

GetConnected

SAE
2012
World Congress

The Essential Automotive Technology Event



EVENT GUIDE

Includes Final Program and
Exhibit Directory

Host Company

NISSAN

Tier One Strategic Partner



SAEInternational®



System Architecture

Rapid Control Prototyping

ECU Autocoding

HIL Testing

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WELCOME TO THE SAE 2012 WORLD CONGRESS!

SAE 2012 World Congress Leadership Team

General Chairman

Robert Sump

Nissan Technical Center
North America

Executive Assistant to
General Chairman

Andrew Christensen

Nissan Technical Center
North America

SAE 2012 World Congress
Strategic Tier One Partner

Mark Little

GE Global Research

SAE 2013 World Congress
General Chairman

Mircea Gradu

Chrysler Group LLC

SAE 2013 World Congress
co-Executive Assistants to
General Chairman

Matthew Reynolds

Joseph M. Guertin

Chrysler Group LLC

SAE Detroit Section Chairman

Brian P. Sangeorzan

Oakland University

SAE Staff Team Leader

Patti Kreh

SAE International

Welcome to SAE 2012 World Congress

Nissan is proud to be the Host Company for this year's event, and I am honored to serve as General Chair.

So much time and effort goes into the preparation and execution of an event of this magnitude. To that end, I would like to thank our Tier One Strategic Partner, General Electric, the Industry Coalition members, the Nissan and GE planning teams as well as the SAE International staff.

Most importantly, I thank you – the conference attendees. Your attendance demonstrates your continued commitment to SAE. I hope your time at the Congress reaffirms your passion for the work that we do as engineers, driving innovation throughout the automotive industry.

The SAE 2012 World Congress theme “Get Connected” represents the new and diverse connections that are driving significant advancements in the auto industry. Not only does the theme symbolize literal connections, such as those between vehicles, infrastructure, the Internet or the electrical grid, it also demonstrates the most fundamental of connections: those relationships among engineers who are developing next-generation vehicle technologies.

Throughout the agenda, you'll find a broad range of engaging events that will appeal to engineers of different disciplines and experience levels. A few highlights:

- The keynote speakers are a world-class group of industry leaders who will share their views on key topics affecting the field of automotive engineering.
- The Management Program is headlined by the AVL Technology Leadership Center and the FEV Powertrain Innovation Forum, which will showcase executive discussions on developing industry trends.
- The Technical Program gives you the opportunity to learn from over 1,500 of your peers, enhancing your skills and creativity. In addition to paper presentations and the popular “Chat with the Experts” program, the new “Connect with the Authors” sessions give you the opportunity to engage directly with engineers who are presenting their innovative work on the exhibit floor.
- Add in the chance to visit the innovative exhibits on the show floor; drive the latest, innovative vehicles in the Ride and Drive; see the work of future engineers at SAE's “A World In Motion” Jet Toy Olympics; and network with fellow engineers at the evening receptions and you'll find that the World Congress has something for everyone.

From OEMs to suppliers, across academia and governments, getting connected with one another will be the catalyst for innovation and the auto industry's foundation for future success.

Thank you again for joining us for the SAE 2012 World Congress. I hope you take this opportunity to get connected, and have a very productive week.



Robert Sump
General Chair
SAE 2012 World Congress



Robert Sump

General Chair

SAE 2012 World Congress

FISITA 2012

World Automotive Congress & Exhibition

Automobiles and Mobility in a Low Carbon Economy
— China and the World

FISITA
2012

World Automotive Congress
27-30 November, Beijing, China

27-30 November, 2012 Beijing, China

Why Attend ?

- I More business opportunities in the largest automotive market on earth
- II Building a complete and professional automotive supply chain
- III Wide participation from government, industry and academia
- IV Over 60 years of high reputation of FISITA Congress
- V SAE-China's Full commitment as the local organizer
- VI Powerful marketing promotion measures around the world

Come and Join us in FISITA 2012 World Automotive Congress & Exhibition together with



For more information, please visit www.fisita2012.com

Organizers:



Society of Automotive
Engineers of China



International Federation of
Automotive Engineering Societies

Exhibition Co-organizer:

NÜRNBERG MESSE NuernbergMesse China

Contact Information

Society of Automotive Engineers of China

Tel: +86-10-6334 5809

+86-10-6334 5599-823, 888

Fax: +86-10-6334 5466

Email: fisita2012@sae-china.org

NuernbergMesse China

Tel: +86-21-5228 4025

Fax: +86-21-5228 4024

E-mail: fisita@nm-china.com.cn

Day/Time	Tuesday, April 24					Wednesday, April 25		
8:00 a.m.								
8:30 a.m.								
9:00 a.m.								
9:30 a.m.								
10:00 a.m.	AVL Technology Leadership Center Sessions 10:00 – 12:00	FEV Powertrain Innovation Forum Sessions 10:00 – 12:00	Technical Sessions 10:00 – 11:40	SAE AWIM Motorized Toy Car 9:00 – 2:00	SAE Career Fair 10:00 – 6:00	Exhibit Open 10:00 – 6:30	Keynote 9:00 – 9:45	FEV Powertrain Innovation Forum Sessions 9:45 – 11:45
10:30 a.m.								
11:00 a.m.								
11:30 a.m.								
12:00 p.m.				Lunch on Exhibit Floor 11:30 – 1:00				
12:30 p.m.								
1:00 p.m.	AVL Technology Leadership Center Sessions 1:30 – 3:30			FEV Powertrain Innovation Forum Sessions 1:00 – 3:00	Technical Sessions 1:00 – 4:00			FEV Powertrain Innovation Forum Sessions 1:00 – 3:00
1:30 p.m.								
2:00 p.m.								
2:30 p.m.								
3:00 p.m.				SAE Annual Business Mtg 3:30 – 4:00				
3:30 p.m.								
4:00 p.m.				Chat with the Experts 4:00 – 5:00				
4:30 p.m.								
5:00 p.m.	SAE Awards Ceremony 5:00 – 6:00 Awards Reception 6:00 – 7:00			Attendee Networking Reception 5:00 - 6:30				
5:30 p.m.								
6:00 p.m.								
6:30 p.m.								
7:00 p.m.						Detroit Section Dinner 6:30 – 8:30		
7:30 p.m.								
8:00 p.m.								
8:30 p.m.								
Ride and Drive Hours: Tuesday-Thursday								

Ride and Drive Hours: Tuesday-Thursday
10:30 am – 4:30 pm



**Professional Development Seminars
Monday - Friday: 8:30 am - 4:30 pm**

				Thursday, April 26												
	Technical Sessions 8:00 – 11:40								Technical Sessions 8:00 – 11:40							
	Lunch on Exhibit Floor 11:30 – 1:00				Keynote 9:00 – 9:45				FEV Powertrain Innovation Forum Sessions 9:45 – 11:45				Lunch on Exhibit Floor 11:30 – 1:00			
	Technical Sessions 1:00 – 4:00				AVL Technology Leadership Center Sessions 10:30 – 12:30								Technical Sessions 1:00 – 4:00		Chat with the Experts 1:00 – 2:00	
	Chat with the Experts 4:00 – 5:00												Chat with the Experts 1:00 – 2:00			
	Attendee Networking Reception 4:30 – 6:00												Attendee Networking Reception 4:30 – 6:00			
SAE AWIM Jet Toy Olympics 9:00 – 2:00												AWIM Fuel Cell Olympics 9:00 – 2:00				
SAE Career Fair 10:00 – 6:00																
Exhibit Open 10:00 – 6:00																

P111037

Location

Cobo Conference/Exhibition Center
(Main location, unless otherwise noted)
One Washington Boulevard
Detroit, MI 48226
Phone: 1-313-877-8777

Detroit Marriott at the Renaissance Center (Headquarters Hotel)
Renaissance Center
400 Renaissance Drive
Detroit, MI 48243
Phone: 1-313-568-8000
Fax: 1-313-568-8146

Hotel Keycards

Sponsored by



Registration

Sponsored by



All registrants will receive a lanyard and a bag upon registration.

Lanyards compliments of

DENSO

Bags compliments of

AISIN

Hours of Operation

Registration **NEW LOCATION**

E-Badge Registration (pre-registered)

Inside Wayne Exhibit Hall

On-Site Registration / SAE Marketplace

Inside Oakland Exhibit Hall

Hours:

Monday, April 23
8:00 a.m. – 5:00 p.m.

Tuesday, April 24
7:00 a.m. – 6:30 p.m.

Wednesday, April 25
7:00 a.m. – 6:00 p.m.

Thursday, April 26
7:00 a.m. – 6:00 p.m.

On-Site Registration Fees:

SAE Classic Member	\$189 / day
SAE Premium Member	\$164 / day
SAE Elite Member	\$139 / day
Non-Member	\$370 / day
Technical Program Participants*	
*SAE Members	Free (3 days)
*Non Members	\$189 / day
<i>*speakers, authors, organizers, chairs, technical paper reviewers, sponsoring committees</i>	
Student SAE Members	Free (3 days)
Student Non-Members**	\$25 (3 days)
**Full Time College ID Required	
Press***	FREE
Analyst***	FREE
Public Relations***	\$189 / day
***Credentials Required	
Exhibitor / Sponsor Personnel	Provided with booth/ sponsorship purchase

All registrations include access to technical sessions, management program, exhibit, lunch, receptions on the exhibit floor, and networking opportunities. NOTE: Students will receive all entitlements noted above except lunch.

SAE 2012 World Congress Industry Leadership Coalition

3M Automotive Market Center
ABC Group
AGC Automotive Americas Co.
Agero
Aisin World Corporation of America
Akebono Brake
Alcoa Electrical and Electronic Solutions
Alcoa, Inc.
Alpine Electronics of America, Inc.
American Axle & Manufacturing Holdings Inc.
American Mitsuba Corporation
American Showa Inc.
Arvin Innovation, Inc.
ArvinMeritor, Inc.
Autoliv North America, Inc.
Autoneum North America, Inc.
AVL North America, Inc.
BASF Corporation

Behr America Inc.
Benteler Automotive Corp.
BMW Group
BorgWarner Inc.
Bridgestone Americas
Brose North America, Inc.
Cadence Innovation LLC
CalsonicKansei North America, Inc.
Chrysler Group LLC
Citation Corporation
Clarion Corporation of America
Consulate General of Canada - Detroit
Consulting4Drive
Continental Automotive Systems, Inc.
Continental North America
Cooper-Standard Automotive
Cummins Inc.
Custom Sensors & Technologies (CST)

D G Technologies
Dana Holding Corporation
DASSAULT Systemes
Dell
Delphi Corporation
Denso International America Inc.
DENSO International America, Inc.
Detroit Metropolitan Convention & Visitors Bureau
Donnelly Electronics
Dow Automotive
dSPACE Inc.
Dura Automotive Systems Inc
EaglePicher Inc.
Eaton Corporation
Eberspaecher North America, Inc.
Edscha North America
ESG Automotive

Hours of Operation

SAE International & Marketplace-

NEW LOCATION

Front of Oakland Exhibit Hall

Tuesday, April 24

8:00 a.m. – 6:30 p.m.

Wednesday, April 25

8:00 a.m. – 6:00 p.m.

Thursday, April 26

8:00 a.m. – 6:00 p.m.

Collocated in the front entrance of the exhibit hall near registration—putting “all things SAE” in one convenient location. Resources from the SAE 2012 World Congress are available for purchase. SAE's portfolio of products and services that help connect mobility professionals to the people and the technology needed to solve industry's challenges are also highlighted. At the Marketplace, save \$5 when you purchase \$50 or more of “print” books.

Currency Exchange

CHASE BANK

611 Woodward Ave.

Detroit, MI 48226

(313) 225-3774

Monday – Friday

8:00 a.m. – 5:00 p.m.

\$5 fee – no account needed

All forms of currency are accepted.

Media Center

Back of Wayne Hall

Tuesday – Wednesday, April 24-25

8:00 a.m. – 6:00 p.m.

Thursday, April 26

8:00 a.m. – 2:00 p.m.

Networking Receptions

Tuesday, April 24 – 5:00 – 6:30 p.m.

Wednesday, April 25 – 4:30 – 6:00 p.m.

Thursday, April 26 – 4:30 – 6:00 p.m.

Operations Office

Inside Oakland Hall—Rooms O-1 & O-2

Monday – Thursday, April 23-26

7:00 a.m. – 5:00 p.m.

Seminars – Check availability at

SAE registration desk at the Marriott

Renaissance Center

Marriott Renaissance Center, Fifth Floor

Monday – Friday, April 23 – 27

8:30 a.m. – 4:30 p.m.

SAE Fellows Reception and Dinner

Marriott Renaissance Center

Ambassador Salon, (3rd Level)

Monday, April 23

5:00 – 9:00 p.m.

Fellow members and invited guests only

SAE International &
Marketplace

Sponsored by



Wednesday
Networking Reception

Sponsored by

TOYOTA

Sponsored by



中国汽车技术研究中心
China Automotive Technology & Research Center

Facton Inc.
Faurecia North America
Federal-Mogul Corporation
FEV, Inc.
Findlay Industries, Inc.
Flex-N-Gate Corp.
Foamex Automotive Products Group
FOKUS Associates LLC
Ford Motor Company
Freitag & Company
Freudenburg-NOK G.P.
GE Global Research
GE Plastics
General Motors Company
General Products Corporation
Gentex Corporation
GETRAG Corporation
GKN Driveline, NA
Global Emergent

Grede Foundries Inc.
Grupo Antolin North America, Inc.
Guardian Industries
Harvard Industries, Inc.
Hayes Lemmerz International, Inc.
Hella Corporate Center USA Inc.
Henkel Corporation
Hitachi Automotive Products, Inc.
Honda Motor Co., Ltd.
Honda R & D Americas, Inc.
Honeywell International
Horiba Instruments, Inc.
Hyundai-Kia America Technical Center, Inc.
IAV Automotive Engineering, Inc.
Inalfa Roof Systems, Inc.
Inergy Automotive Systems (USA) LLC
Infineon Technologies AG
Infineon Technologies North America Corp.
International Truck and Engine Corporation

J. L. French Automotive Casting
JATCO Ltd.
Johnson Controls Inc.
Kautex Textron North America
Keihin North America, Inc.
Key Plastics, LLC
Key Safety Systems Inc.
KSPG
Kongsberg Automotive
KOSTAL of America
Koyo Bearings USA LLC
L G Chem Power Inc.
Lamborghini
Lear Corporation
Linamar Corp.
Magna International Inc.
MAGNA STEYR NA
Magneti Marelli Powertrain USA, LLC
MAHLE Inc.

continued on next page

GENERAL INFORMATION



Concierge Club
VIP Check- In
Sponsored by



On-Site Services (all located in Cobo Center)

Cobo Hospitality / Business Services

Cobo Center Lobby

Saturday, April 21
12:00 – 4:00 p.m.

Monday, April 23
12:00 – 4:00 p.m.

Tuesday – Thursday, April 24-26
8:00 a.m. – 5:00 p.m.

Phone: 313-877-8290
Fax: 313-202-1833

Services Available: Copying, faxing, on-site computer workstations, shipping services, restaurant reservations, airport shuttles/ transportation, cell phone rental, office supplies, etc.

Coat Check

Oakland Hall Lobby

Tuesday, April 24
7:00 a.m. – 7:30 p.m.

Wednesday, April 25
7:00 a.m. – 9:30 p.m.

Thursday, April 26
7:00 a.m. – 11:00 p.m.

NEW LOCATION

Concierge Club (by invitation only) / VIP Check- In Room W1-55

Tuesday – Wednesday, April 24 – 25
7:30 a.m. – 5:30 p.m.

Thursday, April 26
7:30 a.m. – 12:00 p.m.

SAE 2012 World Congress Industry Leadership Coalition continued

MANN+HUMMEL GmbH
MANN+HUMMEL USA, INC.
MarkIV Automotive
MathWorks
MathWorks
MB-technology NA LLC
Mentor Graphics
Meridian Automotive Systems
Metaldyne Corporation
Michelin North America Inc.
Michigan Economic Development Corp.
Millerschin Group
Mitsubishi Electric Automotive America, Inc.
Mollertech LLC
Motorola - Automotive
MSC Software
MTS Systems Corporation
Navistar, Inc.
Neaton Auto Products Manufacturing Inc.
NHK International Corp.
Nissan Motor Co., Ltd.
Nissan North America Inc.
Nissan Technical Center North America
Nissin Brake Ohio Inc.
North American Lighting
NSK Americas
NTN Bearing Corporation of America
OESA
OMMC (Ohio Module Manufacturing Co., LLC)

Omron Automotive Electronics Inc.
Panasonic Automotive Systems Co. of America
Parker Hannifin Corp.
Perfect Costing Solutions
PGW
Philips Automotive Lighting, N.A.
Pierburg Inc
Pilkington Automotive Limited
Pioneer Automotive Technologies Inc.
Plastic Omnium
PPG Industries, Inc.
Preh, Inc.
Remy International Inc.
Ricardo Inc.
Robert Bosch LLC
Saint-Gobain Sekurit, USA Inc.
Schaeffler Group USA
Shape Corp.
Siemens PLM Software, Inc.
SKD Automotive Group
SKF USA, Inc.
Southwest Research Institute
Specialty Equipment Market Association (SEMA)
Stanley Electric U.S. Co. Inc.
T. Ryan Consultants LLC
TAG Holdings, LLC
TATA Technologies
Teksid Aluminum

Tenneco Automotive
TG Fluid Systems USA Corporation
The Timken Company
ThyssenKrupp Budd Co.
TI Automotive
TK Holdings, Inc.
Tower Automotive
Toyota Motor Engineering & Manufacturing North America
TRAM Inc.
Trelleborg Automotive
TRW Automotive
U.S. Manufacturing Corp.
University of Michigan
University of Toledo
University of Washington
US Army RDECOM-TARDEC
USCAR
Visteon Corporation
Volkswagen
Webasto Roof Systems
Webasto-Edscha Cabrio USA Inc.
Woodbridge Group
Yazaki North America, Inc.
ZF Group NAO

SAE Cyber Café *Oakland Entrance*

Tuesday – Wednesday, April 24-25
7:00 a.m. – 7:00 p.m.

Thursday, April 26
7:00 a.m. – 6:00 p.m.

Visit the SAE Cyber Café to access
EngineerXchange, Visit Detroit, &
Automotive Engineering International
On-line!

Food Courts *Back of Wayne/Oakland Exhibit Halls*

Tuesday – Thursday, April 24-26
11:00 a.m. – 2:00 p.m.

Housing Changes?

If calling during regular business hours 9am-8pm
EASTERN TIME please call (800) 847-5810 toll free
or (801) 505-4138 International. If calling outside
regular business hours please call (801) 505-4609.

SAE Cyber Café
Sponsored by



Liberty Mutual
INSURANCE

First Aid Services *Room W-1 (Inside Wayne Hall)*

Tuesday, April 24
7:00 a.m. – 7:00 p.m.

Wednesday, April 25
8:00 a.m. – 6:30 p.m.

Thursday, April 26
8:00 a.m. – 10:00 p.m.

Exhibitor Services *Right Side of Oakland Hall*

Networking Lounges on Exhibit Floor

Booth #131 (Wayne Hall)

*Booth #619 (Wayne/Oakland Halls - Center of the
Exhibit Floor)*

Booth #1137 & #1213 (Oakland Hall)

Tuesday – Thursday, April 24-26
Open during exhibit hours

Visionary Engineering Customer Support

A leading supplier to all the world's auto manufacturers, DENSO is developing technology now for the more fuel efficient and environmentally friendly cars of tomorrow.

DENSO focuses on our customers' needs to provide engineering solutions. We're designing for more efficient ways of powering the internal combustion engine, and providing components for hybrid and electric vehicles.

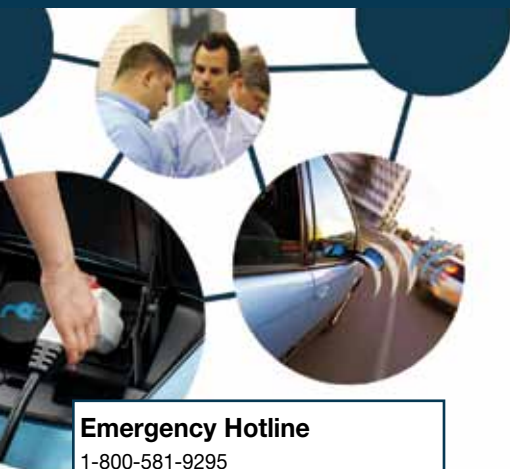
More than 13,000 DENSO employees in North America work together to provide quality products and customer service. Our regional headquarters in Michigan includes sales as well as an engineering center to design, build and test our technology, and our 26 manufacturing plants across North America turn our innovative ideas into a reality.

DENSO is proud to sponsor SAE 2012 World Congress.

DENSO

www.densocorp-na.com

GENERAL INFORMATION



Emergency Hotline

1-800-581-9295

SAE International World Headquarters

400 Commonwealth Drive
Warrendale, PA 15096-0001 USA
Phone: 1-724-776-4841
Fax: 1-724-776-0790

Customer Service

1-877-606-7323 (toll free U.S.
and Canada)
1-724-776-4970
www.sae.org
customerservice@sae.org

Automotive Headquarters

755 W. Big Beaver Rd.
Troy, MI 48084 USA
Phone: 1-248-273-2455
Fax: 1-248-273-2494

VIP Check-In
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FISITA Patronage



On-Site Services (all located in Cobo Center)

People Mover

Monday – Thursday
6:30 a.m. – 12:00 a.m.

Friday – Saturday
6:30 a.m. – 2:00 a.m.

Sunday
12:00 p.m. – 12:00 a.m.

People Mover Passes can be obtained at each People Mover Station for a fee of \$0.50 per ride.

Restaurant Services

See Cobo Hospitality / Business Services or refer to link <http://www.visitdetroit.com/index.php/restaurants> for a listing of restaurants in Detroit.

Security

**Front of Macomb Hall in M3
(Macomb Lobby)**

Security is of continued importance. Your patience and understanding is appreciated as we do everything possible to secure the event.

Photography and audio video recordings are NOT permitted. Also, as a courtesy to presenters and audience members, please turn off all cell phones and pagers before entering technical session rooms.

No one under the age of 16 is permitted on the exhibition floor unless part of an SAE/AWIM sponsored school tour planned and pre-arranged by SAE.



No Cameras/Video

Shuttle Services

The shuttle will run a continuous loop at ten minute intervals from the Motor City Lobby of the Marriott Renaissance Center to Cobo.

Tuesday, April 24
6:00 a.m. – 7:30 p.m.

Wednesday, April 25
6:00 a.m. – 9:00 p.m.

Thursday, April 26
6:00 a.m. – 11:00 p.m.

Guests staying at the Courtyard Marriott, Atheneum, and the Hilton Garden Inn will receive people mover passes for these three days. Guests will receive their passes upon check in.

Technology Lounges

D3-19 – Safety/Testing

D0-01 A&B – Electronics/Integrated Design & Manufacturing/Materials

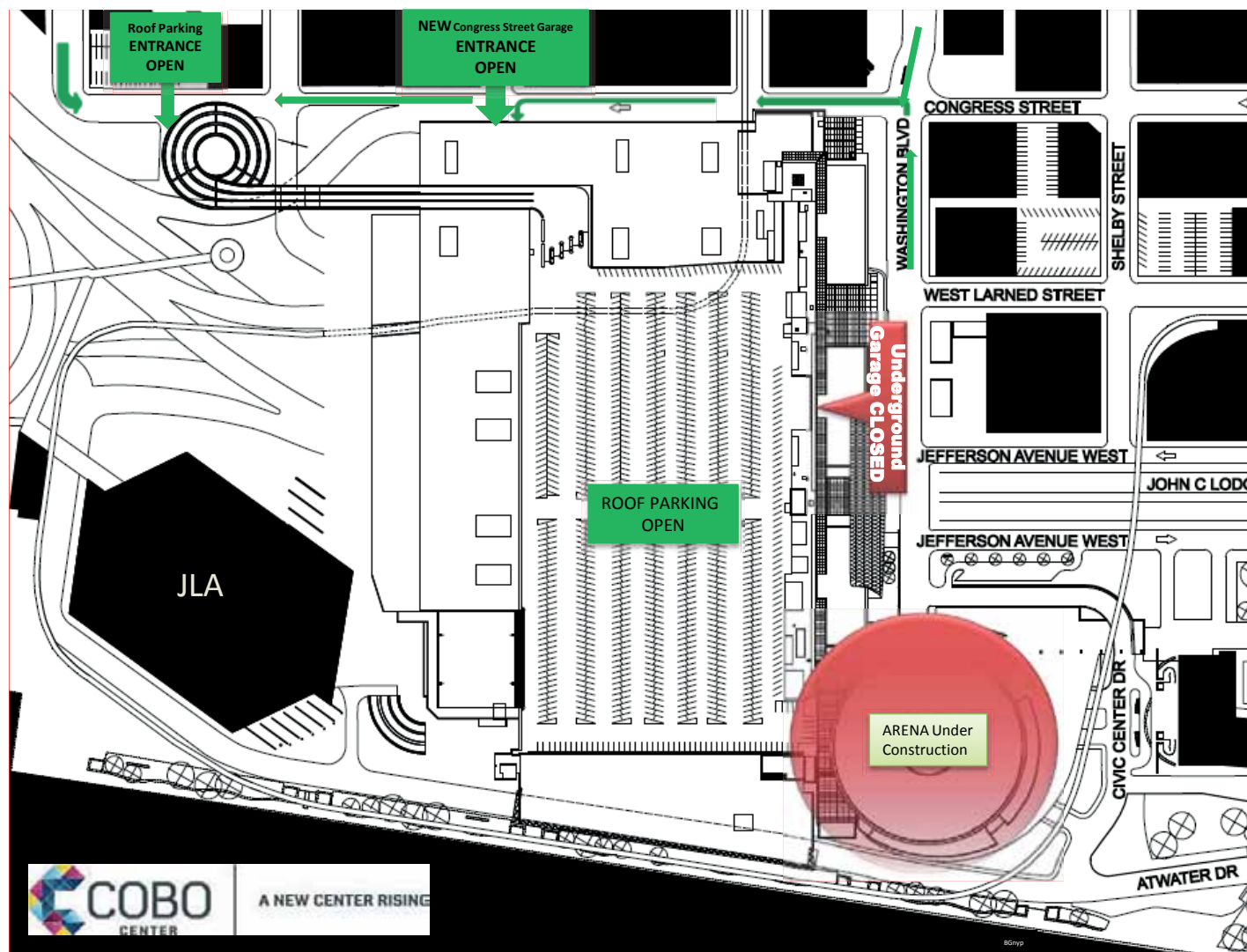
W2-60 – Powertrain/Propulsion/Emissions/Environment/Sustainability

7:00 a.m. – 5:30 p.m.

VIP Check – In Oakland Hall Lobby

Tuesday – Thursday, April 24-26
6:30 a.m. – 6:00 p.m.

DOWNTOWN DETROIT PARKING



City Of Detroit Municipal Parking Department Parking Facilities

Listed below are recommended parking facilities for all exhibitors of the SAE 2012 World Congress. Parking will be handled on a first-come, first-served basis. As long as spaces are available, attendees will be able to park and pay the current rate for the day. These rates do not include reserved parking. Please note that the parking facilities do not accommodate overnight parking.

Congress Street Garage

467 W Congress
Detroit, MI 48226
6:00 a.m. – 11:00 p.m. Monday – Friday
Saturday, Sunday and holidays as needed

Cobo Roof Parking Deck

625 W Congress
Detroit, MI 48226

Ford Underground Garage

30 East Jefferson
Detroit, MI 48226
6:00 a.m. – 11:00 p.m. Monday – Friday
Saturday, Sunday and holidays as needed
Maximum rate: \$10

Millennium Garage

432 West Congress
Detroit, MI 48226
6:00 a.m. – 11:00 p.m. Monday – Friday
Saturday, Sunday and holidays as needed
Maximum rate: \$15

For additional parking information, or to reserve parking, please contact:

Municipal Parking Department
1600 West Lafayette
Detroit, MI 48216
Phone: 313-221-2500

SPECIAL EVENTS AND NETWORKING OPPORTUNITIES

TUESDAY

April 24

Opening Ceremonies

AVL Technology Leadership Center, W1-51/52

8:30 – 9:30 a.m.

Welcome:



Frank O. Klegon

2012 SAE President,
President, FOKUS
Associates LLC



Helmut List

Chairman & CEO,
AVL North America



Robert Sump

Vice President,
Nissan Technical
Center North America
and 2012 SAE World
Congress General
Chair

Featured Speaker:



**Jeffrey
Immelt**

Chairman &
CEO, General
Electric

NEW! International Motorized Toy Car Competition

Detroit Hall

9:00 a.m. – 2:00 p.m.

For more information, please visit:
www.awim.org/events



International Motorized
Toy Car Competition

Sponsored by

Honeywell

TUESDAY

April 24

SAE Detroit Section Student Exhibit Competition

Wayne Hall

Judging: 10:00 a.m. – 12:30 p.m.

SAE Detroit Section will host the Annual Student Exhibit Competition during SAE 2012 World Congress. The exhibits showcase SAE collegiate chapter activities and projects. It is a great opportunity for automotive manufacturers and suppliers, as well as alumni, to learn more about the innovative engineering efforts in which SAE collegiate chapters worldwide are engaged.

Exhibits also detail the novel design concepts, engineering analyses, and manufacturing methods employed to construct SAE collegiate design competition vehicles (many of which will be on display). Exhibits will be on display all week. Cash prizes will be awarded to the top three schools. Come see for yourself the remarkable new technologies these enthusiastic and creative young engineers have on display.

SAE Detroit Section
Student Exhibit Competition

Sponsored by



Booth Student Chapter

200	Ferris State University
220	Lawrence Technological University
112	Michigan Technological University
124	Milwaukee School of Engineering
118	University of Michigan
208	Wayne State University
106	Western Michigan University

SAE Detroit Section High School Poster Competition

Wayne Hall

Local high school students incorporated the SAE 2012 World Congress theme “GetConnected” into their posters. Judging was based on originality, artistic excellence, aesthetic effect and relevance to the theme. The top ten posters will be on display all week next to the student exhibits.

SAE Detroit Section
Student Poster Competition

Sponsored by



SAE Annual Business Meeting

FEV Powertrain Innovation Forum, W1-54

3:30 – 4:00 p.m.

Attendee Networking Reception

Exhibit Hall

5:00 – 6:30 p.m.

TUESDAY

April 24

SAE International Board of Officers

OFFICERS

Frank O. Klegon
2012 President

Richard E. Kleine, EdD
2011 President

Donald G. Hillebrand, PhD
2013 President Nominee

Gregory E. Saunders
Vice President – Aerospace

Mircea Gradu, PhD
Vice President – Automotive

Bharat Vedak
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SAE Awards Ceremony: Honoring Excellence

FEV Powertrain Innovation Forum, W1-54

5:00 - 6:00 p.m. Awards Ceremony

6:00 - 7:00 p.m. Welcome/Awards Reception

Join SAE in honoring excellence in engineering as Frank O. Klegon, 2012 SAE International President, recognizes more than 90 outstanding engineers and educators for their exceptional accomplishments and contributions to the mobility industry. We hope you will join us in honoring your peers by recognizing their accomplishments. Admission to the Awards Ceremony is provided to all conference attendees, award presenters, and guests of the award recipients.



Frank O. Klegon

2012 SAE President,
President, FOKUS
Associates LLC

For additional information about SAE's awards, please visit www.sae.org/awards.

QuickCONNECT Speed Networking

Networking Lounge – Exhibit Floor

5:15 – 6:00 p.m.

Theme: Energy

DON'T FORGET TO VOTE!

Best of the Best Booth Awards

Kiosks located next to the SAE International Booth

The Best of the Best Booth Awards recognize exhibitors with the most innovative technology.

Please vote for the most innovative exhibitor in each of the following categories:

- Poster Display
- 10x10 Booth
- 10x20 Booth
- 20x20 Booth
- Most Innovative Booth Overall

Voting will close Wednesday, April 25 at 6:00 p.m., so be sure to visit the voting kiosks in the front of Oakland Hall before that time.

Best of the Best Award winners will be recognized during the World Congress Annual Banquet.

2011 Best of the Best Winners

AVL – 20'x20', dSpace – 10'x20', Grail Engine Technologies – 10'x10',
Cambustion – Poster Display

Participate.
Exhibit.
Sponsor.
Advertise.
Attend.



The Essential Automotive Technology Event

April 16-18, 2013 • Cobo Center • Detroit, Michigan, USA

Theme: Achieving Efficiency

Host Company:  **CHRYSLER**

Tier One Strategic Supplier: 

www.sae.org/congress

SAE*International*[®]

SPECIAL EVENTS AND NETWORKING OPPORTUNITIES

WEDNESDAY

April 25

International JetToy Competition

Sponsored by



BOSCH

Invented for life



Attendee Networking
Reception

Sponsored by

TOYOTA

International JetToy Competition (6th Annual)

Detroit Hall

9:00 a.m. – 2:00 p.m.

For more information, please visit:

www.awim.org/events



Attendee Networking Reception

Exhibit Hall

4:30 – 6:00 p.m.

QuickCONNECT Speed Networking

Networking Lounge – Exhibit Floor

5:15 – 6:00 p.m.

Theme: Advanced Propulsion

Detroit Section
Social Hour

Sponsored by



SAE Detroit Section

2013 Nissan Altima Vehicle Event

W1-51 & W1-52

5:30 p.m. – Social Hour

6:30 p.m. – Dinner

7:30 p.m. – Presentation

Don't miss the popular SAE Detroit Section Vehicle Event featuring the 2013 Nissan Altima. Ticket holders are invited to attend the social hour prior to the meeting, providing the perfect opportunity to interact with engineering professionals and peers.

SAE Detroit Section is the largest SAE Section with 9,000 members, from southeastern lower Michigan, including Ann Arbor, Jackson, and Toledo. The event is open to both industry and SAE members.

This event is not included with your SAE 2012 World Congress registration. Tickets can be purchased in advance through the SAE Detroit Section website at www.sae-detroit.org. A very limited number of tickets will be available for purchase onsite starting at 5:00 p.m. at the registration desk outside the event. Tickets are \$40/SAE member, \$55/non-member, and \$20/SAE student member or \$400 for a reserved table of ten.

At the forefront of ground vehicle standards development. Then and now.



The first engine oil viscosity standard and the introduction of engine horsepower ratings. The influence of motorcycle headlamps and rollover protective structures for tractors. A standard that defines electric-vehicle charging couplers and the creation of those to aid in the development of the Smart Grid.

For over 100 years, SAE International has played a critical role in the progress of the automobile and the ground vehicle industry.

And while the work of engineering today's vehicles may on the surface look very different given the complexity of technology and global markets, SAE International and its standards development program have essentially remained unchanged. It continues to provide a neutral forum for collaboration on common engineering challenges and the creation of standards, thereby helping industry reduce costs, increase productivity, improve market position, and advance new technologies.

Whether it is bringing standards for and from the United States market to the global table or serving as the world's center of expertise on Commercial Vehicle/ConAg standards, SAE International is uniquely positioned to provide innovative standards solutions—be they by consensus, consortia or harmonization—that offer industry, companies, and individuals opportunities to influence, grow, and prosper.

Join the important work of SAE Technical Standards Development

Currently there is a heightened need for experts in the following areas:

- Chassis Systems
- Electrical Systems
- Fuel Cell
- Materials, Processes, and Parts
- Powertrain Systems/Battery Standardization
- Vehicle Engineering Systems
- Vehicle Safety Systems



Visit the SAE International & Marketplace, near registration, to learn more about volunteering for a standards development committee and where your technical expertise can be of assistance to the industry.

You may also express interest at <http://www.sae.org/standardsdev/participationReq.htm>

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"The society dedicated to advancing mobility engineering worldwide"

Automotive Headquarters - 1.248.273.2455

www.sae.org

SPECIAL EVENTS AND NETWORKING OPPORTUNITIES

THURSDAY

April 26

Reviewing the Highlights of Automotive History

Room D3-20

8:00 a.m. – 4:00 p.m.

This is a session organized by the SAE Mobility History Committee and deals with the history of various components of an automobile powertrain system. See page 94 for a list of speakers.

At each Congress the SAE Mobility History Committee provides a booth for display of historic automotive artifacts and presents an agenda of historic talks on automotive topics.



At this year's Congress we are located outside of Wayne Hall and our booth display will include a 1916 Scripps-Booth automobile, a 1916 Detroit Electric automobile and display boards recounting the history of electric automobiles and hybrid automobiles

International Fuel Cell
Competition

Sponsored by



International Fuel Cell Competition (2nd Annual)

Detroit Hall

9:00 a.m. – 2:00 p.m.

For more information, please visit:
www.awim.org/events



Pre-Banquet Industry Networking Reception

Exhibit Hall

4:30 – 6:00 p.m.

QuickCONNECT Speed Networking

Networking Lounge – Exhibit Floor

5:15 – 6:00 p.m.

Theme: Safety

SAE 2012 Annual Banquet

AVL Technology Leadership Center (W1-52, Level 1)
6:00 p.m.

Featuring:

Toshiyuki Shiga

Chief Operating Officer
Nissan Motor Co., Ltd.



Toshiyuki Shiga is the chief operating officer of Nissan Motor Co., Ltd. (NML), where he is responsible for Global Sales and Marketing, Human Resources, Treasury and Quality. He is also chairman of Management Committee of Japan (MC-J) and Management Committee of General Overseas Market (MC-GOM).

Before assuming his current position in 2005, Shiga acted as senior vice president in charge of the general overseas market (GOM) Sales & Marketing division. Since joining NML in 1976, Shiga has held a number of positions in Sales operation in Asia and Corporate Planning. Shiga holds a degree from the faculty of economics at Osaka Prefecture University.

Presentations by:



Frank O. Klegon

2012 SAE President
President, FOKUS Associates LLC

Welcome by:



Brian P. Sangeorzan

SAE Detroit Section Chair
Associate Professor of
Engineering,
Oakland University

Remarks by:



Robert Sump

SAE 2012 World Congress
General Chair
Vice President, Nissan Technical
Center North America

THURSDAY

April 26

Pre-Banquet Industry Networking Reception

Thursday, April 26

Wayne/Oakland Hall
4:30 p.m.

Afterglow

Immediately following the banquet for
networking over dessert, a nightcap
and live entertainment

Room W1-55 (Level 1)

Sponsored by



BOSCH

Invented for life

To open the banquet, the U.S.
National Anthem will be performed
by the Wayne State University Men's
Glee Club.

Join Master of
Ceremonies Paul W.
Smith, Talk Host on
WJR Radio News as
we honor this year's
top OEM and supplier
executives.



Dress is business attire. Each full
table purchased includes one bottle
of red and one bottle of white wine.
Tickets are priced at \$150 each
or \$1500 per table. Check SAE
registration desk for availability.

GetConnected



CONNECT with the Author

Back of Exhibit Hall – Booth 836

Come join the authors on the exhibit floor and have an extended discussion of their paper/presentation. Authors will bring “hands-on” demonstration property and will be available at the timeslots below to informally discuss their paper/property with attendees on the exhibit floor.

	Tuesday	Wednesday	Thursday
10:00 AM		A Framework for Simulation-based Development and Calibration of VCU-Functions for Advanced PHEV Powertrains <i>Thomas Boehme, IAV</i> and Management of Energy Flow in Complex Commercial Vehicle Powertrains <i>Paul Eckert, IAV</i>	Battery Cell Emissions Monitoring <i>Thomas Aiken, Applied Sensor</i>
		Development of a Standard Spin Loss Test Procedure for 4WD Transfer Cases <i>Michael Kirk, Chrysler LLC</i>	Development of a Transparent Nanocomposite for Automobile Polymer Glazing <i>Takashi Oda, Nissan Motor Company Ltd.</i>
11:30 AM	Numerical and Experimental Analysis of Mixture Formation and Performance in a Direct Injection CNG Engine <i>Mirko Baratta, Politecnico di Torino</i>	Chemical Hydrides for Hydrogen Storage in Fuel Cell Applications <i>Maruthi Devarakonda, Pacific Northwest National Lab.</i>	Zero-Dimensional Modeling in Diesel Engines <i>Peter Eckert, IAV</i>
		Use of Heat Reflective Coating for Vibration Insulation Rubber Parts in Automotive Applications <i>Michael Baumbarger, Honda R&D Americas</i>	System Test of Light Assist Functions <i>Karsten Schulze, IAV</i>
1:00 PM	Development of High-power & High-efficiency Motor for a Newly Developed Electric Vehicle <i>Shunji Oki, Nissan Motor Company Ltd.</i>	Recovering Energy from Shock Absorber Motion on Heavy Duty Commercial Vehicles <i>Jen Tran</i> <i>Jacobs Vehicle Systems</i>	Bottleneck Analysis method for promoting popularization of new technologies during R&D stage <i>Kyoichi Tange, Toyota Motor Corporation</i>
		Test Method for Seat Trim Cover Wrinkling and Bagginess <i>Lisa Fallon, General Motors Company</i>	
2:30 PM	Battery Electric Vehicle Driving and Charging Behavior in the EV Project <i>John Smart, Idaho National Lab.</i> (3:00 PM this discussion only)	New Advances in Lithium Ion Monitoring <i>Joern Tinnemeyer, Cadex</i>	Analysis of Combustion and Emissions in a EURO V Diesel Engine by means of a Refined Quasi-Dimensional Multizone Diagnostic Model <i>Roberto Finesso, Politecnico di Torino</i>
		Rotating Clutch Temperature Model Development <i>Hussein Dourra and Gang Chen, Chrysler LLC</i>	

	Electronics
	Emissions/Environment
	Integrated Design & Manufacturing
	Management
	Materials
	Propulsion/Powertrain
	Safety/Testing

NEW QuickCONNECT Speed Networking

During conferences, SAE International understands that often the most animated interactions and the most valuable learning take place during breaks, meals, and receptions. Extending these unstructured networking periods provides one way to improve the overall attendee experience.

What is it?

QuickCONNECT is a fast-paced, highly interactive, and structured way of networking with fellow industry professionals.

Why should I take part?

QuickCONNECT will provide attendees with the opportunity to meet a large number of new people in their field of interest; enabling attendees to develop the key relationships needed to advance their business and professional relationships.

Who should participate?

All SAE 2012 World Congress attendees are invited to participate and are encouraged to bring with them a handful of business cards to distribute.

Where will this be taking place?

Taking place in the largest Networking Lounge on the show floor, this targeted networking opportunity is one that you won't want to miss.

When does it start?

Tuesday, April 24

Theme: Energy

5:15 p.m. – 6:00 p.m.

Wednesday, April 25

Theme: Advanced Propulsion

5:15 p.m. – 6:00 p.m.

Thursday, April 26

Theme: Safety

5:15 p.m. – 6:00 p.m.

Technology Lounges

D3-19 – Safety/Testing

D0-01 A&B – Electronics/
Integrated Design &
Manufacturing/Materials

W2-60 – Powertrain/Propulsion/
Emissions/Environment/
Sustainability

7:00 a.m. – 5:30 p.m.

Taking place over a period of 45 minutes, each attendee will have 5 minutes with each person before moving on to the next “connection.”

*****Due to limited space, participation will be on a first come, first served basis.*****

Don't forget to bring your business cards!

CHAT WITH THE EXPERTS

Chats with the Experts are designed to encourage small groups to explore subjects of interest to them, pose questions, and share ideas and practical solutions in an informal setting. The subject matter experts will provide brief opening statements on the topic to kick things off and will facilitate an interactive dialogue. Chats with the Experts will feature additional technology topics such as safety, powertrain controls, and hybrid and electric vehicles.

MATERIALS



Room D0-03C

Tuesday, April 24

4:00 – 5:00 p.m.

Performance of Thermoplastic Composites, Bridging the Gap Between Virtual Predictions and Actual Measurements, Effect of the Fiber Orientations

Marios Lambi, BASF Corp.



Room D0-03D

Wednesday, April 25

4:00 – 5:00 p.m.

Concept Vehicle Proof Statement - Bamboo Car

Bernhard Pfeiffer, Ticona R&D



Room D0-04C

Wednesday, April 25

4:00 – 5:00 p.m.

Tire Model Validation and Application - A User Perspective

Xiaobo Yang, Oshkosh Corp.



Room D0-05A

Wednesday, April 25

4:00 – 5:00 p.m.

Challenges in Sheet Metal Forming Technologies and Simulation Methods

Z. Cedric Xia, Ford Motor Company



Room D0-03D

Thursday, April 26

1:00 – 2:00 p.m.

New Generation of Cathode and Electrolyte Material

Phillip Hanefeld, BASF Corp.

ELECTRONICS

Room D0-03A

Tuesday, April 24

4:00 – 5:00 p.m.



The Promise and Challenge of LTE In-Vehicle Services Panel

Evan Jones, Sierra Wireless

Eric Berkobin, Hughes Telematics

Richard Kreifeldt, Harman Intl Industries

Phil Magney, IHS Automotive



Room D0-03A

Wednesday, April 25

4:00 – 5:00 p.m.



U.S. DOT's V2V and V2I Technology Bed Update

Walton Fehr, U.S. DOT

Greg Krueger, MI DOT

INTEGRATED DESIGN & MANUFACTURING

Room D0-07B

Tuesday, April 24

4:00 – 5:00 p.m.



Computer Model Validation and Verification (V&V) in Design

Ramesh Rebba, GM

Ren-Jye Yang, Ford

Zissimos Mourelatos, Oakland Univ.



Room D0-06B

Tuesday, April 24

4:00 – 5:00 p.m.

Flying Car

Branko Sarh, Boeing



Room D0-06A

Wednesday, April 25

4:00 – 5:00 p.m.

Accurately Predicting Quality, Reliability, and Durability

Lev Klyatis, Sohar Inc.



Room D0-03C

Wednesday, April 25

4:00 – 5:00 p.m.

What Does Government Want from Industry? What are the Implications for Engineering?

Michael Kirschner, Design Chain Associates, LLC

continued on next page

continued from previous page



Room D0-04B

Wednesday, April 25

4:00 – 5:00 p.m.

Normalization of Deviance - Lessons Learned and Opportunities for Aerospace and Automobiles

Joe Nieberding, Aerospace Engineering Assoc.

Room D0-04A

Wednesday, April 25

4:00 – 5:00 p.m.



Structural Reliability under Random Time-Varying Excitations

Efstratios Nikolaidis, Univ. of Toledo

Zissimos Mourelatos, Oakland Univ.

Room D0-02A

Wednesday, April 25

4:00 – 5:00 p.m.



Challenges and Opportunities Facing Driver Visibility

Rajiv Mehta, General Motors Company

Michael Flannagan, UMTRI

John Manoogian, College for Create Studies



EMISSIONS/ENVIRONMENT/ SUSTAINABILITY



Room W2-62

Tuesday, April 24

4:00 – 5:00 p.m.

Current and Future Vehicle Emissions Challenges

Timothy Johnson, Corning



Room O2-38

Tuesday, April 24

4:00 – 5:00 p.m.

Automotive Recycling - A Success Story of Sustainability

Richard Paul, LKQ Best Automotive Corp.



Room O2-37

Wednesday, April 25

4:00 – 5:00 p.m.

Thermal Systems Modeling and Simulation

Richard Sun, Chrysler



Room O2-38

Wednesday, April 25

4:00 – 5:00 p.m.

Life Cycle Assessment and Environmental Product Declarations

Rita Schenck, Inst. For Environmental Research & Education

POWERTRAIN



Room O2-44

Wednesday, April 25

4:00 – 5:00 p.m.

Implementing Wireless Power Charging

John Miller, Oak Ridge National Laboratories

Room W2-70

Wednesday, April 25

4:00 – 5:00 p.m.



What Approaches will Advanced Diesel Engine Air Path Controllers utilize in the Future?

John Shetty, BorgWarner Inc.

Yue-Yun Wang, General Motors Company

SAFETY/TESTING

Room D3-19

Wednesday, April 25

4:00 – 5:00 p.m.



Noise, Vibration & Harshness (NVH); Diesel Engines Noise

Thomas Reinhart, Southwest Research Inst.

Room D3-19

Thursday, April 26

4:00 – 5:00 p.m.



Motorsports Chat

David Finch, RAETECH Corp.

Raymond Leto, Total Sim

Wiley R. McCoy, McLaren Performance Technologies



John Melvin, Tandelta

Michael J. Royce, Albion Associates, Inc

Kirk Russell

Bob Welge, Robert Engineering Development



MATERIALS



Room D0-05B

Tuesday, April 24
1:00 p.m.

Challenges in Evaluating Fatigue Performance of Plastics and Composites

Jackie Rehkopf, Plasman Carbon Composites



Room D0-05A

Wednesday, April 25
8:00 a.m.

What Steel Must do to Remain a Viable Automotive Materials

Bart Depompolo, US Steel

Room D0-04B

Wednesday, April 25
10:00 a.m.



Novel Local Structural Durability Concepts for Designing Welded Automotive Components

Thomas Bruder, Cetin Sonsino,
Fraunhofer Inst. For Structural Durability
& System Reliability.



Room D0-03D

Thursday, April 26
1:00 p.m.

Emerging Technologies in Polymers and Coating

Jamil Baghdachi, Eastern Michigan Univ.

ELECTRONICS



Room D0-07A

Tuesday, April 24
10:00 a.m.

Engineering Safe Mobile Systems - The Omnipresent Challenge for Automotive Engineering

Graham Hellestrand, Embedded Systems
Technology Inc.



Room D0-03C

Wednesday, April 25
1:00 p.m.

Systems Engineering Development Chain

Joseph Lomonaco, Harley-Davidson Motor Co.



Room D0-03C

Wednesday, April 25
8:00 a.m.

Challenges in Systems Engineering

John A. Thomas, Booz Allen Hamilton Inc.



Room D0-03B

Thursday, April 26
8:00 a.m.

Extending Functional Safety Processes to Include Security Risk Assessment

David Ward, MIRA, Ltd.

EMISSIONS/ENVIRONMENT/SUSTAINABILITY



Room W2-62

Tuesday, April 24
10:00 a.m.

Vehicular Emissions in Review

Tim Johnson, Corning



Room O2-37

Tuesday, April 24
10:00 a.m.

Thermal Systems for Electric and Hybrid Vehicles

Greg Major, Chrysler LLC

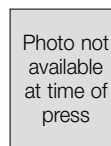


Room O2-35/36

Thursday, April 26
8:00 a.m.

Air Cooled Heat Exchanges – Past, Present and Future

Arif Khan, API Heat Transfer Inc.

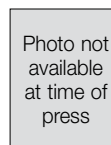


Room O2-38

Thursday, April 26
8:00 a.m.

Sustainable Manufacturing – Reducing Carbon Footprints and Environmental Impacts

Tom Murray, US EPA



Room O2-38

Thursday, April 26
9:40 a.m.

Energy Efficiency and Sustainability for Productivity

Afif Bitar, AAM



Room O2-35/36

Thursday, April 26
1:00 p.m.

Pathways to Improved Fuel Consumption

John J. Kasab, Ricardo Inc.

POWERTRAIN



Room O2-43

Tuesday, April 24
10:00 a.m.

Lightweight Structure Development and Optimization Process for Vehicle Electrification
Simon Xu, General Motors Company



Room O2-43

Wednesday, April 25
1:00 p.m.

Natural Gas LD Vehicles: Traveling the Distance and the Road Ahead
Dick Kauling, General Motors of Canada



Room O2-43

Wednesday, April 25
9:00 a.m.

Concepts and Future Perspectives of Hydrogen IC Engines
Helmut Eichlseder, Graz University of Technology

Room O2-33

Thursday, April 26
3:40 p.m.



Introduction of EcoCar the Next Challenges Year Three Vehicle Refinement and Testing
Patrick M. Walsh, Brian Benoy, Kristen De La Rosa, Argonne National Lab.



SAFETY/TESTING

Room D0-05B

Wednesday, April 25
1:00 p.m.



Deterministic and Stochastic Optimization in Automotive Industry
Charles Yuan, Patrick Koch, Simulia



Room D3-23

Thursday, April 26
8:00 a.m.

Report of the Annual Electric Vehicle Safety Standards Summits
Casey Grant, Fire Protection Research Foundation



Room D3-17

Thursday, April 26
8:00 a.m.

SAE Standards Update - Safety and Human Factors Committee Activities
Daniel Selke, Mercedes-Benz



Room D3-28

Thursday, April 26
8:00 a.m.

SAE Ground Vehicle Standards - Update on Activities
Brian Everest, General Motors Company

SAE Webcasts

Complimentary "Live Webcasts" will take place from the AVL Technology Leadership Center and the FEV Powertrain Innovation Forum. Visit the SAE World Congress home page at <http://www.sae.org/congress/> to participate in the webcast if you are not able to join us in person.

TOURS



Tours

Mechanical Simulation Corporation

Ann Arbor Michigan
Monday, April 23
Price: \$50.00
40 people max.

12:15 – 12:30 p.m.	Check-in Atwater Street Entrance – COBO CENTER
12:30 p.m.	Motor Coach departs COBO Center
1:30 p.m.	Arrival at Mechanical Simulation – Ann Arbor
1:30 p.m.	Tour
4:00 p.m.	Motor Coach departs for return to COBO center

Accurate and Fast Vehicle Simulation

Mechanical Simulation Corporation provides the most accurate and computationally efficient methods for simulating the dynamic performance of cars, trucks, motorcycles, and specialty vehicles. After decades of proving ground validation by vehicle manufactures, Mechanical Simulation's VehicleSim suite of car, truck, and motorcycle simulation products are the globally preferred tools for vehicle dynamics, vehicle control development, and test engineering.

Open Architecture for Seamless Integration

Many customers extend their vehicle models using the well-documented VehicleSim design. Whether it's adding advanced control systems, or extending part of the vehicle model (tires, powertrain, etc.), VehicleSim products offer seamless communication with software (SIL) and hardware (HIL) technologies



On Star Command Center

GM Renaissance Center

Monday, April 23

Price: \$25.00

30 people max.



1:30 – 1:45 p.m.	Check-in, Tower 400 – Visitor Desk GM Renaissance Center 400 Renaissance Center Dr.
2:00 p.m.	Tour begins
2:45 p.m.	Conclusion of Tour

The OnStar Command Center is staffed 365 days a year, 24 hours a day, and seven days a week to support the call centers and subscriber needs. The command center monitors and manages real time volume between the centers, coordinates with a counterpart IT, and monitors weather and crisis situations across North America.

Tickets can be purchased on-site (based on availability) at on-site registration or at Tour Check-in.





SAE Career Fair

The Career Fair at the SAE 2012 World Congress will provide unique opportunities for engineers and professionals to explore available jobs, network with exhibiting companies and learn valuable career tips.

Career Fair

Cobo Center Lobby – Outside Macomb and Detroit Halls

Tuesday - Wednesday, April 24 - 25

10:00 a.m. – 6:00 p.m.

Resume Critique Clinic

SAE Career Fair

Wednesday, April 25

10:00 a.m. – 12:00 p.m.

Have your resume critiqued by a professional and receive tips on how to advertise your skills in the right format. Preferred appointment times are available to SAE members. Stop by the Career Fair to sign up for a time slot.

Career Development Session

Room D3-20

Wednesday, April 25

1:00 – 3:00 p.m.

“Engineers Shifting Gears” will explore the different career paths within Michigan that include advanced alternative options, defense, traditional automotive OEM’s and suppliers or how to transition your skills for a start-up company. Jennifer Llewellyn, Assistant Manager of the Troy Michigan Works! will also present the available training opportunities to assist engineers in these possible career shifts.

“Using Social Media for your Job Search” will be presented by Greg Doyle, Business Consultant, Oakland County Planning and Economic Development. Greg will review best practices for utilizing social media, Facebook, LinkedIn and Twitter for job searches.

Attendance to the Career Fair activities is free for engineering professionals. Please proceed to the Career Fair in the Lobby outside Macomb and Detroit Halls. It is not necessary to register prior to attending the Career Fair.

Career Fair Exhibiting Companies

(as of March 22, 2012):

Aerotek

Alpine Electronics of America

B/E Aerospace, Inc.

Behr America, Inc.

Bendix Commercial Vehicle Systems, LLC

BorgWarner Inc.

Calsonic Kansei North America Inc.

CODA Automotive

Continental Automotive Systems

d.Diversified Services

Delphi

Delta Staffing

Detroit Diesel Corporation

Eicher Engineering Solutions Inc.

Faurecia

Garmin International

Grupo Antolin North America

Hella Corporate Center, USA

Hitachi Automotive Systems Americas, Inc.

Hyundai America Technical Center, Inc. (HATCI)

John Deere

KPIT Infosystems Inc.

LHP Software

Lubrizol Corp.

Magna International

Magneti Marelli

MAHLE Industries, Incorporated

MillerWorks - Textron

Nexteer Automotive

Nissan North America, Inc.

Panasonic Automotive Systems Company of America

Pierburg

Pratt & Miller Engineering

Ricardo, Inc.

Robert Bosch LLC

Satyam-Venture Engineering Services PVT Ltd.

Schaeffler Group, USA

Southwest Research Institute

SPX Service Solutions

Technology Service Partners, Inc., A CSC Company

Toyota

Toyota Boshoku America

Transonic Combustion

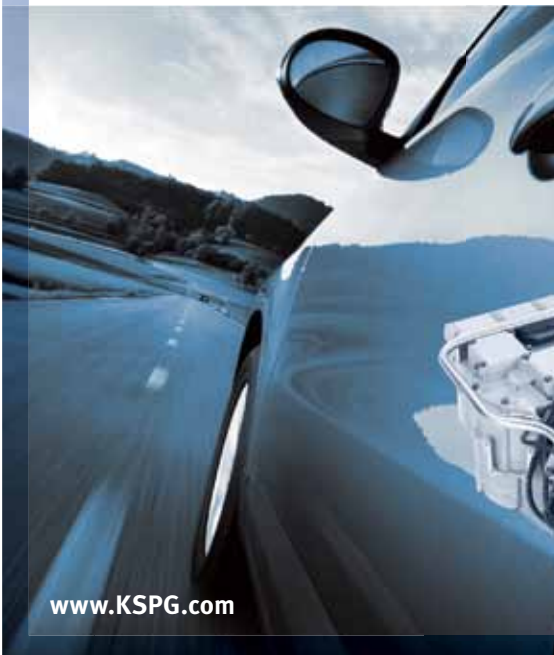
TTi Global (Technical Training, Inc.)

University of Michigan-Dearborn College of Engineering & Computer Science

US Navy – **Tuesday, April 24, 2012 only**

Volkswagen Group of America, Chattanooga Operations LLC

KSPG
Automotive



www.KSPG.com

Rewarding Career in Powertrain Technologies

Visit KSPG and our Pierburg companies at the SAE Career Fair to explore how, together, we can develop the next generation of technologies.

Career Fair, Booth 501

Range Extender

See how KSPG and FEV collaborated on innovative technology to minimize electric car range anxiety.

Exhibit Hall, Booth 401

Ride and Drive
Charging Stations
Sponsored by



Ride and Drive Macomb Hall

Ride and Drive is open to all registered attendees of SAE 2012 World Congress.

Dates and Times:

Tuesday – Thursday, April 24 – 26
10:30 a.m. – 4:30 p.m.

Vehicles provided by multiple OEMs and suppliers will showcase innovative technologies such as advanced propulsion, recent launches, and specialty or halo vehicles. All vehicles can be test driven by attendees on a 10 minute course—making this one aspect of World Congress that you won't want to miss!

OEMs and suppliers participating as of March 12, 2012

- Nissan—featuring the Nissan Leaf
- Mitsubishi— featuring the 2012 Mitsubishi i-MiEV
- Chrysler— Chrysler- featuring the Fiat Lounge Cabrio & the UConnect Trailer
- GM—featuring the Chevrolet Volt
- Bosch— featuring the Jetta Sidewinder
- Honda—featuring the Honda Civic Natural Gas
- Magna Powertrain—2011 Landrover LR2
- Ford—featuring the Ford Focus-Electric
(Cars subject to change)

All participants must show proof of a valid driver's license.

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SAE Technical Standards

SAE International

SAE standards are internationally recognized for their role in helping ensure the safety, quality, and effectiveness of products and services across the mobility engineering industry. The more than 10,000 standards in the SAE database now include historical standards, and can be accessed through one of the targeted solutions below:

 P110347	SAE Digital Library is the industry's most comprehensive resource, encompassing more than 175,000 technical papers, standards, and related publications from SAE and other renowned organizations. digitallibrary.sae.org
 P110333	SAE Subscriptions are online portfolios of SAE technical papers focused on targeted technologies and industries subscriptions.sae.org
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 P110426	SAE J1939 Standards Collection on the Web is the definitive source for all documents related to the controlled area network (CAN) for heavy duty vehicles. sae.org/J1939

P120344

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8:30 – 9:30 a.m.

Welcome:



Frank O. Klegon

2012 SAE President,
President, FOKUS
Associates LLC



Helmut List

Chairman & CEO,
AVL North America



Robert Sump

Vice President,
Nissan Technical
Center North America
and 2012 SAE World
Congress General
Chair

Featured Speaker:



Jeffrey

Immelt

Chairman &
CEO, General
Electric

TUESDAY

April 24

Speaker biographies available on the website at www.sae.org/congress under the Management Program.

TUESDAY

April 24

10:00 a.m. – 12:00 p.m.

Energy Smart: Connected Vehicles and New Opportunities

New opportunities will be created as the current electrical grid is transformed into the smart grid. The new value of vehicle to grid connection, as well as new values beyond mobility, may change the direction of society as a whole. This panel will discuss the value of connected vehicles as well as the opportunities beyond mobility and how they may both transform daily life in the future.

Moderator:



Glen Stancil

Vice President, NRG Energy EV Services

Panelists:



Michael J. Bly

Executive Director, Group Global Functional Leader
Global Electrical Systems, Infotainment & Electrification, General Motors Company



Bert Haskell

Technology Director of Pecan Street Project Inc.



Mark Little

Senior Vice President & Director, GE Global Research



Minoru Shinohara

Senior Vice President, Nissan Motor Co., Ltd.



Akihiko Tobe

General Manager, Hitachi, Ltd., Social Innovation Business Project Division

10:00 a.m. – 12:00 p.m.

Heir Apparent or a Bunch of Hot Air? What Technologies Have the Best Potential for Weaning America off of Foreign Sources of Petroleum?

A variety of technologies have been proposed (CNG, E85, hybrids, EVs, biodiesel, etc.) for the U.S. to “gain oil independence.” Issues continue to be raised on the subsidy vs. sustainability of potential petroleum replacements. This panel will discuss if any of them have become truly viable and whether or not our foreign dependency will ever change.

Moderator:



Floyd Allen

Powertrain Systems Executive, FEV, Inc.

Panelists:



Coleman Jones

Biofuel Implementation Manager, General Motors Company



Tom McCarthy

Chief Engineer, Engine Research & Advanced, Ford Motor Company



Rolf Stromberger

Vice President Business Environment & Public Affairs Strategy, BMW of America, LLC



Justin Ward

Advanced Powertrain Program Manager, Toyota Motor Engineering & Manufacturing North America

TUESDAY

April 24

Speaker biographies available on the website at www.sae.org/congress under the Management Program.

TUESDAY

April 24

1:30 – 3:30 p.m.

Mobility Smart: Efficient and Convenient city Transportation by Connected Services and Information

Urban transportation is evolving and preparing for a new mobility era based on connections with information and services. This panel will investigate the prospects for increased convenience and efficiency through the integration of cross-industry technology roadmaps and discuss what the auto industry can learn from how other sectors plan for the future.

Moderator:



Sandy Stojkovski

President, Scenaria, Inc., A Member of the AVL Group

Panelists:



Takao Asami

Corporate Vice President, Nissan Motor Co., Ltd.



Christopher Borroni-Bird

Director, Advanced Technology Vehicle Concepts & EN-V Program, General Motor Company



Andreas Mai

Director, North America, Automotive Practice, Cisco Internet Business Solutions Group



Lynn Peterson

Sustainable Communities and Transportation Policy Advisor for Governor Kitzhaber, State of Oregon



Kristin Schondorf

Research and Advanced Engineering Project Manager, Future of Mobility Ford Motor Company

Speaker biographies available on the website at www.sae.org/congress under the Management Program.

1:00 – 3:00 p.m.

Connecting 27.5, 35.5, and 54.5: What are the Implications of Finding a Roadmap that Meets the New CAFE Limits?

CAFE targets are driving the design and development of new powertrain and vehicles, 35.5 mpg in 2016 going to 54.5 mpg in 2025. This panel will discuss what combination of technologies can achieve these limits and the implications that consumers and OEMs may be facing.

Moderator:



Gary W. Rogers

President & CEO, FEV, Inc.

Panelists:



Scott Miller

President & COO, Vision Critical International



Richard L. Gezelle

National Manager, Technical & Regulatory Affairs
Toyota Motor North America, Inc.



James Tamm

Fuel Economy Division Chief, Office of Rulemaking, NHTSA



Timothy White

Head of Powertrain Development, Chrysler Group LLC

TUESDAY

April 24

Speaker biographies available on the website at www.sae.org/congress under the Management Program.

WEDNESDAY
April 25

9:00 – 9:45 a.m.

Keynote Address



Featured Speaker:

Anthony Levandowski

Google's Self-Driving Car Project

10:30 a.m. – 12:30 p.m.

2018 and Beyond Powertrains

Even as emission regulations have become stricter, the ICE engine has met the challenge and continued to be a viable powertrain option. The big question is how much longer the fuel economy and cost advantages of the ICE engine will last before being replaced with a HEV? This panel will offer their opinions on the fate of the ICE engine, the core technologies that sustain it, and when HEVs will begin to dominate.

Moderator:



Mick Winship

Executive Director, AVL Powertrain Engineering, Inc.

Panelists:



Joseph Bakaj

Vice President, Powertrain Engineering, Ford Motor Company



Chris Cowland

Director, Advance & SRT Powertrain, Chrysler LLC



William N. Reinert

National Manager, Advanced Technology, Toyota Motor Sales, USA



Sam Winegarden

Executive Director, Powertrain Engine Engineering, General Motors Company

Speaker biographies available on the website at www.sae.org/congress under the Management Program.

9:45 – 11:45 a.m.

What is the Cost of Green When Comparing the Well-to-Wheels Costs and the Environmental Impacts of Competing Technologies?

Understanding the lifecycle cost of a technology is important in making both strategic, as well as purchase decisions. Many claims are made about how “green” a technology is without full consideration of the full lifecycle cost impact. For example: When consumers drive EVs, connect them to the grid at work, drive them home, and recharge them again overnight; they believe they are “acting green.” If they factor in the lifecycle manufacturing costs of the vehicles, the costs and environmental impacts of producing electricity, and vehicle and battery disposal, they may or may not reach the same conclusion. The session panelists will examine several competing technologies and comment on the well-to-wheels costs of each, to determine the “cost of green.”

Moderator:**Tom Cackette**

Chief Deputy Executive Officer, California Air Resources Board

Panelists:**Neil Armstrong**

President, e-Drive & Powertrain, Mercedes-Benz Research & Development North America, Inc.

**Haukur (Hawk) Asgeirsson**

Manager, Power System Technologies, DTE Energy

**Gregg Black**

Senior Manager, Advanced Engine Systems Development, Chrysler Group LLC

**Greg Kolwich**

Project Manager, FEV Inc.

**Lars Ullrich**

Director, Marketing, Diesel Systems North America, Robert Bosch LLC

Speaker biographies available on the website at www.sae.org/congress under the Management Program.

WEDNESDAY

April 25

WEDNESDAY

April 25

1:30 – 3:30 p.m.

Zero Emissions Challenge in Infrastructure: How Industries/ Sectors get Connected to Avoid Pitfalls to Zero Emission Mobility

Get Connected to Avoid Pitfalls to Zero Emission Mobility Zero emission vehicles require a working and available charging infrastructure. OEMs have designed and produced Battery EVs and Fuel Cell EVs and consumers will need the electricity and Hydrogen to power them. This panel will discuss the roadmaps and strategies being taken to make full-scale zero emission mobility a reality *from infrastructure viewpoints*.

Moderator:



Charles E. Freese

Executive Director, GM Powertrain Engineering, General Motors Company

Panelists:



Pat Davis

Program Manager, Vehicle Technologies Program Office, U.S. Department of Energy



Yusuke Hasegawa

Senior Chief Engineer & General Manager, Technology Development Division 5, Honda R&D Co., Ltd.



Herbert Kohler

Vice President, Group Research & Advanced Engineering, e-drive & Future Mobility, Chief Environmental Officer, Daimler AG



Michael Mahan

Product General Manager - EV Infrastructure, GE Energy's Industrial Solutions Business



Tom Turrentine

Director, California Energy Commission's Plug-in Hybrid Electric & Vehicle Research Center, Institute of Transportation Studies, University of California, Davis

Speaker biographies available on the website at www.sae.org/congress under the Management Program.

1:00 – 3:00 p.m.

The Connection between Fuel Economy and Emissions: Do we have the best balance to serve America's interests?

For years we've seen significant improvements on both sides of the fence. Mutually exclusive tradeoffs still exist, however. Government, consumer and OEM perspectives may not be aligned, but finding the right balance between these iconic goals is a key to the competitiveness of our products. These panelists will provide perspectives on how we balance "green" with "consumer requirements".

Moderator:**Christopher Grundler**

Deputy Director, Office of Transportation and Air Quality, U.S. Environmental Protection Agency

Panelists:**Robert Bienenfeld**

Senior Manager, Environment & Energy Strategy, Product Regulatory Office, American Honda Motor Co., Inc.

**Douglas Greenhaus**

Chief Regulatory Counsel, Environment, Health & Safety, NADA

**Dan Kapp**

Director, Ford Powertrain Research & Advanced, Ford Motor Company

**Uwe Kirberg**

Vice President Engineering Diesel Systems, Diesel, Robert Bosch LLC

**J. Gary Smyth**

Executive Director, North American Science Labs, GM Global Research & Development, General Motors Company

WEDNESDAY

April 25

Speaker biographies available on the website at www.sae.org/congress under the Management Program.

THURSDAY

April 26

9:00 – 9:45 a.m.



Keynote Address

Featured Speaker:

David Strickland
Administrator, NHTSA

10:30 a.m. – 12:30 p.m.

How the Connected Vehicle is Changing the Safety Paradigm

ITS is an area of innovation which uses advanced wireless communications (4G) to share information between vehicles, infrastructure, and people. The goal is to help address transportation related issues such as traffic accidents, congestion and environmental impact. In the U.S., Research and Innovative Technology Administration (RITA) and National Highway Traffic Safety Administration (NHTSA) are actively researching ITS technology and how it might be deployed in the U.S., and a new source of Government research funding related to President Obama's Wireless Innovation and Infrastructure Initiative is further driving the discussion. This panel will explore how to overcome the challenges created by the connected vehicle while implementing the potential safety benefits.

Moderator:



Andrew Brown, Jr.

Executive Director & Chief Technologist, Delphi

Panelists:



Brian F. Fontes

Chief Executive Officer, National
Emergency Number Association



Tom Metzger

Senior Vice President of Global
Sales & Account Management,
Connected Vehicle Services,
Agero (formerly ATX Group)



Jay Joseph

Senior Manager, Product
Regulatory Office, American
Honda Motor Co., Inc.



Shelley Row

Director of the U.S. Department
of Transportation's Intelligent
Transportation Systems (ITS) Joint
Program Office



Paul Mascarenas

Chief Technical Officer & Vice
President, Ford Research &
Innovation



Win Williams

Area Vice President, Emerging
Devices, AT&T

9:45 – 11:45 a.m.

Is there really “No Replacement for Displacement?” Getting Connected to the Science of Developing Downsized, High Specific Power Engines

The development of 2 to 4 cylinder engines, as potential replacements for V6's and V8's, is increasing. The commercial and military sectors are supporting this with constantly looking for new smaller, cheaper and more effective engines. We recognize that the world of downsizing, hybridization, and APUs presents its own demands. Recognizing that cost effectiveness is a challenge, this panel will share views on how small is small and whether the demand for these smaller engines will support the development costs and efforts underway.

Moderator:



Mazen Hammoud

Manager Powertrain Calibration, Ford Motor Company

Panelists:



Audley Brown

Director – Global Engine Advanced Engineering, General Motors Company



John W. Juriga

Director of Powertrain, Hyundai Kia American Technical Center



Steven R. McKinley

Vice President Engineering - Americas, Honeywell Turbo Technologies



Dean Tomazic

Vice President Passenger Car and Light-Duty Engines, FEV Inc.

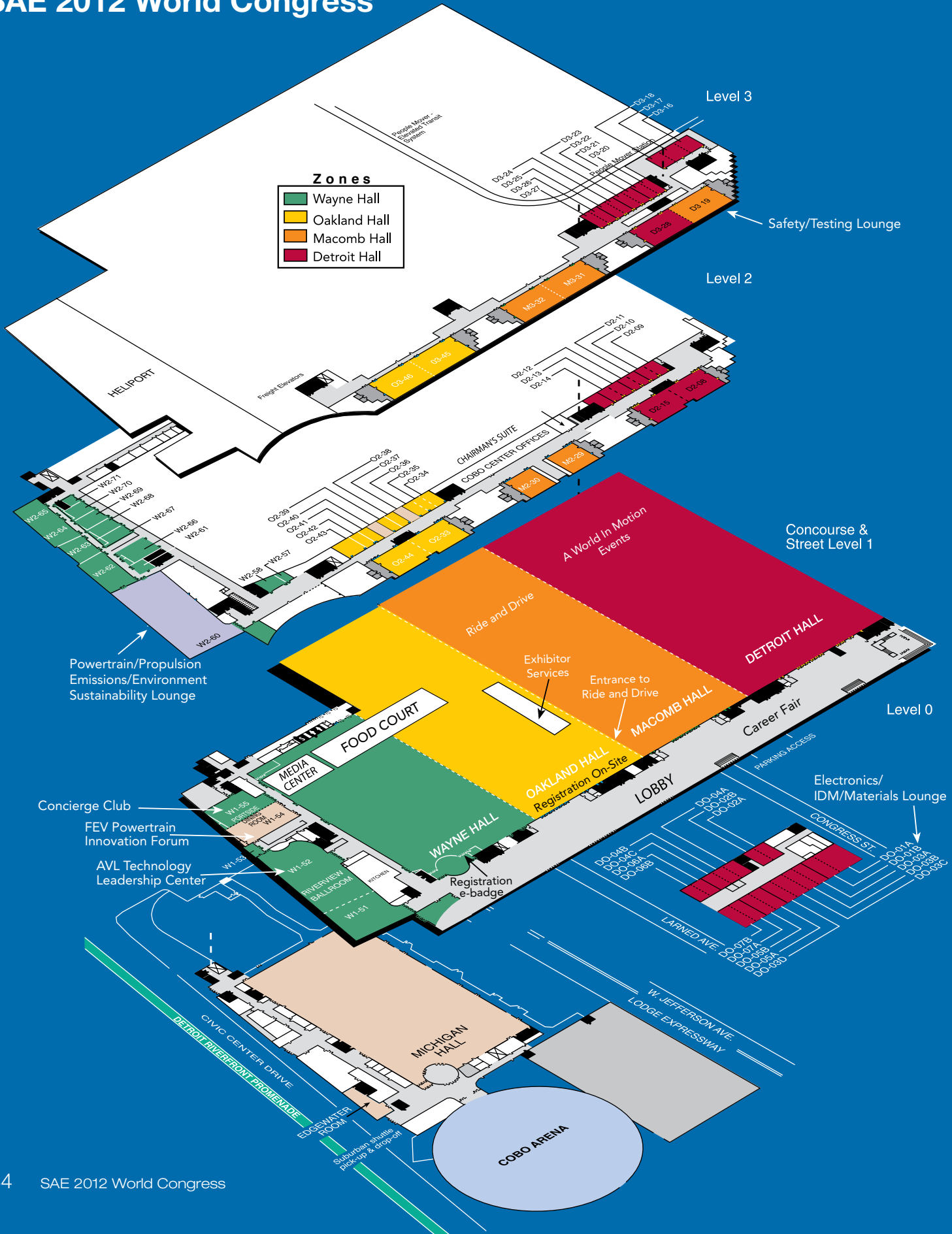
THURSDAY

April 26

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AUTOSAR – Changing how we design and implement Automotive Embedded Networks and Electronic Control Modules: An Expert Panel Discussion (AE501)	-	✓	-	-	-	-	D0-02A	49
Automobile Electronics Design and Systems Reliability (AE302)	-	-	-	✓	-	-	D0-07A	55
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Connected Vehicle Technology - Establishing a Market Base and Breaking Down the Barriers to Entry: An Expert Panel Discussion (AE401)	-	-	✓	-	-	-	D0-02A	52
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In-Vehicle Software (AE306)	✓	-	-	-	-	-	D0-02A	47
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Model-Based Design of Embedded Systems (AE316)	-	-	-	-	✓	-	D0-07A	58
Multi-Media Systems (AE307)	✓	-	-	-	-	-	D0-03C	47
Processes, Methods, and Tools for Cyber-Security-Aware Automotive Embedded Systems (AE321)	-	-	-	-	✓	-	D0-03B	58
Prognostics - An Expert Panel Discussion (AE601)	✓	-	-	-	-	-	D0-04B	47
Safety Critical Systems (part 1 & 2) (AE300)	-	-	✓	✓	-	-	D0-03B	54, 55
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Smart Grid Technologies and Infrastructure (Part 1 & 2) (AE400)	✓	✓	-	-	-	-	D0-03B	47, 49
System Level Architecture Design Tools and Methods (part 1 & 2) (AE318)	✓	✓	-	-	-	-	D0-07A	48, 51
Systems Engineering (part 1 & 2) (AE312)	-	-	✓	✓	-	-	D0-03C	52, 59
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Vehicle Diagnostics (Part 1 of 3) (AE311)	-	-	-	-	✓	-	D0-03A	60
Vehicle Diagnostics (Part 2 of 3): An Expert Panel Discussion - Electric Vehicles, the Next Frontier for Service Technicians (AE311)	-	-	-	-	✓	-	D0-03A	60
Vehicle Diagnostics (Part 3 of 3): An Expert Panel Discussion - The Impact of Increased Vehicle Technology on Service, Diagnostics, and Technician Safety (AE311)	-	-	-	-	-	✓	D0-03A	61
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TUESDAY, APRIL 24 - MORNING

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	D0-02A	D0-03C	D0-04B	D0-03B
	In-Vehicle Software (AE306) This session concentrates on the development of embedded software that resides in production vehicle electronic modules. With a focus on current technical, business, and legal issues relevant to the auto industry, this session covers all aspects of embedded software development including requirements, implementation, algorithms, modeling, and autocode generation. Expert speakers from the embedded software community are encouraged to share their experiences and opinions. 10:00 a.m. - 11:00 a.m. Organizers: Robert Miller, Vector CANtech Inc.; Hassan Hor, Chrysler	Multi-Media Systems (AE307) This session covers topics relating to vehicular entertainment and information systems. Specific subjects include multiband antennas, satellite radio reception, measuring and evaluating audio systems, navigation, displays, infotainment busses, audio amplifiers, and loudspeakers. 10:00 a.m. - 12:00 p.m. Organizers: Robert E. Klacza, Chrysler Group LLC; Richard S. Stroud, Stroud Audio Inc.; Thomas Hermann, Ford Motor Co. Chairpersons: Richard Stroud, Stroud Audio Inc; Thomas Hermann, Ford Motor Co.; Robert Klacza, Chrysler Group LLC	Prognostics - An Expert Panel Discussion (AE601) "Get Connected" to your vehicle more than you ever have been. Don't wait for a diagnostic trouble code to set. See what's really happening to your vehicle before a fault occurs. What if you could fix that situation before it breaks? What would that mean to your customers? Talk to the experts from companies that analyze vehicles daily in the air, on land and at sea where failure is not an option. 10:00 a.m. - 11:40 a.m. Moderators: Tim A. Cavanaugh, BAE Systems Panelists: Felix Heimes, BAE Systems Mark Salamango, Pratt & Miller Christopher L. Thompson, GE Energy	Smart Grid Technologies and Infrastructure (Part 1 of 2) (AE400) This session will provide real world updates on consumer behavior who are part of the DOE awarded EV Project as well as other research using models and consumer data to analyze the affect on the grid during PEV charging. Also presented will be strategies for PEV's charging and synergies for integrating PEV's into the grid by way of existing infrastructure. 10:00 a.m. - 12:00 p.m. Organizers: Scott Craig, Infineon Technologies; Matthew Nielsen, General Electric Co.; Joseph Thompson, Nissan; Michael Tinskey, Ford Motor Co Chairpersons: Joseph Thompson, Nissan R&D Inc; Matthew Nielsen, General Electric Co
10:00 a.m.	Advanced Firmware Device Manager for Automotive: A Case Study (2012-01-0013) Joao H. Silva, Visteon Corp.	ICU - Interactive Communication Unit (Oral Only) Francesco Ricciardi, Bylogix S.r.l.		Electrical Bus Performance Modeling for Urban Environments (2012-01-0200) Deborah Perrotta, MIT-Portugal; Alexandre Teixeira, Helena Silva, Bernardo Ribeiro, CELIA; Joao Afonso, University of Minho
10:20 a.m.	Open Source Platforms Challenge Traditional Proprietary IVI Systems (2012-01-0015) Paul Haskitt, Roger Hampel, Symphony Teleca Corp.	Situational Awareness: A Comprehensive Approach to Reducing Driver Distraction (Oral Only) Scott Pennock, QNX Software Systems, Ltd.		Battery Electric Vehicle Driving and Charging Behavior Observed Early in The EV Project (2012-01-0199) John Smart, Idaho National Laboratory; Stephen Schey, ECOtality North America
10:40 a.m.	AUTOSAR Gets on the Road - More and More (2012-01-0014) Juergen Cordes, Markus Zetlmeisl, Robert Bosch GmbH	HTML5 for Infotainment Systems: Market Opportunities and Design Strategies (Oral Only) Andrew J. Gryc, QNX Software Systems, Ltd.		Electric Mobility Demonstration Project in Washington State (Oral Only) Rita Schenck, Institute for Environmental Research and
11:00 a.m.		Development of 'Motion-Sensor Moustick' Controller and A Study of Usability Improvement While Driving (2012-01-0038) Sung Hyun Kang, Young Wook Song, Sa Rah Kim, Hyundai Motor Group		EV Ecosystem Deployment in the U.S. (Oral Only) Kristen Helsel, AeroVironment Inc.
11:20 a.m.		Next generation DAB Receivers for Automotive applications (Oral Only) Stephen Adams, Visteon Engineering Services		Evaluating Impact of PEV Smart Charging on Power Distribution Systems (Oral Only) Zhenhua Jiang, GE Global Research Center; Matthew Nielsen, General Electric Co
11:40 a.m.		New Approaches for Low Voltage Audio System and Circuit Design (2012-01-0037) Joe Tillo, Steve Tressler, Jonathan Hanson, Visteon Corp.		Impact of EV Charging on Electric Distribution Networks (Oral Only) Leon Wu, Roger N. Anderson, Albert Boulanger, Columbia Univ.
	Planned by Electrical and Electronic Systems Committee / Automobile Electronics Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00244, and also individually. To purchase visit collections.sae.org	Planned by Electrical and Electronic Systems Committee / Automobile Electronics Activity	Planned by Electrical and Electronic Systems Committee / Automobile Electronics Activity	Planned by Testing and Instrumentation Committee / Automobile Electronics Activity

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TUESDAY, APRIL 24 - MORNING Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM	
	D0-07A	D0-03A
	System Level Architecture Design Tools and Methods (part 1 of 2) (AE318) This session focuses on methods and design tools for the exploration, analysis, synthesis, and optimization of E/E automotive architectures. These methods and tools are usually model-based as they are applied in the early phases (left-hand side of the V-Cycle) of the development process. These methods and tools assist designers in deciding and configuring the communication network topology, the allocation of functions to ECU's, and the IO allocation strategies. 10:00 a.m. - 12:00 p.m. Organizers: Amit Choudhury, NEC ELECTRONICS; Paolo Giusto, General Motors Chairpersons: Paolo Giusto, General Motors	Testing and Instrumentation (AE106) This session deals with Innovative Engine Test methods along with their test facility development, Vehicle Infotainment systems, Real time customer usage data and correlation/simulation with in-lab drivability methods, Reliability Testing Approach. 10:00 a.m. - 11:20 a.m. Organizers: Prasad Srinivasa, DG Technologies; Anand Vijay Kulkarni, Chirag Sonchal, Tata Motors Ltd Chairpersons: Anand Vijay Kulkarni, Chirag Sonchal, Tata Motors Ltd
10:00 a.m.	Technical Keynote: Engineering Safe Mobile Systems - The Omnipresent Challenge for Automotive Engineering (Oral Only) Graham Reginald Hellestrand, Embedded Systems Technology Inc.	Pressure Imaging for Automotive Applications (Oral Only) Timothy Gorjanc, XSENSOR Technology Corp.
10:20 a.m.		Development of New Test Method for Compression Load and Permanent Deformation of Weather Strip (2012-01-0021) Joonchul Park, Hyundai Motor Co. & KIA Motors Corp.
10:40 a.m.	Virtualized Fault Injection Methods in the Context of the ISO 26262 Standard (2012-01-0001) Victor Reyes, Synopsys Inc.	Software for Testing Alternators of Heavy-Duty Trucks and Cars (2012-01-0022) Eduard Lyubimov, Perm State Technical University; Sergey P. Gladyshev, Michigan-Dearborn University; Dmitriy Istselekov, Nikolay Belyaev, Perm State Technical University
11:00 a.m.	Meta Model Driven Configurable Architecture Development and Validation (2012-01-0006) BhaaRathe Malliah, Sankhya Technologies	Accurate Estimation of Time Histories for Improved Durability Prediction Using Artificial Neural Networks (2012-01-0023) Sivakumar Balakrishnan, Anoop PP, Ravindra V Kharul, Sasun C, M/S TVS Motor Company Limited
11:20 a.m.	Windows Based Software Development Platform for AUTOSAR ECUs (2012-01-0004) Thierry Rolina, Elektrobit; Florian Wandling, Automotive Software	
11:40 a.m.	Stability Analysis of a Two-Voltage Vehicle Electrical System Based on Co-Simulation (2012-01-0012) Josef Zehetner, Wenpu Lu, Daniel Watzenig, Virtual Vehicle Competence Center	
	Feature Based Architecture Design and Functional Partitioning to Subsystems (Written Only -- No Oral Presentation) (2012-01-0011) Ronald Wiegand, Russell Steele, Suneet Katoch, James Crawford, General Motors Company Planned by Electrical and Electronic Systems Committee / Automobile Electronics Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00248, and also individually. To purchase visit collections.sae.org	Planned by Testing and Instrumentation Committee / Automobile Electronics Activity

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TUESDAY, APRIL 24 - AFTERNOON

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	D0-02A	D0-04B	D0-03A	D0-03B
	AUTOSAR – Changing how we design and implement Automotive Embedded Networks and Electronic Control Modules: An Expert Panel Discussion (AE501) This panel will address the current status of AUTOSAR adoption by the vehicle OEMs, Tier 1 module developers and AUTOSAR products and service providers. How soon and how big will the AUTOSAR impact be for you and the ways vehicles are designed and built? 1:00 p.m. - 3:00 p.m. Organizers: Robert Miller, Vector CANtech Inc. Moderators: Robert Miller, Vector CANtech Inc. Panelists: Ralf Fritz, Vector CANtech Inc. Michael Joseph Melaragni, General Motors Company Jochen Schoof, Elektrobit Automotive GmbH Jeremy James Warmbier, Nexteer Automotive Thomas Erkinen, MathWorks Inc	IVHM/CBM/HUMS “Value Proposition Story” - An Expert Panel Discussion (AE602) When you finally “Get Connected”, how do you demonstrate the “Value” of what you have done. Talk to the experts that have to “Show me the money!” everyday in the business world. How do you make a system pay for its self? How do you make a “Business Case” that shows a return on investment when you haven’t proven your product with real data? Find out ways to show value by what you inspect and how you inspect it. Where is the value in your product as it relates to time and money? 1:00 p.m. - 3:00 p.m. Moderators: Tim A. Cavanaugh, BAE Systems Panelists: Sean Connors, Clockwork Solutions Inc. Christopher L. Thompson, GE Energy Ravi Rajamani, Meggitt PLC Keith Jackson, Rolls-Royce PLC	In-Vehicle Networks (AE305) Technical papers and/or presentations offered in this session will portray the latest developments and proposals for In-Vehicle Networks. Typical subjects covered are: new protocols, gateways, vehicle control, message handling, X-by-wire, diagnostics, off-board connectivity and vehicle-to-vehicle or vehicle-to-infrastructure communications. 1:00 p.m. - 3:40 p.m. Organizers: Christopher Lupini, Delphi Corp.; Richard D. Means, Mark Zachos, DG Technologies Chairpersons: Christopher Lupini, Delphi Corp.	Smart Grid Technologies and Infrastructure (Part 2 of 2) (AE400) What are the critical success factors in the technologies and enablers that bridge the gap between the plug-in vehicle, the home, and the link to the grid/smart grid? . In this panel discussion, we plan on exploring the current state of technology and standards, along with some of the key enablers that will allow vehicles with on-board storage to integrate more closely with the grid and a consumer's home in order to create a more engaging environment for mass consumer acceptance. 1:00 p.m. - 4:00 p.m. Organizers: Scott Craig, Infineon Technologies; Matthew Nielsen, General Electric Co.; Joseph Thompson, Nissan; Michael Tinskey, Ford Motor Co Chairpersons: Scott Craig, Infineon Technologies; Michael Tinskey, Ford Motor Co
1:00 p.m.			Design Methods to Optimize the Performance of Controller Area Networks (2012-01-0194) Dibyendu Palai, Tata Motors Ltd.	“Living and Mobility” - Minimization of the Overall Energy Consumption by Using Synergetic Effects and Predictive Information (2012-01-0496) B. Brendle, M. Lienkamp, Th. Hamacher, TU Muenchen; C. Wilhelm, J. Papajewski, M. Schachner, A. Riedel, P. Gebhard, Audi AG
1:20 p.m.			Guaranteeing Hard Real-Time Requirements of In-Vehicle Multi-hop Communication Over Ethernet (2012-01-0193) Meng Liu, Lars Brohne, Jonas Lext, Time Critical Networks	Power Load Study of a Multi-Floor Electric Vehicle Charging Depot (Oral Only) Leon Wu, Columbia Univ.
1:40 p.m.			Internet Protocol over Ethernet in Powertrain - Comparison with Current Applications and Future Trends (2012-01-0195) Stefan Schneider, Liem Dang, Eckart Schlotmann, Siegfert Baque, Joern Franke, Robert Bosch GmbH	A Low-Cost, Scalable, Real-Time Scheduling Method for Charging Plug-in Electric Vehicles (2012-01-0201) Zhenhua Jiang, Matthew Nielsen, GE Global Research Center
2:00 p.m.			Exploring Use of Ethernet for In-Vehicle Control Applications: AFDX, TTEthernet, EtherCAT, and AVB (2012-01-0196) Rodney Cummings, National Instruments; Kai Richter, Symtavision GmbH; Rolf Ernst, Jonas Diemer, TU Braunschweig; Arkadeb Ghosal, National Instruments	Modeling Electric Vehicle Charging at Home (2012-01-1347) Matthew Nielsen, Dhiraj Arora, Hulas Sehgal, Conner Shane, Kirk Mathews, GE Global Research; Heather Konet, Manabu Sato, Nissan Technical Center North America; Takeshi Oono, Nissan Motor Company, Ltd.
2:20 p.m.			Deterministic Ethernet for Automotive Use (Oral Only) Wlfrid Steiner, TTTech. Computertechnik AG; Dr. Markus Plankensteiner, TTTech Computertechnik AG	Smart Grid Technologies and Infrastructure: An Expert Panel Discussion Panelists: Haukur Asgeirsson, DTE Energy Bert Bras, Georgia Institute of Technology Dennis E. Kyle, Tendril Networks Daniel Lindenmeyer, Infineon Technologies Matthew Nielsen, GE Global Research Center Michael R. Tinskey, Ford Motor Co.

TUESDAY, APRIL 24 - AFTERNOON

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	D0-02A	D0-04B	D0-03A	D0-03B
	AUTOSAR – Changing how we design and implement Automotive Embedded Networks and Electronic Control Modules: An Expert Panel Discussion (AE501) This panel will address the current status of AUTOSAR adoption by the vehicle OEMs, Tier 1 module developers and AUTOSAR products and service providers. How soon and how big will the AUTOSAR impact be for you and the ways vehicles are designed and built? 1:00 p.m. - 3:00 p.m. Organizers: Robert Miller, Vector CANtech Inc. Moderators: Robert Miller, Vector CANtech Inc. Panelists: Ralf Fritz, Vector CANtech Inc. Michael Joseph Melaragni, General Motors Company Jochen Schoof, Elektrobit Automotive GmbH Jeremy James Warmbier, Nexteer Automotive Thomas Erkinen, MathWorks Inc	IVHM/CBM/HUMS “Value Proposition Story” - An Expert Panel Discussion (AE602) When you finally “Get Connected”, how do you demonstrate the “Value” of what you have done. Talk to the experts that have to “Show me the money!” everyday in the business world. How do you make a system pay for its self? How do you make a “Business Case” that shows a return on investment when you haven’t proven your product with real data? Find out ways to show value by what you inspect and how you inspect it. Where is the value in your product as it relates to time and money? 1:00 p.m. - 3:00 p.m. Moderators: Tim A. Cavanaugh, BAE Systems Panelists: Sean Connors, Clockwork Solutions Inc. Christopher L. Thompson, GE Energy Ravi Rajamani, Meggitt PLC Keith Jackson, Rolls-Royce PLC	In-Vehicle Networks (AE305) Technical papers and/or presentations offered in this session will portray the latest developments and proposals for In-Vehicle Networks. Typical subjects covered are: new protocols, gateways, vehicle control, message handling, X-by-wire, diagnostics, off-board connectivity and vehicle-to-vehicle or vehicle-to-infrastructure communications. 1:00 p.m. - 3:40 p.m. Organizers: Christopher Lupini, Delphi Corp.; Richard D. Means, Mark Zachos, DG Technologies Chairpersons: Christopher Lupini, Delphi Corp.	Smart Grid Technologies and Infrastructure (Part 2 of 2) (AE400) What are the critical success factors in the technologies and enablers that bridge the gap between the plug-in vehicle, the home, and the link to the grid/smart grid? . In this panel discussion, we plan on exploring the current state of technology and standards, along with some of the key enablers that will allow vehicles with on-board storage to integrate more closely with the grid and a consumer’s home in order to create a more engaging environment for mass consumer acceptance. 1:00 p.m. - 4:00 p.m. Organizers: Scott Craig, Infineon Technologies; Matthew Nielsen, General Electric Co.; Joseph Thompson, Nissan; Michael Tinskey, Ford Motor Co Chairpersons: Scott Craig, Infineon Technologies; Michael Tinskey, Ford Motor Co
2:40 p.m.			Partial Networking for CAN bus systems: Any saved gram CO2/km is essential to meet future regulations and energy efficient designs are imperative for electric mobility. (Oral Only) Cornelius Butzkamm, David Bollati, C&S Group GmbH	
3:00 p.m.			Comparison of Radical and Smooth Approach for Energy Savings in Automotive Networks (Oral Only) Thomas Liebetrau, Infineon	
3:20 p.m.			Diagnostics as a Service -- Service-Oriented Paradigm in Diagnostics (Oral Only) Andreas Hege, RA Consulting GMBH	
			Serial WireRing - High-Speed Interchip Interface (Written Only -- No Oral Presentation) (2012-01-0198) Thorsten Huck, Andreas Rohatschek, Dieter Thoss, Stoyan Todorov, Robert Bosch GmbH	
			Design and Implementing of Intelligent Vehicle Telematics System (Written Only -- No Oral Presentation) (2012-01-0197) Yanan Li, Wengiang Chen, Zhijie Pan, Geely Automobile Institute	
		Planned by Electrical and Electronic Systems Committee / Automobile Electronics Activity	Planned by Electrical and Electronic Systems Committee / Automobile Electronics Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00244, and also individually. To purchase visit collections.sae.org	Planned by Testing and Instrumentation Committee / Automobile Electronics Activity

TUESDAY, APRIL 24 - AFTERNOON

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM	
	D0-07A	D0-03A
	System Level Architecture Design Tools and Methods (part 2 of 2) (AE318) This session focuses on methods and design tools for the exploration, analysis, synthesis, and optimization of E/E automotive architectures. These methods and tools are usually model-based as they are applied in the early phases (left-hand side of the V-Cycle) of the development process. These methods and tools assist designers in deciding and configuring the communication network topology, the allocation of functions to ECU's, and the IO allocation strategies. 1:00 p.m. - 4:00 p.m. Organizers: Amit Choudhury, NEC ELECTRONICS; Paolo Giusto, General Motors Chairpersons: Paolo Giusto, General Motors	Chat with the Expert Panel: The Promise and Challenge of LTE In-Vehicle Services (AECHAT100) In the next few years, automakers will bring LTE-equipped vehicles to market. With cellular broadband connections up to 100 times faster than today's 2G and 3G data services, LTE will enable unprecedented applications in the vehicle—allowing drivers to connect to their home broadband while on the road. LTE presents significant challenges, including the need for sophisticated multi-mode functionality, advanced antenna design, low profile and power consumption attributes. 4:00 p.m. - 5:00 p.m. Moderators: Phil Magney, iSuppli Panelists: Eric Berkobin, Hughes Telematics Inc. Evan Jones, Sierra Wireless Richard Kreifeldt, Harman International Industries Inc.
1:00 p.m.	Discrete-event, system-level dynamic simulation to measure and optimize the end-to-end power system, and evaluate power control strategies (Oral Only) Deepak Shankar, Robert E. Juliano, Darryl Koivisto, Mirabilis Design Inc.	
1:20 p.m.	Virtual Platform Simulation of Critical Services in a Distributed AUTOSAR System (Oral Only) Thomas Fuhrman, General Motors Company	
1:40 p.m.	Virtual Development of Engine ECU by Modeling Technology (2012-01-0007) Yukihide Niimi, Takayuki Ono, Naoya Tsuchiya, DENSO Corporation	
2:00 p.m.	Automotive Electric System Level Design Methodologies with SystemC (2012-01-0003) Hideaki Ishihara, Naoki Sugiyama, Masato Rinnai, Hirofumi Yamamoto, Shinichirou Taguchi, Takeshi Kondo, Hiroshi Uesugi, DENSO Corp.	
2:20 p.m.	Methods and Tools for Calculating the Flexibility of Automotive HW/SW Architectures (2012-01-0005) Liangpeng Guo, Univ of California-Berkeley; Arkadeb Ghosal, National Instruments; Haibo Zeng, General Motors Company; Paolo Giusto, General Motors; Alberto Sangiovanni-Vincentelli, Univ of California-Berkeley	
2:40 p.m.	On the Decomposition of End-to-End Timing Requirements in Distributed Partitioned Automotive Functions (2012-01-0008) Nico Feiertag, Kai Richter, Christoph Ficek, Symtavision GmbH	
3:00 p.m.	Software Function Allocation and Configuration of an AUTOSAR-Compliant System (2012-01-0002) Ahmed Daghsen, Khaled Chaaban, Sébastien Saudrais, ESTACA; M. M. Shawky, University of Compiègne	
3:20 p.m.	Automating Functional Test Design with Model-Based Testing (2012-01-0010) Stephan Schulz, Conformiq	
3:40 p.m.	Model-Based Development of a Real-Time CAN Software Layer (2012-01-0009) Christoph Bodenstein, Armin Zimmermann, Ilmenau University of Technology Germany Planned by Electrical and Electronic Systems Committee / Automobile Electronics Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00248, and also individually. To purchase visit collections.sae.org	

Technical Session Oral Evaluation Incentives

In an effort to collect more evaluation ratings for the technical session speakers, SAE will be holding daily drawings for anyone who completes an oral evaluation card distributed in technical session rooms. Simply complete the card, tear off the perforation with your name and contact number, and turn it in to the session moderator. Six (6) winners will be announced daily to receive \$25 gift certificates. Winners will be announced daily and posted in the technology lounges.

WEDNESDAY, APRIL 25 - MORNING

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	D0-07B	D0-03A	D0-03C	D0-02A
	CAD/CAM/CAE Technology (B101) 8:00 a.m. - 11:40 a.m. Organizers: Randy Gu, Oakland Univ.; Yu J. Teng, Chrysler Group LLC; William J. Altenhof, Univ. of Windsor; Yun Lu, Chrysler Group LLC; Pilaka Murty, WTAMU	Intelligent Transportation Systems - Safer, Smarter, Faster (AE313) Intelligent Transportation Systems (ITS) includes smart vehicles, smart roads and infrastructure, and wired and wireless communications to link them together. This session will provide insights and progress reports on the latest ITS research, development, and deployment around the world. Time to collision estimations, embedded processor control, adaptive cruise control and image recognition along with discussion on the management of safety and safety systems. 8:00 a.m. - 11:00 a.m. Organizers: David Acton, The-Transformation-Network LLC; Stephan Tarnutzer, DGE Inc. Chairpersons: Stephan Tarnutzer, DGE Inc; David Acton, The-Transformation-Network LLC	Systems Engineering (part 1 of 2) (AE312) This session addresses automotive requirements, high level system design, cost analysis, simulation, modeling, testing, and validation. System includes components, sub assemblies, computer based controllers, hardware and software. The session focuses on intelligent and efficient approaches to analysis, design (not detailed design), modeling, measurement, document management and optimizing performance. Topics on effect of cost, and human machine interface are covered. 8:00 a.m. - 10:00 a.m. Organizers: Subramaniam Ganesan, Oakland Univ.; Ken Rao, IBES Inc. Chairpersons: Subramaniam Ganesan, Oakland Univ	Connected Vehicle Technology - Establishing a Market Base and Breaking Down the Barriers to Entry: An Expert Panel Discussion (AE401) This panel discussion will feature a participants from OEM, Tier suppliers, government, academia community as well as a market analysis that will address connected vehicle technology development and provide insights on what direction what they feel is the most appropriate way industry can establish a market niche for this technology and break down any consumer or government barriers to entry. Participants will address IVS, active safety, infotainment technologies as they relate to V2I and V2V. 9:40 a.m. - 11:40 a.m. Moderators: Christopher Hill, SAIC Panelists: Thilo Koslowski, Gartner Group Matthew Smith, MDOT Steven Underwood, Univ of Michigan-Dearborn Shelley Row, US Dept of Transportation James Keller, Honda R&D Americas Inc
8:00 a.m.	The Accuracy of CAD/CAM Parts - A Critical Analysis (2012-01-0557) Walter James McGee, Raytheon Space & Airborne Systems	Vision Based Driver Alert System (2012-01-0481) Sunil Kumar C, Bhavani Srinivasaiah, Jabez Dhinagar, TVS Motor Company Ltd.	Technical Keynote: Challenges in Systems Engineering (Oral Only) John A. Thomas, Booz Allen Hamilton Inc.	
8:20 a.m.	Development of a Finite Element Model of the Flex-PLI-GTR (2012-01-0551) Susumu Suzuki, Masamoto Ono, Sou Natori, Toshihiro Araki, Nissan Motor Company Ltd.; Pierre Culiere, Alex Wang, ESI Group, Shanghai	Impact of Secondary Tasks on Individual Drivers: Not All Drivers Are Created Equally (2012-01-0486) Amardeep Sathyanarayana, John Hansen, University of Texas at Dallas		
8:40 a.m.	Numerical Simulation of Out-of-Position Front Passenger Injuries in Frontal Crashes Using an Accurate Finite Element Model of the Cockpit Module (2012-01-0552) Michihiro Yamagishi, Jun Iyama, Toshihiro Araki, Sou Natori, Nissan Motor Company Ltd.	Human Sensor Vehicle Traffic Control System with In-Vehicle Notification (2012-01-0487) Isaac Olumide Coker, Synergic Laboratories	Study of the Fatigue Failure of Engine Valve Springs Due to Non-Metallic Inclusions (2012-01-0498) Hassan Chouair, Jiazhong Zhou, Badih Ali Jawad, Liping Liu, Lawrence Technological Univ.	
9:00 a.m.	An Application of Cluster Analysis to Dummy Injury Readings in a Frontal Crash (2012-01-0556) Naoya Koizumi, Masamoto Ono, Sou Natori, Toshihiro Araki, Nissan Motor Company Ltd.	Platooning - Safe and Eco-Friendly Mobility (2012-01-0488) Arturo Davila, Mario Nombela, Applus+ IDIADA	An Investigation of CutCell Meshing Strategies for Accurate Aerodynamic Performance Prediction (2012-01-0499) Ramadan Elhadi Ghmati, Badih Ali Jawad, Lawrence Technological Univ.; Evangelos Koutsavdis, ANSYS Inc.	
9:20 a.m.	Effect of Loading Rate Dependence on Unstable Behavior of Thin-Shell Structured Beams under Axial Compression-Elucidation of Mechanism and Effect of Beam Aspect Ratio on Loading Rate Dependence (2012-01-0554) Toshihiro Araki, Nissan Motor Company Ltd.; Yoji Shibutani, Osaka University Japan	How People Use Their Vehicles: Statistics from the 2009 National Household Travel Survey (2012-01-0489) John Krumm, Microsoft Corporation	Inverter Dead-Time Compensation up to the Field Weakening Region with Respect to Low Sampling Rates (2012-01-0500) Eugen Sworowski, Thomas Pötl, ZF Lenksysteme GmbH; Hans-Christian Reuss, University of Stuttgart	
9:40 a.m.	Design and Development of Radiator Fan for Automotive Application (2012-01-0555) Kishor Udawant, Vikram Tandon, Ashok Joshi, Automotive Research Association of India; M Srinivasan, IFB Automotive (P) Ltd	DSRC Performance Comparison with and without Antenna Diversity Using Different Transmission Power (2012-01-0491) Sue Bai, Radovan Miucic, Honda R&D Americas, Inc.	Virtual Validation Cloud : An Electronic System Validation Platform Based on Cloud Computing Resources (2012-01-0501) Yasuhiro Ito, Yasuo Sugure, Shigeru Oho, Hitachi Ltd	

Continued on next page

WEDNESDAY, APRIL 25 - MORNING

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	D0-07B	D0-03A	D0-03C	D0-02A
	CAD/CAM/CAE Technology (B101) 8:00 a.m. - 11:40 a.m. Organizers: Randy Gu, Oakland Univ.; Yu J. Teng, Chrysler Group LLC; William J. Altenhof, Univ. of Windsor; Yun Lu, Chrysler Group LLC; Pilaka Murty, WTAMU	Intelligent Transportation Systems - Safer, Smarter, Faster (AE313) Intelligent Transportation Systems (ITS) includes smart vehicles, smart roads and infrastructure, and wired and wireless communications to link them together. This session will provide insights and progress reports on the latest ITS research, development, and deployment around the world. Time to collision estimations, embedded processor control, adaptive cruise control and image recognition along with discussion on the management of safety and safety systems. 8:00 a.m. - 11:00 a.m. Organizers: David Acton, The-Transformation-Network LLC; Stephan Tarnutzer, DGE Inc. Chairpersons: Stephan Tarnutzer, DGE Inc; David Acton, The-Transformation-Network LLC	Systems Engineering (part 1 of 2) (AE312) This session addresses automotive requirements, high level system design, cost analysis, simulation, modeling, testing, and validation. System includes components, sub assemblies, computer based controllers, hardware and software. The session focuses on intelligent and efficient approaches to analysis, design (not detailed design), modeling, measurement, document management and optimizing performance. Topics on effect of cost, and human machine interface are covered. 8:00 a.m. - 10:00 a.m. Organizers: Subramaniam Ganesan, Oakland Univ.; Ken Rao, IBES Inc. Chairpersons: Subramaniam Ganesan, Oakland Univ	Connected Vehicle Technology - Establishing a Market Base and Breaking Down the Barriers to Entry: An Expert Panel Discussion (AE401) This panel discussion will feature a participants from OEM, Tier suppliers, government, academia community as well as a market analysis that will address connected vehicle technology development and provide insights on what direction what they feel is the most appropriate way industry can establish a market niche for this technology and break down any consumer or government barriers to entry. Participants will address IVS, active safety, infotainment technologies as they relate to V2I and V2V. 9:40 a.m. - 11:40 a.m. Moderators: Christopher Hill, SAIC Panelists: Thilo Koslowski, Gartner Group Matthew Smith, MDOT Steven Underwood, Univ of Michigan-Dearborn Shelley Row, US Dept of Transportation James Keller, Honda R&D Americas Inc
10:00 a.m.		Design of a Model Reference Cruise Control Algorithm (2012-01-0492) Hakgu Kim, Seoul National University; Kyongsu Yi, Seoul National Univ		
10:20 a.m.		Analyzing Vehicle Fuel Saving Opportunities through Intelligent Driver Feedback (2012-01-0494) Jeffrey Gonder, Matthew Earleywine, Witt Sparks, National Renewable Energy Laboratory		
10:40 a.m.		Development of a Back-up Collision Intervention system (Oral Only) Yoji Seto, Takeshi Sugano, Nissan		
	Estimation of Blowby in Multi-cylinder Diesel Engine Using Finite Element Approach (Written Only -- No Oral Presentation) (2012-01-0559) Ravindra R. Malagi, Gogte Institute of Technology Belgaum		Development of Electronic Control System for a Single Cylinder Motorcycle Engine (Written Only -- No Oral Presentation) (2012-01-0508) Liping Wan Wan, Yankun Jiang, Huazhong Univ. of Science and Technology; Guang Hong, University of Technology-Sydney; Xin Liu, Jianping Zhang, Huazhong Univ. of Science and Technology	
	Planned by Body Engineering Committee / Automobile Body Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00249, and also individually. To purchase visit collections.sae.org	Planned by Electrical and Electronic Systems Committee / Automobile Electronics Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00247, and also individually. To purchase visit collections.sae.org	Planned by Electrical and Electronic Systems Committee / Automobile Electronics Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00246, and also individually. To purchase visit collections.sae.org	

SAE Videos

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WEDNESDAY, APRIL 25 - MORNING
Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM	
	D0-03B	D0-07B
	Safety Critical Systems (part 1 of 2) (AE300) The focus of the session is on system safety analysis and design of safety-critical systems employing electronic controls. Topics include: implementation of safety-relevant systems, fail-safe strategies, distributed fault tolerant systems and hazard analysis. Application areas include: automotive active safety and alternative energy systems as well as avionics and mission management. Finally, the session addresses application of new or revised safety standards such as ISO 26262 and DO-178C. 10:00 a.m. - 12:00 p.m. Organizers: Brian T. Murray, United Technologies Research Center; Joseph G. D'Ambrosio, GM R&D Center; Dr. Markus Plankensteiner, TTTech Computertechnik AG Chairpersons: Brian Murray, United Technologies Research Center; Joseph D'Ambrosio, GM R&D Center	Design Tools and Digital Modeling (B104) 10:20 a.m. - 11:00 a.m. Organizers: Randy Gu, Oakland Univ.; Yu J. Teng, Chrysler Group LLC
10:00 a.m.	Automotive Functional Safety Standard ISO 26262 and the Current Challenges (Oral Only) Chitra Thyagarajan, Integrated Engineering Solutions, Mahindra Satyam	
10:20 a.m.	Review and Assessment of the ISO 26262 Draft Road Vehicle - Functional Safety (2012-01-0025) Qi Van Eikema Hommes, Volpe Transportation Systems Center	Validation of Virtual Driver Model for Design of Automotive Seating Packages (2012-01-0450) Herbert M. Reynolds, ERL LLC; James Wehrle, Wehrle-Wind Enterprises
10:40 a.m.	Automotive Vehicle Level Hazard and Risk Analysis (Oral Only) Padma Sundaram, David Hartfelder, General Motors Company	Pipes Modeling in the Automotive Field (2012-01-0451) Laurent Menanteau, Frederic Colsoul, Samtech International
11:00 a.m.	Safety Element out of Context - A Practical Approach (2012-01-0033) Rolf Schneider, Wolfgang Brandstaetter, AUDI AG; Marc Born, Olaf Kath, ikv++ technologies AG; Tobias Wenzel, Rafael Zalman, Infineon Technologies AG; Johann Mayer, Universitaet der Bundeswehr Muenchen	
11:20 a.m.	Hardware-in-the-Loop Testing in the Context of ISO 26262 (2012-01-0035) Andreas Himmeler, Klaus Lamberg, Michael Beine, dSPACE GmbH	
11:40 a.m.	Tool Integration, from Tool to Tool Chain with ISO 26262 (2012-01-0026) Fredrik Asplund, Matthias Biehl, Jad El-khoury, Daniel Frede, Martin Törngren, KTH Royal Institute of Technology Planned by Electrical and Electronic Systems Committee / Automobile Electronics Activity	Planned by Body Engineering Committee / Automobile Body Activity

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- Attend a free Resume Clinic where mobility industry experts will critique resumes on **Wednesday, April 25 from 10:00 a.m. – 12:00 p.m.**
- Post their resumes online
- Browse open positions—both on site and online

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WEDNESDAY, APRIL 25 - AFTERNOON

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	D0-07A	D0-03A	D0-02A	D0-03B
	Automobile Electronics Design and Systems Reliability (AE302) Meeting reliability, Design, quality and safety requirements for electrical/electronic systems becomes more challenging every year as E/E content, complexity, time-to-market and globalization pressures increase. This session focuses on intelligent practices for achieving high reliability. New approaches and techniques for integrating robust design and robustness validation into the mainstream global automotive electronics product development and manufacturing processes are discussed. 1:00 p.m. - 3:00 p.m. Organizers: Dennis Craggs, Chrysler Group LLC	Hardware-in-the-Loop Technology for Embedded Software Development and Testing (AE108) Advanced powertrain, chassis, vehicle dynamics and body systems electronic controls testing are complex undertakings in new vehicle development. HILs play an important role in facilitating invention as well as validation of the algorithm, communication and diagnostic code prior to release. This session will highlight advances in process, tools, and technology being applied to reduce design and validation time and cost, and to improve the quality of embedded software. 1:00 p.m. - 3:40 p.m. Organizers: Kevin Kott, Vivek Moudgal, dSPACE Inc.; Peter Waeltermann, dSPACE GmbH	Intelligent Vehicle Initiative (IVI) Technology Advanced Controls and Navigation Systems (AE309) This session presents papers by leading experts in the field of Intelligent Vehicle Technologies, such as: vehicle communications and networks, driver drowsiness and driving pattern detection, sensors and GPS, vehicle and chassis control and autonomous vehicles, route prediction, head-up displays and power transmission for electric vehicles. 1:00 p.m. - 3:20 p.m. Organizers: Kenneth W. Webster, Transportation Research Center Inc.	Safety Critical Systems (part 2 of 2) (AE300) The focus of the session is on system safety analysis and design of safety-critical systems employing electronic controls. Topics include: implementation of safety-relevant systems, fail-safe strategies, distributed fault tolerant systems and hazard analysis. Application areas include: automotive active safety and alternative energy systems as well as avionics and mission management. Finally, the session addresses application of new or revised safety standards such as ISO 26262 and DO-178C. 1:00 p.m. - 4:00 p.m. Organizers: Joseph G. D'Ambrosio, GM R&D Center; Brian T. Murray, United Technologies Research Center; Dr. Markus Plankensteiner, TTTech Computertechnik AG
1:00 p.m.	Retraction Control of Motorized Seat Belt System with Sliding Mode Observer (2012-01-0786) Kangseok Lee, Kyutae Bae, Wootak Lee, Changwon National University	Leveraging On-Board Diagnostics and Model-Based Design Methods for Root-Causing Body Control Systems/Software Issues (2012-01-0931) Jinming Yang, Jason Bauman, Al Beydoun, Lear Corp.	Early Detection of Reduced Alertness using Subsidiary Behavior (2012-01-0737) Haruo Matsuo, Abdelaziz Khia, Nissan Motor Company Ltd.	Functional Safety for Hybrid and Electric Vehicles (2012-01-0032) Sébastien Christiaens, Juergen Ogrzewalla, Stefan Pischinger, FEV GmbH
1:20 p.m.	Electromagnetically Compatible Solutions for High and Low Frequency Environment by Separation of Systems (2012-01-0787) Ali Raza, National University of Sci & Tech (NUST); Syed Zeerak ali, Ahmed shafqat, Abid Mushtaq, NUST-RIMMS; Umar Usman, Intikhab Hussain, Ahsan azhar, Yasir Iqbal, NUST-SEECs	Design and Evaluation of Active Trailer Steering Systems of Long Combination Vehicles Using Driver-Software-in-the-Loop Simulations (2012-01-0934) Xuejun Ding, Yuping He, Univ. of Ontario Institute of Technology	Distributed System Architecture of Autonomous Vehicles and Real-Time Path Planning based on the Curvilinear Coordinate System (2012-01-0740) Keonyup Chu, Junsoo Kim, Myoung-ho Sunwoo, Hanyang Univ	Development of Functional Safety in a Multi-Motor Control System for Electric Vehicles (2012-01-0028) Christophe Moure, Klaus Kersting, Applus IDIADA Group
1:40 p.m.	Integrated Maturity Assessment of Distributed Systems in Automotive Electronics (2012-01-0788) Stefan Abendroth, Henning Grönzin, MBTech Group; Klaus Müller-Glaser, Karlsruhe Institute of Technology	Hybrid Vehicle Model Development using ASM-AMESim-Simscape Co-Simulation for Real-Time HIL Applications (2012-01-0932) Kunal Patil, Texas Tech. University; Sisay Kefayalew Molla, dSPACE; Tino Schulze, dSPACE GmbH	An Autonomous and Car-Following System via DSRC Communication (2012-01-0741) Chan Wei Hsu, Ming Kuan KO, Min Huai shih, Shih Chieh Huang, Automotive Research Testing Center	Promoting the Robustness of Calibration-Based Computations (2012-01-0030) Jay Abraham, MathWorks Inc.
2:00 p.m.	Vehicle Level Remote Range Improvement with Low Cost Approach (2012-01-0789) Sidharth Gupta, Tata Motors, Ltd.; Neeraj Sharma, Tata Technologies Ltd	Functional Development Methodology for On-Board Distributed ECU Systems for Production Vehicle Application (2012-01-0929) Akira Watanabe, Asuka Sotome, Nissan Motor Company Ltd.	Driving Pattern Recognition for Adaptive Hybrid Vehicle Control (2012-01-0742) Lei Feng, Wenjia Liu, Bo Chen, Michigan Technological Univ	Schedule Design to Guarantee Freedom of Interference in Mixed Criticality Systems (2012-01-0036) Christoph Fieck, Kai Richter, Nico Feiertag, Syntavision GmbH
2:20 p.m.	Low Cost Hardware Design Techniques for Robust and Reliable Power-Supply Circuits for Automotive ECUs (2012-01-0790) Vishwas Vaidya, Tata Motors, Ltd.	Using High-Fidelity Multibody Vehicle Models in Real-Time Simulations (2012-01-0927) William Crego Prescott, LMS International; Gert Heirman, Katholieke Universiteit Leuven; Matthew furman, Joris De Cuyper, LMS International; Ludger Dragon, Andre Lippeck, Horst Brauner, Daimler AG	GPS Data Filtration Method for Drive Cycle Analysis Applications (2012-01-0743) Adam Duran, Matthew Earleywine, National Renewable Energy Laboratory	Methods and Tools for End-to-End Latency Analysis and Optimization of a Dual-Processor Control Module (2012-01-0029) Paolo Giusto, General Motors Company; Arkadeb Ghosal, National Instruments; Haibo Zeng, Abdulla Yousuf, Swarup Mohalik, James Thomas, General Motors Company; Kai Richter, Syntavision GmbH
2:40 p.m.	Micro Hybrid Battery Management - A Novel System to Augment Engine Restart Reliability and Battery Life (2012-01-0791) Venkatarayanan Lakshminarasimhan, Srikanth Thivaharan, Srividya Parthasarthy, Tata Motors Ltd	Efficient Testing and Cost Awareness: Low-Cost versus HIL-System (2012-01-0933) Stefan Mueller, Petra Langjahr, Bosch Engineering GmbH	Data-Driven Methods for Classification of Driving Styles in Buses (2012-01-0744) Nadezda Karginova, Petrozavodsk State University; Stefan Bytner, Halmstad University; Magnus Svensson, Volvo Technology AB	Practical Realization Of A Multi-function Automotive Integration Platform For Safety Relevant Functions (Oral Only) Rolf Schneider, AUDI AG; Stefan Sollmann Ing, AUDI Electronics Venture GmbH; Simon Brewerton, Infineon Technologies; Martin Fassl, TTTech Automotive GmbH

Continued on next page

WEDNESDAY, APRIL 25 - AFTERNOON

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	D0-07A	D0-03A	D0-02A	D0-03B
	Automobile Electronics Design and Systems Reliability (AE302) Meeting reliability, Design, quality and safety requirements for electrical/electronic systems becomes more challenging every year as E/E content, complexity, time-to-market and globalization pressures increase. This session focuses on intelligent practices for achieving high reliability. New approaches and techniques for integrating robust design and robustness validation into the mainstream global automotive electronics product development and manufacturing processes are discussed. 1:00 p.m. - 3:00 p.m. Organizers: Dennis Craggs, Chrysler Group LLC	Hardware-in-the-Loop Technology for Embedded Software Development and Testing (AE108) Advanced powertrain, chassis, vehicle dynamics and body systems electronic controls testing are complex undertakings in new vehicle development. HILs play an important role in facilitating invention as well as validation of the algorithm, communication and diagnostic code prior to release. This session will highlight advances in process, tools, and technology being applied to reduce design and validation time and cost, and to improve the quality of embedded software. 1:00 p.m. - 3:40 p.m. Organizers: Kevin Kott, Vivek Moudgal, dSPACE Inc.; Peter Waeltermann, dSPACE GmbH	Intelligent Vehicle Initiative (IVI) Technology Advanced Controls and Navigation Systems (AE309) This session presents papers by leading experts in the field of Intelligent Vehicle Technologies, such as: vehicle communications and networks, driver drowsiness and driving pattern detection, sensors and GPS, vehicle and chassis control and autonomous vehicles, route prediction, head-up displays and power transmission for electric vehicles. 1:00 p.m. - 3:20 p.m. Organizers: Kenneth W. Webster, Transportation Research Center Inc.	Safety Critical Systems (part 2 of 2) (AE300) The focus of the session is on system safety analysis and design of safety-critical systems employing electronic controls. Topics include: implementation of safety-relevant systems, fail-safe strategies, distributed fault tolerant systems and hazard analysis. Application areas include: automotive active safety and alternative energy systems as well as avionics and mission management. Finally, the session addresses application of new or revised safety standards such as ISO 26262 and DO-178C. 1:00 p.m. - 4:00 p.m. Organizers: Joseph G. D'Ambrosio, GM R&D Center; Brian T. Murray, United Technologies Research Center; Dr. Markus Plankensteiner, TTTech Computertechnik AG
3:00 p.m.		Virtual Testing and Simulation Environment [Micro-HIL] for Engine and Aftertreatment Calibration and Development -Part 2 (2012-01-0928) Harsha K. Nanjundaswamy, Mufaddel Dahodwala, Mitesh Farsodia, Dean Tomazic, Erik Koehler, FEV Inc.	PHEV Energy Management: A Comparison of Two Levels of Trip Information (2012-01-0745) Mitra Pourabdollah, Viktor Larsson, Lars johannesson, Bo Egardt, Chalmers University of Technology	Demonstration of Automotive Steering Column Lock using Multicore AutoSAR® Operating System (2012-01-0031) Simon P. Brewerton, Infineon Technologies; Natalia Willey, Delphi France SAS; Swapnil Gandhi, Thorsten Rosenthal, Delphi Deutschland GmbH; Claus Stellwag, Elektrotit Automotive GmbH; Matthieu Lemerre, CEA LIST
3:20 p.m.		Low Cost Vehicle Validation Strategy for Early Detection and Correction of Real-Life Performance Deficiencies of Various Subsystems (2012-01-0930) Anand Patidar, Vishwas Vaidya, Tata Motors Ltd.		Component Interoperability For Automotive Safety Issues (2012-01-0034) Malcolm James Baca, Larry DeFazio, QTEC Solutions, Inc
3:40 p.m.				ARAMIS - Taming Multicores for Safe Transportation (Oral Only) Rolf Schneider, AUDI AG; Oliver Sander, Karlsruhe Institute Of Technology; Juergen Becker, Univ. Karlsruhe
	Bilateral Control Method of Torque Drive/ Angle Feedback Used for Steer-by-Wire System (Written Only -- No Oral Presentation) (2012-01-0792) Xiang Wang, Changfu Zong, Haitao Xing, Rufe Hu, Xujun xie, State Key Lab of Auto Sim & Control, Jilin Univ.			
	Planned by Electrical and Electronic Systems Committee / Automobile Electronics Activity	Planned by Testing and Instrumentation Committee / Automobile Electronics Activity	Planned by Electrical and Electronic Systems Committee / Automobile Electronics Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00245, and also individually. To purchase visit collections.sae.org	Planned by Electrical and Electronic Systems Committee / Automobile Electronics Activity

Technical Session Oral Evaluation Incentives

In an effort to collect more evaluation ratings for the technical session speakers, SAE will be holding daily drawings for anyone who completes an oral evaluation card distributed in technical session rooms. Simply complete the card, tear off the perforation with your name and contact number, and turn it in to the session moderator. Six (6) winners will be announced daily to receive \$25 gift certificates. Winners will be announced daily and posted in the technology lounges.

WEDNESDAY, APRIL 25 - AFTERNOON
Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM	
	D0-03C	D0-03A
	Systems Engineering (part 2 of 2) (AE312) This session addresses automotive requirements, high level system design, cost analysis, simulation, modeling, testing, and validation. System includes components, sub assemblies, computer based controllers, hardware and software. The session focuses on intelligent and efficient approaches to analysis, design (not detailed design), modeling, measurement, document management and optimizing performance. Topics on effect of cost, and human machine interface are covered. 1:00 p.m. - 3:40 p.m. Organizers: Subramaniam Ganesan, Oakland Univ.; Ken Rao, IBES Inc.	Chat with the Experts: U.S. DOT's V2V and V2I Technology Test Bed Update (AECHAT200) Come hear the latest updates on the V2V and V2I Technology Test Bed and connected vehicle research including an expansion within the Detroit area that will include Signal Phase and Timing (SPaT) and Geometric Intersection Description (GID), and extensions outside of Michigan. The V2V and V2I Technology Test Bed is available for anyone to use in testing their safety, mobility and environmental applications, services, and components using interoperable equipment consistent with the DOT's program. 4:00 p.m. - 5:00 p.m. Keynote Speakers: Walton L. Fehr, US Dept. of Transportation; Greg Krueger, Michigan Dept. of Transportation
1:00 p.m.	Technical Keynote: Systems Engineering Development Chain (Oral Only) Joseph Lomonaco, Harley-Davidson Motor Co.	
1:40 p.m.	Equivalence Unit Assumptions on Productivity and Capacity Evaluations (2012-01-0502) Tahsin Karaca, Murathan Soner, Sinan Ertunc, Mehmet Ali Arpacik, Mustafa Karaagac, Ahmet Kanbolat, Olgun Celik	
2:00 p.m.	Formal Methods Based Acceptance Testing for AUTOSAR Exchangeability (2012-01-0503) Rickard Svenningsson, Rolf Johansson, SP Technical Research Inst of Sweden; Thomas Arts, Ulf Norell, Quiviq AB	
2:20 p.m.	A Systematic Approach for Load Cycle Generation Based on Real World Indian Drive Profile (2012-01-0504) Nabal Kishore Pandey, Satish Thimmalapura, R Ramachandran, Mahindra & Mahindra Ltd	
2:40 p.m.	Brushless Series Connected Machine with DC Stator Excitation (2012-01-0505) Sergey P. Gladyshev, Michigan-Dearborn University; Irina Okrainskaya, South Ural State University	
3:00 p.m.	Quantifying Uncertainty in Vehicle Simulation Studies (2012-01-0506) Benjamin Geller, Thomas Bradley, Colorado State University	
3:20 p.m.	CFD-Based Shape Optimization for Optimal Aerodynamic Design (2012-01-0507) Asya Gabbasa; Badih Ali Jawad, Lawrence Technological Univ.; Evangelos Koutsavdis, ANSYS Inc.	
	Planned by Electrical and Electronic Systems Committee / Automobile Electronics Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00246, and also individually. To purchase visit collections.sae.org	



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THURSDAY, APRIL 26 - MORNING

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	D0-03C	D0-06A	D0-07A	D0-03B
	Vehicle Sensors and Actuators (AE319) Modern automotive customers need safer vehicles with little or no impact to the environment. The purpose of this session is to present the latest research and development on novel sensors, actuators, and circuits that are critical to deliver the function of today's complex automotive systems. 8:00 a.m. - 10:20 a.m. Organizers: Chentfang Chang, GM R&D Center; Sanjeev M. Naik, GM	Electrical Wiring Harnesses (AE301) The Electrical Wiring Harness session deals with innovations and new developments surrounding the design, development, optimization, and manufacturing of wiring systems, connectors, terminals, wires, coverings, and other related components. The session will also hit on new topics for more robust environmental performance, alternate materials, integration with other systems, and high voltage/current considerations. 8:00 a.m. - 10:00 a.m. Organizers: Howard Evans, Bentley Motors, Ltd.; Jeremy Tibbett, Leoni Wiring Systems Inc. Chairpersons: Howard Evans, Bentley Motors, Ltd.	Model-Based Design of Embedded Systems (AE316) To reduce development time and improve quality while delivering technical innovations, companies use math-based models and a process known as Model-Based Design for developing embedded controllers. Engineers use an executable specification to iterate quickly through design concepts using simulation and without relying on physical prototypes. The specification then serves as the basis for early verification, hardware in-the-loop test, and production code generation. 8:00 a.m. - 9:40 a.m. Organizers: Wensi Jin, MathWorks Inc.	Processes, Methods, and Tools for Cyber-Security-Aware Automotive Embedded Systems (AE321) This session focuses on processes, methods, and tools for the design, analysis, and synthesis of cyber secure automotive embedded systems. Additionally, this session shall also focus on the definition of embedded software and system development processes that include qualitative and quantitative security metrics in addition to safety and other key metrics for the development of automotive embedded systems. 8:00 a.m. - 11:40 a.m. Organizers: Amit Choudhury, NEC ELECTRONICS; Paolo Giusto, General Motors; Barbara Czerny, GM R&D Center Chairpersons: Paolo Giusto, General Motors; Barbara Czerny, GM R&D Center
8:00 a.m.	Integrating sensor technology into fluid handling devices - a platform approach (Oral Only) Brian Engle, GE	TOOL for Dimensioning Electrical Distribution System (Oral Only) Marc Semelle, Automotive Wire Harnesses	Assessing the quality of model-based development processes (Oral Only) Vinod Reddy, MathWorks	Technical Keynote: Extending Functional Safety Processes to Include Security Risk Assessment (Oral Only) David Ward, MIRA, Ltd.
8:20 a.m.	Development of Moving Object Detection Using Vision System (2012-01-0935) Daisuke Tanaka, Nissan Motor Company Ltd.	Development of Aluminum Wire for Low-Voltage Automotive Wiring Harnesses (2012-01-0925) Yasuyuki Otsuka, AutoNetworks Technologies, Ltd.; Taichiro Nishikawa, Sumitomo Electric Industries, Ltd.; Jun Yoshimoto, Sumitomo Wiring Systems, Ltd.; Yasuhiro Akasofu, Sumitomo Electric Toyama Co., Ltd.	Model-Based Verification and Validation of Electronic Engine Controls (2012-01-0961) Kenneth Roy Butts, Toyota Motor Engineering & Mfg NA Inc.; Vivek Jaikamal, ETAS Inc	
8:40 a.m.	Development and Testing of an Online Oil Condition Monitor for Diesel Driven Army Ground Vehicles (2012-01-0936) Carl Byington, Garrett Argenna, Nicholas Mackos, Andrew Ruestow, Impact Technologies LLC; Joel Schmittigal, US Army TARDEC	Crimping Technology of Aluminum Wire for Automotive Wire Harness (2012-01-0922) Takuji Otsuka, Hiroki Hirai, Junichi Ono, Auto Networks Technologies Ltd.; Masaaki Tabata, Sumitomo Wiring Systems Ltd.	Assessing Model-Based Design Workflow for ISO 26262 Compliant Development - Framework and Case Study (Oral Only) Gen R. Sasaki, MathWorks	
9:00 a.m.	Single-Chip 77GHz Radar Sensor and its Automotive Applications (2012-01-0937) Akihiko Hyodo, Shigeru Oho, Toshiyuki Nagasaku, Hitachi Ltd.	Leak-Tight Cable Pass-Through into Hostile Environment (Oil, Temperature, Vibration) Such as Inside Engine or Gear Box (2012-01-0923) Daniel G. Reiter, Leoni	Validation of Control Software Specification Using Design Interests Extraction and Model Checking (2012-01-0960) Tomoyuki Kaga, Toyota Motor Corporation; Masakazu Adachi, Toyota Central R&D Labs., Inc.; Ichiro Hosotani, Masaaki Konishi, Toyota Motor Corporation	Building Security In: The SPARK Approach to Software Development (2012-01-0734) Stuart Matthews, Altran Praxis; Greg Gicca, Adacore
9:20 a.m.	PSi5 in Powertrain (2012-01-0938) Thomas Baehren, Udo Schulz, Christian Ohl, Juergen Moessinger, Dirk Daecke, Juergen Bonfert, Carsten Scholten, Benjamin Glas, Andreas Kneer, Robert Bosch GmbH	A Generic Modeling Approach for Automotive Power Net Consumers (2012-01-0924) Mohamed Ayeb, Ludwig Brabetz, Giscard Jilwan, Patrick Graebel, Universitaet Kassel	AUTOSAR-Compliant Development Workflows: From Architecture to Implementation - Tool Interoperability for Round-Trip Engineering and Verification and Validation (2012-01-0962) Guido Sandmann, MathWorks GmbH; Michael Seibt, Mentor Graphics GmbH	Security Aspects of Utilizing Ethernet AVB as the Converged Vehicle Backbone (2012-01-0735) Robert Boatright, Harman International Industries Inc.; Joseph Tardo, Broadcom Corp
9:40 a.m.	A Flexible High-Performance Accelerator Platform for Automotive Sensor Applications (2012-01-0939) Henning Sahlbach, Sean Whitty, Rolf Ernst, Technische Universität Braunschweig	High Voltage Power distribution centers for alternative drive technologies (Oral Only) Martin Hopf, Leoni		Enabling Exponential Growth of Automotive Network Devices while Reducing the Wired Communication Infrastructure with Security, Reliability, and Safety (2012-01-0736) Barton Shields, Graham Campbell, Jonathan Gael, Ether2
10:00 a.m.	Study on Development of Torque and Angle Sensor for EPS (2012-01-0941) Kwangho Yoo, Jung-wook Seo, Jaewon Ban, Lee Hyukjung, Jinwoo Kim, Wanil Kim, Mando-Hella Electronics			System-level performance modeling of authentication protocols in network communication protocols (Oral Only) Deepak Shankar, Darryl Koivisto, Mirabilis Design Inc.

THURSDAY, APRIL 26 - MORNING
Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	D0-03C	D0-06A	D0-07A	D0-03B
	Vehicle Sensors and Actuators (AE319) Modern automotive customers need safer vehicles with little or no impact to the environment. The purpose of this session is to present the latest research and development on novel sensors, actuators, and circuits that are critical to deliver the function of today's complex automotive systems. 8:00 a.m. - 10:20 a.m. Organizers: Chenfang Chang, GM R&D Center; Sanjeev M. Naik, GM	Electrical Wiring Harnesses (AE301) The Electrical Wiring Harness session deals with innovations and new developments surrounding the design, development, optimization, and manufacturing of wiring systems, connectors, terminals, wires, coverings, and other related components. The session will also hit on new topics for more robust environmental performance, alternate materials, integration with other systems, and high voltage/current considerations. 8:00 a.m. - 10:00 a.m. Organizers: Howard Evans, Bentley Motors, Ltd.; Jeremy Tibbett, Leoni Wiring Systems Inc. Chairpersons: Howard Evans, Bentley Motors, Ltd.	Model-Based Design of Embedded Systems (AE316) To reduce development time and improve quality while delivering technical innovations, companies use math-based models and a process known as Model-Based Design for developing embedded controllers. Engineers use an executable specification to iterate quickly through design concepts using simulation and without relying on physical prototypes. The specification then serves as the basis for early verification, hardware in-the-loop test, and production code generation. 8:00 a.m. - 9:40 a.m. Organizers: Wensi Jin, MathWorks Inc.	Processes, Methods, and Tools for Cyber-Security-Aware Automotive Embedded Systems (AE321) This session focuses on processes, methods, and tools for the design, analysis, and synthesis of cyber secure automotive embedded systems. Additionally, this session shall also focus on the definition of embedded software and system development processes that include qualitative and quantitative security metrics in addition to safety and other key metrics for the development of automotive embedded systems. 8:00 a.m. - 11:40 a.m. Organizers: Amit Choudhury, NEC ELECTRONICS; Paolo Giusto, General Motors; Barbara Czerny, GM R&D Center Chairpersons: Paolo Giusto, General Motors; Barbara Czerny, GM R&D Center
			A Multi-Layered and Modular Design Approach for Developing AMT Control System in Battery Electric Vehicles (Written Only -- No Oral Presentation) (2012-01-0963) Hongbo Liu, Yulong Lei, Zhanjiang Li, State Key Lab. of ASC, Jilin University; Jianguo Zhang, Changchun Inst. of Engineering Tech.; Youde Li, State Key Lab. of ASC, Jilin University	
	Planned by Electrical and Electronic Systems Committee / Automobile Electronics Activity	Planned by Electrical and Electronic Systems Committee / Automobile Electronics Activity	Planned by Electrical and Electronic Systems Committee / Automobile Electronics Activity	Planned by Testing and Instrumentation Committee / Automobile Electronics Activity

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THURSDAY, APRIL 26 - MORNING

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM	
	D0-03A	D0-03A
	Vehicle Diagnostics (Part 1 of 3) (AE311) Vehicle diagnostics deals with the development, delivery and execution of diagnostic procedures for vehicle systems. This session will explore new technologies, processes and trends in the area of vehicle diagnostics. 8:00 a.m. - 10:00 a.m. Organizers: Kathleen E. Kedzior, MAHLE Test Systems	Vehicle Diagnostics (Part 2 of 3): An Expert Panel Discussion - Electric Vehicles, the Next Frontier for Service Technicians (AE311) Vehicle diagnostics deals with the development, delivery and execution of diagnostic procedures for vehicle systems. This session will explore new technologies, processes and trends in the area of vehicle diagnostics. 10:00 a.m. - 12:00 p.m. Organizers: Kathleen E. Kedzior, MAHLE Test Systems
8:00 a.m.	Preventive Smart Monitoring of Vehicle (Oral Only) Sergey Anatolevich Kirillov, SmartTech. Appl; Aleksandr Kirillov Sr, SmartSys Prognosis Inc. USA	
8:20 a.m.	Vehicle Diagnostics Using J-2534 (Oral Only) Brian J. Herron, Drew Technologies Inc.	
8:40 a.m.	Translation Expense Reduction for Vehicle Diagnostics (Oral Only) Arnold Taube, DEERE AND CO	
9:00 a.m.	Developing Prognostic ECU Diagnostics (Oral Only) Louis Scott Bolt, Mahle	
9:20 a.m.	Field Diagnosis of EV/HEV/PHEV Motor-Generators (Oral Only) Jack Lelan Rosebro, Perfect Sky Inc.	
9:40 a.m.	Data-Driven Fault Model for Quality Monitoring and Root Cause Analysis of Automotive Faults (Oral Only) Satnam Singh, General Motors Technical Center India Private Ltd.; Keith Armitage, General Motors Corp.; Steven W. Holland, General Motors LLC; Kallappa Pattada, General Motors Technical Center India Private Ltd.	
		Vehicle Diagnostics Panel 1: Electric Vehicles- the Next Frontier for Service Technicians 10:00 a.m. - 12:00 p.m. With record high prices for crude oil and at the pump, consumers are placing record numbers of orders for gas saving electric and hybrid electric vehicles. To provide fuel economy and emissions to meet these consumer demands, OEM's are providing world-class hybrid electric vehicle system designs. Servicing high voltage battery packs, hybrid drive systems and motor electronics is a change in technology for the vehicle technician and provides new approaches in vehicle service. This panel is comprised of experts in electric vehicle design and servicing. They will be sharing solutions that have been created around an electric vehicle system design and also share their knowledge on how the servicing of the vehicle by the technician is being handled. Each panel participant will first give a short presentation (15 minutes or less) concerning the current conditions in their sector. The panel discussion will follow. A few prepared questions will be presented to the panel by the moderator. After those questions are answered, the discussion is opened up for questions from the audience. Moderators: Mark N. Pope, General Motors LLC Panelists: Joseph J. Barkai, IDC Manufacturing Insights Chris Merkle, Raytheon Professional Services Jeffrey Minter, Madison Area Technical College Mark Quarto, General Motors LLC James Michael Smith, Nissan North America Inc.
	Planned by Electrical and Electronic Systems Committee / Automobile Electronics Activity	Planned by Electrical and Electronic Systems Committee / Automobile Electronics Activity

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Best of the Best Award winners will be recognized during the World Congress Annual Banquet.

THURSDAY, APRIL 26 - AFTERNOON

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM	
	D0-07B	D0-03A
	Simulation and Modeling Mechatronics + Panel (AE201) Historically, simulation and modeling efforts have typically been domain specific, independently modeling the behavior of electronic, electrical, or mechanical subsystems. As the complexity of these subsystems and their inter-domain interactions increase, it is imperative that the inter-domain behaviors and effects are taken into account when modeling and simulating the resulting Mechatronic system. 1:00 p.m. - 4:00 p.m. Organizers: Mark Steffka, GM Powertrain; Thomas Egel, MathWorks Inc; Shuvra Das, Univ. of Detroit Mercy Chairpersons: Mark Steffka, GM Powertrain	Vehicle Diagnostics (Part 3 of 3): An Expert Panel Discussion - The Impact of Increased Vehicle Technology on Service, Diagnostics, and Technician Safety (AE311) Vehicle diagnostics deals with the development, delivery and execution of diagnostic procedures for vehicle systems. This session will explore new technologies, processes and trends in the area of vehicle diagnostics. 1:00 p.m. - 4:00 p.m. Organizers: Kathleen E. Kedzior, MAHLE Test Systems
1:00 p.m.	Verifying Electromagnetic Simulation Results with Measurements (2012-01-1160) Scott W. Piper, James Teune, Gentex Corp.	Vehicle Diagnostics Panel 2: The Impact of Increased Vehicle Technology on Service, Diagnostics, and Technician Safety This Keynote will present results of a joint study between IDC Manufacturing Insights and the SAE Service Technology Program Committee (STPC) concerning a comprehensive ground vehicle service survey. The study targeted dealership technicians, independent repair facility technicians, OEM's, design suppliers, engineering suppliers, tool suppliers/manufactures and SAE members engaged in service. Findings from the study can be used to improve education, training, tools, and future design. The Keynote will be 45 minutes including time allowed for questions. After the Keynote, a panel discussion will follow concerning the results of the survey. Service professionals from each study area; dealership, independent's, OEM's, design suppliers, engineering suppliers, and tool supplier/manufactures will have a discussion regarding the implications for the industry. Each panel participant will first give a short presentation (10 minutes or less) concerning the current conditions in their sector. The panel discussion will follow. A few prepared questions will be presented to the panel by the moderator. After those questions are answered, the discussion is opened up for questions from the audience.
1:20 p.m.	Verification of ASSTREET Driver-Agent Model by Collaborating with the Driving Simulator (2012-01-1161) Jun Tajima, Norihiko Sakamoto, Advanced Solutions Technology Japan, Ltd; Tsutomu Mochida, Shin Tanaka, Toyota Motor Corporation; Hiroshi Yasuda, Toyota Central R&D Labs., Inc.	
1:40 p.m.	Modern and Future Motor Vehicles as Modular-Based Complexes of Mechatronic Systems (2012-01-1163) Boris Nikolaevich Belousov, N.E. Bauman Moscow State Tech Univ; Tatiana Ksenevich, General Physics Institute	
2:00 p.m.	Applying Model-Based Design (MBD) Methods to Mechatronic Systems Panelists: Kenneth Butts, TOYOTA MOTOR ENGINEERING William Goodwin, GM Powertrain Mark J. Jennings, Ford Motor Co. Giorgio Rizzoni, Ohio State Univ. George Saikalis, Hitachi America, Ltd. James Teune, Gentex Corp. Guoming Zhu, Michigan State Univ.	Moderators: Mark N. Pope, General Motors LLC Panelists: Robert Augustine, Christian Brothers Automotive Joseph J. Barkai, IDC Manufacturing Insights Louis Scott Bolt, Mahle Bernard J. Carr, Robert Bosch LLC Kurt Immekus, Volkswagen Group of America Inc. Mark Quarto, General Motors LLC
	Accurate Model Based Hardware-in-the-Loop Test for a Windscreen Wiper System (Written Only -- No Oral Presentation) (2012-01-1164) Alexandros Mouzakitis, Jaguar Land Rover; Jianlin Wei, Jihong Wang, University of Warwick	
	Planned by Computer Applications Committee / Automobile Electronics Activity	Planned by Electrical and Electronic Systems Committee / Automobile Electronics Activity

ELECTRONICS

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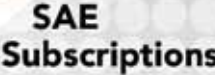
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SESSIONS TECHNICAL, BUSINESS & EXECUTIVE

Author information text is published as submitted by technical paper authors.

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Advances in Alternative Energy Sources for Sustainable Development in the Transportation Sector (SDP110)	-	✓	-	-	-	-	O2-38	66
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Chat with the Expert: Current and Future Vehicle Emissions Challenges (PFLCHAT430)	-	✓	-	-	-	-	W2-62	68
Chat with the Expert: Life Cycle Assessment and Environmental Product Declarations (SDPCHAT200)	-	-	-	✓	-	-	O2-38	73
Chat with the Expert: Thermal Systems Modeling and Simulation (HXCHAT100)	-	-	-	✓	-	-	O2-37	73
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Sustainable and Energy Efficient Manufacturing (SDP109)	-	-	-	-	✓	-	O2-38	76
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Thermal Systems Modeling and Simulation (Part 1 & 2) (HX102)	-	-	✓	✓	-	-	O2-37	69, 71
Thermal Systems for Electric and Hybrid Vehicles (HX105)	✓	-	-	-	-	-	O2-37	65
Vehicle Electrification Strategies for Sustainability (SDP117)	-	-	✓	-	-	-	O2-38	69

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TUESDAY, APRIL 24 - MORNING

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM		
	O2-38	W2-62	O2-37
	E2T Environmental Award - Nomination Presentations (SDP108) This session brings together the finalist of the Environmental Excellence in Transportation awards for the selection of an overall winner. Their presentations will highlight what has been developed as a process, technology, methodology or educational training that has given their company or community an environmental and cost advantage. The Sustainable Development Program Committee monitors this award. Please see http://www.sae.org/news/awards/list/e2t/ for more details. 10:00 a.m. - 11:40 a.m. Organizers: Nakia Simon, Chrysler Corporation LLC; Ronald Williams, Retired, General Motors	Exhaust Emission Control: New Developments (Part 1 of 2) (PFL404) Papers for this session that describes technology developments and the integration of these technologies into new emission control systems. Topics include the integration of various diesel particulate matter (PM) and diesel Nitrogen Oxide (NOX) reduction technologies plus the analogous technologies for the growing population of direct injection gasoline engines. Novel developments in sensors and control systems will also be considered. 10:00 a.m. - 11:40 a.m. Organizers: Kenneth S. Price, Umicore Autocat USA Inc.; Ronald Silver, Caterpillar Inc.; Marek Tatur, FEV Inc.	Thermal Systems for Electric and Hybrid Vehicles (HX105) The purpose of this session is to share experiences and lessons learned to advance the technology in the field of thermal management of electric and hybrid vehicle systems. This session presents papers covering both testing and simulation of hybrid and electric vehicle thermal systems. 10:00 a.m. - 12:00 p.m. Organizers: Ales Alajbegovic, Exa Corporation; Alaa El-Sharkawy, Chrysler Group LLC; Ramesh Kumar Goyal; John Rugh, National Renewable Energy Laboratory
10:00 a.m.		Technical Session Keynote: Vehicular Emissions in Review (2012-01-0368) Timothy V. Johnson, Corning Inc.	Technical Keynote: Thermal Systems for Electric and Hybrid Vehicles (Oral Only) Greg Major, Chrysler LLC
10:20 a.m.	eAssist Light-Electrification Propulsion System (Oral Only) Stephen Poulos		
10:40 a.m.	Viable Reuse of Cooking Oil (Oral Only) Klaus Wagner Acerbi, Delphi Corporation		Development of a Temperature-Dependent Li-ion Battery Thermal Model (2012-01-0117) Scott Peck, Matt Pierce, ThermoAnalytics Inc.
11:00 a.m.	Chrome Free Pre-Treatment (Oral Only) James Havers-Strong, Aviation Business International LLC	Teardown-Based Cost Assessment for Use in Setting Greenhouse Gas Emissions Standards (2012-01-1343) Gregory Kolwich, FEV, Inc.; Al Steier, Munro & Associates; Don Kopinski, Brian Nelson, David Ganss, Benjamin Ellies, Jeff Cherry, Michael Olechiv, U.S. Environmental Protection Agency; Thomas Casciani, FEV Inc; Antonio Fernandez, EPA	Design and Simulation of a Thermal Management System for Plug-In Electric Vehicles in Cold Climates (2012-01-0118) Soheil Shahidinejad, Eric Bibeau, Shaahin Flizadeh, Univ. of Manitoba
11:20 a.m.	NEW GEN 7 (Oral Only) Jeffery Scott Albright, Chrysler Group LLC	Updating China Heavy-Duty On-Road Diesel Emission Regulations (2012-01-0367) Reggie Zhan, Southwest Research Institute; Mengliang Li, China Automotive Technology and Research Center; Lin Shui, SINOPEC Lubricant Company	Influence of Terminal Tabs/Busbar Ohmic Heat on Maximum Cell Temperature of a Li-ion Battery System for PHEV Applications (2012-01-0119) Kim Yeow, Ho Teng, Marina Thelliez, Eugene Tan, AVL Powertrain Engineering Inc
11:40 a.m.			Cabin Heating and Windshield Defrosting for Extended Range Electric, Pure Electric, & Plug-in Hybrid Vehicles (2012-01-0121) Mark Nemesh, Matthew Martinchick, Sam Ibri, General Motors Company
	Planned by Sustainable Development Program Committee / Engineering Meetings Board	Planned by Exhaust Aftertreatment and Emissions Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00286 and SUB-TP-00010, and also individually. To purchase visit collections. sae.org	Planned by Thermal Management Activity / EMB Land and Sea Group

TUESDAY, APRIL 24 - AFTERNOON

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	O2-38	O2-37	W2-62	W2-67
	Advances in Alternative Energy Sources for Sustainable Development in the Transportation Sector (SDP110) This session explores advances in the creation of sustainable energy sources, their usage in the transportation sector, and impact on the environment. Topics can include research and in-production technology used to produce renewable energy sources such as alternative fuels, as well as the materials from which they are made. A discussion on lifecycle analysis of the energy source in terms of net efficiency improvement or greenhouse gas emissions reduction is highly recommended. 1:00 p.m. - 4:00 p.m. Organizers: Sujit Das, Oak Ridge National Laboratory; Rahul Jhavar, Caterpillar Inc Chairpersons: Sujit Das, Oak Ridge National Laboratory	Climate Control (HX104) Climate control is a defining vehicle attribute and is strongly associated with brand image. Performance and quality of the climate control system are critical to customer satisfaction. The system has strong interaction with other vehicle systems. Its primary objective is to deliver thermal comfort and safety of the occupants. Alternative A/C systems, multi-zone climate control, cabin air filtration, automatic controls, and optimized energy consumption are among the recent advances. 1:00 p.m. - 2:40 p.m. Organizers: Bashar AbdulNour, General Dynamics Land Systems; Jeffrey Bozeman, General Motors Company; William Hill, MACRAE LLC	Exhaust Emission Control: New Developments (Part 2 of 2) (PFL404) Papers for this session that describes technology developments and the integration of these technologies into new emission control systems. Topics include the integration of various diesel particulate matter (PM) and diesel Nitrogen Oxide (NOx) reduction technologies plus the analogous technologies for the growing population of direct injection gasoline engines. Novel developments in sensors and control systems will also be considered. 1:00 p.m. - 4:00 p.m. Organizers: Kenneth S. Price, Umicore Autocat USA Inc.; Ronald Silver, Caterpillar Inc.; Marek Tatur, FEV Inc.	Particle Emissions from Combustion Sources (PFL409) Papers for this session on particle emissions from combustion engines, including measurement and testing methods, and the effects of changes in fuel composition. Papers are also invited on the topics of the environmental and health effects of elemental carbon and organic carbon that constitutes solid cored particles plus the environmental and health effects of secondary organic aerosol emissions. This includes particulate emissions from both gasoline and diesel engines. 1:00 p.m. - 3:20 p.m. Organizers: Imad A. Khalek, Southwest Research Institute; M. Matti Maricq, Ford Motor Co. Chairpersons: Matti Maricq, Ford Motor Co; Imad Khalek, Imad Khalek, Southwest Research Institute
1:00 p.m.	Combustion Behaviour and Emission Performance of Neat and Blended Polyoxymethylene Dimethyl Ethers in a Light-Duty Diesel Engine (2012-01-1053) Leonardo Pellegrini, Mario Marchionna, Renata Patrini, ENI SpA; Carlo Beatrice, Nicola Del Giacomo, Chiara Guido, Istituto Motori CNR	Internal Heat Exchanger Heat Transfer and Pressure Drop Effect on System Performance and Compressor Discharge Temperature (2012-01-0318) John J. Meyer, Visteon Climate Control	Development of DPF/SCR System for Heavy Duty Diesel Engine (2012-01-0369) Seung-il Moon, Byung-gwi Choi, Hyun-woo Lee, Gi-soo Hyun, Choong-heon Hyun, Hyundai Motor Co. & KIA Motors Corp.	Rape Seed Oil B100 Diesel Engine Particulate Emissions: The Influence of Intake Oxygen on Particle Size Distribution (2012-01-0435) Seyed Ali. Hadavi, Hu Li, Patrick Biller, Amanda Lea-Langton, Gordon Andrews, University of Leeds; Grzegorz Przybyla, Silesian University of Technology
1:20 p.m.	A Study of Gasoline-Ethanol Blends Influence on Performance and Exhaust Emissions from a Light-Duty Gasoline Engine (2012-01-1052) Piotr Bielaczyc, Andrzej Szczotka, Joseph Woodburn, Bosmal Automotive R & D Institute	Comparison of Coaxial and Non-Coaxial Internal Heat Exchangers (2012-01-0319) Lothar Seybold, Adam Opel AG; William Hill, MACRAE, LLC; Kai-Ove Pietsch, Ioannis Lazaridis, Adam Opel AG	Advanced Urea SCR System Study with a Light Duty Diesel Vehicle (2012-01-0371) Gang Guo, Douglas Dobson, James Warner, William Ruona, Christine Lambert, Ford Motor Co	Effect of Common Rail Pressure on the Relationship between Efficiency and Particulate Matter Emissions at NOx Parity (2012-01-0430) Bhaskar Prabhakar, André L. Boehman, Pennsylvania State University
1:40 p.m.	Emission Performance of Lignin-Derived Cyclic Oxygenates in a Heavy-Duty Diesel Engine (2012-01-1056) Lei Zhou, M.D. Boot, C.C.M. Luijten, C.A.J. Leermakers, N.J. Dam, L.P.H. de Goeij, Eindhoven University of Technology	Experimentally Validated Model of Refrigerant Distribution in a Parallel Microchannel Evaporator (2012-01-0321) Hanfei Tuo, University of Illinois; Algirdas Bielskus, Pega Hrnjak, Univ. of Illinois at Urbana-Champaign	Influence of DPF Soot Loading on Engine Performance with a Pre-Turbo Aftertreatment Exhaust Line (2012-01-0362) Vicente Bermudez, Jose R. Serrano, Pedro Piqueras, Óscar García-Afonso, Universitat Politècnica de València	Impact of Engine Operating Conditions on Particle Number and Size from a Small Displacement Automotive Diesel Engine (2012-01-0429) Federico Mollo, Davide Vezza, Theodoros Vlachos, Debora Fino, Politecnico di Torino; Andrea De Filippo, General Motors Powertrain Europe
2:00 p.m.	Characterizations of Deployment Rates in Automotive Technology (2012-01-1057) Stephen Zoepf, John Heywood, MIT	Development of a Virtual Thermal Manikin to Predict Thermal Sensation in Automobiles (2012-01-0315) Shailendra Kaushik, Taeyoung Han, Kuo-huey Chen, General Motors Company	Measurement and Prediction of Filtration Efficiency Evolution of Soot Loaded Diesel Particulate Filters (2012-01-0363) Danhong Zhong, Suhao He, Pushkar Tandon, Maxime Moreno, Thorsten Boger, Corning Inc	Exhaust Particle Characterization for Lean and Stoichiometric DI Vehicles Operating on Ethanol-Gasoline Blends (2012-01-0437) John M. E. Storey, Teresa L. Barone, John F. Thomas, Shean P. Huff, Oak Ridge National Laboratory
2:20 p.m.	Laboratory Investigation on Emission Characteristics of a Diesel Car Fuelled with Biodiesel Blends (2012-01-1063) Di Yao, Diming Lou, Zhiyuan Hu, Piqiang Tan, Hangquan Shen, Tongji University	Development of an Energy-Saving Occupied-Zone HVAC System (OZ HVAC) (2012-01-0320) Chunkyu Kwon, Chang Won Lee, Hyundai-Kia R&D Center; Lee Foster, Hyundai Kia America Technical Center; Jungcho Kwon, Hyundai-Kia R&D Center; Younggy Shin, Sejong University	A Study of PGM-Free Oxidation Catalyst Y ₂ MnO ₃ for Diesel Exhaust Aftertreatment (2012-01-0365) Keita Ishizaki, Naoki Mitsuda, Naoki Ohya, Hiroshi Ohno, Takahiro Naka, Honda R&D Co., Ltd.; Akira Abe, Hiromitsu Takagi, Akiko Sugimoto, Mitsui Mining & Smelting Co., Ltd.	Particulate Emissions for LEV II Light-Duty Gasoline Direct Injection Vehicles (2012-01-0442) Sherry Zhang, Wayne McMahon, California Air Resources Board
2:40 p.m.	Solar Assisted Vehicle Electrical System (S.A.V.E.) (2012-01-1058) Chirag Padmakar Sonchal, Anand Vijay Kulkarni, Jaypal Gajankush, Sandeep pawar, Tata Motors, Ltd.		Performance of Particle Oxidation Catalyst and Particle Formation Studies with Sulphur Containing Fuels (2012-01-0366) Piotr Bielaczyc, BOSMAL Automotive R&D Institute; Jorma Keskinen, Tampere Univ of Technology; Jakub Dzida, Rafal Sala, BOSMAL Automotive R&D Institute; Topi Ronkko, Tampere Univ of Technology; Toni Kinnunen, Pekka Matilainen, Ecocat Oy; Panu Karjalainen, Tampere Univ of Technology; Matti Juhani Happonen, Tampere Univ. of Technology	The Effects of Hot Air Dilution and an Evaporation Tube (ET) on the Particulate Matter Emissions from a Spray Guided Direct Injection Spark Ignition Engine (2012-01-0436) Fan Xu, Richard Stone, University of Oxford

Continued on next page

TUESDAY, APRIL 24 - AFTERNOON

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	O2-38	O2-37	W2-62	W2-67
	Advances in Alternative Energy Sources for Sustainable Development in the Transportation Sector (SDP110) This session explores advances in the creation of sustainable energy sources, their usage in the transportation sector, and impact on the environment. Topics can include research and in-production technology used to produce renewable energy sources such as alternative fuels, as well as the materials from which they are made. A discussion on lifecycle analysis of the energy source in terms of net efficiency improvement or greenhouse gas emissions reduction is highly recommended. 1:00 p.m. - 4:00 p.m. Organizers: Sujit Das, Oak Ridge National Laboratory; Rahul Jhavar, Caterpillar Inc Chairpersons: Sujit Das, Oak Ridge National Laboratory	Climate Control (HX104) Climate control is a defining vehicle attribute and is strongly associated with brand image. Performance and quality of the climate control system are critical to customer satisfaction. The system has strong interaction with other vehicle systems. Its primary objective is to deliver thermal comfort and safety of the occupants. Alternative A/C systems, multi-zone climate control, cabin air filtration, automatic controls, and optimized energy consumption are among the recent advances. 1:00 p.m. - 2:40 p.m. Organizers: Bashar AbdulNour, General Dynamics Land Systems; Jeffrey Bozeman, General Motors Company; William Hill, MACRAE LLC	Exhaust Emission Control: New Developments (Part 2 of 2) (PFL404) Papers for this session that describes technology developments and the integration of these technologies into new emission control systems. Topics include the integration of various diesel particulate matter (PM) and diesel Nitrogen Oxide (NOX) reduction technologies plus the analogous technologies for the growing population of direct injection gasoline engines. Novel developments in sensors and control systems will also be considered. 1:00 p.m. - 4:00 p.m. Organizers: Kenneth S. Price, Umicore Autocat USA Inc.; Ronald Silver, Caterpillar Inc.; Marek Tatur, FEV Inc.	Particle Emissions from Combustion Sources (PFL409) Papers for this session on particle emissions from combustion engines, including measurement and testing methods, and the effects of changes in fuel composition. Papers are also invited on the topics of the environmental and health effects of elemental carbon and organic carbon that constitutes solid cored particles plus the environmental and health effects of secondary organic aerosol emissions. This includes particulate emissions from both gasoline and diesel engines. 1:00 p.m. - 3:20 p.m. Organizers: Imad A. Khalek, Southwest Research Institute; M. Matti Maricq, Ford Motor Co. Chairpersons: Matti Maricq, Ford Motor Co; Imad Khalek, Imad Khalek, Southwest Research Institute
3:00 p.m.	Study on a C.I. engine using orange oil and orange oil with DEE (Oral Only) Purushothaman Krishnan, Education		Characterization of a New Advanced Diesel Oxidation Catalyst with Low Temperature NO _x Storage Capability for LD Diesel (2012-01-0373) Federico Millo, Davide Vezza, Politecnico di Torino	Characterization of Particulate Morphology, Nanostructures, and Sizes in Low-Temperature Combustion with Biofuels (2012-01-0441) HeeJe Seong, Kyeong O. Lee, Seungmok Choi, Argonne National Laboratory; Cory Adams, David Foster, University of Wisconsin at Madison
3:20 p.m.			Development of New Concept Catalyst for Low CO ₂ Emission Diesel Engine Using NO _x Adsorption at Low Temperatures (2012-01-0370) Yoshihisa Tsukamoto, Hiromasa Nishioka, Daichi Imai, Yuichi Sobue, Nobuyuki Takagi, Toyota Motor Corporation; Toshiyuki Tanaka, Tsuyoshi Hamaguchi, Toyota Central R&D Labs Inc	
3:40 p.m.			A Visualization Test Setup for Investigation of Water-Deposit Interaction in a Surrogate Rectangular Cooler Exposed to Diesel Exhaust Flow (2012-01-0364) Mehdi Abarham, Tejas Chafekar, John Hoard, Univ of Michigan; Daniel Styles, Ford Motor Co; Dennis Assanis, Univ of Michigan	
			Sampling of Non-Volatile Vehicle Exhaust Particles: A Simplified Guide (Written Only -- No Oral Presentation) (2012-01-0443) Barouch Giechaskiel, Michael Arndt, Wolfgang Schindler, Alexander Bergmann, AVL List GmbH; William Silvis, AVL North America Inc; Yannis Drossinos, European Commission, JRC	
	Planned by Sustainable Development Program Committee / Engineering Meetings Board The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00293 and SUB-TP-00010, and also individually. To purchase visit collections.sae.org	Planned by Thermal Management Activity / EMB Land and Sea Group	Planned by Exhaust Aftertreatment and Emissions Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00286 and SUB-TP-00010, and also individually. To purchase visit collections.sae.org	Planned by Exhaust Aftertreatment and Emissions Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, SUB-TP-00010, and also individually. To purchase visit collections.sae.org

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TUESDAY, APRIL 24 - AFTERNOON
Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM	
	O2-38	W2-62
	Chat with the Expert: Automotive Recycling - A Success Story of Sustainability (SDPCHAT100) Automobiles are the most highly recycled product in the world. The U.S and EU are in stark contrast in their approach. One is market driven and the other is regulatory driven. Soon, China become the largest market for automotive recycling and presents new challenges. Discussion points will include facts and figures about car recycling, reuse and remanufacturing of automotive parts, design for environment considerations, international regulation and policies, and other issues of car recycling. 4:00 p.m. - 5:00 p.m. Keynote Speakers: Richard T. Paul, LKQ Best Automotive Corp.	Chat with the Expert: Current and Future Vehicle Emissions Challenges (PFLCHAT430) 4:00 p.m. - 5:00 p.m. Moderators: Timothy Johnson, Corning Inc. Panelists: Takeyuki Kamimoto Joseph E. Kubsh, Manufacturers of Emission Controls Assoc. Joseph McDonald, US EPA-Office of Transportation and Air Quality Charles E. Roberts, Southwest Research Institute Andrew Walker, Johnson Matthey Inc.
	Planned by Sustainable Development Program Committee / Engineering Meetings Board	

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Symposium
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- Aftertreatment solutions
- Alternative fuels and powertrains
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WEDNESDAY, APRIL 25 - MORNING

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	W2-67	O2-37	W2-62	O2-38
	Emissions Measurement and Testing (Part 1 of 2) (PFL408) Papers for this session covering emissions measuring techniques and testing regimes. This includes new analysis techniques and the novel application of existing techniques, the comparison of existing and proposed testing regimes with real world experience, including modeling. 8:00 a.m. - 11:20 a.m. Organizers: Allen B. Duncan, Environmental Protection; Leslie Hill, Horiba, Ltd.; Phil Price, Ford Motor Co.	Thermal Systems Modeling and Simulation (Part 1 of 2) (HX102) The Thermal Systems Modeling and Simulation session focusses on state of the art simulation technologies for modeling thermal systems and their application in the development and optimization of vehicle thermal management and fuel economy. The papers in the session will range from empirical, 1D modeling methods to three dimensional CFD models as well as coupled methods. 8:00 a.m. - 10:40 a.m. Organizers: Ales Alajbegovic, Exa Corporation; Ramesh Kumar Goyal; Gursaran D. Mathur, CalsonicKansei North America Inc.; Kumar Srinivasan, Chrysler Group LLC	Exhaust Emission Control: Particulate Filter Systems (Part 1 of 2) (PFL402) Papers for this session covering various aspects of Particulate Filter (PF) systems including the accumulation and oxidation of particulate matter within the PF, the performance of different PF technologies, and their use with different fuel specifications, engine technologies and testing protocols. Papers are also invited on novel PF construction techniques and materials and new regeneration strategies. 8:20 a.m. - 11:20 a.m. Organizers: Matthew Leustek, Caterpillar Inc.; Jerry Liu, Cummins Emission Solutions; Paul Richards; Andrea Strzelec, Pacific Northwest National Laboratory Chairpersons: Andrea Strzelec, Texas A&M Univ; Jerry Liu, Cummins Emission Solutions	Vehicle Electrification Strategies for Sustainability (SDP117) Attendees will explore the issues and design strategies of bringing sustainable EV, PHEV and vehicle electrification technologies to market. Identifying the customer value of these sustainable technologies is key to their success and growth. The design models and systems presented in this session highlight ways to optimize customer value to make these technologies successful. 10:00 a.m. - 11:40 a.m. Organizers: Lance Atkins, Nissan Technical Center NA Chairpersons: Lance Atkins, Nissan Technical Center NA
8:00 a.m.	Relationship between Carbon Monoxide and Particulate Matter Levels across a Range of Engine Technologies (2012-01-1346) David L. McKain, Scott Wayne, Nigel Clark, West Virginia Univ.	Simulation Process of the Heat Protection of a Full Vehicle (2012-01-0635) Heinrich Reister, Walter Bauer, Daimler AG		
8:20 a.m.	Speciation of Nitrogen Oxides in a Light Duty Diesel Engine During an EGR System Failure (2012-01-0876) Tim Nevius, Richard Rooney, Robert Zummer, Horiba Automotive Test Systems Corp.	Engine Room Lay-out Study for Fuel Efficiency and Thermal Performance (2012-01-0639) Seung-Jin Baek, Hyundai Motor Company; Byungcheon Lee, Jaehoon Han, Exa Corporation	Innovative Aluminum Titanate Based - Diesel Particulate Filter Having Asymmetric Hexagonal Cell Geometry (2012-01-0838) Kentaro Iwasaki, Sumitomo Chemical Co.Ltd.	
8:40 a.m.	Measurement of Automobile Exhaust N ₂ O in Continuous Dilute and in Sample Storage Bag by a Mid-IR Laser Spectroscopic Motor Exhaust Gas Analyzer (2012-01-0875) Montajir Rahman, Kenji Hara, Shigeru Nakatani, Horiba, Ltd.	Numerical Modeling of Vane Oil Pump with Variable Displacement (2012-01-0637) De Ming Wang, Hui Ding, Yu Jiang, Simerics Inc.; Xin Xiang, SLW Automotive	Performance Improvement of Diesel Particulate Filter by Layer Coating (2012-01-0842) Kazuki Nakamura, Ividen Co Ltd; Nickolasd Vlachos, Aerosol & Particle Technology Laboratory; Athanasios Konstandopoulos, CERTH/CPERI; Hidemasa Iwata, Ohno Kazushige, Ividen Co Ltd	
9:00 a.m.	On-Site Checks of the Particle Number Measurement Systems with Polydisperse Aerosol (2012-01-0873) Barouch Giechaskiel, Alexander Bergmann, AVL List GmbH, Austria	Exhaust System Manifold Development (2012-01-0643) Lakshmikanth Meda, Yan Shu, Martin Romzek, Eberspaecher North America Inc.	High Porosity DPF Design for Integrated SCR Functions (2012-01-0843) Akifumi Kawakami, NGK Insulators, Ltd.; Takashi Mizutani, Yukinari Shibagaki, Kazuya Yuuki, Hirofumi Sakamoto, Claus Vogt, NGK Insulators Ltd; Tatsuyuki Kuki, Wolfgang Heuss, Philipp Kattouah, Mikio Makino, NGK Europe GmbH	
9:20 a.m.	Analysis of Improved Combustion Characteristics and NO _x Emission of an SI-HCNG Engine (2012-01-0874) Heesik Yoo, Dongkyu Lee, Kang Huh, Pohang Univ of Science and Technology	Performances and Opportunities of an Engine Cooling System with a Double Circuit at Two Temperature Levels (2012-01-0638) Roberto Cipollone, Davide Di Battista, University of L'Aquila	Particle Oxidation Catalyst (POC [®]) - From Diesel To GDI - Studies on Particulate Number and Mass Efficiency (2012-01-0845) Toni Kinnunen, Pekka Matilainen, Ecocat Oy; Daniel Scheder, Werner Czika, Horiba Europe GmbH; David Waters, Gerald Russ, University of Applied Sciences Darmstadt	
9:40 a.m.	Analysis of Particulate Matter Sensor Signals (2012-01-0871) Dieter Bender, James C. Peyton Jones, Villanova University; Daniel Harshbarger, Cummins Inc.	Theoretical Analysis of Engine Waste Heat Recovery by the Combined Thermo-Generator and Organic Rankine Cycle System (2012-01-0636) Gequn Shu, Jian Zhao, Hua Tian, Haiqiao Wei, Xingyu Liang, Guopeng Yu, Lina Liu, State Key Laboratory of Engines	Porous Silicon Nitride Ceramics with High Performance for Diesel Exhaust After-Treatment System (2012-01-0849) Hiroaki Okano, Hiroshi Yamaguchi, Risa Shigenobu, Kubota Corporation; Akira Obuchi, Junko Uchisawa, Nat'l Institute of AIST	

Continued on next page

WEDNESDAY, APRIL 25 - MORNING
Technical and Business Sessions

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10:00 a.m.	Analysis of a Scooter Emission Behavior in Cold and Hot Conditions: Modelling and Experimental Investigations (2012-01-0881) Paolo Iodice, Adolfo Senatore, Università di Napoli	Application of Optimization Techniques to Powertrain Thermal Model (2012-01-0632) Katsuya Minami, Hiroshi Otsubo, Yusuke Nakai, Honda R&D Co., Ltd.	Soot and Ash Deposition Characteristics at the Catalyst-Substrate Interface and Intra-Layer Interactions in Aged Diesel Particulate Filters Illustrated using Focused Ion Beam (FIB) Milling (2012-01-0836) Carl Justin Kamp, Alexander Sappok, Victor Wong, Massachusetts Institute of Technology	An Economic and In-Service Emissions Analysis of Conventional, Hybrid and Electric Vehicles for Australian Driving Conditions (2012-01-0819) Rahul Sharma, Maxime Bessede, Chris Manzie, Michael Brear, Robert Crawford, Univ. of Melbourne
10:20 a.m.	Optical Analysis and Measurement of Crankcase Lubricant Oil Atomisation (2012-01-0882) Benjamin T. Johnson, Loughborough Univ.; Graham K. Hargrave, Benjamin A. Reid, Loughborough Univ.; Vivian J. Page, Stuart Wagstaff, Perkins Engines Co Ltd	Determination of Time Variant 1D-3D Temperature and Heat Transfer Distribution Inside the Cooling Jacket of a SI Engine Cooling System after Key-Off (2012-01-0642) Md. Hazrat Ali, Masjuki Hassan, Md. Kalam, Suh Chyn Pang, Liaquat Memon, Irfan Magami, University of Malaya	Soot Oxidation Characteristics of SiC Nanoparticle Membrane Filters (2012-01-0848) Keisuke Nakamura, Hiroshi Oki, Ryoko Sanui, Katsunori Hanamura, Tokyo Institute of Technology; Masamichi Tanaka, Nobuhiro Hidaka, Sumitomo Osaka Cement Co., Ltd.; Hiroaki Matsumoto, Hitachi High-Technologies Corporation.	Optimizing and Diversifying the Electric Range of Plug-in Hybrid Electric Vehicles for U.S. Drivers (2012-01-0817) Zhenhong Lin, Oak Ridge National Laboratory
10:40 a.m.	NMOG Emissions Characterizations and Estimation for Vehicles Using Ethanol-Blended Fuels (2012-01-0883) C. Scott Sluder, Brian H. West, Oak Ridge National Laboratory		Procedure Development and Experimental Study of Passive Particulate Matter Oxidation in a Diesel Catalyzed Particulate Filter (2012-01-0851) Chris Hutton, John Johnson, Jeffrey Naber, Jason Keith, Michigan Technological University	Optimization of Electric Vehicle Concepts Based on Customer-Relevant Characteristics (2012-01-0815) Elias Wiedemann, Technical University Munich; Jürgen Meurle, Audi AG; Markus Lienkamp, TU Muenchen
11:00 a.m.	Controlling Particulate Matter Emissions in Vehicles Using Different Strategies under the Heavy-Duty Test Cycle (2012-01-0885) Luis Miguel Oliveira, Dimitrios Savvidis, Mark Pecqueur Sr, KdG University-College		Non-destructive, Non-invasive Neutron Imaging of Soot, Ash and Washcoat Deposition in Particulate Filters. (Oral Only) Todd Toops, Hassina Bilheux, Sophie Voisin, Oak Ridge National Laboratory; Jens Gregor, University of Tennessee; Andrea Strzelec, Texas A&M Univ.	Recovering Energy from Shock Absorber Motion on Heavy Duty Commercial Vehicles (2012-01-0814) Jeffrey Mossberg, JACOBS V S; Zack Anderson, Levant Power Corporation; Clive Tucker, Levant Power Corporation; Johannes Schneider, Levant Power Corporation
11:20 a.m.				Exploiting the Benefits of the Electrification of a 4WD Pick-Up Vehicle (2012-01-0818) Jonathan Webb, Alfonso Escuer, IDIADA Automotive Technology; Ricardo Prado, METALSA SA de CV
				Sensitivity Study on the Design Methodology of an Electric Vehicle (Written Only -- No Oral Presentation) (2012-01-0820) Fabrice Le Berr, Abdenour Abdelli, Raouf Benlamine, IFP Energies nouvelles
	Planned by Exhaust Aftertreatment and Emissions Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00288 and SUB-TP-00010, and also individually. To purchase visit collections. sae.org	Planned by Thermal Management Activity / EMB Land and Sea Group The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00259 and SUB-TP-00008, and also individually. To purchase visit collections. sae.org	Planned by Exhaust Aftertreatment and Emissions Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00286 and SUB-TP-00010, and also individually. To purchase visit collections. sae.org	Planned by Sustainable Development Program Committee / Engineering Meetings Board

WEDNESDAY, APRIL 25 - AFTERNOON

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
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1:00 p.m.	Development of Delhi Driving Cycle: A Tool for Realistic Assessment of Exhaust Emissions from Passenger Cars in Delhi (2012-01-0877) Sachin Chugh, Prashant Kumar, M Muralidharan, Mukesh Kumar B, M Sithanathan, Anurag Gupta, Biswajit Basu, Ravinder Kumar Malhotra, Indian Oil Corporation Ltd., R&D Centre	Catalyzed Particulate Filter Passive Oxidation Study with ULSD and Biodiesel Blended Fuel (2012-01-0837) Kenneth Lee Shiel, Jeffrey Naber, John Johnson, Chris Hutton, Michigan Technological University	New Bottleneck Analysis Method from Industrializing View Point. - Application and verification in biomass energy utilization as a fuel- (Oral Only) Kyoichi Tange, Toyota Motor Corporation	Energy Efficient HVAC System with Spot Cooling in an Automobile - Design and CFD Analysis (2012-01-0641) Debashis Ghosh, Mingyu Wang, Delphi Automotive Systems; Edward Wolfe, Delphi Thermal Systems; Kuo-huey Chen, Shailendra Kaushik, Taeyoung Han, General Motors Company
1:20 p.m.	Analysis of Various Driving Parameters and Emissions for Passenger Cars Driven With and Without Stops at Intersections under Different Test Cycles (2012-01-0880) Dimitrios Savvidis, Karel de Grote University College; Hu Li, Gordon Andrews, University of Leeds; Christos Ioakimidis, Universidad de Deusto	Impact of Biodiesel on Particle Emissions and DPF Regeneration Management in a Euro5 Automotive Diesel Engine (2012-01-0839) Silvana Di Iorio, Carlo Beatrice, Chiara Guido, Istituto Motori CNR; Pierpaolo Napolitano, Università di Napoli Federico II; Alberto Vassallo, Claudio Ciaravino, General Motors Company	Quantifying the Life Cycle Water Consumption of a Passenger Vehicle (2012-01-0646) Bert Bras, Francisco Tejada, Jeff Yen, John Zullo, Tina Guldberg, Georgia Institute of Technology	Thermal Comfort Prediction and Validation in a Realistic Vehicle Thermal Environment (2012-01-0645) Kuo-huey Chen, Shailendra Kaushik, Taeyoung Han, General Motors Company; Debashis Ghosh, Mingyu Wang, Delphi Automotive Systems
1:40 p.m.	Impact of Ethanol Fuels on Regulated Tailpipe Emissions (2012-01-0872) Mahmoud K. Yassine, Morgan La Pan, Chrysler Group LLC	DPF's Regeneration Procedures and Emissions with RME Blend Fuels (2012-01-0844) Jan Czerwinski, Samuel Bürki, Peter Bonsack, Univ. of Applied Sciences Biel-Bienne; Andreas Mayer, TTM; Panayotis Dimopoulos Eggenschwiler, Adm Norbert Heeb, EMPA; Giovanni D'Urbano, Swiss Federal Office for the Environment; Sandra Hermle; Stephan Renz, Renz Consulting	A Forward-Looking Stochastic Fleet Assessment Model for Analyzing the Impact of Uncertainties on Light-Duty Vehicles Fuel Use and Emissions (2012-01-0647) Parisa Bastani, University of Cambridge-MIT; John B. Heywood, MIT; Chris Hope, University of Cambridge	A Multidisciplinary Numerical Modeling Tool Integrating CFD and Thermal System Simulation for Automotive HVAC System Design (2012-01-0644) Tao Ye, General Motors Company
2:00 p.m.	Emissions Certification Vehicle Cycles Based on Heavy Duty Engine Test Cycles (2012-01-0878) Morgan Andraea, Gary Salemme, Mahesh Kumar, Zhen Sun, Cummins Inc.	Metal Oxide Particle Emissions from Diesel and Petrol Engines (2012-01-0841) Andreas Mayer, TTM; Jan Czerwinski, Univ. of Applied Sciences Biel-Bienne; Markus Kasper, Matter Aerosol AG; Andrea Ulrich, EMPA; John J. Mooney, John J. Mooney LLC	Analytical Evaluation of OEM Wheel Combinations that Reduce Sustainable Efforts and Increase Automotive Fleet Operational Costs (2012-01-0648) Daniel Lamon, Federal Acquisition Services; Daming Zhang, California State University Fresno	Ventilation Characteristics of Modeled Compact Car Part 5 - Scaled Model Experiment for Heat Transfer Characteristics (2012-01-0634) Yoshiichi Ozeki, Asahi Glass Co Ltd; Hideaki Nagano, Tokyo City University; Takuya Kataoka, DENSO Corp; Hironao Iwase, Fuji Heavy Industries Ltd.; Hisafumi Doi, Mitsubishi Motors Corporation; Ryou Mizushima, Daihatsu Motor Co., Ltd.; Itsuhei Kohri, Tokyo City University; Shinsuke Kato, IIS, the University of Tokyo
2:20 p.m.	Investigation of Methods for Improved Exhaust Emissions Measurement of Plug-in Hybrid Electric Vehicles (2012-01-0884) Richard T. Rooney, Tim A. Nevius, Horiba Automotive Test Systems Corp.	Effect of DPF Design Parameters on Fuel Economy and Thermal Durability (2012-01-0847) Jianwen Li, Rahul Mital, General Motors Company	A General Method of Life Cycle Assessment (2012-01-0649) Shigeki Nitta, Yoshihisa Moriguchi, Mazda Motor Corp.	Ventilation Characteristics of Modeled Compact Car Part 6 - Numerical Analysis of Heat Transfer Characteristics by CRI (2012-01-0640) Hideaki Nagano, Tokyo City University; Minoru Inoue, Mazda Motor Corporation; Yoshiichi Ozeki, Asahi Glass Co Ltd; Weirong Zhang, The University of Tokyo; Yoshihisa Kitano, Kazuhiko Matsunaga, ISUZU MOTORS LIMITED; Shinsuke Kato, IIS, the University of Tokyo; Itsuhei Kohri, Tokyo City University

Continued on next page

WEDNESDAY, APRIL 25 - AFTERNOON Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
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2:40 p.m.	Transient Exhaust Gas Recirculation Ratio Measurement Utilizing Heated NDIR Method (2012-01-0886) Tomoshi Yoshimura, Masaru Miyai, Hiroshi Nakamura, Horiba, Ltd.	Discussion Break	Fuel Consumption Simulation Model for Transit Buses Based on Real Operating Condition to Assist Bus Electrification (2012-01-0651) Caixia Yang, Eric Bibeau, University of Manitoba; G Paul Zanetel, New Flyer Industries Inc.	New Evaluation Method of Transient and Non-Uniform Environment in a Passenger Compartment (2012-01-0633) Kenjiro Imai, Takuya Kataoka, Takafumi MASUDA, Tomohiro Inada, DENSO Corp
3:00 p.m.	Methods for Quantifying the Release of Vanadium from Engine Exhaust Aftertreatment Catalysts (2012-01-0887) Z. Gerald Liu, Nathan A. Ottinger, Christopher M. Creemeens, Cummins Emission Solutions		Life Cycle Assessment of Lightweight Noryl® GTX® Resin Fender and Its Comparison with Steel Fender (2012-01-0650) Anju Baroth, GE India Technology Centre; Sreepadaraj karanam, Robert McKay, SABIC Innovative Plastics	
	Vehicular Emission Performance Simulation (Written Only -- No Oral Presentation) (2012-01-1059) Jhun-Sou Lin, Mike Dong, Syed Ali, Mark Hipp, Ford Motor Co.; Carol Schnepfer, CD-adapco			
	Planned by Exhaust Aftertreatment and Emissions Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00288 and SUB-TP-00010, and also individually. To purchase visit collections.sae.org	Planned by Exhaust Aftertreatment and Emissions Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00286 and SUB-TP-00010, and also individually. To purchase visit collections.sae.org	Planned by Sustainable Development Program Committee / Engineering Meetings Board	Planned by Thermal Management Activity / EMB Land and Sea Group The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00259, and also individually. To purchase visit collections.sae.org

Technical Session Oral Evaluation Incentives

In an effort to collect more evaluation ratings for the technical session speakers, SAE will be holding daily drawings for anyone who completes an oral evaluation card distributed in technical session rooms. Simply complete the card, tear off the perforation with your name and contact number, and turn it in to the session moderator. Six (6) winners will be announced daily to receive \$25 gift certificates. Winners will be announced daily and posted in the technology lounges.

WEDNESDAY, APRIL 25 - AFTERNOON

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM		
	W2-62	O2-38	O2-37
	Exhaust Emission Control: SCR (Part 1 of 2) (PFL405) Papers cover the Selective Catalytic Reduction (SCR) process, in which a non-hydrocarbon reductant known as Diesel Exhaust Fluid (DEF) is injected to create ammonia which reacts with NOX and converts it into harmless Nitrogen. The topic includes various aspects of SCR technology such as different washcoats, two-way (SCR washcoat on DPF substrate), aging and poisoning impact on catalyst performance, importance of DEF injection and mixing and SCR modeling. 3:00 p.m. - 4:00 p.m. Organizers: Magdi Khair, Southwest Research Institute; Danan Dou, John Deere Product Engineering Center; Rahul Mital, General Motors Company; Minyong Zhou, Exova; Brad Adelman, Navistar Inc. Chairpersons: Brad Adelman, Navistar Inc Moderators: Danan Dou, John Deere Product Engineering Center	Chat with the Expert: Life Cycle Assessment and Environmental Product Declarations (SDPCHAT200) The use of Life Cycle Assessment as a tool for measuring the environmental performance of products and services is increasing rapidly worldwide. One of the drivers for this increase is the demand for environmental product declarations, the LCA based ecolabel. This chat will address this demand, global government requirements and other direct business drivers for these assessments. 4:00 p.m. - 5:00 p.m. Keynote Speakers: Rita Schenck, Institute for Environmental Research and Education	Chat with the Expert: Thermal Systems Modeling and Simulation (HXCHAT100) Chat with the Expert session on Thermal Systems Modeling and Simulation 4:00 p.m. - 5:00 p.m. Organizers: Ales Alajbegovic, Exa Corporation; Ramesh Kumar Goyal; Gursaran D. Mathur, CalsonicKansei North America Inc.; Kumar Srinivasan, Chrysler Group LLC Keynote Speakers: Richard Sun, Chrysler Group LLC
3:00 p.m.	Physico-Chemical Modeling of an Integrated SCR on DPF (SCR/DPF) System (2012-01-1083) Friedemann Schrade, Miles Brammer, Jochen Schaeffner, Kay Langeheinecke, Lutz Kraemer, IAV GmbH		
3:20 p.m.	On-Road Evaluation of an Integrated SCR and Continuously Regenerating Trap Exhaust System (2012-01-1088) David Kittelson, Winthrop Watts, Univ. of Minnesota - Twin Cities; Andrew Walker, Martyn Twigg, Johnson Matthey Plc		
3:40 p.m.	Tier 4 High Efficiency SCR for Agricultural Applications (2012-01-1087) Korneel De Rudder, Donaldson Europe Planned by Exhaust Aftertreatment and Emissions Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00286 and SUB-TP-00010, and also individually. To purchase visit collections. sae.org	Planned by Sustainable Development Program Committee / Engineering Meetings Board	

THURSDAY, APRIL 26 - MORNING

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	O2-37	W2-67	W2-62	W2-63
	End of Life Management: Reuse/Recycle/ Remanufacture (Part 1 of 2) (SDP119) This session reviews vehicle end-of-life issues including, parts reuse, parts remanufacturing for reuse, parts/materials recycling, and the technologies and processes associated with these activities. 8:00 a.m. - 10:40 a.m. Organizers: Mohamed El-Sayed, Kettering Univ.; Susan Sawyer-Beaulieu, Univ of Windsor; Jacob Hohn, RSR Technologies, Inc.; Richard Paul, LKQ Best Automotive Corp Chairpersons: Susan Sawyer-Beaulieu, Univ of Windsor; Jacob Hohn, RSR Technologies, Inc.; Richard Paul, LKQ Best Automotive Corp	Exhaust Emission Control: Modeling (Part 1 of 2) (PFL407) Papers for this session covering diesel engine exhaust aftertreatment system models as well as their validation and application. Technologies covered include DOC, HC Trap, DPF, LNT, SCR, ammonia oxidation catalysts, hybrid or combined catalysts, urea-water solution spray dynamics, and mixture non-uniformity. Modeling aspects range from fundamental, 3D models of individual components to system level simulation, optimization, and control. 8:00 a.m. - 11:00 a.m. Organizers: Maruthi Devarakonda, Pacific Northwest National Laboratory; Colin P. Garner, Loughborough Univ.; Thomas McKinley, Cummins Inc.; Vincenzo Mulone, Univ. di Roma Tor Vergata; Achuth Munnannur, Cummins; Cornelius Opris, Caterpillar Inc.	Exhaust Emission Control: SCR (Part 2 of 2) (PFL405) Papers for this session covering the Selective Catalytic Reduction (SCR) process, in which a non-hydrocarbon reductant known as Diesel Exhaust Fluid (DEF) is injected to create ammonia which reacts with NOx and converts it into harmless Nitrogen. The topic includes various aspects of SCR technology such as different washcoats, two-way (SCR) washcoat on DPF substrate), aging and poisoning impact on catalyst performance, importance of DEF injection and mixing and SCR modeling. 8:00 a.m. - 11:40 a.m. Organizers: Magdi Khair, Southwest Research Institute; Danan Dou, John Deere Product Engineering Center; Rahul Mital, General Motors Company; Brad Adelman, Navistar Inc.; Minyong Zhou, Exova Chairpersons: Rahul Mital, General Motors LLC Moderators: Brad Adelman, Navistar Inc	Exhaust Emission Control: System Integration and Durability (PFL401) Papers for this session covering various aspects of exhaust emissions system integration and durability, including the durability of particulate filters and exhaust catalysts (oxidation, reduction, and combinations thereof). It also includes mechanisms of performance degradation and possible mitigation strategies, data from field tests, analysis of aged catalysts and filters, laboratory and accelerated on-engine aging studies, and relevant experimental tools and methodology. 8:00 a.m. - 10:40 a.m. Organizers: Eric Corrigan, Corning Inc.; Pradeep Prasad, Aleksey Yezerets, Cummins Inc. Chairpersons: Pradeep Prasad, Cummins Inc.
8:00 a.m.	Battery Recycling: The Lead-Acid Benchmark (Oral Only) David Nisbet Wilson, International Lead Association	xD+1D Catalyst Simulation-A Numerical Study on the Impact of Pore Diffusion (2012-01-1296) Wilfried Edelbauer, Susanne Kutschi, Johann C. Wurzenberger, AVL LIST GmbH	Urea Quality Sensor Integration in Urea Supply Line / Urea Tank (2012-01-1086) Sachin Kadu, TATA Technologies Ltd; Harish gangwar, TATA Motors Ltd	The Effects of Biodiesel on the Performance and the Durability of Diesel Engine Active-DPF (2012-01-1089) Jau-Huai Lu, National Chung-Hsing Univ.; Yong-Yuan Ku, Ching-Fu Liao, Automotive Research and Testing Center
8:20 a.m.	A Comparison of Li-Ion Battery Recycling Options (Oral Only) Linda Gaines, John L. Sullivan, Argonne National Laboratory	The Micromechanics of Catalytic Soot Oxidation in Diesel Particulate Filters (2012-01-1288) Athanasios G. Konstandopoulos, Margaritis Kostoglou, CETH/CPERI and Aristotle University; Souzana Lorentzou, CETH/CPERI	SCR Deactivation Kinetics for Model-Based Control and Accelerated Aging Applications (2012-01-1077) Gordon J. Bartley, Christopher J. Chadwell, Theodore M. Kostek, Reggie Zhan, Southwest Research Institute	Advanced Exhaust Gas Thermal Management for Lowest Tailpipe Emissions - Combining Low Emission Engine and Electrically Heated Catalyst (2012-01-1090) Ulrich Pfahl, EMITEC Inc.; Axel Schatz, Roman Konieczny, EMITEC GmbH
8:40 a.m.	Recycling End of Life Batteries from Hybrid and Electric Vehicles (Oral Only) Todd Coy, Kinsbursky Brothers Supply Inc.	Modeling of Injected Diesel Fuel Conversion and Heat Release in Oxidation Catalyst: 3D-CFD & 1D Channels Approach (2012-01-1293) Jan Stepanek, Petr Koci, Institute of Chemical Technology, Prague; Mike Weaver, CD-adapco; Rainer Frey, Andre Overfeld, Hartmut Jakobs, Daimler AG	SCR Deactivation Study for OBD Applications (2012-01-1076) Gordon J. Bartley, Southwest Research Institute; Theodore Kostek, PACCAR Inc.	Electrically Heated Catalysts for Cold-Start Emissions in Diesel Aftertreatment (2012-01-1092) Chang Hwan Kim, Michael Paratore, Eugene Gonze, Charles Solbrig, Stuart Smith, General Motors Company
9:00 a.m.	Battery Recycling at Inmetco (Oral Only) Albert Hardies, INMETCO	On Using a CFD Based Global Kinetic Reaction Model to Simulate Catalyst Exotherm with Exhaust Fuel Dosing Device (Fuel Vaporizer) (2012-01-1290) W.U. Alex Leong, Ford Motor Company; Ismail H. Savci, Ford Otomotiv San A.S.; Andy Hatton, Jonathan Scott, Faurecia Emissions Control Technologies	Hydrothermal Aging Effects on NH3 Oxidation on a State of the Art Copper Zeolite Urea SCR Catalyst (Oral Only) Joshua L. Ratts, Robert D. Clayton, Thomas E. Paulson, Caterpillar Inc.	Sensitivity Analysis of Ash Packing and Distribution in Diesel Particulate Filters to Transient Changes in Exhaust Conditions (2012-01-1093) Alexander Sappok, Carl Kamp, Victor Wong, Massachusetts Institute of Technology
9:20 a.m.	Battery Recycling Technology (Oral Only) Joshua Montenegro, Jacob Hohn, Tim Ellis, RSR Technologies	Modeling and Analysis of Microwave Regeneration Process in Wall-Flow Diesel Particulate Filter (2012-01-1289) Yunqing Liu, Yuan Shen, Yi You, Geely Automotive Institute; Fuquan Zhao, Zhejiang Geely Holding Group; Jinke gong, Hunan University	Hydrocarbon Fouling of SCR During PCCI Combustion (2012-01-1080) Vitaly Y. Prikhodko, Josh A. Pihl, Sam A. Lewis, James E. Parks, Oak Ridge National Laboratory	Effect of Coolant Exposure on Diesel Exhaust Aftertreatment Performance (2012-01-1091) Yaritza M. López-De Jesús, Wassim Klink, Michael G. Cotton, Penelope Markatou, Johnson Matthey ECT; Alexandr Kozlov, John Deere & Co
9:40 a.m.	Identification of Transportation Battery Systems for Recycling (2012-01-0351) Todd F. Mackintosh, General Motors Company	Development and Validation of a Pt-Pd Diesel Oxidation Catalyst Model (2012-01-1286) Timothy C. Watling, Mehrdad Ahmadijad, Monica Tuijani, Åsa Johansson, Michael A.J. Paterson, Johnson Matthey, Emission Control Technologies	N ₂ O Formation and Mitigation in Diesel Aftertreatment Systems (2012-01-1085) Krishna Kamasamudram, Cary Henry, Neal Currier, Aleksey Yezerets, Cummins Inc.	Investigation of the Impact of Real-World Aging on Diesel Oxidation Catalysts (2012-01-1094) Junhui Li, Tamas Szailer, Ana Watts, Neal Currier, Aleksey Yezerets, Cummins Inc.
10:00 a.m.	Battery Recycling Interaction with Washington (2012-01-0352) John Howes, Redland Energy Group	Development of a Numerical Model to Predict the Impact of Phosphorus on Flow through Aftertreatment Components (2012-01-1299) Praveen Chavannavar, Caterpillar Inc	Brief Investigation of SCR High Temperature N ₂ O Production (2012-01-1082) Gordon J. Bartley, Christopher A. Sharp, Southwest Research Institute	Hydrocarbon Poisoning of Cu-Zeolite SCR Catalysts (2012-01-1096) Jin-Yong Luo, University of Waterloo; Aleksey Yezerets, Cary Henry, Cummins Inc.; Howard Hess, Johnson Matthey Inc; Krishna Kamasamudram, Cummins Inc; Hai-Ying Chen, Johnson Matthey Inc; William S. Epling, Univ. of Waterloo

THURSDAY, APRIL 26 - MORNING

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	O2-37	W2-67	W2-62	W2-63
	End of Life Management: Reuse/ Recycle/ Remanufacture (Part 1 of 2) (SDP119) This session reviews vehicle end-of-life issues including, parts reuse, parts remanufacturing for reuse, parts/materials recycling, and the technologies and processes associated with these activities. 8:00 a.m. - 10:40 a.m. Organizers: Mohamed El-Sayed, Kettering Univ.; Susan Sawyer-Beaulieu, Univ of Windsor; Jacob Hohn, RSR Technologies, Inc.; Richard Paul, LKQ Best Automotive Corp Chairpersons: Susan Sawyer-Beaulieu, Univ of Windsor; Jacob Hohn, RSR Technologies, Inc.; Richard Paul, LKQ Best Automotive Corp	Exhaust Emission Control: Modeling (Part 1 of 2) (PFL407) Papers for this session covering diesel engine exhaust aftertreatment system models as well as their validation and application. Technologies covered include DOC, HC Trap, DPF, LNT, SCR, ammonia oxidation catalysts, hybrid or combined catalysts, urea-water solution spray dynamics, and mixture non-uniformity. Modeling aspects range from fundamental, 3D models of individual components to system level simulation, optimization, and control. 8:00 a.m. - 11:00 a.m. Organizers: Maruthi Devarakonda, Pacific Northwest National Laboratory; Colin P. Garner, Loughborough Univ.; Thomas McKinley, Cummins Inc.; Vincenzo Mulone, Univ. di Roma Tor Vergata; Achuth Munnannur, Cummins; Cornelius Opris, Caterpillar Inc.	Exhaust Emission Control: SCR (Part 2 of 2) (PFL405) Papers for this session covering the Selective Catalytic Reduction (SCR) process, in which a non-hydrocarbon reductant known as Diesel Exhaust Fluid (DEF) is injected to create ammonia which reacts with NOx and converts it into harmless Nitrogen. The topic includes various aspects of SCR technology such as different washcoats, two-way (SCR washcoat on DPF substrate), aging and poisoning impact on catalyst performance, importance of DEF injection and mixing and SCR modeling. 8:00 a.m. - 11:40 a.m. Organizers: Magdi Khair, Southwest Research Institute; Danan Dou, John Deere Product Engineering Center; Rahul Mital, General Motors Company; Brad Adelman, Navistar Inc.; Minyong Zhou, Exova Chairpersons: Rahul Mital, General Motors LLC Moderators: Brad Adelman, Navistar Inc	Exhaust Emission Control: System Integration and Durability (PFL401) Papers for this session covering various aspects of exhaust emissions system integration and durability, including the durability of particulate filters and exhaust catalysts (oxidation, reduction, and combinations thereof). It also includes mechanisms of performance degradation and possible mitigation strategies, data from field tests, analysis of aged catalysts and filters, laboratory and accelerated on-engine aging studies, and relevant experimental tools and methodology. 8:00 a.m. - 10:40 a.m. Organizers: Eric Corrigan, Corning Inc.; Pradeep Prasad, Aleksey Yezerets, Cummins Inc. Chairpersons: Pradeep Prasad, Cummins Inc.
10:20 a.m.	Solving the Environmental and Transportation Regulatory Challenges Of Large Format Lithium Ion Batteries (Oral Only) George Kerchner, PRBA	Modeling Species Inhibition and Competitive Adsorption in Urea-SCR Catalysts (2012-01-1295) Maruthi Devarakonda, Russell Tonkyn, Jong Lee, Pacific Northwest National Laboratory	Newly Developed Cordierite Honeycomb Substrate for SCR Coating Realizing System Compactness and Low Backpressure (2012-01-1079) Shogo Hirose, Yukio Miyairi, Frank Katsube, Kazuya Yuuki, Hirofumi Sakamoto, Claus Vogt, NGK Insulators, Ltd.; Shuji Fujii, NGK Automotive Ceramics USA, Inc	Investigation Regarding the Influence of a Catalytic Combustion Chamber Coating on Gasoline Combustion Characteristics, Emission Formation and Engine Efficiency (2012-01-1097) Patrick Haenel, Henning Kleeberg, Dean Tomazic, FEV Inc; Shawn Dolan, Henkel Corp
10:40 a.m.		Electronic and Atomistic Roles of Cordierite Substrate in Sintering of Washcoated Catalysts for Automotive Exhaust Gas Emissions Control: Multi-scale Computational Chemistry Approach based on Ultra-Accelerated Quantum Chemical Molecular Dynamics Method (2012-01-1292) Akira Miyamoto, Ryo Nagumo, Ai Suzuki, Ryuji Miura, Hideyuki Tsuboi, Nozomu Hatakeyama, Hiromitsu Takaba, Sumio Kozawa, Tohoku Univ.; Athonu Chatterjee, Akira Okada, Corning Inc.	Development of a 3rd Generation SCR NH ₃ -Direct Dosing System for Highly Efficient DeNOx (2012-01-1078) Christian Gerhart, Hans-Peter Krimmer, Benedikt Hammer, AlzChem Trostberg GmbH; Bernd Schulz, NIGU Chemie Waldkraiburg; Oliver Kröcher, Daniel Peitz, Paul Scherrer Institut; Thomas Sattelmayer, Plamen Toshev, Georg Wachtmeister, Alexander Heubach, Technical University Munich; Eberhard Jacob, Emissionskonzepte	BREAK
11:00 a.m.			Axially Resolved Performance of Cu-Zeolite SCR Catalysts (2012-01-1084) Cary Henry, Krishna Kamasamudram, Neal Currier, Aleksey Yezerets, Cummins Inc; Mario Castagnola, Hai-Ying Chen, Johnson Matthey Inc	
11:20 a.m.			Comparison Between Air-Assisted and Airless Urea Spray for Diesel SCR System by PDA and CFD (2012-01-1081) Lun Hua, Yan-guang Zhao, Jing Hu, Tang Tao, Shi-Jin Shuai, Tsinghua Univ.	
		Application of Artificial Neural Networks to Aftertreatment Thermal Modeling (Written Only -- No Oral Presentation) (2012-01-1302) John Nji Chi, Cummins Inc.		
		Exhaust-Aftertreatment Integrated, DoE-based Calibration (Written Only -- No Oral Presentation) (2012-01-1303) Yves Rosefort, Andreas Wiartalla, FEV GmbH; Henry Kwee, Stefan Pischinger, Institute for Combustion Engines, RWTH		
	Planned by Sustainable Development Program Committee / Engineering Meetings Board	Planned by Exhaust Aftertreatment and Emissions Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00287 and SUB-TP-00010, and also individually. To purchase visit collections.sae.org	Planned by Exhaust Aftertreatment and Emissions Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00286 and SUB-TP-00010, and also individually. To purchase visit collections.sae.org	Planned by Exhaust Aftertreatment and Emissions Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00286 and SUB-TP-00010, and also individually. To purchase visit collections.sae.org

THURSDAY, APRIL 26 - MORNING

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	O2-38	O2-38	O2-35/36	W2-63
	Sustainable Materials and Components (SDP111) This session delves in to various areas surrounding topics that related to a material or component's ability to be considered sustainable. These topics include materials recycling methodologies and technologies, remanufacturing and serviceability, materials or components reuse, advanced battery recycling, end of life vehicle management, as well as substances of concern and volatile organic compound reduction and elimination. 8:00 a.m. - 10:00 a.m. Organizers: Deepak Gupta, Southeast Missouri State Univ.; Michael L. Santella, Oak Ridge National Laboratory; Bhaskaran Gopalakrishnan, West Virginia Univ Chairpersons: Deepak Gupta, Southeast Missouri State Univ; Bhaskaran Gopalakrishnan, West Virginia Univ Moderators: Deepak Gupta, Southeast Missouri State Univ; Bhaskaran Gopalakrishnan, West Virginia Univ	Sustainable and Energy Efficient Manufacturing (SDP109) Specifically the session looks to address developments in energy efficient manufacturing relevant to the automotive industry. Specifically it will focus on examining emerging energy efficient manufacturing technologies, as well as, best practices for established manufacturing methods. Additionally, the session examines innovative design and modeling techniques relevant to energy systems employed in automotive manufacturing. 8:00 a.m. - 10:20 a.m. Organizers: Deepak Gupta, Southeast Missouri State Univ.; Bhaskaran Gopalakrishnan, West Virginia Univ.; Antoinette Stein, IGC; Sujit Das, Oak Ridge National Laboratory Chairpersons: Deepak Gupta, Southeast Missouri State Univ; Bhaskaran Gopalakrishnan, Subodh Chaudhari, West Virginia Univ	Thermal Systems Components (HX101) This session features components used for thermal management. The papers address design, application and systems related topics. 8:00 a.m. - 11:00 a.m. Organizers: Alaa El-Sharkawy, Chrysler Group LLC; Ronald Semel, General Motors	Gaseous Engine Emissions (PFL411) Papers for this session on the general topic of combustion engine gaseous emissions (regulated and non-regulated). This includes hydrocarbon species production over aftertreatment devices as a result of changes in fuel specification and the inclusion of bio derived components, specific NOX species production over catalytic devices, well to wheels CO2 production for alternative technologies and consideration of secondary emissions production (slip) as a result of aftertreatment. 11:00 a.m. - 11:40 a.m. Organizers: A. Siddiq Khan, ACEEE; Amanda Lea-Langton, Univ. of Leeds Chairpersons: Siddiq Khan, ACEEE
8:00 a.m.	Recycling of Used Up Crankshaft Grinding Wheels (2012-01-1060) Surendra Datar, Tata Motors, Ltd.	Technical Keynote: Sustainable Manufacturing - Reducing Carbon Footprints and Environmental Impacts (Oral Only) Tom Murray, US Environmental Protection Agency	Technical Keynote: Air Cooled Heat Exchangers - Past, Present and Future (Oral Only) Arif Khan, API Heat Transfer Inc.	
8:20 a.m.	Environmental Implications of Recycling Scrap Tire Material into Ultra Fine Rubber Powder (2012-01-1051) Bert Bras, Tina Guldborg, Georgia Institute of Technology		Two-Phase Flow Boiling Heat Transfer Coefficients and Pressure Gradients for HFO-1234yf (2012-01-1047) Gursaran D. Mathur, CalsonicKansei North America Inc.	
8:40 a.m.	An Assessment of the Rare Earth Element Content of Conventional and Electric Vehicles (2012-01-1061) Elisa Alonso, Massachusetts Institute of Technology; Timothy Wallington, Andrew Sherman, Mark Everson, Ford Motor Co; Frank Field, Richard Roth, Randolph Kirchain, Massachusetts Institute of Technology	Analysis of Compressed Air and Process Heating Systems – A Case Study from Automotive Parts Manufacturer in Mexico (2012-01-0323) Bhaskaran Gopalakrishnan, West Virginia Univ.; Deepak Gupta, Southeast Missouri State Univ.; Afif Bitar, AAM	SAE 2012 - High Efficiency Subcool Condenser (2012-01-1046) Markus Wawzyniak, Behr GmbH & Co. KG	
9:00 a.m.	Thin Film and Vacuum Technology for Advanced Automotive Assemblies (2012-01-1055) David Mount, ULVAC Japan, Ltd.	DOE's Save Energy Now Assessments at the Automotive and Supportive Industries in the Supply Chain - Lessons Learned and Results from Over 100 Assessments Conducted in 2006 – 2011 (Oral Only) Sachin Uttamrao Nimbalkar, Nasr E. Alkadi, Mahabir Bhandari, Oak Ridge National Laboratory	Evaporator with Integrated Ejector for Automotive Cabin Cooling (2012-01-1048) Bradley R. Brodie, DENSO International America Inc.; Yoshiaki Takano, Mika Gocho, DENSO Corp.	
9:20 a.m.	Advancing Sustainability Considerations in Early Stage Vehicle Product Design (Oral Only) Manish Mehta, National Center for Mfg Sciences	Game Changing Energy-Efficient Technologies In US Auto Industry (Oral Only) Nasr E. Alkadi, Sachin Uttamrao Nimbalkar, Oak Ridge National Laboratory	Unitary HPAC System (2012-01-1050) Carrie Kowsky, Edward Wolfe, Lindsey Leitzel, Frederick Oddi, Delphi Thermal Systems	
9:40 a.m.	Technical Keynote: Energy Efficiency and Sustainability for Productivity (Oral Only) Afif Bitar, AAM	Efficiency Improvements for Compressed Air Systems (2012-01-0327) Frank Leonard Barringer III, Keith A. Woodbury, The University of Alabama; Brian Middleton, Johnson Controls Inc.	The Cooling Performances Evaluation of Nanofluids in a Compact Heat Exchanger (2012-01-1045) Gabriela Huminic, Angel Huminic, Transilvania University	
10:00 a.m.		Energy Efficient Mechanical Press and Hydraulic System Operation (2012-01-0326) Jesse A. Monn, Timothy Sullivan Raffio, Kelly Kissock, University of Dayton	Transient Thermal Analysis of Diesel Fuel Systems (2012-01-1049) Alaa El-Sharkawy, Chrysler Group LLC	

THURSDAY, APRIL 26 - MORNING

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	O2-38	O2-38	O2-35/36	W2-63
	Sustainable Materials and Components (SDP111) This session delves in to various areas surrounding topics that related to a material or component's ability to be considered sustainable. These topics include materials recycling methodologies and technologies, remanufacturing and serviceability, materials or components reuse, advanced battery recycling, end of life vehicle management, as well as substances of concern and volatile organic compound reduction and elimination. 8:00 a.m. - 10:00 a.m. Organizers: Deepak Gupta, Southeast Missouri State Univ.; Michael L. Santella, Oak Ridge National Laboratory; Bhaskaran Gopalakrishnan, West Virginia Univ Chairpersons: Deepak Gupta, Southeast Missouri State Univ; Bhaskaran Gopalakrishnan, West Virginia Univ Moderators: Deepak Gupta, Southeast Missouri State Univ; Bhaskaran Gopalakrishnan, West Virginia Univ	Sustainable and Energy Efficient Manufacturing (SDP109) Specifically the session looks to address developments in energy efficient manufacturing relevant to the automotive industry. Specifically it will focus on examining emerging energy efficient manufacturing technologies, as well as, best practices for established manufacturing methods. Additionally, the session examines innovative design and modeling techniques relevant to energy systems employed in automotive manufacturing. 8:00 a.m. - 10:20 a.m. Organizers: Deepak Gupta, Southeast Missouri State Univ.; Bhaskaran Gopalakrishnan, West Virginia Univ.; Antoinette Stein, IGC; Sujit Das, Oak Ridge National Laboratory Chairpersons: Deepak Gupta, Southeast Missouri State Univ; Bhaskaran Gopalakrishnan, Subodh Chaudhari, West Virginia Univ	Thermal Systems Components (HX101) This session features components used for thermal management. The papers address design, application and systems related topics. 8:00 a.m. - 11:00 a.m. Organizers: Alaa El-Sharkawy, Chrysler Group LLC; Ronald Semel, General Motors	Gaseous Engine Emissions (PFL411) Papers for this session on the general topic of combustion engine gaseous emissions (regulated and non-regulated). This includes hydrocarbon species production over aftertreatment devices as a result of changes in fuel specification and the inclusion of bio derived components, specific NOX species production over catalytic devices, well to wheels CO2 production for alternative technologies and consideration of secondary emissions production (slip) as a result of aftertreatment. 11:00 a.m. - 11:40 a.m. Organizers: A. Siddiq Khan, ACEEE; Amanda Lea-Langton, Univ. of Leeds Chairpersons: Siddiq Khan, ACEEE
10:20 a.m.			Visco Coolant Pump - Demand-Based Flow Rate Control (2012-01-1043) Gerold Schultheiss, Simon Edwards, Matthias Banzhaf, Behr GmbH & Co. KG; Thomas Mersch, Behr America Inc	
10:40 a.m.			Thermal Management in Engine Compartment for Efficient Working of the Intercooler on a Rear Engine Vehicle (2012-01-1044) Nilesh Shridhar Mirajkar, Rajesh Adhikarath Tharayi, Tata Motors Ltd	
11:00 a.m.				N2O Formation Pathways During the Regeneration of Lean NOx Trap (Oral Only) Petr Koci, Sarka Bartova, Milos Marek, Institute of Chemical Technology, Prague; Josh Pihl, Mi-Young Kim, Jae-Soon Choi, William Partridge, Oak Ridge National Laboratory
11:20 a.m.				A Comparison of Ammonia Emission Factors from Light-Duty Vehicles Operating on Gasoline, Liquefied Petroleum Gas (LPG) and Compressed Natural Gas (CNG) (2012-01-1095) Piotr Bielaczyc, Andrzej Szczotka, Antoni Swiatek, Joseph Woodburn, BOSMAL Automotive R&D Institute Ltd.
				An Experimental Investigation on Regulated and Unregulated Emissions from Four 4-Stroke Gasoline-Powered Motorcycle (Written Only -- No Oral Presentation) (2012-01-1098) Renato Pentead, PK Consulting; Luiz Daemme, Instituto de Tecnologia para Desenvolvm; Tadeu Melo, Petrobras
	Planned by Sustainable Development Program Committee / Engineering Meetings Board	Planned by Sustainable Development Program Committee / Engineering Meetings Board	Planned by Thermal Management Activity / EMB Land and Sea Group	Planned by Exhaust Aftertreatment and Emissions Committee / Powertrain Fuels and Lubricants Activity

THURSDAY, APRIL 26 - AFTERNOON

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	W2-62	O2-37	O2-35/36	W2-67
	Advanced Catalysts and Substrates (PFL400) Papers are invited for this session covering the systems engineering experience required to achieve ultra-low emission levels on light-duty vehicles. Emission system component topics for this session include the development of advanced three-way catalysts, the development of NOX control strategies for gasoline lean burn engines, the application of high cell density substrates to advanced emission systems, and the integration of these components into full vehicle emission systems. 1:00 p.m. - 3:40 p.m. Organizers: Douglas Ball, Umicore Autocat USA Inc.; Rasto Brezny, Manufacturers of Emission Controls Assoc.; Ronald Heck, RMH Consulting; Joseph E. Kubsh, Manufacturers of Emission Controls Assoc. Chairpersons: Joseph Kubsh, Rasto Brezny, Manufacturers of Emission Controls Assoc	End of Life Management: Reuse/ Recycle/ Remanufacture (Part 2 of 2) (SDP119) This session reviews vehicle end-of-life issues including, parts reuse, parts remanufacturing for reuse, parts/materials recycling, and the technologies and processes associated with these activities. 1:00 p.m. - 3:40 p.m. Organizers: Mohamed El-Sayed, Kettering Univ.; Susan Sawyer-Beaulieu, Univ of Windsor; Jacob Hohn, RSR Technologies, Inc.; Richard Paul, LKQ Best Automotive Corp Chairpersons: Susan Sawyer-Beaulieu, Univ of Windsor; Jacob Hohn, RSR Technologies, Inc.; Richard Paul, LKQ Best Automotive Corp	Energy Efficiency of Thermal Systems (HX103) Proper thermal management can significantly contribute to overall system energy efficiency. This session highlights the latest developments in thermal management energy efficiency. 1:00 p.m. - 3:40 p.m. Organizers: Ronald Semel, General Motors; Ramesh Kumar Goyal; Gursaran D. Mathur, CalsonicKansei North America Inc.; Pankaj Mahajan, Chrysler Group	Exhaust Emission Control: Modeling (Part 2 of 2) (PFL407) Papers are invited for this session covering diesel engine exhaust aftertreatment system models as well as their validation and application. Technologies covered include DOC, HC Trap, DPF, LNT, SCR, ammonia oxidation catalysts, hybrid or combined catalysts, urea-water solution spray dynamics, and mixture non-uniformity. Modeling aspects range from fundamental, 3D models of individual components to system level simulation, optimization, and control. 1:00 p.m. - 3:40 p.m. Organizers: Maruthi Devarakonda, Pacific Northwest National Laboratory; Colin P. Garner, Loughborough Univ.; Thomas McKinley, Cummins Inc.; Vincenzo Mulone, Univ. di Roma Tor Vergata; Achuth Munnannur, Cummins; Cornelius Opris, Caterpillar Inc.
1:00 p.m.	The Effects of Catalytic Converter Location and Palladium Loading on Tailpipe Emissions (2012-01-1247) Michael Zammit, Jeffrey Wuttke, Chrysler Group LLC; Pramod Ravindran, Steven Aaltonen, BASF Corp	Hybrid Electric Vehicle Batteries: The Next Challenge for Automotive Recyclers (Oral Only) Richard T. Paul, LKQ Best Automotive Corp.	Technical Keynote: Pathways to improved fuel consumption (Oral Only) John J. Kasab, Ricardo Inc.	Modeling of Exhaust Gas Treatment for Stationary Applications (2012-01-1300) Henry Pong, James Wallace, Pierre E. Sullivan, Univ. of Toronto
1:20 p.m.	High-efficiency NOx Trap Catalyst with Highly Dispersed Precious Metal for Low Precious Metal Loading (2012-01-1246) Katsuo Suga, Tetsuro Naito, Yasunari Hanaki, Masanori Nakamura, Kazuyuki Shiratori, Yoshiaki Hiramoto, Yoshiaki Tanaka, Nissan Motor Company Ltd.	A Techno-Economic Analysis of PEV Battery Second Use: Repurposed-Battery Selling Price and Commercial and Industrial End-User Value (2012-01-0349) Jeremy S. Neubauer, Ahmad Pesaran, National Renewable Energy Laboratory; Brett Williams, University of California, Berkeley; Mike Ferry, California Center for Sustainable Energy; Jim Eyer, E&I Consulting	Development of an Innovative Energy Efficient Compact Cooling System "SLIM" (2012-01-1201) Gursaran D. Mathur, CalsonicKansei North America Inc.; Junichiro Hara, Mitsuru Iwasaki, Yuichi Meguriya, Calsonic Kansei Corp.	Numerical Modeling of the Impinging Process of Urea-Water Solution Spray on the Heated Walls of SCR Systems (2012-01-1301) Ehab Abu-Ramadan, Univ. of Waterloo; Kaushik Saha, Xianguo Li, Univ of Waterloo
1:40 p.m.	A Physically-Based, Lumped-Parameter Model of an Electrically-Heated Three-Way Catalytic Converter (2012-01-1240) Beth Bezaire, Shawn Midlam-Mohler, Ohio State University	Repurposing Batteries of Plug-In Electric Vehicles to Support Renewable Energy Penetration in the Electric Grid (2012-01-0348) Shahab Shokrzadeh, Eric Bibeau, University of Manitoba	Waste Heat Recovery: The Next Challenge for Commercial Vehicle Thermomanagement (2012-01-1205) Simon Edwards, Jochen Eitel, Eberhard Pantow, Peter Geskes, Rainer Lutz, Behr GmbH & Co. KG; John Tepas, Behr Thermal Systems Inc	Thermal and Fluid Dynamic Considerations in Aftertreatment System Design for SCR Solid Deposit Mitigation (2012-01-1287) Achuth Munnannur, Mihai Chiruta, Z Gerald Liu, Cummins Emission Solutions
2:00 p.m.	Development and Demonstration of a Low Emissions Four-Stroke Outboard Marine Engine Utilizing Catalyst Technology (2012-01-1243) Jeffrey Broman, Mercury Marine	A National Approach to the Environmental Management of End-of-life Vehicles in Canada (Oral Only) Steve R. Fletcher	Comparison of Working Fluids in Both Subcritical and Supercritical Rankine Cycles for Waste-Heat Recovery Systems in Heavy-Duty Vehicles (2012-01-1200) Gunnar Latz, Sven Andersson, Karin Munch, Chalmers Univ of Technology	Effects of Various Model Parameters in the Simulation of a Diesel SCR System (2012-01-1297) Sudhakar Das, Kaushik Das, Zainal Abidin, Darius Mehta, Southwest Research Institute
2:20 p.m.	Development of Advanced and Low PGM TWC System for LEV2 PZ EV and LEV3 SULEV30 (2012-01-1242) Yoshiaki Matsuzono, Kei kuroki, Tomohiro Nishi, Norihiko Suzuki, Honda R&D Co Ltd; Takashi Yamada, Tomotaka Hirota, Geng Zhang, Johnson Matthey Japan Inc	Eliminating end-of-life and enhancing sustainability offerings for manufacturers, OEMs and suppliers through the use of cradle-to-cradle materials (Oral Only) Michael James Savoni, GolinHarris	Improved Energy Management Using Engine Compartment Encapsulation and Grille Shutter Control (2012-01-1203) Rashad Mustafa, IAE, TU Braunschweig; Mirko Schulze, IVB, TU Braunschweig; Peter Elits, Technische Universität Braunschweig; Ferit Küçükay; Tobias Jaekel, Christoph Lund, Volkswagen AG	Impact of the Turbulence Model and Numerical Approach on the Prediction of the Ammonia Homogenization in an Automotive SCR System (2012-01-1291) Simon Fischer, Rene Bitto, Thomas Lauer, Vienna University of Technology; Christian Krenn, Johannes Tauer, Gunther Pessl, BMW Motoren GmbH Steyr
2:40 p.m.	Cold Start Calibration of Current PZEV Vehicles and the Impact of LEV-III Emission Regulations (2012-01-1245) Douglas Ball, David Moser, Umicore Autocat USA Inc.	Extracting the "Mines on Wheels," An Important Contribution to Sustainability (2012-01-0350) Mark Caffarey, Umicore USA Inc.; Christina Meskers, Thierry Van Kerckhoven, Umicore Precious Metals Refining	Advanced Dual Level Vehicle Heat Rejection System for Passenger Cars (2012-01-1204) Carloandrea Malvicino, Fausto Di Sciullo, Walter Ferraris, Centro Ricerche Fiat S.C.p.A.; Francesco Vestrelli, Fabrizio Beltramelli, Fiat Group Automobiles S.p.A.	Modeling the Interactions Of Soot and SCR Reactions in Advanced DPF Technologies with Non-homogeneous Wall Structure (2012-01-1298) Grigorios C. Koltsakis, Thomas Bollerhoff, Zissis Samaras, Aristotle University Thessaloniki; Ioannis Markomanolakis, Exothermia SA

Continued on next page

THURSDAY, APRIL 26 - AFTERNOON Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	W2-62	O2-37	O2-35/36	W2-67
	Advanced Catalysts and Substrates (PFL400) Papers are invited for this session covering the systems engineering experience required to achieve ultra-low emission levels on light-duty vehicles. Emission system component topics for this session include the development of advanced three-way catalysts, the development of NOX control strategies for gasoline lean burn engines, the application of high cell density substrates to advanced emission systems, and the integration of these components into full vehicle emission systems. 1:00 p.m. - 3:40 p.m. Organizers: Douglas Ball, Umicore Autocat USA Inc.; Rasto Brezny, Manufacturers of Emission Controls Assoc.; Ronald Heck, RMH Consulting; Joseph E. Kubsh, Manufacturers of Emission Controls Assoc. Chairpersons: Joseph Kubsh, Rasto Brezny, Manufacturers of Emission Controls Assoc.	End of Life Management: Reuse/ Recycle/ Remanufacture (Part 2 of 2) (SDP119) This session reviews vehicle end-of-life issues including, parts reuse, parts remanufacturing for reuse, parts/materials recycling, and the technologies and processes associated with these activities. 1:00 p.m. - 3:40 p.m. Organizers: Mohamed El-Sayed, Kettering Univ.; Susan Sawyer-Beaulieu, Univ of Windsor; Jacob Hohn, RSR Technologies, Inc.; Richard Paul, LKQ Best Automotive Corp Chairpersons: Susan Sawyer-Beaulieu, Univ of Windsor; Jacob Hohn, RSR Technologies, Inc.; Richard Paul, LKQ Best Automotive Corp	Energy Efficiency of Thermal Systems (HX103) Proper thermal management can significantly contribute to overall system energy efficiency. This session highlights the latest developments in thermal management energy efficiency. 1:00 p.m. - 3:40 p.m. Organizers: Ronald Semel, General Motors; Ramesh Kumar Goyal; Gursaran D. Mathur, CalsonicKansei North America Inc.; Pankaj Mahajan, Chrysler Group	Exhaust Emission Control: Modeling (Part 2 of 2) (PFL407) Papers are invited for this session covering diesel engine exhaust aftertreatment system models as well as their validation and application. Technologies covered include DOC, HC Trap, DPF, LNT, SCR, ammonia oxidation catalysts, hybrid or combined catalysts, urea-water solution spray dynamics, and mixture non-uniformity. Modeling aspects range from fundamental, 3D models of individual components to system level simulation, optimization, and control. 1:00 p.m. - 3:40 p.m. Organizers: Maruthi Devarakonda, Pacific Northwest National Laboratory; Colin P. Garner, Loughborough Univ.; Thomas McKinley, Cummins Inc.; Vincenzo Mulone, Univ. di Roma Tor Vergata; Achuthi Munnannur, Cummins; Cornelius Opris, Caterpillar Inc.
3:00 p.m.	Potential of a Low Pressure Drop Filter Concept for Direct Injection Gasoline Engines to Reduce Particulate Number Emission (2012-01-1241) Takehide Shimoda, Yoshitaka Ito, Chika Saito, Takahiko Nakatani, Yukinari Shibagaki, Kazuya Yuuki, Hirofumi Sakamoto, Claus Vogt, NGK Insulators Ltd; Tasuku Matsumoto, Yasuyuki Furuta, Wolfgang Heuss, Philipp Kattouah, Mikio Makino, NGK Europe GmbH	Remanufactured Products: A New Business Model For Light-Vehicle OEMs (2012-01-0353) Ron Giuntini, Giuntini & Company Inc.	A/C Cycle Power Recovery Method (2012-01-1202) Ronald S. Eisenhour, Nissan Technical Center North America, Inc.	Modeling of Dual Layer Ammonia Slip Catalysts (ASC) (2012-01-1294) Balaji Sukumar, Jianguo Dai, Asa Johansson, Penelope Markatou, Johnson Matthey ECT; Mehrdad Ahmadienejad, Timothy Watling, Johnson Matthey Technology Centre; Bhargav Ranganath, Abhijeet Nande, Tamas Szailer, Cummins Inc
3:20 p.m.	Application of Catalyzed Gasoline Particulate Filters to GDI Vehicles (2012-01-1244) Joerg Michael Richter, Raoul Klingmann, Stephanie Spiess, Ka-Fai Wong, Umicore Planned by Exhaust Aftertreatment and Emissions Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, SUB-TP-00010, and also individually. To purchase visit collections.sae.org	End-of-Life Vehicles (ELVs): Gasoline Drainage Process (Oral Only) Mohit Garg, Veronica Velazquez, Chhavi Dhankar, Univ. of Windsor Planned by Sustainable Development Program Committee / Engineering Meetings Board The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00294, and also individually. To purchase visit collections.sae.org	Effect of Glazing Thermal Conductivity on Cabin Soak Temperature (2012-01-1207) Steven Gasworth, SABIC Innovative Plastics; Triloka Tankala, GE India Technology Center Pvt Ltd Planned by Thermal Management Activity / EMB Land and Sea Group	Simulation of Catalytic Oxidation and Selective Catalytic NOx Reduction in Lean-Exhaust Hybrid Vehicles (2012-01-1304) Zhiming Gao, C. Stuart Daw, V. Kalyana Chakravarthy, Oak Ridge National Laboratory Planned by Exhaust Aftertreatment and Emissions Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00287 and SUB-TP-00010, and also individually. To purchase visit collections.sae.org

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THURSDAY, APRIL 26 - AFTERNOON
Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM	
	W2-63	W2-63
	In-Use and On-Board Emissions Measurement (PFL410) Papers are invited for this session on engine emissions measurement from an in-use and OBD perspective. This covers data collection during real-world operation, including various advanced analysis techniques to report and determine emissions levels under in-use operations. It also covers the topics related to the on-board detection of emissions for control of aftertreatment devices and to ensure continued functionality of emissions compliance strategies. 1:00 p.m. - 2:20 p.m. Organizers: Shouxian Ren, General Motors Company; Hui Xu, Cummins Chairpersons: Hui Xu, Cummins	Exhaust Emission Control: Particle Filter Substrates (PFL406) Papers are presented in this session covering both diesel and gasoline particulate filters in terms of developing substrates with lower pressure drop, improved thermal stress resistance, new substrate materials and new test methods to evaluate the mechanical properties of the ceramic materials. 2:40 p.m. - 3:40 p.m. Organizers: Kirby Baumgard, John Deere Power Systems; Thorsten Boger, Corning Inc.; Julian Tan, Watlow Chairpersons: Kirby Baumgard, John Deere Power Systems
1:00 p.m.	Light-Off Temperature Shift for Catalyzed Diesel Particulate Filter On-Board Diagnostics (2012-01-1248) Ryan Schultz, Purdue Univ-West Lafayette; Raymond Sutjiono, Purdue Univ- West Lafayette	
1:20 p.m.	Determination of the PEMS Measurement Allowance for PM Emissions Regulated Under the Heavy-Duty Diesel Engine In-Use Testing Program (2012-01-1250) Thomas L. Bougher, Imad A. Khalek, Southwest Research Institute; Christopher A. Laroo, US Environmental Protection Agency; Dipak K. Bishnu, California Air Resources Board	
1:40 p.m.	Development of Spark Plug for Ion Current Misfire Detection System (2012-01-1253) Kaori Doi, Yoshihiro Nakamura, Ken Hanashi, Denso Corp.; Katushi Hashizume, Toyota Motor Corporation	
2:00 p.m.	Measurement of In-use PM using Soot Augmented with a Gravimetric Reference (2012-01-1254) William M. Silvis, AVL North America Inc.	
2:20 p.m.	Discussion Break	
2:40 p.m.		Failure Stress and Apparent Elastic Modulus of Diesel Particulate Filter Ceramics (2012-01-1252) Andrew Wereszczak, Ethan Fox, Michael Lance, Mattison Ferber, Oak Ridge National Laboratory
3:00 p.m.		The Best Choice of Gasoline/Diesel Particulate Filter to Meet Future Particulate Matter Regulation (2012-01-1255) Jung Min Seo, Won Soon Park, Myung Jong Lee, Hyundai Kia Motors
3:20 p.m.		Acicular Mullite-Cordierite Composites with Controllable CTE (Oral Only) Daniel Grohol, Chan Han, Aleksander pyzik, Clifford Todd, Janet goss, The Dow Chemical Company
	Planned by Exhaust Aftertreatment and Emissions Committee / Powertrain Fuels and Lubricants Activity	Planned by Exhaust Aftertreatment and Emissions Committee / Powertrain Fuels and Lubricants Activity

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SESSIONS TECHNICAL, BUSINESS & EXECUTIVE

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	AM	PM	AM	PM	AM	PM		
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Chat with the Expert: Challenges and Opportunities facing Driver Visibility (IDMCHAT900)	-	-	-	✓	-	-	D0-02A	88
Chat with the Expert: Computer Model Validation and Verification (V&V) in Design (IDMCHAT600)	-	✓	-	-	-	-	D0-07B	84
Chat with the Expert: Flying Car (IDMCHAT500)	-	✓	-	-	-	-	D0-06B	84
Chat with the Expert: Normalization of Deviance - Lessons Learned and Opportunities for Aerospace and Automobiles (IDMCHAT200)	-	-	-	✓	-	-	D0-04B	88
Chat with the Expert: Structural Reliability under Random Time-Varying Excitations (IDMCHAT400)	-	-	-	✓	-	-	D0-04A	88
Chat with the Expert: What Does Government Want from Industry? What are the Implications for Engineering? (IDMCHAT300)	-	-	-	✓	-	-	D0-03C	88
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Reliability and Robust Design in Automotive Engineering: Decision Under Uncertainty/Uncertainty Modeling (IDM105)	✓	-	-	-	-	-	D0-06B	83
Reliability and Robust Design in Automotive Engineering: Model Validation and Verification (IDM107)	-	✓	-	-	-	-	D0-06B	84
Reliability and Robust Design in Automotive Engineering: Reliability and Robust Design in Automotive Aero-Thermal and Fluid Systems (IDM106)	-	-	-	-	✓	-	D0-06B	89
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TUESDAY, APRIL 24 - MORNING

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM	
	D0-04A	D0-06B
	Key Success Factors of Lean Manufacturing Implementation and Global Supply Chain (IDM201) This technical session deals with research and development efforts addressing the advancement and applications of Lean methodologies and Quality Improvement in the mobility industry. Papers presented in this session will portray the latest developments in the principles, practices, tools, processes, and applications of Lean and Quality improvement methodologies. 10:00 a.m. - 11:40 a.m. Organizers: Beena Anand, DataNet Quality Systems; Mohamed El-Sayed, Kettering Univ.; Mark R. Ripple, BBK, Ltd.	Reliability and Robust Design in Automotive Engineering: Decision Under Uncertainty/Uncertainty Modeling (IDM105) Methods for modeling uncertainty and decision making under uncertainty are presented in this session. Both theoretical developments and practical applications from the automotive industry are covered. 10:00 a.m. - 11:40 a.m. Organizers: Ramesh Rebba, General Motors Company; Zissimos Mourelatos, Oakland Univ.; Efstratios Nikolaidis, Univ of Toledo Chairpersons: Vijitashwa Pandey, Oakland Univ; David Lamb, US Army TARDEC
10:00 a.m.	Balancing Manufacturability and Performance Attributes in Lean Design (2012-01-0512) Mohamed El-Sayed, Jacqueline El-Sayed, Kettering Univ.	Design with Uncertain Technology Evolution (2012-01-0912) Jonathan L. Arendt, Richard Malak, Daniel McAdams, Texas A&M University
10:20 a.m.	Making Six Sigma a Cultural Norm (2012-01-0513) Lisa Miller, Jacob Frimenko, Visteon Corp.	Composing Tradeoff Studies under Uncertainty based on Parameterized Efficient Sets and Stochastic Dominance Principles (2012-01-0913) Christopher Bily, Richard Malak, Texas A&M University
10:40 a.m.	Secrets for Successful Six Sigma Deployment (2012-01-0515) Jacob Frimenko, Visteon Corp.	System Failure Identification using Linear Algebra: Application to Cost-Reliability Tradeoffs under Uncertain Preferences (2012-01-0914) Vijitashwa Pandey, Zissimos Mourelatos, Oakland Univ.; Efstratios Nikolaidis, Univ. of Toledo; Matthew Castanier, David Lamb, US Army TARDEC
11:00 a.m.	CoQ Tradeoffs in Manufacturing Process Improvement and Inspection Strategy Selection: A Case Study of Welded Automotive Assemblies (2012-01-0514) Hadi Zaklouta, Richard Roth, Massachusetts Institute of Technology	Managing the Computational Cost in a Monte Carlo Simulation by Considering the Value of Information (2012-01-0915) Efstratios Nikolaidis, Univ. of Toledo; Vijitashwa Pandey, Zissimos Mourelatos, Oakland Univ.
11:20 a.m.	Implementation of Lean Transactional at Tenneco Europe, Applications in Finance (2012-01-0517) Patrick Garcia, David Younie, Tenneco Europe; Josep Fornos, Tenneco	A Sensitivity Analysis Formulation for Steady-State Conjugate Heat Transfer Problems of Industrial Size (2012-01-0911) Christian Rauch, VIRTUAL VEHICLE Research and Test Center
	Planned by Lean - Six Sigma Committee / Integrated Design and Manufacturing Activity	Planned by Quality, Reliability and Robust Design Committee / Integrated Design and Manufacturing Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00260, and also individually. To purchase visit collections.sae.org

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TUESDAY, APRIL 24 - AFTERNOON

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	D0-06B	D0-07B	D0-07B	D0-06B
	Reliability and Robust Design in Automotive Engineering: Model Validation and Verification (IDM107) Model Validation and Verification invite papers that deal with the theoretical and/or applied aspects of one or more of the following representative topics: model development, model correlation/calibration, model verification, model validation, uncertainty quantification, uncertainty propagation, validation metrics, predictive capability assessment, etc. 1:00 p.m. - 4:00 p.m. Organizers: Ramesh Rebba, General Motors Company; Yan Fu, Ren-Jye Yang, Ford Motor Co Chairpersons: Yan Fu, Ford Motor Co; Ramesh Rebba, General Motors LLC	Trends in Development of Accelerated Reliability and Durability Testing Technology (IDM112) This session presents the paper, practices and technology used in development of trends in reliability and durability testing (ART/ADT) technology and accurate prediction. The purpose is covering a new ideas and unique approaches to accurate simulation and integration of field inputs, safety, and human factors, improvement the ART/ADT steps-components, implementation that leads to reduce recalls, cost, and time during design, manufacture, and usage. It leads to accelerated product development. 1:00 p.m. - 2:40 p.m. Organizers: Gary L. Harlow, Skill Center; Lev Klyatis, Sohar Inc.; Efstratios Nikolaidis, Univ. of Toledo Chairpersons: Lev Klyatis, Sohar Inc	Chat with the Expert: Computer Model Validation and Verification (V&V) in Design (IDMCHAT600) Design uses computational models which quantify functional input-output relations. The fidelity in model predictions can be improved either by statistically calibrating a number of model parameters or building a correction model using test data. We will review the statistical methods to computer model validation, including frequentist and Bayesian approaches, elaborate on the significance of V&V in automotive design and discuss relevant theoretical and implementation issues and philosophies. 4:00 p.m. - 5:00 p.m. Keynote Speakers: Zissimos Mourelatos, Oakland Univ.; Ramesh Rebba, General Motors LLC; Ren-Jye Yang, Ford Motor Co.	Chat with the Expert: Flying Car (IDMCHAT500) This chat will address some past and present development efforts on "Flying Cars" and "Roadable Vehicles". The expert's opening statement will including history, vehicle concepts, design methodologies, and descriptions of built and tested prototypes, will be part of the chat. Participants are encouraged to provide inputs and discuss opportunities for this emerging transportation system . 4:00 p.m. - 5:00 p.m. Keynote Speakers: Branko Sarh, Boeing
1:00 p.m.	A Nonparametric Bootstrap Approach to Variable-size Local-domain Design Optimization and Computer Model Validation (2012-01-0226) Dorin Drignei, Zissimos Mourelatos, Vijitashwa Pandey, Oakland Univ.; Michael Kokkolaras, Univ. of Michigan-Ann Arbor	About Trends in the Strategy of Development Accelerated Reliability and Durability Testing Technology (2012-01-0206) Lev Klyatis, Sohar Inc.		
1:20 p.m.	A Bayesian Inference based Model Interpolation and Extrapolation (2012-01-0223) Zhenfei Zhan, Yan Fu, Ren-Jye Yang, Ford Motor Co.; Zhimin Xi, Univ. of Michigan; Lei Shi, Ford Motor Co.	Method of Computer-Aided FTA (Fault Tree Analysis) in Reliability Design and Development; Using Knowledge Management Based on Quantity Dimension Indexing and Block Diagram (2012-01-0203) Youji Hiraoka, Katsunari Yamamoto, JATCO, Ltd.; Tamotsu Murakami, The University of Tokyo; Yoshiyuki Furukawa, Hitoshi Tokunaga, Hiroyuki Sawada, AIST		
1:40 p.m.	A Model Validation Approach for Various Design Configurations with Insufficient Experimental Data for Model Accuracy Check (2012-01-0228) Zhimin Xi, Univ. of Michigan Dearborn; Yan Fu, Ren-Jye Yang, Ford Motor Co	An Engineering Alternative to Statistically Designed Acceptance Tests (2012-01-0205) Bryan L. Dodson, SKF; Rene Klerx, SKF AB		
2:00 p.m.	A Study on Prediction of the Brake Hoses Deformation Associated with a Vehicle Motion (2012-01-0224) Moon-Won Kang, Hyundai Motor Co. & KIA Motors Corp.	Accelerated Reliability / Durability and Field Test Data: Collection and Analysis for Decision Making. (2012-01-0204) Zigmund Bluvband, ALD		
2:20 p.m.	Noise Factor Effects on Leaf Spring Fatigue Life (2012-01-0225) Murathan Soner, Tolga Erdogan, Nilay Guven, Mustafa Karaagac, Ahmet Kanbolat, Olgun Celik Company	Improving Reliability and Profitability Using the Systemic Failure Analysis Methodology During Reliability Stress Testing (2012-01-0202) David E. Verbitsky, Alefa-EEQRA		
2:40 p.m.	Parabolic Leaf Spring Fatigue Life Based on Road Load Data, Endurance Rig Test and Wind Up Evaluations (2012-01-0227) Murathan Soner, Nilay Guven, Mustafa Karaagac, Tolga Erdogan, Olgun Celik Company; Ahmet Kanbolat; Erhan Eyo, Ahmet Pasaoglu, FORD OTOSAN			
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WEDNESDAY, APRIL 25 - MORNING Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM	
	D0-05B	D0-04A
	Body Engineering and Design (B100) 8:00 a.m. - 11:40 a.m. Organizers: Vesna Savic, Mallikarjuna Bennur, General Motors Company; Raghu Echempati, Kettering Univ.; Ramakrishna Koganti, US Army	Leadership for Lean, Green and Safe (part 1 of 2) (IDM203) Many organizations are working on long-term sustainable growth. Tactical efforts by those working on "green", "lean" (economics from lean) and "safe" are all contributors to the strategic focus. Unfortunately, those efforts are often running in parallel to each other with barriers due to paradigms and organizational "silos." Learn how Deming's principles and the common goal of identifying and eliminating waste in each "silo" can lead to improvements in your continuous improvement efforts. 8:00 a.m. - 11:40 a.m. Organizers: Michael Taubitz, FDR Safety LLC Chairpersons: Michael Taubitz, FDR Safety LLC
8:00 a.m.	Application of Load Path Index U* for Evaluation of Sheet Steel Joint with Spot Welds (2012-01-0534) Tadashi Naito, Hirokazu Kobayashi, Yuta Urushiyama, Honda R&D Co., Ltd.	Welcome and Opening Remarks (Oral Only) Michael Taubitz, FDR Safety LLC
8:20 a.m.	Evaluation of Force-Based Spot Weld Modeling in Quasi-Static Finite Element Analysis (2012-01-0537) Hwawon Lee, Parvath Police, Charles Cory, General Motors Company	Are We Green Yet? Addressing Fundamental Barriers to Achieving Long-Term Sustainable Design (Oral Only) Michael Kirschner, Design Chain Associates, LLC
8:40 a.m.	CAE Based Multi-Level Optimization of a Bus Body Constituted of Aluminum Extrusions (2012-01-0535) Wook Jin Na, HMC	
9:00 a.m.		The Future of Automotive Quality Tools and Management Systems (Oral Only) R. Dan Reid, Automotive Industry Action Group
9:40 a.m.		Using Economic Analysis to Assess the Viability of Post-2016 MY Greenhouse Gas Emission and Fuel Economy Standards for Light Duty Vehicles (2012-01-0754) Dean Drake, Thomas Walton, Michael Whinihan, David Aldorfer, Defour Group LLC
10:20 a.m.		Lean, Green & Safe for Machinery: Methods and Applications (Oral Only) Bruce W. Main, Design Safety Engineering Inc.
11:00 a.m.		Leveraging Joint-Development Agreements for co-integration of products for improved performance and faster-time-to-market (Oral Only) Brian Engle, GE
	Simultaneous Engineering and Electro-Coating of Car Body (Written Only -- No Oral Presentation) (2012-01-0538) Ping-ping Kang, Coatings For Industry; 1Lt Li-na Li cEng, Adm Jin-kai Hui Sr, Geely Automobile Institute	
	Planned by Body Engineering Committee / Automobile Body Activity	Planned by Quality, Reliability and Robust Design Committee / Integrated Design and Manufacturing Activity



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WEDNESDAY, APRIL 25 - AFTERNOON Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	D0-05B	D0-04A	D0-06A	D0-06A
	Design Optimization - Methods and Applications (B103) 1:00 p.m. - 3:20 p.m. Organizers: Vesna Savic, Mallikarjuna Bennur, General Motors Company; Hasetetsion G. Mariani	Leadership for Lean, Green and Safe (part 2 of 2) (IDM203) Many organizations are working on long-term sustainable growth. Tactical efforts by those working on "green", "lean" (economics from lean) and "safe" are all contributors to the strategic focus. Unfortunately, those efforts are often running in parallel to each other with barriers due to paradigms and organizational "silos." Learn how Deming's principles and the common goal of identifying and eliminating waste in each "silo" can lead to improvements in your continuous improvement efforts. 1:00 p.m. - 4:00 p.m. Organizers: Michael Taubitz, FDR Safety LLC Chairpersons: Michael Taubitz, FDR Safety LLC	Reliability, Robustness and Accelerated Testing (IDM102) This session presents methods and automotive applications on how to assess reliability and robustness in product development. Topics include among others, system reliability target allocation, interval analysis in robust design and imprecise reliability assessment. It also addresses new developments and applications in the area of accelerated testing. 1:00 p.m. - 3:40 p.m. Organizers: Efstratios Nikolaidis, Univ. of Toledo; Zissimos Mourelatos, Oakland Univ.; Ramesh Rebba, General Motors LLC; Paul Lubinski, Thermo King Corp.; David Lamb, US Army TARDEC; Mohammad Hijawi, Chrysler Arizona Proving Grounds; Richard Amori, Jay Zhou, Ford Motor Co.; Robert Lust, General Motors (Retired) Chairpersons: Efstratios Nikolaidis, Univ. of Toledo; Ramesh Rebba, General Motors LLC	Chat with the Expert: Accurately Predicting Quality, Reliability, and Durability (IDMCHAT100) Recalls, high life-cycle costs, constant complaints, and other problems are all the result of poor quality. To improve quality one must accurately predict the two great pillars of quality – reliability and durability. Use the accurate simulation to predict reliability and durability; Obtain the necessary initial information for accurate field simulation and accelerated product development; Develop the techniques for product production based on the accelerated reliability/durability testing. 4:00 p.m. - 5:00 p.m. Keynote Speakers: Lev Klyatis, Sohar Inc.
1:00 p.m.	Technical Keynote: Deterministic and Stochastic Optimization in Automotive Industry (Oral Only) Charles Yuan, Patrick Koch, Simulia	Lean Cultural Transformation Challenges in a Tertiary Care Hospital (Oral Only) Rita D'Angelo, Anjna Gandhi, Ruan Varney, Henry Ford Health System	Efficient Random Vibration Analysis Using Markov Chain Monte Carlo Simulation (2012-01-0067) Mahdi Norouzi, Efstratios Nikolaidis, Univ. of Toledo	
1:20 p.m.			Estimation of High-Cycle Fatigue Life by using Re-analysis (2012-01-0066) Mahdi Norouzi, Efstratios Nikolaidis, Univ. of Toledo	
1:40 p.m.			Optimal Preventive Maintenance Schedule Based on Lifecycle Cost and Time-Dependent Reliability (2012-01-0070) Jing Li, Zissimos Mourelatos, Oakland Univ.; Amandeep Singh, US Army TARDEC	
2:00 p.m.	New Technique for Optimizing Member Cross-Sections in Car Bodies to Reduce Noise and Weight (2012-01-0772) Nobuo Aizawa, Honda R&D Co., Ltd.; Jared Cox, Honda R&D Americas, Inc.; Keiichi Motoyama, Mississippi State Univ; Ichiro Yamazaki, Techno Core Co., Ltd.	Improving Operational Excellence using a Holistic Approach to Occupational Health and Safety (Oral Only) David E. Oliver, General Motors Company	System Topology Identification with Limited Test Data (2012-01-0064) Vijitashwa Pandey, Zissimos Mourelatos, Oakland Univ.	
2:20 p.m.	Performance Optimization for the XAM Hybrid Electric Vehicle Prototype (2012-01-0773) Massimiliana Carello, Nicoletta Filippo, Politecnico di Torino; Roberto d'Ippolito, NOESIS Solutions N.V.		Design Curve Construction Based on Two-Stress Level Test Data (2012-01-0069) Zhigang Wei, Limin Luo, Shengbin Lin, Dmitri Konson, Fulun Yang, Tenneco Inc	
2:40 p.m.	Reduction of Mass and Sound Pressure for Automatic Transmission Using Topography Optimization (2012-01-0774) Takanori Ide, Aisin AW Co., Ltd.; Hiroyuki Kitajima, Aw Engineering Co. Ltd; Juan Leiva, Brian Watson, Vanderplaats R & D	Deming: The Foundation for Leadership and Culture (Oral Only) Michael Taubitz, FDR Safety LLC	Dual Torsional Vibration Damper Optimization (2012-01-0065) Mohammad Hijawi, Chrysler Arizona Proving Grounds	
3:00 p.m.	Modification of Seat Structure for Improvement of Ride Comfort (2012-01-0777) HakGyun Kim, Hyundai Kia Motors; Sangdo Park, Hyundai-Kia R&D Center; Taehoon Lee, Hyundai Motors Namyang; Choi Taejin, DYMO Co; Chang Oan Woo, Hyundai Motors Namyang		Deriving the Compressed Accelerated Test Cycle from Measured Road Load Data (2012-01-0063) Abhijit Londhe, Suhas Kangde, Krishnan Karthikeyan, Mahindra & Mahindra Ltd.	

Continued on next page

WEDNESDAY, APRIL 25 - AFTERNOON Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	D0-05B	D0-04A	D0-06A	D0-06A
	Design Optimization - Methods and Applications (B103) 1:00 p.m. - 3:20 p.m. Organizers: Vesna Savic, Mallikarjuna Bennur, General Motors Company; Hasetetsion G. Mariam	Leadership for Lean, Green and Safe (part 2 of 2) (IDM203) Many organizations are working on long-term sustainable growth. Tactical efforts by those working on "green", "lean" (economics from lean) and "safe" are all contributors to the strategic focus. Unfortunately, those efforts are often running in parallel to each other with barriers due to paradigms and organizational "silos." Learn how Deming's principles and the common goal of identifying and eliminating waste in each "silo" can lead to improvements in your continuous improvement efforts. 1:00 p.m. - 4:00 p.m. Organizers: Michael Taubitz, FDR Safety LLC Chairpersons: Michael Taubitz, FDR Safety LLC	Reliability, Robustness and Accelerated Testing (IDM102) This session presents methods and automotive applications on how to assess reliability and robustness in product development. Topics include among others, system reliability target allocation, interval analysis in robust design and imprecise reliability assessment. It also addresses new developments and applications in the area of accelerated testing. 1:00 p.m. - 3:40 p.m. Organizers: Efstratios Nikolaidis, Univ. of Toledo; Zissimos Mourelatos, Oakland Univ.; Ramesh Rebba, General Motors LLC; Paul Lubinski, Thermo King Corp.; David Lamb, US Army TARDEC; Mohammad Hijawi, Chrysler Arizona Proving Grounds; Richard Amori, Jay Zhou, Ford Motor Co.; Robert Lust, General Motors (Retired) Chairpersons: Efstratios Nikolaidis, Univ. of Toledo; Ramesh Rebba, General Motors LLC	Chat with the Expert: Accurately Predicting Quality, Reliability, and Durability (IDMCHAT100) Recalls, high life-cycle costs, constant complaints, and other problems are all the result of poor quality. To improve quality one must accurately predict the two great pillars of quality – reliability and durability. Use the accurate simulation to predict reliability and durability; Obtain the necessary initial information for accurate field simulation and accelerated product development; Develop the techniques for product production based on the accelerated reliability/durability testing. 4:00 p.m. - 5:00 p.m. Keynote Speakers: Lev Klyatis, Sohar Inc.
3:20 p.m.		Panel Discussion: Pulling it all Together Moderator: Michael Taubitz, FDR Safety LLC	A Study on the Role of TRIZ in DFSS (2012-01-0068) Jong Ho Kim, Ill Soo Kim, Hong Wook Lee, Byung Ok Park, Hyundai Motor Company	
	Multidisciplinary Design Optimization of a Hatchback Structure (Written Only -- No Oral Presentation) (2012-01-0780) Yunkai Gao, Haixing Feng, Dawei Gao, Ruiyao Xu, Tongji University			
	Designing of Automotive Vacuum Pumps - Development of Mathematical Model for Critical Parameters and Optimization using Artificial Neural Networks (Written Only -- No Oral Presentation) (2012-01-0779) Nagendiran S R, Arun Subramanian, J Suresh kumar, Ramalingam Sivanantham, Ucal Fuel Systems, Ltd.			
	Optimization of the Realizable $k - \epsilon$ Turbulence Model Especially for the Simulation of Road Vehicle (Written Only -- No Oral Presentation) (2012-01-0778) Zhengqi Gu, Xin Song, Hunan University; Yejie Jiang, Guangzhou Automobile Group CO.,LTD; Xu Gong, Hunan University			
	Planned by Body Engineering Committee / Automobile Body Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00250, and also individually. To purchase visit collections.sae.org	Planned by Quality, Reliability and Robust Design Committee / Integrated Design and Manufacturing Activity	Planned by Quality, Reliability and Robust Design Committee / Integrated Design and Manufacturing Activity	

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WEDNESDAY, APRIL 25 - AFTERNOON
Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	D0-02A	D0-04B	D0-04A	D0-03C
	Chat with the Expert: Challenges and Opportunities facing Driver Visibility (IDMCHAT900) Recent styling trends (sleeker profiles, smaller windows) together with Safety and Aero requirements are all challenging an important vehicle attribute – Visibility. This panel of Industry experts will discuss how we can quantify Visibility, a largely experiential attribute. Additionally, you will understand the role technology can play to enhance visibility, and how OEM's are balancing seemingly conflicting requirements to offer an attractive, cost effective and functional product. 4:00 p.m. - 5:00 p.m. Keynote Speakers: Michael Flannagan, Univ. of Michigan; John Manoojian, Center for Creative Studies; Rajiv Mehta, G M	Chat with the Expert: Normalization of Deviance - Lessons Learned and Opportunities for Aerospace and Automobiles (IDMCHAT200) Normalization of Deviance. What is this phenomenon and why was it so catastrophic for two NASA missions? What went wrong? History has shown that the majority of aerospace mishaps can be traced to easily recognized, preventable root causes resulting from human error and a lack of quality somewhere in the system. Examining and understanding the root causes of aerospace mission failures is critical to helping today's designers of any complex systems identify system specific lessons. 4:00 p.m. - 5:00 p.m. Keynote Speakers: Joe Nieberding, Aerospace Engineering Assoc.	Chat with the Expert: Structural Reliability under Random Time-Varying Excitations (IDMCHAT400) This chat will discuss how to characterize and simulate time varying-loads, calculate the response and the reliability of a system under random vibration. Issues such as non Gaussian random processes, and nonlinear systems and highlight differences from the classical random vibration problems of linear systems excited by a stationary random process are discussed as well as methodologies to characterize and sample a random process and simulation methods to assess the time-varying reliability. 4:00 p.m. - 5:00 p.m. Keynote Speakers: Zissimos Mourelatos, Oakland Univ.; Efstratios Nikolaidis, Univ. of Toledo	Chat with the Expert: What Does Government Want from Industry? What are the Implications for Engineering? (IDMCHAT300) Governments are increasingly legislating the environmental performance of products. Engineers are responsible for designing and developing products that meet these and other, externally mandated requirements. Where and how do companies manage this responsibility? Learn what are some of the issues and challenges of ownership of environmental performance within a manufacturing company approaches that would enable companies to efficiently and effectively address this in a consistent manner. 4:00 p.m. - 5:00 p.m. Keynote Speakers: Michael Kirschner, Design Chain Associates, LLC



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THURSDAY, APRIL 26 - MORNING Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM	
	D0-06B	D0-04B
	Reliability and Robust Design in Automotive Engineering: Reliability and Robust Design in Automotive Aero-Thermal and Fluid Systems (IDM106) The purpose of this session is to bring awareness among the automotive aerodynamics, thermal and hydraulic systems development community to address the need of reliability analysis and robust design to improve the overall product quality. This session also introduces CAE based optimization of aero-thermal and fluid systems to improve automotive fuel economy. This session presents papers covering both testing and simulation. 8:00 a.m. - 9:40 a.m. Organizers: Alaa El-Sharkawy, Chrysler Group LLC; Zissimos Mourelatos, Oakland Univ.; Sadek S. Rahman, Richard Sun, Chrysler Group LLC Chairpersons: Sadek Rahman, Richard Sun, Chrysler Group LLC	Virtual Design and Engineering (IDM301) This technical session will showcase the creation and application of various tools that will allow for the design and manufacture of parts, equipment, facilities and tests that eliminate the need for physical part prototyping early in a program. The ability to model various aspects of design, test and manufacturing allows for more accurate, cost effective and faster development and product delivery to market. 8:00 a.m. - 10:40 a.m. Organizers: George Smith, Magna PowerTrain; Robert Lust, Retired; Paul Zalucha, Ford Motor Co Chairpersons: G Smith, Magna Powertrain Usa Inc
8:00 a.m.	The Electric Fan As A Cooling Package Air Flow Meter (2012-01-0954) Timothy C. Scott, Sweet Briar College; David R. Hoffman, Patrick Moore, Chrysler LLC	Dimensional Engineering and Tolerance Analysis: Do It Right the First Time (2012-01-0949) Donald Jasurda, DCS Inc
8:20 a.m.	Sensitivity/Uncertainty Analysis of Material Thermal Degradation Models (2012-01-0955) Alaa El-Sharkawy, Chrysler Group LLC; Joshua Kamrad, Chrysler Engineering	Study on Warpage of Large and Thin-Wall Injection Molded Part (2012-01-0947) Xiao Guo, Qing Guo, Yanfeng Visteon Auto Trim Sys Co. Ltd.
8:40 a.m.	Transient Thermal Modeling of Power Train Components (2012-01-0956) Timothy C. Scott, Sweet Briar College; Fu-Long Chang, Chrysler Corp.; Masuma Khandaker, Chrysler Group; Sudhi Uppuluri, Computational Sciences Experts Group	Application of Optimization Algorithm to the HVAC Configuration Design (2012-01-0950) Tatsuro Kyuto, Motohiro Kitada, Hideo Asano, Denso
9:00 a.m.	Explication of Gasket for Sealing of Super Rough Surface (2012-01-0958) Atsushi Nagata, Shinji Ushijima, Shingo Mukai, Eizo Hayashi, NOK Corporation	A Development of the Virtual Design System for the Attachments of a Hydraulic Excavator (2012-01-0952) Seong-Yong Kim, Hyundai Heavy Industries
9:20 a.m.	Analysis of Temperature Measurement Errors During Vehicle Thermal Testing (Oral Only) Alaa El-Sharkawy, Chrysler Group LLC; Roberto Tregnago, FIAT	Multi Attribute Optimization: Fuel Consumption, Emissions and Driveability (2012-01-0946) Kazuhiko Gotoh, Toyota Motor Corporation; Jerome Ceppi, Nicolas Sabatier, LMS Imagine; Yukisada Tsuchida, LMS Japan
9:40 a.m.		Compliant Parts Simulation Procedure (Written Only -- No Oral Presentation) (2012-01-0948) Meike Schaub, Wilhelm Ruppert, Uwe Laugwitz, Adam Opel AG - General Motors Company
10:00 a.m.		Co-Simulation of Multiple Software Packages for Model Based Control Development and Full Vehicle System Evaluation (2012-01-0951) Trevor Sweafford, Hwan-Sik Yoon, Tennessee Technological Univ; Yanying Wang, General Motors Company; Anthony Will, General Motors
10:20 a.m.		Evaluation of Vehicle Systems Structural Durability Using PSD Based Fatigue Life Approach (2012-01-0953) Abhijit Londhe, Suhas Kangde, Narayana Moorthy, Mahindra & Mahindra Ltd.
	Development of Cost Effective Non-Permeable and Leak-Proof Air Inlet System Ducting for Turbocharged Intercooled Modern Diesel Engine (Written Only -- No Oral Presentation) (2012-01-0959) Vivek Kolhe, K. Veeramani, Tata Technologies Ltd.; Nil Kanth Singh, Tata Motors Ltd.; Ravindra Ravva, Tata Technologies Ltd.	
	Planned by Quality, Reliability and Robust Design Committee / Integrated Design and Manufacturing Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00260, and also individually. To purchase visit collections.sae.org	Planned by E-Design and Manufacturing Committee / Integrated Design and Manufacturing Activity

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SESSIONS TECHNICAL, BUSINESS & EXECUTIVE

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	Tues		Wed		Thur		Room No.	Page No.
	AM	PM	AM	PM	AM	PM		
Career Development Session (CONG101)	-	-	-	✓	-	-	D3-20	93
Engineering Education (B600)	✓	-	-	-	-	-	D3-21	93
Reviewing the Highlights of Automotive History (Part 1 & 2) (CONG100)	-	-	-	-	✓	✓	D3-20	94

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TUESDAY, APRIL 24 - MORNING Technical and Business Sessions		
TIME	SESSION TITLE, DESCRIPTION, AND ROOM	
	D3-21	
	Engineering Education (B600) 10:00 a.m. - 11:00 a.m. Organizers: Richard K. Stobart, Loughborough Univ.	
10:00 a.m.	Introductory CAN Instruction in Vehicle Systems Engineering Education (2012-01-0087) David McDonald, Lake Superior State Univ.	
10:20 a.m.	The E-born [®] Concept Vehicle: An Innovative Solution for Urban Mobility (2012-01-0088) Robert Chimeno, Applus+ IDIADA	
10:40 a.m.	A Distributed Engineering Computer Aided Learning System (2012-01-0089) Massuod Alatrash, Ayman Mansour, Mohammad obeidat, Wayne State University	
	Planned by Faculty Advisors Committee / Education Board; Automobile Body Activity / EMB Land and Sea Group	

WEDNESDAY, APRIL 25 - AFTERNOON Technical and Business Sessions		
TIME	SESSION TITLE, DESCRIPTION, AND ROOM	
	D3-20	
	Career Development Session (CONG101) 1:00 p.m. - 4:00 p.m. Organizers: Martha Schanno, SAE International	
	Engineers Shifting Gears (Oral Only) Jennifer Llewellyn, Michigan Works! Troy	
	Using Social Media for your Job Search (Oral Only) Greg Doyle, Oakland County Business Center	



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THURSDAY, APRIL 26 - MORNING
Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM	
	D3-20	
	Reviewing the Highlights of Automotive History (Part 1 of 2) (CONG100) This is a session organized by the SAE Mobility History Committee and deals with the history of various components of an automobile powertrain system. 8:00 a.m. - 11:40 a.m.  Organizers: Donald C. Siegl, GM Retired Chairpersons: Donald L. Wood	
8:00 a.m.	Taming Spontaneous Combustion - Historical Reflections on the Diesel Engine (Oral Only) Charles A. Amann, KAB Engineering	
9:00 a.m.	Electric Vehicle Battery Development History (Oral Only) Robert Galyen, Magna E-Car Systems	
10:00 a.m.	Chrysler's 1,000 HP Recuperated Turboprop - 6,927 Inconel Tubes! (Oral Only) Robert Ernest Pauley	
	Planned by Mobility History Committee / Office of the Secretary	

THURSDAY, APRIL 26 - AFTERNOON
Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM	
	D3-20	
	Reviewing the Highlights of Automotive History (Part 2 of 2) (CONG100) This is a session organized by the SAE Mobility History Committee and deals with the history of various components of an automobile powertrain system. 1:00 p.m. - 4:00 p.m. Organizers: Donald C. Siegl, GM Retired Chairpersons: Donald L. Wood	
1:00 p.m.	The Reach for Economy in the 1910's - Scripps Booth and the Cycle Car Craze (Oral Only) Thomas Booth	
2:00 p.m.	Intermodal Transport from 1800 to 1960 (Oral Only) Catherine Aska Thompson, Isuzu Manufacturing Services Inc.	
3:00 p.m.	Streamlining the American Car, 1918-1949 (Oral Only) William Porter	
	Planned by Mobility History Committee / Office of the Secretary	

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SESSIONS TECHNICAL, BUSINESS & EXECUTIVE

Author information text is published as submitted by technical paper authors.

	Tues		Wed		Thur		Room No.	Page No.
	AM	PM	AM	PM	AM	PM		
Achieving Light Weight Vehicles (M214)	-	-	✓	-	-	-	D0-06B	104
Advanced Analysis, Design, and Optimization of Materials, Restraints, and Structures for Enhanced Automotive Safety and Weight Reduction (M103)	-	-	-	-	-	✓	D0-04C	111
Advances In Light Weight Materials - Aluminum (M211)	-	-	✓	-	-	-	D0-06B	103
Advances in Coating (M303)	-	-	-	-	-	✓	D0-03D	111
Advances in Instrument Panels and Interiors (Part 2 of 2): An Expert Panel Discussion on VOC's and Vehicle Interiors (M301)	-	-	✓	-	-	-	D0-03D	104
Advances in Instrument Panels and Interiors (part 1 of 2) (M301)	-	-	✓	-	-	-	D0-03D	103
Advances in Plastic Components, Processes and Technologies (M302)	-	-	-	✓	-	-	D0-03D	107
Applications of Advanced High-Strength Steels for Automotive Structures (Part 1 & 2) (M205)	-	-	✓	✓	-	-	D0-05A	103, 107
Automotive Composites (M306)	-	-	-	-	✓	-	D0-03D	110
Automotive Engineering Testing and Test Methods (M104)	-	-	✓	-	-	-	D0-07A	103
CAE Analysis and Application: NVH CAE (M161)	-	✓	-	-	-	-	D0-06A	99
CAE Durability Analysis & Applications (Part 1 & 2) (M162)	-	-	✓	✓	-	-	D0-04B	106, 107
Casting Materials Seminar for Automotive Applications (M215)	✓	-	-	-	-	-	D0-05A	98
Chat with the Expert: Challenges in Sheet Metal Forming Technologies and Simulation Methods (MCHAT210)	-	-	-	✓	-	-	D0-05A	109
Chat with the Expert: Concept Vehicle Proof Statement - BamBoo Car (MCHAT303)	-	-	-	✓	-	-	D0-03D	109
Chat with the Expert: New Generations of Cathode and Electrolyte Materials (MCHAT304)	-	-	-	-	-	✓	D0-03D	111
Chat with the Expert: Performance of Thermoplastic Composites, Bridging the Gap Between Virtual Predictions and Actual Measurements, Effect of the Fiber Orientations (MCHAT301)	-	✓	-	-	-	-	D0-03C	101
Chat with the Expert: Tire Model Validation and Application - A User Perspective (MCHAT151)	-	-	-	✓	-	-	D0-04C	109
Fatigue Research and Applications (M203)	-	✓	-	-	-	-	D0-05B	99
Load Simulation and Analysis in Automotive Engineering								
(Part 1 of 4): Nonlinear Component/System Modeling Techniques and Application (M151)	-	-	✓	-	-	-	D0-04C	104
(Part 2 of 4): Tire-Terrain and Multi-Body System Modeling and Applications (M151)	-	-	-	✓	-	-	D0-04C	107
(Part 3 of 4): Vehicle Ride Comfort Modeling/Simulation/Testing and Analysis (M151)	✓	-	-	-	-	-	D0-04C	98
(Part 4 of 4): Influence of Load on Vehicle Drivability/Handling/Braking Stability Characteristics and Controls (M151)	-	✓	-	-	-	-	D0-04C	99
Magnesium Technologies (M213)	-	-	-	-	✓	-	D0-05A	110
Materials and Residual Stress Testing Development (M110)	-	✓	-	-	-	-	D0-05B	99

Continued on next page

	Tues		Wed		Thur		Room No.	Page No.
	AM	PM	AM	PM	AM	PM		
Optical Measurement and Nondestructive Testing Techniques in Automotive Engineering (M107)	-	✓	-	-	-	-	D0-03C	101
Sheet / Hydro / Gas Forming Technology and Modeling (M204)	-	✓	-	-	-	-	D0-05A	101
Structural Plastic Composite Components - The Other Lightweight Material (part 1 & 2) (M310)	✓	✓	-	-	-	-	D0-04C	98, 101
Welding, Joining and Fastening for Automotive Applications (M102)	-	-	✓	-	-	-	D0-04C	104

Technical Session Oral Evaluation Incentives

In an effort to collect more evaluation ratings for the technical session speakers, SAE will be holding daily drawings for anyone who completes an oral evaluation card distributed in technical session rooms. Simply complete the card, tear off the perforation with your name and contact number, and turn it in to the session moderator. Six (6) winners will be announced daily to receive \$25 gift certificates. Winners will be announced daily and posted in the technology lounges.

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P120079B

TUESDAY, APRIL 24 - MORNING

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM		
	D0-05A	D0-04C	D0-03D
	Casting Materials Seminar for Automotive Applications (M215) An innovative, conceptual approach to the design of metal castings is emphasized throughout this seminar. Selection of an alloy and how it impacts the design boundaries of a casting are considered. The seminar also examines a systems approach to casting design. Communications between designer, patternmaker and casting producer are stressed throughout the seminar. The correlation between costing processes and the design of the casting is reviewed. 10:00 a.m. - 11:40 a.m. Organizers: Thomas Prucha, American Foundry Society Inc.	Load Simulation and Analysis in Automotive Engineering (Part 3 of 4): Vehicle Ride Comfort Modeling/Simulation/Testing and Analysis (M151) This session focuses on modeling and simulation of driver behavior, driving simulators, vehicle ride comfort evaluation and enhancement, test/simulation correlation, and damage modeling and analysis techniques; also of interest are studies regarding vehicle elastomeric components, passive, semi-active and active suspension systems, suspension seats, beaming, shaking, impact harshness, brake judder with regard to the ride comfort of drivers, passengers, and goods. 10:00 a.m. - 11:40 a.m. Organizers: Jingzhoujames Yang, Texas Tech. Univ.; Xiaobo Yang, Oshkosh Corporation; Peijun Xu, Ebco Inc.; Ken Kang, Honda R&D Americas Inc. Chairpersons: Ken Kang, Honda R&D Americas Inc.; Jingzhoujames Yang, Texas Tech. Univ.	Structural Plastic Composite Components - The Other Lightweight Material (part 1 of 2) (M310) This session focuses on the role of structural composites needed to achieve the proposed 2017 - 2025 GHG/CAFÉ legislation. Topics include: Overview of proposed legislation with technology pathway assumptions, Summary of government funded composite programs, Latest technologies: Predictive CAE, Injection Molding with CFRT, Low cost carbon fiber, and OEM perspectives on composite usage. A panel discussion "Structural Composites Adoption 2017 - 2025 - Hype or Reality?" will follow. 10:00 a.m. - 11:40 a.m. Organizers: Marianne S. Morgan, BASF Corp.
10:00 a.m.		Sensitivity Analysis of Achieving a Reach Task within a Vehicle Considering Joint Angle Variability (2012-01-0058) Aimee Cloutier, Jared Gragg, Jingzhou Yang, Fisseha Alemayehu, Texas Tech Univ	Legislation and Technology Assumptions (Oral Only) Edward Nam, US Environmental Protection Agency
10:20 a.m.		A Study on Ride Comfort Assessment of Multiple Occupants using Lumped Parameter Analysis (2012-01-0053) Anindya Deb, Divyanshu Joshi, Indian Institute of Science	
10:40 a.m.		Mathematical Modeling in Vehicle Ride Dynamics (2012-01-0056) Saurav Talukdar, Indian Institute of Technology Bombay; Anupam Mazumdar, Murukesh Mullasseril, Karuna Kalita, Indian Institute of Technology Guwahati; Aditya Ujjwal, BIT Mesra	New Enabling Technologies Driven by DoE-Automotive Composites Consortium Collaborations (Oral Only) Khaled Shahwan, Chrysler LLC
11:00 a.m.		Comparative Analysis of an Elastic 2 Degree of Freedom Half Car Model with a Rigid 2 Degree of Freedom Model (2012-01-0057) Anupam Mazumdar, Indian Institute of Technology Guwahati; Saurav Talukdar, Indian Institute of Technology Bombay; Karuna Kalita, Indian Institute of Technology Guwahati	NHTSA Lightweighting and Safety Studies (Oral Only) Tom Hollowell, Wth Consulting LLC
11:20 a.m.		Starting Quality Assessment and Optimization for Automated Manual Transmission (2012-01-0059) Yulong Lei, Hongbo Liu, Jun Qiu, State Key Lab. of ASC, Jilin University; Jianguo Zhang, Changchun Inst. of Engineering Tech.; Youde Li, State Key Lab. of ASC, Jilin University	Q&A / discussion
11:40 a.m.		Shift Quality Optimization Based on Assessment System for Dual Clutch Transmission (Written Only -- No Oral Presentation) (2012-01-0060) Hongbo Liu, Yulong Lei, State Key Lab. of ASC, Jilin University; Jianguo Zhang, Changchun Inst. of Engineering Tech.; Jun Qiu, Youde Li, State Key Lab. of ASC, Jilin University	
12:00 p.m.		Study of Suspension Longitudinal Frequency Response Characteristics (Written Only -- No Oral Presentation) (2012-01-0061) Xianjie Zhou, Qiqiao Zhang, Jin Zhou, GAC Automotive Engineering Institute	
12:20 p.m.		The Influence of Damper Top Mount Characteristics on Vehicle Ride Comfort and Harshness: Parametric Study (Written Only -- No Oral Presentation) (2012-01-0054) Mina M.S. Kaldas, Kemal Çalıtkan, Roman Henze, Ferit Küçükay, IAE, TU Braunschweig, Germany	
	Planned by Non-Ferrous Committee / Materials Engineering Activity	Planned by Materials Modeling and Testing Committee / Materials Engineering Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00263, and also individually. To purchase visit collections.sae.org	Planned by Materials Modeling and Testing Committee / Materials Engineering Activity

TUESDAY, APRIL 24 - AFTERNOON

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	D0-06A	D0-05B	D0-04C	D0-05B
	CAE Analysis and Application: NVH CAE (M161) This session covers the development and application of numerical methods along with test correlation and optimization for NVH issues of full vehicle and vehicle subsystems. All structural components, subsystems and complete systems found in automotive vehicles will be considered. Topics include structure NVH, vibro-acoustics, wind noise and aeroacoustics, intake/exhaust and vehicle interior noise. 1:00 p.m. - 3:00 p.m. Organizers: Jianmin Gu, Changan Automobile Co., Ltd.; Luohui Long, FORD MOTOR COMPANY; Chang Qi, Dalian Univ. of Technology; Guangtian Gavin Song, AM General LLC; Weiguo Zhang, Chrysler Group LLC	Fatigue Research and Applications (M203) This session covers recent fatigue research, analysis, analytical tools development, and novel applications of fatigue technology in the ground vehicle industry. 1:00 p.m. - 3:00 p.m. Organizers: Carlos Engler-Pinto, Ford Motor Co.; John Bonnen, Ford Motor Co; Jackie Rehkopf, Plasan Carbon Composites; Chin-Chan Chu, Retired; Jwo Pan, Univ. of Michigan-Ann Arbor Chairpersons: John Bonnen, Carlos Engler-Pinto, Ford Motor Co; Chin-Chan Chu, Retired; Jackie Rehkopf, Plasan Carbon Composites	Load Simulation and Analysis in Automotive Engineering (Part 4 of 4): Influence of Load on Vehicle Drivability/Handling/Braking Stability Characteristics and Controls (M151) Focusing on analysis and enhancement of vehicle handling dynamics, braking/traction performance, operational robustness and active stability under the influence of loading and tire force: system modeling/ simulation, testing and optimization; correlations of simulation results, objective measurements and subjective judgments of load impacts on vehicle dynamics characteristics; vehicle/chassis control systems; impact of system hybridization/ electrification on vehicle dynamics/control. 1:00 p.m. - 3:00 p.m. Organizers: Dongpu Cao, Lancaster University; Ken Kang, Honda R&D Americas Inc.; Xiaobo Yang, Oshkosh Corporation; Paramsothy Jayakumar, TARDEC Chairpersons: Ken Kang, Honda R&D Americas Inc.; Dongpu Cao, Lancaster University	Materials and Residual Stress Testing Development (M110) This session will address the developments residual stress measurement technologies and applications in industries. The effects of the stress state retained in a component on the mechanical properties of materials, especially fatigue behavior. Thus, the measurements and technologies of the residual stress have been studying through X-ray diffraction, neutron, laser and other technologies. 1:00 p.m. - 3:00 p.m. Organizers: Jwo Pan, Univ. of Michigan-Ann Arbor; Gerald A. Shulke, Xichen Sun, Chrysler Group LLC; Xin Zhang, F.tech R&D North America Inc.
1:00 p.m.	A Displacement-Approach for Liftgate Chocking Investigation (2012-01-0217) Yul Woong Hyun, Greg Warden, James Blenman, Scott Thorpe, Altaf Imam, Roger Garrett, James Tebbe, Tye ukpong, Steven Wienckowski, Balakrishna Chintia, General Motors Company	Technical Keynote: Challenges in Evaluating Fatigue Performance of Plastics and Composites (Oral Only) Jackie D. Rehkopf, Plasan Carbon Composites	Analysis of the Structural Behavior of Racing Motorcycle Swingarms (2012-01-0207) Giacomo Risitano, Lorenzo Scappaticci, Guglielmo Marconi University; Carlo Girmaldi, Francesco Mariani, Università degli Studi di Perugia	Effects of High Rolling Loads on Residual Stress Distributions in a Rectangular Bar (Oral Only) Mohammed Yusuf Ali, Jwo Pan, Univ. of Michigan-Ann Arbor; Petr Michlik, Caterpillar Inc
1:20 p.m.	Prediction of Vehicle Fuel Tank Slosh Noise from Component-Level Test Data (2012-01-0215) Pierre De Man, Jules-Joseph Van Schaffingen, Inergy Automotive Systems Research SA		An Investigation of Anti-lock Braking System for Automobiles (2012-01-0209) Aref M. A. Soliman, South Valley University, Egypt; Mina M.S. Kaldas, IAE, TU Braunschweig, Germany	Residual Stress Measurement using X-Ray Diffraction Techniques, Guidelines and Normative Standards (2012-01-0186) Mohammed Belassel, Proto Manufacturing Inc.
1:40 p.m.	Investigation on the Properties of Fibrous Material in the Acoustic Calculation model of Automotive Exhaust System (2012-01-0218) Hoi-Jeon Kim, James Egan, Faurecia Emission Control Technologies	Effect of Oxidation on the Fatigue Performance of a Candidate Material for a Diesel Particulate Filter Application at Elevated Temperatures (Oral Only) Katherine Avery, Univ. of Michigan	Effect of Added Mass of Spindle Wheel Force Transducer on Vehicle Dynamic Response (2012-01-0210) Shawn S. You, MTS Systems Corp.	Material Microcrack Failure Effects Based on Residual Stress Evaluations (2012-01-0187) Mustafa Karaagac, Murathan Soner, Olgun Celik; Alper Togay, Kasim Sevimli, Olguncelik; Ahmet Kanbolat, Olguncelik Company
2:00 p.m.	Balance Weight-Saving with Performance of Acoustic Isolation Using Hybrid SEA Model (2012-01-0216) Hidenori Tanaka, Yoshihito Miyama, Hitoshi Murakami, Toshio Enomoto, Nissan Motor Company Ltd.	Correlation between Scatter in Fatigue Life and Fatigue Crack Initiation Sites in Cast Aluminum Alloys (2012-01-0920) Xin Zheng, Nanjing Univ. of Aero. & Astro., China; Carlos Engler-Pinto, Xuming Su, Ford Motor Co; Haitao Cui, Weidong Wen, Nanjing Univ. of Aero. & Astro., China	Potential for Hydroplaning Behavior during Transient Maneuvers (2012-01-0211) L. Daniel Metz, Metz Engineering & Racing, LLC	Neutron Diffraction Study on Residual Stress in Aluminum Engine Blocks Following Machining and Service Testing (2012-01-0188) Anthony Lombardy, Ryerson University; Dimitry Sediako, National Research Council Canada; Francesco D'Elia, C. (Ravi) Ravindran, Ryerson University; Robert I. Mackay, Nemak of Canada
2:20 p.m.	Weight Reduction of Damping Materials on Vehicle Body Panels by using an Optimization with Sound Pressure Constraints (2012-01-0220) Takashi Yamamoto, Shinichi Maruyama, Hiroshi Shimada, Nissan Motor Company Ltd.	Cyclic Mechanical Response of Metastable Austenite: Application to Advanced High Strength Steels for Vehicle Weight Reduction (Oral Only) Kip Findley, G. R. Lehnhoff, Colorado School of Mines	Dynamic Research on Control Strategy of Electric Power Steering System (2012-01-0212) Ziman He, Shanghai Jiao Tong Univ.; Mengyan Gu, Shanghai University of Engineering Science	Scuffing Behavior of 4140 Alloy Steel and Ductile Cast Iron (2012-01-0189) Natalie Mikecz, University of Wisconsin-Platteville; Nancy Kelley, Missouri Univ. of Science and Technology; Erzwon Othman, UiTM Malaysia; Rebeca Lumberras, Oakland University; Jiman Han, Gary Barber, Qian Zou, David Schall, Oakland University

Continued on next page

TUESDAY, APRIL 24 - AFTERNOON

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	D0-06A	D0-05B	D0-04C	D0-05B
	CAE Analysis and Application: NVH CAE (M161) This session covers the development and application of numerical methods along with test correlation and optimization for NVH issues of full vehicle and vehicle subsystems. All structural components, subsystems and complete systems found in automotive vehicles will be considered. Topics include structure NVH, vibro-acoustics, wind noise and aeroacoustics, intake/exhaust and vehicle interior noise. 1:00 p.m. - 3:00 p.m. Organizers: Jianmin Gu, Changan Automobile Co., Ltd.; Luohui Long, FORD MOTOR COMPANY; Chang Qi, Dalian Univ. of Technology; Guangtian Gavin Song, AM General LLC; Weiguo Zhang, Chrysler Group LLC	Fatigue Research and Applications (M203) This session covers recent fatigue research, analysis, analytical tools development, and novel applications of fatigue technology in the ground vehicle industry. 1:00 p.m. - 3:00 p.m. Organizers: Carlos Engler-Pinto, Ford Motor Co.; John Bonnen, Ford Motor Co; Jackie Rehkopf, Plasan Carbon Composites; Chin-Chan Chu, Retired; Jwo Pan, Univ. of Michigan-Ann Arbor Chairpersons: John Bonnen, Carlos Engler-Pinto, Ford Motor Co; Chin-Chan Chu, Retired; Jackie Rehkopf, Plasan Carbon Composites	Load Simulation and Analysis in Automotive Engineering (Part 4 of 4): Influence of Load on Vehicle Drivability/Handling/Braking Stability Characteristics and Controls (M151) Focusing on analysis and enhancement of vehicle handling dynamics, braking/traction performance, operational robustness and active stability under the influence of loading and tire force: system modeling/simulation, testing and optimization; correlations of simulation results, objective measurements and subjective judgments of load impacts on vehicle dynamics characteristics; vehicle/chassis control systems; impact of system hybridization/electrification on vehicle dynamics/control. 1:00 p.m. - 3:00 p.m. Organizers: Dongpu Cao, Lancaster University; Ken Kang, Honda R&D Americas Inc.; Xiaobo Yang, Oshkosh Corporation; Paramsothy Jayakumar, TARDEC Chairpersons: Ken Kang, Honda R&D Americas Inc.; Dongpu Cao, Lancaster University	Materials and Residual Stress Testing Development (M110) This session will address the developments residual stress measurement technologies and applications in industries. The effects of the stress state retained in a component on the mechanical properties of materials, especially fatigue behavior. Thus, the measurements and technologies of the residual stress have been studying through X-ray diffraction, neutron, laser and other technologies. 1:00 p.m. - 3:00 p.m. Organizers: Jwo Pan, Univ. of Michigan-Ann Arbor; Gerald A. Shulke, Xichen Sun, Chrysler Group LLC; Xin Zhang, F.tech R&D North America Inc.
2:40 p.m.	The Application of the Simulation Techniques to Predict and Reduce the Interior Noise in bus Development (2012-01-0219) Yogesh Surkutwar, Kaustubh Patel, Subbarao Amara, Ashok Joshi, Automotive Research Association of India	The Effect of Case Depth, Residual Stress, and Prior Processing on Crack Initiation Resistance of Induction Hardened Bar Steel (Oral Only) Kip Findley, A. Nissan, Colorado School of Mines	Method of Vehicle Dynamics Analysis by means of Equivalent Cornering Stiffness for Aerodynamic Forces and Moments (2012-01-0213) Hideaki Shibue, Atsushi Ogawa, Susumu Mashio, Honda R&D Co., Ltd.	Effect of a Deformable Roller on Residual Stress Distribution for Elastic-Plastic Flat Plate Rolling under Plane Strain Conditions (2012-01-0190) M. Y. Ali, J. Pan, Univ. of Michigan-Ann Arbor
	Optimization of Bus Body Based on Vehicle Interior Vibration (Written Only -- No Oral Presentation) (2012-01-0221) Guang-ming Wu, Wen-ku Shi, Wei Liu, Zhi-yong Chen, Jilin University	Study on Fatigue Rupture of Automotive Rear Stabilizer-Bar (Written Only -- No Oral Presentation) (2012-01-0921) Zhaofeng Mao, Dangwen Chen, Shangjun Jiang, Zishun Zhao, Guobin Yang, Geely Automobile Research Int	Dynamic Response of Vehicle-Driver Couple to the Aerodynamic Loads due to the Crossing of a Bridge Tower Wake (Written Only -- No Oral Presentation) (2012-01-0214) Edoardo Sabbioni, Marco Sbroi, Daniele Rocchi, Riccardo Galeotti, Politecnico di Milano	
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TUESDAY, APRIL 24 - AFTERNOON

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	D0-03C	D0-05A	D0-03D	D0-03C
	Optical Measurement and Nondestructive Testing Techniques in Automotive Engineering (M107) Papers are invited on various aspects of developments and applications of optical measurement and nondestructive testing techniques in automotive engineering. Topics include shape and dimension gauging of components and full vehicle bodies, stress and strain analysis, applications to NVH, nondestructive testing and quality inspection, design verification and optimization, manufacturing tool for quality improvement and cost reduction, etc. 1:00 p.m. - 3:20 p.m. Organizers: Kah Wah Long, Chrysler Group LLC; Lianxiang Yang, Oakland Univ.; Sheng Liu, General Motors LLC	Sheet / Hydro / Gas Forming Technology and Modeling (M204) The Sheet/ Hydro/ Gas Forming Technology and Modeling session is designed to provide industrial and academic participants a forum to address current technical issues in sheet metal forming using analytical, numerical and experimental tools. This session will help to advance the state of the art in sheet metal forming and lead to rapid dissemination of new technologies for industrial applications. 1:00 p.m. - 3:00 p.m. Organizers: Ghassan Kridli, Texas A&M Univ. at Qatar; Krishna Murali, General Motors Company; Thomas Oetjens, Magna International Chairpersons: Ghassan Kridli, Texas A&M Univ at Qatar; Krishna Murali, General Motors LLC; Thomas Oetjens, Magna International Moderators: Thomas Oetjens, Magna International Panelists: Thomas Stoughton, General Motors Company Z. Xia, Ford Motor Co Shunping Li, ESI North America ZiQiang Sheng, Martinrea International Inc Kidambi (Ken) Kannan, AutoForm Jixian Sun, LSTC Michael Worswick, Univ of Waterloo	Structural Plastic Composite Components - The Other Lightweight Material (part 2 of 2) (M310) This session focuses on the role of structural composites needed to achieve the proposed 2017 – 2025 GHG/CAFE legislation. Topics include: Overview of proposed legislation with technology pathway assumptions, Summary of government funded composite programs, Multiple presentations on the Latest technologies, Production viable low cost carbon fiber, plus various OEM perspectives on composite usage. A panel discussion "Structural Composites Adoption 2017 - 2025 - Hype or Reality?" will follow. 1:00 p.m. - 4:00 p.m. Organizers: Marianne S. Morgan, BASF Corp.	Chat with the Expert: Performance of Thermoplastic Composites, Bridging the Gap Between Virtual Predictions and Actual Measurements, Effect of the Fiber Orientations (MCHAT301) This "Chat" will explore the discrepancies and gaps that exist between predictive CAE methodologies and actual performance in a collaborative interactive discussion where attendees will have the opportunity to share their own perspectives and opinions. The discussion will be framed by the author's own viewpoint from many years of working in this area. 4:00 p.m. - 5:00 p.m. Keynote Speakers: Marios Lambi, BASF Corp.
1:00 p.m.	Measuring the Mechanical Properties of Aluminum Sheets and Their Resistance Spot Welds at Large Strains Using Digital Image Correlation Coupled with a Modified Shear Test (2012-01-0181) Jidong Kang, CANMET- Materials Technology Laboratory; Joseph McDermid, Moise Bruhis, McMaster University	A Temperature and Time Dependent Forming Limit Surface for Sheet Metal Forming at Elevated Temperatures (2012-01-0016) ZiQiang Sheng, Martinrea International Inc.	Composite Predictive Engineering Studies - American Chemistry Council Plastics Division (Oral Only) Michael Wyzgoski, Consultant	
1:20 p.m.	Optical Metrology, the Key to Lean Manufacturing (2012-01-0185) John Tyson, Trillion Quality Systems	The Warm Formability of Ferritic Stainless Steel for Bipolar Plates (Oral Only) Lakshmi Ravi Narayan, University of Windsor; Arianna Morales, General Motors R&D Center; Ahmet Alpas, University of Windsor	Predictive Technologies: Thinking Out of the Metallic Box (Oral Only) Khaled Shahwan, Chrysler LLC	
1:40 p.m.	Full Field Strain Measurement of Punch-stretch Tests Using Digital Image Correlation (2012-01-0183) Xu Chen, Xin Xie, Jianfei Sun, Lianxiang Yang, Oakland Univ	Reverse Bulging in Elevated Temperature Pneumatic Forming: Beyond Pre-Thinning (Oral Only) Fadi Abu-Farha, Penn State Univ-Behrend	Technology & market overview of injection molded components with continuous fiber reinforcements (Oral Only) Scott C. Schlicker, BASF	
2:00 p.m.	Advancements in Digital Image Correlation opening a new range of measurement capabilities (Oral Only) Matt J. Crompton, Dantec Dynamics	Definitions and Methods for Worst Case Materials in Formability Simulations (2012-01-0017) Thomas Oetjens, Boris Shulkin, Magna International	Magna / Canada Consortium (Oral Only) Tom Pilette, Magna Intl. Inc.	
2:20 p.m.	Effects of Gage Section Geometry on Tensile Material Properties by Digital Image Correlation (2012-01-0184) Vesna Savic, Louis Hector, Keith Snavey, General Motors Company	Sheet Metal Analysis - Formability Failure Methods Panel Discussion Moderators: Thomas Oetjens, Cosma Die Technology Panelists: Kidambi Kannan, AutoForm Shunping Li, ESI North America Z.Q. Sheng, Martinrea International Inc. Thomas Stoughton, General Motors Company Jixian Sun, Livermore Software Tech Corp. Michael J. Worswick, Univ. of Waterloo Z. Cedric Xia, Ford Motor Co.	Low Cost Carbon Fiber Materials and Processing Technologies (Oral Only) George Husman, Zoltek Companies Inc.	

TUESDAY, APRIL 24 - AFTERNOON

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	D0-03C	D0-05A	D0-03D	D0-03C
	Optical Measurement and Nondestructive Testing Techniques in Automotive Engineering (M107) Papers are invited on various aspects of developments and applications of optical measurement and nondestructive testing techniques in automotive engineering. Topics include shape and dimension gauging of components and full vehicle bodies, stress and strain analysis, applications to NVH, nondestructive testing and quality inspection, design verification and optimization, manufacturing tool for quality improvement and cost reduction, etc. 1:00 p.m. - 3:20 p.m. Organizers: Kah Wah Long, Chrysler Group LLC; Lianxiang Yang, Oakland Univ.; Sheng Liu, General Motors LLC	Sheet / Hydro / Gas Forming Technology and Modeling (M204) The Sheet/ Hydro/ Gas Forming Technology and Modeling session is designed to provide industrial and academic participants a forum to address current technical issues in sheet metal forming using analytical, numerical and experimental tools. This session will help to advance the state of the art in sheet metal forming and lead to rapid dissemination of new technologies for industrial applications. 1:00 p.m. - 3:00 p.m. Organizers: Ghassan Kridli, Texas A&M Univ. at Qatar; Krishna Murali, General Motors Company; Thomas Oetjens, Magna International Chairpersons: Ghassan Kridli, Texas A&M Univ at Qatar; Krishna Murali, General Motors LLC; Thomas Oetjens, Magna International Moderators: Thomas Oetjens, Magna International Panelists: Thomas Stoughton, General Motors Company Z. Xia, Ford Motor Co Shunping Li, ESI North America ZiQiang Sheng, Martinrea International Inc Kidambi (Ken) Kannan, AutoForm Jixian Sun, LSTC Michael Worswick, Univ of Waterloo	Structural Plastic Composite Components - The Other Lightweight Material (part 2 of 2) (M310) This session focuses on the role of structural composites needed to achieve the proposed 2017 – 2025 GHG/CAFÉ legislation. Topics include: Overview of proposed legislation with technology pathway assumptions, Summary of government funded composite programs, Multiple presentations on the Latest technologies, Production viable low cost carbon fiber, plus various OEM perspectives on composite usage. A panel discussion "Structural Composites Adoption 2017 - 2025 - Hype or Reality?" will follow. 1:00 p.m. - 4:00 p.m. Organizers: Marianne S. Morgan, BASF Corp.	Chat with the Expert: Performance of Thermoplastic Composites, Bridging the Gap Between Virtual Predictions and Actual Measurements, Effect of the Fiber Orientations (MCHAT301) This "Chat" will explore the discrepancies and gaps that exist between predictive CAE methodologies and actual performance in a collaborative interactive discussion where attendees will have the opportunity to share their own perspectives and opinions. The discussion will be framed by the author's own viewpoint from many years of working in this area. 4:00 p.m. - 5:00 p.m. Keynote Speakers: Marios Lambi, BASF Corp.
2:40 p.m.	Developments and Improvements of Non-intrusive Optical Methods for Fluid Velocity and Particle Measurement Systems. (Oral Only) Clifford Weissman, Dantec Dynamics	Forming Limit Diagrams of Ground St14 Steel Sheets with Different Thicknesses (Written Only -- No Oral Presentation) (2012-01-0018) Ramin Hashemi, University of Tehran; Amir Ghazanfari, Sharif Univ of Technology; Karen Abrinia, Tehran Univ; Ahmad Assempour, Sharif Univ of Technology	GM Viewpoint (Oral Only) Mark Voss, General Motors LLC	
3:00 p.m.	Quality Inspection of Spot Welds using Digital Shearography (2012-01-0182) Nan Xu, Xin Xie, Oakland Univ.; George Harmon, Chrysler LLC; Randy Gu, Lianxiang Yang, Oakland Univ.	A Critical Assessment of Forming Limit Prediction Models and Beneficial Modifications to Them (Written Only -- No Oral Presentation) (2012-01-0020) Amir Ghazanfari, Ahmad Assempour, Sharif Univ of Technology	The Potential of Composites for Vehicle Mass Reduction and Impediments to High Volume Implementation (Oral Only) Patrick Blanchard, Ford Motor Company	
3:20 p.m.		Estimation of the Initial Blank Shape and Strain Distribution for Complicated Geometries in Sheet Metal Forming by a Nonlinear Inverse Finite Element Method (Written Only -- No Oral Presentation) (2012-01-0019) Muhammad Farahani, Ahmad Assempour, Sharif Univ of Technology	Panel Discussion: "Structural Composites Adoption 2012-2025-Hype or Reality?" (Oral Only) Brett Smith, Center For Automotive Research	
	Planned by Materials Modeling and Testing Committee / Materials Engineering Activity	Planned by Ferrous Committee / Materials Engineering Activity	Planned by Materials Modeling and Testing Committee / Materials Engineering Activity	

WEDNESDAY, APRIL 25 - MORNING Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	D0-06B	D0-03D	D0-05A	D0-07A
	Advances In Light Weight Materials - Aluminum (M211) This session presents the latest developments in automotive applications of aluminum castings and wrought products. The papers cover a wide range of the technical aspects including alloy development, lightweight design, process development and simulation as well as performance optimization. 8:00 a.m. - 10:00 a.m. Organizers: SooHo Kim, Alantum Corp.; Alan Luo, General Motors; Douglas Richman, Kaiser Aluminum	Advances in Instrument Panels and Interiors (part 1 of 2) (M301) This session will feature technical presentations that will discuss new technology and industry insights in automotive interiors. Focus areas include materials, perceived quality, environmental concerns, manufacturing, safety, and durability. 8:00 a.m. - 9:00 a.m. Organizers: Robert Egbers, Comusa; Norm Kakarala, INTEVO PROD LLC; Stephen M. Pitrof, Inteva LLC; Ravi Thyagarajan, US Army TARDEC	Applications of Advanced High-Strength Steels for Automotive Structures (Part 1 of 2) (M205) This symposium provides a forum for researchers and application engineers to disseminate the knowledge and information gained in the area of advanced high-strength steel development and applications in automotive structures, enabling light-weight and durable vehicles with improved safety. 8:00 a.m. - 10:40 a.m. Organizers: Constantin Chiriac, United States Steel Corp.; Jason Coryell, General Motors; Michael L. Santella, Oak Ridge National Laboratory; Raj Sohmshetty, Ford Motor Co.; Raj Mohan Iyengar, US Nuclear Regulatory Commission Chairpersons: Jason Coryell, General Motors	Automotive Engineering Testing and Test Methods (M104) The focus of this session are the tests and test methods employed in the evaluation of the performance and durability of powertrain (engines, transmissions), driveline (4WD systems, drivshafts, axles), chassis (frame, suspensions, brakes, etc.) and body components, subsystems, and full vehicle systems. 8:00 a.m. - 10:00 a.m. Organizers: Darryl S. Taylor, Boeing; Mike Temkin, Chrysler Corp.
8:00 a.m.	Corrosion Resistance of Aluminum Coated Stainless Steel (Oral Only) Han Jin Ryu, Posco Technical Research Labs	Development of Interior Stain Removal Technology (2012-01-0511) Kaho Takahashi, Manabu Tachibana, Takayuki Fukui, Shigeo Kogure, Kentaro Murakami, Tomoya Yoshida, Kazuto Yamaguchi, Nissan Motor Company Ltd.	Technical Keynote: What Steel Must do to Remain a Viable Automotive Material (Oral Only) Bart Anthony Depompolo, U.S. Steel Automotive Product Technology	6 DOF Bench Test on a New Active Kinematics Rear Suspension for Functional Development (2012-01-0550) Isabel Ramirez Ruiz, Ferrari Spa; Dave Fricke, Thomas Stachel, Juan Garcia, MTS Systems Corp
8:20 a.m.	Aluminium High Pressure Die Casting Process based on Part Design, Fatigue Life and Natural Frequency Integration (Oral Only) Murathan Soner, Olgun Celik	Test Method for Seat Wrinkling and Bagging (2012-01-0509) Lisa Fallon, Amber Hendricks, General Motors Company		Design Considerations for Static Seals: Integrating Material Properties into Design (2012-01-0541) Paul F. Tuckner, Grace Technology and Development
8:40 a.m.	Growth and Development Trends of Automotive Aluminum (Oral Only) Randall Scheps, ATG, Alcoa	Investigation of New Scratch Method for Automotive Interior and Exterior Parts (2012-01-0510) Patricia Scott, Honda R&D Americas Inc.; Corey McEnhill, James Ryan, Nichole Vervys, Tetsuya Oda, Honda R&D Americas Inc	Comparison of Hole Expansion Properties of Quench & Partitioned, Quench & Tempered and Austempered Steels (2012-01-0530) Emmanuel De Moor, David K. Matlock, John G. Speer, Colorado School of Mines; C. Fojer, Arcelor Mittal Global R&D; J. Penning, Ghent University	A Methodology to Quantify Surface Mar (2012-01-0542) Arun Kumar Sikder, GE India Technology Center Pvt. Ltd.; Vaidyanath Ramakrishnan, Sabic Innovative Plastics; Maitreyee Sinha, GE Corporate; Vicki Watkins, GE Global Research Center; Matthew Marks, Stephen Shuler, Sabc Innovative Plastics
9:00 a.m.	Powder extrusion of Aluminium alloys for weight saving (Oral Only) Peter Schaeffler, ecka-granules		The Prestrain Effect on the Sheared Edge Flangeability of Dual Phase 780 Steels (2012-01-0533) Constantin Chiriac, Ming F. Shi, Todd M. Link, United States Steel Corp.	Wear Study of Coated Heavy Duty Exhaust Valve Systems in a Experimental Test Rig (2012-01-0546) Peter Forsberg, Patrik Hollman, Staffan Jacobson, Uppsala University
9:20 a.m.	Hot Forming of 7075 Aluminium Alloy Tubes to Produce Complex and Strong Components (2012-01-0539) Jean-François Béland, Guillaume D'Amours, National Research Council Canada		Weldability Prediction of AHSS Stackups Using Artificial Neural Network Models (2012-01-0529) Raj Sohmshetty, Rakshit Ramachandra, Ted Coon, Ford Motor Co.; Kyoungh-Yun Joseph Kim, Keunho Choi, Wayne State Univ.	Comparison of Tests of Thermal Fatigue Carried Out in Laboratory with Tests Performed under Critical Environmental Conditions for a Vehicle (2012-01-0544) Fabrício Cardinali, Fiat Group; Cristiana Brasil Maia, University PUC-MG
9:40 a.m.	Aluminum Cylinder Head High Cycle Fatigue Durability Including the Effects of Manufacturing Processes (2012-01-0540) Xingfu Chen, Carlos Engler-Pinto, Michael King, Mei Li, Eben Prabhu, Xuming Su, Ford Motor Company		Transition Zone Tensile Properties within a Tailored Hot Stamping (2012-01-0531) Alexander Bardelcik, Ryan George, Michael J. Worswick, Univ. of Waterloo	Internal Residual Stress Measurement of Aluminum Alloy Castings Using Neutron Diffraction (2012-01-0549) Yumi Kubota, Jun Kubo, Keitaro Ishida, Akinori Okada, Minoru Yoshida, Nissan Motor Company Ltd.; Toru Saito, Hiroshi Suzuki, Japan Atomic Energy Agency
10:00 a.m.			Studies on the Coating Materials for Forming Dies of Advanced High Strength Steel Sheets (2012-01-0527) Sung Chul Cha, supersungi	
10:20 a.m.			Bend-Forming Technology for Ultra High Strength Steel Sheets (2012-01-0532) Takayuki Futatsuka, Takeshi Fujita, Yuji Yamasaki, Toru Inazumi, JFE Steel Corp	Dynamic Vehicle Rollover Testing with the Jordan Rollover System (2012-01-0543) Donald Friedman, Center for Injury Research
	Planned by Non-Ferrous Committee / Materials Engineering Activity	Planned by Polymers and Coatings Committee / Materials Engineering Activity	Planned by Ferrous Committee / Materials Engineering Activity	Planned by Materials Modeling and Testing Committee / Materials Engineering Activity

WEDNESDAY, APRIL 25 - MORNING Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	D0-04C	D0-04C	D0-03D	D0-06B
	Load Simulation and Analysis in Automotive Engineering (Part 1 of 4): Nonlinear Component/System Modeling Techniques and Application (M151) Focus on new theory, formulation and modeling of amplitude-, frequency- and temperature-dependent nonlinear components/systems such as rubber and hydraulic mounts or bushings, shock absorbers, and any joint friction/damping; dynamic characterization through lab and field testing; Linearization methodology; Model validation, application, and sensitivity analysis in vehicle system simulations; Nonlinear system identification, modeling, and application in testing accuracy improvement; etc 8:00 a.m. - 11:40 a.m. Organizers: Ken Kang, Honda R&D Americas Inc.; Peijun Xu, Ebc Inc.; Fulun Yang, Tenneco Inc.; Xiaobo Yang, Oshkosh Corporation Chairpersons: Ken Kang, Honda R&D Americas Inc.; Fulun Yang, Tenneco Inc.; Peijun Xu, Ebc Inc	Welding, Joining and Fastening for Automotive Applications (M102) The technical session is organized to represent the general research in the areas of welding, riveting, joining, and fastening for automotive applications. Papers in this session focus on the recent advances in the process optimization, analytical solution, numerical modeling, response evaluation as well as static and dynamic testing of traditional resistance spot welds, gas metal arc welds, friction stir spot welds, laser welds, rivets, mounts, adhesives, and fasteners. 8:00 a.m. - 12:00 p.m. Organizers: Jwo Pan, Univ. of Michigan-Ann Arbor; Michael L. Santella, Oak Ridge National Laboratory; Tau Tyan, Ford Motor Co Chairpersons: Tau Tyan, Ford Motor Co	Advances in Instrument Panels and Interiors (Part 2 of 2): An Expert Panel Discussion on VOC's and Vehicle Interiors (M301) This session will feature technical presentations that will discuss new technology and industry insights in automotive interiors. Focus areas include materials, perceived quality, environmental concerns, manufacturing, safety, and durability. 9:20 a.m. - 11:40 a.m. Organizers: Robert Egbers, Comusa; Norm Kakarala, INTEVO PROD LLC; Stephen M. Pitrof, Inteva LLC; Ravi Thyagarajan, US Army TARDEC Moderators: Stephen Pitrof, Inteva LLC Panelists: Robert Proctor, Honda R&D Americas Inc Douglas Pickett, General Motors Company Jeffrey Valente, ExxonMobil Chemical Co Scott Weiss, Toyota Technical Center USA Inc	Achieving Light Weight Vehicles (M214) This session will feature the development and application of various light-weight materials, light weight architectures, or applied engineering methods used to achieve light weight vehicles. Included are papers focused upon aluminum alloys, high strength steels, composite structures and titanium alloys. 10:00 a.m. - 11:00 a.m. Organizers: Thomas Glennan, Technical Writing Solutions LLC; Brandon M. Hance, AK Steel Corp. Chairpersons: Brandon Hance, AK Steel Corp
8:00 a.m.	Fatigue Life Assessment of Welded Structures with the Linear Traction Stress Analysis Approach (2012-01-0524) Zhigang Wei, Fulun Yang, Limin Luo, Tenneco Inc; Katherine Avery, University of Michigan; Pingsha Dong, The University of New Orleans	A Matrix Array Technique for Evaluation of Adhesively Bonded Joints (2012-01-0475) Bitu Ghaffari, Kimberly Lazarz, Daniel Ondrus, Ford Motor Company; Roman Maev, Sergey Titov, The Institute for Diagnostic Imaging Res; Alex Bogachenkov, Institute of Biochemical Physics of RAS		
8:20 a.m.	Potential Failure Modes and Accelerating Test Strategy of Burner (2012-01-0523) Henry Cheng, Fulun Yang, Zhigang Wei, Tenneco Inc.	Development of Fatigue Evaluation Procedure for Weld-Bonded Joints Using the Battelle Structural Stress Method (2012-01-0477) Jeong Kyun Hong, Thomas Forte, Battelle		
8:40 a.m.	Nonlinear rubber isolator optimal design (Oral Only) Peijun Xu, Ebc Inc.	Ultrasonic Spot Welding of Galvanized Mild Steel to Magnesium AZ31B (2012-01-0474) Tsung-Yu Pan, Michael Santella, Oak Ridge National Laboratory		
9:00 a.m.	Dynamic Characterization of an Elastomeric Component under Intermediate Strain Rates (2012-01-0518) Andrés Ramírez, Luis Munoz, Universidad De Los Andes	Corrosion Behavior of Mixed-Metal Joint of Magnesium to Mild Steel by Ultrasonic Spot Welding (2012-01-0472) Tsung-Yu Pan, Michael Santella, Oak Ridge National Laboratory		
9:20 a.m.	Finite Element Overlay Technique for Predicting the Payne Effect in a Filled-Rubber Cab Mount (2012-01-0525) Christopher Robert Hartley, Nissan Technical Center North America, Inc.; Jaehwan Choi, Dassault Systemes Simulia Corp	Fatigue of Friction Stir Spot Welded Lap-Joints in AZ31 Mg Alloy Sheets (Oral Only) J. Brian Jordon, University of Alabama; Harish Rao, University Of Alabama; Harsha Badarinarayan, Hitachi America Ltd; Xuming Su, Ford Motor Co; Mark Horstemeyer, Mississippi State Univ		
9:40 a.m.	The Influence of Road Surface Properties on Vehicle Suspension Parameters Optimized for Ride - Design Trends for Global Markets (2012-01-0521) Bhaskar Chaturvedi, Timothy Gordon, Steven Karamihas, University of Michigan	Failure Modes of Friction Stir Spot Welds in Lap-Shear Specimens of Dissimilar Advanced High Strength Steels under Quasi-Static and Cyclic Loading Conditions (2012-01-0479) Seung-Hoon Hong, Kulthida Sripichai, Chia-Siung Yu, Katherine Avery, Jwo Pan, Univ. of Michigan-Ann Arbor; Tsung-Yu Pan, Michael Santella, Oak Ridge National Laboratory		
10:00 a.m.	On Chaos and Bifurcation in Nonlinear Driver-Vehicle System Probabilistic Dynamics (2012-01-0522) Guangqiang Wu, Yun Sheng, Tongji Univ.	Friction Stir Spot Welding (FSSW) of Advanced High Strength Steel (AHSS) (2012-01-0480) Michael Santella, Oak Ridge National Laboratory; Yuri Hovanski, Battelle Memorial Institute; Tsung-Yu Pan, Oak Ridge National Laboratory		Meeting fuel economy legislation and consumer demand through the increased use of aluminum (Oral Only) Randall Scheps, Alcoa Automotive

WEDNESDAY, APRIL 25 - MORNING Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	D0-04C	D0-04C	D0-03D	D0-06B
	Load Simulation and Analysis in Automotive Engineering (Part 1 of 4): Nonlinear Component/System Modeling Techniques and Application (M151) Focus on new theory, formulation and modeling of amplitude-, frequency- and temperature-dependent nonlinear components/systems such as rubber and hydraulic mounts or bushings, shock absorbers, and any joint friction/damping; dynamic characterization through lab and field testing; Linearization methodology; Model validation, application, and sensitivity analysis in vehicle system simulations; Nonlinear system identification, modeling, and application in testing accuracy improvement; etc 8:00 a.m. - 11:40 a.m. Organizers: Ken Kang, Honda R&D Americas Inc.; Peijun Xu, Ebc Co Inc.; Fulun Yang, Tenneco Inc.; Xiaobo Yang, Oshkosh Corporation Chairpersons: Ken Kang, Honda R&D Americas Inc.; Fulun Yang, Tenneco Inc.; Peijun Xu, Ebc Co Inc	Welding, Joining and Fastening for Automotive Applications (M102) The technical session is organized to represent the general research in the areas of welding, riveting, joining, and fastening for automotive applications. Papers in this session focus on the recent advances in the process optimization, analytical solution, numerical modeling, response evaluation as well as static and dynamic testing of traditional resistance spot welds, gas metal arc welds, friction stir spot welds, laser welds, rivets, mounts, adhesives, and fasteners. 8:00 a.m. - 12:00 p.m. Organizers: Jwo Pan, Univ. of Michigan-Ann Arbor; Michael L. Santella, Oak Ridge National Laboratory; Tau Tyan, Ford Motor Co Chairpersons: Tau Tyan, Ford Motor Co	Advances in Instrument Panels and Interiors (Part 2 of 2): An Expert Panel Discussion on VOC's and Vehicle Interiors (M301) This session will feature technical presentations that will discuss new technology and industry insights in automotive interiors. Focus areas include materials, perceived quality, environmental concerns, manufacturing, safety, and durability. 9:20 a.m. - 11:40 a.m. Organizers: Robert Egbers, Comusa; Norm Kakarala, INTEVO PROD LLC; Stephen M. Pitrof, Inteva LLC; Ravi Thyagarajan, US Army TARDEC Moderators: Stephen Pitrof, Inteva LLC Panelists: Robert Proctor, Honda R&D Americas Inc Douglas Pickett, General Motors Company Jeffrey Valentage, ExxonMobil Chemical Co Scott Weiss, Toyota Technical Center USA Inc	Achieving Light Weight Vehicles (M214) This session will feature the development and application of various light-weight materials, light weight architectures, or applied engineering methods used to achieve light weight vehicles. Included are papers focused upon aluminum alloys, high strength steels, composite structures and titanium alloys. 10:00 a.m. - 11:00 a.m. Organizers: Thomas Glennan, Technical Writing Solutions LLC; Brandon M. Hance, AK Steel Corp. Chairpersons: Brandon Hance, AK Steel Corp
10:20 a.m.	Physical Modeling of Shock Absorber Using Large Deflection Theory (2012-01-0520) Yuhang Chen, Konghui Guo, Yehai Yang, Ye Zhuang, Jilin University	Metal Matrix Composite Hardfacing of MIG-6(R) Al Castings by Friction Stir Fabrication (2012-01-0473) Jeff Schultz, Schultz-Creehan		InCar - Advanced Door Design (2012-01-0782) Amit Bhagwan, Paul McKune, Timo Faath, Lay Knoerr, ThyssenKrupp Steel USA LLC
10:40 a.m.	Strength Analysis of a Semi-Trailer Tractor Frame (Written Only -- No Oral Presentation) (2012-01-0526) Guoquan Wang, Cheng Zhao, Beijing Information Science & Technology University; Ping Pan, Beijing Foton Manufacture Corporation	Finite Element Analyses of Failure Mode of Welds in Lap-Shear Specimens of Steel Sheets with Different Thicknesses (Oral Only) Kamran Asim, Jaewon Lee, Jwo Pan, Univ. of Michigan-Ann Arbor		Energy Absorption of Hybrid Structures in Bending (2012-01-0783) Gayan Rathnaweera, Yvonne Durandet, Dong Ruan, Swinburne University of Technology; Michael Hajji, Henkel Australia Pty Ltd
11:00 a.m.		Tightening Characteristics of Nonferrous Bolts and Usefulness of Magnesium Alloy Bolts (2012-01-0476) Shinji Hashimura; Yukio Miyashita, Nagaoka University of Technology; Yu Kurakake, Kurume National College of Technology; Shigeru Yamanaka, Genki Hibi, Maruemu Works. Co. Ltd.		Life-Cycle Integration of Titanium Alloys into the Automotive Segment for Vehicle Light-Weighting: Part I - Component Redesign, Prototyping, and Validation (Written Only -- No Oral Presentation) (2012-01-0784) Joshua Jones, Mathew Kuttolamadom, Laine Mears, Thomas Kurfess, Clemson-ICAR; Kilian Funk, BMW Manufacturing Co LLC
11:20 a.m.		Optimal Fastener and Preload Selection (2012-01-0478) Jim Olmstead, MDA; Paul Barker, Flexion Engineering Inc.; Jonathan Vandersluis, MDA Space Missions		Life-Cycle Integration of Titanium Alloys into the Automotive Segment for Vehicle Light-Weighting: Part II - Component Life-Cycle Modeling and Cost Justification (Written Only -- No Oral Presentation) (2012-01-0785) Mathew Kuttolamadom, Joshua Jones, Laine Mears, Thomas Kurfess, CU-ICAR; Kilian Funk, BMW Manufacturing Co LLC
	Planned by Materials Modeling and Testing Committee / Materials Engineering Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00263, and also individually. To purchase visit collections.sae.org	Planned by Materials Modeling and Testing Committee / Materials Engineering Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00261, and also individually. To purchase visit collections.sae.org	Planned by Polymers and Coatings Committee / Materials Engineering Activity	Planned by Non-Ferrous Committee / Materials Engineering Activity

WEDNESDAY, APRIL 25 - MORNING Technical and Business Sessions		
TIME	SESSION TITLE, DESCRIPTION, AND ROOM	
	D0-04B	
	CAE Durability Analysis & Applications (Part 1 of 2) (M162) This technical session focuses on advanced technologies in material modeling, stress calculation and fatigue analysis, not only innovative and improved methods in these areas but also innovative and improved applications to automotive engineering. Discussions on new material constitutive model development, innovative and improved modeling techniques for stresses, recent advances in fatigue damage calculation and fatigue life predictions will be addressed. 10:00 a.m. - 12:00 p.m. Organizers: Mingchao Guo, Chrysler Group LLC; Guangtian Gavin Song, AM General LLC; Guofei Chen, United States Steel Corporation; Fan Li, General Motors; Ali Fatemi, University of Toledo; Mark A. Pompetzki, HBM-nCode; Yung-Li Lee, Chrysler Group LLC Chairpersons: Mark A. Pompetzki, HBM-nCode; Ali Fatemi, Univ. of Toledo	
10:00 a.m.	Technical Keynote: Novel Local Structural Durability Concepts for Designing Welded Automotive Components (Oral Only) Thomas Bruder, Cetin Morris Sonsino, Fraunhofer Inst. for Structural Durability & Sys Reliability	
10:40 a.m.	Fatigue Life Simulation on Fiber Reinforced Composites - Overview and Methods of Analysis for the Automotive Industry (2012-01-0730) Atul Jain, LMS International; Ignaas Verpoest, Katholieke Universiteit Leuven; Michael Hack, LMS International; Stepan Lomov, Katholieke Universiteit Leuven; Laurent Adam, e-Xstream engineering; Wim Van Paepegem, University of Gent	
11:00 a.m.	A Fracture Mechanics Approach to Durability Calculations for Adhesive Joints (2012-01-0731) Peter Heyes, HBM UK, Ltd.; Gunnar Björkman, Volvo Technology; Andrew Blows, Tim Mumford, Jaguar/Land Rover Cars; Paul Briskham, Coventry University	
11:20 a.m.	Life Prediction Approach for Stainless Steel Exhaust Manifold (2012-01-0732) Pierre-Olivier Santacreu, Laurent Faivre, Arcelormittal; Antoine Acher, Aperam	
11:40 a.m.	A Fatigue Life Estimation Technique for Body Mount Joints (2012-01-0733) Mingchao Guo, Suresh Bhosale, Sridhar Srikanthan, Chrysler Group LLC; Kurt Munson, Jeffrey Mentley, Ncode International, Ltd.	
	Planned by Materials Modeling and Testing Committee / Materials Engineering Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00265, and also individually. To purchase visit collections.sae.org	

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**Wednesday, April 25, 2012
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7:00 a.m. – 8:30 a.m.**

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WEDNESDAY, APRIL 25 - AFTERNOON Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	D0-03D	D0-05A	D0-04B	D0-04C
	Advances in Plastic Components, Processes and Technologies (M302) This session will cover a very broad range of applications, processes and technologies as the title suggests. Please refer to the Session Schedule for M302 to get a list of specific papers / presentations contained in this session (session code: M302). 1:00 p.m. - 3:20 p.m. Organizers: Yaomin Dong, Kettering Univ.; Y Charles Lu, University of Kentucky; Robert Maynard, EMS-Grivory America	Applications of Advanced High-Strength Steels for Automotive Structures (Part 2 of 2) (M205) This symposium provides a forum for researchers and application engineers to disseminate the knowledge and information gained in the area of advanced high-strength steel development and applications in automotive structures, enabling light-weight and durable vehicles with improved safety. 1:00 p.m. - 3:20 p.m. Organizers: Constantin Chiriac, United States Steel Corp.; Jason Coryell, General Motors; Michael L. Santella, Oak Ridge National Laboratory; Raj Sohmshtetty, Ford Motor Co.; Raj Mohan Iyengar, US Nuclear Regulatory Commission Chairpersons: Jason Coryell, General Motors	CAE Durability Analysis & Applications (Part 2 of 2) (M162) This technical session focuses on advanced technologies in material modeling, stress calculation and fatigue analysis, not only innovative and improved methods in these areas but also innovative and improved applications to automotive engineering. Discussions on new material constitutive model development, innovative and improved modeling techniques for stresses, recent advances in fatigue damage calculation and fatigue life predictions will be addressed. 1:00 p.m. - 3:00 p.m. Organizers: Mingchao Guo, Chrysler Group LLC; Guangtian Gavin Song, AM General LLC; Guofei Chen, United States Steel Corporation; Fan Li, GM; Ali Fatemi, Univ. of Toledo; Mark A. Pompetzki, HBM-nCode; Yung-Li Lee, Chrysler Group LLC Chairpersons: Guofei Chen, United States Steel Corp.; Guangtian Gavin Song, AM General LLC	Load Simulation and Analysis in Automotive Engineering (Part 2 of 4): Tire-Terrain and Multi-Body System Modeling and Applications (M151) Focusing on tire and terrain mechanics modeling for load simulations, tire model development, parameters identification, and sensitivity analyses, tire test development, road profile characterization, effective road profile development, and interactions between tire, suspension/steering/brake systems, and different terrains, spindle loads/travel variation characteristics from proving ground test on deterministic and rough roads, terramechanics, and correlation studies. 1:00 p.m. - 3:20 p.m. Organizers: Brad Hopkins, Virginia Tech; Paramsothy Jayakumar, TARDEC; Ken Kang, Honda R&D Americas Inc.; Xiaobo Yang, Oshkosh Corporation Chairpersons: Ken Kang, Honda R&D Americas Inc.; Xiaobo Yang, Oshkosh Corporation
1:00 p.m.	Eco+ Solutions in High Performance Plastics from DSM for Automotive. (Oral Only) Hubertus Gerardus Havenith, DSM	FutureSteelVehicle Design Methodology: Detail Design Concept using 3G Optimization (2012-01-1345) Jonathan B. Powers, Srinivasan Laxman, Severstal North America Inc.; Akbar Farahani, Hamed Sharifi, ETA Inc (Engineering Tech Assoc)	Potentials of Crankshaft Fillet Rolling Process (2012-01-0755) M. Cagri Cevik, FEV GmbH; Helmut Hochbein, Hegenscheidt-MFD; Martin Rebbert, FEV GmbH	Development of a Full-Vehicle Hybrid-Simulation Test using Hybrid System Response Convergence (HSRC) (2012-01-0763) Dave Fricke, MTS Systems Corp.; Matthias Frost, Audi AG
1:20 p.m.	Hybrid Design for Automotive Body Panels (2012-01-0746) Andre Camboa, MIT-Portugal; Helena Silva, Alexandre Teixeira, Bernardo Ribeiro, CEIIA; Joao Nunes, University of Minho	FutureSteelVehicle - Integrated Incremental Forming and Crash Process Optimization (Oral Only) Jody R. Shaw, US Steel	An Analytical Load Distribution Solution for Bearings (2012-01-0756) Jaewon Lee, Jwo Pan, Univ. of Michigan-Ann Arbor; Yung-Li Lee, Chrysler Group LLC	Sensitivity of step-climb performance to various design factors (Oral Only) Arun Kumar Chandrasekaran, Xiaobo Yang, Oshkosh Corporation
1:40 p.m.	Biodiesel Permeability in Polyethylene (2012-01-0747) Emmanuel Richaud, Research	FutureSteelVehicle - Steel Solutions to Lightweight Steel Automotive Structures in Hybrid Vehicles (Oral Only) Dean Kanelos, Nucor	Assessing Dirlik's Fatigue Damage Estimation Method for Automotive Applications (2012-01-0757) John P. Quigley, General Dynamics Land Systems; Yung-Li Lee, Chrysler Group LLC	"Motion in FEA": An Innovative Approach for More Physical and More Accurate Vehicle Dynamics Simulation (2012-01-0762) Frederic Colsohl, Samtech International; Bernard Voss, Samtech; Thomas Wissart, Samtech Deutschland
2:00 p.m.	Development of a Transparent Nanocomposite for Automobile Polymer Glazing (2012-01-0749) Takashi Oda, Katsumi Morohoshi, Yasuaki Kai, Nissan Motor Company Ltd.	FutureSteelVehicle - Leading Edge Innovation for Steel Body Structures (Oral Only) Marcel Van Schaik, ThyssenKrupp Steel USA LLC	French Door Open/Close Durability Evaluation by Multibody Dynamics Method (2012-01-0758) Ying Chen, David Lepley, Charles Cutting, Nissan Technical Center North America, Inc.; Toshihiro Araki, Nissan Motor Company Ltd.	A Physics-Based Vehicle/Terrain Interaction Model for Soft Soil Off-Road Vehicle Simulations (2012-01-0767) Justin Madsen, Dan Negrut, Univ. of Wisconsin; Alexander Reid, US Army RDECOM; Andrew Seidl, Univ. of Wisconsin; Paul Ayers, George Bozdech, University of Tennessee; Jeffery Freeman, MechSim; James O'Kins, US Army Tank Auto & Armaments Command
2:20 p.m.	Polycarbonate Glazing - Accelerated Wiper Testing, Surface Characterization and Comparison with On-Road Fleet Data (2012-01-0750) Arun Kumar Sikder, GE India Technology Center Pvt. Ltd.; Nicole Babbie Paull, Exatec LLC; Stephen Shuler, Sabic Innovative Plastics; Mary Gilliam, Exatec LLC; Dinesh K. B Parthipan, GE India Technology Center Pvt. Ltd.	FutureSteelVehicle - Steel Manufacturing Assessment (Oral Only) Michael A. Gulas, ArcelorMittal Dofasco Hamilton Inc.	Computer Aided Simulations in Automotive Engine Gasket Sealing (2012-01-0759) Amir Ghasemi	FE-Simulation of Tread Profile Effects on the Performance of the Cellular Shear Band Based Non-Pneumatic Tire (2012-01-0768) Jianfeng Ma, St. Louis Univ.; Joshua Summers, Paul Joseph, Clemson Univ
2:40 p.m.	Development of High Strength Polymer Based Bearing for Automotive Parts under Boundary Lubrication (2012-01-0751) Yohei Takada, Hideki Iwata, Takahiro Niwa, Satoshi Kamiya, Daido Metal Co., Ltd.	High Strength Light-Weight Valve Spring for Automotive Engine to Enhance Fuel Efficiency (2012-01-0528) Jung-Suk Lee, Young Sang Ko, Hyung Oh Ban, Hyundai Motor Company	Direct-Coupled Fluid-Structure Interaction for Automotive Applications (2012-01-0760) Rajeev Jaiman, Harold Thomas, Farzin Shakib, Altair Engineering Inc.	A New Modeling Strategy for the Transient Behavior of Tire-Snow Interaction (2012-01-0766) Jonah Lee, Univ. of Alaska Fairbanks; Cheng-fu Chen, Univ. of Alaska

Continued on next page

WEDNESDAY, APRIL 25 - AFTERNOON Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	D0-03D	D0-05A	D0-04B	D0-04C
	Advances in Plastic Components, Processes and Technologies (M302) This session will cover a very broad range of applications, processes and technologies as the title suggests. Please refer to the Session Schedule for M302 to get a list of specific papers / presentations contained in this session (session code: M302). 1:00 p.m. - 3:20 p.m. Organizers: Yaomin Dong, Kettering Univ.; Y Charles Lu, University of Kentucky; Robert Maynard, EMS-Grivory America	Applications of Advanced High-Strength Steels for Automotive Structures (Part 2 of 2) (M205) This symposium provides a forum for researchers and application engineers to disseminate the knowledge and information gained in the area of advanced high-strength steel development and applications in automotive structures, enabling light-weight and durable vehicles with improved safety. 1:00 p.m. - 3:20 p.m. Organizers: Constantin Chiriac, United States Steel Corp.; Jason Coryell, General Motors; Michael L. Santella, Oak Ridge National Laboratory; Raj Sohmshtetty, Ford Motor Co.; Raj Mohan Iyengar, US Nuclear Regulatory Commission Chairpersons: Jason Coryell, General Motors	CAE Durability Analysis & Applications (Part 2 of 2) (M162) This technical session focuses on advanced technologies in material modeling, stress calculation and fatigue analysis, not only innovative and improved methods in these areas but also innovative and improved applications to automotive engineering. Discussions on new material constitutive model development, innovative and improved modeling techniques for stresses, recent advances in fatigue damage calculation and fatigue life predictions will be addressed. 1:00 p.m. - 3:00 p.m. Organizers: Mingchao Guo, Chrysler Group LLC; Guangtian Gavin Song, AM General LLC; Guofei Chen, United States Steel Corporation; Fan Li, GM; Ali Fatemi, Univ. of Toledo; Mark A. Pompetzki, HBM-nCode; Yung-Li Lee, Chrysler Group LLC Chairpersons: Guofei Chen, United States Steel Corp.; Guangtian Gavin Song, AM General LLC	Load Simulation and Analysis in Automotive Engineering (Part 2 of 4): Tire-Terrain and Multi-Body System Modeling and Applications (M151) Focusing on tire and terrain mechanics modeling for load simulations, tire model development, parameters identification, and sensitivity analyses, tire test development, road profile characterization, effective road profile development, and interactions between tire, suspension/steering/brake systems, and different terrains, spindle loads/travel variation characteristics from proving ground test on deterministic and rough roads, terramechanics, and correlation studies. 1:00 p.m. - 3:20 p.m. Organizers: Brad Hopkins, Virginia Tech; Paramsothy Jayakumar, TARDEC; Ken Kang, Honda R&D Americas Inc.; Xiaobo Yang, Oshkosh Corporation Chairpersons: Ken Kang, Honda R&D Americas Inc.; Xiaobo Yang, Oshkosh Corporation
3:00 p.m.	Effect of Biodiesel on the Tensile Properties of Nylon-6 (2012-01-0752) Pranab Sen Choudhury, Pankaj Mallick, University of Michigan-Dearborn	Development of High Cr Sintered Stainless Steel with High Heat and Wear Resistance (2012-01-0062) Daisuke Fukae, Hideaki Kawata, Hitachi Powdered metals Co. Ltd.		Indoor/Outdoor Testing of a Passenger Car Suspension for Vibration and Harshness Analysis (2012-01-0765) Charles J. Gagliano, Honda R&D Americas Inc.; Massimiliano Gobbi, Giampiero Mastinu, Mario Pennati, Politecnico di Milano
3:20 p.m.				
			Selection of Constitutive Models in Rubber Bushing Simulation (Written Only -- No Oral Presentation) (2012-01-0761) Yuan Qu, Shen Wu, Min Sun, Peter Qiu, Linbo Zhang, Chery Automobile Co., Ltd.	Numerical Investigation of the Vertical Dynamics of an Agricultural Vehicle Operating on Deformable Soil (Written Only -- No Oral Presentation) (2012-01-0764) Silvia Negrini, Edoardo Sabbioni, Francesco braghin, Politecnico di Milano; stefano melzi
				Experimental Characterization of the Lateral Response of a Tire under Hydroplaning Condition (Written Only -- No Oral Presentation) (2012-01-0769) Stefano Melzi, Marco Sbroi, Edoardo Sabbioni, Vincenzo d'alessandro, Politecnico di Milano
	Planned by Polymers and Coatings Committee / Materials Engineering Activity	Planned by Ferrous Committee / Materials Engineering Activity	Planned by Materials Modeling and Testing Committee / Materials Engineering Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00265, and also individually. To purchase visit collections.sae.org	Planned by Materials Modeling and Testing Committee / Materials Engineering Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00263, and also individually. To purchase visit collections.sae.org

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WEDNESDAY, APRIL 25 - AFTERNOON Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM		
	D0-05A	D0-03D	D0-04C
	Chat with the Expert: Challenges in Sheet Metal Forming Technologies and Simulation Methods (MCHAT210) Learn about the significant challenges and opportunities in sheet metal forming technologies and simulation methods. Conversation includes the ever-increasing use of light-weighting materials such as aluminum alloys and Advanced High-Strength Steels as demanded by weight reduction efforts and performance requirements. Additionally, talks will include competitive pressure to accelerate vehicle development time and reduce development cost, which require upfront, more reliable simulation methods. 4:00 p.m. - 5:00 p.m. Keynote Speakers: Z. Cedric Xia, Ford Motor Co.	Chat with the Expert: Concept Vehicle Proof Statement - BamBoo Car (MCHAT303) Today, engineering polymers are driving innovations in the automotive industry, especially in the area of electric vehicles. Engineering polymers provide a high strength to weight ratio and excellent toughness as well as environmentally-friendly processing and recyclability opportunities. This expert chat will address the various engineering polymers in design elements and structural components found throughout the "BamBoo" and what is possible with composite for future cars. 4:00 p.m. - 5:00 p.m. Keynote Speakers: Bernhard Pfeiffer, Ticona GmbH	Chat with the Expert: Tire Model Validation and Application - A User Perspective (MCHAT151) Tire model research and development activities have been performed by researchers and engineers world wide for decades and have significant impacts on vehicle development. From user perspective, this chat will highlight the following topics about tire model used for vehicle dynamics related simulation: challenges, applications, testing for parameterization, accuracy requirements for their impact on vehicle model simulation, and validation procedure development. 4:00 p.m. - 5:00 p.m. Keynote Speakers: Xiaobo Yang, Oshkosh Corporation



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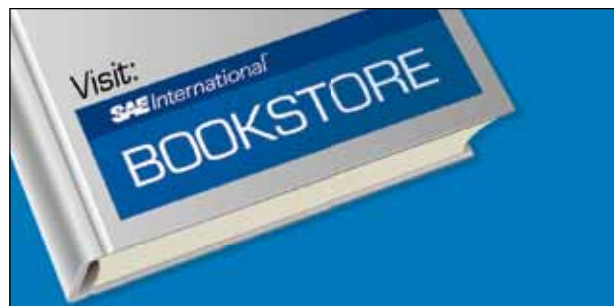
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THURSDAY, APRIL 26 - MORNING Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM	
	D0-03D	D0-05A
	Automotive Composites (M306) This session contains papers which describe the use of modern automotive composites in structural applications. Design, process, and analytical presentations are included, as well as papers presenting results of bonding strategies and techniques. Engineers involved in the design and use of advanced composites will find this session of particular value. 8:00 a.m. - 9:40 a.m. Organizers: Enamul Haque, Bostik Inc.; Y Charles Lu, Univ. of Kentucky; Srikanth Pilla, Univ. of Wisconsin-Madison; Richard Dale Tonda, SEA Limited	Magnesium Technologies (M213) With the higher federal fuel economy standards announced recently, Mg is becoming increasingly more attractive as structural material for automobiles. In recent years, the interest in magnesium research for automotive applications has expanded beyond cast alloys to include wrought alloys. The focus is not only on improving alloy properties, but also on reducing process costs. The technical papers to be presented at the 2012 Magnesium Technologies sessions reflect this broadening perspective. 8:00 a.m. - 9:40 a.m. Organizers: Ravi Verma, General Motors Corp.
8:00 a.m.	POLYURETHANE SELF-SUPPORTING SOLID TIRE FOR FUTURE ROBOTIC VEHICLES (Oral Only) Abraham Pannikottu, American Engineering Group; Jon S. Gerhardt, Univ. of Akron	Influence of the Local Mechanical Behavior on Component Deformation in a Mg Alloy Thin-Walled Frame Casting (2012-01-0770) Joy H. Forsmark, Jacob Zindel, Larry Godlewski, Ari Caliskan, Ford Motor Co.
8:20 a.m.	Lightweight Door Panel Made with Bio-Based Composite Material (2012-01-0942) Steven R. Sopher, JSP; Hidehiro Sasaki, JSP Corporation	Developing a Forming Limit Surface (FLS) for the AZ31B Magnesium Alloy (Oral Only) Fadi Abu-Farha, Penn State Univ-Behrend
8:40 a.m.	5000 hours Aging of THERBAN® (HNBR) Elastomers in an Aggressive Biodiesel Blend (2012-01-0943) Victor Nasreddine, LANXESS Corporation; Christian Mueller, Hubert Bille, Kevin Kulbaba, Matthias Soddemann, Andreas Bischoff, LANXESS Deutschland GmbH	High Temperature Forming Limit Diagrams of AZ31 Magnesium Sheets Obtained by the Pneumatic Stretching Test (Oral Only) Fadi Abu-Farha, Penn State Univ-Behrend; Ravi Verma, Louis Hector, General Motors Company
9:00 a.m.	Evaluation of Mechanical Properties and Effective Thickness of Composite Interfaces (2012-01-0945) Sesha Spandana Pulla, Y Charles Lu, Univ. of Kentucky	Effect of Temperature Variation on Stresses in Adhesive Joints between Magnesium and Steel (2012-01-0771) Shardul Bhambure, Pankaj K. Mallick, University of Michigan-Dearborn
9:20 a.m.	Design and Fatigue Life Comparison of Steel and Composite Leaf Spring (2012-01-0944) Murathan Soner, Olgun Celik Company; Metin Tanoglu, Izmir Institute of Technology; Nilay Guven, Olguncelik Company; Mustafa Karaagac, Olgun Celik Company; Rasim akyali, Ozay Aksoy, Tolga Erdogan, Ahmet Kanbolat, Olguncelik Company	Sliding wear behaviour of squeeze cast magnesium matrix composites (Oral Only) Anindya Banerji, Henry Hu, Ahmet Alpas, Univ of Windsor
	Planned by Polymers and Coatings Committee / Materials Engineering Activity	Planned by Non-Ferrous Committee / Materials Engineering Activity



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THURSDAY, APRIL 26 - AFTERNOON Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM		
	D0-04C	D0-03D	D0-03D
	Advanced Analysis, Design, and Optimization of Materials, Restraints, and Structures for Enhanced Automotive Safety and Weight Reduction (M103) Papers with an emphasis on, but not limited to, innovative ideas to enhance automotive safety with improved material constitutive modeling, analysis methods, simulation and pre/post processing tools, optimization techniques, finite element model updating, model validation and verification techniques, restraint systems, as well as lightweight material applications and designs are highly encouraged. 1:00 p.m. - 4:00 p.m. Organizers: Jwo Pan, Univ. of Michigan-Ann Arbor; Tau Tyan, Ford Motor Co.; Guofei Chen, United States Steel Corporation; Wei Li, General Motors Company; William J. Altenhof, Univ. of Windsor; S. George Luckey, Ford Motor Co.; Sheng-Dong Liu, Generalty LLC	Advances in Coating (M303) This session will provide a look at advanced coating, e-coating, clear coat and pretreatment technologies with a focus on improved performance and appearance. Additional discussions will be on the sustainability impact of coatings, new test methodologies such as weathering test cycles, and impact on coating quality and color on consumer purchasing. Where appropriate extended Q&A sessions will occur. 1:00 p.m. - 4:00 p.m. Organizers: James Keller, Hatci; Daniel G. Wright, BASF Corp. Chairpersons: James Keller, Hatci; Daniel Wright, BASF Corp	Chat with the Expert: New Generations of Cathode and Electrolyte Materials (MCHAT304) Two factors for better market adoption of battery-powered vehicles are longer driving range associated with higher energy density batteries and improved lifetime of the batteries. Doing so will enable increased driving distances and better customer satisfaction for full electric, plug-in, or hybrid vehicles. This chat will address new generations of cathode and electrolyte materials that will provide better performance and safety through much higher energy density and longer battery lifetime. 1:00 p.m. - 2:00 p.m. Keynote Speakers: Phillip Hanefeld, BASF Corp.
1:00 p.m.	Side Crash Pressure Sensor Prediction: An ALE Approach (2012-01-0046) Tau Tyan, Ben McClain, Kirk D. Arthurs, Jeffrey Rupp, Mahmoud Yousef Ghannam, David Bauch, Todd Clark, Ford Motor Co.; Dilip M. Bhalsod, Jason Wang, LSTC	Technical Keynote: Emerging Technologies in Polymers and Coatings (Oral Only) Jamil Baghdachi, Eastern Michigan Univ.	
1:20 p.m.	Side Crash Pressure Sensor Prediction: An Improved Corpuscular Particle Method (2012-01-0043) Tau Tyan, Ben McClain, Kirk Arthurs, Jeffrey Rupp, Mahmoud Ghannam, David Bauch, Todd Clark, Ford Motor Co.; Dilip Bhalsod, Jason Wang, LSTC		
1:40 p.m.	Assessment Method of Effectiveness of Passenger Seat Belt Reminder (2012-01-0050) Motoyuki Akamatsu, Human Technology RI, AIST; Hiroshi Hashimoto, Japan Automobile Research Institute; Shinji Shimaoka, Japanese Automobile Manufacturers Association	Development of Scratch Resistant Clear Coat for Automotive (Oral Only) Junya Ogawa, Developmental Center	
2:00 p.m.	Airbag System Applied to Microvans (2012-01-0047) Daqing Zhang, Xinming Wang, Jialiang Huang, Zongma Zhou, Yanqing Wang, Xiaoyan Zhang, Chenlei Wang, Huayong Wang, Xiaohui Nie, Wenlin Zhang, Kaifeng SciTech. Co.Ltd	Using the Beer-Lambert Law and Kubelka-Munk Theory to Model Percent Transmittance of Multilayer Composite Coatings (Oral Only) Donald H. Campbell, BASF Corp.	
2:20 p.m.	Relationship between Material Properties and Local Formability of DP980 Steels (2012-01-0042) Kyoo Sil Choi, Ayoub Soulami, Dongsheng Li, Xin Sun, Moe Khaleel, Pacific Northwest National Laboratory; Le Xu, Frederic Barlat, POSTECH	Development of an Enhanced Accelerated Weathering Test Cycle for Automotive Coatings (2012-01-1173) Todd Fitz, Honda R&D Americas Inc.	
2:40 p.m.	Optimized AHSS Structures for Vehicle Side Impact (2012-01-0044) Guofei Chen, Ming F. Shi, United States Steel Corporation; Tau Tyan, Ford Motor Co	Organic/Inorganic Coatings Cured by Ultraviolet Light and Moisture for Automotive Glass (2012-01-1174) Syed Mahdi, THE DOW CHEMICAL COMPANY	
3:00 p.m.	Crashworthiness and Numerical Analysis of Composite Inserts in Vehicle Structure (2012-01-0049) Chung-Kyu Park, Cing-Dao Kan, The George Washington University; Steven Reagan, L & L Products Inc.; Balachandra Deshpande, SimaFore Inc.; Pradeep Mohan, The George Washington University	PPG study reveals importance of color in vehicle purchase decisions (Oral Only) Michael Millar, PPG	

THURSDAY, APRIL 26 - AFTERNOON

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM		
	D0-04C	D0-03D	D0-03D
	Advanced Analysis, Design, and Optimization of Materials, Restraints, and Structures for Enhanced Automotive Safety and Weight Reduction (M103) Papers with an emphasis on, but not limited to, innovative ideas to enhance automotive safety with improved material constitutive modeling, analysis methods, simulation and pre/post processing tools, optimization techniques, finite element model updating, model validation and verification techniques, restraint systems, as well as lightweight material applications and designs are highly encouraged. 1:00 p.m. - 4:00 p.m. Organizers: Jwo Pan, Univ. of Michigan-Ann Arbor; Tau Tyan, Ford Motor Co.; Guofei Chen, United States Steel Corporation; Wei Li, General Motors Company; William J. Altenhof, Univ. of Windsor; S. George Luckey, Ford Motor Co.; Sheng-Dong Liu, General LLC	Advances in Coating (M303) This session will provide a look at advanced coating, e-coating, clear coat and pretreatment technologies with a focus on improved performance and appearance. Additional discussions will be on the sustainability impact of coatings, new test methodologies such as weathering test cycles, and impact on coating quality and color on consumer purchasing. Where appropriate extended Q&A sessions will occur. 1:00 p.m. - 4:00 p.m. Organizers: James Keller, Hatci; Daniel G. Wright, BASF Corp. Chairpersons: James Keller, Hatci; Daniel Wright, BASF Corp	Chat with the Expert: New Generations of Cathode and Electrolyte Materials (MCHAT304) Two factors for better market adoption of battery-powered vehicles are longer driving range associated with higher energy density batteries and improved lifetime of the batteries. Doing so will enable increased driving distances and better customer satisfaction for full electric, plug-in, or hybrid vehicles. This chat will address new generations of cathode and electrolyte materials that will provide better performance and safety through much higher energy density and longer battery lifetime. 1:00 p.m. - 2:00 p.m. Keynote Speakers: Phillip Hanefeld, BASF Corp.
3:20 p.m.	Characterization of Mechanical Behavior of Thermoplastics with Local Deformation Measurement (2012-01-0040) Gongyao Gu, Shaoting Lin, Yong Xia, Qing Zhou, Tsinghua University; Chin-Hsu Lin, General Motors Company	Effect of Various Electrocatalytic Anodes on Hexavalent and Trivalent Chrome Plating Solutions (Oral Only) Marilyn Jo Niksa, Water Star Inc.	
3:40 p.m.	New Skate Chassis Concept for Electric Vehicles (2012-01-0039) Luis Pinheiro, Filipe Passarinho, Alexandre Teixeira, Helena Silva, Bernardo Ribeiro, CEIA	Forecast Salt Spray Test Results of Automotive Corrosive Parts by Electrochemical Corrosion Evaluation. (Oral Only) Santosh Kumar Sarang, Aisin Technical Center of America	
	Determination of Geometrical Parameters of the Dead Metal Zone and Exit Curvature Profile in the Extrusion Process of Non-Symmetrical Flat Dies (Written Only -- No Oral Presentation) (2012-01-0052) Meysam Rastegar, Ahmad Assempour, Amir Ghazanfari, Sharif Univ of Technology		
	Finite Element Analysis of Friction-Assisted Powder Compaction Process (Written Only -- No Oral Presentation) (2012-01-0051) Orest Kostiv, Ryerson University & MAGNA International; Kamran Behdinan, University of Toronto; Seyed Hashemi, Ryerson University		
	Planned by Materials Modeling and Testing Committee / Materials Engineering Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00262, and also individually. To purchase visit collections.sae.org	Planned by Polymers and Coatings Committee / Materials Engineering Activity	

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MATERIALS

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AS OF MARCH 20, 2012

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Autodesk.....	525
Bruker Corporation, Nano Surfaces Division	1113
Bulk Molding Compounds Inc	901
CALS CORPORATION	1324
Core Molding Technologies Inc.....	931
Edag Inc.....	308
Element Materials Technology Wixom.....	1133
Hong Kong Trade Development Council...	632
International Products Corp.....	1121
Ixetic GmbH	537
Kienle + Spiess GmbH	537
KIPP Car Comfort Systems	537
KSM Castings GmbH	537
REM Surface Engineering.....	1000
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Intelligent Vehicle Initiative (IVI) Technology Advanced Controls and Navigation, 2012	COLL-TP-00245	8	\$111.00
Systems Engineering, 2012	COLL-TP-00246	11	\$127.00
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Exhaust Emission Control Modeling, 2012	COLL-TP-00287	19	\$175.00
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Design Optimization Methods and Applications, 2012	COLL-TP-00250	7	\$111.00
Reliability and Robust Design in Engineering, 2012	COLL-TP-00260	17 est	\$175.00
Materials			
Advanced Analysis, Design, and Optimization of Materials, Restraints, and Structures for Enhanced Automotive Safety and Weight Reduction, 2012	COLL-TP-00262	11	\$127.00
Load Simulation and Analysis in Automotive Engineering, 2012	COLL-TP-00263	31	\$238.00
CAE Analysis and Application, 2012	COLL-TP-00264	10 est	\$127.00
CAE Durability Analysis & Applications, 2012	COLL-TP-00265	11	\$127.00
Welding, Joining and Fastening for Automotive Applications, 2012	COLL-TP-00261	9 est	\$111.00

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Advanced Hybrid Vehicle Powertrains, 2012	COLL-TP-00266	40	\$254.00
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SI Combustion, 2012	COLL-TP-00272	13	\$127.00
Direct Injection SI Engine Technology, 2012	COLL-TP-00273	13	\$127.00
Fuel & Additive Effects on SI Engine Performance, 2012	COLL-TP-00274	16 est	\$159.00
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Powertrain Control & Calibration, 2012	COLL-TP-00284	21	\$191.00
Combustion Control and Optimization, 2012	COLL-TP-00285	21	\$191.00
New CI & SI Engines and Components, 2012	COLL-TP-00289	23	\$191.00
Engine Boosting Systems, 2012	COLL-TP-00290	14	\$159.00
CI & SI Power Cylinder Systems, 2012	COLL-TP-00291	15	\$159.00
Transmission and Driveline, 2012	COLL-TP-00292	28	\$222.00
Safety/Testing			
Noise and Vibration, 2012	COLL-TP-00239	17 est	\$175.00
Steering and Suspension Technology, 2012	COLL-TP-00240	9	\$127.00
Vehicle Dynamics, Stability and Control, 2012	COLL-TP-00241	23	\$191.00
Active Safety, 2012	COLL-TP-00242	14	\$159.00
Safety Critical Systems, 2012	COLL-TP-00243	11	\$127.00
Fire Safety, 2012	COLL-TP-00251	9	\$127.00
Automotive Lighting Technology and Human Factors in Driver Vision and Lighting, 2012	COLL-TP-00252	15	\$159.00
Accident Reconstruction, 2012	COLL-TP-00253	29 est	\$222.00
Biomechanics, 2012	COLL-TP-00254	7	\$111.00
Rear Impact, Rollover, and Side Impact, 2012	COLL-TP-00256	22	\$191.00
Vehicle Aerodynamics, 2012	COLL-TP-00258	32	\$238.00

*Pricing and paper count subject to change

SESSIONS TECHNICAL, BUSINESS & EXECUTIVE

Author information text is published as submitted by technical paper authors.

	Tues		Wed		Thur		Room No.	Page No.
	AM	PM	AM	PM	AM	PM		
Advanced Battery Technology (Part 1 & 2) (PFL103)	-	-	✓	✓	-	-	O2-44	133, 134, 136, 137
Advanced Fuel Cell Vehicle Applications (Part 1 & 2) (PFL101)	-	-	-	-	✓	✓	O2-44	
Advanced Hybrid Vehicle Powertrains (Part 1 - 5) (PFL100)	✓	✓	✓	✓	✓	-	O2-33	118, 122, 123, 129, 130, 136, 137, 143, 144
Alternative and Advanced Fuels (Part 1 & 2) (PFL215)	-	-	-	-	✓	✓	W2-68	147, 148, 150, 151
Battery Mechanics (Part 1 & 2) (PFL107)	✓	✓	-	-	-	-	O2-43	118, 122, 123
CI & SI Power Cylinder Systems (Part 1 & 2) (PFL502)	-	-	-	-	✓	✓	W2-69	143, 144, 150, 151
Chat with the Expert: Implementing Wireless Power Charging (PFLCHAT130)	-	-	-	✓	-	-	O2-44	141
Chat with the Expert: What Approaches will Advanced Diesel Engine Air Path Controllers Utilize in the Future? (PFLCHAT330)	-	-	-	✓	-	-	W2-70	142
Cold Start and Transients (PFL211)	-	-	-	-	✓	-	W2-61	149
Combustion Control and Optimization (Part 1 - 3) (PFL303)	-	-	-	✓	✓	✓	W2-70	141, 147, 148, 150, 151
Direct Injection SI Engine Technology (Part 1 & 2) (PFL202)	✓	✓	-	-	-	-	W2-64	118, 122, 123
EcoCAR Development (PFL110)	-	-	-	-	-	✓	O2-33	152, 153
Electric Motor & Power Electronics (Part 1 & 2) (PFL104)	✓	✓	-	-	-	-	O2-44	118, 124, 125
Engine Boosting Systems (Part 1 & 2) (PFL501)	-	✓	✓	-	-	-	W2-69	124, 125, 129, 130
Engine Flows and Combustion Diagnostics (PFL212)	-	-	-	-	-	✓	W2-61	152, 153
Fuel & Additive Effects on CI Engine Performance (Part 1 & 2) (PFL205)	-	-	✓	✓	-	-	W2-63	133, 134, 139, 140
Fuel & Additive Effects on SI Engine Performance (Part 1 & 2) (PFL203)	-	-	-	-	✓	✓	W2-66	143, 144, 152, 153
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Fuel Injection and Sprays - Numerical (Part 2 of 3) (PFL210)	-	-	-	-	✓	-	W2-65	145, 146
Fuel Injection and Sprays - Numerical (Part 3 of 3) (PFL210)	-	-	-	-	-	✓	W2-65	152, 153
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Heat Transfer and Advances in Thermal & Fluid Sciences - Lubrication and Vehicle Systems (PFL214)	-	-	-	-	-	✓	O2-43	154
High Efficiency IC Engines (Part 1 & 2) (PFL216)	✓	✓	-	-	-	-	W2-63	119, 124, 125
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Kinetically Controlled CI Combustion (Including HCCI) (Part 1 - 3) (PFL206)	-	-	✓	✓	✓	-	W2-64	129, 130, 136, 137, 145, 146

	Tues		Wed		Thur		Room No.	Page No.
	AM	PM	AM	PM	AM	PM		
Lubricant and Engineered Surfaces Research & Development (PFL508)	✓	-	-	-	-	-	W2-69	119
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Mixing-Controlled CI Combustion (Part 1 - 3) (PFL204)	✓	✓	✓	-	-	-	W2-68	120, 124, 125, 129, 130
Modeling of SI and Diesel Engines - 2 Stroke Engines (PFL208)	-	-	-	✓	-	-	W2-61	141
Modeling of SI and Diesel Engines - Acoustics & Charging (PFL208)	-	-	-	✓	-	-	W2-61	138
Modeling of SI and Diesel Engines - CI Combustion (PFL208)	-	-	-	-	✓	-	W2-61	145, 146
Modeling of SI and Diesel Engines - Fundamentals (PFL208)	-	-	✓	-	-	-	W2-61	131, 132
Modeling of SI and Diesel Engines - Mechanical Systems (PFL208)	-	-	✓	-	-	-	W2-61	135
Modeling of SI and Diesel Engines - SI Combustion (PFL208)	✓	-	-	-	-	-	W2-61	120
Modeling of SI and Diesel Engines- System Modeling & Controls (PFL208)	-	✓	-	-	-	-	W2-61	126, 127
Multi-Dimensional Engine Modeling (Part 1 - 4) (PFL209)	✓	✓	✓	✓	-	-	W2-66	120, 126, 127, 131, 132, 138
Natural Gas Engines and Vehicles (PFL106)	-	-	-	✓	-	-	O2-43	141
New CI & SI Engines and Components (Part 1 - 3) (PFL500)	✓	✓	✓	-	-	-	W2-65	120, 126, 127, 133, 134
Powertrain Actuators and Sensors (PFL302)	-	-	-	-	✓	-	W2-70	147, 148
Powertrain Control & Calibration (Part 1 - 3) (PFL300)	-	✓	✓	✓	-	-	W2-67	126, 127, 131, 132, 135, 138
Powertrain NVH (PFL504)	-	-	-	✓	-	-	W2-69	138
SI Combustion - Alternative Fuels and Emissions (PFL201)	-	-	-	-	✓	-	W2-68	147, 148
SI Combustion - Pre-Ignition, Knock, and Ignition (PFL201)	-	-	-	✓	-	-	W2-68	139, 140
Small Engine Technology (PFL503)	✓	-	-	-	-	-	W2-69	121
Transmission and Driveline: Transmission Systems / Hybrids (PFL600)	-	-	✓	-	-	-	O2-35/36	131, 132
Transmission and Driveline: All Wheel Drive / IVT/CVT (PFL602)	-	✓	-	-	-	-	O2-35/36	128
Transmission and Driveline: Components / Subsystems (PFL605)	-	-	-	✓	-	-	O2-35/36	139, 140
Transmission and Driveline: Controls (PFL604)	✓	-	-	-	-	-	O2-35/36	121
Transmission and Driveline: Modeling (PFL608)	-	-	✓	-	-	-	O2-35/36	135
Transmission and Driveline: NVH (PFL606)	-	✓	-	-	-	-	O2-35/36	128
Variable Valve Actuation (PFL304)	✓	-	-	-	-	-	W2-70	121

**Powertrain/Propulsion
Session Notepads -
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TUESDAY, APRIL 24 - MORNING

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	O2-33	O2-43	W2-64	O2-44
	Advanced Hybrid Vehicle Powertrains (Part 1 of 5) (PFL100) Charging - Communications and Methods 10:00 a.m. - 11:40 a.m. Organizers: Ryan McGee, Ford Motor Co.; Mark A. Theobald, GM Powertrain; Michael Duoba, Argonne National Laboratory Chairpersons: Ryan McGee, Ford Motor Co	Battery Mechanics (Part 1 of 2) (PFL107) Battery Mechanics address the interest and need in the understanding of mechanics of the high voltage, high power density batteries and the technologies for vehicle integration. Topic includes crash/impact performance, modal performance (e.g. N&V), durability and reliability performance, thermal performance, battery packs and vehicle integration in electric or hybrid electric vehicles (EV or HEV or PHEV), multi-disciplinary performance optimization, and robust optimization. 10:00 a.m. - 11:40 a.m. Organizers: Wayne Cai, General Motors R&D; Xiaosong Huang, General Motors; Thomas Wang, GM Technical Center; Xinran Xiao, Michigan State Univ. Chairpersons: Xiaosong Huang, General Motors; Thomas Wang, GM Technical Center; Xinran Xiao, Michigan State Univ	Direct Injection SI Engine Technology (Part 1 of 2) (PFL202) Focuses on SI combustion technologies that employ direct, in-cylinder fuel injection. Topics of particular interest include in-cylinder fuel injection and spray studies, flow/spray interaction and in-cylinder mixture formation studies, and combustion chamber shape optimization. Focus includes 'stratified' operation or other modes enabled by DI hardware, DI-specific emissions issues such as particulates and smoke, and technologies enabled by DISI (such as downsizing). 10:00 a.m. - 11:40 a.m. Organizers: Jianwen Yi, Ford Motor Co.; Matthew Brusstar, US Environmental Protection Agency; James W G Turner, Lotus Engineering, Ltd.; Sudhakar Das, SwRI; Gerald Micklow, East Carolina University	Electric Motor & Power Electronics (Part 1 of 2) (PFL104) Power electronics and electric motors are essential for improving vehicle efficiency through drivetrain electrification. Technologies that support high efficiency, high power density, and low cost motors and power modules are required for the success of vehicle electrification. 10:00 a.m. - 11:40 a.m. Organizers: Laura Marlino, Oak Ridge National Laboratory; Mark A. Theobald, GM Powertrain; Serdar Yonak, Infineon Technologies North America Corp.
10:00 a.m.	Assessing the Regeneration Potential for a Refuse Truck Over a Real-World Duty Cycle (2012-01-1030) Andrej Ivanco, Rajit Johri, Zoran Filipi, Univ of Michigan	Technical Keynote - Lightweight Structure Development and Optimization Process for Vehicle Electrification (Oral Only) Simon Xu, General Motors Company	Understanding the Effect of DISI Injector Deposits on Vehicle Performance (2012-01-0391) Arndt Joedicke, Jens Krueger-Venus, Peter Bohr, Roger Cracknell, David Doyle, Shell Projects and Technology	Development of High-Power and High-Efficiency Motor for a Newly Developed Electric Vehicle (2012-01-0342) Shunji Oki, Shigeaki Ishikawa, Takeshi Ikemi, Nissan Motor Company Ltd.
10:20 a.m.	Communication for Plug-in Electric Vehicles (2012-01-1036) Richard A. Scholer, Ford Advanced Vehicle Technology; Michael Bourton, Grid2home; Dan Mephram, General Motors Company; Arindam Maitra, EPRI Company; Tim Godfrey, Electric Power Research Institute; Doug Oliver, Ford Motor Co; Donthy Venkatesh, OnStar LLC; Eloi Taha, Nissan Technical Center NA; Michael Muller, SPX Service Solutions; Cliff Fietzek, BMW	A Review Study of Methods for Lithium-ion Battery Health Monitoring and Remaining Life Estimation in Hybrid Electric Vehicles (2012-01-0125) Seyed Ehsan Samadani, Roydon A. Fraser, Michael Fowler, University of Waterloo	Fuel Rail Pressure Rise during Cold Start of a Gasoline Direct Injection Engine (2012-01-0393) David Burke, Delphi Corp; David Foti, James Haller, Delphi Energy & Engine Mgmt Systems; William J. Fedor, Delphi Powertrain	Development of Compact Transverse Flux Motor with 2 Coils and 3 Stators (2012-01-0344) Tadanobu Takahashi, Daijiro Takizawa, Shin Aoki, Shigeru Tajima, Nobuyuki Imai, Honda R&D Co., Ltd.
10:40 a.m.	Battery Charge Balance and Correction Issues in Hybrid Electric Vehicles for Individual Phases of Certification Dynamometer Driving Cycles as Used in EPA Fuel Economy Label Calculations (2012-01-1006) Mark Meyer, Virginia Tech / Argonne National Lab; Douglas Nelson, Virginia Tech; Henning Lohse-Busch, Argonne National Laboratory	Concepts for Mechanical Abuse Testing of High-Voltage Batteries (2012-01-0124) Wolfgang Sinz, Florian Feist, Gregor Gstrein, Jürgen Gugler, Ernst Tomasch, Christoph Breiffuss, Peter Luttenberger, Hermann Steffan, Graz University of Technology; Peter Gollob, Volker Hennige, AVL LIST GmbH	Dosing Performance of Piezo Injectors and Sensorless Closed-Loop Controlled Solenoid Injectors for Gasoline Direct Injection (2012-01-0394) Sebastian Skiba, Joachim Melbert, Ruhr-University of Bochum	Reduced Magnet Designs and Position Self-Sensing Control Methods of Flux-Intensifying Permanent Magnet Synchronous Machines (2012-01-0345) Jun Tamura, Nissan Motor Company Ltd.; Chen-Yen Yu, Natee Limsuwan, Robert Lorenz, University of Wisconsin-Madison
11:00 a.m.	SAE J2954: Guideline for Wireless Charging for Electric and Plug-In Electric Vehicles created with Laboratory and Vehicle Validation Testing. (Oral Only) Jesse Schneider, BMW AG	Traction Battery and Battery Control Unit Development (2012-01-0122) Juergen Ogrzewalla, FEV GmbH	Influence of Injection and Ambient Conditions on the Nozzle Exit Spray of an Outwardly Opening GDI Injector (2012-01-0396) Diana Cordes, Philipp Pischke, Reinhold Kneer, RWTH Aachen University	Influence of the Coil Pitch and the Slot/Pole Number Combination upon the Performance of Permanent Magnet Motors (2012-01-0336) Takashi Fukushima, Daiki Tanaka, Yuichi Shibukawa, Nissan Motor Company Ltd.
11:20 a.m.	Design and Development of a Formula SAE® Style Electric Vehicle Utilizing OLEV® Technology (Written Only -- No Oral Presentation) (2012-01-1042) Dinh Dung Vu; Aaron Park; In-Soo Suh	26,500km Down the Pan-American Highway in an Electric Vehicle A Battery's Perspective (2012-01-0123) Clemens Lorf, Ricardo F. Martinez-Botas, Nigel Brandon, Imperial College London	Split-Injection Strategies under Full-Load Using DMF, A New Biofuel Candidate, Compared to Ethanol in a GDI Engine (2012-01-0403) Ritchie Daniel, Chongming Wang, Hongming Xu, University of Birmingham; Guohong Tian, Newcastle University	A Sensorless-Based Control Scheme to Enhance the Accuracy of Position Encoders Used in Permanent Magnet Synchronous Motors for Automotive Applications (2012-01-0343) Jeremy Malaize, Wissam Dib, IFP New Energy
	Design and Development of a Formula SAE® Style Electric Vehicle Utilizing OLEV® Technology (Written Only -- No Oral Presentation) (2012-01-1042) Dinh Dung Vu; Aaron Park; In-Soo Suh			
	Planned by Advanced Power Sources Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00266, and also individually. To purchase visit collections.sae.org	Planned by Advanced Power Sources Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00270, and also individually. To purchase visit collections.sae.org	Planned by Combustion and Fuels Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00273 and SUB-TP-00008, and also individually. To purchase visit collections.sae.org	Planned by Advanced Power Sources Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00269, and also individually. To purchase visit collections.sae.org

TUESDAY, APRIL 24 - MORNING Technical and Business Sessions

TIME	W2-63	W2-69	W2-67
	High Efficiency IC Engines (Part 1 of 2) (PFL216) This session will highlight technologies impacting IC engine efficiency, including engine downsizing, pressure boosting and turbocharging; intelligent combustion such as high dilution, low temperature and stratified charge; variable compression ratios and fully variable valvetrains; advanced fuel injection technologies, and much more. 10:00 a.m. - 11:20 a.m. Organizers: Neville Bugli, Sogefi Filter Division - N A; Bengt Johansson, Lund University; Gerald Micklow, East Carolina University; Christine Stanfel, Parker Hannifin; Robert M. Wagner, Oak Ridge National Laboratory Chairpersons: Gerald Micklow, East Carolina University; Robert M. Wagner, Oak Ridge National Laboratory	Lubricant and Engineered Surfaces Research & Development (PFL508) Discussions in this session involve lubricant research and development that is necessary to advance and support new automotive engineering technology as well as related developments in engineered surfaces. 10:00 a.m. - 11:00 a.m. Organizers: Michael Huston, Chris McFadden, Lubrizol Corp.; Timothy P. Newcomb, BorgWarner Inc. Chairpersons: Michael Huston, Lubrizol Corp; Timothy Newcomb, BorgWarner Inc	Military Vehicle: Advanced Propulsion System Technology (MV101) This year's focus will be on high output, heavy fuel, military engines including JP-8 and synthetic blends of JP-8 fuel effects on engine performance. 10:00 a.m. - 11:40 a.m. Organizers: Peter Schihl, US Army TACOM; John Tasdemir, US Army TARDEC Chairpersons: Peter Schihl, US Army TACOM
10:00 a.m.	Engine Thermal Control for Improving the Engine Thermal Efficiency and Anti-Knocking Quality (2012-01-0377) Daishi Takahashi, Koichi Nakata, Yasushi Yoshihara, Toyota Motor Corporation	Tribological Behavior of Plasma Electrolyte Oxidation Coating on Al 319 Aluminum Alloy (2012-01-0165) Hoda Eliat, Xueyuan Nie, Univ of Windsor	Performance of JP-8 Unified Fuel in a Small Bore Indirect Injection Diesel Engine for APU Applications (2012-01-1199) Valentin Soloiu, April Covington, Jeff Lewis, Marvin Duggan, James LoBue, Georgia Southern University; Marcis Jansons, Wayne State University
10:20 a.m.	Indicated Cycle Efficiency Improvements of a 4-Stroke, High Compression Ratio, S.I., Opposed-Piston, Sleeve-Valve Engine Using Highly Delayed Spark Timing for Knock Mitigation (2012-01-0378) Michael A Willcox, James M Cleeves, Simon Jackson, Michael Hawkes, Joshua Raimond, Pinnacle Engines	High Speed, Automatable Superfinishing of Rear-Axle Hypoid Gears (2012-01-0164) Michael Frechette, Gary Sroka, Matthew Bell, REM Surface Engineering	Real-Time Combustion Control for Use of Military Grade Jet Fuel in a Heavy Duty Compression Ignition Engine (Oral Only) Gary Hunter, Stephan Kruit, Gus Johnson, AVL Powertrain Engineering Inc.
10:40 a.m.	Full-Time Gasoline Direct-Injection Compression Ignition (GDCI) for High Efficiency and Low NOx and PM (2012-01-0384) Mark C. Sellnau, James Sinnamon, Kevin Hoyer, Harry Husted, Delphi Corp.	Lubricant Formulations for Spark Ignition Direct Injection (SIDI) Turbocharged Engines (Oral Only) Jonathan E. Ayutsede, Andrew Ritchie, Infineum USA LP	The Ignition Behavior of a Coal to Liquid Fischer-Tropsch Jet Fuel in a Military Relevant Single Cylinder Diesel Engine (2012-01-1197) Peter Schihl, Laura Hoogterp-Decker, Eric Gingrich, US Army TARDEC
11:00 a.m.	Reduction in Parasitic Losses by Careful Choice of Alternator Drive System (2012-01-0385) Stewart Mackay, Mahle Powertrain, Ltd.	Discussion Break	
	Improving the Efficiency of Turbocharged Spark Ignition Engines for Passenger Cars through Waste Heat Recovery (Written Only -- No Oral Presentation) (2012-01-0388) Alberto Boretti, Missouri University of Science and Techn		
	Development of advanced oil separator to give uniform oil separation efficiency across engine speed and load conditions (Written Only -- No Oral Presentation) (2012-01-0179) Vivek Kolhe, Tata Technologies, Ltd.; Manu Sharma, Mahle filter system Ltd; K Veeramani, Makarand kulkarni, Ravindra Ravva, Tata Technologies Ltd		
	Planned by Combustion and Fuels Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00283, and also individually. To purchase visit collections.sae.org	Planned by Lubricants and Powertrain Systems Committee / Powertrain Fuels and Lubricants Activity	Planned by Military Vehicle Committee / Commercial Vehicle Activity

TUESDAY, APRIL 24 - MORNING

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	W2-68	W2-61	W2-66	W2-65
	Mixing-Controlled CI Combustion (Part 1 of 3) (PFL204) Features CI combustion technologies distinguished by 1) mixing processes that influence combustion; and 2) combustion phasing closely coupled to the timing of fuel injection. Includes the impact of the fuel injection and jet-mixing processes (e.g. multiple injection strategies, group-hole/ complex injector geometries); impact of swirl/spray targeting on mixing processes; combustion chamber/engine geometry optimization; sources of combustion inefficiency; and the impact of operating conditions. 10:00 a.m. - 11:40 a.m. Organizers: Jose M Garcia, Universidad Politecnica de Valencia; Song-Chang Kong, Iowa State Univ.; Budhadeb Mahakul, Deere & Company; Robert McDavid, Caterpillar Inc.; Mark P. B. Musculus, Sandia National Laboratories; Stefan Simescu, Southwest Research Institute; Dale R. Tree, Brigham Young Univ.; Rishikesh Venugopal, John F. Wright, Cummins Inc.; Yong Yi, Caterpillar Inc.; Ming Zheng, Univ. of Windsor; Raul Payri, Universidad Politecnica de Valencia Chairpersons: Raul Payri, Universidad Politecnica de Valencia; Ming Zheng, Univ of Windsor	Modeling of SI and Diesel Engines - SI Combustion (PFL208) Zero-dimensional, one-dimensional, and quasi-dimensional models for simulation of SI and CI engines with respect to: engine breathing and boosting; SI combustion and emissions; CI combustion and emissions; fundamentals of engine thermodynamics; thermal management; mechanical and lubrication systems; system level models for controls; system level models for vehicle fuel economy and emissions predictions. 10:00 a.m. - 11:40 a.m. Organizers: Kevin L. Hoag, Univ. of Wisconsin; Federico Millo, Politecnico di Torino; Thomas Morel, Gamma Technologies Inc.; Christof Schernus, FEV MOTORENTECHNIK; Brad R. Tillock, EngSim Corporation	Multi-Dimensional Engine Modeling (Part 1 of 4) (PFL209) The spectrum of papers solicited for this session reflect the truly multidisciplinary nature of the field, covering advances in areas such as chemical kinetics, combustion and spray modeling, turbulence, mesh generation, and approaches targeting improved computational efficiency. Papers employing multi-dimensional modeling to gain a deeper understanding of processes related to turbulent transport, transient phenomena, and chemically reacting, two-phase flows are also encouraged. 10:00 a.m. - 11:40 a.m. Organizers: Harro Barths, General Motors Company; Sarah Diakhaby, Computational Dynamics, Ltd.; Allen David Gosman, CD-adapco; Carl Hergart, Caterpillar Chairpersons: Carl Hergart, Caterpillar Inc	New CI & SI Engines and Components (Part 1 of 3) (PFL500) This session covers topics regarding new CI and SI engines and components. This includes analytical, experimental, and computational studies covering hardware development as well as design and analysis techniques. 10:00 a.m. - 11:40 a.m. Organizers: Jeffrey Naber, Michigan Technological Univ.; James E. Smith, West Virginia Univ.; John Szpytman, Continental Automotive Systems US Inc.
10:00 a.m.	Transonic Combustion - Supercritical Gasoline Combustion Operating Range Extension for Low Emissions and High Thermal Efficiency (2012-01-0702) Philip Zoldak, Chris de Boer, Shreeram Shetty, Transonic Combustion	Implementation of a Single Zone k- τ Turbulence Model in a Multi Zone Combustion Model (2012-01-0130) Momir Sjeric, Darko Kozarac, Univ. of Zgb Fac. of Mech Eng. and Nav.; Michael Bogensperger, AVL GmbH	Large Eddy Simulation of the Intake Flow in a Realistic Single Cylinder Configuration (2012-01-0137) Jukka-Pekka Keskinen, Ville Vuorinen, Ossi Kaario, Martti Larmi, Aalto University	Design Concept and Manufacturing Method of a Lightweight Deep Skirt Cylinder Block (2012-01-0406) Azmi Osman, PROTON Malaysia
10:20 a.m.	Investigation of Diesel Injector Nozzle Flow Number Impact on Spray Formation and Combustion Evolution by Optical Diagnostics (2012-01-0701) Luigi Allocca, Bianca Maria Vaglieco, Alessandro Montanaro, Ezio Mancaruso, Istituto Motori CNR; Claudio Ciaravino, General Motors Company; Giovanni Avolio, General Motors Powertrain Europe	Exploitation of Multi-Cycle Engine LES to Introduce Physical Perturbations in 1D Engine Models for Reproducing COV (2012-01-0127) Cecile Pera, Stephane Richard, Christian Angelberger, IFP Energies nouvelles	LES Simulation of Direct Injection SI-Engine In-Cylinder Flow (2012-01-0138) Oldrich Vitek, Jan Macek, Czech Technical Univ.; Reinhard Tatschl, Zoran Pavlovic, Peter Priesching, AVL LIST GmbH	Study of Intake Ports Design for Ultra Low Cost (ULC) Gasoline Engine Using STAR-CD (2012-01-0407) Ashish Vashishtha, Balamurugan Rathinam, Renault (RNTBCI); Laurent Delahaye, Frederic Ravet, Frederic Justet, Renault
10:40 a.m.	Experimental and Numerical Analysis of Nozzle Flow Number Impact on Full Load Performance of an Euro5 Automotive Diesel Engine (2012-01-0679) Carlo Beatrice, Chiara Guido, Valentina Fraioli, Marianna Migliaccio, Istituto Motori CNR	A Monte Carlo Based Turbulent Flame Propagation Model for Predictive SI In-Cylinder Engine Simulations Employing Detailed Chemistry for Accurate Knock Prediction (Oral Only) Simon Bjerkborn, Karin Frojd, Cathleen Perlman, LOGE AB; Fabian Mauss, BTU Cottbus; Henrik Hoffmeyer, Volkswagen AG	Large Eddy Simulation of Partially Premixed Combustion in an Internal Combustion Engine (2012-01-0139) Rickard Solsjö, Mehdi Jangi, Martin Tuner, Xue-Song Bai, Lund University	Development of a Two-Stage Variable Displacement Vane Oil Pump (2012-01-0408) Taguchi Arata, Nissan Motor Company Ltd.; Nicola Novi, Pierburg Pump Technology Italy SpA; Kenji Ariga, Akira Yamashita, Nissan Motor Company Ltd.; Giacomo Armenio, Pierburg Pump Technology Italy SpA
11:00 a.m.	Emission Reduction using a Close Post Injection Strategy with a Modified Nozzle and Piston Bowl Geometry for a Heavy EGR Rate (2012-01-0681) Jeongwoo Lee, Seungmok Choi, Junyong Lee, Seunghyup Shin, Seunghyun Lee, Han Ho Song, Kyoungdoug Min, Seoul National Univ.; Hoimyoung Choi, Advanced Institutes of Convergence Tech.	Soot Formation Model Applied to Spark Ignition Engine (2012-01-0128) Ahmed E. Hassaneen, Dept of Auto Tech, Helwan Univ, Egypt; Stephen Samuel, Denise Morrey, Oxford Brookes Univ	On LES Grid Criteria for Spray Induced Turbulence (2012-01-0141) Siddhartha Banerjee, Christopher Rutland, Univ. of Wisconsin Madison	Cylinder Block Temperature Mapping and Development of Cooling Cowl for Reducing the Maximum Liner Temperature (2012-01-0405) Vipin Sukumaran T, Sandeep Kolluri, Sumith Joseph, T. Sreenivasulu, R Parthiban, Mohan D Umate, TVS Motor Company Limited
11:20 a.m.	An Open Cycle Simulation of DI Diesel Engine Flow Field Effect on Spray Processes (2012-01-0696) Kohei Fukuda, Abbas Ghasemi, Ronald Barron, Ram Balachandar, University of Windsor Planned by Combustion and Fuels Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00275 and SUB-TP-00009, and also individually. To purchase visit collections.sae.org	An Online Crank-Angle-Resolved Mean-Value Combustion Model of Gasoline Engines Including Effects of Cycle Initial States (2012-01-0129) Zheng Qu, Mike Ma, Fuquan Zhao, Geely Automobile Research Int Planned by Combustion and Fuels Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00278 and SUB-TP-00008, and also individually. To purchase visit collections.sae.org	Analyzing Local Combustion Environment with a Flamelet Model and Detailed Chemistry (2012-01-0150) Ossi Kaario, Aalto University; Anders Brink, Åbo Akademi; Armin Wehrfritz, Martti Larmi, Aalto University Planned by Combustion and Fuels Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00279 and SUB-TP-00008, and also individually. To purchase visit collections.sae.org	Optimization of Crankshaft Torsional Rigidity for Fatigue Strength Improvement Using CAE (2012-01-0404) Manoj Ukhande, Rajesh Mane, Girish Shegavi, CDFD Engg. Bharat Forge Ltd. Pune, India Planned by Lubricants and Powertrain Systems Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00289, and also individually. To purchase visit collections.sae.org

TUESDAY, APRIL 24 - MORNING Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM		
	W2-70	O2-35/36	W2-69
	Variable Valve Actuation (PFL304) Variable Valve Actuation mechanisms, devices, and systems; and the impact and control of such systems on thermodynamics, combustion, fuel economy, emissions, and performance. 10:00 a.m. - 11:40 a.m. Organizers: Timothy Kunz, Delphi Corp.; Steven Ernest, Jacobs Vehicle Systems Inc.; James Robert Westbrook, Chrysler Group LLC Chairpersons: Steven Nelson Ernest, Jacobs Vehicle Systems Inc.; Timothy Kunz, Delphi Automotive Systems LLC; James Robert Westbrook, Chrysler Group LLC	Transmission and Driveline: Controls (PFL604) This session covers transmission and driveline controls. Session will cover topics related to controls hardware, controls software, and controls integration. 10:20 a.m. - 11:20 a.m. Organizers: Gang Chen, Hussein Dourra, Chrysler Group LLC; Erich L. Wilfinger, Jatco USA Inc.	Small Engine Technology (PFL503) In this session, papers regarding research and development on small engine technology will be included. Topics will possibly consist of combustion, emission, control, NVH, etc. 11:20 a.m. - 11:40 a.m. Organizers: Mikhail A. Ejakov, David Masser, Ford Motor Co.; Scott A. Miers, Michigan Technological Univ.
10:00 a.m.	Overview of Measurement Technology for Valve Lift and Rotation on Motored and Fired Engines (2012-01-0159) Robert Kerres, Dominik Schwarz, Matthias Bach, Klaus Fuoss, Andreas Eichenberg, Johannes Wüst, Porsche Engineering Services GmbH		
10:20 a.m.	Iterative Learning Control for a Fully Flexible Valve Actuation in a Test Cell (2012-01-0162) Hai Wu, Jyh-Shin Chen, Meng-Feng Li, Russell P. Durrett, General Motors Company; Wen Chen, Wayne State University; Kevin L. Moore, Colorado School of Mines	Method for Identification of the Kiss Point as well as Takeoff Point of a Hydraulically Actuated Friction Clutch (2012-01-0112) Alex Tarasow, Christian Bohn, Clausthal University of Technology; Guido Wachsmuth, Roland Serway, IAV; Marcel Eisbach, Qi Zhao, Georg Bauer, Clausthal University of Technology	
10:40 a.m.	Cylinder Deactivation with Mechanically Fully Variable Valve Train (2012-01-0160) Rudolf Flierl, Frederic Lauer, Kaiserslautern Technical University; Michael Breuer, Kolbenschmidt Pierburg AG; Wilhelm Hannibal, ENTEC Consulting GmbH	Transmission Virtual Torque Sensor - Absolute Torque Estimation (2012-01-0111) Dongxu Li, Farzad Samie, Kumaraswamy Hebbale, Chunhao Lee, Chi-Kuan Kao, General Motors Company	
11:00 a.m.	Development of Continuously Variable Valve Lift Mechanism for Improved Fuel Economy (2012-01-0163) Hermes Fernandez, Delphi Advanced Powertrain Systems; Youssef Kazour, Michael Knauf, James Sinnamon, Edward Suh, Daniel Glueck, Delphi Corp	Hydrodynamic Synchromesh Automated Transmission Optimization and Control Aimed for Fuel Consumption Reduction (2012-01-0109) Tinghui Hu, Institute of Automotive Engineering, TU Braunschweig; Yulong Lei, Jun Qiu, State Key Laboratory of Automotive Simulation & Control	
11:20 a.m.	A Compact Dual CAM Variable Valve Operation System to Improve Volumetric Efficiency of Small Engines (2012-01-0161) Sambathkumar Ramadoss, TVS Motor Company Limited; A Ramesh, Indian Institute of Technology Madras; Lakshmi Narasimhan, TVS Motor Company Limited		An Innovative Solution for Two-Stroke Engines to Reduce the Short-Circuit Effects (2012-01-0180) Giovanni Ferrara, Francesco Balduzzi, Giovanni Vichi, Università degli Studi di Firenze
		Pressure Control Strategies of Dual Clutches in the Gear-shift Process of Wet-type DCT (Written Only -- No Oral Presentation) (2012-01-0113) Xiaofeng Yin, Xihua University; Zhiming Liao, Peijun Li, Chongqing Tsingshan Industrial Co. Ltd.; Yuan Zhong, Xiuting Wu, Xihua University	
		Model-based Estimation of Unknown Contact Forces Acting on a Piston in Dual Clutch Transmission (Written Only -- No Oral Presentation) (2012-01-0110) Rashad Mustafa, Ferit Küçükay, IAE, TU Braunschweig, Germany	
		Gear-Shift Strategy for a Clutchless Automated Manual Transmission in Battery Electric Vehicles (Written Only -- No Oral Presentation) (2012-01-0115) Hongbo Liu, Yulong Lei, Zhanjiang Li, State Key Lab. of ASC, Jilin University; Jianguo Zhang, Changchun Inst. of Engineering Tech.; Youde Li, State Key Lab. of ASC, Jilin University	
	Planned by Control and Calibration Committee / Powertrain Fuels and Lubricants Activity	Planned by Transmission and Driveline Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00292, and also individually. To purchase visit collections.sae.org	Planned by Lubricants and Powertrain Systems Committee / Powertrain Fuels and Lubricants Activity

TUESDAY, APRIL 24 - AFTERNOON Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM		
	O2-33	O2-43	W2-64
	Advanced Hybrid Vehicle Powertrains (Part 2 of 5) (PFL100) Analysis Methods and Electrification Scenarios 1:00 p.m. - 4:00 p.m. Organizers: Ryan McGee, Ford Motor Co.; Michael Duoba, Argonne National Laboratory; Mark A. Theobald, GM Powertrain Chairpersons: Ryan McGee, Ford Motor Co	Battery Mechanics (Part 2 of 2) (PFL107) Battery Mechanics address the interest and need in the understanding of mechanics of the high voltage, high power density batteries and the technologies for vehicle integration. Topic includes crash/impact performance, modal performance (e.g. N&V), durability and reliability performance, thermal performance, battery packs and vehicle integration in electric or hybrid electric vehicles (EV or HEV or PHEV), multi-disciplinary performance optimization, and robust optimization. 1:00 p.m. - 3:20 p.m. Organizers: Wayne Cai, General Motors R&D; Xiaosong Huang, General Motors; Thomas Wang, GM Technical Center; Xinran Xiao, Michigan State Univ. Chairpersons: Wayne Cai, General Motors R&D; Thomas Wang, GM Technical Center	Direct Injection SI Engine Technology (Part 2 of 2) (PFL202) Focuses on SI combustion technologies that employ direct, in-cylinder fuel injection. Topics of particular interest include in-cylinder fuel injection and spray studies, flow/spray interaction and in-cylinder mixture formation studies, and combustion chamber shape optimization. Focus includes 'stratified' operation or other modes enabled by DI hardware, DI-specific emissions issues such as particulates and smoke, and technologies enabled by DISI (such as downsizing). 1:00 p.m. - 3:40 p.m. Organizers: Jianwen Yi, Ford Motor Co.; Matthew Brusstar, US Environmental Protection Agency; James W G Turner, Lotus Engineering, Ltd.; Sudhakar Das, SwRI; Gerald Micklow, East Carolina University
1:00 p.m.	Methodology for Assessment of Alternative Hybrid Electric Vehicle Powertrain System Architectures (2012-01-1010) Alexander T. Zaremba, Ciro Soto, Mark Jennings, Ford Motor Co.	Mathematical Modeling of Lithium-Ion Batteries for EREV Applications (Oral Only) Justin McDade, John Lyons, General Motors Company	Benchmarking a 2-Stroke Spark Ignition Heavy Fuel Engine (2012-01-0397) Chi La, Patrick Murphy, Stephen Cakebread, Ricardo Inc.
1:20 p.m.	The Power Performance and the Fuel Economy Estimation of HV for Vehicle Concept Planning Using VHDL-AMS Full Vehicle Simulation (2012-01-1025) Kimitoshi Tsuji, Toyota Motor Corporation; Takashi Abe, Nagasaki University; Toshiji Kato, Doshisha University; Yasunari Kido, Toyota Motor Corporation	Thermal Stress in a Li-Ion Battery (Oral Only) Wei Wu, Michigan State Univ; Xinran Xiao, Michigan State Univ.; Xiaosong Huang, General Motors	Numerical Simulation on Spray Atomization and Fuel-Air Mixing Process in a Gasoline Direct Injection Engine (2012-01-0395) Yunqing Liu, Geely Automotive Institute; Yuan Shen, Yi You, Geely Automobile Institute; Fuquan Zhao, Zhejiang Geely Holding Group
1:40 p.m.	Comparison of Powertrain Configuration Options for Plug-in HEVs from a Fuel Economy Perspective (2012-01-1027) Namdoo Kim, Jason Kwon, Aymeric Rousseau, Argonne National Laboratory	Thermal Analysis of a High-Power Lithium-Ion Battery System with Indirect Air Cooling (2012-01-0333) Ho Teng, AVL Powertrain Engineering Inc.	Large Eddy Simulation of GDI Single-Hole Flow and Near-Field Spray (2012-01-0392) Bizhan Bafui, Giovanni Corbinelli, Peter Spiekermann, Mark Shost, Delphi Corp.; Ming-Chia Lai, Wayne State Univ.
2:00 p.m.	Development of Integrated Powertrain Simulation for Hybrid Electric Vehicles Considering Total Energy Management (2012-01-1012) Kentaro Watanabe, Masayuki Tani, Tsuyoshi Yamamuro, Masaaki Kubo, Nissan Motor Company Ltd.	Validation of a Thermal-Electric Li-Ion Battery Model (2012-01-0332) Scott Peck, ThermoAnalytics Inc.; Theodore Olszanski, Sonya Zanardelli, US Army TARDEC, Warren, Michigan; Matt Pierce, ThermoAnalytics Inc.	A Comparison of Two Injectors in Mixture Preparation for a High Tumble GDI Engine - A CFD Study (2012-01-0398) James Gunasekaran E, Annamalai University; Subramaniam Dhandapani, NGP Institute of Technology
2:20 p.m.	Modeling and Optimization of Plug-In Hybrid Electric Vehicle Fuel Economy (2012-01-1018) Jonathan Zeman, Iakovos Papadimitriou, Gamma Technologies, Inc; Kentaro Watanabe, Masaaki Kubo, Nissan Motor Co., Ltd; Tomohisa Kumagai, CD-adapco Japan Co., Ltd	Thermal Analysis of a Li-ion Battery System with Indirect Liquid Cooling Using Finite Element Analysis Approach (2012-01-0331) Kim Yeow, Ho Teng, Marina Thelliez, Eugene Tan, AVL Powertrain Engineering Inc	Cycle-to-Cycle Variations Based Unsteady Effects on Spray Combustion in Internal Combustion Engines by Using LES (2012-01-0399) Dmitry Goryntsev, Amsini Sadiki, Johannes Janicka, TU-Darmstadt, EKT, Germany
2:40 p.m.	Autonomie Model Validation with Test Data for 2010 Toyota Prius (2012-01-1040) Namwook Kim, Aymeric Rousseau, Eric Rask, Argonne National Laboratory	Global Sensitivity Analysis of Transport Parameters in Lithium-Ion Battery Models (Oral Only) John Lyons, Ramesh Rebba, General Motors Company	Numerical Study on Multiple Injection Strategies in DISI Engines for Particulate Emission Control (2012-01-0400) Giovanni Bonandrini, Rita Di Gioia, Domenico Papaleo, Luca Venturoli, Magneti Marelli Powertrain SPA
3:00 p.m.	A Framework for Simulation-Based Development and Calibration of VCU-Functions for Advanced PHEV Powertrains (2012-01-1032) Thomas Boehme, Matthias Schultalbers, Heiko Rabba, Alexandra Burger, IAV GmbH; Wolfgang Drewelow, Univ of Rostock	Temperature Rise in Prismatic Polymer Lithium-Ion Batteries: An Analytic Approach (2012-01-0334) Peyman Taheri, Majid Bahrami, Simon Fraser University	Numerical and Experimental Analysis of Mixture Formation and Performance in a Direct Injection CNG Engine (2012-01-0401) Mirko Baratta, Nicola Rapetto, Ezio Spessa, Politecnico di Torino; Alois Fuerhapter, Harald Philipp, AVL LIST GmbH

Continued on next page

TUESDAY, APRIL 24 - AFTERNOON Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM		
	O2-33	O2-43	W2-64
	Advanced Hybrid Vehicle Powertrains (Part 2 of 5) (PFL100) Analysis Methods and Electrification Scenarios 1:00 p.m. - 4:00 p.m. Organizers: Ryan McGee, Ford Motor Co.; Michael Duoba, Argonne National Laboratory; Mark A. Theobald, GM Powertrain Chairpersons: Ryan McGee, Ford Motor Co	Battery Mechanics (Part 2 of 2) (PFL107) Battery Mechanics address the interest and need in the understanding of mechanics of the high voltage, high power density batteries and the technologies for vehicle integration. Topic includes crash/impact performance, modal performance (e.g. N&V), durability and reliability performance, thermal performance, battery packs and vehicle integration in electric or hybrid electric vehicles (EV or HEV or PHEV), multi-disciplinary performance optimization, and robust optimization. 1:00 p.m. - 3:20 p.m. Organizers: Wayne Cai, General Motors R&D; Xiaosong Huang, General Motors; Thomas Wang, GM Technical Center; Xinran Xiao, Michigan State Univ. Chairpersons: Wayne Cai, General Motors R&D; Thomas Wang, GM Technical Center	Direct Injection SI Engine Technology (Part 2 of 2) (PFL202) Focuses on SI combustion technologies that employ direct, in-cylinder fuel injection. Topics of particular interest include in-cylinder fuel injection and spray studies, flow/spray interaction and in-cylinder mixture formation studies, and combustion chamber shape optimization. Focus includes 'stratified' operation or other modes enabled by DI hardware, DI-specific emissions issues such as particulates and smoke, and technologies enabled by DISI (such as downsizing). 1:00 p.m. - 3:40 p.m. Organizers: Jianwen Yi, Ford Motor Co.; Matthew Brusstar, US Environmental Protection Agency; James W G Turner, Lotus Engineering, Ltd.; Sudhakar Das, SwRI; Gerald Micklow, East Carolina University
3:20 p.m.	Impact of Technology on Electric Drive Fuel Consumption and Cost (2012-01-1011) Ayman Moawad, Namdoo Kim, Aymeric Rousseau, Argonne National Laboratory		Cold Start Simulation and Test on DISI Engines Utilizing a Multi-Zone Vaporization Approach (2012-01-0402) Stephan Liebsch, André Zboralski, Jochen Maass, Michael Guenther, Matthias Kratzsch, IAV GmbH; Steffen Zwahr, Westsaechsische Hochschule Zwickau
3:40 p.m.	Electrified Vehicle Penetration Scenarios in Europe: Economic and Environmental Impacts (2012-01-1034) Elias Zgheib, Denis Clodic, Mines Paristech		
	Planned by Advanced Power Sources Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00266, and also individually. To purchase visit collections.sae.org	Planned by Advanced Power Sources Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00270, and also individually. To purchase visit collections.sae.org	Planned by Combustion and Fuels Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00273 and SUB-TP-00008, and also individually. To purchase visit collections.sae.org

Technical Session Oral Evaluation Incentives

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TUESDAY, APRIL 24 - AFTERNOON

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	O2-44	W2-69	W2-63	W2-68
	Electric Motor & Power Electronics (Part 2 of 2) (PFL104) Power electronics and electric motors are essential for improving vehicle efficiency through drivetrain electrification. Technologies that support high efficiency, high power density, and low cost motors and power modules are required for the success of vehicle electrification. 1:00 p.m. - 3:20 p.m. Organizers: Laura Marlino, Oak Ridge National Laboratory; Mark A. Theobald, GM Powertrain; Serdar Yonak, Infineon Technologies North America Corp.	Engine Boosting Systems (Part 1 of 2) (PFL501) Trends of ever increasing power density, better fuel economy and now reduced emissions are increasing focus on turbocharging/ supercharging and turbochargers/ superchargers, as part of overall engine system optimization. Increased amounts of EGR and use of aftertreatment devices present new challenges. This session will cover conceptual, modeling and experimental studies relating to advanced turbochargers/ superchargers and advanced boosting systems to respond to above challenges. 1:00 p.m. - 2:40 p.m. Organizers: David Japikse, Concepts NREC; William Smith, Honeywell Int'l (Turbo Technologies); Arjun D. Tuteja Chairpersons: William Smith, Honeywell Int'l (Turbo Technologies)	High Efficiency IC Engines (Part 2 of 2) (PFL216) This session will highlight technologies impacting IC engine efficiency, including engine downsizing, pressure boosting and turbocharging; intelligent combustion such as high dilution, low temperature and stratified charge; variable compression ratios and fully variable valvetrains; advanced fuel injection technologies, and much more. 1:00 p.m. - 3:20 p.m. Organizers: Neville Bugli, Sogefi Filter Division - N A; Bengt Johansson, Lund University; Gerald Micklow, East Carolina University; Christine Stanfel, Parker Hannifin; Robert M. Wagner, Oak Ridge National Laboratory Chairpersons: Gerald Micklow, East Carolina University; Robert M. Wagner, Oak Ridge National Laboratory	Mixing-Controlled CI Combustion (Part 2 of 3) (PFL204) Features CI combustion technologies distinguished by 1) mixing processes that influence combustion; and 2) combustion phasing closely coupled to the timing of fuel injection. Includes the impact of the fuel injection and jet-mixing processes (e.g. multiple injection strategies, group-hole/ complex injector geometries); impact of swirl/spray targeting on mixing processes; combustion chamber/engine geometry optimization; sources of combustion inefficiency; and the impact of operating conditions. 1:00 p.m. - 4:00 p.m. Organizers: Jose M Garcia, Universidad Politecnica de Valencia; Song-Chang Kong, Iowa State University; Budhadeb Mahakul, Deere & Company; Robert McDavid, Caterpillar Inc.; Mark P. B. Musculus, Sandia National Laboratories; Stefan Simescu, Southwest Research Institute; Dale R. Tree, Brigham Young Univ.; Rishikesh Venugopal, John F. Wright, Cummins Inc.; Yong Yi, Caterpillar Inc.; Ming Zheng, Univ. of Windsor; Raul Payri, Universidad Politecnica de Valencia Chairpersons: Song-Chang Kong, Iowa State University; Budhadeb Mahakul, Navistar
1:00 p.m.	Power Modules and Inverter Evaluation for GM Electrification Architectures (2012-01-0340) Prakash H. Desai, Sean Bartolucci, Marzia Fatema, Ronald Weiss, General Motors Company	Effect of Pulsating Flow Characteristics on Performance and Surge Limit of Automotive Turbocharger Compressors (2012-01-0715) Silvia Marelli, Chiara Carraro, Massimo Capobianco, University of Genoa	Effect of E85 on RCCI Performance and Emissions on a Multi-Cylinder Light-Duty Diesel Engine (2012-01-0376) Scott Curran, Oak Ridge National Laboratory; Reed Hanson, University of Wisconsin; Robert Wagner, Oak Ridge National Laboratory	The Influence of Compression Ratio on Indicated Emissions and Fuel Economy Responses to Input Variables for a D.I Diesel Engine Combustion System (2012-01-0697) David J. MacMillan, Theo Law, Paul J. Shayler, University of Nottingham; Ian Pegg, Ford Motor Co
1:20 p.m.	Progress in the Development of a High-Performance Heat Sink for Hybrid Electric Vehicle Inverters (2012-01-0339) Jan Vetrovec, Amardeep Litt, Aqwest LLC	Improving Turbocharged Engine Simulation by Including Heat Transfer in the Turbocharger (2012-01-0703) Habib Aghaali, Hans-Erik Angstrom, Royal Institute of Technology	Investigation of Fuel Reactivity Stratification for Controlling PCI Heat-Release Rates Using High-Speed Chemiluminescence Imaging and Fuel Tracer Fluorescence (2012-01-0375) Sage Kokjohn, Rolf Reitz, Derek Splitter, Univ of Wisconsin; Mark Musculus, Sandia National Laboratories	Investigation of the Load Limits and Emissions of a Naturally-Aspirated Direct-Injection Diesel Engine (2012-01-0686) William F. Northrop, Univ of Minnesota (former GM Employee); Alejandro Plazas Torres, Patrick Szymkowicz, General Motors Company
1:40 p.m.	Reliability of SiC-MOSFET for Hybrid Vehicle (2012-01-0337) Hideo Matsuki, Kensaku Yamamoto, Masanori Nagaya, Hiroki Watanabe, Eiichi Okuno, Toshimasa Yamamoto, Shoichi Onda, DENSO Corporation	Valve-Event Modulated Boost System: Fuel Consumption and Performance with Scavenge-Sourced EGR (2012-01-0705) David B. Roth, Michael Becker, BorgWarner Inc.	Piston Bowl Optimization for RCCI Combustion in a Light-Duty Multi-Cylinder Engine (2012-01-0380) Reed Hanson, Scott Curran, Robert Wagner, Oak Ridge National Laboratory; Sage Kokjohn, Derek Splitter, Rolf Reitz, University of Wisconsin - Madison	Development and Testing of an EGR System for Medium Speed Diesel Engines (2012-01-0680) David Six, Tom Van Herzele, Ghent University; Lieven Vervaeke, Marc Bastiaen, Anglo Belgian Corporation; Jonas Galle, Roger Sierens, Sebastian Verhelst, Ghent University
2:00 p.m.	Thermal Performance and Reliability of Bonded Interfaces for Power Electronics Applications (Oral Only) Sreekant Narumanchi, Douglas DeVoto, Mark Mihalic, Patrick Mccluskey, National Renewable Energy Laboratory	Intake Manifold Length Effects on Turbocharged Gasoline Downsizing Engine Performance and Fuel Economy (2012-01-0714) James Taylor, David Gurney, Paul Freeland, Mahle Powertrain Ltd; Rene Dingelstadt, Mahle International GmbH; Jürgen Stehlig, Veit Bruggesser, Mahle Filtersysteme GmbH	Effect of Compression Ratio and Piston Geometry on RCCI Load Limits and Efficiency (2012-01-0383) Derek Splitter, Martin Wissink, Sage Kokjohn, Rolf Reitz, Univ of Wisconsin	Transmission Electron Microscopy of Soot Particles Directly Sampled in Diesel Spray Flame - A Comparison between US#2 and Biodiesel Soot (2012-01-0695) Tetsuya Aizawa, Hiroki Nishigai, Katsufumi Kondo, Teruo Yamaguchi, Meiji University; Jean-Guillaume Nerva, CMT, Universidad Politécnica de Valencia; Caroline Ganzale, Georgia Institute of Technology; Sanghoon Kook, University of New South Wales; Lyle Pickett, Sandia National Laboratories
2:20 p.m.	Integrated Energy Storage Systems to Optimize Payback Period of Hybrid Vehicles (2012-01-0341) Marc Rosenmayr, Alan Brown, Rainer Schmidt, Hella Electronics Corp.	EGR Effects on Boosted SI Engine Operation and Knock Integral Correlation (2012-01-0707) Bjoern Hoepke, Stefan Jannsen, Emmanuel Kasseris, Wai K. Cheng, Massachusetts Institute of Technology	Heavy-Duty RCCI Operation Using Natural Gas and Diesel (2012-01-0379) Derek E. Nieman, Adam B. Dempsey, Rolf D. Reitz, University of Wisconsin-Madison	Experimental Study of an Automotive Diesel Engine Running with Stoichiometric Combustion (2012-01-0699) Alain Maiboom, Xavier Tauzia, Ecole Centrale De Nantes

Continued on next page

TUESDAY, APRIL 24 - AFTERNOON

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	O2-44	W2-69	W2-63	W2-68
	Electric Motor & Power Electronics (Part 2 of 2) (PFL104) Power electronics and electric motors are essential for improving vehicle efficiency through drivetrain electrification. Technologies that support high efficiency, high power density, and low cost motors and power modules are required for the success of vehicle electrification. 1:00 p.m. - 3:20 p.m. Organizers: Laura Marlino, Oak Ridge National Laboratory; Mark A. Theobald, GM Powertrain; Serdar Yonak, Infineon Technologies North America Corp.	Engine Boosting Systems (Part 1 of 2) (PFL501) Trends of ever increasing power density, better fuel economy and now reduced emissions are increasing focus on turbocharging/ supercharging and turbochargers/ superchargers, as part of overall engine system optimization. Increased amounts of EGR and use of aftertreatment devices present new challenges. This session will cover conceptual, modeling and experimental studies relating to advanced turbochargers/ superchargers and advanced boosting systems to respond to above challenges. 1:00 p.m. - 2:40 p.m. Organizers: David Japikse, Concepts NREC; William Smith, Honeywell Int'l (Turbo Technologies); Arjun D. Tuteja Chairpersons: William Smith, Honeywell Int'l (Turbo Technologies)	High Efficiency IC Engines (Part 2 of 2) (PFL216) This session will highlight technologies impacting IC engine efficiency, including engine downsizing, pressure boosting and turbocharging; intelligent combustion such as high dilution, low temperature and stratified charge; variable compression ratios and fully variable valvetrains; advanced fuel injection technologies, and much more. 1:00 p.m. - 3:20 p.m. Organizers: Neville Bugli, Sogefi Filter Division - N A; Bengt Johansson, Lund University; Gerald Micklow, East Carolina University; Christine Stanfel, Parker Hannifin; Robert M. Wagner, Oak Ridge National Laboratory Chairpersons: Gerald Micklow, East Carolina University; Robert M. Wagner, Oak Ridge National Laboratory	Mixing-Controlled CI Combustion (Part 2 of 3) (PFL204) Features CI combustion technologies distinguished by 1) mixing processes that influence combustion; and 2) combustion phasing closely coupled to the timing of fuel injection. Includes the impact of the fuel injection and jet-mixing processes (e.g. multiple injection strategies, group-hole/ complex injector geometries); impact of swirl/spray targeting on mixing processes; combustion chamber/engine geometry optimization; sources of combustion inefficiency; and the impact of operating conditions. 1:00 p.m. - 4:00 p.m. Organizers: Jose M Garcia, Universidad Politecnica de Valencia; Song-Chang Kong, Iowa State University; Budhadeb Mahakul, Deere & Company; Robert McDavid, Caterpillar Inc.; Mark P. B. Musculus, Sandia National Laboratories; Stefan Simescu, Southwest Research Institute; Dale R. Tree, Brigham Young Univ.; Rishikesh Venugopal, John F. Wright, Cummins Inc.; Yong Yi, Caterpillar Inc.; Ming Zheng, Univ. of Windsor; Raul Payri, Universidad Politecnica de Valencia Chairpersons: Song-Chang Kong, Iowa State University; Budhadeb Mahakul, Navistar
2:40 p.m.	Electric Drivetrain Testing Using Smart Green Technology (2012-01-0338) Soumendu Chanda, Adrian Snyder, Kevin Rzemien, FEV Inc.		High Efficiency and Low Pollutants Combustion: Gasoline Multiple Premixed Compression Ignition (MPCI) (2012-01-0382) Hong-Qiang Yang, Shi-Jin Shuai, Zhi Wang, Jian-Xin Wang, Tsinghua Univ	Exhaust Hydrocarbon Speciation from a Single-Cylinder Compression Ignition Engine Operating with In-Cylinder Blending of Gasoline and Diesel Fuels (2012-01-0683) William De Ojeda, Yu Zhang, Navistar Inc; Kelvin Xie, Xiaoye Han, Meiping Wang, Ming Zheng, University of Windsor
3:00 p.m.	Practical LDT Electrification and Colateral Powertrain Effects (Oral Only) Javier Iturbe, Applus Idiada		A Gasoline Fueled Pre-Chamber Jet Ignition Combustion System at Unthrottled Conditions (2012-01-0386) William P. Attard, Hugh Blaxill, MAHLE Powertrain	A Comparative Study on Different Dual-Fuel Combustion Modes Fuelled with Gasoline and Diesel (2012-01-0694) Binbin Yang, Shanju Li, Zunqing Zheng, Mingfa Yao, Tianjin Univ; Wai Cheng, Massachusetts Institute of Technology
3:20 p.m.				Gasoline Partially Premixed Combustion in a Light Duty Engine at Low Load and Idle Operating Conditions (2012-01-0687) Patrick Borgqvist, Per Tunestal, Bengt Johansson, Lund University
3:40 p.m.				Enabling High Efficiency Direct Injection Engine with Naphtha Fuel through Partially Premixed Charge Compression Ignition Combustion (2012-01-0677) Junseok Chang, Gautam Kalghatgi, Amer Amer, Yoann Violette, Saudi Aramco
			Research of the Atkinson Cycle in the Spark Ignition Engine (Written Only -- No Oral Presentation) (2012-01-0390) Chongming Wang, Ritchie Daniel, Hongming Xu, University of Birmingham	
			Experimental Study of Energy Balance in Thermal Barrier Coated Diesel Engine (Written Only -- No Oral Presentation) (2012-01-0389) Ashish Jashvantlal Modi, Govt. Engg. College	
	Planned by Advanced Power Sources Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00269, and also individually. To purchase visit collections.sae.org	Planned by Lubricants and Powertrain Systems Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00290 and SUB-TP-00008, and also individually. To purchase visit collections.sae.org	Planned by Combustion and Fuels Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00283 and SUB-TP-00009, and also individually. To purchase visit collections.sae.org	Planned by Combustion and Fuels Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00275 and SUB-TP-00009, and also individually. To purchase visit collections.sae.org

TUESDAY, APRIL 24 - AFTERNOON Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	W2-61	W2-66	W2-65	W2-67
	Modeling of SI and Diesel Engines- System Modeling & Controls (PFL208) Zero-dimensional, one-dimensional, and quasi-dimensional models for simulation of SI and CI engines with respect to: engine breathing and boosting; SI combustion and emissions; CI combustion and emissions; fundamentals of engine thermodynamics; thermal management; mechanical and lubrication systems; system level models for controls; system level models for vehicle fuel economy and emissions predictions. 1:00 p.m. - 3:20 p.m. Organizers: Federico Millo, Politecnico di Torino; Thomas Morel, Gamma Technologies Inc.; Christof Schemus, FEV GmbH; Tino Schulze, dSPACE GmbH Chairpersons: Federico Millo, Politecnico di Torino; Tino Schulze, dSPACE GmbH	Multi-Dimensional Engine Modeling (Part 2 of 4) (PFL209) The spectrum of papers solicited for this session reflect the truly multidisciplinary nature of the field, covering advances in areas such as chemical kinetics, combustion and spray modeling, turbulence, mesh generation, and approaches targeting improved computational efficiency. Papers employing multi-dimensional modeling to gain a deeper understanding of processes related to turbulent transport, transient phenomena, and chemically reacting, two-phase flows are also encouraged. 1:00 p.m. - 4:00 p.m. Organizers: Hardo Barths, General Motors Company; Sarah Diakhaby, Computational Dynamics, Ltd.; Allen David Gosman, CD-adapco; Carl Hergart, Caterpillar	New CI & SI Engines and Components (Part 2 of 3) (PFL500) This session covers topics regarding new CI and SI engines and components. This includes analytical, experimental, and computational studies covering hardware development as well as design and analysis techniques. 1:00 p.m. - 3:40 p.m. Organizers: Jeffrey Naber, Michigan Technological Univ.; James E. Smith, West Virginia Univ.; John Szpytman, Continental Automotive Systems US Inc.	Powertrain Control & Calibration (Part 1 of 3) (PFL300) This session covers engine control system and optimization technique developments related to achieving stringent market fuel economy, emissions, performance, reliability and quality demands. Related topics include engine and its subsystem control, signal processing, on-board diagnostic strategy development, sensor, actuator, electronic control unit designs, etc. 1:00 p.m. - 4:00 p.m. Organizers: Matti Vint, Ricardo Inc.; Peter J. Maloney, MathWorks Inc.; Feilong Liu, Delphi Corp Chairpersons: Matti Vint, Ricardo Inc; Peter Maloney, MathWorks Inc
1:00 p.m.	A Structure and Calibration Method for Data-Driven Modeling of NO_x and Soot Emissions from a Diesel Engine (2012-01-0355) Markus Grahn, Krister Johansson, Christian Vartia, Volvo Car Corporation; Tomas McKelvey, Chalmers University of Technology	Multi-Dimensional Flamelet Modeling of Multiple Injection Diesel Engines (2012-01-0133) Eric M. Doran, Heinz Pitsch, Stanford University; David J. Cook, Robert Bosch LLC	Internal Force Analysis of a Variable Displacement Vane Pump (2012-01-0409) Pierre E. Sullivan, Univ. of Toronto; Manmohan Sehmbay, Magna Powertrain	Optimization of a Parallel Hybrid Electric Vehicle Control Strategy (Oral Only) Patrick Hudson, Zachariah Chambers, Rose Hulman Institute of Technology; Marc Herniter, Rose-Hulman Institute of Technology
1:20 p.m.	Evaluation of Virtual NO_x Sensor Models for Off Road Heavy Duty Diesel Engines (2012-01-0358) Stephan Stadlbauer, Daniel Alberer, Markus Hirsch, Johannes Kepler University Linz; Simone Formentin, Politecnico di Milano; Christian Benatzky, Liebherr Machines Bulle SA; Luigi del Re, Johannes Kepler University Linz	Comparison of Diesel Combustion CFD Models and Evaluation of the Effects of Model Constants (2012-01-0134) Hu Wang, Tianjin Univ; Rolf D. Reitz, Univ of Wisconsin; Mingfa Yao, Tianjin Univ	Stop-Start System with Compact Motor Generator and Newly Developed Direct Injection Gasoline Engine (2012-01-0410) Masaya Furushou, Kimiyoshi Nishizawa, Takayuki Iwasaki, Masahiko Tahara, Nissan Motor Company Ltd.	A Simulation-Based Comparison of Different Power Split Configurations with Respect to the System Efficiency (2012-01-0438) Thomas Boehme, Osama Metwally, Bernd Becker, Nikolaj Meinhardt, Martin Rucht, Heiko Rabba, IAV GmbH; Wolfgang Drewelow, Univ of Rostock
1:40 p.m.	Application of a Tractive Energy Analysis to Quantify the Benefits of Advanced Efficiency Technologies for Medium- and Heavy-Duty Trucks Using Characteristic Drive Cycle Data (2012-01-0361) Tim J. LaClair, Oak Ridge National Laboratory	Prediction of Number Density, Volume Fraction and Size Distribution of Soot Particles in a Diesel Engine under Various Operating Conditions (2012-01-0136) Jaeseo Lee, Kang Y. Huh, Pohang Univ of Science and Technology	Experimental and Modeling Study of a Heat Exchanger Concept for Thermoelectric Waste Heat Recovery from Diesel Exhaust (2012-01-0411) Chad Baker, Univ. of Texas-Austin; Li Shi, University of Texas	Quantifying the Effects of Idle-Stop Systems on Fuel Economy in Light-Duty Passenger Vehicles (2012-01-0719) Jeffrey Wishart, ECOTALITY North America; Matthew Shirk, Idaho National Lab; Tyler Gray, Nicholas Fengler, ECOTALITY North America
2:00 p.m.	Evaluating Synergies between Fuels and Near Term Powertrain Technologies through Vehicle Drive Cycle and Performance Simulation (2012-01-0357) Andre Bisordi, Dave OudeNijeweme, Michael Bassett, Philip Stansfield, Mahle Powertrain Ltd; John Williams, Rana Ali, BP International Ltd	Investigation of Pilot and Multiple Injection Parameters on Mixture Formation and Combustion Characteristics in a Heavy Duty DI-Diesel Engine (2012-01-0142) Raouf Mobasher, Zhijun Peng, Univ of Sussex	Study on Reduction of Timing Chain Friction Using Multi-Body Dynamics (2012-01-0412) Motoyasu Sakaguchi, Shinji Yamada, Masao Seki, Yojiro Koiba, Takahiro Yamauchi, Tomohiro Wakabayashi, Honda R&D Co., Ltd.	Engine Stop Position Estimation (2012-01-0720) Martin Mueller, Delphi Corp.
2:20 p.m.	Complex Systems Method Applied to Identify Carbon Dioxide Emission Reductions for Light-Duty Vehicles for the 2020-2025 Timeframe (2012-01-0360) Anrico F. Casadei, Henry H. Huang, Felipe Brandao, John J. Kasab, Wayne A. Thelen, Ricardo Inc.; Matthew Brusstar, Jeff Cherry, Ann Chiu, Benjamin D. Elies, Joseph McDonald, US Environmental Protection Agency	Comparison of Quantitative In-Cylinder Equivalence Ratio Measurements with CFD Predictions for a Light Duty Low Temperature Combustion Diesel Engine (2012-01-0143) Adam B. Dempsey, Bao-Lin Wang, Rolf D. Reitz, Univ. of Wisconsin; Benjamin Petersen, Dipankar Sahoo, Paul C. Miles, Sandia National Laboratories	Design of Affordable Multi-Cylinder Variable Compression Ratio (VCR) Engine for Advanced Combustion Research Purposes (2012-01-0414) Pawel Wos, Krzysztof Balawender, Miroslaw Jakubowski, Hubert Kuszewski, Kazimierz Lejda, Adam Ulstrzycki, Rzeszow University of Technology	Management of Energy Flow in Complex Commercial Vehicle Powertrains (2012-01-0724) Peter Eckert, Lars Henning, Reza Rezaei, Joern Seebode, Steve Kipping, Kai Behnk, IAV GmbH; Michael L. Traver, IAV Automotive Engineering Inc.
2:40 p.m.	Optimization of Hybrid Power Trains- Physical Based Modeling for Concept Design (2012-01-0359) Johann C. Wurzenberger, Ivo Prah, Primoz Tominc, AVL LIST GmbH; Tomaz Katrasnik, Univ of Ljubljana	Analysis of the Effect of Re-Entrant Combustion Chamber Geometry on Combustion Process and Emission Formation in a HSDI Diesel Engine (2012-01-0144) Raouf Mobasher, Zhijun Peng, Univ of Sussex	Development of New I3 1.2L Supercharged Gasoline Engine (2012-01-0415) Atsushi Kobayashi, Takeshi Satou, Hiroshi Isaji, Sho Takahashi, Takeshi Miyamoto, Nissan Motor Company Ltd.	Implementation of Model-Based Calibration for a Gasoline Engine (2012-01-0722) Shugang Jiang, Donald Nutter, A&D Technology Inc.; Anthony Gullitti, IAV Automotive Engineering Inc.

TUESDAY, APRIL 24 - AFTERNOON Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	W2-61	W2-66	W2-65	W2-67
	Modeling of SI and Diesel Engines- System Modeling & Controls (PFL208) Zero-dimensional, one-dimensional, and quasi-dimensional models for simulation of SI and CI engines with respect to: engine breathing and boosting; SI combustion and emissions; CI combustion and emissions; fundamentals of engine thermodynamics; thermal management; mechanical and lubrication systems; system level models for controls; system level models for vehicle fuel economy and emissions predictions. 1:00 p.m. - 3:20 p.m. Organizers: Federico Millo, Politecnico di Torino; Thomas Morel, Gamma Technologies Inc.; Christof Schernus, FEV GmbH; Tino Schulze, dSPACE GmbH Chairpersons: Federico Millo, Politecnico di Torino; Tino Schulze, dSPACE GmbH	Multi-Dimensional Engine Modeling (Part 2 of 4) (PFL209) The spectrum of papers solicited for this session reflect the truly multidisciplinary nature of the field, covering advances in areas such as chemical kinetics, combustion and spray modeling, turbulence, mesh generation, and approaches targeting improved computational efficiency. Papers employing multi-dimensional modeling to gain a deeper understanding of processes related to turbulent transport, transient phenomena, and chemically reacting, two-phase flows are also encouraged. 1:00 p.m. - 4:00 p.m. Organizers: Harido Barths, General Motors Company; Sarah Diakhaby, Computational Dynamics, Ltd.; Allen David Gosman, CD-adapco; Carl Hergart, Caterpillar	New CI & SI Engines and Components (Part 2 of 3) (PFL500) This session covers topics regarding new CI and SI engines and components. This includes analytical, experimental, and computational studies covering hardware development as well as design and analysis techniques. 1:00 p.m. - 3:40 p.m. Organizers: Jeffrey Naber, Michigan Technological Univ.; James E. Smith, West Virginia Univ.; John Szytman, Continental Automotive Systems US Inc.	Powertrain Control & Calibration (Part 1 of 3) (PFL300) This session covers engine control system and optimization technique developments related to achieving stringent market fuel economy, emissions, performance, reliability and quality demands. Related topics include engine and its subsystem control, signal processing, on-board diagnostic strategy development, sensor, actuator, electronic control unit designs, etc. 1:00 p.m. - 4:00 p.m. Organizers: Matti Vint, Ricardo Inc.; Peter J. Maloney, MathWorks Inc.; Feilong Liu, Delphi Corp Chairpersons: Matti Vint, Ricardo Inc.; Peter Maloney, MathWorks Inc
3:00 p.m.	Analysis of the Cooling Plant of a High Performance Motorbike Engine (2012-01-0354) Dario Buono, Adolfo Senatore, Università di Napoli; Maria Vittoria Prati, Istituto Motori CNR; Mario Manganelli, Aprilia	Predicted Paths of Soot Particles in the Cylinders of a Direct Injection Diesel Engine (2012-01-0148) Wan Mohd Faizal Wan Mahmood, Antonino LaRocca, Paul J. Shayler, University of Nottingham; Fabrizio Bonatesta, Oxford Brookes University; Ian Pegg, Ford Motor Co	Development of a Hydraulic Variable Valve Timing Control System with an Optimum Angular Position Locking Mechanism (2012-01-0416) Takahiro Miura, Shunichi Aoyama, Kaoru Onogawa, Takaya Fujia, Tetsuro Murata, Kenji Ariga, Ken shiozawa, Nissan Motor Company Ltd.; Kazunari Adachi, Masaki Kobayashi, Aisin Seiki Co Ltd	Virtual Exhaust-Gas Aftertreatment Test Bench - A Contribution to Model-Based Development and Calibration of Engine Control Algorithms (2012-01-0897) Kay Langeheinecke, Friedemann Schrade, Sandra Dusemund, Tim Berner, Sergej Naumov, Andreas Horn, IAV GmbH
3:20 p.m.		Efficient Combustion Modeling Based on Tabkin® CFD Look-up Tables: A Case Study of a Lifted Diesel Spray Flame (2012-01-0152) Ferry Tap, Philipp Schapotschnikow, Dacolt	Replicating Instantaneous Cylinder Mass Flow Rate with Parallel Continuously and Discretely Actuating Intake Plenum Valves (2012-01-0417) Aaron Gander, University of Wisconsin-Madison; John Moskwia, Univ of Wisconsin	MIL-Based Calibration and Validation of Diesel-ECU Models Using Emission and Fuel Consumption Prediction during Dynamic Warm-Up Tests (NEDC) (2012-01-0432) Harald Altenstrasser, AVL LIST GmbH; Yoshihisa Kato, Honda R&D Co.,Ltd.; Nikolaus Keuth, AVL LIST GmbH; Thomas Winsel, University of Applied Sciences Kempten
3:40 p.m.		Application of the CTC Model to Predict Combustion and Pollutant Emissions in a Common-Rail Diesel Engine Operating with Multiple Injections and High EGR (2012-01-0154) Gianluca D'Errico, Tommaso Lucchini, Politecnico di Milano; Rita Di Gioia, Giovanni Bonandrini, Magneti Marelli Powertrain SPA		Design of an Electric Variable CAM Phaser Controller (2012-01-0433) Gordon Cheever Jr, Charles Sullivan, Karl Schten, Ash Punater, Clinton Erickson, Delphi Automotive
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TUESDAY, APRIL 24 - AFTERNOON Technical and Business Sessions		
TIME	SESSION TITLE, DESCRIPTION, AND ROOM	
	O2-35/36	O2-35/36
	Transmission and Driveline: NVH (PFL606) This session addresses transmission noise, vibration, and harshness (NVH) issues and design solutions. 1:00 p.m. - 1:40 p.m. Organizers: John Collins, John A. Frait, Chrysler Group LLC	Transmission and Driveline: All Wheel Drive / IVT/CVT (PFL602) This session includes papers on powersplit analyses, parasitic loss investigation, electronic limited slip differentials, and CVT belt dynamic analyses among other interesting and useful topics. 2:00 p.m. - 4:00 p.m. Organizers: Fabio Da Silva Ferreira, Schaeffler Group USA Inc.; Robert A. Smithson, Fallbrook Technologies Inc.
1:00 p.m.	Prediction Technology for Motorcycle Drivability Attributed to Drive Train Characteristics (2012-01-0308) Yasuhiro Higashi, Tatsuya Iwamoto, Naoki Kobayashi, Honda R&D Co., Ltd.	
1:20 p.m.	Customer Orientated Approach for Evaluation of Transmission Rattle (2012-01-0311) Gerrit M Knabe, Ferit Küçükay, IAE, TU Braunschweig, Germany	
1:40 p.m.	Discussion Break	
2:00 p.m.		Analysis and Guidelines for Design of Efficient Power-Split Systems (2012-01-0304) Gabriela Achtenova, Tomas Budinsky, Czech Technical Univ.
2:20 p.m.		Development of Front-Wheel-Drive ELSD for Efficient Performance and Safety (2012-01-0305) Matthew Fox, Eaton Corp.; John Grogg, Eaton Automotive
2:40 p.m.		Development of a Standard Spin Loss Test Procedure for 4WD Transfer Cases (2012-01-0306) Michael Kirk, Syed M. Ilyas, Chrysler Group LLC; Thomas D'Anna, FEV Inc; Andreas E. Perakes, Ford Motor Co.; Craig S. Ross, General Motors Company
3:00 p.m.		Spatial Dynamics of Pushbelt CVTs: Model Enhancements (2012-01-0307) Thomas Cebulla, Kilian Grundl, Thorsten Schindler, Heinz Ulbrich, Technische Universität München; Arie van der Velde, Han Pijpers, Bosch Transmission Technology B.V.
3:20 p.m.		Study of Self-induced Vibration in an Operating Metal Pushing V-belt CVT (2012-01-0309) Toshihiro Saito, Honda R&D Co., Ltd.; Koji Miyamoto, Ito Corp.
3:40 p.m.	A Novel Method of Axle Torque Measurement for Off-Road Vehicles (2012-01-0310) Ianto Guy, Harper Adams University College	Planned by Transmission and Driveline Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00292, and also individually. To purchase visit collections.sae.org

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WEDNESDAY, APRIL 25 - MORNING

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	O2-33	W2-69	W2-64	W2-68
	Advanced Hybrid Vehicle Powertrains (Part 3 of 5) (PFL100) Hybrid Engines & Systems; Heavy Duty Hybrids. 8:00 a.m. - 11:40 a.m. Organizers: Michael Duoba, Argonne National Laboratory; Ryan McGee, Ford Motor Co.; Mark A. Theobald, GM Powertrain Chairpersons: Mark Theobald, GM Powertrain	Engine Boosting Systems (Part 2 of 2) (PFL501) Trends of ever increasing power density, better fuel economy and now reduced emissions are increasing focus on turbocharging/supercharging and turbochargers/superchargers, as part of overall engine system optimization. Increased amounts of EGR and use of aftertreatment devices present new challenges. This session will cover conceptual, modeling and experimental studies relating to advanced turbochargers/superchargers and advanced boosting systems to respond to above challenges. 8:00 a.m. - 11:00 a.m. Organizers: David Japikse, Concepts NREC; William Smith, Honeywell Int'l (Turbo Technologies); Arjun D. Tuteja Chairpersons: William Smith, Honeywell Int'l (Turbo Technologies)	Kinetically Controlled CI Combustion (Including HCCI) (Part 1 of 3) (PFL206) This session focuses on kinetically controlled combustion (including, HCCI, PCCI, CAI, RCCI, etc.). Part 1: Experimental works (2stroke, mode switching, expansion of low and high loads, valve overlaps and boosting) 8:00 a.m. - 11:20 a.m. Organizers: Christopher Gehrke, Caterpillar Inc.; Scott Goldsborough, Marquette Univ.; Nebojsa Milovanovic, MAHLE Powertrain Ltd.; Samveg Saxena; Hongming Xu, Birmingham Univ.	Mixing-Controlled CI Combustion (Part 3 of 3) (PFL204) Features CI combustion technologies distinguished by 1) mixing processes that influence combustion; and 2) combustion phasing closely coupled to the timing of fuel injection. Includes the impact of the fuel injection and jet-mixing processes (e.g. multiple injection strategies, group-hole/complex injector geometries); impact of swirl/spray targeting on mixing processes; combustion chamber/engine geometry optimization; sources of combustion inefficiency; and the impact of operating conditions. 8:00 a.m. - 11:20 a.m. Organizers: Jose M Garcia, Universidad Politecnica de Valencia; Song-Chang Kong, Iowa State Univ.; Budhadeb Mahakul, Deere & Company; Robert McDavid, Caterpillar Inc.; Mark P. B. Musculus, Sandia National Laboratories; Stefan Simescu, Southwest Research Institute; Dale R. Tree, Brigham Young Univ.; Rishikesh Venugopal, John F. Wright, Cummins Inc.; Yong Yi, Caterpillar Inc.; Ming Zheng, Univ. of Windsor; Raul Payri, Universidad Politecnica de Valencia Chairpersons: Jacqueline O'Connor, Dipankar Sahoo, Sandia National Laboratories
8:00 a.m.	Integrating In-Wheel Motors into Vehicles - Real-World Experiences (2012-01-1037) Andy Watts, Andrew Vallance, Al Fraser, Andrew Whitehead, Christopher Hilton, Helen Monkhouse, John Barrie-Smith, Sunoj George, Michael Ellims, Protean Electric	Downspeeding and Supercharging a Diesel Passenger Car for Increased Fuel Economy (2012-01-0704) Gregory Ostrowski, Gary D. Neely, Christopher J. Chadwell, Darius Mehta, Southwest Research Institute; Philip Wetzel, Eaton Corporation	The Potential of Highly Premixed Combustion for Pollutant Control in an Automotive Two-Stroke HSDI Diesel Engine (2012-01-1104) Jesus Benajes, Ricardo Novella, Daniela De Lima, CMT-Universitat Politècnica de València; Vincent Dugue, Nicolas Quechon, Renault	An Optical Investigation of Fuel Composition Effects in a Reactivity Controlled HSDI Engine (2012-01-0691) Matthew Blessinger, Joshua Stein, Jaal Ghandhi, Univ. of Wisconsin Madison
8:20 a.m.	Scuderi Split Cycle Engine: Air Hybrid Vehicle Powertrain Simulation Study (2012-01-1013) Riccardo Meldolesi, Nicholas Badain, Southwest Research Institute	Effect of Actual Gaps and Leakage Flow of Variable Geometry Turbine on its Performance (2012-01-0708) Natsuko Motoda, Akihiro Yamagata, IHI Corporation	Valve Profile Adaptation, Stratification, Boosting and 2-Stroke Strategies for Raising Loads of Gasoline HCCI Engines (2012-01-1108) Daniel Dahl, Chalmers Univ. of Technology; Ingemar Denbratt, Chalmers Univ of Technology	Ethanol/N-Heptane Dual-Fuel Partially Premixed Combustion Analysis through Formaldehyde PLIF (2012-01-0685) Radu Florea, Kan Zha, Xin Yu, Marcis Jansons, Dinu Taraza, Naeim Henein, Wayne State University
8:40 a.m.	2-Stroke Externally Scavenged Engines for Range Extender Applications (2012-01-1022) Enrico Mattarelli, Carlo Alberto Rinaldini, Giuseppe Cantore, University of Modena & Reggio E.; Piero Baldini, PRIMAVIS	Enhancing Power Density with Two-Stage Turbochargers (2012-01-0709) Jinsuk Kang, Jaeyeon Lee, Hyun-soo Song, Hyundai Kia Motors; Dongoh Lee, Hyundai-Kia R&D Center	2-Stroke CAI Combustion Operation in a GDI Engine with Poppet Valves (2012-01-1118) Yan Zhang, Mohammed Ojapah, Alasdair Cairns, Hua Zhao, Brunel University	Soot Volume Fraction and Morphology of Conventional, Fischer-Tropsch, Coal-Derived, and Surrogate Fuel at Diesel Conditions (2012-01-0678) Sanghoon Kook, University of New South Wales; Lyle M. Pickett, Sandia National Laboratories
9:00 a.m.	An Opposed-Piston Free-Piston Linear Generator Development for HEV (2012-01-1021) Ling Huang, Nanjing Univ. of Science & Technology	Scalable Component-Based Modeling for Optimizing Engines with Supercharging, E-Boost and Turbocompound Concepts (2012-01-0713) Lars Eriksson, Tobias Lindell, Oskar Leufven, Andreas Thomasson, Linköping University, Sweden	Expanding the Low Load Limit of HCCI Combustion Process Using EIVO Strategy in a 4VVAS Gasoline Engine (2012-01-1121) Tao Chen, Tianjin Univ; Hui Xie, Le Li, Weifei Yu, Lianfang Zhang, Tianjin Univ.; Hua Zhao, Brunel University London	Cooling Loss Reduction of Highly Dispersed Spray Combustion with Restricted In-Cylinder Swirl and Squish Flow in Diesel Engine (2012-01-0689) Masaaki Kono, Masatoshi Basaki, Masaharu Ito, Nippon Soken, Inc.; Takeshi Hashizume, Shinobu Ishiyama, Toyota Motor Corporation; Kazuhisa Inagaki, Toyota Central R&D Labs., Inc.
9:20 a.m.	Performance Comparison of Engine Down-Sized to High Efficiency ICEs in Optimized Hybrid Vehicles (2012-01-1033) Harry C. Watson, Sunil Alihikari, University of Melbourne	Model-Based Analysis and Optimization of Turbocharged Diesel Engines with a Variable Geometry Compressor and Turbine System (2012-01-0716) Marcello Canova, Junqiang Zhou, Ohio State University; Lisa Fiorentini, Fabio Chiara, OSU Center for Automotive Research; Yue-Yun Wang, General Motors Company	HCCI Load Expansion Opportunities Using a Fully Variable HVA Research Engine to Guide Development of a Production Intent Cam-Based VVA Engine: The Low Load Limit (2012-01-1134) Adam Weall, James P. Szybist, K. Dean Edwards, Oak Ridge National Laboratory; Matthew Foster, Keith Confer, Wayne Moore, Delphi Automotive Systems	Effect of Split Injection on the Combustion and In-Cylinder Soot Formation Characteristics of Low Compression Ratio Neat Gas-To-Liquid-Fueled DI Diesel Engine (2012-01-0690) Salih Manasra, Bayreuth Engine Research Center-Germany; Dieter Brueggemann, Bayreuth Engine Research Center
9:40 a.m.	The Development of a Dedicated Range Extender Engine (2012-01-1002) Michael Bassett, Jonathon Hall, Dave OudeNijeweme, Darren Darkes, Andre Bisordi, Marco Warth, Mahle Powertrain, Ltd.	Aero Design Challenges in Wide-Operability Turbocharger Centrifugal Compressors (2012-01-0710) Eric Krivitzky, Louis Larosiliere, Concepts NREC	Experimental Study on Spark Assisted Compression Ignition (SACI) Combustion with Positive Valve Overlap in a HCCI Gasoline Engine (2012-01-1126) Le Li, Hui Xie, Tao Chen, Weifei Yu, Tianjin Univ.; Hua Zhao, Brunel University	Equivalence Ratio Distributions in a Light-Duty Diesel Engine Operating under Partially Premixed Conditions (2012-01-0692) Benjamin Petersen, Paul Miles, Dipankar Sahoo, Sandia National Laboratories

Continued on next page

WEDNESDAY, APRIL 25 - MORNING

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	O2-33	W2-69	W2-64	W2-68
	Advanced Hybrid Vehicle Powertrains (Part 3 of 5) (PFL100) Hybrid Engines & Systems; Heavy Duty Hybrids. 8:00 a.m. - 11:40 a.m. Organizers: Michael Duoba, Argonne National Laboratory; Ryan McGee, Ford Motor Co.; Mark A. Theobald, GM Powertrain Chairpersons: Mark Theobald, GM Powertrain	Engine Boosting Systems (Part 2 of 2) (PFL501) Trends of ever increasing power density, better fuel economy and now reduced emissions are increasing focus on turbocharging/supercharging and turbochargers/superchargers, as part of overall engine system optimization. Increased amounts of EGR and use of aftertreatment devices present new challenges. This session will cover conceptual, modeling and experimental studies relating to advanced turbochargers/superchargers and advanced boosting systems to respond to above challenges. 8:00 a.m. - 11:00 a.m. Organizers: David Japikse, Concepts NREC; William Smith, Honeywell Int'l (Turbo Technologies); Arjun D. Tuteja Chairpersons: William Smith, Honeywell Int'l (Turbo Technologies)	Kinetically Controlled CI Combustion (Including HCCI) (Part 1 of 3) (PFL206) This session focuses on kinetically controlled combustion (including, HCCI, PCCI, CAI, RCCI, etc.). Part 1: Experimental works (2stroke, mode switching, expansion of low and high loads, valve overlaps and boosting) 8:00 a.m. - 11:20 a.m. Organizers: Christopher Gehrke, Caterpillar Inc.; Scott Goldsborough, Marquette Univ.; Nebojsa Milovanovic, MAHLE Powertrain Ltd.; Samveg Saxena; Hongming Xu, Birmingham Univ.	Mixing-Controlled CI Combustion (Part 3 of 3) (PFL204) Features CI combustion technologies distinguished by 1) mixing processes that influence combustion; and 2) combustion phasing closely coupled to the timing of fuel injection. Includes the impact of the fuel injection and jet-mixing processes (e.g. multiple injection strategies, group-hole/ complex injector geometries); impact of swirl/spray targeting on mixing processes; combustion chamber/engine geometry optimization; sources of combustion inefficiency; and the impact of operating conditions. 8:00 a.m. - 11:20 a.m. Organizers: Jose M Garcia, Universidad Politecnica de Valencia; Song-Chang Kong, Iowa State Univ.; Budhadeb Mahakul, Deere & Company; Robert McDavid, Caterpillar Inc.; Mark P. B. Musculus, Sandia National Laboratories; Stefan Simescu, Southwest Research Institute; Dale R. Tree, Brigham Young Univ.; Rishikesh Venugopal, John F. Wright, Cummins Inc.; Yong Yi, Caterpillar Inc.; Ming Zheng, Univ. of Windsor; Raul Payri, Universidad Politecnica de Valencia Chairpersons: Jacqueline O'Connor, Dipankar Sahoo, Sandia National Laboratories
10:00 a.m.	Series Hydraulic Hybrid System for a Passenger Car: Design, Integration and Packaging Study (2012-01-1031) Michael Woon, Sidharth Nakra, Andrej Ivanco, Zoran Filipi, University of Michigan	Dynamic Features and their Propagation in a Centrifugal Compressor Housing with Ported Shroud (2012-01-0706) Matthieu Gancedo, Erwann Guillou, Ephraim Gutmark, University of Cincinnati; Ashraf Mohamed, Honeywell	Gasoline DICI Engine Operation in the LTC Regime Using Triple- Pulse Injection (2012-01-1131) Youngchul Ra, Paul Loeper, Michael Andrie, Roger Krieger, David Foster, Rolf Reitz, University of Wisconsin-Madison; Russ Durrett, General Motors Company	Optical Study of Swirl during Combustion in a CI Engine with Different Injection Pressures and Swirl Ratios Compared with Calculations (2012-01-0682) Henrik W. R. Dembinski, Hans-Erik Angstrom, Royal Institute of Technology
10:20 a.m.	The Value of Component in the Loop HEV Intracity Buses with Different Traction Management in Hybrid Vehicles (2012-01-1024) Richard K. Stobart, Anusha Wijewardane, Guangyu Dong, Jing Li, Loughborough University	BSFC Improvement and NOx Reduction by Sequential Turbo System in a Heavy Duty Diesel Engine (2012-01-0712) Munemasa Hashimoto, Yuzo Aoyagi, Masayuki Kobayashi, Tetsuya Murayama, New A.C.E. Institute Co., Ltd.; Yuichi Goto, Hisakazu Suzuki, National Traffic Safety & Enviro Lab	Experimental Study into a Hybrid PCCI/CI Concept for Next-Generation Heavy-Duty Diesel Engines (2012-01-1114) Erik Doosje, Frank Willems, Rik Baert, Martin Van Dijk, TNO Science & Industry	Parametric Analysis of Piston Bowl Geometry and Injection Nozzle Configuration using 3D CFD and DoE (2012-01-0700) Vinod Karthik Rajamani, FEV GmbH; Sascha Schoenfeld, Avnish Dhongde, VKA, RWTH Aachen University
10:40 a.m.	Fuel Economy Research on Series-Type HEV Intracity Buses with Different Traction Motor Capacity Combinations (2012-01-1035) Minjae Kim, Daebong Jung, Kyoungdoug Min, Seoul National Univ	Optimal Operation of a Turbocharged Diesel Engine during Transients (2012-01-0711) Tomas Nilsson, Anders Froberg, Jan Aslund, Linkopings Univ	Boosted HCCI Combustion Using Low-Octane Gasoline with Fully Premixed and Partially Stratified Charges (2012-01-1120) Yi Yang, John Dec, Nicolas Dronniou, Sandia National Laboratories; William Cannella, Chevron	Numerical Investigation of High Powered Diesel Mode Transition Using Large Eddy Simulations (2012-01-0693) Siddhartha Banerjee, Christopher Rutland, Univ. of Wisconsin Madison
11:00 a.m.	Reduction of Accessory Overdrive and Parasitic Loading on a Parallel Electric Hybrid City Bus (2012-01-1005) Jeffrey Campbell, Winthrop Watts, David Kittelson, Univ. of Minnesota - Twin Cities		Light-Duty Reactivity Controlled Compression Ignition Combustion Using a Cetane Improver (2012-01-1110) John Kaddatz, Michael Andrie, Rolf Reitz, Sage Kokjohn, University of Wisconsin Madison	Investigation of Partially Premixed Combustion Characteristics in Low Load Range with Regards to Fuel Octane Number in a Light-Duty Diesel Engine (2012-01-0684) Hadeel Solaka, Lund University; Ulf Aronsson, Volvo Group Trucks Technology; Martin Tuner, Bengt Johansson, Lund University
11:20 a.m.	Impact of Auxiliary Loads on Fuel Economy and Emissions in Transit Bus Applications (2012-01-1028) Rachel L. Muncrief, Miguel Cruz, Henry Ng, Michael Harold, University of Houston			
			Analysis of the Combustion Mode Switch Between SI and Gasoline HCCI (Written Only -- No Oral Presentation) (2012-01-1105) Tobias Nier, Andre Kulzer, Roland Karlemeyer, Robert Bosch GmbH	
	Planned by Advanced Power Sources Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00266, and also individually. To purchase visit collections.sae.org	Planned by Lubricants and Powertrain Systems Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00290 and SUB-TP-00009, and also individually. To purchase visit collections.sae.org	Planned by Combustion and Fuels Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00277, and also individually. To purchase visit collections.sae.org	Planned by Combustion and Fuels Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00275 and SUB-TP-00009, and also individually. To purchase visit collections.sae.org

WEDNESDAY, APRIL 25 - MORNING

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	W2-61	W2-66	W2-70	O2-35/36
	Modeling of SI and Diesel Engines - Fundamentals (PFL208) Zero-dimensional, one-dimensional, and quasi-dimensional models for simulation of SI and CI engines with respect to: engine breathing and boosting; SI combustion and emissions; CI combustion and emissions; fundamentals of engine thermodynamics; thermal management; mechanical and lubrication systems; system level models for controls; system level models for vehicle fuel economy and emissions predictions. 8:00 a.m. - 9:40 a.m. Organizers: Federico Millo, Politecnico di Torino; Thomas Morel, Gamma Technologies Inc.; Angelo Onorati, Politecnico di Milano; Christof Schernus, FEV GmbH Chairpersons: Angelo Onorati, Politecnico di Milano; Christof Schernus, FEV GmbH	Multi-Dimensional Engine Modeling (Part 3 of 4) (PFL209) The spectrum of papers solicited for this session reflect the truly multidisciplinary nature of the field, covering advances in areas such as chemical kinetics, combustion and spray modeling, turbulence, mesh generation, and approaches targeting improved computational efficiency. Papers employing multi-dimensional modeling to gain a deeper understanding of processes related to turbulent transport, transient phenomena, and chemically reacting, two-phase flows are also encouraged. 8:00 a.m. - 11:40 a.m. Organizers: Harido Barths, General Motors Company; Sarah Diakhaby, Computational Dynamics, Ltd.; Allen David Gosman, CD-adapco; Carl Hergart, Caterpillar	Powertrain Control & Calibration (Part 2 of 3) (PFL300) This session covers engine control system and optimization technique developments related to achieving stringent market fuel economy, emissions, performance, reliability and quality demands. Related topics include engine and its subsystem control, signal processing, on-board diagnostic strategy development, sensor, actuator, electronic control unit designs, etc. 8:00 a.m. - 10:00 a.m. Organizers: Peter J. Maloney, MathWorks Inc.; Matti Vint, Ricardo Inc.; Feilong Liu, Delphi Corp Chairpersons: Matti Vint, Ricardo Inc; Peter Maloney, MathWorks Inc	Transmission and Driveline: Transmission Systems / Hybrids (PFL600) This session deals with papers on automotive transmissions of different types, their enhancements and controls. 8:00 a.m. - 9:40 a.m. Organizers: Berthold Martin, Chrysler Group LLC; Tejinder Singh, General Motors Company Chairpersons: Berthold Martin, Chrysler Group LLC; Tejinder Singh, General Motors LLC
8:00 a.m.	Transfer Matrix Computation for Intake Elements with Large Pressure Fluctuations under Mean Flow Conditions (2012-01-0672) Haitham Mezher, Ecole Centrale De Nantes, Mann+Hummel; Jérôme Migaud, Advanced Development, Mann+Hummel France; David Chalet, Ecole Centrale De Nantes; Vincent Raimbault, Advanced Development, Mann+Hummel France; Pascal Chesse, Ecole Centrale De Nantes; Bernhard Huurdeman, Mann + Hummel GmbH	Model Constant Optimization Using an Ensemble of Experimental Data (2012-01-0131) Joseph Bliss, David Schmidt, James Smith, Kshitij Neroorkar, Univ of Massachusetts-Amherst	EGR Reference Allocation for Diesel Engine Air System Control (2012-01-0892) Harald Waschl, Daniel Alberer, Johannes Kepler University Linz; Andreas Kerschbaummayr, BMW Motoren GmbH	High Efficiency, Hydro-Mechanical Passenger Vehicle Transmission using Fixed Displacement Pump/Motors and Digital Hydraulics (2012-01-0624) Robert H.F. Lloyd, Lloydco LLC
8:20 a.m.	Some Useful Additions to Calculate the Wall Heat Losses in Real Cycle Simulations (2012-01-0673) Moritz Heinle, Michael Bargende, University of Stuttgart; Hans-Juergen Berner, FKFS	Acceleration of Detailed Chemical Kinetics Using Multi-zone Modeling for CFD in Internal Combustion Engine Simulations (2012-01-0135) Mandhapati Raju, Mingjie Wang, Meizhong Dai, Convergent Science Inc.; William Piggott, Daniel Flowers, Lawrence Livermore National Laboratory	Physical-Based Algorithms for Interpolation and Extrapolation of Turbocharger Data Maps (2012-01-0434) Jamil El Hadeif, Renault SAS; Guillaume Colin, Yann Chamailard, PRISME - Université d'Orléans; Vincent Talon, Renault SAS	Geometric Analysis of a Dual Clutch Lever-Based Electromechanical Actuator with Application to Actuator Dynamics Modelling (2012-01-0631) Milan Milutinovic, Vladimir Ivanovic, Josko Deur, Dragutin Scap, University of Zagreb
8:40 a.m.	Energy Wall Losses Estimation of a Gasoline Engine Using a Sliding Mode Observer (2012-01-0674) Maria Adelina Rivas Caicedo, Gipsa Lab France; Emmanuel Witrant, Olivier Sename, Gipsa Lab; Pascal Hegelin, Christian Caillol, Université D'Orléans	Validation of the Generalized RNG Turbulence Model and Its Application to Flow in a HSDI Diesel Engine (2012-01-0140) Bao-Lin Wang, Hunan Univ. & Univ. of Wisconsin-Madison; Michael J. Bergin, Wisconsin Engine Research Consultants; Benjamin R. Petersen, Paul C. Miles, Sandia National Laboratories; Rolf D. Reitz, University of Wisconsin-Madison; Zhiyu Han, Hunan University	Online Identification of the Turbocharger Efficiency For Diesel Engine Control (2012-01-0439) Wissam DIB, Jonathan Chauvin, Olivier Grondin, ifp energies nouvelles; Laurent Fontvielle, Remy Brunel Ing, Renault SA	HEV Application of Shaking Vibration Control System Based on Advanced Motor Control (2012-01-0622) Satoru Fujimoto, Kazutaka Adachi, Hiroyuki Ashizawa, Jun Motosugi, Nissan Motor Company Ltd.
9:00 a.m.	A Quasi-3D Model for the Simulation of the Unsteady Flows in I.C. Engine Pipe Systems (2012-01-0675) Gianluca Montenegro, Angelo Onorati, Tarcisio Cerri, Augusto Della Torre, Politecnico di Milano	Simulations of Advanced Combustion Modes Using Detailed Chemistry Combined with Tabulation and Mechanism Reduction Techniques (2012-01-0145) Francesco Contino, Université catholique de Louvain; Tommaso Lucchini, Gianluca D'Errico, Politecnico di Milano; Catherine Duynslaegher, Veronique Dias, Herve Jeanmart, Université catholique de Louvain	Explicit Model Predictive Control of the Diesel Engine Fuel Path (2012-01-0893) Jamei Deng, Kingston University London; Richard Stobart, Cunjia liu, Edward Winward, Loughborough University	Power-Split HEV Control Strategy Development with Refined Engine Transients (2012-01-0629) John Arata, Michael Leamy, Kenneth Cunefare, Georgia Institute of Technology
9:20 a.m.	Restriction Model Independent Method for Non-Isentropic Outflow Valve Boundary Problem Resolution (2012-01-0676) Felipe Castillo, RENAULT SAS; Emmanuel Witrant, Luc Dugard, Gipsa Lab	Ignition Quality Tester Guided Improvements to Reaction Mechanisms for n-Alkanes: n-Heptane to n-Hexadecane (2012-01-0149) Chitralkumar V. Naik, Karthik Puduppakkam, Ellen Meeks, Long Liang, Reaction Design Inc.	Methodology for Design and Calibration of a Drift Compensation Method for Fuel-To-Air Ratio Estimation (2012-01-0717) Francisco Payri, Carlos Guardiola, David Blanco-Rodríguez, Universidad Politécnica de Valencia; Alexandre Mazer, Annabelle Cornette, PSA	Development of New Hybrid Transaxle for Sub-Compact-Class Vehicles (2012-01-0623) Tomoaki Furukawa, Ryuji Ibaraki, Hiroaki Kimura, Koichi Kondo, Masato Watanabe, Tatsuhiro Mizutani, Hiroyuki Hattori, Akira Takasaki, Toyota Motor Corporation

Continued on next page

WEDNESDAY, APRIL 25 - MORNING Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	W2-61	W2-66	W2-70	O2-35/36
	Modeling of SI and Diesel Engines - Fundamentals (PFL208) Zero-dimensional, one-dimensional, and quasi-dimensional models for simulation of SI and CI engines with respect to: engine breathing and boosting; SI combustion and emissions; CI combustion and emissions; fundamentals of engine thermodynamics; thermal management; mechanical and lubrication systems; system level models for controls; system level models for vehicle fuel economy and emissions predictions. 8:00 a.m. - 9:40 a.m. Organizers: Federico Millo, Politecnico di Torino; Thomas Morel, Gamma Technologies Inc.; Angelo Onorati, Politecnico di Milano; Christof Schemus, FEV GmbH Chairpersons: Angelo Onorati, Politecnico di Milano; Christof Schemus, FEV GmbH	Multi-Dimensional Engine Modeling (Part 3 of 4) (PFL209) The spectrum of papers solicited for this session reflect the truly multidisciplinary nature of the field, covering advances in areas such as chemical kinetics, combustion and spray modeling, turbulence, mesh generation, and approaches targeting improved computational efficiency. Papers employing multi-dimensional modeling to gain a deeper understanding of processes related to turbulent transport, transient phenomena, and chemically reacting, two-phase flows are also encouraged. 8:00 a.m. - 11:40 a.m. Organizers: Harro Barth, General Motors Company; Sarah Diakhaby, Computational Dynamics, Ltd.; Allen David Gosman, CD-adapco; Carl Hergart, Caterpillar	Powertrain Control & Calibration (Part 2 of 3) (PFL300) This session covers engine control system and optimization technique developments related to achieving stringent market fuel economy, emissions, performance, reliability and quality demands. Related topics include engine and its subsystem control, signal processing, on-board diagnostic strategy development, sensor, actuator, electronic control unit designs, etc. 8:00 a.m. - 10:00 a.m. Organizers: Peter J. Maloney, MathWorks Inc.; Matti Vint, Ricardo Inc.; Feilong Liu, Delphi Corp Chairpersons: Matti Vint, Ricardo Inc; Peter Maloney, MathWorks Inc	Transmission and Driveline: Transmission Systems / Hybrids (PFL600) This session deals with papers on automotive transmissions of different types, their enhancements and controls. 8:00 a.m. - 9:40 a.m. Organizers: Berthold Martin, Chrysler Group LLC; Tejinder Singh, General Motors Company Chairpersons: Berthold Martin, Chrysler Group LLC; Tejinder Singh, General Motors LLC
9:40 a.m.	Discussion Break	3D CFD Modeling of a Biodiesel-Fueled Diesel Engine Based on a Detailed Chemical Mechanism (2012-01-0151) Junfeng Yang, Chalmers Univ of Technology; Monica Johansson, Chalmers; Chitrakumar Naik, Karthik Puduppakkam, Reaction Design Inc; Valeri Golovitchev, Chalmers Univ of Technology; Ellen Meeks, Reaction Design Inc	A New Diagnosis Method for an Air-Fuel Ratio Cylinder Imbalance (2012-01-0718) Shinji Nakagawa, Hitachi, Ltd.; Eisaku Fukuchi, Akihito Numata, Hitachi Automotive Systems, Ltd.	Discussion Break
10:00 a.m.		A Numerical Study of the Effect of EGR on Flame Lift-off in n-Heptane Sprays Using a Novel PaSR Model Implemented in OpenFOAM (2012-01-0153) Anne Kösters, Valeri Golovitchev, Chalmers Univ of Technology; Anders Karlsson, Volvo Technology Corp		
10:20 a.m.		Transonic Combustion: Model Development and Validation in the Context of a Pressure Chamber (2012-01-0155) Kishwar Hossain, Jian Qiu, Shreeram Shetty, Philip Zoldak, Transonic Combustion Inc; Chris De Boer, Transonic Combustion Inc.		
10:40 a.m.		Numerical Analysis of Combustion and Emissions Formation in a Heavy Duty DME Engine (2012-01-0156) Henrik Salsing, Volvo Powertrain; Valeri Golovitchev, Ingemar Denbratt, Chalmers Univ of Technology		
11:00 a.m.		Modeling Fuel Spray Auto-ignition using the FGM Approach: Effect of Tabulation Method (2012-01-0157) UlaT Egüz, Sridhar Ayyapureddi, Cemil Bekdemir, Bart Somers, Philip de Goey, Eindhoven University of Technology		
		Turbulence-Chemistry-Interaction Modelling in 3D-CFD for Study of Auto Ignition Phenomena (Written Only -- No Oral Presentation) (2012-01-0158) Christof Benz, Jürgen Nocke, Egon Hassel, University of Rostock; Henrik Hoffmeyer; Karsten Michels		
	Planned by Combustion and Fuels Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00278 and SUB-TP-00008, and also individually. To purchase visit collections.sae.org	Planned by Combustion and Fuels Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00279 and SUB-TP-00008, and also individually. To purchase visit collections.sae.org	Planned by Control and Calibration Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00284 and SUB-TP-00009, and also individually. To purchase visit collections.sae.org	Planned by Transmission and Driveline Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00292, and also individually. To purchase visit collections.sae.org

WEDNESDAY, APRIL 25 - MORNING Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	W2-63	W2-65	O2-44	O2-43
	Fuel & Additive Effects on CI Engine Performance (Part 1 of 2) (PFL205) This session presents work investigating the effect of fuel composition on CI engine performance in terms of combustion efficiency, emissions and engine hardware durability. Variations in fuel composition include surrogate fuels, the blending of oxygenated components and the use of fuel additives are considered. 8:20 a.m. - 11:00 a.m. Organizers: Scott Curran, Oak Ridge National Laboratory; Paul Richards; Samveg Saxena, University of California, Berkeley; Andrea Strzelec, Texas A&M University Chairpersons: Paul Richards; Scott Curran, Oak Ridge National Laboratory	New CI & SI Engines and Components (Part 3 of 3) (PFL500) This session covers topics regarding new CI and SI engines and components. This includes analytical, experimental, and computational studies covering hardware development as well as design and analysis techniques. 8:20 a.m. - 11:00 a.m. Organizers: Jeffrey Nabber, Michigan Technological Univ.; James E. Smith, West Virginia Univ.; John Szytman, Continental Automotive Systems US Inc.	Advanced Battery Technology (Part 1 of 2) (PFL103) Batteries pose one of the biggest challenges and opportunities on the road to electrifying the automobile. The success or failure of Hybrid, Plug-In, and Electric vehicles is highly dependent on their batteries. This session features a variety of talks by the OEMs and third party groups active in the field. 9:00 a.m. - 11:20 a.m. Organizers: Neil M. Johnson, Ricardo; Alvaro Masias, Ford Motor Co.; James Miller, Argonne National Laboratory Chairpersons: Neil Johnson, Ricardo Inc	Hydrogen IC Engines (PFL102) This session focuses on hydrogen internal combustion engines and highlights recent engine research as well as vehicle related activities. Combustion concepts including hydrogen port fuel injection as well as direct injection are investigated, advanced diagnostics for hydrogen engines are presented and recent results in hydrogen engine simulation are shown. 9:00 a.m. - 11:40 a.m. Organizers: Brad A. Boyer, Ford Motor Co.; Thomas Wallner, Argonne National Laboratory Chairpersons: Brad Boyer, Ford Motor Co; Thomas Wallner, Argonne National Laboratory
8:20 a.m.	Effects of EGR and Pilot Injection on Characteristics of Combustion and Emissions of Diesel Engines with Low Ignitability Fuel (2012-01-0853) Tie Li, Shanghai JiaoTong University; Hideyuki Ogawa, Riichi Moriaki, Hokkaido University; Teruo Suzuki, Jomo Technical Research Center	Delphi's Heated Injector Technology: The Efficient Solution for Fast Ethanol Cold Starts and Reduced Emissions (2012-01-0418) Timothy D. Spegar, David Burke, Lucille Lavan, Delphi Automotive		
8:40 a.m.	Fuel Effects on Combustion and Emissions of a Direct-Injection Diesel Engine Operating at Moderate to High Engine Speed and Load (2012-01-0863) James Szybist, Oak Ridge National Laboratory; Patrick Szymkowitz, William F. Northrop, General Motors Company	Reducing CO₂ Emissions from Port Injected Gasoline Engines Using Novel Micro-Superchargers and Fuel-Air Mixing Technologies (2012-01-0420) Paul Wilkinson, mi Technology Goup; Roger Kennedy, RHKI Ltd		
9:00 a.m.	Possible Mechanism for Poor Diesel Fuel Lubricity in the Field (2012-01-0867) Stephen Cook, Jim Barker, Jacqueline Reid, Paul Richards, Innospec	Improvement of Fuel Consumption by Stopping Some Fuel Injectors while Operating Both Intake and Exhaust Valves in Gasoline Engines (2012-01-0421) Hirokazu Suzuki, Ken Saito, Aichi University of Technology; Kohei Nakashima, Yoshio Murakami, Meijo Univ.	Rapid Impedance Spectrum Measurements for State-of-Health Assessment of Energy Storage Devices (2012-01-0657) Jon P. Christophersen, Idaho National Laboratory; John Morrison, Montana Tech of Univ of Montana; William Morrison, Qualtech Systems Inc; Chester Motloch, Motloch Consulting, Inc.	Technical Keynote: Concepts and Future Perspectives of Hydrogen IC Engines (Oral Only) Helmut Eichlseder, Graz University of Technology
9:20 a.m.	Experimental and Statistical Comparison of Engine Response as a Function of Fuel Chemistry and Properties in CI and HCCI Engines (2012-01-0857) Michael Bunce, Bruce G. Bunting, Oak Ridge National Laboratory; Jun Wang, AVL North America Inc; Robert Crawford, Rincon Ranch Consulting	Advanced Combustion Performance for High Efficiency in New I3 1.2L Supercharged Gasoline Engine by Effective Use of 3D Engine Simulation (2012-01-0422) Yuko Mito, Kazuki Tanzawa, Michio Watanabe, Yuta Eiyama, Nissan Motor Company Ltd.	Robust State of Charge Estimation of Lithium-Ion Batteries via an Iterative Learning Observer (2012-01-0659) Meng-Feng Li, General Motors Company; Wen Chen, Wayne State Univ; Hai Wu, David Gorski, General Motors Company	
9:40 a.m.	Investigations of Nitric Oxide Formation Through the Use of Barium Additive and Two-Stage Model (2012-01-0861) Hoseok Song, Brandon Tompkins, Timothy Jacobs, Texas A&M University	The Effects of Spark Timing and Equivalence Ratio on Spark-Ignition Linear Engine Operation with Liquefied Petroleum Gas (2012-01-0424) Jaeheun Kim, Choongsik Bae, Korea Advanced Inst. of Science & Tech.; Gangchul Kim, Korea Institute of Energy Research	Using Magnetic Susceptibility in Realtime Battery Monitoring: One Solution for Micro-Hybrid, Hybrid and Electric Automobiles (2012-01-0667) Joern Tinnemeyer, Cadex Electronics Inc.	Performance of a Port Fuel Injected, Spark Ignition Engine Optimised for Hydrogen Fuel (2012-01-0654) Peter A. Dennis, Robert J. Dingli, Payman Abbasi Atibeh, Harry C. Watson, Michael J. Brear, University of Melbourne; Glen Voice, Ford Motor Company of Australia
10:00 a.m.	Ultra-Clean Transient Operation of a Compression Ignition Engine Fuelled with Upgraded Hydrous Bioethanol (2012-01-0859) Casper Raahede, Technological Institute Denmark; Magnus Lewander, Par Gabriellsson, Haldor Topsoe AS	Brushless Motors for In-Tank Fuel Pumps (2012-01-0426) Duane Collins, Philip Anderson, Sharon Beyer, Daniel Moreno, Delphi Powertrain Systems	Electric Vehicle Battery Cell Balancing (Oral Only) Adam Timmons, Chrysler Group LLC	Realization and Testing of a Low Pressure Hydrogen Direct Injection Engine Using Commercial Injectors (2012-01-0652) Marco Antonelli, Luigi Martorano, Università di Pisa - DESE
10:20 a.m.	Investigation of Effects of Ignition Improvers on Ignition Delay Time of Ethanol Combustion with Rapid Compression and Expansion Machine (2012-01-0854) Ronnachart Munsin, Yossapong Laonual, Sumrerng Jugjai, Mechanical Engineering Department, KMUTT; Masataka Matsuki, Hidenori Kosaka, Tokyo Institute of Technology	A Friction Comparison between Chain and Belt-Drive Systems (2012-01-0427) James Gagg, Mahle Powertrain, Ltd.	Geometry-Resolved Electro-Chemistry Model of Li-Ion Batteries (2012-01-0663) Robert Spotnitz, Battery Design Inc; Boris Kaludercic, Samir Muzaferija, Milovan Peric, Gaetan Damblanc, Steve Hartridge, CD-adapco	A Hydrogen Direct Injection Engine Concept that Exceeds U.S. DOE Light-Duty Efficiency Targets (2012-01-0653) Nicholas S. Matthias, Thomas Wallner, Riccardo Scarcelli, Argonne National Laboratory

Continued on next page

WEDNESDAY, APRIL 25 - MORNING Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	W2-63	W2-65	O2-44	O2-43
	Fuel & Additive Effects on CI Engine Performance (Part 1 of 2) (PFL205) This session presents work investigating the effect of fuel composition on CI engine performance in terms of combustion efficiency, emissions and engine hardware durability. Variations in fuel composition include surrogate fuels, the blending of oxygenated components and the use of fuel additives are considered. 8:20 a.m. - 11:00 a.m. Organizers: Scott Curran, Oak Ridge National Laboratory; Paul Richards; Samveg Saxena, University of California, Berkeley; Andrea Strzelec, Texas A&M University Chairpersons: Paul Richards; Scott Curran, Oak Ridge National Laboratory	New CI & SI Engines and Components (Part 3 of 3) (PFL500) This session covers topics regarding new CI and SI engines and components. This includes analytical, experimental, and computational studies covering hardware development as well as design and analysis techniques. 8:20 a.m. - 11:00 a.m. Organizers: Jeffrey Naber, Michigan Technological Univ.; James E. Smith, West Virginia Univ.; John Szpytman, Continental Automotive Systems US Inc.	Advanced Battery Technology (Part 1 of 2) (PFL103) Batteries pose one of the biggest challenges and opportunities on the road to electrifying the automobile. The success or failure of Hybrid, Plug-In, and Electric vehicles is highly dependent on their batteries. This session features a variety of talks by the OEMs and third party groups active in the field. 9:00 a.m. - 11:20 a.m. Organizers: Neil M. Johnson, Ricardo; Alvaro Masias, Ford Motor Co.; James Miller, Argonne National Laboratory Chairpersons: Neil Johnson, Ricardo Inc	Hydrogen IC Engines (PFL102) This session focuses on hydrogen internal combustion engines and highlights recent engine research as well as vehicle related activities. Combustion concepts including hydrogen port fuel injection as well as direct injection are investigated, advanced diagnostics for hydrogen engines are presented and recent results in hydrogen engine simulation are shown. 9:00 a.m. - 11:40 a.m. Organizers: Brad A. Boyer, Ford Motor Co.; Thomas Wallner, Argonne National Laboratory Chairpersons: Brad Boyer, Ford Motor Co; Thomas Wallner, Argonne National Laboratory
10:40 a.m.	Effects of n-Butanol Addition on the Performance and Emissions of a Turbocharged Common-Rail Diesel Engine (2012-01-0852) Gen Chen, Wu Yu, Qianqian Li, Zuohua Huang, Xi'an Jiaotong University	Miller Cycle Application to the Scuderi Split Cycle Engine (by Downsizing the Compressor Cylinder) (2012-01-0419) David Branyon, Dean Simpson, Southwest Research Institute	Simulating Rechargeable Lithium-Ion Battery Using VHDL-AMS (2012-01-0665) Xiao Hu, Shaohua Lin, ANSYS Inc.; Scott Stanton	Engine Performance of a Novel Hydrogen Combustion System (Oral Only) Matthew Younkens, Ford Motor Co.; Brad Boyer, Ford Motor Co; Margaret Wooldridge, Univ of Michigan
11:00 a.m.			Development of a Simulation Model to Analyze the Effect of Thermal Management on Battery Life (2012-01-0671) Tugce Yuksel, Jeremy Michalek, Carnegie Mellon Univ.	Direct In-cylinder Water Injection as a means of NOx reduction in Hydrogen Engines (Oral Only) Matthew Younkens, Univ of Michigan/Ford Motor Co.; Brad Boyer, Ford Motor Co; Margaret Wooldridge, Univ of Michigan
11:20 a.m.				Numerical Investigation of NO _x Formation Mechanism in H ₂ -Diesel Dual-Fuel Engine (2012-01-0655) Satbir Singh, Carnegie Mellon Univ.; Shiyu Liu, Hailin Li, West Virginia Univ
		An Assessment of Two Piston Bowl Concepts in a Medium-Duty Diesel Engine (Written Only -- No Oral Presentation) (2012-01-0423) Eric M. Kurtz, Joshua Styron, Ford Motor Co.		
		Performance Improvement of Automotive Oil Pump to Operate at High Temperatures Employed in Modern Diesel Engines (Written Only -- No Oral Presentation) (2012-01-0428) Srinivasan S, J Suresh kumar, K Vijayakumar, P Venkataraman, S. Loganathan, UCAL Fuel System Ltd		
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WEDNESDAY, APRIL 25 - MORNING Technical and Business Sessions

TIME	W2-61	W2-70	O2-35/36
	Modeling of SI and Diesel Engines - Mechanical Systems (PFL208) Zero-dimensional, one-dimensional, and quasi-dimensional models for simulation of SI and CI engines with respect to: engine breathing and boosting; SI combustion and emissions; CI combustion and emissions; fundamentals of engine thermodynamics; thermal management; mechanical and lubrication systems; system level models for controls; system level models for vehicle fuel economy and emissions predictions. 10:00 a.m. - 10:40 a.m. Organizers: Christopher Loy Allmond, Chrysler Group LLC; Diana-Lucina Dascalescu, Gamma Technologies Inc.; Federico Millo, Politecnico di Torino; Thomas Morel, Gamma Technologies Inc.; Christof Schernus, FEV GmbH Chairpersons: Diana-Lucina Dascalescu, Gamma Technologies Inc; Christopher Allmond, Chrysler Group LLC	Powertrain Control & Calibration (Part 3 of 3) (PFL300) This session covers engine control system and optimization technique developments related to achieving stringent market fuel economy, emissions, performance, reliability and quality demands. Related topics include engine and its subsystem control, signal processing, on-board diagnostic strategy development, sensor, actuator, electronic control unit designs, etc. 10:00 a.m. - 11:40 a.m. Organizers: Peter J. Maloney, MathWorks Inc.; Matti Vint, Ricardo Inc.; Feilong Liu, Delphi Corp Chairpersons: Matti Vint, Ricardo Inc; Feilong Liu, Delphi Corp	Transmission and Driveline: Modeling (PFL608) This session covers transmission and driveline modeling. Session will cover topics related to transmission hardware, software, and system integration. 10:00 a.m. - 11:00 a.m. Organizers: Michael E. Fingerman, Chrysler Group LLC; James Hendrickson, General Motors Company; Chin-Yuan Perng, Ford Motor Co. Chairpersons: Michael Fingerman, Chrysler Group LLC
10:00 a.m.	An Efficient Multi-Body Approach Modeling Elastohydrodynamic Friction in Drive Systems (2012-01-0917) Markus Filippi, Heinz Ulbrich, Technische Universitaet Muenchen	A Methodology for Minimising Emissions Constrained Cold Start Fuel Consumption (2012-01-0894) Denis Igorevich Andrianov, Chris Manzie, Michael John Brear, Univ of Melbourne	Rotating Clutch Temperature Model Development Using Rapid Prototype Controllers (2012-01-0625) Gang Chen, Hussein Dourra, Darshan Shah, Chrysler Group LLC
10:20 a.m.	Design Assistance System and Its Application (2012-01-0916) Sergii Bogomolov, Jan Macek, Antonin Mikulec, Michael Valasek, Czech Technical University in Prague	Reduction of Transient Particulate Matter Spikes with Decision Tree Based Control (2012-01-0721) Indranil Brahma, Bucknell Univ.	A Fast-Running Model of a Van Doorne (Push-Belt) CVT Including Belt Tension and Compression Compliance (2012-01-0628) Jesus Rodriguez, Gamma Technologies Inc.; Frederic Brix, Kaito Associates; Tomohisa Kumagai, CD-adapco Japan Co., Ltd.
10:40 a.m.		State of the Art and Analysis of Control Oriented NOx Models (2012-01-0723) Carole Qu��rel, Olivier Grondin, IFP Energies Nouvelles; Christophe Letellier, CORIA - Universit�� de Rouen	Optimization of a Multiple-Speed Transmission for Downsizing the Motor of a Fully Electric Vehicle (2012-01-0630) Francesca Di Nicola, Aldo Sornioti, Thomas Holdstock, Univ. of Surrey; Fabio Viotto, Stefano Bertolotto, Oerlikon Graziano Drive Systems
11:00 a.m.		Parameterized Diesel Engine Combustion Modeling for Torque Based Combustion Property Estimation (2012-01-0907) Mikael Thor, Bo Egardt, Tomas McKelvey, Ingemar Andersson, Chalmers University of Technology	
11:20 a.m.	A Machine Learning Approach to Information Extraction from Cylinder Pressure Sensors (2012-01-0440) Maria Henningsson, Bo Bernhardsson, Per Tunestal, Rolf Johansson, Lund University	A Machine Learning Approach to Information Extraction from Cylinder Pressure Sensors (2012-01-0440) Maria Henningsson, Bo Bernhardsson, Per Tunestal, Rolf Johansson, Lund University	
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WEDNESDAY, APRIL 25 - AFTERNOON Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	O2-44	O2-33	W2-65	W2-64
	Advanced Battery Technology (Part 2 of 2) (PFL103) Batteries pose one of the biggest challenges and opportunities on the road to electrifying the automobile. The success or failure of Hybrid, Plug-In, and Electric vehicles is highly dependent on their batteries. This session features a variety of talks by the OEMs and third party groups active in the field. 1:00 p.m. - 3:40 p.m. Organizers: Neil M. Johnson, Ricardo; Alvaro Masias, Ford Motor Co.; James Miller, Argonne National Laboratory Chairpersons: James Miller, Argonne National Laboratory	Advanced Hybrid Vehicle Powertrains (Part 4 of 5) (PFL100) New Production Hybrid Powertrains 1:00 p.m. - 3:20 p.m. Organizers: Michael Duoba, Argonne National Laboratory; Ryan McGee, Ford Motor Co.; Mark A. Theobald, GM Powertrain Chairpersons: Michael Duoba, Argonne National Laboratory	Fuel Injection and Sprays - Experimental (Part 1 of 3) (PFL210) This session is devoted to experimental and computational work in the area of fuel injection systems and sprays. Topics include: spray characterization, cavitation, multi-phase jet modeling, CFD models for spray processes, wall films and impingement, hydraulic circuit analysis, and dissolved gas effects. Studies of gasoline, diesel and alternative fuel sprays and fuel injection equipment are encouraged. 1:00 p.m. - 4:00 p.m. Organizers: Tarek M. Abdel-Salam, East Carolina University; Essam El-Hannouny, Argonne National Laboratory	Kinetically Controlled CI Combustion (Including HCCI) (Part 2 of 3) (PFL206) This session focuses on kinetically controlled combustion (including, HCCI, PCCI, CAI, RCCI, etc.). Part 2: Thermal stratification, cyclic variability and alternative fuels 1:00 p.m. - 4:00 p.m. Organizers: Christopher Gehrke, Caterpillar Inc.; Scott Goldsborough, Marquette Univ.; Nebojsa Milovanovic, MAHLE Powertrain Ltd.; Samveg Saxena; Hongming Xu, Birmingham Univ.
1:00 p.m.	Development of High Capacity Lithium-Ion Battery for NISSAN LEAF (2012-01-0664) Michinori Ikezoe, Norihiko Hirata, Chika AMEMIYA, Automotive Energy Supply Corporation; Takeshi Miyamoto, Yasuharu Watanabe, Toshiro Hirai, Tetsuo Sasaki, Nissan Motor Company Ltd.	GE Electric Drivetrain Technologies for Lightweight Battery Dominant Hybrid Fuel Cell Bus (2012-01-1029) Lembit Salasoo, Tim Richter, Robert D King, Zhihao Li, GE Global Research	Evaluation of Breakup Process of Diesel Fuel Spray by Micro Probe L2F (2012-01-0452) Keisuke Komada, Daisaku Sakaguchi, Hironobu Ueki, Masahiro Ishida, Nagasaki University	Investigating the Development of Thermal Stratification from the Near-Wall Regions to the Bulk-Gas in an HCCI Engine with Planar Imaging Thermometry (2012-01-1111) Nicolas Dronniou, John Dec, Sandia National Laboratories
1:20 p.m.	Advancements in Lithium Battery Technology: Cells and Packs (Oral Only) Nick Karditsas, Cobasys LLC	Development of Commercial Motor HV-AT System (Motor Hybrid with Automatic Transmission System) (2012-01-1009) Kazumi Ogawa, Toshinori Murahashi, Yasutoshi Yamada, Aisin Seiki Co Ltd	Investigation of Diesel Liquid Spray Penetration Fluctuations under Vaporizing Conditions (2012-01-0455) Jaclyn E. Johnson, Jeffrey D. Naber, Seong-Young Lee, Michigan Technological University; Eric Kurtz, Nan Robarge, Ford Motor Company; Hai-Wen Ge, ESI Mindware Inc	Understanding the Dynamic Evolution of Cyclic Variability at the Operating Limits of HCCI Engines with Negative Valve Overlap (2012-01-1106) Erik Hellström, Anna Stefanopoulou, Jiri Vavra, Aristotelis Babajimopoulos, Dennis Assanis, University of Michigan; Li Jiang, Hakan Yilmaz, Robert Bosch LLC
1:40 p.m.	Comparison of Plug-In Hybrid Electric Vehicle Battery Life Across Geographies and Drive Cycles (2012-01-0666) Kandler Smith, Matthew Earleywine, Eric Wood, Jeremy Neubauer, Ahmad Pesaran, National Renewable Energy Laboratory	Control Unit Development for Parallel Hybrid Electric Vehicle (2012-01-1038) Jeong Soo Eo, DongHoon Won, Yong-Seok Kim, Myungwon Lee, Hyundai-Kia Corp. R&D Div.	Schlieren Measurements of the ECN-Spray A Penetration under Inert and Reacting Conditions (2012-01-0456) Jose V Pastor, Raul Payri, Jose M Garcia-Oliver, Jean-Guillaume Nerva, Universidad Politecnica de Valencia	Improving Efficiency and Using E10 for Higher Loads in Boosted HCCI Engines (2012-01-1107) John E. Dec, Yi Yang, Nicolas Dronniou, Sandia National Laboratories
2:00 p.m.	Considerations in Estimating Battery Energy for Hybrid and Electric Vehicles (2012-01-0660) Monika Minarcin, Navistar, Inc.; Eric Rask, Argonne National Laboratory	Development of the New THS-II Powertrain for Compact Vehicles (2012-01-1017) Takashi Uehara, Yasuhiro Takahashi, Ryoji Oki, Takahiko Hirasawa, Yusuke Kamiyo, Ikuro Ando, Ryuta Teraya, Makoto Nakamura, Toyota Motor Corporation	Flow Field Characterization of Superheated Sprays from a Multi-Hole Injector by Using High-Speed PIV (2012-01-0457) Ming Zhang, Min Xu, Yuyin Zhang, Wei Zeng, Shanghai Jiao Tong University	Pressure Sensitivity of HCCI Auto-Ignition Temperature for Primary Reference Fuels (2012-01-1128) Ida Truedsson, Martin Tuner, Bengt Johansson, Lund University; William Cannella, Chevron USA Inc
2:20 p.m.	Umicore's High Voltage Battery Recycling Solution (Oral Only) Mark Caffarey, Umicore Autocat USA Inc.	Development of General Motors' eAssist Powertrain (2012-01-1039) Shawn Hawkins, Fred Billotto, Daniel Cottrell, Alan Houtman, Stephen Poulos, Roger Rademacher, Keith Van Maanen, Daryl Wilson, General Motors Company	Hydraulic Behavior and Spray Characteristics of a Common Rail Diesel Injection System Using Gasoline Fuel (2012-01-0458) Raul Payri, Antonio Garcia, Vicent Domenech, Universidad Politecnica de Valencia; Russ Durrett, Alejandro Plazas Torres, GM R&D Center	Effects of Active Species in Residual Gas on Auto-Ignition in a HCCI Gasoline Engine (2012-01-1115) Weifei Yu, Hui Xie, Tao Chen, Le Li, Kang Song, Tianjin Univ.; Hua Zhao, Brunel Univ.
2:40 p.m.	Battery Cell Emissions Monitoring (Oral Only) Thomas D. Aiken, AppliedSensor Inc.	High Performance Stop-Start System with 14 Volt Belt Alternator Starter (2012-01-1041) Gary Fuls, Gregory Roth, Andrew Fedewa, Delphi Automotive Systems, LLC	Momentum Flux Spatial Distribution and PDA Analysis of a GDI Spray (2012-01-0459) Lucio Postriotti, Maurizio Bosi, Università degli Studi di Perugia; Alessandro Mariani, Carmine Ungaro, Gruppo Locomoti	A Comparative Study of the Ignition and Combustion Properties of Ethanol-Indolene Blends During HCCI Operation of a Single Cylinder Engine (2012-01-1124) Mohammad Fatouraie, Peter Keros, Univ. of Michigan; Margaret Wooldridge, Univ of Michigan

Continued on next page

WEDNESDAY, APRIL 25 - AFTERNOON Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	O2-44	O2-33	W2-65	W2-64
	Advanced Battery Technology (Part 2 of 2) (PFL103) Batteries pose one of the biggest challenges and opportunities on the road to electrifying the automobile. The success or failure of Hybrid, Plug-In, and Electric vehicles is highly dependent on their batteries. This session features a variety of talks by the OEMs and third party groups active in the field. 1:00 p.m. - 3:40 p.m. Organizers: Neil M. Johnson, Ricardo; Alvaro Masias, Ford Motor Co.; James Miller, Argonne National Laboratory Chairpersons: James Miller, Argonne National Laboratory	Advanced Hybrid Vehicle Powertrains (Part 4 of 5) (PFL100) New Production Hybrid Powertrains 1:00 p.m. - 3:20 p.m. Organizers: Michael Duoba, Argonne National Laboratory; Ryan McGee, Ford Motor Co.; Mark A. Theobald, GM Powertrain Chairpersons: Michael Duoba, Argonne National Laboratory	Fuel Injection and Sprays - Experimental (Part 1 of 3) (PFL210) This session is devoted to experimental and computational work in the area of fuel injection systems and sprays. Topics include: spray characterization, cavitation, multi-phase jet modeling, CFD models for spray processes, wall films and impingement, hydraulic circuit analysis, and dissolved gas effects. Studies of gasoline, diesel and alternative fuel sprays and fuel injection equipment are encouraged. 1:00 p.m. - 4:00 p.m. Organizers: Tarek M. Abdel-Salam, East Carolina University; Essam El-Hannouny, Argonne National Laboratory	Kinetically Controlled CI Combustion (Including HCCI) (Part 2 of 3) (PFL206) This session focuses on kinetically controlled combustion (including, HCCI, PCCI, CAI, RCCI, etc.). Part 2: Thermal stratification, cyclic variability and alternative fuels 1:00 p.m. - 4:00 p.m. Organizers: Christopher Gehrke, Caterpillar Inc.; Scott Goldsborough, Marquette Univ.; Nebojsa Milovanovic, MAHLE Powertrain Ltd.; Samveg Saxena; Hongming Xu, Birmingham Univ.
3:00 p.m.	Cycle Life Investigations on Different Li-Ion Cell Chemistries for PHEV Applications Based on Real Life Conditions (2012-01-0656) Nils Lohmann, Manuel Fischlaller, Joachim Melbert, Thomas Musch, Ruhr-University of Bochum; Peter Lamp, Sebastian Scharner, Verena Liebau, BMW Group	Development of Plug-In Hybrid System for Midsize Car (2012-01-1014) Kensuke Kamichi, Masaya Yamamoto, Shunsuke Fushiki, Takehito Yoda, Saeko Kurachi, Koichi Kojima, Toyota Motor Corporation	Spray Parameter Comparison between Diesel and Vegetable Oils for Non-Evaporating Conditions (2012-01-0461) Jonas Galle, Joachim Demuyne, Jeroen Vancollie, Sebastian Verhelst, Ghent University	Analysis of the Effects of Certain Alcohol and Furan-Based Biofuels on Controlled Auto Ignition (2012-01-1135) Adrien Brassat, Matthias Thewes, Martin Muther, Stefan Pischinger, Institute for Combustion Engines, RWTH Aachen University; Changyoul Lee, Ravi Xavier Fernandes, PCFC, RWTH Aachen University; Herbert Olivier, Yasar Uygun, Shock Wave Laboratory, RWTH Aachen University
3:20 p.m.	A Functional Water-Soluble Binder for Initial Efficiency and Low-Temperature Performance Improvement of Lithium Ion Battery (2012-01-0658) Liping He, Ying Wang, Yuansen Xie, Ming Mei, Xulun Lai, Rui Xu, Fenggang Zhao, Ampere Technology Co., Ltd.		Liquid and Vapor Envelopes of Sprays from a Multi-Hole Fuel Injector Operating under Closely-Spaced Double-Injection Conditions (2012-01-0462) Scott E. Parrish, Gaoming Zhang, Ronald J. Zink, General Motors Company	An Experimental Analysis on Diesel/n-Butanol Blends Operating in Partial Premixed Combustion in a Light Duty Diesel Engine (2012-01-1127) Gerardo Valentino, Felice E. Corcione, Stefano Iannuzzi, Istituto Motori, CNR; Simone Serra, Università di Cagliari
3:40 p.m.			Effects of Injection Pressure, Injection-Rate Shape, and Heat Release on Liquid Length (2012-01-0463) Brian Fisher, Charles Mueller, Sandia National Laboratories	Effects of Fuel Composition Variations (H₂/CO) for Biomass Gas HCCI Combustion (2012-01-1112) Dale Edward Haggith, Andrzej Sobiesiak, University of Windsor
			Quantitative Fuel-Air-Mixing Measurements in Diesel-Like Sprays Emanating from Convergent and Divergent Multi-Layer Nozzles (Written Only -- No Oral Presentation) (2012-01-0464) Thorsten Brands, Peter Hottenbach, Hans-Jürgen Koss, Gerd Grünefeld, Aachen Univ.; Stefan Pischinger, Philipp Adomeit, FEV Motorentechnik GmbH	
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WEDNESDAY, APRIL 25 - AFTERNOON Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	W2-61	W2-66	W2-70	W2-69
	Modeling of SI and Diesel Engines - Acoustics & Charging (PFL208) Zero-dimensional, one-dimensional, and quasi-dimensional models for simulation of SI and CI engines with respect to: engine breathing and boosting; SI combustion and emissions; CI combustion and emissions; fundamentals of engine thermodynamics; thermal management; mechanical and lubrication systems; system level models for controls; system level models for vehicle fuel economy and emissions predictions. 1:00 p.m. - 2:40 p.m. Organizers: Michael L. Briggs; Federico Mollo, Politecnico di Torino; Thomas Morel, Gamma Technologies Inc.; Christof Schernus, FEV GmbH Chairpersons: Michael Briggs; Christof Schernus, FEV GmbH	Multi-Dimensional Engine Modeling (Part 4 of 4) (PFL209) The spectrum of papers solicited for this session reflect the truly multidisciplinary nature of the field, covering advances in areas such as chemical kinetics, combustion and spray modeling, turbulence, mesh generation, and approaches targeting improved computational efficiency. Papers employing multi-dimensional modeling to gain a deeper understanding of processes related to turbulent transport, transient phenomena, and chemically reacting, two-phase flows are also encouraged. 1:00 p.m. - 2:00 p.m. Organizers: Harold Barths, General Motors Company; Sarah Diakhaby, Computational Dynamics, Ltd.; Allen David Gosman, CD-adapco; Carl Hergart, Caterpillar	Powertrain Control & Calibration (Part 3 of 3) Cont'd (PFL300) This session covers engine control system and optimization technique developments related to achieving stringent market fuel economy, emissions, performance, reliability and quality demands. Related topics include engine and its subsystem control, signal processing, on-board diagnostic strategy development, sensor, actuator, electronic control unit designs, etc. 1:00 p.m. - 2:00 p.m. Organizers: Peter J. Maloney, MathWorks Inc.; Matti Vint, Ricardo Inc.; Feilong Liu, Delphi Corp Chairpersons: Matti Vint, Ricardo Inc; Feilong Liu, Delphi Corp	Powertrain NVH (PFL504) This session sets out to reflect the recent advances on the research, development and practices of Powertrain NVH treatment. The technical papers are of interest to powertrain system designers, testing specialists, NVH experts, and other individuals who evaluate and develop technologies to control powertrain NVH. The coverage includes: engine, engine subsystem and components noise and vibration; powertrain systems noise measurement and instrumentation; powertrain systems noise analysis. 1:00 p.m. - 3:00 p.m. Organizers: Mikhail A. Ejakov, Ford Motor Co.; Gang Sheng, Univ. of Alaska Fairbanks; Abdelkrim Zouani, Ford Motor Co.
1:00 p.m.	Improving the Simulation of the Acoustic Performance of Complex Silencers for ICE by a Multi-Dimensional Non-Linear Approach (2012-01-0828) Federico Piscaglia, Federico Piscaglia; Andrea Montorfano, Angelo Onorati, Politecnico di Milano	Detailed Simulations of Stratified Ignition and Combustion Processes in a Spray-Guided Gasoline Engine using the SparkCMM/G-Equation Modeling Framework (2012-01-0132) Rainer N. Dahms, Sandia National Laboratories; Michael C. Drake, Ronald O. Grover, Jr., Arun S. Solomon, Todd D. Fansler, General Motors Company	Road Map for Addressing Future On-Board Diagnostic Challenges in Light and Heavy-Duty Diesel Engines (2012-01-0895) Harsha K. Nanjundaswamy, Dean Tomazic, Mufaddel Dahodwala, Erik Koehler, FEV Inc.	Development of a Torque Measurement Method on a Rotating Shaft Using a Battery-Less Sensor (2012-01-0909) Shuhei Hashimoto, Yasuhiro Kanda, Koichi Onishi, Nissan Motor Company Ltd.
1:20 p.m.	Acoustic One-Dimensional Compressor Model for Integration in a Gas-Dynamic Code (2012-01-0834) Antonio Torregrosa, Francisco Arnau, Pedro Piqueras, Miguel Reyes-Belmonte, Universitat Politècnica de València; Magnus Knutsson, Johan Lennblad, Volvo Car Corporation	Development of a CFD Approach to Model Fuel-Air Mixing in Gasoline Direct-Injection Engines (2012-01-0146) Tommaso Lucchini, Gianluca D'Errico, Angelo Onorati, Politecnico di Milano; Giovanni Bonandrini, Luca Venturoli, Rita Di Gioia, Magneti Marelli Powertrain SPA	Intake System Diagnosis for Diesel Engine with Dual-Loop EGR (2012-01-0904) Olivier Grondin, Jonathan Chauvin, IFP Energies Nouvelles; Laurent Fontvielle, Renault	
1:40 p.m.	Design of a Boosted 2-Cylinder SI-Engine with Gasoline Direct Injection to Define the Needs of Future Powertrains (2012-01-0832) Alexander Eichhorn, David Lejsek, Andre Kulzer, Andreas Kufferath, Robert Bosch GmbH; Eberhard Witzgall, Weber Motor AG; Ralf Centmayer, Weber Motor GmbH	Ignition and Combustion Simulations of Spray-Guided SIDI Engine using Arrhenius Combustion with Spark-Energy Deposition Model (2012-01-0147) Xiaofeng Yang, Arun Solomon, Tang-Wei Kuo, General Motors Company	Detection of Urea Injection System Faults for SCR Systems (2012-01-0431) Yu Sun, Yue-Yun Wang, Chenfang Chang, Stephen Levijoki, General Motors Company	Study of Piston Pin Noise of Semi-Floating System (2012-01-0889) Takashi Kondo, Honda R&D Co., Ltd.; Hisayuki Ohbayashi, Honda Foundry Co., Ltd.
2:00 p.m.	Integrated Simulation, Analysis and Testing of a Variable Valve Train for Passenger Car Diesel Engines (2012-01-0829) David Gurney, John Mitcalf, Marco Warth, MAHLE Powertrain Ltd.; Simon Schneider, Patric Genieser, MAHLE International GmbH			Optimization of Semi-Floating Piston Pin Boss Formed by Using Oil-Film Simulations (2012-01-0908) Chihiro Nishikawa, Honda R&D Co., Ltd.
2:20 p.m.	Development of a High Performance Engine for a Formula SAE Racer (2012-01-0833) Enrico Mattarelli, Carlo Alberto Rinaldini, Univ of Modena & Reggio Emilia			Modeling and Analysis of Powertrain NVH (2012-01-0888) Dumitru M. Beloiu, AVL Powertrain Engineering Inc.
2:40 p.m.	Discussion Break			Development of an Air Intake System for NVH Performance by Combining Numerical and Experimental Techniques (2012-01-0903) Avnish Gosain, Muhammed Fayaz P, Maruti Suzuki India Pvt., Ltd.; Mugundaram Ravindran, Sureshkumar Chukka, Maruti Suzuki India Ltd
	Estimation and Analysis of Crank-Angle-Resolved Gas Exchange Process of Spark-Ignition Engines (Written Only -- No Oral Presentation) (2012-01-0835) Zheng Qu, Mike Ma, Fuquan Zhao, Geely Automobile Research Int			Design of Engine Gear-Driven Mass Balance Unit and NVH Performance Optimization (Written Only -- No Oral Presentation) (2012-01-0890) Chen Yang, Yuan Shen, Yi You, Fuquan Zhao, Geely Automotive Research Institute
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WEDNESDAY, APRIL 25 - AFTERNOON

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM		
	W2-68	O2-35/36	W2-63
	SI Combustion - Pre-Ignition, Knock, and Ignition (PFL201) This session focuses on combustion technologies in both 4-stroke and 2-stroke engines characterized by 1) ignition by an external energy source that serves to control combustion phasing, and 2) a combustion rate that is limited by flame propagation. The scope of topics includes studies of mixture formation, ignition, knock, engine efficiency, flame propagation, alternative fuels and emissions formation. Part 1 of 2: Pre-Ignition, Knock, and Ignition 1:00 p.m. - 4:00 p.m. Organizers: Terrence Alger, Southwest Research Institute; Richard S. Davis, General Motors Company; Mark C. Sellnau, Delphi Corp. Chairpersons: Richard Davis, General Motors LLC; Terrence Alger, Southwest Research Institute	Transmission and Driveline: Components / Subsystems (PFL605) The papers presented in this session pertain to transmission component topics. Three presentations will be made on subjects such as Dual Dry Clutch testing, Torque Converter modeling, and low friction seal research. 1:00 p.m. - 2:00 p.m. Organizers: Joel H. Gunderson, Farzad Samie, General Motors Company	Fuel & Additive Effects on CI Engine Performance (Part 2 of 2) (PFL205) This session presents work investigating the effect of fuel composition on CI engine performance in terms of combustion efficiency, emissions and engine hardware durability. Variations in fuel composition include surrogate fuels, the blending of oxygenated components and the use of fuel additives are considered. 1:20 p.m. - 3:00 p.m. Organizers: Scott Curran, Oak Ridge National Laboratory; Paul Richards; Samveg Saxena, University of California, Berkeley; Andrea Strzelec, Texas A&M University Chairpersons: Scott Curran, Oak Ridge National Laboratory; Andrea Strzelec, Texas A&M Univ
1:00 p.m.	Abnormal Combustion in a Highly Boosted SI Engine - The Occurrence of Super Knock (2012-01-1141) Takuya Inoue, Yoshiki Inoue, Masahiro Ishikawa, NGK Spark Plug Co., Ltd.	Design of Test Rigs for a Dry Dual Clutch and its Electromechanical Actuator (2012-01-0807) Vladimir Ivanovič, Matija Hoič, Joško Deur, Zvonko Herold, University of Zagreb; Eric H. Tseng, Ford Motor Co.	
1:20 p.m.	The Effects of Piston Crevices and Injection Strategy on Low-Speed Pre-Ignition in Boosted SI Engines (2012-01-1148) Manfred Amann, Terrence Alger, Barry Westmoreland, Andreas Rothmaier, Southwest Research Institute	Parametric Importance Analysis and Design Optimization of a Torque Converter Model Using Sensitivity Information (2012-01-0808) Joydeep Banerjee, University of Waterloo; Hadi Adibi asl, Univ of Waterloo; Nasser Lashgarian Azad, University of Waterloo; John McPhee, Univ of Waterloo	Performance Evaluation and Components Behavior of Light Duty Diesel Engine after 300 Hours Test Fuelled with Pure Biodiesel: Effects on Reliability and Durability (2012-01-0865) Vicente Bermudez, Bernardo Tormos, Antonio Garcia, Waldemar Linares, CMT-Motores Térmicos (UPV)
1:40 p.m.	Pre-Ignition and Super-Knock in Turbo-Charged SI Engines (Oral Only) Gautam Kalghatgi, Saudi Aramco	Low Friction Seal for Muddy Water with Textured Surface (2012-01-0809) Takuya Kato, Shohei Yamane, Go Kanzaki, Shinobu Munekata, Mitsuo Watanabe, Hirotaka Mizuta, NOK Corporation	Biodiesel Stability and its Effects on Diesel Fuel Injection Equipment (2012-01-0860) Julien Bouilly, Ali Mohammadi, Toyota Motor Europe NV/SA; Yutaka Iida, Hiromichi Hashimoto, Toyota Motor Corporation; Savas Geivanidis, Zissis Samaras, Aristotle University of Thessaloniki
2:00 p.m.	Lubricant Reactivity Effects on Gasoline Spark Ignition Engine Knock (2012-01-1140) Manfred Amann, Terrence Alger, Southwest Research Institute		The Influence of Biodiesel Fuel Quality on Modern Diesel Vehicle Performance (2012-01-0858) Shailesh Martin Lopes, Timothy Cushing, General Motors Company
2:20 p.m.	The Interaction of Fuel Anti-Knock Index and Cooled EGR on Engine Performance and Efficiency (2012-01-1149) Terrence Alger, Barrett Mangold, Charles Roberts, Jess Gingrich, Southwest Research Institute		Optical Diagnostic Combustion Comparisons of Pump Diesel with Bio-Derived Diesel Blends in an Optical DI Diesel Engine (2012-01-0868) Cody William Squibb, Harold Schock, Casey Allen, Tonghun Lee, Mulyanto Poort, Kyle Crayne, Michigan State University
2:40 p.m.	Knock Limit Extension with a Gasoline Fueled Pre-Chamber Jet Igniter in a Modern Vehicle Powertrain (2012-01-1143) William P. Attard, Hugh Blaxill, MAHLE Powertrain; Eric K. Anderson, National Research Council; Paul Litke, US Air Force Research Laboratory		Hydrotreated Vegetable Oil and Miller Timing in a Medium-Speed CI Engine (2012-01-0862) Matteo Imperato, Teemu Sarjovaara, Martti Larmi, Aalto University School of Engineering; Aki Tili, Helsinki University of Technology
3:00 p.m.	A Lean Burn Gasoline Fueled Pre-Chamber Jet Ignition Combustion System Achieving High Efficiency and Low NOx at Part Load (2012-01-1146) William P. Attard, Hugh Blaxill, MAHLE Powertrain		
3:20 p.m.	Improvement in Spark-Ignition Engine Fuel Consumption and Cyclic Variability with Pulsed Energy Spark Plug (2012-01-1151) Louis S. Camilli, Joseph E. Gonnella, Enerpulse, Inc.; Timothy J. Jacobs, Texas A&M University		

WEDNESDAY, APRIL 25 - AFTERNOON Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM		
	W2-68	O2-35/36	W2-63
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3:40 p.m.	Improvement of Lean Limit and Fuel Consumption Using Microwave Plasma Ignition Technology (2012-01-1139) Atsushi Nishiyama, Yuji Ikeda, Imagineering Inc		
		Analytical Approach to Gear Reverse Engineering (Spur and Helical) (Written Only -- No Oral Presentation) (2012-01-0812) Sagar Jadhav, Mahindra & Mahindra Ltd.; Amit Sandooja, Mahindra Engineering Services	Review on the Effects of Dual-Fuel Operation, Using Diesel and Gaseous Fuels, on Emissions and Performance (Written Only -- No Oral Presentation) (2012-01-0869) A.M.L.M. Wagemakers, C.A.J. Leermakers, Eindhoven University of Technology
		Duty Cycle Fatigue Simulation for Differential Casing (Written Only -- No Oral Presentation) (2012-01-0813) Suresh Naidu Reddy, Mahindra & Mahindra, Ltd.; Vivek H Yadav, Mahindra & Mahindra	Effects of Dimethylcarbonate-Biodiesel Blends on the Combustion, Performance and Exhaust Emissions of a DI Diesel Engine (Written Only -- No Oral Presentation) (2012-01-0870) S Sivalakshmi, T Balusamy, Government College of Engineering, Salem
		Launch Devices for Turbo-Charged Engines (Written Only -- No Oral Presentation) (2012-01-0811) Philip Severyn, Jeff Hemphill, Philip George, Todd Sturgin, Luk USA LLC	
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WEDNESDAY, APRIL 25 - AFTERNOON

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	O2-43	W2-70	W2-61	O2-44
	Natural Gas Engines and Vehicles (PFL106) This session covers fuel injection, combustion, controls, performance and emissions of SI engines fueled with methane based fuels such as natural gas, producer gas, coke oven gas or hydrogen-natural gas blends. Diesel-natural gas dual-fuel engines will also be presented. 1:20 p.m. - 3:20 p.m. Organizers: Riccardo Scarcelli, Argonne National Laboratory; Patric Ouellette, Westport Innovations Inc.; Thomas Wallner, Argonne National Laboratory Chairpersons: Patric Ouellette, Westport Innovations Inc	Combustion Control and Optimization (Part 1 of 3) (PFL303) This session covers engine combustion control and optimization techniques related to achieving stringent market fuel economy, emissions, and performance. Related topics include engine combustion diagnostics, control, optimization, related combustion sensing, etc. 2:00 p.m. - 4:00 p.m. Organizers: Guoming Zhu, Michigan State Univ.; Yue-Yun Wang, General Motors; Junmin Wang, Ohio State Univ.; Elisa Toulson, Michigan State Univ.; Rahul Sharma, Univ. of Melbourne; Nilabh Srivastava, Univ. of North Carolina Chairpersons: Yue-Yun Wang, General Motors	Modeling of SI and Diesel Engines - 2 Stroke Engines (PFL208) Zero-dimensional, one-dimensional, and quasi-dimensional models for simulation of SI and CI engines with respect to: engine breathing and boosting; SI combustion and emissions; CI combustion and emissions; fundamentals of engine thermodynamics; thermal management; mechanical and lubrication systems; system level models for controls; system level models for vehicle fuel economy and emissions predictions. 3:00 p.m. - 3:40 p.m. Organizers: Fabio Bozza, Università di Napoli; Federico Mollo, Politecnico di Torino; Thomas Morel, Gamma Technologies Inc.; Christof Schernus, FEV GmbH Chairpersons: Fabio Bozza, Università di Napoli; Christof Schernus, FEV GmbH	Chat with the Expert: Implementing Wireless Power Charging (PFLCHAT130) This chat session aims to take the mystery out of wireless power transfer (WPT) and magnetic resonance coupling and cast this technology into more familiar terms for those now working on conductive charging. 4:00 p.m. - 5:00 p.m. Keynote Speakers: John Miller, ORNL
1:20 p.m.	Technical Keynote: Natural Gas LD Vehicles: Travelling the Distance and the Road Ahead (Oral Only) Dick C. Kauling, General Motors of Canada, Ltd.			
2:00 p.m.	Lean Burn Performance of a Natural Gas Fuelled, Port Injected, Spark Ignition Engine (2012-01-0822) Payman Abbasi Atibeh, Peter A. Dennis, Pedro J. Orbaiz, Michael J. Brear, Harry C. Watson, University of Melbourne	Efficient On-Board Pegging Calculation from Piezo-Electric Sensor Signal for Real Time In-Cylinder Pressure Offset Compensation (2012-01-0901) Ivan Fanelli, Sergio M. Camporeale, Bernardo Fortunato, DIMeG, Polytechnic University of Bari		
2:20 p.m.	Spark Ignition and Pre-Chamber Turbulent Jet Ignition Combustion Visualization (2012-01-0823) William P. Attard, MAHLE Powertrain LLC; Elisa Toulson, Andrew Huisjen, Xuefei Chen, Guoming Zhu, Harold Schock, Michigan State University	Evaluation of a New Diagnostic Technique to Detect and Account for Load Variation during Cylinder Pressure Measurement of Large-Scale Four-Stroke Diesel Engines (2012-01-1342) Dimitrios T. Hountalas, Antonis A. Antonopoulos, Georgios N. Zovanos, National Technical University of Athens; Roussos G. Papagiannakis, Hellenic Air Force Academy		
2:40 p.m.	Experimental Study of Ignition and Combustion Characteristics of a Diesel Pilot Spray in a Lean Premixed Methane/Air Charge using a Rapid Compression Expansion Machine (2012-01-0825) Stephanie Schlatter, Bruno Schneider, Yuri Wright, Konstantinos Boulouchos, Swiss Federal Institute of Technology	A Novel Closed Loop Control based on Ionization Current in Combustion Cycle at Cold Start in a GDI Engine (2012-01-1339) Yinbo Cao, Liguang Li, Tongji Univ.		
3:00 p.m.	Controlling the Injector Tip Temperature in a Diesel Dual Fuel Engine (2012-01-0826) Fredrik Königsson, Per Stalhammar, AVL Sweden; Hans-Erik Angstrom, Royal Institute of Technology	Improving Speed and Accuracy of Gasoline and Diesel Engine Testing via Closed-Loop Combustion Control (2012-01-0902) Tony Cains, David Pates, Marco Warth, Mahle Powertrain Ltd	Numerical and Experimental Investigation of Fuel Effects on Knock Occurrence and Combustion Noise in a 2-Stroke Engine (2012-01-0827) Fabio Bozza, Università di Napoli; Stefano Fontanesi, Università di Modena e Reggio Emilia; Alfredo Gimelli, Università di Napoli; Elena Severi, Università degli Studi di Modena; Daniela Siano, Istituto Motori CNR, Italy	
3:20 p.m.		Diesel Engine Acoustic Emission Analysis for Combustion Control (2012-01-1338) Fabrizio Ponti, Vittorio Ravaglioli, Davide Moro, University of Bologna; Matteo De Cesare, Magneti Marelli Powertrain SPA	Air System Conception for a Downsized Two-Stroke Diesel Engine (2012-01-0831) Ludek Pohorelsky, Pavel Brynych, Jan Macek, Czech Technical Univ in Prague; Pierre-Yves Vallaude, Jean-Charles Ricaud, Le Moteur Moderne; Philippe Obernesser, Pascal Tribotté, Renault	
3:40 p.m.		Accelerometer Measurements to Optimize the Injection Strategy (2012-01-1341) Ornella Chiavola, Giancarlo Chiatti, Erasmo Recco, ROMA TRE University		
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WEDNESDAY, APRIL 25 - AFTERNOON
Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM	
	W2-70	
	Chat with the Expert: What Approaches will Advanced Diesel Engine Air Path Controllers Utilize in the Future? (PFLCHAT330) The level of hardware sophistication in the air path of high performance diesel engines continues to rise. Along with this comes a need for advanced control systems which optimize the operation of these components. The discussion will center around actuator performance, sensor technology, in-cylinder feedback, ECU design considerations, algorithm approaches and calibration trends. In order to provide a broader insights two experts, one from an OEM and the other from an air system supplier. 4:00 p.m. - 5:00 p.m. Keynote Speakers: John Shutty, BorgWarner Automotive; Yue-Yun Wang, General Motors	
	Planned by Control and Calibration Committee / Powertrain Fuels and Lubricants Activity	

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THURSDAY, APRIL 26 - MORNING

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	O2-44	O2-33	W2-69	W2-66
	Advanced Fuel Cell Vehicle Applications (Part 1 of 2) (PFL101) Fuel Cell Propulsion for electric automotive applications has the highest potential to offer both zero emissions and long range vehicle while being able to 100 percent refuel in a matter of minutes. This session covers Fuel Cell advances in Low Cost; Cold Start Optimization; Modeling, Simulation of PEM Fuel Cell systems and a comparison between BEV and FCVs are also covered. A Panel of Industry Experts will openly discuss challenges remaining in fuel cell commercialization. 8:00 a.m. - 11:40 a.m. Organizers: Jesse Schneider, BMW AG; Dohoy Jung, Univ. of Michigan-Dearborn	Advanced Hybrid Vehicle Powertrains (Part 5 of 5) (PFL100) Hybrid-Electric and Electric Vehicle Controls 8:00 a.m. - 11:00 a.m. Organizers: Michael Duoba, Argonne National Laboratory; Ryan McGee, Ford Motor Co.; Mark A. Theobald, GM Powertrain Chairpersons: Michael Duoba, Argonne National Laboratory	CI & SI Power Cylinder Systems (Part 1 of 2) (PFL502) This session covers topics regarding the Power Cylinder (piston, piston rings, piston pins, connecting rods). The papers include information on how to reduce friction and improve fuel economy, how to improve durability by understanding wear, and how to improve oil consumption and blow-by. 8:00 a.m. - 11:40 a.m. Organizers: Yong-Ching Chen; Dwight Doig, Dan Earl Richardson, Cummins Inc.	Fuel & Additive Effects on SI Engine Performance (Part 1 of 2) (PFL203) This session focuses on the impact of conventional and alternative fuels as well as fuel additives on the operation, performance and emissions of SI engines. Papers focus on the impact of bio-derived fuels (ethanol, butanol and others) on engine design and performance as well as gasoline properties and additives, and their impact. 8:00 a.m. - 10:00 a.m. Organizers: Chris Hagen, Colorado State University; Gerald Micklow, East Carolina University Chairpersons: Chris Hagen, Colorado State Univ
8:00 a.m.	Low-Cost FC System Concept with Fewer Parts and Adoption of Low-Cost Components (2012-01-1222) Hayato Chikugo, Yasushi Ichikawa, Keigo Ikezoe, Nissan Motor Company Ltd.	Frequency Domain Power Distribution Strategy for Series Hybrid Electric Vehicles (2012-01-1003) Youngki Kim, Tae-Kyung Lee, Zoran Filipi, Univ of Michigan	Analysis of the Mixed Friction in the Piston Assembly of a SI Engine (2012-01-1333) Andre Merkle, TU Muenchen; Sebastian Kunkel; Georg Wachtmeister, TU Muenchen	Management of Lubricant Fuel Economy Performance over Time through Fuel Additives (2012-01-1270) Scott Rappaport, Steve Natrass, Sue Smith, Mark Brewer, Ian Buttery, Hongrui Ma, Shell
8:20 a.m.	Air Supply System for Automotive Fuel Cell Application (2012-01-1225) Massimo Venturi, Daimler AG; Jochen Sang, Andreas Knoop, Gerald Hornburg, NuCellSys GmbH	Development of a Hybrid Control Strategy for an Advanced Parallel HEV Powertrain with Two Electrical Axles (2012-01-1007) Thomas Boehme, Alexandra Burger, Daniel Rein, Matthias Schultalbers, Daniel Silvere Njemeni Djankou, IAV GmbH; Wolfgang Drevelow, Univ of Rostock	Calculation of the Piston Assembly Friction: Classification, Validation and Interpretation (2012-01-1323) Martin Werner, Andre Merkle, Stefan Graf, Roman Holzmüller, Georg Wachtmeister, Technische Universität München	Effect of Fuel Components on Engine Abnormal Combustion (2012-01-1276) Nozomi Sasaki, Koichi Nakata, Toyota Motor Corporation
8:40 a.m.	Control System for Sensing the Differential Pressure Between Air and Hydrogen in a PEFC (2012-01-1228) Yoshitomo Asai, Nissan Motor Company Ltd.	Analysis of Various Operating Strategies for a Parallel-Hybrid Diesel Powertrain with a Belt Alternator Starter (2012-01-1008) Edoardo Morra, Ezio Spessa, Politecnico di Torino; Claudio Ciaravino, Alberto Vassallo, General Motors Company	Thermal and Mechanical Loading in the Combustion Bowl Region of Light Vehicle Diesel AlSiCuNiMg Pistons; Reviewed with Emphasis on Advanced Finite Element Analysis and Instrumented Engine Testing Techniques. (2012-01-1330) Scott Kenningley, Roman Morgenstern, Federal-Mogul Corp.	GEM Ternary Blends: Testing Iso-Stoichiometric Mixtures of Gasoline, Ethanol and Methanol in a Production Flex-Fuel Vehicle Fitted with a Physical Alcohol Sensor (2012-01-1279) James W G Turner, Richard J Pearson, Mark A McGregor, John M Ramsay, Lotus Engineering; Eelco Dekker, BioMCN; Ben Iosefa, Methanex Corporation; Gregory A Dolan, Methanol Institute; Kenth Johansson, Kjell ac Bergström, Saab Automobile Powertrain AB
9:00 a.m.	Development of System Control for Rapid Warm-up Operation of Fuel Cell (2012-01-1230) Yoshiaki Naganuma, Kota Manabe, Hiroyuki Imanishi, Yasuhiro Nonobe, Toyota Motor Corporation	Energy Management Strategy and Optimal Hybridization Level for a Diesel HEV (2012-01-1019) Laurent Thibault, Olivier Grondin, Carole Querel, Gilles Corde, IFP Energies Nouvelles	Numerical Simulation Study of Carbon Build-up and Oil Consumption in a Heavy Duty Diesel Engine (2012-01-1326) Walter Zottin, Pedro Vitor Bacchin, MAHLE Metal Leve S A; André Ferraro Garcia, Cummins Brasil Ltda	Effects of Combustion Phasing, Injection Timing, Relative Air-Fuel Ratio and Variable Valve Timing on SI Engine Performance and Emissions using 2,5-Dimethylfuran (2012-01-1285) Ritchie Daniel, Chongming Wang, Hongming Xu, University of Birmingham; Guohong Tian, Newcastle University
9:20 a.m.	Discussion Break	GreenZone Driving for Plug In Hybrid Electric Vehicles (2012-01-1004) Johannes Kristinsson, Ryan McGee, Hai Yu, Fazal Syed, Finn Tseng, Dimitar Filev, Anthony Phillips, Ford Motor Company	The Study of Friction between Piston Ring and Different Cylinder Liners using Floating Liner Engine - Part 1 (2012-01-1334) Kai Liao, Haijie Chen, Tian Tian, Massachusetts Institute of Technology	Experimental Evaluation of Lean-burn and EGR as Load Control Strategies for Methanol Engines (2012-01-1283) Jeroen Vancouillie, Louis Slegghem, Maarten Van de Ginste, Joachim Demuyneck, Jonas Galle, Sebastian Verhelst, Ghent University
9:40 a.m.	PEFC Performance Improvement Methodology for Vehicle Applications (2012-01-1232) Shigetaka Hamada, Masaaki Kondo, Toyota Motor Corporation; Masahiro Shiozawa, Nippon Soken, Inc.; Sogo Goto, Toyota Motor Corporation	The Flexible EV/HEV and SOC Band Control Corresponding to Driving Mode, Driver's Driving Style and Environmental Circumstances (2012-01-1016) Jeongeun Kim, Hyunsung Sim, Hyundai Motor Co. & KIA Motors Corp.; Jonghan Oh, Hyundai Motor Co.	Discussion Break	Effect of Different Ethanol-Gasoline Blends on Exhaust Emissions and Fuel Consumption (2012-01-1273) Rosa Delgado, Susanna Paz, Applus IDIADA

Continued on next page

THURSDAY, APRIL 26 - MORNING Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	O2-44	O2-33	W2-69	W2-66
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10:00 a.m.	Hybrid Electric System for an Hydrogen Fuel Cell Vehicle and its Energy Management (2012-01-1226) Ramon Naiff da Fonseca, Eric Bideaux, Lab. Ampère; Mathias Gerard, Matthieu Desbois-Renaudin, CEALITEN Grenoble; Bruno Jeanneret, IFSTTAR Bron	Real-World Driving Pattern Recognition for Adaptive HEV Supervisory Control: Based on Representative Driving Cycles in Midwestern US (2012-01-1020) Tae-Kyung Lee, Zoran Filipi, Univ of Michigan	A New Floating-Liner Test Rig Design to Investigate Factors Influencing Piston-Liner Friction (2012-01-1328) Theo Law, David MacMillan, Paul J. Shayler, Geoff Kirk, University of Nottingham; Ian Pegg, Roland Stark, Ford Motor Co	
10:20 a.m.	A Pareto Frontier Analysis of Renewable-Energy Consumption, Range, and Cost for Hydrogen Fuel Cell vs. Battery Electric Vehicles (2012-01-1224) Michael J. Veenstra, Chris Gearhart, Ford Motor Co.	Optimization of Rule-Based Control Strategy for a Hydraulic-Electric Hybrid Light Urban Vehicle Based on Dynamic Programming (2012-01-1015) Xianke Lin, Andrej Ivanco, Zoran Filipi, Univ of Michigan	Calculation of Piston Ring Radial Pressure Distribution from its Measured Free Shape (2012-01-1322) Eduardo Tomanik, Rafael Bruno, Mahle Metal Leve S A	
10:40 a.m.	Panel Discussion - Challenges Remaining for Commercialization of Fuel Cell Vehicles Organizers: Jesse Schneider, BMW AG Panelists: Akihiro Iiyama, Nissan Matthias Bork, GM Massimo Venturi, Daimler AG	Centralized Torque Controller for a Nonminimum Phase Phenomenon in a Powersplit HEV (2012-01-1026) Qing Wang, Fazal Syed, Ryan McGee, Ming Kuang, Anthony Phillips, Ford Motor Co.	CAE Simulations for Engine Block Bore Distortion (2012-01-1320) Amir Ghasemi	
11:00 a.m.			Friction Reduction in Power Cylinder Systems for Downsize Gasoline Engines with Modern Surface Technologies of Aluminum Crankcases (2012-01-1332) Wolfgang Hanke, Matthias Fahr, KS Kolbenschmidt GmbH; Andreas Rehl, Marco Voigt, KSPG AG; Hajime Ando, Nippon Piston Rings Co., Ltd	
11:20 a.m.			A Numerical and Experimental Study of Twin-land Oil Control Ring Friction in Internal Combustion Engines Part 2 (2012-01-1321) Haijie Chen, Kai Liao, Tian Tian, Massachusetts Institute of Technology	
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THURSDAY, APRIL 26 - MORNING

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	W2-65	O2-43	W2-64	W2-61
	Fuel Injection and Sprays - Numerical (Part 2 of 3) (PFL210) This session is devoted to experimental and computational work in the area of fuel injection systems and sprays. Topics include: spray characterization, cavitation, multi-phase jet modeling, CFD models for spray processes, wall films and impingement, hydraulic circuit analysis, and dissolved gas effects. Studies of gasoline, diesel and alternative fuel sprays and fuel injection equipment are encouraged. 8:00 a.m. - 11:40 a.m. Organizers: Tarek M. Abdel-Salam, East Carolina University; Essam El-Hannouny, Argonne National Laboratory	Heat Transfer and Advances in Thermal & Fluid Sciences - In-cylinder Heat Transfer, Cooling and Exhaust Systems (PFL214) This session focuses on fundamental numerical (1D and 3D CFD) and experimental research in the areas of heat and mass transfer and fluid flow that impacts engine and vehicle performance and design. Subject areas include convection, conduction, radiation, porous media, phase change including boiling, condensation, melting and freezing. Application areas include, combustion, emissions, cooling, lubrication, exhaust, intake, fuel delivery, external air flow, under hood and under body. 8:00 a.m. - 10:00 a.m. Organizers: John Abraham, Purdue Univ.; Thomas Edward Briggs, Oak Ridge National Laboratory; Raj Ranganathan, Showatech Inc.; Martin Tuner, Lund Univ.; Tarek Abdel-Salam, East Carolina University Chairpersons: Tarek M. Abdel-Salam, East Carolina University; Thomas Edward Briggs, Southwest Research Institute; Raj Ranganathan, Showatech Inc.; Martin Tuner, Lund Univ.	Kinetically Controlled CI Combustion (Including HCCI) (Part 3 of 3) (PFL206) This session focuses on kinetically controlled combustion (including, HCCI, PCCI, CAI, RCCI, etc.). Part 3: Control and Modelling 8:00 a.m. - 11:40 a.m. Organizers: Christopher Gehrke, Caterpillar Inc.; Scott Goldsborough, Marquette Univ.; Nebojsa Milovanovic, MAHLE Powertrain Ltd.; Samveg Saxena; Hongming Xu, Birmingham Univ.	Modeling of SI and Diesel Engines - CI Combustion (PFL208) Zero-dimensional, one-dimensional, and quasi-dimensional models for simulation of SI and CI engines with respect to: engine breathing and boosting; SI combustion and emissions; CI combustion and emissions; fundamentals of engine thermodynamics; thermal management; mechanical and lubrication systems; system level models for controls; system level models for vehicle fuel economy and emissions predictions. 8:00 a.m. - 9:40 a.m. Organizers: Michael Bybee, Gamma Technologies Inc.; Jan Macek, Czech Technical Univ.; Federico Millo, Politecnico di Torino; Thomas Morel, Gamma Technologies Inc.; Christof Schernus, FEV GmbH Chairpersons: Michael Bybee, Gamma Technologies Inc
8:00 a.m.	Superheated Sprays of Alternative Fuels for Direct Injection Engines (2012-01-1261) Sergio Negro, Federico Brusiani, Gian Marco Bianchi, University of Bologna	Optical Diagnostics and CFD Validation of Jacket Cooling System Filling and the Occurrence of Trapped Air (2012-01-1213) Peter R. Woollen, Loughborough University; Jean-Yves Tillier, Vivian J. Page, David E. Knight, Perkins Engines Co Ltd; Graham K. Hargrave, Benjamin A. Reid, Edward J. Long, Loughborough University	Dynamic Engine Control for HCCI Combustion (2012-01-1133) John Lahti, John Deere Power Systems; John Moskwa, University of Wisconsin - Madison	Zero-Dimensional Modeling of Combustion and Heat Release Rate in DI Diesel Engines (2012-01-1065) Reza Rezaei, Peter Eckert, Joern Seebode, Kai Behnk, IAV GmbH
8:20 a.m.	Improving the Accuracy of 1-D Fuel Injection Modeling (2012-01-1256) Karri Keskinen, Ossi Kaario, Aki Tili, Tuomo Hulkkonen, Martti Larmi, Aalto University	Cylinder Cooling for Improved Durability on an Opposed-Piston Engine (2012-01-1215) Patrick Lee, Achates Power Inc.; Michael Wahl, Achates Power Inc	HCCI Combustion Control Using Dual-Fuel Approach: Experimental and Modeling Investigations (2012-01-1117) Ali Aldawood, Sebastian Mosbach, Markus Kraft, University of Cambridge	Analysis of Combustion and Emissions in a EURO V Diesel Engine by Means of a Refined Quasi-Dimensional Multizone Diagnostic Model (2012-01-1066) Roberto Finesso, Ezio Spessa, Politecnico di Torino
8:40 a.m.	LES Based Modeling and Simulation of Spray Dynamics including Gasoline Direct Injection (GDI) Processes using KIVA-4 Code (2012-01-1257) Kaushal Nishad, Technical University Darmstadt, Germany; Philipp Pischke, RWTH Aachen University, Germany; Dmitry Goryntsev, Amsini Sadiki, Technical University Darmstadt, Germany; Reinhold Kneer, RWTH Aachen University, Germany	Estimation of Surface Heat Flux in IC Engines Using Temperature Measurements: Processing Code Effects (2012-01-1208) Terry Hendricks, Jaal Ghandhi, University of Wisconsin - Madison	Evaluation of Ignition Timing Predictions Using Control-Oriented Models in Kinetically-Modulated Combustion Regimes (2012-01-1136) S. Scott Goldsborough, Timothy A. Smith, Michael V. Johnson, Steven S. McConnell, Argonne National Laboratory	A Soot Radiation Model for Diesel Sprays (2012-01-1069) J. Javier Lopez, Jose M Garcia-Oliver, Jaime Martin, CMT Motores Termicos UPV; Jean Pierre Chemisky, Alexandre Bouet, PSA Peugeot-Citroën
9:00 a.m.	Self-Ignition Calculation of Diesel Spray (2012-01-1262) Milan Marcic, Jurij Avsec, Zdravko Praunseis, Simon Marcic, Univ. of Maribor; Michael Wensing, Univ. of Erlangen; Alfred Leipertz, Friedrich-Alexander Universität	Applying Design of Experiments to Determine the Effect of Gas Properties on In-Cylinder Heat Flux in a Motored SI Engine (2012-01-1209) Joachim Demuyck, Michel De Paepe, Louis Sileghem, Jeroen Vancoillie, Sebastian Verhelst, Ghent University; Kam Chana, University of Oxford	A Real-Time Control Oriented HCCI Combustion Model in 4-Stroke HCCI/SI GDI Engine and Model-Based Fast Calibration Development (2012-01-1123) HE MA, Hongming Xu, Thorsten Schnier, Birmingham Univ; Jihong Wang, University of Warwick; Guohong Tian, Newcastle University	Self-Calibrating Model for Diesel Engine Simulations (2012-01-1072) Michal Pasternak, Fabian Mauss, Brandenburg University of Technology; Gábor Janiga, Dominique Thévenin, University of Magdeburg
9:20 a.m.	Numerical Investigation of Spray Characteristics of Diesel Alternative Fuels (2012-01-1265) Abbas Ghasemi, Kohei Fukuda, Ram Balachandrar, Ronald Barron, University of Windsor, Mech. Eng. Dept.	Heat Insulating Effect of Soot Deposit on Local Transient Heat Transfer in Diesel Engine Combustion Chamber (2012-01-1217) Revaz Kavtaradze, Andrey Zelentsov, Bauman Moscow State Technical University; Sergey P. Gladyshev, Michigan-Dearborn University; Zurab Kavtaradze, Dmitry Onishchenko, Bauman Moscow State Technical University	A Study of Control Strategy for Combustion Mode Switching Between HCCI and SI With the Blowdown Supercharging System (2012-01-1122) Tatsuya Kuboyama, Yasuo Moriyoshi, Chiba Univ.; Koichi Hatamura, Hatamura Engine Research Office Ltd; Toshio Yamada, CD-adapco JAPAN Co., Ltd.; Junichi Takanashi, Yasuhiro Urata, Honda R&D Co Ltd	A Fast Tool for Predictive IC Engine In-Cylinder Modelling with Detailed Chemistry (2012-01-1074) Cathleen Perlman, Karin Frojd, Lars Seidel, LOGE AB; Martin Tuner, Lund Univ; Fabian Mauss, BTU Cottbus
9:40 a.m.	The Development of the DL Fuel Injector Atomizer with Active Droplet Coalescence Control for Port Fuel Injection Applications (2012-01-1259) Michael Pontoppidan, Numidis Sarl; Gino Montanari, Magneti Marelli Sistemas Automotivos	Temperature Controlled Exhaust Heat Thermoelectric Generation (2012-01-1214) Francisco P. Brito, Jorge Martins, L.M. Goncalves, Rui Sousa, Universidade do Minho	Optimal Use of Boosting Configurations and Valve Strategies for High Load HCCI - A Modeling Study (2012-01-1101) Sotirios Marmalis, Aristotelis Babajmopoulos, University of Michigan; Orgun Guralp, Paul Najt, General Motors Company	

Continued on next page

THURSDAY, APRIL 26 - MORNING Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	W2-65	O2-43	W2-64	W2-61
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10:00 a.m.	Detailed Modeling and Simulation of High-Pressure Fuel Injection Processes in Diesel Engines (2012-01-1258) Joseph Oefelein, Rainer Dahms, Guilhem Lacaze, Sandia National Laboratories		Detailed Kinetic Modeling of Conventional Gasoline at Highly Boosted Conditions and the Associated Intermediate Temperature Heat Release (2012-01-1109) Marco Mehl, William Pitz, Mani Sarathy, Lawrence Livermore National Laboratory; Yi Yang, John Dec, Sandia National Laboratories	
10:20 a.m.	A Number Size Distribution Moments Based Solid Cone Diesel Spray Model: Assessment of Droplet Breakup Models Based on Different Distribution Functions (2012-01-1260) Nwabueze G. Emekwuru, University of Wolverhampton, U.K.		A Sequential Chemical Kinetics-CFD-Chemical Kinetics Methodology to Predict HCCI Combustion and Main Emissions (2012-01-1119) Ivan Dario Bedoya, Francisco Cadavid, University of Antioquia; Samveg Saxena, Lawrence Berkeley National Laboratory; Robert Dibble, University of California, Berkeley; Salvador Aceves, Daniel Flowers, Lawrence Livermore National Lab	
10:40 a.m.	Comparison and Standardization of Numerical Approaches for the Prediction of Non-reacting and Reacting Diesel Sprays (2012-01-1263) Sibendu Som, Argonne National Laboratory; Gianluca D'Errico, Politecnico di Milano; Douglas Longman, Argonne National Laboratory; Tommaso Lucchini, Politecnico di Milano		Chemical Kinetics Study on Effect of Pressure and Fuel, O ₂ , and N ₂ Molar Concentrations on Hydrocarbon Ignition Process (2012-01-1113) Kazunari Kuwahara, Yoshihiro Hiramura, Shintaro Ohmura, Osaka Institute of Technology; Masahiro Furutani, Nagoya Institute of Technology; Yasuyuki Sakai, Hiromitsu Ando, University of Fukui	
11:00 a.m.	Primary Breakup Model for Turbulent Liquid Jet Based on Ligament Evolution (2012-01-0460) Federico Brusiani, Gian Marco Bianchi, University of Bologna; Alessandro Tiberi, Ferrari S.p.A.		HCCI-Combustion in the Z Engine (2012-01-1132) Timo T. Janhunen	
11:20 a.m.	A Model-Based Analysis on Size Distribution and Rate of Evaporation for Fuel Drops in a Gasoline Spray in the Engine (2012-01-1264) Ho Teng, AVL Powertrain Engineering Inc.		Combustion and Emission Characteristics of a PPC Engine Fuelled with Dieseline (2012-01-1138) Fan Zhang, University of Birmingham; Hongming Xu, University of Birmingham, Tsinghua Univ.; Soheil Zeraati Rezaei, University of Birmingham; Gautam Kalghatgi, Saudi Aramco; Shi-Jin Shuai, Tsinghua Univ	
			Model-Based Control of Combustion Phasing in an HCCI Engine (Written Only -- No Oral Presentation) (2012-01-1137) Mehran Bidarvatan, K.N. Toosi University of Technology; Mahdi Shahbakhli, University of California, Berkeley; Seyed Ali Jazayeri, K.N. Toosi University of Technology	
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THURSDAY, APRIL 26 - MORNING Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	W2-68	W2-70	W2-70	W2-68
	SI Combustion - Alternative Fuels and Emissions (PFL201) This session focuses on combustion technologies in both 4-stroke and 2-stroke engines characterized by 1) ignition by an external energy source that serves to control combustion phasing, and 2) a combustion rate that is limited by flame propagation. The scope of topics includes studies of mixture formation, ignition, knock, engine efficiency, flame propagation, alternative fuels and emissions formation. Part 2 of 2: Alternative Fuels and Emissions 8:00 a.m. - 9:40 a.m. Organizers: Terrence Alger, Southwest Research Institute; Richard S. Davis, General Motors Company; Mark C. Sellnau, Delphi Corp. Chairpersons: Mark Sellnau, Delphi Corp; Richard Davis, General Motors LLC	Powertrain Actuators and Sensors (PFL302) Variable Valve Actuation mechanisms, devices, and systems; and the impact and control of such systems on thermodynamics, combustion, fuel economy, emissions, and performance. 8:20 a.m. - 8:40 a.m. Organizers: Steve Thomson, Delphi Corp.	Combustion Control and Optimization (Part 2 of 3) (PFL303) This session covers engine combustion control and optimization techniques related to achieving stringent market fuel economy, emissions, and performance. Related topics include engine combustion diagnostics, control, optimization, related combustion sensing, etc. 9:00 a.m. - 11:40 a.m. Organizers: Guoming Zhu, Michigan State Univ.; Junmin Wang, Ohio State Univ.; Yue-Yun Wang, General Motors; Elisa Toulson, Michigan State Univ.; Rahul Sharma, Univ. of Melbourne; Nilabh Srivastava, Univ. of North Carolina Chairpersons: Junmin Wang, Ohio State Univ	Alternative and Advanced Fuels (Part 1 of 2) (PFL215) This session focuses on the fundamental properties of fuels and methods for measuring these properties, as well as issues related to fuel storage and transportation. Examples include diesel fuel lubricity determination, fuel effects on deposits, cold weather issues, and environmental and toxicological impacts of new fuels. 9:40 a.m. - 11:40 a.m. Organizers: William P. Attard, MAHLE Powertrain LLC; Barbara Goodrich, John Deere Product Engineering Center; George Karavalakis, Univ. of California-Riverside; Elisa Toulson, Michigan State Univ. Chairpersons: Elisa Toulson, Michigan State Univ; Barbara Goodrich, John Deere Product Engineering Center
8:00 a.m.	Optical Characterization of Methane Combustion in a Four Stroke Engine for Two Wheel Application (2012-01-1150) Paolo Sementa, Francesco Catapano, Bianca Maria Vaglieco, Silvana Di Iorio, Istituto Motori CNR			
8:20 a.m.	Comparison of Gasoline (ULG), 2,5-Dimethylfuran (DMF) and Bio-Ethanol in a DISI Miller Cycle with Late Inlet Valve Closing Time (2012-01-1147) Chongming Wang; Ritchie Daniel, Xiao Ma, Birmingham Univ	Sensing of Particulate Matter for On-Board Diagnosis of Particulate Filters (2012-01-0372) Harry Husted, Gregory Roth, Scott Nelson, Lary Hocken, Gary Fulks, David Racine, Delphi Automotive Systems, LLC		
8:40 a.m.	Investigations on a Catalyst Heating Strategy by Variable Valve Train for SI Engines (2012-01-1142) Wolfram Gottschalk, Gunnar Kirstein, Olaf Magnor, Matthias Schultalbers, Robert Wetten, IAV Automotive Engineering	Discussion Break		
9:00 a.m.	Experimental and Numerical Investigation of the Idle Operating Engine Condition for a GDI Engine (2012-01-1144) Simone Malaguti, Alessandro D'Adamo, Giuseppe Cantore, Univ. of Modena & Reggio Emilia; Paolo Sementa, Bianca Maria Vaglieco, Francesco Catapano, Istituto Motori CNR		An Experimental Study on Engine Dynamics Model Based In-Cylinder Pressure Estimation (2012-01-0896) Feilong Liu, Delphi Corporation; Gehan A. J. Amaratunga, Nick Collings, University of Cambridge; Ahmed Soliman, University of North Carolina Charlotte	
9:20 a.m.	Dual-Injection as a Knock Mitigation Strategy Using Pure Ethanol and Methanol (2012-01-1152) Ritchie Daniel, Chongming Wang, Hongming Xu, University of Birmingham; Guohong Tian, Newcastle University; Dave Richardson, Jaguar Cars Ltd		Multi-Objective Adjoint Optimization of Intake Port Geometry (2012-01-0905) Eugene de Villiers, Engys; Carsten Othmer, Volkswagen AG	
9:40 a.m.			Real-Time Predictive Modeling of Combustion and NO _x Formation in Diesel Engines Under Transient Conditions (2012-01-0899) Roberto Finesso, Ezio Spessa, Politecnico di Torino	Biodiesel Later-Phased Low Temperature Combustion Ignition and Burn Rate Behavior on Engine Torque (2012-01-1305) Brandon T. Tompkins, Hoseok Song, Joshua Bittle, Timothy J. Jacobs, Texas A&M University
10:00 a.m.			High Efficiency and Clean Diesel Combustion Concept using Double Premixed Combustion: D-SPIA (2012-01-0906) Hiroshi Kuzuyama, Masahiro Machida, Tsutomu Kawae, Takeshi Tanaka, Hideki Aoki, Yoshio Sugiyama, Tsutomu Umehara, Toyota Industries Corporation	Impact of Biodiesel Blends on In-cylinder Soot Temperature and Concentrations in a Small-Bore Optical Diesel Engine (2012-01-1311) Kan Zha, Xin Yu, Radu Florea, Marcis Jansons, Wayne State University

Continued on next page

THURSDAY, APRIL 26 - MORNING Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	W2-68	W2-70	W2-70	W2-68
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10:20 a.m.			Analysis of Diesel Injector Nozzle Flow Number Impact on Emissions and Performance of a Euro5 Automotive Diesel Engine (2012-01-0891) Chiara Guido, Carlo Beatrice, Silvana Di Iorio, Istituto Motori CNR; Pierpaolo Napolitano, Università di Napoli Federico II; Giovanni Avolio, General Motors Powertrain Europe; Claudio Ciaravino, General Motors Company	Comparison of In-Cylinder Soot Evolution in an Optically Accessible Engine Fueled with JP-8 and ULSD (2012-01-1315) Xin Yu, Kan Zha, Radu Florea, Marcis Jansons, Wayne State University
10:40 a.m.			Detailed Evaluation of a New Semi-Empirical Multi-Zone NO _x Model by Application on Various Diesel Engine Configurations (2012-01-1156) Nicholas Savva, Dimitrios Hountalas, National Technical Univ of Athens	Impact of Varying Biodiesel Blends on Direct-Injection Light-Duty Diesel Engine Emissions (2012-01-1313) Marie-Josée Poitras, Deborah Rosenblatt, Tak W. Chan, Greg Rideout, Environment Canada
11:00 a.m.			Analysis of Thermodynamic Characteristics of Diesel Engine Emission Control Strategies Using a Multi-Zone Combustion Model (2012-01-1340) Christoph Poetsch, Virtual Vehicle; Herwig Ofner, Wolfgang Cartellieri, AVL LIST GmbH	Performance and Emission Studies of a Diesel Engine Fueled with Wood Pyrolysis Oil-Biodiesel Emulsions (2012-01-1306) Prakash Ramakrishnan, Raghubansha Kumar Singh, Murugan Sivalingam, NIT Rourkela, India
11:20 a.m.			Numerical Optimization of a Light-Duty Compression Ignition Engine Fuelled With Low-Octane Gasoline (2012-01-1336) Bishwadipa Das Adhikary; Youngchul Ra, Rolf Reitz, Univ of Wisconsin; Stephen Ciatti, Argonne National Laboratory	Best Brazil Paper - Investigation of the Gel Formation and Filter Solutions in the Fuel System for Flex-Fuel Vehicles (SAE Paper #2011-36-0217) (Oral Only) Sandra Cordeiro, Fernando Jun Yoshino, Mahle
		Research of Techniques for Low Pressure Indication in Internal Combustion Engines (Written Only -- No Oral Presentation) (2012-01-0444) Jan Czerwinski, Pierre Comte, Thomas Hilfiker, Univ. of Applied Sciences Biel-Bienne; Andreas Fürholz, Kistler Instruments AG, Winterthur (CH)		
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THURSDAY, APRIL 26 - MORNING Technical and Business Sessions

TIME		
	W2-61	
	Cold Start and Transients (PFL211) This session focuses on both SI and CI combustion and mixture preparation during cold start and transient engine operation. Example topics include engine performance, emissions, control strategies and calibrations for cold start and transient operation impact on NOx, PM, HC, CO, and CO2 emissions; also including the impact of variable valve timing, spark, and turbocharger controls. 10:00 a.m. - 11:40 a.m. Organizers: Eric W. Curtis, Peter Moilanen, Ford Motor Co.; Hamid B. Servati, ServoTech Engineering Chairpersons: Peter Moilanen, Ford Motor Co	
10:00 a.m.	Analysis of Deviations from Steady State Performance During Transient Operation of a Light Duty Diesel Engine (2012-01-1067) William Glewen, David Heuwetter, David Foster, Michael Andrie, Roger Krieger, University of Wisconsin	
10:20 a.m.	The Influence of Injection Strategy and Glow Plug Temperature on Cycle by Cycle Stability Under Cold Idling Conditions for a Low Compression Ratio, HPCR Diesel Engine (2012-01-1071) Michael McGhee, Paul J. Shayler, Antonino LaRocca, University of Nottingham; Michael Murphy, Ian Pegg, Ford Motor Co	
10:40 a.m.	Combustion Robustness Characterization of Gasoline and E85 for Startability in a Direct Injection Spark-Ignition Engine (2012-01-1073) Vaibhav Kale, Michigan Technological Univ; Halim Santoso, Craig Marriott, GM Powertrain; Jeremy Worm, Jeffrey Naber, Michigan Technological Univ	
11:00 a.m.	Excess Emissions and Fuel Consumption of Modern Spark Ignition Passenger Cars at Low Ambient Temperatures (2012-01-1070) Piotr Bielaczyc, Andrzej Szczotka, Joseph Woodburn, BOSMAL Automotive R&D Institute	
11:20 a.m.	Transient Characteristics of Cold Start Emissions from a Two-Stage Direct Injection Gasoline Engines Employing the Total Stoichiometric Ratio and Local Rich Mixture Start-up Strategy (2012-01-1068) Qianwang Fan, Liguang Li, Tongji Univ.	
	Real World Cold Start Emissions from a Diesel Vehicle (Written Only -- No Oral Presentation) (2012-01-1075) Jayne Windeatt, Gemma Brady, Philippa Usher, Hu Li, Ali Hadavi, University of Leeds	
	Planned by Combustion and Fuels Committee / Powertrain Fuels and Lubricants Activity The papers in this session are available in SAE Technical Paper Collection, SUB-TP-00010, and also individually. To purchase visit collections.sae.org	



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International Motorized Toy Car Competition
Tuesday, April 24, 2012
 9:00 a.m. - 2:00 p.m.
 in Detroit Hall

International JetToy Competition
Wednesday April 25, 2012
 9:00 a.m. - 2:00 p.m.
 in Detroit Hall

International Fuel Cell Competition
Thursday, April 26, 2012
 9:00 a.m. - 2:00 p.m.
 in Detroit Hall



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THURSDAY, APRIL 26 - AFTERNOON

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	O2-44	W2-68	W2-69	W2-70
	Advanced Fuel Cell Vehicle Applications (Part 2 of 2) (PFL101) Fuel Cell Propulsion for electric automotive applications has the highest potential to offer both zero emissions and long range vehicle while being able to 100 percent refuel in a matter of minutes. This session covers advances in hydrogen fueling methodologies; hydrogen storage and diffusion simulations; and industry view on trade offs of advance storage technologies. PEM Fuel Cell water management and Novel Catalysts are also explored. 1:00 p.m. - 3:20 p.m. Organizers: Jesse Schneider, BMW AG; Dohoy Jung, Univ. of Michigan-Dearborn Chairpersons: Jesse Schneider, BMW AG	Alternative and Advanced Fuels (Part 2 of 2) (PFL215) This session focuses on the fundamental properties of fuels and methods for measuring these properties, as well as issues related to fuel storage and transportation. Examples include diesel fuel lubricity determination, fuel effects on deposits, cold weather issues, and environmental and toxicological impacts of new fuels. 1:00 p.m. - 3:20 p.m. Organizers: William P. Attard, MAHLE Powertrain LLC; Barbara Goodrich, John Deere Product Engineering Center; George Karavalakis, Univ. of California-Riverside; Elisa Toulson, Michigan State Univ. Chairpersons: William P. Attard, MAHLE Powertrain LLC; Barbara Goodrich, John Deere Product Engineering Center	CI & SI Power Cylinder Systems (Part 2 of 2) (PFL502) This session covers topics regarding the Power Cylinder (piston, piston rings, piston pins, connecting rods). The papers include information on how to reduce friction and improve fuel economy, how to improve durability by understanding wear, and how to improve oil consumption and blow-by. 1:00 p.m. - 2:20 p.m. Organizers: Yong-Ching Chen; Dwight Doig, Dan Richardson, Cummins Inc.	Combustion Control and Optimization (Part 3 of 3) (PFL303) This session covers engine combustion control and optimization techniques related to achieving stringent market fuel economy, emissions, and performance. Related topics include engine combustion diagnostics, control, optimization, related combustion sensing, etc. 1:00 p.m. - 3:20 a.m. Organizers: Guoming Zhu, Michigan State Univ.; Yue-Yun Wang, General Motors; Junmin Wang, Ohio State Univ.; Elisa Toulson, Michigan State Univ.; Rahul Sharma, Univ. of Melbourne; Nilabh Srivastava, Univ. of North Carolina Chairpersons: Guoming Zhu, Michigan State Univ
1:00 p.m.	Application of MC Method-Based H2 Fueling (2012-01-1223) Steven Mathison, Honda R&D Americas, Inc.; Ryan Harty, American Honda Motor Co., Inc.; Joseph Cohen, Air Products and Chemicals, Inc.; Nikunj Gupta, Herie Soto, Shell	Ignition Characteristics of Hydrogen Jets in an Argon-Oxygen Atmosphere (2012-01-1312) Mohd Radzi Abu Mansor, Shinji Nakao, Katsutaka Nakagami, Masahiro Shioji, Kyoto University; Akira Kato, Toyota Motor Corporation	Application of DLC Coating in Cylinder Liners for Friction Reduction (2012-01-1329) Edney Deschauer Rejowski, Mahle Metal Leve S A; Paulo Mordente Sr, Mahle Metal Leve SA; Marina Fuser Pillis, Nuclear and Energ. Research Inst- IPEN; Tom Casserly, Sub-One Technology, Inc.	Mode Switching Control for Diesel Low Temperature Combustion with Fast Feedback Algorithms (2012-01-0900) Usman Asad, Prasad Divekar, Xiang Chen, Ming Zheng, Univ. of Windsor; Jimi Tjong, Ford Motor Company of Canada
1:20 p.m.	Hydrogen Vehicle Fueling and Fuel Cell Vehicle to Hydrogen Station Communications, Recommended Practice SAE J2601 (Oral Only) Jesse Schneider, BMW AG	Development of HMC LPI Mono-Fuel Vehicle (2012-01-1314) In-Tak Kim, Sang-Hee Lee, Woo-Jik Lee, Jong-Suk Yoon, Hyundai & Kia Motors Company	Development of Hydrogen-Free Diamond-Like Carbon Coating for Piston Rings (Oral Only) Tsuyoshi Higuchi, Yutaka Mabuchi, Hiroki Ichihara, Takashi Murata, Nissan Motor Company Ltd.; Mmasaki Moronuki, RIKEN	Artificial Intelligence Methodologies for Oxygen Virtual Sensing at Diesel Engine Intake (2012-01-1153) Francesco Mariani, Carlo N. Grimaldi, Università degli Studi di Perugia; Stefano Sgatti, Matteo De Cesare, Magneti Marelli Powertrain SPA; Michele Battistoni, Università degli Studi di Perugia
1:40 p.m.	Development of a Vehicle-Level Simulation Model for Evaluating the Trade-Off between Various Advanced On-Board Hydrogen Storage Technologies for Fuel Cell Vehicles (2012-01-1227) Matthew Thornton, Aaron Brooker, Jonathon Cosgrove, National Renewable Energy Laboratory; Michael Veenstra, Ford Motor Company; Jose Miguel Pasini, United Technologies Research Center	Effect of Intake Pressure and Temperature on the Auto-Ignition of Fuels with Different Cetane Number and Volatility (2012-01-1317) Chandrasekharan Jayakumar, Ziliang Zheng, Umashankar Joshi, Walter Bryzik, Naeim Henein, Wayne State University; Eric Sattler, US Army TACOM	Comparison Between Journal and Rolling Element Bearings in a Camshaft Application (2012-01-1324) Stewart Mackay, Mahle Powertrain, Ltd.	Combustion Simulations for a Self Controlling Variable Compression Ratio Connecting Rod (2012-01-1154) Frank Stefan Will, Dylan Mayson, Deakin University
2:00 p.m.	Practical Method of Hydrogen Diffusion Simulation for Fuel Cell Electric Vehicle Development (2012-01-1231) Mitsunori Matsumoto, Kenichi Shimizu, Honda R&D Co.Ltd Automobile R&D Center	Low Cetane Number Renewable Oxy-fuels for Premixed Combustion Concept Application: Experimental Investigation on a Light Duty Diesel Engine (2012-01-1310) Gabriele Di Blasio, Carlo Beatrice, Istituto Motori CNR; Rutger Dijkstra, Michael Boot, Technische Universiteit Eindhoven	A Durability Assessment of Rolling Element Bearings in a Camshaft Application, Considering Sensitivity to Installation and Operating Parameters (2012-01-1331) Jason Bleach, Mahle Powertrain, Ltd.	Identification and Correction of the Error Induced by the Sampling Method Used to Monitor Cylinder Pressure of Reciprocating Internal Combustion Engines (2012-01-1155) Antonis Antonopoulos, Dimitrios Hountalas, National Technical University of Athens
2:20 p.m.	Impact of One Side Hydrophobic Gas Diffusion Layer on Water Removal Rate and Proton Exchange Membrane Fuel Cell Performance (2012-01-1221) Saher Al Shakhshir, Yonxin Wang, Yongtaek Lee, Xianguo Li, University of Waterloo	A Study on NOx Emission Characteristics When Using Biomass-derived Diesel Alternative Fuels (2012-01-1316) Norifumi Mizushima, Susumu Sato, Daisuke Kawano, National Traffic Safety & Enviro Lab.; Akira Saito, Yutaka Takada, LEVO		Development of Closed-Loop Robust Control System for Diesel Engines - Combustion Monitoring by Crank Angular Velocity Analysis and its Applications - (2012-01-1157) Yukitoshi Aoyama, Ryo Hasegawa, Tomomi Yamada, Takekazu Itoh, Terutoshi Tomoda, Yuichi Shimasaki, Toyota Motor Corporation
2:40 p.m.	Chemical Hydrides for Hydrogen Storage in Fuel Cell Applications (2012-01-1229) Maruthi Devarakonda, Kriston Brooks, Ewa Ronnebro, Scot Rassat, Jamie Holladay, Pacific Northwest National Laboratory	Investigation on the Effect of 5% Biodiesel -Diesel Blend on Heavy Duty Buses: With Different Aspiration Technologies in Respect of Vehicle Performance (2012-01-1309) M Muralidharan, M Subramanian, P C Kanal, R K Malhotra, Indian Oil Corporation Ltd., R&D Centre		Challenges and Potential of Intra-Cycle Combustion Control for Direct Injection Diesel Engines (2012-01-1158) Thomas Steffen, Richard Stobart, Zhijia Yang, Loughborough University

Continued on next page

THURSDAY, APRIL 26 - AFTERNOON Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	O2-44	W2-68	W2-69	W2-70
	Advanced Fuel Cell Vehicle Applications (Part 2 of 2) (PFL101) Fuel Cell Propulsion for electric automotive applications has the highest potential to offer both zero emissions and long range vehicle while being able to 100 percent refuel in a matter of minutes. This session covers advances in hydrogen fueling methodologies; hydrogen storage and diffusion simulations; and industry view on trade offs of advance storage technologies. PEM Fuel Cell water management and Novel Catalysts are also explored. 1:00 p.m. - 3:20 p.m. Organizers: Jesse Schneider, BMW AG; Dohoy Jung, Univ. of Michigan-Dearborn Chairpersons: Jesse Schneider, BMW AG	Alternative and Advanced Fuels (Part 2 of 2) (PFL215) This session focuses on the fundamental properties of fuels and methods for measuring these properties, as well as issues related to fuel storage and transportation. Examples include diesel fuel lubricity determination, fuel effects on deposits, cold weather issues, and environmental and toxicological impacts of new fuels. 1:00 p.m. - 3:20 p.m. Organizers: William P. Attard, MAHLE Powertrain LLC; Barbara Goodrich, John Deere Product Engineering Center; George Karavalakis, Univ. of California-Riverside; Elisa Toulson, Michigan State Univ. Chairpersons: William P. Attard, MAHLE Powertrain LLC; Barbara Goodrich, John Deere Product Engineering Center	CI & SI Power Cylinder Systems (Part 2 of 2) (PFL502) This session covers topics regarding the Power Cylinder (piston, piston rings, piston pins, connecting rods). The papers include information on how to reduce friction and improve fuel economy, how to improve durability by understanding wear, and how to improve oil consumption and blow-by. 1:00 p.m. - 2:20 p.m. Organizers: Yong-Ching Chen; Dwight Doig, Dan Richardson, Cummins Inc.	Combustion Control and Optimization (Part 3 of 3) (PFL303) This session covers engine combustion control and optimization techniques related to achieving stringent market fuel economy, emissions, and performance. Related topics include engine combustion diagnostics, control, optimization, related combustion sensing, etc. 1:00 p.m. - 3:20 a.m. Organizers: Guoming Zhu, Michigan State Univ.; Yue-Yun Wang, General Motors; Junmin Wang, Ohio State Univ.; Elisa Toulson, Michigan State Univ.; Rahul Sharma, Univ. of Melbourne; Nilabh Srivastava, Univ. of North Carolina Chairpersons: Guoming Zhu, Michigan State Univ
3:00 p.m.	A Novel Synthetic Method of Gold Modified Platinum Catalyst and the Application to Electrocatalyst for Fuel Cell (Oral Only) Toshihiro Ikai, hisao kato, Tetsuo kawamura, Toyota Motor Corporation	Diesel Engine Performance Using Blend of Ammonia and Dimethyl Ether (Oral Only) Christopher Gross, Song-Charng Kong, Iowa State University		Soot and NO_x Reduction by Spatially Separated Pilot Injection (2012-01-1159) Andreas Binde, Stephen Busch, Amin Velji, Uwe Wagner, Karlsruhe Institute of Technology (KIT)
	Modeling and Simulation of a PEM Fuel Cell (PEMFC) Used in Vehicles (Written Only -- No Oral Presentation) (2012-01-1233) Mehdi Hosseini, Amir H. Shamekhi, Arya Yazdani, K N Toosi Univ. of Technology	Effect of FFA of Jatropa Curcas L Oil on Performance and Emissions of a DI Diesel Engine (Written Only -- No Oral Presentation) (2012-01-1318) Gopinath A, Ashok Leyland; Sairam K, Vels University, School of Maritime Studies; Sukumar Puhon, GKM College of Engineering & Technology; Ganesan V, Indian Institute of Technology Madras	Effects of Temperature on Wear Behavior of a Plasma Sprayed Diesel Engine Cylinder (Written Only -- No Oral Presentation) (2012-01-1335) M.S. Ghorashi, G.H. Farrahi, M.R. Eftekhari, Sharif Univ of Technology	
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THURSDAY, APRIL 26 - AFTERNOON

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	O2-33	W2-61	W2-66	W2-65
	EcoCAR Development (PFL110) The 2008-2011 EcoCAR: The NeXt Challenge student vehicle competition, sponsored by General Motors and the U.S. Department of Energy, tasked university teams with designing, implementing and refining advanced powertrains into a conventional crossover SUV. This session presents some final results from teams in the competition, highlighting the entire EcoCAR vehicle development process. Data from dynamometer as well as on-road testing is used to validate teams' modeling and simulation predictions. 1:00 p.m. - 4:00 p.m. Organizers: Brian Benoy, Kristen G. De La Rosa, Patrick M. Walsh, Argonne National Laboratory	Engine Flows and Combustion Diagnostics (PFL212) This session focuses on applying various sensors and diagnostics to examine the flow and combustion processes in both production engines and research environments. Examples of diagnostics of interest include, but are not limited to: pressure sensors, ion probes, exhaust gas composition analyzers, and various optical techniques. 1:00 p.m. - 3:00 p.m. Organizers: Olvind Andersson, Lund Univ.; Anand H. Gandhi, Ford Powertrain Research Lab.; Matthew J. Hall, Univ. of Texas-Austin; Benjamin Petersen, Sandia National Laboratories	Fuel & Additive Effects on SI Engine Performance (Part 2 of 2) (PFL203) This session focuses on the impact of conventional and alternative fuels as well as fuel additives on the operation, performance and emissions of SI engines. Papers focus on the impact of bio-derived fuels (ethanol, butanol and others) on engine design and performance as well as gasoline properties and additives, and their impact. 1:00 p.m. - 3:20 p.m. Organizers: Chris Hagen, Colorado State University; Gerald Micklow, East Carolina University Chairpersons: Gerald Micklow, East Carolina University	Fuel Injection and Sprays - Numerical (Part 3 of 3) (PFL210) This session is devoted to experimental and computational work in the area of fuel injection systems and sprays. Topics include: spray characterization, cavitation, multi-phase jet modeling, CFD models for spray processes, wall films and impingement, hydraulic circuit analysis, and dissolved gas effects. Studies of gasoline, diesel and alternative fuel sprays and fuel injection equipment are encouraged. 1:00 p.m. - 2:20 p.m. Organizers: Tarek M. Abdel-Salam, East Carolina University; Essam El-Hannouny, Argonne National Laboratory
1:00 p.m.	Design of an On-Road PHEV Fuel Economy Testing Methodology with Built-In Utility Factor Distance Weighting (2012-01-1194) Michael Duoba, Argonne National Laboratory	Doppler Global Velocimetry Measurement of Charge Motion Inside Piston Bowl of a Motored Diesel Engine and Correlation to CFD Results (2012-01-1234) Roland Deepe, Wolfgang Tschiggfrei, Thomas Seidel, Carolus Gruenig, Christian Schramm, IAV	The Performance of a Modern Vehicle on a Variety of Alcohol-Gasoline Fuel Blends (2012-01-1272) Philip A. Stansfield, Andre Bisordi, Dave OudeNijeweme, Mahle Powertrain, Ltd.; John Williams, Martin Gold, Rana Ali, BP International Ltd	Wall Impingement Process of a Multi-Hole GDI Spray: Experimental and Numerical Investigation (2012-01-1266) Alessandro Montanaro, Istituto Motori CNR; Simone Malaguti, Univ of Modena & Reggio Emilia; Salvatore Alfuso, Istituto Motori CNR
1:20 p.m.	Control and Testing of a 2-Mode Front-Wheel-Drive Hybrid-Electric Vehicle (2012-01-1192) Zhenhua Zhu, Douglas Ward, W. Scott Wayne, West Virginia Univ.	In-Cylinder Optical Study on Combustion of DMF and DMF Fuel Blends (2012-01-1235) Xiao Ma, Changzhao Jiang, Hongming Xu, Birmingham Univ; Steve Richardson, Jaguar Land Rover	Evaluation of Ethanol Blends for Plug-In Hybrid Vehicles Using Engine in the Loop (2012-01-1280) Neeraj Shidore, Andrew Ickes, Thomas Wallner, Aymeric Rousseau, James Sevik, Argonne National Laboratory; Mehrdad Ehsani, Texas A&M Univ.	Coupled Simulation of Nozzle Flow and Spray Formation Using Diesel and Biodiesel for CI Engine Applications (2012-01-1267) Michele Battistoni, Carlo Grimaldi, Francesco Mariani, Università degli Studi di Perugia
1:40 p.m.	Refinement and Testing of an E85 Split Parallel EREV (2012-01-1196) Robert Jesse Alley, Jonathan King, Lynn Gantt, Patrick Walsh, Douglas Nelson, Virginia Tech	Visualization of Partially Premixed Combustion of Gasoline-like Fuel Using High Speed Imaging in a Constant Volume Vessel (2012-01-1236) Liang Zheng, Yunliang Qi, Xu He, Zhi Wang, Tsinghua University	Octane Numbers of Ethanol-Gasoline Blends: Measurements and Novel Estimation Method from Molar Composition (2012-01-1274) James E. Anderson, Thomas G. Leone, Michael H. Shelby, Timothy J. Wallington, Ford Motor Company; Jeffrey J. Bizub, GE Energy Waukesha; Michael Foster, Michael G. Lynskey, BP Products North America Inc.; Dusan Polovina, AVL Powertrain Engineering Inc.	Pilot Injection Model for Small Diesel Cylinder (2012-01-1268) Giancarlo Chiatti, Fulvio Palmieri, Roma Tre University
2:00 p.m.	EcoCAR Technology Transfer: From the Competition to the Classroom (2012-01-1191) Marc Herniter, Zachariah Chambers, Rose Hulman Institute of Technology	An Optical Study of DMF and Ethanol Combustion Under Dual-Injection Strategy (2012-01-1237) Changzhao Jiang, Xiao Ma, Hongming Xu, University of Birmingham; Steve Richardson, Jaguar Land Rover	Experimental Investigation of Butanol Isomer Combustion in Spark Ignition Engines (2012-01-1271) Carol Regalbuto, Michael Pennisi, Benjamin Wigg, Dimitrios Kyritsis, University of Illinois Urbana-Champaign	Application of the Homogeneous Relaxation Model to Simulating Cavitating Flow of a Diesel Fuel (2012-01-1269) Kshitij Neroorkar, Univ. of Massachusetts-Amherst; Bradley Shields, Univ of Massachusetts-Amherst; Ronald O. Grover, Jr., Alejandro Plazas Torres, General Motors Company; David Schmidt, Univ of Massachusetts-Amherst
2:20 p.m.	Development, Verification, and Validation of Penn State Extended Range Electric Vehicle (2012-01-1190) Shawn Getty, Gary Neal, Daniel Haworth, Penn State University	UV-Visible Imaging of PCCI Engine Running with Ethanol/Diesel Fuel (2012-01-1238) Ezio Mancarusio, Bianca Maria Vaglieco, Istituto Motori CNR	Effect of Heat of Vaporization, Chemical Octane, and Sensitivity on Knock Limit for Ethanol - Gasoline Blends (2012-01-1277) Robert A. Stein, Dusan Polovina, Kevin Roth, AVL Powertrain Engineering Inc.; Michael Foster, Michael Lynskey, BP Products North America Inc.; Todd Whiting, Deere & Company; James E. Anderson, Michael H. Shelby, Thomas G. Leone, Ford Motor Company; Steven VanderGriend, ICM Inc.	

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THURSDAY, APRIL 26 - AFTERNOON Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	O2-33	W2-61	W2-66	W2-65
	EcoCAR Development (PFL110) The 2008-2011 EcoCAR: The NeXt Challenge student vehicle competition, sponsored by General Motors and the U.S. Department of Energy, tasked university teams with designing, implementing and refining advanced powertrains into a conventional crossover SUV. This session presents some final results from teams in the competition, highlighting the entire EcoCAR vehicle development process. Data from dynamometer as well as on-road testing is used to validate teams' modeling and simulation predictions. 1:00 p.m. - 4:00 p.m. Organizers: Brian Benoy, Kristen G. De La Rosa, Patrick M. Walsh, Argonne National Laboratory	Engine Flows and Combustion Diagnostics (PFL212) This session focuses on applying various sensors and diagnostics to examine the flow and combustion processes in both production engines and research environments. Examples of diagnostics of interest include, but are not limited to: pressure sensors, ion probes, exhaust gas composition analyzers, and various optical techniques. 1:00 p.m. - 3:00 p.m. Organizers: Oivind Andersson, Lund Univ.; Anand H. Gandhi, Ford Powertrain Research Lab.; Matthew J. Hall, Univ. of Texas-Austin; Benjamin Petersen, Sandia National Laboratories	Fuel & Additive Effects on SI Engine Performance (Part 2 of 2) (PFL203) This session focuses on the impact of conventional and alternative fuels as well as fuel additives on the operation, performance and emissions of SI engines. Papers focus on the impact of bio-derived fuels (ethanol, butanol and others) on engine design and performance as well as gasoline properties and additives, and their impact. 1:00 p.m. - 3:20 p.m. Organizers: Chris Hagen, Colorado State University; Gerald Micklow, East Carolina University Chairpersons: Gerald Micklow, East Carolina University	Fuel Injection and Sprays - Numerical (Part 3 of 3) (PFL210) This session is devoted to experimental and computational work in the area of fuel injection systems and sprays. Topics include: spray characterization, cavitation, multi-phase jet modeling, CFD models for spray processes, wall films and impingement, hydraulic circuit analysis, and dissolved gas effects. Studies of gasoline, diesel and alternative fuel sprays and fuel injection equipment are encouraged. 1:00 p.m. - 2:20 p.m. Organizers: Tarek M. Abdel-Salam, East Carolina University; Essam El-Hannouny, Argonne National Laboratory
2:40 p.m.	Modeling and Simulation of Inverter Switching Characteristics for HEV BLDC Motors (2012-01-1189) Brian Benoy, Argonne National Laboratory	Diesel Spray Ignition Detection and Spatial/Temporal Correction (2012-01-1239) Peter M. Lillo, Lyle M. Pickett, Sandia National Laboratories; Helena Persson, Oivind Andersson, Lund University; Sanghoon Kook, University of New South Wales	Charge Cooling Effects on Knock Limits in SI DI Engines Using Gasoline/Ethanol Blends: Part 1-Quantifying Charge Cooling (2012-01-1275) Emmanuel Kasseris, John Heywood, Sloan Automotive Laboratory, MIT	
3:00 p.m.	Impact of Supervisory Control on Criteria Tailpipe Emissions for an Extended-Range Electric Vehicle (2012-01-1193) Patrick Walsh, Argonne National Laboratory; Douglas Nelson, Virginia Tech		Charge Cooling Effects on Knock Limits in SI DI Engines Using Gasoline/Ethanol Blends: Part 2-Effective Octane Numbers (2012-01-1284) Emmanuel Kasseris, John Heywood, Sloan Automotive Laboratory, MIT	
3:20 p.m.	Hybrid Architecture Selection to Reduce Emissions and Petroleum Energy Consumption (2012-01-1195) Robert Jesse Alley, Jonathan King, Eli White, Douglas Nelson, Virginia Tech			
3:40 p.m.	Technical Keynote - Introduction to EcoCAR The NeXt Challenge Year Three: Vehicle Refinement and Testing (Oral Only) Patrick M. Walsh, Brian Benoy, Kristen G. De La Rosa, Argonne National Laboratory			
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THURSDAY, APRIL 26 - AFTERNOON Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM	
	O2-43	
	Heat Transfer and Advances in Thermal & Fluid Sciences - Lubrication and Vehicle Systems (PFL214) This session focuses on fundamental numerical (1D and 3D CFD) and experimental research in the areas of heat and mass transfer and fluid flow that impacts engine and vehicle performance and design. Subject areas include convection, conduction, radiation, porous media, phase change including boiling, condensation, melting and freezing. Application areas include, combustion, emissions, cooling, lubrication, exhaust, intake, fuel delivery, external air flow, under hood and under body. 1:00 p.m. - 3:00 p.m. Organizers: John Abraham, Purdue Univ.; Thomas Edward Briggs, Oak Ridge National Laboratory; Raj Ranganathan, Showatech Inc.; Martin Tuner, Lund Univ.; Tarek Abdel-Salam, East Carolina University Chairpersons: Tarek M. Abdel-Salam, East Carolina University; Thomas Edward Briggs, Southwest Research Institute; Raj Ranganathan, Showatech Inc.; Martin Tuner, Lund Univ.	
1:00 p.m.	Investigating the Potential to Reduce Crankshaft Main Bearing Friction During Engine Warm-up by Raising Oil Feed Temperature (2012-01-1216) Jean-Paul Zammit, Paul J. Shayler, Richard Gardiner, University of Nottingham; Ian Pegg, Ford Motor Co	
1:20 p.m.	The Effect of Piston Cooling Jets on Diesel Engine Piston Temperatures, Emissions and Fuel Consumption (2012-01-1212) David C. Luff, Theo Law, Paul J. Shayler, University of Nottingham; Ian Pegg, Ford Motor Co	
1:40 p.m.	An Experimental Characterization of Automatic Transmission Fluid Flowing Through Air Cooled Microchannel Heat Exchanger (2012-01-1211) Md Abdul Quaiyum, Amir Fartaj, Serena Askar, Univ. of Windsor	
2:00 p.m.	Thermal, Hydraulic and Drainable Performances of Slant Louver Fin for Automobile Applications (2012-01-1218) Hiechan Kang, Kunsan National Univ.; Kwangil Kim, Halla Climate Control Corp. (HCC)	
2:20 p.m.	Computational Investigation for Flow and Heat Transfer Characteristics of Automobile Windshield with Impinging Slot Jets (2012-01-1219) M Ashok Kumar, Kannan Kanniah, General Motors Technical Center, India	
2:40 p.m.	Effect of Environmental Temperature Rise on Automotive Performance & Fuel Consumption (Oral Only) R.K. Mandloi, A. Rehman, J.L. Bhagoria, Maulana Azad National Institute Of Tech.	
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Chat with the Expert: Motorsports (MSECCHAT100)	-	-	-	-	-	✓	D3-19	172
Chat with the Expert: Noise, Vibration and Harshness (NVH): Diesel Engine Noise (ACCHAT100)	-	-	-	✓	-	-	D3-19	168
Fire Safety (B200)	-	-	-	-	✓	-	D3-23	169
Human Factors in Driver Vision and Lighting (B301)	✓	-	-	-	-	-	D3-18	157
Human Factors in Driving and Automotive Telematics (B302)	-	-	-	-	✓	-	D3-17	169
Human Factors in Seating Comfort (B303)	✓	-	-	-	-	-	D3-17	157
Military Vehicle: Vehicle and Human Modeling and Simulation (MV102)	-	✓	-	-	-	-	D3-17	159
Motorsports Engineering (MSEC100)	-	-	-	-	-	✓	D3-18	172
Noise and Vibration (Part 1 of 2): Intake/Exhaust/PT and Chassis (AC200)	-	-	✓	-	-	-	D3-26	162
Noise and Vibration (Part 2 of 2): Vehicle Interior Comfort and Advanced Methods (AC200)	-	-	-	✓	-	-	D3-26	166
Occupant Protection:								
Accident Reconstruction (Part 1 & 2) (B400)	-	-	✓	✓	-	-	D3-28	162, 166
Biomechanics (B401)	-	-	✓	-	-	-	D3-20	162
Event Data Recorders (EDR) (B402)	-	-	-	-	✓	-	D3-28	169
Integrated Safety Systems (B411)	-	-	-	-	-	✓	D3-21	172
Occupant Restraints (Air Bags, Seat Belts, Knee Bolsters, Child Seats) (B403)	-	✓	-	-	-	-	D3-28	159
Pedestrian Safety (B404)	-	✓	-	-	-	-	D3-20	159
Rollover and Side Impact (B406)	✓	-	-	-	-	-	D3-22	157
Safety Test Methodology (Part 1 & 2) (B407)	✓	✓	-	-	-	-	D3-23	157, 161
Structural Crashworthiness and Occupant Safety (B409)	-	-	✓	-	-	-	D3-23	164
Steering and Suspension Technology Symposium (AC300)	-	-	-	-	✓	-	D3-18	169
Tire and Wheel Technology (AC400)	-	-	-	✓	-	-	D3-18	166
Vehicle Aerodynamics:								
(Part 1 of 6): Aerodynamic Development I (B500)	✓	-	-	-	-	-	D3-24/25	158
(Part 2 of 6): Aerodynamic Development II (B500)	-	✓	-	-	-	-	D3-24/25	161
(Part 3 and 4 of 6): Unsteady Aerodynamics / Experimental Test Facilities and Adjustments (B500)	-	-	✓	-	-	-	D3-24/25	164
(Parts 5 and 6 of 6): CFD Validation and Application / Heavy Truck Aerodynamics (B500)	-	-	-	-	✓	-	D3-24/25	171
Vehicle Dynamics, Stability and Control (Part 1 & 2) (AC500)	-	-	✓	✓	-	-	D3-17	164, 168

Technical Session Oral Evaluation Incentives

In an effort to collect more evaluation ratings for the technical session speakers, SAE will be holding daily drawings for anyone who completes an oral evaluation card distributed in technical session rooms. Simply complete the card, tear off the perforation with your name and contact number, and turn it in to the session moderator. Six (6) winners will be announced daily to receive \$25 gift certificates. Winners will be announced daily and posted in the technology lounges.

TUESDAY, APRIL 24 - MORNING

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	D3-18	D3-17	D3-22	D3-23
	Human Factors in Driver Vision and Lighting (B301) Visual perception continues to be a critical aspect of overall driver performance. The papers in this session highlight new developments designed to provide better support for driver rearward vision, better understanding of how to measure light and its effects on drivers' eyes, and better understanding of how drivers accomplish the visually difficult task of negotiating intersections. 10:00 a.m. - 12:00 p.m. Organizers: Michael J. Flannagan, Univ. of Michigan; Jianzhong Jiao, Osram Opto Semiconductors Inc.	Human Factors in Seating Comfort (B303) 10:00 a.m. - 11:20 a.m. Organizers: Jennifer M. Badgley, Lear Corp.; Currell L. Pattie; Marilyn Vaia, General Dynamics Land Systems	Occupant Protection: Rollover and Side Impact (B406) Papers and presentations in this session are related to vehicular rollover and side-impact. They cover various aspects of occupant safety, including vehicle design, restraint systems design, crash test analysis, CAE simulations and statistical trends analysis. 10:00 a.m. - 11:40 a.m. Organizers: Jarrod Carter, Origin Engineering; Donald Parker, Exponent Inc.; Jeffery W. Sankey, Transportation Research Center Inc.; Diana Kay Spurgeon, TRC Inc.; Mukul K. Verma, MP Holcomb Engineering Corp.	Occupant Protection: Safety Test Methodology (Part 1 of 2) (B407) Safety Test Methodology Session (Part 1 of 2) presents papers in advancement of auto-safety-related analytical/testing methods in rollover related crashes, including (1) A CAE method for simulating various vehicle types in ditch fall-over test, (2) Use of a roll simulation as a test device for parametric study establishing occupant response metrics for Recreational Off-Highway Vehicle (ROV) (3) biomechanical analysis of ROV riding and 90o overturns and (4) FMVSS 226 ejection mitigation test. 10:00 a.m. - 12:00 p.m. Organizers: Clifford C. Chou, Wayne State University; Anindya Deb, Indian Institute of Science; Jialiang Le, Ford Motor Co.; P. Miller II, MGA Research Corp. Chairpersons: Anindya Deb, Indian Institute Of Science; Helen A. Kalet, MGA Research Corp.; Robert W. McCoy, Ford Motor Co.; Feng Zhu, Wayne State University
10:00 a.m.	Test on US Market's Receptivity to Aspheric Driver Side Mirrors (2012-01-0076) Tausuke Mukai, Toshihiro Hashimoto, Honda Motor Co., Ltd.	Consumer Sensitivity to Vehicle Interior Component Adjustments (2012-01-0075) Javier Adolfo Alcazar, General Motors Company	Injury Risk Investigation of the Small, Rear-seat Occupant in Side Impact (2012-01-0092) Richard M. Morgan, George Washington Univ.; Paul Scullion, Global Automakers; Lilly Nix, Cing-Dao Kan, Vinay Nagabhushana, George Washington Univ; Kurt Shanks, Ravi Tangirala, Hyundai-Kia America Technical Center Inc	A Study of the Ditch Fall-over Test Method Using Numerical Simulation (2012-01-0094) Tatsuya Fukushima, Masafumi Shitamichi, Osamu Nishikata, Masamitsu Mori, Keiji Hatano, Toshikazu Torigaki, Nissan Motor Company Ltd.; Masato Nishi, Takahiko Miyachi, JSOL Corporation
10:20 a.m.	Usability Verification of Distance Reference Lines in the Side View Camera (2012-01-0077) Kei Oshida, Haruhiko Nishiguchi, Takashi Watanabe, Honda R&D Co. Ltd.	A Study on Design Factors of Gas Pedal Operation (2012-01-0073) Masayoshi Horiue, Ohtsubo tomonori, Hiroshi Okiyama, Mazda Motor Corp.; Yoshiyuki Tanaka, Toshio Tsuji, Hiroshima University	Development of Side Impact Dummy FE Models using Reverse Engineering (2012-01-0091) Takeshi Uriu, Tsuyoshi Yasuki, Satoshi Fukushima, Masaaki Kuwahara, Toyota Motor Corporation	S-E-A Roll Simulator as a Parametric Test Device (2012-01-1175) Elaine Castro, Douglas Morr, C. Brian Tanner, S-E-A Ltd.
10:40 a.m.	Validation of High Dynamic Range Photography as a Tool to Accurately Represent Low-Illumination Scenes (2012-01-0078) Jay Todd, Joseph Sala, Exponent Inc.; Genevieve Heckman, Exponent Inc; David Krauss, Exponent Failure Analysis	Seat Comfort as a Function of Occupant Characteristics and Pressure Measurements at the Occupant-Seat Interface (2012-01-0071) Anjan Vincent, Vivek D. Bhise, Pankaj Mallick, University of Michigan-Dearborn	Technical Feasibility Study on Avoidance or Mitigation of Side Collisions at Intersections (2012-01-0090) Jongsoo KIM, Jaewan LEE, KATRI; Eunsook KIM, SNU	Establishing Occupant Response Metrics on a Roll Simulator (2012-01-0099) Steven J. Yoder, Ohio State Univ.; Douglas R. Morr, Gary J. Heydinger, SEA, Ltd.; Dennis A. Guenther, Ohio State Univ.
11:00 a.m.	Interactions among Light Source Luminance, Illuminance and Size on Discomfort Glare (2012-01-0269) John Bullough, Kathryn Sweater Hickcox, Rensselaer Polytechnic Institute	Utilizing Finite Element Tools to Model Objective Seat Comfort Results (2012-01-0074) Daniel Dooge, Cécile Cabane, Christian Marca, Ramesh Dwarampudi, ESI Group; Daniel Cohen, General Motors Company; Sarah Pearson, General Motors LLC	Influence of Complying with FMVSS 226 (Ejection Mitigation) on Side Airbag Occupant Out of Position Injury Assessment (2012-01-0466) Jeff Dix, Selim Hammoud, Alex Cardinali, Nissan Technical Center North America, Inc.; Abe Mitchell, Daniel Fulk, Autoliv North America Inc	Biomechanics of Occupant Responses during Recreational Off-Highway Vehicle (ROV) Riding and 90-degree Tip-overs (2012-01-0096) William Newberry, Michael Carhart, Robert Larson, Amanda Bridges, Graeme Fowler, Exponent Inc.
11:20 a.m.	Vehicle Lighting and Modern Roundabouts: Implications for Pedestrian Safety (2012-01-0268) John D. Bullough, Nicholas P. Skinner, Rensselaer Polytechnic Institute		Comparison of Linear Variable Deceleration Rate Rollover Reconstruction to Steer-Induced Rollover Tests (2012-01-0469) Mark W. Arndt, Transportation Safety Tech. Inc.; Don Stevens, Stephen Arndt, SEFA Inc	Evaluation of Variation in the Excursion Measured in the FMVSS 226 Ejection Mitigation Test Resulting from Test Vehicle Setup (2012-01-0097) Joe Mueller, Nissan Technical Center North America, Inc.; Douglas Stein, Autoliv ASP; Jeff Dix, Nissan Technical Center North America, Inc.
11:40 a.m.	Analysis of Accident Types for Intersection Install Red Light Cameras (2012-01-0079) Sungjun Yoo, Traffic Safety Research & Engrg Planned by Human Factors Committee / Automobile Body Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00252, and also individually. To purchase visit collections.sae.org	Planned by Human Factors Committee / Automobile Body Activity	Planned by Occupant Protection Committee / Automobile Body Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00256, and also individually. To purchase visit collections.sae.org	Planned by Occupant Protection Committee / Automobile Body Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00256, and also individually. To purchase visit collections.sae.org

TUESDAY, APRIL 24 - MORNING Technical and Business Sessions		
TIME	SESSION TITLE, DESCRIPTION, AND ROOM	
	D3-24/25	
	Vehicle Aerodynamics (Part 1 of 6): Aerodynamic Development I (B500) This session deals with the aerodynamic development of vehicles or vehicle systems. Techniques used to optimize vehicle aerodynamic drag are discussed, including experimental as well as computational simulations. 10:00 a.m. - 11:40 a.m. Organizers: Mark E. Gleason, Arturo Guzman, Todd Lounsberry, Chrysler Group LLC	
10:00 a.m.	Adjoint Method for Aerodynamic Shape Improvement (2012-01-0167) Taeyoung Han, Shailendra Kaushik, General Motors Company; Ronald Gin, ESI Group; Emmanuel Bot, ESI	
10:20 a.m.	Aerodynamic Investigation of Vehicle Cooling-Drag (2012-01-0170) Dirk Baeder, Thomas Indinger, Nikolaus Adams, Technical Univ. of Munich; Peter Unterlechner, Audi AG	
10:40 a.m.	The Process of Making an Aerodynamically Efficient Car Body for the SAE Supermileage Competition (2012-01-0176) Louis Gagnon, Marc Richard, Guillaume Beardsell, Matthieu Boudreau, Université Laval	
11:00 a.m.	An Accurate, Extensive, and Rapid Method for Aerodynamics Optimization: The 50:50:50 Method (2012-01-0174) Ashok Khondge, Ansys India; Sandeep Sovani, ANSYS Inc.	
11:20 a.m.	The Aerodynamic Development of the Tesla Model S - Part 1: Overview (2012-01-0177) Robert Palin, Tesla Motors Inc.; Vincent Johnston, Tesla Motors Inc.; Shaun Johnson, Andrew D'Hooze, Tesla Motors Inc.; Bradley Duncan, Joaquin Ivan Gargoloff, Exa Corporation	
	Planned by Vehicle Aerodynamics Committee / Automobile Body Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00258 and SUB-TP-00004, and also individually. To purchase visit collections.sae.org	

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TUESDAY, APRIL 24 - AFTERNOON

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	D3-18	D3-17	D3-28	D3-20
	Automotive Lighting Technology Conference (B300) LED technology advancement continues in the past year. This leads to broader lighting applications. The latest studies presented in this session cover design strategy, thermal management and reliability related testing. Other topics in this session also centered on continuing improvement for lighting performance and product safety. 1:00 p.m. - 4:00 p.m. Organizers: Jianzhong Jiao, Osram Opto Semiconductors Inc.; Michael J. Flannagan, Univ. of Michigan Chairpersons: Jianzhong Jiao, Osram Opto Semiconductors Inc.; Rainer Neumann, Visteon Deutschland GmbH	Military Vehicle: Vehicle and Human Modeling and Simulation (MV102) Focused on unclassified analytical findings applicable to the military vehicle systems (manned and unmanned) and human body modeling. Vehicle modeling includes vehicle dynamics, track and terrain modeling, ride comfort, NRRM, advanced suspension technologies, control systems, real-time modeling, driving simulators, computational dynamics, etc. Human modeling includes human factors, blast simulations, etc. 1:00 p.m. - 4:00 p.m. Organizers: Nammalwar Purushothaman, BAE Systems; Amandeep Singh, US Army TARDEC; Guangtian Gavin Song, AM General LLC; Weiguo Zhang, Chrysler LLC; Mark Brudnak, US Army TACOM	Occupant Protection: Occupant Restraints (Air Bags, Seat Belts, Knee Bolsters, Child Seats) (B403) 1:00 p.m. - 4:00 p.m. Organizers: Robert Mehl, BAE Systems Inc.; Scott David D. Thomas, General Motors Company; Chris A. Van Ee, Design Research Engineering	Occupant Protection: Pedestrian Safety (B404) 1:00 p.m. - 4:00 p.m. Organizers: Carlos Arregui Dalmases; Jason R. Kerrigan, Univ. of Virginia
1:00 p.m.	Evolution of Luminaires in the Automotive Lighting Industry towards LEDs requires Revolution of Thermal Management (2012-01-0259) Boris Marovic, Mentor Graphics (Deutschland) GmbH; Andras Poppe, Gabor Molnar, Mentor Graphics	Multidisciplinary Design Optimization of a Ground Vehicle Track for Durability and Survivability (2012-01-0725) Nickolas Vlahopoulos, Univ. of Michigan; Matthew Castanier, US Army TARDEC; Nicholas Stowe; Eric Maes, Michigan Engineering Inc	A Study of Rear Seat 6-year-old Dummy Kinematics in Offset Frontal Crashes (2012-01-0080) Takashi Deguchi, Akira Yamaguchi, Kaoru Tatsu, Tomosaburo Okabe, Nissan Motor Company Ltd.	Comparison of Responses of the Flex-PLI and TRL Legform Impactors in Pedestrian Tests (2012-01-0270) Koji Mizuno, Takaharu Ueyama, Nagoya Univ.; Daisuke Nakane, Shingo Wanami, DENSO CORPORATION
1:20 p.m.	LED Design for Light-Guides in Automotive Lighting Applications (2012-01-0262) Peter Brick, Osram Opto Semiconductors GmbH	Sandwich Plates with a Compressible Core Impacted by Blast Loading (2012-01-0726) Terry John Hause, TARDEC	Seat Belt Restraint Evidence Generated in the Presence of Fractured Glass (2012-01-0084) Marie Moralde, Alan Dibb, Janine Smedley, Michael Carhart, Exponent Inc; Eddie Cooper, B33 Consulting Inc	Development of Injury Probability Functions for the Flexible Pedestrian Legform Impactor (2012-01-0277) Yukou Takahashi, Honda R&D Co., Ltd.; Fumio Matsuoka, Toyota Motor Corporation; Hiroyuki Okuyama, Nissan Motor Company Ltd.; Iwao Imaizumi, Honda R&D Co., Ltd.
1:40 p.m.	Future Opportunities with LED Front Lighting (2012-01-0264) Rainer Neumann, Visteon Innovation & Technology GmbH	A Novel Approach for Combat Vehicle Mobility Definition and Assessment (2012-01-0302) Macam S. Dattathreya, TARDEC; Harpreet Singh, Wayne State University	Simulation and Physical Measurement of Seamless Passenger Airbag Door Deployment (2012-01-0082) Qing Guo, Yanfeng Visteon Auto Trim Sys Co., Ltd.; Bing Liu, Yanfeng Visteon Auto Trim Sys Co Ltd	Factors that Influence the Performance of Approaching Vehicle Sound for Pedestrian (VSP) Systems (2012-01-0991) Heather Konet, Manabu Sato, Nissan Technical Center North America, Inc.
2:00 p.m.	LED Light Source and LED Headlamp Architecture (2012-01-0263) Josef Schug, Philips Technologie GmbH; Norbert Lesch, Philips Lumileds	Real-Time Driving Simulation of Magneto-Rheological Active Damper Stryker Suspension (2012-01-0303) Michael Megiveron, Amandeep Singh, US Army TARDEC	Single Stage Driver Airbag Module Development for OOP (2012-01-0083) Young Seok Kim, Kurt Fischer, Eyad Nayef, TRW Vehicle Safety Systems, Inc.; Hyeong Ho Choi, Hyundai-Kia Motors	Safety Benefits of Automatic Emergency Braking Systems in France (2012-01-0273) Brian N. Flides, Monash Univ.
2:20 p.m.	Testing LEDs for Automotive Lighting Applications (Oral Only) Jianzhong Jiao, Osram Opto Semiconductors Inc.; Christian Jung, Osram Opto Semiconductors GmbH		Panel Discussion: SAE Ground Vehicle Standards update Moderator & Panelist: Douglas J. Stein, Autolive ASP	Different Factors Influencing Post-crash Pedestrian Kinematics (2012-01-0271) Yoshiko Kawabe, Toshiyuki Asai, Daisuke Murakami, Chinmoy Pal, Tomosaburo Okabe, Nissan Motor Company Ltd.
2:40 p.m.	Thermoplastic Reflector Design for Robust Optical Performance (2012-01-0266) Triloka Tankala, Poovanna TK, Arunachala p, GE India Technology Center Pvt Ltd; Russell Bloomfield, James Wilson, SABIC Innovative Plastics		Panelists: Michael Haldenwanger, General Motors Company Miriam A. Manary, Transportation Research Institute John M. Mourer, Key Safety Systems, Inc.	An Examination of the Factors that Affect Testing Variation in Pedestrian Head Impact Equipment (2012-01-0278) Patrick Grattan, Jeff Dix, Jovo Nastovski, Nissan North America Inc.
3:00 p.m.	Networking Break			Influencing Factors of Contact Force Distribution in Pedestrian Upper Legform Impact with Vehicle Front-End (2012-01-0272) Bingbing Nie, Jun Huang, Yong Xia, Qing Zhou, Tsinghua University

Continued on next page

TUESDAY, APRIL 24 - AFTERNOON

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	D3-18	D3-17	D3-28	D3-20
	Automotive Lighting Technology Conference (B300) LED technology advancement continues in the past year. This leads to broader lighting applications. The latest studies presented in this session cover design strategy, thermal management and reliability related testing. Other topics in this session also centered on continuing improvement for lighting performance and product safety. 1:00 p.m. - 4:00 p.m. Organizers: Jianzhong Jiao, Osram Opto Semiconductors Inc.; Michael J. Flannagan, Univ. of Michigan Chairpersons: Jianzhong Jiao, Osram Opto Semiconductors Inc.; Rainer Neumann, Visteon Deutschland GmbH	Military Vehicle: Vehicle and Human Modeling and Simulation (MV102) Focused on unclassified analytical findings applicable to the military vehicle systems (manned and unmanned) and human body modeling. Vehicle modeling includes vehicle dynamics, track and terrain modeling, ride comfort, NRMM, advanced suspension technologies, control systems, real-time modeling, driving simulators, computational dynamics, etc. Human modeling includes human factors, blast simulations, etc. 1:00 p.m. - 4:00 p.m. Organizers: Nammalwar Purushothaman, BAE Systems; Amandeep Singh, US Army TARDEC; Guangtian Gavin Song, AM General LLC; Weiguo Zhang, Chrysler LLC; Mark Brudnak, US Army TACOM	Occupant Protection: Occupant Restraints (Air Bags, Seat Belts, Knee Bolsters, Child Seats) (B403) 1:00 p.m. - 4:00 p.m. Organizers: Robert Mehl, BAE Systems Inc.; Scott David D. Thomas, General Motors Company; Chris A. Van Ee, Design Research Engineering	Occupant Protection: Pedestrian Safety (B404) 1:00 p.m. - 4:00 p.m. Organizers: Carlos Arregui Dalmases; Jason R. Kerrigan, Univ. of Virginia
3:20 p.m.	Turn Signal Usage Rate Results: A Comprehensive Field Study of 12,000 Observed Turning Vehicles (2012-01-0261) Richard Ponziani, RLP Engineering			Part 581, IIHS Damageability and Lower Leg Impact Compliant Bumper - Challenges and Solutions (2012-01-0274) Dhanendra Nagwanshi, GE India Technology Center Pvt, Ltd.; Matthew Marks, SABIC Innovative Plastics; Somasekhar Bobba, GE India Technology Center Pvt, Ltd.
3:40 p.m.	Progress of Automotive Lighting Technology (Oral Only) Gunnar Luettgens, Helmut Tiesler-Wittig, Lukas Kuepper, Thorsten Anger, Lars Dabringhausen, Michael Haacke, Bernd Schoenfelder, Philips Automotive Lighting			
4:00 p.m.	Push Type Switch with Mechanical Latch for Roof Lamp Application (2012-01-0265) Suhas Dodamani, Tata Technologies; Rajnish Singh, Tata Motors			
4:20 p.m.	Innovative Approaches to Global Demands of the Exterior Signal Lighting (2012-01-0260) Miroslav Kropac, Vladimir Kubena, Visteon Autopal SRO			
			Child Dummies Restrained by an ISOFIX CRS and a Universal CRS in Different Crash Pulses and the Effect of a Crash Pulse on Dummy Accelerations (Written Only -- No Oral Presentation) (2012-01-0085) Jia Hu, Jianyong Ma, Jia Fang, SAIC MOTOR CORPORATION LIM	
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TUESDAY, APRIL 24 - AFTERNOON

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM	
	D3-23	D3-24/25
	Occupant Protection: Safety Test Methodology (Part 2 of 2) (B407) Safety Test Methodology Session (Part 2 of 2) presents papers in advancement of auto- safety-related analytical/testing methods in frontal and side crashes, including (1) full-scale moving motorcycle into moving car crash testing; (2) practical vs. RSM-based MDO in vehicle body design; (3) Hybrid III head/neck analysis of Nij in NCAP; (4) LW vehicle front end structure for pedestrian protection; (5) a pole side impact sled test method; (6) aortic mechanics in high-speed racing crashes. 1:00 p.m. - 3:00 p.m. Organizers: Clifford C. Chou, Wayne State University; Anindya Deb, Indian Institute of Science; Jialiang Le, Ford Motor Co.; P. Miller II, MGA Research Corp. Chairpersons: Troy Coopridge, Takata Holdings Inc.; Jialiang Le, Ford Motor Co.	Vehicle Aerodynamics (Part 2 of 6): Aerodynamic Development II (B500) 1:00 p.m. - 3:40 p.m. Organizers: Adrian P. Gaylard, Jaguar Land Rover; Mark E. Gleason, Chrysler Group LLC
1:00 p.m.	Full-Scale Moving Motorcycle into Moving Car Crash Testing for Use in Safety Design and Accident Reconstruction (2012-01-0103) James W. Smith, Todd A. Frank, Kelly E. Bosch, Graeme F. Fowler, Exponent, Inc.; Jarrod W. Carter, Origin Engineering, LLC	Aerodynamic Effects of Different Tire Models on a Sedan Type Passenger Car (2012-01-0169) Christoffer Landstrom, Chalmers Univ. of Technology; Linda Josefsson, Tim Walker, Volvo Car Corporation; Lennart Lofdahl, Chalmers Univ of Technology
1:20 p.m.	Practical Versus RSM-Based MDO in Vehicle Body Design (2012-01-0098) Anindya Deb, Indian Institute Of Science; Clifford C. Chou, Wayne State University; Utpal Dutta, Univ. of Detroit Mercy; Srinivas Gunti, Indian Institute of Science	A Study of an Active Rear Diffuser Device for Aerodynamic Drag Reduction of Automobiles (2012-01-0173) Seung-On Kang, Jun-Ho Cho, Sang-Ook Jun, Hoon-Il Park, Ki-Sun Song, Seoul National University; Jung-Do Kee, Hyundai & Kia Corp; Kyu-Hong Kim, Dong-Ho Lee, Seoul National University
1:40 p.m.	Hybrid III Head/Neck Analysis Highlighting Nij in NCAP (2012-01-0102) Jianping Wu, Yibing Shi, Brian Beaudet, Guy Nusholtz, Chrysler Group LLC	Numerical Flow Simulation for a Generic Vehicle Body on Wheels with Variable Underbody Diffuser (2012-01-0172) Angel Humnic, Gabriela Humnic, Transilvania University
2:00 p.m.	Design of Light-Weight Vehicle Front End Structure for Pedestrian Protection (2012-01-1176) Sandeep Kulkarni, Dinesh Mana, GE INDIA TECHNOLOGY CENTER LTD	Bluff Body Drag Reduction with Ventilated Base Cavities (2012-01-0171) Jeff Howell, Tata Motors European Technical Centre; David Sims-Williams, Adam Sprot, Fred Hamlin, Robert Dornay, Durham University
2:20 p.m.	Development of Pole Side Impact Sled Test Method using Multiple Actuators for EuroNCAP (2012-01-0095) Akira Kinoshita, Naoki Shigeno, Tatsuya Fukushima, Nissan Motor Company Ltd.; Hermann Steffan, Technische Univ of Graz	Networking Break
2:40 p.m.	Aortic Mechanics in High-Speed Racing Crashes (2012-01-0101) Aditya Belwadi, Suresh Mahi, Paul C. Begeman, John Melvin, King H. Yang, Wayne State Univ.	Introduction of a New Realistic Generic Car Model for Aerodynamic Investigations (2012-01-0168) Angelina I. Heft, Thomas Indinger, Nikolaus A. Adams, Technische Universität München
3:00 p.m.		The Aerodynamic Development of the Tesla Model S - Part 2: Wheel Design Optimization (2012-01-0178) Andrew D'Hooge, Robert B. Palin, S. Johnson, Tesla Motors Inc.; Bradley Duncan, Joaquin Ivan Gargoloff, Exa Corporation
		Numerical and Experimental Investigation on Vehicles in Platoon (Written Only -- No Oral Presentation) (2012-01-0175) Paolo Schito, Francesco braghin, Politecnico di Milano
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WEDNESDAY, APRIL 25 - MORNING

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	D3-21	D3-26	D3-28	D3-20
	Active Safety (Part 1 of 2) (AC600) Automotive Active Safety Systems help prevent accidents or mitigate accident severity. Some active safety systems provide warnings to the driver in critical situations, while other systems respond to threats by automatically braking and steering the vehicle. Active Safety systems are enabled by on-board sensors, together with environmental sensors such as radars and cameras. In the future, car-to-car and car-to-infrastructure communication will enhance system functionality and performance. 8:00 a.m. - 10:40 a.m. Organizers: Joseph Kianianthra; Walter Kosiak, Delphi Corp. Chairpersons: Walter Kosiak, Delphi Corp.	Noise and Vibration (Part 1 of 2): Intake/Exhaust/PT and Chassis (AC200) 8:00 a.m. - 10:20 a.m. Organizers: James M. Nieters, NVH Sensors to Solutions; Christopher E. Shaw, Visteon Corp.; Saeed Siavoshani, Dow Chemical; In-Soo Suh, KAIST	Occupant Protection: Accident Reconstruction (Part 1 of 2) (B400) 8:00 a.m. - 11:40 a.m. Organizers: Matthew Brach, Brach Engineering; Raymond M. Brach; Geoff Germane, Germane Engineering; Stein E. Husher, Michael S. Varat, KEVA Engineering	Occupant Protection: Biomechanics (B401) 8:00 a.m. - 11:40 a.m. Organizers: Elizabeth Mary Fievisohn, Virginia Tech.; Jacob L. Fisher, Exponent Inc.; Warren N. Hardy, Virginia Tech.; David Raymond, California State University Los Angeles
8:00 a.m.	Benefit Estimation of a Lane Departure Warning System using ASSTREET (2012-01-0289) Shin Tanaka, Tsutomu Mochida, Toyota Motor Corporation; Masami Aga, Toyota Motor North America, Inc.; Jun Tajima, Advanced Solutions Technology JAPAN	Development of NV Performance of New Rear Suspension and New Drivetrain for Rear-Drive Vehicles (2012-01-0729) Takayuki Miyakawa, Hiromichi Akamatsu, Toshio Enomoto, Atsushi Suzuki, Yusuke Kageyama, Hisayoshi Matsuoka, Nissan Motor Company Ltd.	Acceleration and Braking Performance of School Buses (2012-01-0593) Charles Funk, Exponent Inc.; Timothy Howery, Michigan State University; Joseph Jager, ACP Consultant Inc.; Daniel Lee, Michigan State University	Headform Impact Tests to Assess Energy Management of Seat Back Contact Points Associated with Head Injury for Pediatric Occupants (2012-01-0561) Kristy B. Arbogast, Matthew R. Maltese, Caitlin Locey, Children's Hospital of Philadelphia; Katarina Bohman, Autoliv Research
8:20 a.m.	Towards "Vision Zero" (2012-01-0288) Alexander E. Schanz, Reinhold Hamann, Robert Bosch GmbH	Correlation of Axle Build Parameters to End-of-Line NVH Test Performance Part I: Preparing the Data for Multivariate Regression Analysis (2012-01-0727) Glenn Meinhardt, American Axle & Mfg Inc.; Sankar sengupta, Oakland University	Low Speed Acceleration of Tractor-Semitrailers Equipped with Automated Transmissions (2012-01-0597) Kerry Drew, Hrycay Consulting Engineers Inc.; Sebastian Van Nooten, Jeffrey Gervais, Hrycay Consulting Engineers Inc	Assessment of the Simulated Injury Monitor (SI-Mon) in Analyzing Head Injuries in Pedestrian Crashes (2012-01-0569) Kyle A. Ott, Johns Hopkins Applied Physics Lab; John F. Wiechel, The Ohio State Univ.; Dennis A. Guenther, Ohio State Univ.; Jason Stammen, NHTSA; Ann E. Mallory, Transportation Research Center Inc.
8:40 a.m.	The Relationship between Driver Acceptance and System Effectiveness in Car-Based Collision Warning Systems: Evidence of an Overreliance Effect in Older Drivers? (2012-01-0282) Scott Stevens, Volpe Center, U.S. DOT	Correlation of Axle Build Parameters to End-of-Line NVH Test Performance Part II: Multivariate Regression Analysis (2012-01-0728) Glenn Meinhardt, American Axle & Mfg Inc.; Sankar sengupta, Oakland University	Application of Air Brake Performance Relationships in Accident Reconstruction and Their Correlation to Real Vehicle Performance (2012-01-0609) Ashley L. Dunn, SEA, Ltd.; Dennis Guenther, Ohio State Univ; Richard Radlinski, Link Engineering Co	Fracture Modeling Inputs for a Human Body Model via Inference from a Risk Curve: Application for Skull Fracture Potential (2012-01-0562) Tony R. Laituri, Raed Essa El-jawahri, Ford Motor Co.
9:00 a.m.	Development of a Coordinated Strategy of Steering Torque Overlay and Differential Braking for Unintended Lane Departure Avoidance (2012-01-0281) Junyung Lee, Kyongsu Yi, Seoul National Univ	Acoustic Characterization of Automotive Mufflers - Part I: Test Rig Design and Evaluation of Acoustic Properties (2012-01-0800) Giovanni Ferrara, Lorenzo ferrari, Giovanni Vichi, Giulio Lenzi, Davide Biliotti, Univ of Florence	Analysis of Motorcycle Braking Performance and Associated Braking Marks (2012-01-0610) Ashley L. Dunn, Michael Dorohoff, Fawzi Bayan, Anthony Cornetto, Ronny Wahba, SEA Limited; Masahiro Chuma; Dennis Guenther, Ohio State Univ; Nicholas Eiselstein, SEA Ltd	Neck Loads in Playground Activities in a Pediatric Population (2012-01-0560) William R. Bussone, Michael Prange, Robert Thomas Bove, Thomas Daniel, Exponent Inc.
9:20 a.m.	Networking Break	Acoustic Characterization of Automotive Mufflers - Part II: Validation of the Numerical Models by Means of Experimental Data (2012-01-0801) Giovanni Ferrara, Lorenzo ferrari, Giovanni Vichi, Giulio Lenzi, Davide Biliotti, Univ of Florence	Dry Pavement Friction Reductions Due to Sanding Applications (2012-01-0603) Duane R. Meyers, Timothy P. Austin, Wisconsin State Patrol	An Investigation of Injury Factors Concerning Drivers in Vehicles Involved in Small-Overlap Frontal Crashes (2012-01-0599) Takahiro Kikuchi, Tomoyuki Nakao, Taisuke Watanabe, Hidetsugu Saeki, Tomosaburo Okabe, Nissan Motor Company Ltd.
9:40 a.m.	Efficacy and Usage Patterns for Three Types of Rearview Camera Displays During Backing Up (2012-01-0287) Robyn Kim, Robert Rauschenberger, Genevieve Heckman, Doug Young, Robert Lange, Exponent, Inc.	The Identification of Noise Source in Diesel Engine Based on the Cepstrum Analysis of Sound and Vibration Signals (2012-01-0802) Xingyu Liang, Kang Yang, Ge-Qun Shu, lihui dong, yifan Mei, Yuesen Wang, State Key Laboratory of Engines	Rollout Deceleration of Modern Passenger Vehicles (2012-01-0616) Kirsten White, Raymond Merala, Daniel Desautels, Tim Ellis-Caleo, Talas Engineering Inc.	Kinematics Validation of Age-Specific Restrained 50 th Percentile Occupant FE Model in Frontal Impact (2012-01-0565) Yuichi Ito, Yasuhiro Dokko, Yasuki Motozawa, Honda R&D Co., Ltd.; Fumie Mori, Kazuki Ohashi, PSG

Continued on next page

WEDNESDAY, APRIL 25 - MORNING

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	D3-21	D3-26	D3-28	D3-20
	Active Safety (Part 1 of 2) (AC600) Automotive Active Safety Systems help prevent accidents or mitigate accident severity. Some active safety systems provide warnings to the driver in critical situations, while other systems respond to threats by automatically braking and steering the vehicle. Active Safety systems are enabled by on-board sensors, together with environmental sensors such as radars and cameras. In the future, car-to-car and car-to-infrastructure communication will enhance system functionality and performance. 8:00 a.m. - 10:40 a.m. Organizers: Joseph Kianianthra; Walter Kosiak, Delphi Corp. Chairpersons: Walter Kosiak, Delphi Corp.	Noise and Vibration (Part 1 of 2): Intake/Exhaust/PT and Chassis (AC200) 8:00 a.m. - 10:20 a.m. Organizers: James M. Nieters, NVH Sensors to Solutions; Christopher E. Shaw, Visteon Corp.; Saeed Siavoshani, Dow Chemical; In-Soo Suh, KAIST	Occupant Protection: Accident Reconstruction (Part 1 of 2) (B400) 8:00 a.m. - 11:40 a.m. Organizers: Matthew Brach, Brach Engineering; Raymond M. Brach; Geoff Germane, Germane Engineering; Stein E. Husher, Michael S. Varat, KEVA Engineering	Occupant Protection: Biomechanics (B401) 8:00 a.m. - 11:40 a.m. Organizers: Elizabeth Mary Fievisohn, Virginia Tech.; Jacob L. Fisher, Exponent Inc.; Warren N. Hardy, Virginia Tech.; David Raymond, California State University Los Angeles
10:00 a.m.	Extension of the Honda-DRI "Safety Impact Methodology" (SIM) for the NHTSA Advanced Crash Avoidance Technology (ACAT) II Program and Application to the Evaluation of a Pre-Production Head-On Crash Avoidance Assist System - Progress Report (2012-01-0291) John Zellner, Michael Van Auken, Jordan Silberling, Joseph Kelly, Brad Hagoski, Dynamic Research Inc; Yoichi Sugimoto, Yoshihiro Urai, Honda R&D Co Ltd	Cord-reinforced composite exhaust hangers for optimizing NVH, durability and positioning in automotive applications (2012-01-0803) Joachim Reihle, Klaus Steinmaier, Ernst Hahn, SGF GmbH; Donald Parker, Exponent Inc	An Integrated Model of Rolling and Sliding in Rollover Crashes (2012-01-0605) James Funk, Jeffrey Wirth, Enrique Bonugli, Richard Watson, Biodynamic Research Corp; Alan Asay, Woolley Engineering Research	Tractor-Semitrailer Driver and Sleeping Compartment Occupant Responses to Low-Speed Impacts (2012-01-0566) Joseph C. McGowan, McGowan Associates, Inc.; William Bussone, Christine Raasch, James W. Smith, Janine Smedley, Exponent Inc.
10:20 a.m.	Field Relevance of the New Car Assessment Program Lane Departure Warning Confirmation Test (2012-01-0284) Kristofer D. Kusano, Hampton C. Gabler, Virginia Tech		A Critique of Critical Speed Yaw Mark Research (2012-01-0600) Shane Richardson, Tia Orton, Nikola Josevski, Wei Pei (Tandy) Pok, Andreas Sandvik, Chris Jones, Delta-V Experts	Fidelity of Biodynamic Simulation Models for Low Speed Collinear Rear Crash Conditions (2012-01-0570) Mark S. Erickson, Hayes + Associates
10:35 a.m.			Empirical Testing of Vehicular Rotational Motion (2012-01-0602) Duane R. Meyers, Thomas W. Parrott, Timothy P. Austin, Wisconsin State Patrol	
11:00 a.m.			Analysis of Critical Speed Yaw Scuffs Using Spiral Curves (2012-01-0606) Jeremy Daily, University of Tulsa	
11:20 a.m.			Comparison of Calculated Speeds for a Yawing and Braking Vehicle to Full-Scale Vehicle Tests (2012-01-0620) Neal Carter, Gray Beauchamp, Nathan A. Rose, Kineticorp LLC	
		Reduction of exhaust noise by means of thermal acoustics (Written Only -- No Oral Presentation) (2012-01-0804) Emanuele Milani, Costanza Paze, Massimo Ambrosino, Pierangelo Pagliano, Magneti Marelli		
	Planned by Automobile Chassis Activity / EMB Land and Sea Group The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00242, and also individually. To purchase visit collections.sae.org	Planned by Noise and Vibration Committee / Automobile Chassis Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00239, and also individually. To purchase visit collections.sae.org	Planned by Occupant Protection Committee / Automobile Body Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00253 and SUB-TP-00006, and also individually. To purchase visit collections.sae.org	The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00254 and SUB-TP-00007, and also individually. To purchase visit collections.sae.org

WEDNESDAY, APRIL 25 - MORNING Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM		
	D3-23	D3-24/25	D3-17
	Occupant Protection: Structural Crashworthiness and Occupant Safety (B409) Papers advancing the science of occupant safety in vehicle collisions. 8:00 a.m. - 11:00 a.m. Organizers: Saeed Barbat, Jamel E. Belwafa, Ford Motor Co.	Vehicle Aerodynamics (Part 3 and 4 of 6): Unsteady Aerodynamics / Experimental Test Facilities and Adjustments (B500) 8:00 a.m. - 11:40 a.m. Organizers: Edward G. Duell, Jacobs Technology Inc.; Thomas N. Ramsay, Honda R&D Americas Inc.; David Sims-Williams, Durham Univ.; Sandeep Sovani, ANSYS Inc.; Mark E. Gleason, Chrysler Group LLC	Vehicle Dynamics, Stability and Control (Part 1 of 2) (AC500) 8:00 a.m. - 10:40 a.m. Organizers: W. Riley Garrett, Paul Grygier, National Hwy Traffic Safety Admin; Mark Heitz, Transportation Research Center Inc.; Gary J. Heydinger, SEA Limited; David R. Mikesell, Ohio Northern Univ.; Mohamed Kamel Salaani, Transportation Research Center Inc.
8:00 a.m.	An Adaptive Response Surface Method for Crashworthiness Optimization (Oral Only) Lei Shi, Shanghai Jiao Tong University & Ford Motor Company Intern; Ren-Jye Yang, Ford Motor Company; Ping Zhu, Shanghai Jiao Tong University	Quantitative Representations of Aerodynamic Effects on Handling Response and Flat Ride of Vehicles (2012-01-0445) Atsushi Ogawa, Susumu Mashio, Shujiro Yano, Tetsuhiro Kawamura, Honda R&D Co., Ltd.	Recreational Off-Highway Vehicle (ROV) Handling and Control (2012-01-0239) Jeffrey C. Brown, Robert Larson, Graeme Fowler, Robert Kuhn, Exponent Inc.
8:20 a.m.	Response Characteristics of the High Frequency Crash Data in Frontal Crashes (2012-01-0572) Jienan Zeng, Tatsuji Osaki, Fang Yuan, Keihin Corp	Validation and Modeling of Transient Aerodynamic Loads Acting on a Simplified Passenger Car Model in Sinusoidal Motion (2012-01-0447) Mitsuyoshi Kawakami, Norikazu Sato, Toyota Central R&D Labs., Inc.; Peter Aschwanden, Juerg Mueller, RUAG Aviation, RUAG Schweiz AG; Yoshihiro Kato, Masaki Nakagawa, Eiichi Ono, Toyota Central R&D Labs., Inc.	Validation of a Roll Simulator for Recreational Off-Highway Vehicles (2012-01-0241) Scott Bradley Zagorski, Dennis Guenther, Ohio State Univ.; Gary Heydinger, Anmol Sidhu, SEA Ltd
8:40 a.m.	Injury Rates for Older and Younger Belted Drivers in Traffic Accidents (2012-01-0573) Dietmar Otte, Birgitt Wiese, Medical Univ. Hannover	Assessment of a Vehicle's Transient Aerodynamic Response (2012-01-0449) Nicholas Oettle, Oliver Mankowski, David Sims-Williams, Robert Dominy, Durham Univ; Claire Freeman, Adrian Gaylard, Jaguar Land Rover	Combining Regenerative Braking and Anti-Lock Braking for Enhanced Braking Performance and Efficiency (2012-01-0234) Martin Rosenberger, Technische Universitaet Muenchen; Richard Anton Uhlig; Tilo Koch, AUDI AG; Markus Lienkamp, Technische Universitaet Muenchen
9:00 a.m.	Further Validation of Age-Dependent FE Models of a Mid-Sized Male Thorax (2012-01-0582) Raed E. El-jawhri, Tony R. Laituri, Agnes S. Kim, Ford Motor Co.	Unsteady Vehicle Aerodynamics during a Dynamic Steering Action: 1st Report, On-Road Analysis (2012-01-0446) Yoshihiro Okada, Takahide Nouzawa, Satoshi Okamoto, Takuya Fujita, Takashi Kamioka, Mazda Motor Corp; Makoto Tsubokura, Hokkaido Univ	Enhancement of Yaw and Roll Stability for Trucks by Estimating Payload Conditions (2012-01-0230) Hideaki Koto, Toshihisa Kato, Chihiro Nitta, Koji Suzuki, Tetsuya Yamada, Advics Co., LTD.
9:20 a.m.	Networking Break	Unsteady Vehicle Aerodynamics during a Dynamic Steering Action: 2nd Report, Numerical Analysis (2012-01-0448) Makoto Tsubokura, Yuki Ikawa, Hokkaido Univ.; Takuji Nakashima, Hiroshima Univ.; Yoshihiro Okada, Takashi Kamioka, Takahide Nouzawa, Mazda Motor Corp.	Understeer Concepts with Extensions to Four-Wheel Steer, Active Steer, and Time Transients (2012-01-0245) Richard Topping, General Motors Company (Retired)
9:40 a.m.	Optimization Strategies to Explore Multiple Optimal Solutions and Its Application to Restraint System Design (2012-01-0578) Zhendan Xue, Sumeet Parashar, ESTECO North America; Guosong Li, Yan Fu, Ford Motor Co.	Networking Break	Experimental Investigation of a Hydraulically Interconnected Suspension in Vehicle Dynamics and Stability Control (2012-01-0240) Lifu Wang, Nong Zhang, University of Technology, Sydney; Haiping Du, University of Wollongong
10:00 a.m.	The Development of the Current Australian Statutory Write-Off Criteria for Damaged Vehicle Repair (2012-01-0576) Shane Richardson, Delta-V Experts; Geoff Hughes, NMVTRC/CAR-SAFE; Tandy Wei Pei Pok, Nikola Josevski, Tia Orton, Chris Jones, Delta-V Experts	CFD Analysis of Various Automotive Bodies in Linear Static Pressure Gradients (2012-01-0298) Mark Gleason, Chrysler Group LLC	Simulation-based Certification of ESC Systems for Passenger Vehicles in Europe (2012-01-0235) Karl Michael Hahn, Henning Holzmann, Florian Weyer, Mathias Roemer, Adam Opel AG; Jonathan Webb, Sandro Boltshauser, IDIADA Automotive Technology SA

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WEDNESDAY, APRIL 25 - MORNING Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM		
	D3-23	D3-24/25	D3-17
	Occupant Protection: Structural Crashworthiness and Occupant Safety (B409) Papers advancing the science of occupant safety in vehicle collisions. 8:00 a.m. - 11:00 a.m. Organizers: Saeed Barbat, Jamel E. Belwafa, Ford Motor Co.	Vehicle Aerodynamics (Part 3 and 4 of 6): Unsteady Aerodynamics / Experimental Test Facilities and Adjustments (B500) 8:00 a.m. - 11:40 a.m. Organizers: Edward G. Duell, Jacobs Technology Inc.; Thomas N. Ramsay, Honda R&D Americas Inc.; David Sims-Williams, Durham Univ.; Sandeep Sovani, ANSYS Inc.; Mark E. Gleason, Chrysler Group LLC	Vehicle Dynamics, Stability and Control (Part 1 of 2) (AC500) 8:00 a.m. - 10:40 a.m. Organizers: W. Riley Garrott, Paul Grygier, National Hwy Traffic Safety Admin; Mark Heitz, Transportation Research Center Inc.; Gary J. Heydinger, SEA Limited; David R. Mikesell, Ohio Northern Univ.; Mohamed Kamel Salaani, Transportation Research Center Inc.
10:20 a.m.	Classifiers to Augment the CDC System to Distinguish the Role of Structure in a Frontal Impact Taxonomy (2012-01-0575) Dale E. Halloway, Frank Pintar, Medical College of Wisconsin; James Saunders, NHTSA; Aida Barsan-Anelli, Information Systems and Services, Inc.	The Ground Simulation Upgrade of the Large Wind Tunnel at the Technische Universität München (2012-01-0299) Steffen Mack, Thomas Indinger, Nikolaus A. Adams, Technical University of Munich; Peter Unterlechner, Audi AG	Active Yaw Control of a Vehicle using a Fuzzy Logic Algorithm (2012-01-0229) Simanta Ghosh, Indian Institute of Technology; Anindya Deb, Manoj Mahala, Indian Institute Of Science; Morteza Tanbakuchi, Matthew Makowski, Ford Motor Company
10:40 a.m.	Moving Deformable Barrier Test Procedure for Evaluating Small Overlap/Oblique Crashes (2012-01-0577) James Saunders, Matthew Craig, Daniel Parent, NHTSA	The Honda R&D Americas Scale Model Wind Tunnel (2012-01-0301) James McMillen, Honda R&D Americas, Inc.; Joel Walter, Jacobs; Mathieu Geslin, Honda R&D Americas, Inc.	
11:00 a.m.		The Windshear Rolling Road Wind Tunnel (2012-01-0300) Joel Walter, Jacobs; Jeffrey Bordner, Brian Nelson, Andrew Boram, Windshear, Inc.	
11:20 a.m.		Aerodynamic Performance Assessment of BMW Validation Models using Computational Fluid Dynamics (2012-01-0297) Satheesh Kandasamy, Bradley Duncan, Holger Gau, Fabien Maroy, Alain Belanger, Exa Corporation; Norbert Gruen, Sebastian Schäufele, BMW Group	
			Cooperative Optimization of Vehicle Ride Comfort and Handling Stability by Integrated Control Strategy (Written Only -- No Oral Presentation) (2012-01-0247) Wei Liu, Jilin University; Hao Ya, China FAW Group Corporation R&D Center
			Linear Vehicle Model Identification Under Different Speed Based on ARMA Model (Written Only -- No Oral Presentation) (2012-01-0249) Yan Bai, Jilin University, China; D.A. Crolla, University of Sunderland, UK; Hsin Guan, Changfu Zong, Jilin University, China
			Research of the Impact of Power Steering System Parameters on the Vehicle Handling Stability (Written Only -- No Oral Presentation) (2012-01-0256) ShuHua Liao, Caihong Yang, Guangxi University of Technology
	Planned by Occupant Protection Committee / Automobile Body Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00256 and SUB-TP-00007, and also individually. To purchase visit collections. sae.org	Planned by Vehicle Aerodynamics Committee / Automobile Body Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00258 and SUB-TP-00004, and also individually. To purchase visit collections. sae.org	Planned by Vehicle Dynamics Committee / Automobile Chassis Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00241 and SUB-TP-00006, and also individually. To purchase visit collections. sae.org

WEDNESDAY, APRIL 25 - AFTERNOON

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	D3-21	D3-26	D3-28	D3-18
	Active Safety (Part 2 of 2) (AC600) Automotive Active Safety Systems help prevent accidents or mitigate accident severity. Some active safety systems provide warnings to the driver in critical situations, while other systems respond to threats by automatically braking and steering the vehicle. Active Safety systems are enabled by on-board sensors, together with environmental sensors such as radars and cameras. In the future, car-to-car and car-to-infrastructure communication will enhance system functionality and performance. 1:00 p.m. - 3:20 p.m. Organizers: Joseph Kianianthra; Walter Kosiak, Delphi Corp. Chairpersons: Walter Kosiak, Delphi Corp.	Noise and Vibration (Part 2 of 2): Vehicle Interior Comfort and Advanced Methods (AC200) 1:00 p.m. - 3:00 p.m. Organizers: Deane Jaeger, HARLEY-DAVIDSON MOTOR CO; Christopher Morgan, Autoliv ASP; Pranab Saha, Kolano and Saha Engineers Inc.; Christopher E. Shaw, Visteon Corp. Chairpersons: Pranab Saha, Kolano and Saha Engineers Inc.; Christopher Morgan, Autoliv ASP	Occupant Protection: Accident Reconstruction (Part 2 of 2) (B400) 1:00 p.m. - 4:00 p.m. Organizers: Matthew Brach, Brach Engineering; Raymond M. Brach; Geoff Germane, Germane Engineering; Stein E. Husher, Michael S. Varat, KEVA Engineering	Tire and Wheel Technology (AC400) Topics on wheel design and testing, as well as tire testing and performance will be presented by industry and academic professionals. 1:00 p.m. - 4:00 p.m. Organizers: John D. Andrus; David L. Howland, General Motors Company; Jaehyung Ju, Univ. of North Texas; Neel K. Mani, Timothy A. Marantis, Bridgestone Americas Inc.; Rick S. Wallace, General Motors Company
1:00 p.m.	Real-Time Vehicle Detection using a Single Rear Camera for a Blind Spot Warning System (2012-01-0293) Chikao Tsuchiya, Shinya Tanaka, Hiroyuki Furusho, Nissan Motor Company Ltd.; Kenji Nishida, AIST; Takio Kurita, Hiroshima University	Acoustic Investigations of HVAC Systems in Vehicle (2012-01-1185) Thomas Biermeier, Stefan Becker, iPAT; Paul Risch, AUDI AG	Trailer Side Underride Crash Testing: Relating Collision Damage to Impact Speed (2012-01-0614) Rene A. Castaneda, Castaneda Engineering Inc.; William Jones, Mr. Truck, Inc.; Mark Shattuck, Kinetic Engineering; Dan Mills, DCM Technical Services; Toby Gloekler, Collision Reconstruction Engineers; Bahram Ravani, University of California at Davis	J328 6061-T6 Load Factor Evaluation (2012-01-0793) Ken Archibald, Independent Test Services; Wilson Lee, Matthew Brest, Alcoa
1:20 p.m.	Forward Safety System using Cameras with Different Focal Lengths (2012-01-0290) Yu-Sung Chen, Jia-Xiu Liu, Yi-Feng Su, ARTC	Sensitivity Analysis and Optimization of an Off Road Car Vibration Performance Using DOE and RSM Methods (2012-01-1186) Reza Ghasemiazar, AZAD University (NAGHADEH Branch); Shahram Azadi, K N Toosi Univ of Technology	Reconstruction of Low-Speed Crashes using the Quasi-Static Force vs. Deformation Characteristics of the Bumpers Involved in the Crashes (2012-01-0598) William Scott, Enrique Bonugli, Herbert Guzman, Daniel Swartzendruber, Biodynamic Research Corporation	Development of a Biaxial Fatigue Load File to Emulate the Services Demanded of a Motor Sport Vehicle (2012-01-0798) Ken Archibald, Independent Test Services; Wilson Lee, Alcoa Wheel Products; Roberto Rotundo, Ferrari; Matteo Melara, App Tech Forged Wheels; Joshua Gorseger, Independent Test Services; Chris Au, Alcoa Wheel & Forged Products
1:40 p.m.	Intersection Management using Vehicular Networks (2012-01-0292) Reza Azimi, Gaurav Bhatia, Raj Rajkumar, Carnegie Mellon University; Priyantha Mudalige, General Motors Company	A Study of Experimental Acoustic Modal Analysis of Automotive Interior Acoustic Field Coupled with the Body Structure (2012-01-1187) Hiromichi Tsuji, Toshio Enomoto, Shinichi Maruyama, Takuya Yoshimura, Nissan Motor Company, Ltd.	A Comparison of 3D Model Dynamic Simulation Results with Low-Speed Crash Test Data (2012-01-0601) Daniel Fittanto, Kathleen Allen Rodowicz, Exponent Inc	Aluminum Alloy Wheel Design Optimization Based on Fatigue Life and Production Technology (Oral Only) Murathan Soner, Olgun Celik
2:00 p.m.	Networking Break	A Practical CAE Approach to Determine Acoustic Cavity Modes for Vehicle NVH Development (2012-01-1184) Farokh Kavarana, Anna Schroeder, Nissan Technical Center North America, Inc.	Computational Consideration of Crush Energy Estimation in Frontal Collisions with Underride and Lateral Offset (2012-01-0595) Chris Cummins, Army Research Laboratory; Massoud Tavakoli, Kettering University Crash Safety Center	Study on Contribution of Tire Driving Stiffness to Vehicle Fuel Economy (2012-01-0794) Emiko Mogi, Shinya Notomi, Tetsuya Mizone, Honda R&D Co., Ltd.; Shunichi Yamazaki, Intelligent Vehicle Research Institute; Kenzo Hosoi
2:20 p.m.	Traffic Situation Assessment and Intervention Strategy of a Collision Avoidance System based on Galileo Satellite Positioning (2012-01-0280) Frederic Christen, FKA GmbH; Christian Ewald, Lutz Eckstein, Dirk Abel, Alexander Katrinok, RWTH Aachen University; Pierre Duysinx, Université de Liège	Use of Heat Reflective Coating for Vibration Insulation Rubber Parts in Automotive Applications (2012-01-1182) Michael A. Baumbarger, Honda R&D Americas Inc.	Sensitivity of Collision Simulation Results to Initial Assumptions (2012-01-0604) Bradley Heinrichs, Brian Mac Giolla Ri, Ross Hunter, MEA Forensic Engineers & Scientists	Estimation of Tire Temperature Distribution and Rolling Resistance under Running Conditions Including Environmental Factors (2012-01-0796) Kazutaka Yokota, Eisei Higuchi, Masashi Kitagawa, Honda R&D Co., Ltd
2:40 p.m.	Stereo Vision based Full-Range Object Detection and Tracking including Pedestrians (2012-01-0286) Greg Schamp, Truman Shen, Troy coopridr, Nitendra Nath, Farooq Ibrahim, Takata	Active Noise Control Method Considering Auditory Characteristics (2012-01-0993) Gangping TAN, Dengfeng WANG, Shuming Chen, Jilin University; Jiqiang SONG, FAW CAR Co., Ltd.	Uncertainty of CRASH3 ΔV and Energy Loss for Frontal Collisions (2012-01-0608) R. Matthew Brach, Raymond M. Brach, Andrew Louderback, Brach Engineering	An Analysis and Evaluation of the Damage and Durability Performance of Steel Belted Radial Ply Passenger Tires That Have Experienced Severe Impacts (2012-01-0795) William John Woehrl, Tire Forensics Investigations; Dennis Carlson, Carlson Engineering
3:00 p.m.	Development of an Active System in Order to Detect Drowsiness (2012-01-0283) Jaime López, Applus Idiada; Noelia Rodríguez Ibañez, FICOSA International Group		Close-Range Photogrammetry with Laser Scan Point Clouds (2012-01-0607) Michael Andrew Callahan, Beau LeBlanc, Regan Vreeland, Gerald Bretting, Collision & Injury Dynamics Inc.	Reading DOT Codes on Passenger Car Tires (2012-01-0797) Oliver Scholz, Fraunhofer IIS; Thomas Koehler, University of Erlangen-Nuremberg

WEDNESDAY, APRIL 25 - AFTERNOON

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	D3-21	D3-26	D3-28	D3-18
	Active Safety (Part 2 of 2) (AC600) Automotive Active Safety Systems help prevent accidents or mitigate accident severity. Some active safety systems provide warnings to the driver in critical situations, while other systems respond to threats by automatically braking and steering the vehicle. Active Safety systems are enabled by on-board sensors, together with environmental sensors such as radars and cameras. In the future, car-to-car and car-to-infrastructure communication will enhance system functionality and performance. 1:00 p.m. - 3:20 p.m. Organizers: Joseph Kianianthra; Walter Kosiak, Delphi Corp. Chairpersons: Walter Kosiak, Delphi Corp.	Noise and Vibration (Part 2 of 2): Vehicle Interior Comfort and Advanced Methods (AC200) 1:00 p.m. - 3:00 p.m. Organizers: Deane Jaeger, HARLEY-DAVIDSON MOTOR CO; Christopher Morgan, Autoliv ASP; Pranab Saha, Kolano and Saha Engineers Inc.; Christopher E. Shaw, Visteon Corp. Chairpersons: Pranab Saha, Kolano and Saha Engineers Inc.; Christopher Morgan, Autoliv ASP	Occupant Protection: Accident Reconstruction (Part 2 of 2) (B400) 1:00 p.m. - 4:00 p.m. Organizers: Matthew Brach, Brach Engineering; Raymond M. Brach; Geoff Germane, Germane Engineering; Stein E. Husher, Michael S. Varat, KEVA Engineering	Tire and Wheel Technology (AC400) Topics on wheel design and testing, as well as tire testing and performance will be presented by industry and academic professionals. 1:00 p.m. - 4:00 p.m. Organizers: John D. Andrus; David L. Howland, General Motors Company; Jaehyung Ju, Univ. of North Texas; Neel K. Mani, Timothy A. Marantis, Bridgestone Americas Inc.; Rick S. Wallace, General Motors Company
3:20 p.m.			A Close-Range Photogrammetric Solution Working with Zoomed Images from Digital Cameras (2012-01-0612) Lee DeChant, DeChant Consulting Services; John R. Kinney, Kinney Engineering LLC	
3:40 p.m.			Method for Estimating the Distance an Object will First Enter the Headlight Beam (2012-01-0615) Jeffrey Muttart, Crash Safety Research Group; Chris Kauderer, Kauderer & Associates; Jan Unarski, Institute of Forensic Research; Wade Bartlett, Mechanical Forensics Engineering Svc; Grant Johnston, Grant Johnston Consulting; Dan Barshinger, Quest Engineering & Failure Analysis, Inc; Matthew Romoser, University of Massachusetts-Amherst	
	The ERSEC Project: Enhanced Road Safety by Integrating Egnos-Galileo Data with On-Board Control System (Written Only -- No Oral Presentation) (2012-01-0285) Gabriella Caporaletti, EICAS Automazione		Benefits and Methodology for Dimensioning a Vehicle Using a 3D Scanner for Accident Reconstruction Purposes (Written Only -- No Oral Presentation) (2012-01-0617) Donald F. Tandy, Clay Coleman, Jason Colborn, Todd Hoover, Jung Bae, Tandy Engineering & Associates Inc.	
			Simulating Moving Motorcycle to Moving Car Crashes (Written Only -- No Oral Presentation) (2012-01-0621) Todd A. Frank, James W. Smith, Graeme F. Fowler, Exponent Inc; Jarrod W. Carter, Origin Engineering, LLC; Kelly Bosch, Exponent Inc	
			Condition of the Motorcycle Steering Head Assembly after Crash Testing (Written Only -- No Oral Presentation) (2012-01-0619) Todd A. Frank, Darko Babic, Exponent Inc; Patrick Williams, Yamaha Motor Corp USA	
			Acceleration and Braking Performance of Transit Style Buses (Written Only -- No Oral Presentation) (2012-01-0618) James D. English, James D. English & Associates; Roman F. Beck, Beck Forensics, Inc	
	Planned by Automobile Chassis Activity / EMB Land and Sea Group The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00242, and also individually. To purchase visit collections.sae.org	Planned by Noise and Vibration Committee / Automobile Chassis Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00239, and also individually. To purchase visit collections.sae.org	Planned by Occupant Protection Committee / Automobile Body Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00253 and SUB-TP-00006, and also individually. To purchase visit collections.sae.org	Planned by Tire and Wheel Committee / Automobile Chassis Activity

WEDNESDAY, APRIL 25 - AFTERNOON

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM	
	D3-17	D3-19
	Vehicle Dynamics, Stability and Control (Part 2 of 2) (AC500) 1:00 p.m. - 3:20 p.m. Organizers: W. Riley Garrott, Paul Grygier, National Hwy Traffic Safety Admin; Mark Heitz, Transportation Research Center Inc.; Gary J. Heydinger, SEA Limited; David R. Mikesell, Ohio Northern Univ.; Mohamed Kamel Salaani, Transportation Research Center Inc.	Chat with the Expert: Noise, Vibration and Harshness (NVH): Diesel Engine Noise (ACCHAT100) Mr. Reinhart will be available to discuss the issues involved in reducing the noise of diesel engines while achieving performance and emissions requirements. Attendees are encouraged to bring their questions and problems to the discussion. 4:00 p.m. - 5:00 p.m. Organizers: Christopher Shaw, Visteon Corp. Keynote Speakers: Thomas Reinhart, Southwest Research Institute
1:00 p.m.	Sway Stability of 5 TH Wheel RV Trailers (2012-01-0237) Richard H. Klein, Richard Klein Consulting Engineers; Peter Broen, Dynamic Research Inc; Tim Schlabach, Keystone RV Company	
1:20 p.m.	Numerical Simulation and Analysis of Closed-Loop Driver/Articulated Vehicle Dynamic Systems (2012-01-0244) Xuejun Ding, Yuping He, Univ. of Ontario Institute of Technology	
1:40 p.m.	Control Strategy for the Longitudinal Degree of Freedom of a Complete Vehicle Test Rig (2012-01-0232) Stephan Rinderknecht, Rafael Fietzek, Torben Meier, TU Darmstadt	
2:00 p.m.	Heavy Truck Stability with a Trailing Axle Tire Blowout (2012-01-0238) Robert Larson, Joseph Cuadrado, Exponent Inc.	
2:20 p.m.	The Study of the Tire/Vehicle Matching for the Vehicle Handling Performance (Oral Only) Dong Chul Kwon, Hankooktire	
2:40 p.m.	Control Allocation based Optimal Torque Vectoring for 4WD Electric Vehicle (2012-01-0246) Juyong Kang, Yi kyongsu, Hyundong Heo, Seoul National Univ.	
3:00 p.m.	Calculating Tire Overlap during Steady-State Cornering Maneuvers (2012-01-0242) L. Daniel Metz, Metz Engineering & Racing, LLC	
	Steering and Handling Performance Following a Full Tire Tread Belt Separation (Written Only -- No Oral Presentation) (2012-01-0257) Donald F. Tandy, B. Nicholas Ault, Robert Pascarella, Tandy Engineering & Associates Inc.	
	Four-Wheel Independently Driven In-Wheel Motors Electric Vehicle AFS and DYC Integrated Control (Written Only -- No Oral Presentation) (2012-01-0258) Gang Li, Wei Hong, Heqi Liang, Jilin University of China	
	Traction Control Logic Based on Extended Kalman Filter for Omni-directional Electric Vehicle (Written Only -- No Oral Presentation) (2012-01-0251) Guoying Chen, Changfu Zong, Xueli Guo, Jilin University	
	Development of a Path-following and a Speed Control Driver Model for an Electric Vehicle (Written Only -- No Oral Presentation) (2012-01-0250) Kiumars Jalali, Steve Lambert, John McPhee, Univ of Waterloo	
	Development of a Fuzzy Slip Control System for Electric Vehicles with In-wheel Motors (Written Only -- No Oral Presentation) (2012-01-0248) Kiumars Jalali, Thomas Uchida, John McPhee, Steve Lambert, Univ of Waterloo	
	Planned by Vehicle Dynamics Committee / Automobile Chassis Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00241 and SUB-TP-00006, and also individually. To purchase visit collections.sae.org	Planned by Automobile Chassis Activity / EMB Land and Sea Group

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THURSDAY, APRIL 26 - MORNING

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	D3-23	D3-17	D3-28	D3-18
	Fire Safety (B200) The fire safety session will focus on current developments in the field of vehicle fire risk assessment and mitigation. Papers addressing vehicle design, live-fire tests and fire investigation issues applicable to traditional and hydrogen fuel vehicles will be presented. 8:00 a.m. - 11:40 a.m. Organizers: Steven Hodges, Alion Science & Technology; Leland E. Shields, Leland E Shields Inc.	Human Factors in Driving and Automotive Telematics (B302) As information and entertainment to and from the vehicle (Telematics) become more prolific it is critical to increase our understanding of how the driver understands and uses Telematics functions. Equally critical is how those functions impact the driver. This session will address those issues. 8:00 a.m. - 12:00 p.m. Organizers: James Foley, Toyota Technical Center USA Inc.; Daniel J. Selke, Mercedes-Benz USA LLC	Occupant Protection: Event Data Recorders (EDR) (B402) This session includes the latest research on Event Data Recorders (EDRs) equipped in passenger cars, light trucks, and commercial vehicles (heavy trucks and motorcoaches). Emphasis is placed on the application, interpretation and use of EDRs in the investigation of motor vehicle crashes. 8:00 a.m. - 11:40 a.m. Organizers: Matthew Brach, Brach Engineering; Timothy Cheek, Delta V Forensic Engrg; Brian J. Everest, General Motors LLC; John Steiner, KEVA Engineering	Steering and Suspension Technology Symposium (AC300) 8:00 a.m. - 11:00 a.m. Organizers: Robert Ackley, Ford Motor Co.; Prashant Patel, Chrysler Group LLC Chairpersons: Robert Ackley, Ford Motor Co
8:00 a.m.	Technical Keynote: Report of the Annual Electric Vehicle Safety Standards Summits (Oral Only) Casey C. Grant, Fire Protection Research Foundation	Technical Keynote: SAE Standards Update - Safety and Human Factors Committee activities (Oral Only) Daniel J. Selke, Mercedes-Benz USA LLC	Technical Keynote: (Oral Only) William H. Rose, Robert Bosch LLC	A Study on Behavior of Dust Cover Under Low Temperature Environment (2012-01-0973) Tatsuro Hosen, Tadahisa Yamabe, Shin Ito, Naoki Matsumoto, Kenichi Uchida, Shigeyuki Ono, NOK Corporation
8:20 a.m.		Event Detection: The Second Dimension of Driver Performance for Visual-Manual Tasks (2012-01-0964) Richard Young	GPS Device Comparison for Accident Reconstruction (2012-01-0997) Roger Bortolin, Hrycay Consulting Engineers Inc.; James Hrycay, Jeffrey Golden, Hrycay Consulting Engineers Inc	A Development of Composite Material Suspension Arm (2012-01-0980) PiYoung Jeong, PiYoung
8:40 a.m.	Temperature Characteristics of a Hybrid Electric Vehicle Fire (2012-01-0982) Hideki Matsumura, Shinichiro Itoh, Kazuo Matsushima, Takeo okada, National Traffic Safety & Enviro Lab.	Development of the Enhanced Peripheral Detection Task: A Surrogate Test for Driver Distraction (2012-01-0965) Li Hsieh, Richard Young, Sean Seaman, Wayne State University	Assessing the Accuracy of Vehicle Event Data Based on CAN Messages (2012-01-1000) Carsten Mueller, Jeremy Daily, Mauricio Papa, Univ. of Tulsa	Optimal Rear Suspension Design for the Improvement of Ride Comfort and Suspension Noise (2012-01-0975) Bong Soo Kim, Kyung Il Bae, Sehyun Chang, Hyundai Motor Company; Jun Sung Ryu, Hyundai Motor Europe Technical Center; Kihaeng Cho, Mando Corp
9:00 a.m.	Design Tradeoffs: The Social Costs of Vehicle Fire Protection (2012-01-0985) Robert R. Scheibe, GT Engineering; Tyler Scott, University of Washington; Leland E. Shields, Leland E. Shields, Inc; Richard O. Zerbe, University of Washington	Cognitive Distraction While Driving: A Critical Review of Definitions and Prevalence in Crashes (2012-01-0967) Richard Young, Wayne State University	An Examination of Diagnostic Event Data in Bendix Antilock Brake System Electronic Control Units (2012-01-0994) Timothy P. Austin, Wisconsin State Patrol; Michael J. Farrell, Fox Valley Technical College; Benjamin N. Smith, Messerschmidt Safety Consultants	Development of a New Multi-link Rear Suspension (2012-01-0978) Reo Koide, Yoshihiro Kawabe, Keiichi Nakajima, Kiriama Kazuhiro, Nissan Motor Company Ltd.
9:20 a.m.	Hot Surface Ignition and Fire Propagation Characteristics of R134a and R1234yf Refrigerants (2012-01-0984) Jon Olson, Superior Forensic Engineering, LLC; Steven Lambert, Ford Motor Company	An Exploration of Rapid Serial Visual Presentation for Automotive Applications (2012-01-0970) Michael Tschirhart, Visteon Corp.; Kathleen Ku, Visteon Corp	Accuracy of Event Data in the 2010 and 2011 Toyota Camry During Steady State and Braking Conditions (2012-01-0999) Richard Ruth, Institute of Police Technology and Mgmt; Wade Bartlett, Mechanical Forensics Engineering Svc; Jeremy Daily, University of Tulsa	High Performance Electromechanical Actuator for Active Rear Axle Kinematics of a Sports Car (2012-01-0974) Isabel Ramirez Ruiz, Ferrari Spa
9:40 a.m.	Networking Break	Regional preferences in user interaction schemes for automotive touch screen (Oral Only) Michael Tschirhart, Visteon Corp.; John Kosinski, Kathleen Ku, Visteon Corp	Confirmation of Toyota EDR Pre-crash Data (2012-01-0998) Roger Brown, Collision Research & Analysis, Inc.; Lance Lewis, Barry Hare, Mark Jakstis, Robert Landis, Harold Clyde, Ryan Buetzer, Toyota Motor Sales, U.S.A., Inc.	Networking Break
10:00 a.m.	Development and Characteristics of a Burner for Localized Fire Tests and an Evaluation of Those Fire Tests (2012-01-0987) Yohsuke Tamura, Masaru Takabayashi, Masayuki Takeuchi, Nobuaki Ohtuka, Takashi Nakajima, Japan Automobile Research Institute; Kenji Sato, Toho University	Networking Break	Evaluation of Camry HS-CAN Pre-Crash Data (2012-01-0996) Roger Brown, Samuel White, Collision Research & Analysis Inc.	Efficiency of On-Off Semiactive Suspensions in a Pick-up Truck (2012-01-0979) Juan C. Tudon-Martinez, Jorge Lozoya-Santos, Ruben Morales-Menendez, Tecnológico de Monterrey

Continued on next page

THURSDAY, APRIL 26 - MORNING

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM			
	D3-23	D3-17	D3-28	D3-18
	Fire Safety (B200) The fire safety session will focus on current developments in the field of vehicle fire risk assessment and mitigation. Papers addressing vehicle design, live-fire tests and fire investigation issues applicable to traditional and hydrogen fuel vehicles will be presented. 8:00 a.m. - 11:40 a.m. Organizers: Steven Hodges, Alion Science & Technology; Leland E. Shields, Leland E Shields Inc.	Human Factors in Driving and Automotive Telematics (B302) As information and entertainment to and from the vehicle (Telematics) become more prolific it is critical to increase our understanding of how the driver understands and uses Telematics functions. Equally critical is how those functions impact the driver. This session will address those issues. 8:00 a.m. - 12:00 p.m. Organizers: James Foley, Toyota Technical Center USA Inc.; Daniel J. Selke, Mercedes-Benz USA LLC	Occupant Protection: Event Data Recorders (EDR) (B402) This session includes the latest research on Event Data Recorders (EDRs) equipped in passenger cars, light trucks, and commercial vehicles (heavy trucks and motorcoaches). Emphasis is placed on the application, interpretation and use of EDRs in the investigation of motor vehicle crashes. 8:00 a.m. - 11:40 a.m. Organizers: Matthew Brach, Brach Engineering; Timothy Cheek, Delta V Forensic Engrg; Brian J. Everest, General Motors LLC; John Steiner, KEVA Engineering	Steering and Suspension Technology Symposium (AC300) 8:00 a.m. - 11:00 a.m. Organizers: Robert Ackley, Ford Motor Co.; Prashant Patel, Chrysler Group LLC Chairpersons: Robert Ackley, Ford Motor Co
10:20 a.m.	Common Causes of Bus Fires (2012-01-0989) Suzanne Smyth, Scott Dillon, Exponent	Panel Discussion: How to Meet Customer Demand in a High-Tech Future: The Impact of Telematics Demand on the Driver and the Vehicle Panelists: Lawrence Smythe, Nissan Technical Center NA Michael Tschirhart, Visteon Corp. Richard A. Young, Wayne State University		Application of Nonparametric Magnetorheological Damper Model in Vehicle Semi-active Suspension System (2012-01-0977) H. Metered, Helwan University
10:40 a.m.	The Development of a Standard Test for Assessing the Effectiveness of Transit Vehicle Fire Extinguishing Systems (2012-01-0986) Adam Chattaway, Robert Dunster, Paul Weller, Kidde Graviner Ltd; Joey Peoples, Kidde Aerospace & Defense			Energy Efficient Hydraulic Power Assisted Steering System (E ² HPAS) (2012-01-0976) Chirag Padmakar Sonchal, Jaypal gajankush, Anand Vijay Kulkarni, Sandeep pawar, Tata Motors, Ltd.
11:00 a.m.	A Comparison of Various Fire Detection Methodologies in Transit Vehicle Engine Compartment Fire Protection Systems (2012-01-0983) Paul Smith, Adam Chattaway, Kidde Graviner, Ltd.; Joey Peoples, Kidde Aerospace & Defense			
11:20 a.m.	Fuel System Crashworthiness for Recreational Off-Highway Vehicles (2012-01-0988) Mark William Arndt, Transportation Safety Tech. Inc.			
11:40 a.m.				
	A Review of Oxidation on Steel Surfaces in the Context of Fire Investigations (Written Only -- No Oral Presentation) (2012-01-0990) Jeff D. Colwell, Darko Babic, Exponent Inc.			The Shock Absorber of Energy Recovery Using Electrorheological Fluid (Written Only -- No Oral Presentation) (2012-01-0981) Jun Wang, Xuexun Guo, yanxia su, Wuhan University of Technology
	Planned by Fire Safety Committee / Automobile Body Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00251, and also individually. To purchase visit collections.sae.org	Planned by Human Factors Committee / Automobile Body Activity	Planned by Occupant Protection Committee / Automobile Body Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00253, and also individually. To purchase visit collections.sae.org	Planned by Steering and Suspension Committee / Automobile Chassis Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00240 and COLL-TP-00243, and also individually. To purchase visit collections.sae.org

THURSDAY, APRIL 26 - MORNING Technical and Business Sessions		
TIME	SESSION TITLE, DESCRIPTION, AND ROOM	
	D3-24/25	
	Vehicle Aerodynamics (Parts 5 and 6 of 6): CFD Validation and Application / Heavy Truck Aerodynamics (B500) 8:00 a.m. - 11:40 a.m. Organizers: Gregory Fadler, Navistar; Kevin Golsch, Navistar Inc.; Taeyoung Han, GM; Bahram Khalighi, GM R&D Center; Mark E. Gleason, Chrysler Group LLC	
8:00 a.m.	Numerical Simulations of Aeroacoustic Fields around Automobile Rear-View Mirrors (2012-01-0586) Yoshihiro Kato, Toyota Central R&D Labs Inc.	
8:20 a.m.	CFD Simulation with Automatic Mesh Refinement for the Flow around Simplified Car Models (2012-01-0589) Emmanuel Guilmineau, Jeroen Wackers, Ecole Centrale De Nantes	
8:40 a.m.	Study on the Capability of an Open Source CFD Software for Unsteady Vehicle Aerodynamics (2012-01-0585) Johannes Wojciak, Bastian Schnepf, Thomas Indinger, Nikolaus Adams, Technische Universitaet Muenchen	
9:00 a.m.	Spectral Density and Time Scales of Velocity Fluctuations in the Wake of a Simplified Car Model (2012-01-0592) Hermann Lienhart, Univ. of Erlangen; João Pedro Pêgo, Fac. Engenharia - Univ. Porto	
9:20 a.m.	Embedded Large Eddy Simulation of Flow around the Ahmed Body (2012-01-0587) Domenico Caridi, Davor Cokljat, ANSYS UK; Jochen Schuetze, Richard Lechner, ANSYS Inc.	
9:40 a.m.	Modelling A-Pillar Water Overflow: Developing CFD and Experimental Methods (2012-01-0588) Adrian P. Gaylard, Michael Fagg, Mark Bannister, Jaguar Land Rover; Bradley Duncan, Joaquin Ivan Gargoloff, Jonathan Jilesen, Exa Corporation	
10:00 a.m.	Networking Break	
10:20 a.m.	Experimental and Numerical Investigation of the Under Hood Flow with Heat Transfer for a Scaled Tractor-Trailer (2012-01-0107) Beat Heinzelmänn, Daimler AG; Thomas Indinger, Nikolaus Adams, Technical University of Munich; Reinhard Blanke, Daimler AG	
10:40 a.m.	Fuel Consumption Reduction by Geometry Variations on a Generic Tractor-Trailer Configuration (2012-01-0105) Antoine Devesa, Thomas Indinger, FluidDyna GmbH	
11:00 a.m.	Experimental and Numerical Investigation of Wheel Housing Aerodynamics on Heavy Trucks (2012-01-0106) David Söderblom, Chalmers Univ. of Technology; Per Elofsson, Scania AB; Linus Hjelm, Volvo 3P; Lennart Lofdahl, Chalmers Univ of Technology	
11:20 a.m.	Wind Tunnel and Track Tests of Class 8 Tractors Pulling Single and Tandem Trailers Fitted with Side Skirts and Boat-tails (2012-01-0104) Kevin R. Cooper, National Research Council Canada (ret)	
	Planned by Vehicle Aerodynamics Committee / Automobile Body Activity The papers in this session are available in SAE Technical Paper Collection, COLL-TP-00258 and SUB-TP-00004, and also individually. To purchase visit collections.sae.org	

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THURSDAY, APRIL 26 - AFTERNOON

Technical and Business Sessions

TIME	SESSION TITLE, DESCRIPTION, AND ROOM		
	D3-18	D3-21	D3-19
	Motorsports Engineering (MSEC100) This session covers all aspects of motorsports engineering, but focuses on aerodynamics, engines and electric powered vehicles in motorsports. 1:00 p.m. - 4:00 p.m. Organizers: David A. Finch, Raetech Corp.; Raymond Leto, TotalSim LLC; Wiley R. McCoy, McLaren Performance Technologies; John Melvin, Tandelta; John Patalak, NASCAR; Thomas N. Ramsay, Honda R&D Americas Inc.; Michael Royce; J. Kirk Russell; H. Robert (Bob) Welge, Robert's Engineering Development Chairpersons: Michael Royce	Occupant Protection: Integrated Safety Systems (B411) This session deals with topics related to integrated active and passive safety systems including system test of light assistance functions, effect of automatic braking in real-world crashes, modeling of drive adaptation capability, and evaluation of integration of in-vehicle warning systems. In addition, two special topics, such as automatic identification/notification of road accidents and safety mechanism for agriculture tractors, are presented. 1:00 p.m. - 4:00 p.m. Organizers: Clifford C. Chou, Wayne State University; Jialiang Le, Ford Motor Co.	Chat with the Expert: Motorsports (MSECCHAT100) The members of the SAE's Motorsports Engineering Activity have a long and wide experience in motor sports with special expertise in aerodynamics, safety, powertrain, chassis set up and development, and student competitions. They are willing and able to discuss all aspects of motor sports. 4:00 p.m. - 5:00 p.m. Keynote Speakers: David A. Finch, Raetech Corp.; Raymond Leto, TotalSim LLC; Wiley R. McCoy, McLaren Performance Technologies; John Melvin, Tandelta; Michael Royce; J. Kirk Russell; H. Robert (Bob) Welge, Robert's Engineering Development
1:00 p.m.	Motorcycle Aerodynamic Performance Improvement through Belly Pan Designs Evaluation and Testing (2012-01-1167) Daniel del Cerro Turner, Yufeng Yao, Denis Marchant, Kingston University	System Test of Light Assist Functions (2012-01-1177) Hamma Tadjine, IAV GmbH; Karsten Schulze, IAV Automotive Engineering Inc.; Sven Bogdanow, marcel heidde, IAV GmbH	
1:20 p.m.	Interaction of Downforce Generating Devices and Cooling Air Flow - A Numerical and Experimental Study on Open Wheeled Race Cars (2012-01-1165) Niklas Dyverfors, Kristoffer Borre, Christian Arnell, Jonathan Rice, Chalmers University of Technology	Effect of Impact-Triggered Automatic Braking in Multiple Impact Crashes (2012-01-1181) Atsushi Togawa, Daisuke Murakami, Chinmoy Pal, Tomosaburo Okabe, Nissan Motor Company Ltd.	
1:40 p.m.	High-Downforce Airfoil Design for Motorsports (2012-01-1168) P.S. Sriram, Ashok Gopalathnam, Andrew Misenheimer, North Carolina State Univ	Modeling Driver Adaptation Capabilities in Critical Driving Situations (2012-01-1179) Renaud Deborne, Reymond Gilles, Andras Kemeny, Renault SAS	
2:00 p.m.	Drag Optimization of a Sport Motorbike (2012-01-1171) Lorenzo Scappaticci, Giacomo Risitano, Guglielmo Marconi University; Michele Battistoni, Carlo Grimaldi, Universita degli Studi di Perugia	Timely Comprehension: A Methodology for Evaluating Integration of In-Vehicle Warning Systems (2012-01-0100) Brian Cullinane, Google, Inc.; Christopher Kirm, Mercedes-Benz Of North America	
2:20 p.m.	The Aerodynamic Characteristics of a Fully Deformable Formula One Wind Tunnel Tyre (2012-01-1166) A. J. Sprot, D. B. Sims-Williams, R. G. Dominy, Durham University	eNOTIFY: Definition of a Methodology and Tools for Automatic Identification and Notification of Road Accidents (2012-01-1178) Mario Nombela, Eloi Boix, IDIADA Automotive Technology SA	
2:40 p.m.	In-Cylinder Thermodynamic Analysis for Performance Engine Development (2012-01-1170) David Anderson, Justin Callies, Baitao Xiao, Robert Gary Prucka, Clemson Univ	A Safety Mechanism for Agricultural Tractors (2012-01-1180) Mohamed Ali Emam	
3:00 p.m.	Academic Research and Motorsports Industry Partnerships Enhance Race Car Safety and Performance (2012-01-1172) Peter Hylton, Andrew Borne, Chase Kaufman, Ryan Corso, Paul Lucas, Indiana Univ. Purdue Univ. Indianapolis		
3:20 p.m.	Report on the Annual Electric Vehicle Safety Standards Summits (Oral Only) Casey C. Grant, Fire Protection Research Foundation		
3:40 p.m.	Student Electric Vehicle Competition Technical Conference - A Report (Oral Only) Douglas A. Fraser, Thayer School of Engineering at Dartmouth		
	Optimal Diffuser Design for Formula SAE Race Car Using an Innovative Geometry Buildup and CFD Simulation Setup with On-Track Testing Correlation (Written Only - No Oral Presentation) (2012-01-1169) Obinna Ehirim, Cornell University, Sibley School - MAE		

SAFETY/TESTING

EXHIBITOR LIST

AS OF MARCH 20, 2012

Acuren Inspection.....	315
AdvanTech International.....	906
Ajin Industrial Co Ltd	1225
CCE	312
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PLK Technologies Co., LTD.	1320
Prettl Electric Corp	813
Proto Manufacturing	600
Transportation Research Center Inc.....	912
Yuyoo Ruiqi Electronics Co Ltd	412

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Call for Papers Key Dates

Abstracts due **October 2, 2012**; Review-ready manuscripts due **November 15, 2012**; Final manuscripts due **March 23, 2013**.
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AWARDS

SAE Award Recipients and Fellows Recognized at SAE 2012 World Congress

SAE Medal of Honor

Duane Tiede
ATI Inc.

Branko Sarh
The Boeing Company

Robert E. Larson
Exponent, Inc.

Robert M. Siewert
General Motors Company (retired)

Long Liang
Reaction Design

SAE Fellow Grade of Membership

André L. Boehman
The Pennsylvania State University

Christopher P. Thomas
BorgWarner Inc.

Todd Link
United States Steel Corporation

Andrew Brown, Jr.
Delphi Corporation

Andrew P. Walker
Johnson Matthey plc

Paul M. McKune
ThyssenKrupp Steel USA, LLC

James A. Buczkowski
Ford Motor Company

Ren-Jye Yang
Ford Motor Company

Ellen Meeks
Reaction Design

Man-Feng Chang
General Motors Company (retired)

Hua Zhao
Brunel University London

Zissimos P. Mourelatos
Oakland University

Mohamed E. M. El-Sayed
Kettering University

Arch T. Colwell Merit Award

Cleve Bare
Exponent, Inc.

Mark Musculus
Sandia National Laboratories

Chitralkumar V. Naik
Reaction Design

Zoran S. Filipi
Clemson University

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Dongpu Cao
University of Waterloo

Tsung-Yu Pan
Elan Technology Corporation

Peter Hofbauer
EcoMotors International

Guofei Chen
United States Steel Corporation

Donald D. Parker
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John M. Miller
Oak Ridge National Laboratory

Jeffrey J. Croteau
Exponent, Inc.

Prashant Patel
Chrysler Group LLC

Charles J. Mueller
Sandia National Laboratories

Ruth Gao
Ford Motor Company

Alireza Pazooki
Concordia University

Douglas J. Nelson
Virginia Polytechnic Institute and State University

Devin Hodgson
Reaction Design

Daniel S. Peterson
Exponent, Inc.

Paul J. Richards
Innopsec Ltd. (retired)

Jeyapandian Kottalam
Reaction Design

Karthik V. Puduppakkam
Reaction Design

Subhash Rakheja
Concordia University

Paras Shah
Federal Mogul Corporation

Ming F. Shi
United States Steel Corporation

Amandeep Singh
U.S. Army, RDECOM TARDEC

Van-Xuan Tran
University of Michigan-Ann Arbor

Tau Tyan
Ford Motor Company

Cheng Wang
Reaction Design

John D. Zolock
Exponent, Inc.

Arnold W. Siegel International Transportation Safety Award

Jeff Richard Crandall
University of Virginia

Award for Research on Automotive Lubricants

Nagesh Cheekala
Eaton Aerospace

Ronald Rohrbach
FRAM Group

Peter D. Unger
FRAM Group

Edward N. Cole Award for Automotive Engineering Innovation

John J. Moskwa
University of Wisconsin-Madison

Elmer A. Sperry Award

Zigmund Bluvband
ALD Group

Herbert Hecht
SoHaR Incorporated

Environmental Excellence in Transportation Award

To Be Announced

Excellence in Engineering Education Award

Edward M. Kasprzak
Milliken Research Associates, Inc.

Forest R. McFarland Award

John Andrus
General Motors LLC (retired)

Michael Duoba
Argonne National Laboratory

Colin Garner
Loughborough University

Taeyoung Han
General Motors LLC

Kah Wah Long
Chrysler Group LLC

Peter J. Maloney
The MathWorks Inc.

Gursaran D. Mathur
CalsonicKansei North America Inc.

Cornelius N. Opris
Caterpillar Inc.

Mark N. Pope
General Motors LLC

Saeed Jafari Siavoshani
Dow Chemical

Murray J. Sittsamer
Luminous Group LLC

Xichen Sun
Chrysler Group LLC

Arnold Taube
John Deere World Headquarters

Thomas Wallner
Argonne National Laboratory

Kevin M. Zielinski
Red Cedar Media LLC

Franz F. Pischinger Powertrain Innovation Award

David F. Merrion
Detroit Diesel Corporation (retired)

AWARDS

Harry L. Horning Memorial Award

Reed Hanson

University of Wisconsin-Madison

Rolf D. Reitz

University of Wisconsin-Madison

Derek Splitter

University of Wisconsin-Madison

Henry Ford II Distinguished Award for Excellence in Automotive Engineering

Ching-Hung Chuang

Ford Motor Company

Yan Fu

Ford Motor Company

Guosong Li

Ford Motor Company

Ren-Jye Yang

Ford Motor Company

International Leadership Citation

Volker Sick

The University of Michigan

John Johnson Award for Outstanding Research in Diesel Engines

Caroline L. Genzale

Georgia Institute of Technology

Cherian A. Idicheria

General Motors R&D Center

Julien Manin

Sandia National Laboratories

Mark P. B. Musculus

Sandia National Laboratories

Lyle M. Pickett

Sandia National Laboratories

Dennis L. Siebers

Sandia National Laboratories

Lloyd L. Withrow Distinguished Speaker Award

Jeff D. Colwell

Exponent, Inc.

Subramaniam Ganesan

Oakland University

D. Gary Harlow

Lehigh University

Gursaran D. Mathur

CalsonicKansei North America

Rainer Neumann

Visteon Innovation & Technology
GmbH

Willem van Dam

Chevron Oronite

Xiaobo Yang

Oshkosh Corporation

Max Bentele Award for Engine Technology Innovation

Gregory Matthew Shaver

Purdue University

Ralph R. Teetor Educational Award

Shorya Awtar

University of Michigan, Ann Arbor

Jeremy S. Daily

University of Tulsa

Christopher D. Depcik

University of Kansas

Marcis Jansons

Wayne State University

Heejung Jung

University of California Riverside

Scott Miers

Michigan Tech University

Junmin Wang

Ohio State University

Jingzhou Yang

Texas Tech University

Rodica Baranescu Award for Technical & Leadership Excellence in Commercial Vehicle Engineering

Ning Lei

Navistar

Rumbaugh Outstanding Student Leader Award

Matthew J. Meyer
GM Racing – Powertrain

Russell S. Springer Award

Benjamin Petersen
Sandia National Laboratories

SAE / AISI Sydney H. Melbourne Award for Excellence in the Advancement of Automotive Sheet Steel

Timo Faath
ThyssenKrupp Steel USA, LLC

Paul M. McKune
ThyssenKrupp Steel USA, LLC

Markus Weber
ThyssenKrupp Steel Europe AG

SAE Faculty Advisor Award

Jason R. Blough
Michigan Technological University

Panagiotis Michaleris
The Pennsylvania State University

Mohsen M. Osman
Alexandria University

Kevin J. Scoles
Drexel University

Clifford M. Stover
California State Polytechnic University,
Pomona

SAE / Honeywell Outstanding Collegiate Branch Award

**Michigan Technological
University – Class 1**

**Milwaukee School of
Engineering – Class 2**

**California State Polytechnic
University, Pomona – Class 3**

SAE / Timken- Howard Simpson Automotive Transmission and Driveline Innovation Award

Peter J. Tenberge
Chemnitz University of Technology

Technical Standards Board Outstanding Achievement Award

Paul A. Dicke
Holistech Energy Solutions, LLC

Rob Frost
Cummins Inc.

Martin C. Kapanowski
Ford Motor Company

Michael K. Larson
General Motors

Raj Rajamanickam
Concentric Rockford Inc.

Galen E. Ressler
General Motors

Jeff Smith
Vee Engineering

John A. Yurtin
Delphi Packard Electric

Vincent Bendix Automotive Electronics Engineering Award

Naehyuck Chang
Seoul National University

Taeyoung Chung
Hyundai Mobis

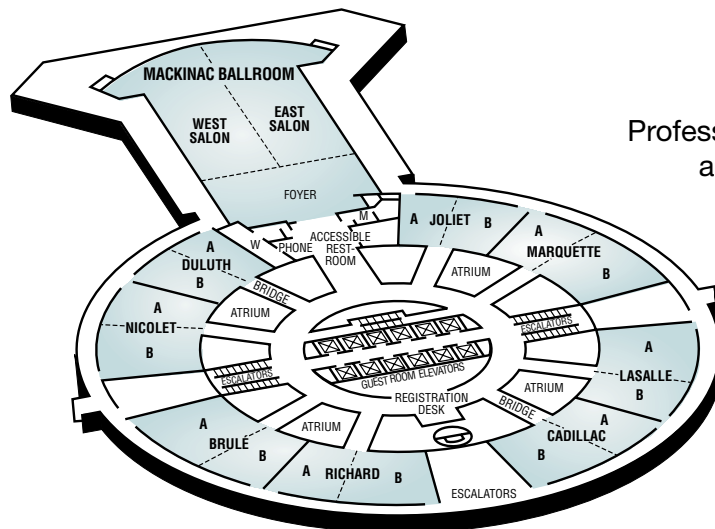
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Seoul National University

Kyungil Seo
Hyundai Mobis

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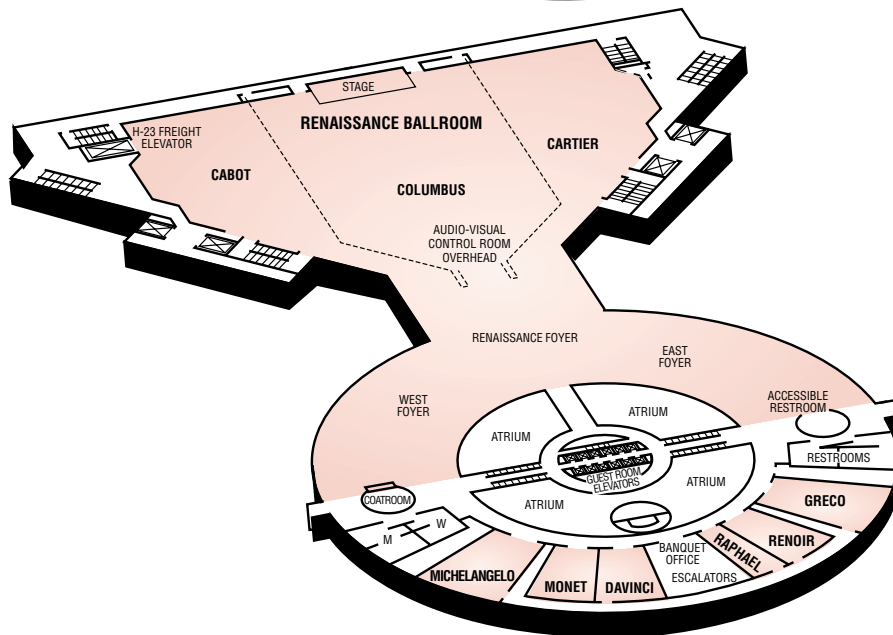
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DETROIT MARRIOTT RENAISSANCE CENTER



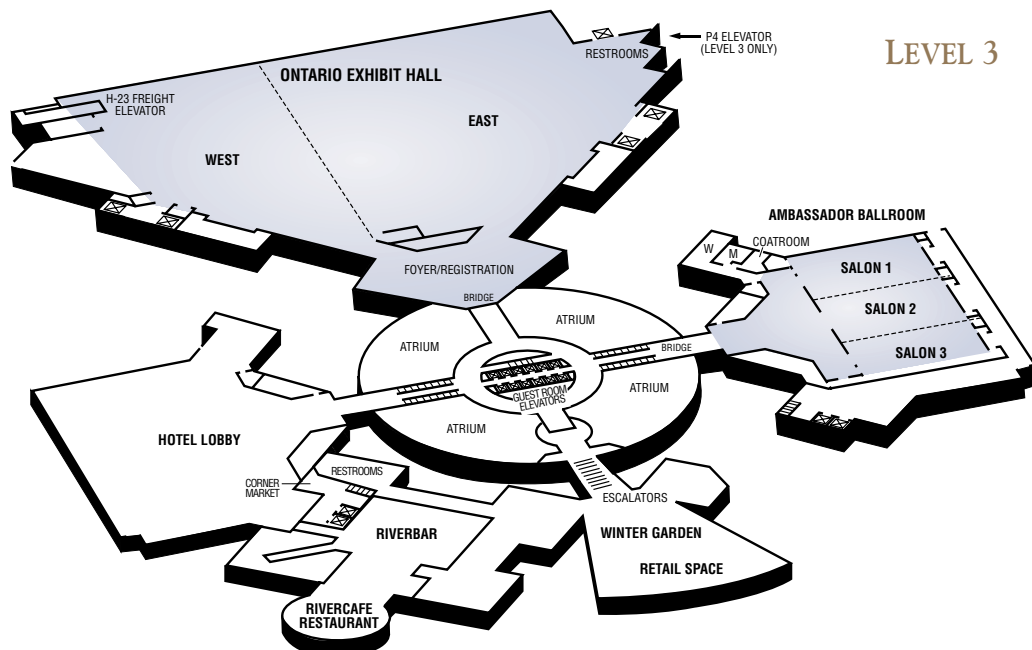
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Professional Development Seminars
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LEVEL 4

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Program Name, I.D.#, Location	Start Date	End Date	Instructor	List Fee	Mbr Fee
Electronics					
Automotive Powertrain and Battery Cooling Airflow Systems: A Vehicle Perspective	4/23/12	4/24/12	Williams, Jack	\$1,305	\$1,175
Acquiring and Analyzing Data from Sensors and In-Vehicle Networks	4/24/12	4/25/12	Walter, Richard P	\$1,315	\$1,184
**Embedded Control Systems Design Workshop	4/25/12	4/26/12	Bogden, Dennis M	\$1,265	\$1,139
Emissions/Environment/Sustainability					
Exhaust Flow Performance and Pressure Drop of Exhaust Components and Systems	4/23/12	4/23/12	Masoudi, Mansour	\$725	\$653
Emissions-Related OBD Systems: A Design Overview	4/24/12	4/24/12	Van Gilder, John F	\$785	\$707
Advanced Diesel Particulate Filtration Systems	4/26/12	4/27/12	Konstandopoulos & Masoudi	\$1,275	\$1,148
Integrated Design & Manufacturing					
Weibull-Log Normal Analysis Workshop	4/23/12	4/25/12	Fulton, Wes	\$1,985	\$1,787
Introduction to Failure Mode and Effects Analysis for Product and Process	4/23/12	4/24/12	Dawson, Lee D	\$1,285	\$1,157
Vehicle User Interfaces: Principles and Techniques for Design and Development	4/23/12	4/23/12	Tschirhart & Kosinski	\$725	\$653
Design Reviews for Effective Product Development	4/26/12	4/26/12	Mago, Angelo	\$725	\$653
Management/Marketplace					
Strategic Leadership	4/23/12	4/25/12	Doyle, Joseph	\$1,585	\$1,427
Success Strategies for Women in Industry and Business	4/23/12	4/23/12	Bardasz, Ewa	\$575	\$518
Product Liability & The Engineer	4/24/12	4/25/12	Seyboldt, Charles	\$1,225	\$1,103
Engineering Project Management	4/24/12	4/25/12	Mago, Angelo	\$1,390	\$1,251
Managing Engineering and Technical Professionals	4/25/12	4/27/12	Timmis, Eric	\$1,645	\$1,481
Leading High Performance Teams	4/26/12	4/27/12	Doyle, Joseph	\$1,225	\$1,103
Patent Law for Engineers	4/23/12	4/23/12	Levine, Russell E	\$725	\$653
Materials					
Threaded Fasteners and the Bolted Joint	4/23/12	4/24/12	Comer, Jess J	\$1,315	\$1,184
Advanced High Strength Steels for Vehicle Weight Reduction	4/23/12	4/24/12	Geck & Cover	\$1,225	\$1,103
Surface Texture: Specification and Control	4/23/12	4/23/12	Malburg, Mark C	\$725	\$653
Fundamentals of Metal Fatigue Analysis	4/25/12	4/27/12	Comer, Jess J	\$1,645	\$1,481

Program Name, I.D.#, Location	Start Date	End Date	Instructor	List Fee	Mbr Fee
Powertrains/Propulsion					
Fundamentals of Modern Vehicle Transmissions	4/23/12	4/25/12	McVea, William Mark	\$1,565	\$1,409
Gasoline Direct Injection (GDI) Engines	4/23/12	4/25/12	Chehroudi, Bruce	\$1,595	\$1,436
Introduction to NVH Aspects of Hybrid and Electric Vehicles	4/24/12	4/24/12	Govindswamy, Kiran	\$725	\$653
Hybrid Vehicle Systems Integration	4/26/12	4/26/12	Cattelan, Alexandra	\$725	\$653
Powertrain Selection for Fuel Economy and Acceleration Performance	4/26/12	4/27/12	Hoff & Davis	\$1,265	\$1,139
Common Rail Diesel Fuel Injection	4/27/12	4/27/12	Piacenti, Vincent	\$725	\$653
Engine and Exhaust System Heat Transfer	4/27/12	4/27/12	Ranganathan, Raj	\$725	\$653
Safety/Testing					
Accelerated Test Methods for Ground and Aerospace Vehicle Development	4/23/12	4/24/12	Porter, Alexander J	\$1,295	\$1,166
Vehicle Dynamics for Passenger Cars and Light Trucks	4/23/12	4/25/12	Lundstrom, Richard	\$1,715	\$1,544
Introduction to Hybrid and Electric Vehicle Battery Systems	4/25/12	4/26/12	Spek, Erik J	\$1,265	\$1,139
Safe Handling of High Voltage Battery Systems	4/27/12	4/27/12	Spek, Erik J	\$725	\$653

All seminars will be held at the Detroit Marriott Renaissance Center, Levels 5 except the Embedded Control Systems Design Workshop which will be held at

**SAE Automotive Headquarters, 755 W. Big Beaver, 1 h Floor, Troy, Michigan.

To register for seminars on-site visit the SAE Seminar Desk on Level 5 at the Detroit Marriott at the Renaissance Center .

For complete seminar descriptions, please visit SAE's website at **www.sae.org/congress** or the SAE Seminar Registration Desk.

SAE COMMITTEE TASK FORCE & BOARD MEETINGS

Monday, April 23

Group	Location	Time
K – 12 Education Committee	Marriott – Renoir	8:00 a.m. – 12:00 p.m.
IEA Spray Collaboration Workshop	Cobo – 02-39	8:00 a.m. – 2:00 p.m.
Interior Climate Control MRG CRP	AHQ – Education	8:00 a.m. – 5:00 p.m.
Vehicle EE Diagnostic Standards Committee	AHQ – Networking	9:00 a.m. – 12:00 p.m.
Corporate Sales Meeting	Marriott - Michelangelo	9:30 a.m. – 5:30 p.m.
SAE Foundation Board of Trustees	Cobo – D3-16	10:00 a.m. – 4:00 p.m.
MPPC Council	AHQ – Standards	1:00 p.m. – 3:00 p.m.
Pre College Education Committee	Marriott - Raphael	1:00 p.m. – 3:00 p.m.
Land & Sea Group (LSG)	Westin - Esquire Room	3:00 p.m. – 5:00 p.m.
TEETOR Meeting	Marriott – Da Vinci	3:30 p.m. – 5:30 p.m.
SAE Fellows Reception (Invitation Only)	Marriott – Ambassador Ballroom	5:00 p.m. – 6:00 p.m.
SAE Fellows Dinner (Invitation Only)	Marriott – Ambassador Ballroom	6:15 p.m. – 9:00 p.m.
TEETOR Award Reception (Invitation Only)	Marriott – Mackinac East	7:00 p.m. – 8:30 p.m.

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Patti Kreh

SAE International

Tuesday, April 24

Group	Location	Time
Advanced Power Sources Committee	Cobo – W2-60B	7:00 a.m. – 8:00 a.m.
Membership Board Meeting	Marriott – Da Vinci	7:30 a.m. – 2:00 p.m.
MM&T Committee	Cobo – DO-06A	8:00 a.m. – 8:45 a.m.
Control & Calibration Committee	Cobo – W2-60B	8:00 a.m. – 9:00 a.m.
Auto Electronics Committee	Cobo – DO-07B	8:30 a.m. – 9:30 a.m.
Fuel & Lubricants TC1 Engine Lubrication Committee	Cobo – D2-15	8:30 a.m. – 10:00 a.m.
Interior Climate Control Committee-Vehicle OEM	Cobo – D2-13	8:30 a.m. – 12:00 p.m.
Acoustical Materials Committee	AHQ – Education	8:30 a.m. – 12:00 p.m.
Committee on Automotive Rubber Specs (CARS)	AHQ – C-2 Classroom	9:00 a.m. – 11:00 a.m.
ABET Relations Committee	Marriott – Michelangelo	9:00 a.m. – 11:00 a.m.
Vehicle Dynamics Standards Committee	Cobo – M3-32	9:00 a.m. – 12:00 p.m.
HYBRID J2836, J2847, J2931 Task Force	AHQ – Networking	9:00 a.m. – 12:00 p.m.
Small Task Battery Committee	Cobo – D2-10	9:00 a.m. – 4:00 p.m.
Automotive Electronic Systems Reliability Standards	AHQ – Standards	9:30 a.m. – 11:00 a.m.
Fuel & Lubricants TC3 Driveline & Chassis Lubrication	Cobo – D2-15	10:00 a.m. – 11:00 a.m.
SAE Foundation Banquet Leadership Committee	Cobo - Chairman's Suite	11:00 a.m. – 12:30 p.m.
TQRT Committee	Cobo – D3-27	11:30 a.m. – 1:30 p.m.
Lubricants & Powertrain Systems Committee	Cobo – W2-60B	12:00 p.m. – 1:00 p.m.
HYBRID J1772 Task Force	AHQ – Networking	1:00 p.m. – 3:00 p.m.
Cooling Systems Standards Committee	AHQ – C-3 Classroom	1:00 p.m. – 4:00 p.m.
Fuel & Lubricants EOVC Task Force	Cobo – D2-15	1:00 p.m. – 4:00 p.m.
Textile & Flexible Plastic Committee	AHQ – C-2 Classroom	1:00 p.m. – 4:00 p.m.
Ignition Standards Committee	AHQ – Education	1:00 p.m. – 4:00 p.m.
Journal Editors Meeting	Cobo – D3-27	1:30 p.m. – 3:00 p.m.
Executive Nomination Committee (ENC)	Cobo – Chairman's Suite	1:30 p.m. – 2:30 p.m.
EMB New Member	Cobo – D3-16	1:30 p.m. – 2:30 p.m.
College Design Series Committee	Marriott – Michelangelo	2:00 p.m. – 4:00 p.m.
Battery Electronic Fuel Gauge Committee	Cobo – D2-13	2:00 p.m. – 4:00 p.m.
Powertrain Steering Committee	AHQ – Standards	3:00 p.m. – 5:00 p.m.
Brake Executive Board	Cobo – D3-27	3:30 p.m. – 5:00 p.m.
Ferrous/NonFerrous Committee	Cobo – DO 01-A&B	4:00 pm. – 5:00 p.m.
Fuel & Lubricants Council	Cobo – D2-13	4:00 p.m. – 6:00 p.m.

SAE COMMITTEE TASK FORCE & BOARD MEETINGS

Wednesday, April 25

Group	Location	Time
Occupant Protection Committee	Cobo – D3-16	6:30 a.m. – 7:30 a.m.
Combustion & Fuels Committee	Cobo – W2-60B	7:00 a.m. – 8:00 a.m.
NAIPC Committee	Cobo – Chairman's Suite	7:00 a.m. – 9:00 a.m.
Publications Board	Marriott – Da Vinci	8:00 a.m. – 1:00 p.m.
Executive Nominating Committee	Marriott – Marquette B	7:30 a.m. – 4:00 p.m.
Education Board	Marriott – Michelangelo	8:30 a.m. – 12:00 p.m.
Interior Climate Control Steering Committee	Cobo – D2-15	8:30 a.m. – 5:00 p.m.
Faculty Advisors Committee	Cobo – 03-45B	9:00 a.m. – 10:30 a.m.
Awards Program Committee	Marriott – Raphael	9:00 a.m. – 11:00 a.m.
Scholarship Committee	Marriott - Renoir	9:00 a.m. – 11:00 a.m.
HFTC6 Operator Accommodation	Cobo – D2-10	9:00 a.m. – 3:00 p.m.
Battery Testing Committee	Cobo – D2-13	10:00 a.m. – 12:00 p.m.
Vehicle Aerodynamics & Road Vehicle Aerodynamics Committees	Cobo – D3-24/25	1:00 p.m. – 3:00 p.m.
HYBRID 1&2 Responder Task Force	Cobo – M2-32	1:00 p.m. – 3:00 p.m.
Restraint Systems Standards Steering Committee	AHQ – Standards	1:00 p.m. – 3:00 p.m.
Fuel System Standards Committee	AHQ – Education	1:00 p.m. – 3:00 p.m.
CPDG Meeting	Cobo – D3-16	1:00 p.m. – 4:00 p.m.
Special Purpose Vehicle Committee	Cobo – D2-13	1:00 p.m. – 4:00 p.m.
Accident Reconstruction/Event Data Recorder Community	Cobo D3-28	4:15 p.m. – 5:00 p.m.
Engineering Meetings Board Meeting	Marriott – Mackinac West	5:00 p.m. – 8:00 p.m.
Past President's Dinner (Invitation Only)	Marriott – Michelangelo	6:30 p.m. – 9:30 p.m.

DON'T FORGET TO VOTE!

Best of the Best Booth Awards

Kiosks located next to the SAE International Booth

The Best of the Best Booth Awards recognize exhibitors with the most innovative technology.

Please vote for the most innovative exhibitor in each of the following categories:

- Poster Display
- 10x10 Booth
- 10x20 Booth
- 20x20 Booth
- Most Innovative Booth Overall

Voting will close Wednesday, April 25 at 6:00 p.m., so be sure to visit the voting kiosks in the front of Oakland Hall before that time.

Best of the Best Award winners will be recognized during the World Congress Annual Banquet.

Thursday, April 26

Group	Location	Time
Exhaust Aftertreatment & Emissions Committee	Cobo – W2-60B	7:00 a.m. – 8:00 a.m.
SETC Committee	Cobo – D3-22	7:00 a.m. – 9:00 a.m.
Ground Vehicle Reliability Committee	Cobo – M3-32	8:00 a.m. – 4:30 p.m.
Interior Climate Control Committee (CRP)	AHQ – Networking	8:00 a.m. – 5:00 p.m.
Wheel Finishing Lab Testing Task Force	AHQ – Education	9:00 a.m. – 12:00 p.m.
Pedestrian Dummy Task Group	Cobo – D2-10	9:00 a.m. – 12:00 p.m.
PF&L Executive Committee	Cobo – 03-45B	10:00 a.m. – 12:00 p.m.
J2047 Terminology Revision Task Force	AHQ C-3 Classroom	10:30 a.m. – 12:00 p.m.
Sustainable Development Program Committee (SDPC)	Cobo – 02-38	11:45 a.m. – 12:45 p.m.
Fire Safety Committee	Cobo – D3-23	1:00 p.m. – 3:00 p.m.
Auto Trans Friction Committee	AHQ – Standards	1:00 p.m. – 3:00 p.m.
Wheel Standards Committee	AHQ – Education	1:00 p.m. – 3:00 p.m.
Auto Trans Transaxle Committee	Cobo – D2-10	1:00 p.m. – 4:00 p.m.
Highway Tire Forum Steering Committee	AHQ – C-3 Classroom	1:00 p.m. – 5:00 p.m.
Service Technology Program Committee	Cobo – D3-27	12:00 p.m. – 1:30 p.m.
Motor Vehicle Council	Cobo – D2-13	2:30 p.m. – 4:30 p.m.

Friday, April 27

Group	Location	Time
Vehicle Architecture for Data Communications Committee	AHQ – Standards	9:00 a.m. – 12:00 p.m.
Safety Test Instrumentation Standards Committee	AHQ – Education	9:00 a.m. – 12:00 p.m.
Human Biomechanics & Simulation Standards Steering	AHQ - Education	1:00 p.m. – 5:00 p.m.

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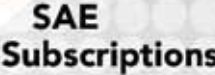
Tuesday, April 24	8:00 a.m. – 6:30 p.m.
Wednesday, April 25	8:00 a.m. – 6:00 p.m.
Thursday, April 26	8:00 a.m. – 6:00 p.m.

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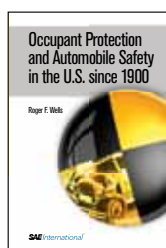
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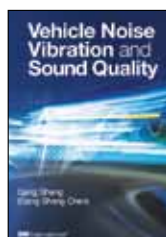
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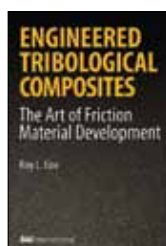
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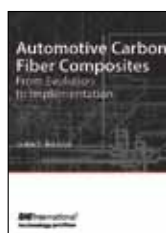
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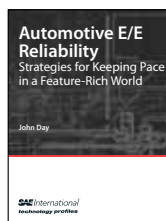
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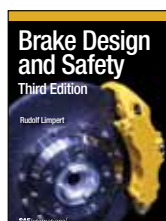
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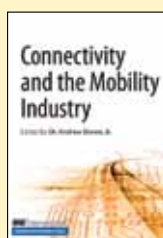
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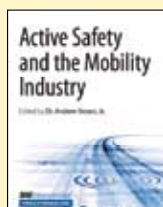
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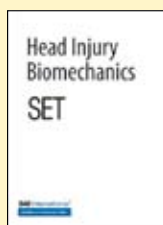
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1. A summary that states the objective of the paper/presentation;
2. Tentative title;
3. Name of the author and co-authors and all contact information;
4. Selection of the most appropriate technical session.

ELECTRONICS & ELECTRICAL SYSTEMS

- Testing & Instrumentation
 - Remote Communications and Data Analysis
 - New Test Methodologies and Information Management
 - On-board Instrumentation and Diagnostics
 - Component / System Simulation
 - Software/Hardware System Equipment and Innovations
 - System Software Testing & Validation
 - IVHM
 - Prognostics
- Electrical & Electronic Systems
 - Electrical Wiring Harnesses
 - Electro-mechanical Designs
 - Electronics Reliability
 - Model-Based Design and In-Vehicle Software
- Multi-Media Systems
- Software Safety Systems
- Systems Engineering
- Vehicle Sensors & Actuators
- Telematics Systems / Vehicle Navigation/ HMI
- Auxiliary Controls
- Electronic Components and Microprocessors
- Connected Vehicle
 - Smart Vehicle / Smart Infrastructure
 - Smart Grid Technologies
 - EV Infrastructure
 - Vehicle Information and Communication
 - Intelligent Transportation Systems
- Interior Electronics

ENVIRONMENT / EMISSIONS/ SUSTAINABILITY

- Emissions
 - Advanced Catalyst Technology
 - Cold Start Emissions Control Technologies
 - Diesel Exhaust Emission Control (DPF Substrates & Systems, Durability, HC-DeNOx, Modeling, New Developments, SCR)
 - Emissions Measurement & Testing
 - Emissions Processes for SI Engines
 - Particulate Emissions from Direct Injection Gasoline Engines
 - Gas Direct Injection Aftertreatment
 - Lean NOx Catalysts
 - LEV and ULEV Emissions
 - Non-Thermal Plasma Aftertreatment
 - Substrate Technology Surface Engineering & Tribology
- Thermal Systems
 - Climate Control
 - Thermal Systems Components
 - Thermal Systems for Electric & Hybrid Vehicles
 - Thermal Systems Modeling & Simulation
 - Energy Efficiency of Thermal Systems
- Sustainable Systems
 - Intelligent Highways & Guidance Systems
 - Low VOC for Interiors
 - Energy Efficient Manufacturing
 - Design for Sustainability
 - Vehicle Ownership/Usage Alternatives (shared ownership, renting, etc)
 - GHG Emissions Reduction
 - Integration of Transportation Systems into Urban Environments
 - Mass Transit and Regional Transit Systems in an Era of Mega-Cities
 - Sustainable and Energy Efficient Manufacturing
 - Advances in Alternative Energy Sources for Sustainable Development in the Transportation Sector
 - Sustainable Materials and Components
 - LCA and Sustainability
 - Vehicle Electrification Strategies for Sustainability
 - End of Life Management: Reuse/ Recycle/ Remanufacture
 - Megatrends in Sustainability
 - Reliability of Transportation System Design

MATERIALS

- Ferrous
 - Achieving Lightweight Vehicles
 - Applications for High Strength Steel Bar & Microalloyed Forgings
 - Castings
 - Coated Materials
 - Exterior Body Panels
 - Fatigue Research & Applications
 - Stainless Steel
 - Stamping Technology
- Non-Ferrous
 - Aluminum Applications
 - Magnesium
 - Vehicles Structures & Applications
 - Other Alloys
- Materials Modeling & Testing
 - Welding & Joining & Fastening
 - Modeling of Materials for Crash Applications
 - Experiments in Automotive Engineering
 - Load Simulation and Analysis in Automotive Engineering
- Polymers & Coatings
 - Bumper Systems
 - Painting Coatings
 - Components, Process & Technologies
 - Elastomers & Plastics for Fuels, Oils & Fluids
 - Instrument Panels
 - Interior Trim
 - Composites
 - Seals, Gaskets & Rubber Products
 - Seating Materials & Design
 - Low VOC Materials
 - Nanotechnology for Automotive Applications
 - Bearings, Lubricant Systems & Tribology
 - Biomaterials

INTEGRATED DESIGN AND MANUFACTURING

- Virtual Engineering E-manufacturing
- Accelerated Testing and Vehicle Reliability
- OEM Global Supply Chain
- Aftermarket Supply Chain
- Reliability & Robust Design in Automotive Engineering
 - Axiomatic Design
 - Design for Six Sigma
 - Design for Manufacturing
- Six Sigma
- Reliability Testing and DOE
- Modeling & Validation
- Accelerated Reliability & Durability Testing
- Lean Manufacturing for the Mobility Industry
- Concurrent Engineering
- Leadership for Lean Safety

PROPULSION/POWERTRAIN

- Hybrid and Non-Traditional Powertrains
 - Advanced Hybrid Vehicle Powertrains
 - Fuel Cell Power Systems
 - EV Powertrains
 - Advanced Battery Technologies
 - Natural Gas Engines and Vehicles
 - Hydrogen IC Engines
 - Power Electronics
- Fuel & Additive Effects on Combustion
 - Alternative and Advanced Fuels
 - Fuel Injection & Sprays
 - Fuel & Additive Effects on Engine Performance
- Compression Ignition Engines
 - CI Engine Modeling
 - Cold Start & Transients
 - Kinetically Controlled CI Combustion (HCCI)
 - Partially Premixed Combustion
 - Mixing Controlled (Diesel) Combustion
 - In-Cylinder Diesel Particulate & NOx Control
 - New Diesel Engines & Components
 - Lubricant Diagnosis and Management Systems
- Spark Ignition Engines
 - SI Engine Modeling
 - Direct Injection SI Engine Technology
 - New SI Engine & Component Design
 - Two-Stroke Engines
 - Rotary Engines
 - SI Combustion
- High Efficiency and Reduced CO₂/km)
 - Waste Heat Recovery
 - Engine Downsizing and Downspeeding
 - Variable Valvetrain Technologies
 - Small High-Efficiency Engines
- Control and Optimization
 - Powertrain Control and Optimization
 - Powertrain Actuators and Sensors
 - Combustion Control and Optimization
- Engine Components and Subsystems
 - Advanced Turbochargers & Power Boost
 - Engine Breathing Systems
 - Power Cylinder Systems
 - Variable Valve Actuation Systems
 - Electronic Engine Controls
 - On Board Diagnostics
- Lubricants
 - Engine Oils
 - Heavy Duty Diesel Lubricants
 - Transmission and Axle Lubricants
 - Lubricant R&D to Improve Vehicle Performance
- Transmissions & Drivelines
 - Clutch Systems & Controls
 - Gear Systems & Driveline
 - Launch Devices
 - New Transmission Systems
 - Hybrid Transmissions
 - CVT/IVT
 - Transmission & Driveline NVH
- Engine Flows and Combustion Diagnostics
- In-Cylinder Velocity Measurements
- Heat Transfer and Advances in Thermal & Fluid Sciences
- Multi-Dimensional Modeling
- Vehicle & Engine Systems Analysis & Modeling

SAFETY / TESTING

- Connected Vehicle
 - V2V/V2I Safety Applications
- Activity Safety
 - Lane Departure Warning/Lane Keeping Assistance
 - Collision & Blindspot Warning
 - Active Pedestrian Protection
 - Backover Protection
 - Collision Imminent Braking
 - Collision Avoidance
- Occupant Protection
 - Air Bag/Suppression
 - Belt Restraints
 - Child Passenger Restraints
 - Biomechanics
 - Pedestrian Safety
 - Integrated Safety Systems
 - CAE Methods in Crash Safety Applications Occupant Safety
 - Rollover
 - Rear & Side Impact
 - Accident Reconstruction
 - Event Data Recorders
 - Computer Applications for Crashworthiness
 - Vehicle Aggressivity & Compatibility in Crashes
 - Safety Test Methodology
 - Safety Critical Systems
 - Collision Avoidance
 - Pre-crash sensing
- Fire Safety
 - Fire Statistics & Analysis
 - Material Flammability & Fire Experiments
 - Underhood and Electrical Fires
 - Hydrogen Vehicle Fire Safety
 - Suppression Systems
- CAD/CAM/CAE
 - Design Simulation & Design Tools
 - Digital Modeling
 - Rapid Prototyping
 - Virtual Development
- Body Design & Engineering
- Design Optimization: Methods & Applications
- Body Structures
- Corrosion Prevention
- Digital Human Modeling
- Glass Applications
- Human Factors
 - Seating
 - Vision and Visibility
 - Comfort
 - Mobility
 - Telematics
- Lighting Technology
- Aerodynamics
- Wiper Systems
- Steering, Chassis & Suspension
 - Steering/Suspension Components & Systems
- Tires & Wheels
 - Component design/test technologies
 - Simulation/modeling
 - Testing and performance evaluation
- Vehicle Dynamics and Simulation
 - Passive/active
 - Stability control systems
 - Simulation and modeling
- Motorsports
 - Safety
 - Vehicle/Chassis
 - Tires
 - Testing/Simulation
 - Aerodynamics
 - Powertrain
 - Fuels & Lubricants
 - Materials
 - Green Motorsports
 - Alternative Energy Systems & Sources

NEW DEADLINE

Deadline for submitting paper offers.....September 1, 2012
Review Ready Manuscripts due to session organizers..... October 23, 2012
Final Manuscripts due to SAE..... January 25, 2013

Abstracts will be confirmed after September 1.

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Exhibit Hours

Tuesday, April 24

10:00 a.m. – 6:30 p.m.

Wednesday, April 25

10:00 a.m. – 6:00 p.m.

Thursday, April 26

10:00 a.m. – 6:00 p.m.

What is the Innovators Only Challenge? Prospective exhibitors are required to submit a written profile outlining their company's innovative product or service. Once received, a panel of automotive technology experts review the profiles based on criteria that includes: solution provided; product/ service differentiator; significance of product/service to their company, customers, industry, environment, and end consumer; collaborative efforts, if any, impacting the development of the innovative product or service.

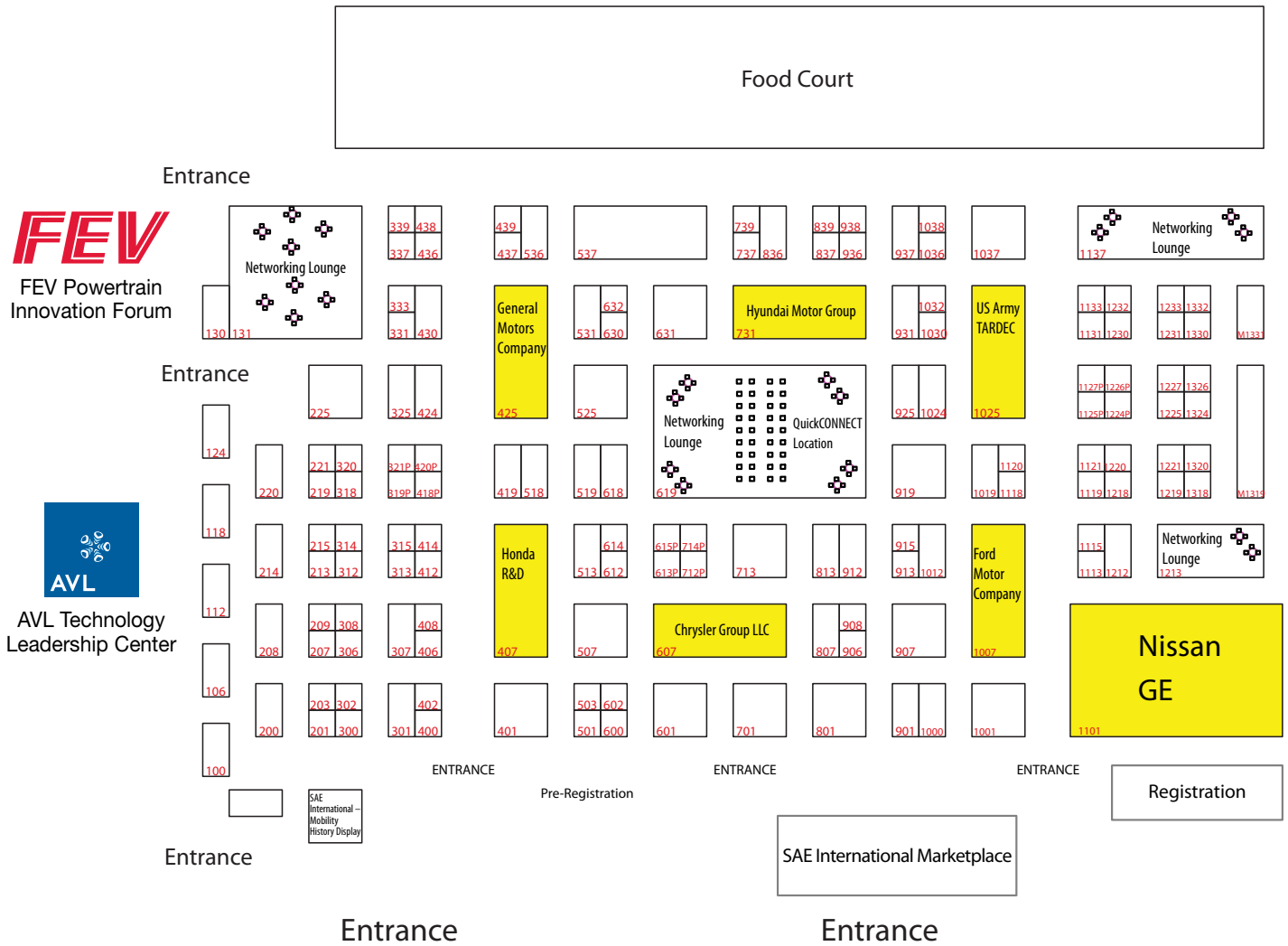
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Innovators Only Exhibition

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Company	Booth	Company	Booth	Company	Booth
A		H		R	
Acuren Inspection	315	Hart Energy - International Fuel Quality Center	414	Raydiance.....	418P
ADM21 Co Ltd	1232	Honda R&D	407	Reaction Design	1037
Advanced Cooling Technologies Inc.....	1030	Hong Kong Trade Development Council...	632	REM Surface Engineering	1000
AdvanTech International.....	906	Horiba.....	919	Rheinfelden ALLOYS GmbH & Co Kg	537
Ajin Industrial Co LTD.....	1225	Hyosung Corporation.....	1231	S	
Albonair	424	Hyundai Motor Group	731	SAE International.....	100
AluMag Automotive LLC	537	Hyundai-Metia	1233	SAE Marketplace.....	100
Applus IDIADA.....	507	I		Scuderia Group LLC	907
Autodesk Inc.....	525	IAV Automotive Engineering Inc.....	701	Sensor Products Inc.....	602
Automotive Engineering International Magazine.....	100	Ikeuchi USA Inc.....	936	Shilla Industrial Co Ltd	1332
AVL	101	International Products Corp.....	1121	Shinhan Precision Co Ltd	1326
B		Intrepid Control Systems Inc.....	400	Sichuan Zhongzi Exhaust Purge Co Ltd..	1120
Band-It-Idex Inc	913	Ixetic GmbH	537	Siemens PLM Software.....	807
Baumot.....	519	J		Simerics Inc.....	612
Bruker Corporation.....	1113	JATCO Ltd.....	1024	SLW Automotive.....	402
Bulk Molding Compounds Inc	901	K		Solutia Inc.....	513
Bylogix.....	713	Kienle + Spiess GmbH.....	537	SpaceClaim Corporation.....	501
C		KIPP Car Comfort Systems	537	SPAL USA	1019
CALS CORPORATION.....	1324	Korea Hitek Co Ltd.....	1221	Synergeering Group LLC.....	503
Cambustion	714P	Korea Powder Metallurgy Co.,Ltd.....	1330	T	
CCE	312	KOTRA/ AIN Global.....	M1331	Tata Technologies.....	937
CD-adapco.....	601	KSM Castings GmbH.....	537	Texas Economic Development.....	618
Centro Estero Per L'Internazionalizzazione	713	L		TI Automotive	531
Chrysler Group LLC	607	Lauterbach Inc	837	Torino Chamber Of Commerce	713
Comfort Motion Technologies (CMT)	1118	Lawrence Technological University	220U	Tour Engine Inc.....	613P
Concepts NREC	313	M		Transportation Research Center Inc	912
Continental Engineering Services	614	Mentor Graphics Corp	437	TRUWIN.....	1227
Controlled Power Technology	518	Michigan Technological University.....	112U	U	
Convergent Science Inc.....	300	Milwaukee School of Engineering.....	124U	ULVAC Inc.	1012
Core Molding Technologies Inc.....	931	MIRA Ltd	630	Univ of Michigan Transportation Res Inst	1212
D		MSC Software Corporation.....	406	University of Michigan.....	118U
D & V Electronics Ltd	307	N		US Army TARDEC	1025
Daesung Electric Co. Ltd.	1230	Natural Resources Canada Canmet-MTL..	302	US Dept of Transportation	1212
Delphi Automotive Systems.....	F111	Nissan.....	1101	US Environmental Protection Agency....	1131
Doyle Rotary Engine.....	408	NRC Automotive	302	V	
dSPACE Inc	325	O		VAC Sales USA LLC.....	908
Dynamic Intelligent Solutions.....	1125P	Objet, Inc.	1115	Victrex Polymer Solutions	615P
E		OneGene Electronics Inc.....	1318	W	
Ecomotive Solutions	713	Optrand Inc	712P	WARDSAUTO	M1319
ECotality Inc	915	P		Wayne State University	208U
EDAG Inc.....	308	Pinnacle Engines.....	430	Western Michigan University.....	106U
Element Materials Technology Wixom ...	1133	PLK Technologies Co., LTD.....	1320	WWJ Newsradio 950.....	130
F		Politecnico di Torino	713	Y	
Ferris State University	200U	PPT Vision Inc	1119	YOUNGSHIN PRECISION CO., LTD.....	1219
FEV Inc	401	Prettl Electric Corp	813	Yuyao Ruiqi Electronics Co Ltd	412
Ford Motor Co.....	1007	Pridgeon & Clay	419		
From Concept To Car.....	713	PROMEXICO	631		
Futronic Co., Ltd.	1218	Protean Electric.....	801		
G		Proto Manufacturing.....	600		
GE Global Research.....	1101	PSM International.....	925		
General Motors Company.....	425	PTM Corporation.....	536		
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Grail Engine Technologies.....	436				

EXHIBITOR LISTING BY TECHNOLOGY

ELECTRONICS

Advanced Cooling Technologies Inc ...	1030	dSpace.....	325	Korea Hitek Co Ltd.....	1221
AdvanTech International.....	906	D & V Electronics Ltd	307	Lauterbach Inc	837
Ajin Industrial Co LTD	1225	ECotality Inc.....	915	Mentor Graphics.....	437
Bylogix	713	Edag Inc.....	308	Mira Limited.....	630
CCE	312	Futronic Co Ltd	1218	OneGene Electronics Inc	1318
Centro Estero Per L'Internazionalizzazione	713	Hong Kong Trade Development Council.....	632	Tata Technologies	937
Comfort Motion Technologies (CMT).....	118	Hyosung Corporation	1231	Transportation Research Center Inc.....	912
Continental Engineering Services.....	614	IAV Automotive Engineering.....	701	TRUWIN	1227
Daesung Electric Co. Ltd.....	1230	Intrepid Control Systems	400	US Dept of Transportation	1212
				Yuyao Ruiqi Electronics Co Ltd.....	412

EMISSIONS/ENVIRONMENT/ SUSTAINABILITY

Albonair	424	dSpace.....	325	Nissan	1101
Baumot	519	Ecomotive Solutions	713	Pridgeon & Clay	419
Brucker Corporation, Nano Surfaces Division	1113	Edag Inc.....	308	Sichuan Zhongzi Exhaust Purge Co Ltd.....	1120
Centro Estero Per L'Internazionalizzazione	713	Futronic Co Ltd	1218	TI Automotive	531
CCE	312	From Concept To Car	713	Transportation Research Center Inc.....	912
Continental Engineering Services.....	614	Grail Engine Technologies.....	436	Torino Chamber Of Commerce.....	713
Convergent Science Inc	300	IAV Automotive Engineering Inc.	701	ULVAC Inc.	118U
		Milwaukee School of Engineering	124U	US Environmental Protection Agency...	1131
		Mira Limited.....	630		

INTEGRATED DESIGN & MANUFACTURING

AluMag Automotive LLC.....	537	Grail Engine Technologies.....	436	Objet, Inc.....	1115
Autodesk Inc	525	Horiba	919	Pridgeon & Clay	419
Band-It-Idex Inc.....	913	IAV Automotive Engineering.....	701	PPT Vision.....	1119
Brucker Corporation, Nano Surfaces Division	1113	Ikeuchi USA Inc.....	936	Prettl Electric Corp	813
CCE . 312		Ixetic GmbH	537	Proto Manufacturing Inc	600
Centro Estero Per L'Internazionalizzazione	713	Kienle + Spiess GmbH	537	PTM Corporation.....	536
Concepts NREC.....	313	KIPP Car Comfort Systems	537	Rheinfelden ALLOYS GmbH & Co KG..	537
Continental Engineering Services.....	614	Korea Powder Metallurgy Co.,Ltd.....	1330	Sensor Products Inc.....	602
dSpace.....	325	KSM Castings GmbH	537	Siemens PLM Software	807
Edag Inc.....	308	Mentor Graphics.....	437	SpaceClaim Corporation	501
Futronic Co., Ltd.	1218	Michigan Technological University.....	112U	Synergeering Group LLC	503
Gradient Lens Corp	301	Mira Limited.....	630	Texas Economic Development.....	618
		MSC Software	406	YOUNGSHIN PRECISION CO., LTD ...	1219

MANAGEMENT & MARKETPLACE

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As of March 20, 2012

MATERIALS

AluMag Automotive LLC.....	537	Edag Inc.....	308	KSM Castings GmbH.....	537
Autodesk.....	525	Element Materials Technology Wixom. 1133		REM Surface Engineering.....	1000
Bruker Corporation, Nano Surfaces Division	1113	Hong Kong Trade Development Council .632		Rheinfelden ALLOYS GmbH & Co KG..	537
Bulk Molding Compounds Inc	901	International Products Corp.....	1121	Solutia Inc	513
CALS CORPORATION	1324	Ixetic GmbH	537	Synergeering Group Inc.....	503
Core Molding Technologies Inc.....	931	Kienle + Spiess GmbH	537	VAC Sales USA LLC.....	908
		KIPP Car Comfort Systems	537	Victrex Polymer	615P

PROPULSION/POWERTRAIN

AluMag Automotive LLC.....	537	FEV	401	Prettl Electric Corp	813
Applus IDIADA.....	507	Futronic Co Ltd	1218	Protean Electric	801
Autodesk.....	525	Grail Engine Technologies.....	436	PSM International	925
AVL .. 101		Hart Energy - International Fuel Quality Center.....	414	Raydiance	418P
Baumot	519	Horiba	919	Reaction Design	1037
Bruker Corporation, Nano Surfaces Division 1113		Hyosung Corporation	1231	Rheinfelden ALLOYS GmbH & Co KG..	537
Bulk Molding Compounds Inc	901	Hyundai-Metia	1233	Scuderia Group	907
Cambustion.....	714P	IAV Automotive Engineering Inc.	701	Shilla Industrial Co Ltd.....	1332
CCE . 312		Ixetic GmbH	537	Shinhan Precision Co Ltd	1326
CD-adapco	601	JATCO Ltd	1024	Simerics Inc.....	612
Centro Estero Per L'Internazionalizzazione	713	Kienle + Spiess GmbH	537	SLW Automotive.....	402
Concepts NREC.....	313	KIPP Car Comfort Systems	537	Spal USA.....	1019
Continental Engineering Services.....	614	Korea Powder Metallurgy Co Ltd.....	1330	Tata Technologies.....	937
Controlled Power Technologies Ltd	518	KSM Castings GmbH.....	537	Texas Economic Development.....	618
Convergent Science Inc	300	Mira Limited.....	630	TI Automotive	531
Daesung Electric Co Ltd.....	1230	MSC Software Corporation	406	Tour Engine Inc.....	613P
D & V Electronics Ltd	307	Onegene Electronics Inc.....	1318	Transportation Research Center Inc.....	912
Doyle Rotary Engine	408	Optrand Inc.....	712P	TRUWIN	1227
Edag Inc.....	308	Pinnacle Engines	430	ULVAC Inc.	118U
				Youngshin Precision Co Ltd.....	1219

SAFETY/TESTING

Acuren Inspection.....	315	Dynamic Intelligent Solutions	1125P	Mira Limited.....	630
AdvanTech International.....	906	Edag Inc.....	308	PLK Technologies Co., LTD.	1320
Ajin Industrial Co Ltd	1225	Gradient Lens Corporation	301	Prettl Electric Corp	813
CCE	312	Futronic Co Ltd	1218	Proto Manufacturing	600
Continental Engineering Services.....	614	IAV Automotive Engineering Inc.	701	Transportation Research Center Inc.....	912
Daesung Electric Co Ltd.....	1230	International Products Corp.....	1121	Yuyoo Ruiqi Electronics Co Ltd	412

INNOVATIVE EXHIBITOR PROFILES

Exhibitor Directory text is published as submitted by exhibiting companies.

A

Acuren Inspection

705 Albany St
Dayton, OH 45417
United States
www.acuren.com
Booth #315

Acuren Inspection - "A Higher Level of Reliability"
Acuren, a nondestructive testing (NDT), inspection and materials engineering firm focused on supporting mechanical integrity and inspection programs for clients across various industries including the Automotive Industry. Our mission is to provide reliable, repeatable service - for every client, everywhere, every day.

ADM21 Co Ltd

607 Hakdang Li Cheong Yaang
Chung Nam 345803
South Korea
Booth #1232

As one of the leading windshield wiper designer and manufacturer, ADM21 has a presence in over 100 countries. At ADM21 our culture passionately cultivates innovation and honest services. ADM21 is a dependable business partner that advocates environmentally and socially considerate decisions for its employees and customers

Advanced Cooling Technologies Inc

1046 New Holland Ave
Lancaster, PA 17601
United States
www.1-act.com
Booth #1030

ACT is a premier thermal management solutions provider specializing in technology development, product design and manufacturing. ACT manufactures heat pipes, vapor chambers, pumped liquid and thermal storage devices. ACT's quality system is certified to ISO9001:2008 and AS9100-C standards. ACT serves customers worldwide in the Aerospace, Automotive, Medical and Military markets.

AdvanTech International

1600 Cottontail Ln Ste 3
Somerset, NJ 08873
United States
www.advantechinternational.com
Booth #906

AdvanTech International is organized around two expanding markets. Vehicle Components focuses on delivering world class cold forming technology, wheel assemblies and components, and velocity/position sensors to automotive and motorcycle manufacturers in North America and Europe. Motion Technology delivers intelligent linear automation solutions to the semiconductor, precision inspection and general factory automation industries.

Ajin Industrial Co LTD Advanced Electronic Systems

1191-3 Shinsang-ri jinryang-eup
Gyeongsan-si Gyeongbuk 712837
South Korea
www.wamc.co.kr
Booth #1225

Ajin Industrial Co., Ltd. is a tier-1 automotive supplier developing and manufacturing from car body parts to advanced electronic systems. Ajin Industrial supplies parts and systems to many major OEMs by operating over 10 manufacturing facilities around the globe.

Albonair

39555 Orchard Hill Pl Ste 600
Novi, MI 48375
United States
www.albonair.com
Booth #424

Albonair, a Hinduja Group company, develops and manufactures exhaust aftertreatment systems for commercial and passenger vehicles. The supplier's portfolio covers SCR systems, diesel particulate filter systems and diesel oxidation catalysts. As component supplier and system integrator Albonair offers every customer the optimum solution to meet nationally applicable exhaust regulations.

AluMag Automotive LLC

20929 Sunnysdale St
Farmington Hills, MI 48336
United States
www.alumag.de
Booth #537

AluMag is a global market developing company (Market Research, Market Development and Road shows) that will help you penetrate new markets and find new business. We access new markets and open doors for your business - regardless of application, material, process or product. For SAE 2012 we are supporting and introducing German leading technology companies in the field of weight reduction and emission reduction that are currently not present in the NAFTA market.

Applus IDIADA

PO Box 20
L'Albornar
SANTA OLIVA(Tarragona) E43710
Spain
www.idiada.com
Booth #507

Comprehensive design, engineering and type approval services for vehicle development. CAD, CAE and testing of all major vehicle functionalities with unique state-of-the-art facilities. A large team of 1300 engineers from over 25 countries, and an international network of branch offices in 19 countries ensure clients will receive a customized service.

Autodesk Inc

111 McInnis Pkwy
San Rafael, CA 94903
United States
www.autodesk.com/manufacturing
Booth #525

Autodesk has a track record of satisfying customers with high quality, dependable products. Autodesk solutions help solve some of the Automotive industry's most challenging problems, and facilitate the shift in technology to address new opportunities. Autodesk offers strong interoperability across applications and open access to a network of development partners.

Automotive Engineering International Magazine

400 Commonwealth Dr
Warrendale, PA 15086
United States
www.sae.org
Booth #100

Pick up a copy to SAE International's flagship publication and the engineers choice for the most timely, relevant technical information, AEI. The SAE 2012 World Congress Show Issue will be distributed highlighting many of the innovations presented at the event. Sign up for a complimentary subscription to AEI or any



SAE magazines including various technology focused e-newsletters. Interested in marketing to the global auto industry? SAE offers many channels in which to do so. Learn of them at the SAE booth. Magazines and staff reps can be found at the SAE booth featuring the SAE Marketplace, which is located at the front entrance of the exhibit hall near registration.

AVL

47519 Halyard Dr
Plymouth, MI 48170
United States
www.avl.com
Booth #101

AVL is the world's largest privately owned and independent company for the development of gasoline, diesel, alternative fuel, electric and hybrid powertrain systems. The company offers combined solutions of powertrain engineering, simulation software, testing and instrumentation systems. AVL's North American Headquarters is located in the Detroit suburb of Plymouth, Michigan.

Platinum
Partner

B

Band-It-Idex Inc

4799 Dahlia St
Denver, CO 80216
United States
www.band-it-idex.com
Booth #913

BAND-IT - IDEX, INC., The World's Leader in Engineered Band Clamping Systems is able to supply your Automotive Banding & Clamping requirements for Side Curtain Airbags, Exhaust and Cable Shields, CV Boots and many other vehicle applications. Visit us at WWW.BAND-IT-IDEX.COM.

Baumot

39555 Orchard Hill Pl
Novi, MI 48375
United States
www.baumot.us
Booth #519

In over 23 years BAUMOT has developed a global footprint, while selling its core competency in application management of innovative Diesel emission reduction systems as well as coating solutions for substrates in PM and NOx reduction systems to Retrofit and now OEM customers alike. New: the NH3 generator.

Bruker Corporation Nano Surfaces Division

Suite 150
3400 E. Britannia Drive
Tucson, AZ 85706
United States
www.bruker-axs.com
Booth #1113

Bruker's high-performance metrology solutions encompass a wide range of technologies, including stylus profilers, confocal microscopes, and interferometric optical profilers. At SAE, see Bruker's NPFLEX™ 3D Metrology System which provides comprehensive, non-destructive 3D surface characterization of wear, surface texture, and manufacturing processes on large and fixtured, precision machined samples. This system enables lean production level yields, while supporting improved product quality.

Bulk Molding Compounds Inc

1600 Powis Ct
West Chicago, IL 60185
United States
www.bulkmolding.com

Booth #901

Bulk Molding Compounds, Inc. (BMC) is the world's largest supplier of bulk molding materials (thermosetting BMC). BMC is an innovative material solution for automotive engineers seeking a lightweight, heat resistant material that retains excellent modulus properties when exposed to cycling temperatures and automotive fluids. Ideal for metal replacement applications, BMC allows engineers to design complex components that resist creep over the life of a vehicle even when exposed to temperatures in excess of 200°C.

Bylogix

Via Rosta 5 Bis
Turin 10143
Italy
www.bylogix.it

Booth #713

Production: engineering company, that designs embedded systems for automotive applications supporting the customer from the concept phase to the mass production. Bylogix skills are in the field of real time software and hardware design, safety study and analysis, control systems modelling and simulation, electric and electronic vehicle architectures definition, testing systems. In recent years Bylogix contributed to develop and to bring to production some electric vehicles and its new components.

**CALS CORPORATION**

4th Semi Bldg
132 Yeongjung-ro, Yeongdeungpo-gu
Seoul 150-038
South Korea
www.changam.co.kr

Booth #1324

CALS Corp., was established at November 11, 1980. Now we are producing 300 kinds of specialty lubricants from our own factory. In Specialty Lubricant Industry, we are the exporter to 27 countries, including the USA, Japan, China, India, Mexico, Indonesia, etc. as well as domestic market.

Cambustion

347 Cherry Hinton Road
J6 The Paddocks
Cambridge CB1 8DH
United Kingdom
www.cambustion.com

Booth #714P

Cambustion's fast-response HC, NOx, CO/CO₂ and particulate analyzers enable engineers worldwide to understand engine operation and meet emissions targets. Cambustion's DPF Testing System has been embraced by DPF and vehicle manufacturers for DPF testing and development while the new CPMA allows direct measurement of engine exhaust particle mass/shape. Poster Booth 714P.

Canadian Automotive Innovation Ctrs

c/o Consulate General of Canada Detroit
600 Renaissance Ctr Ste 1100
Detroit, MI 48243
United States

Booth #302

Three Canadian organizations will be highlighting innovative technologies and solutions for the automotive industry. The Department of Foreign Affairs and International Trade Canada manages Canada's diplomatic and consular relations and encourages the country's international trade. The Natural Resources Canada (NRC)-CANMET Materials Technology Laboratory (CANMET-MTL), collaborates with industry and deploys technologies to improve all aspects of producing and using value-added products from minerals and metals. The National Research Council Canada (NRC)-NRC Automotive provides strategic research, scientific and technical services to develop and deploy solutions for the automotive industry. See individual company listings for detailed descriptions.

Canmet MATERIALS

Natural Resources Canada
183 Longwood Rd S
Hamilton, ON L8P 0A1
Canada
www.nrcan-rncan.gc.ca/mms-smm/mate-mate/index-eng.htm

Booth #302

At Canmet MATERIALS, NRC's scientific and technical staff supports the competitiveness of Canadian industry through research and development activities involving metals and alloys, metal composites, metal powders and the enabling technologies, such as fabrication, coating and welding, that are required for manufacturing products. The laboratory also studies environmental processes, such as recycling and eco-materials.

CCE

28800 Orchard Lake Rd
Farmington Hills, MI 48334
United States
www.cadcam-e.com

Booth #312

CCE is a minority-owned Michigan Corporation in business since 1989. Our focus is in providing technology solutions to leverage information locked in CAD files to increase efficiencies across the extended enterprise. Technology is complemented with engineering services to help companies outsource their chores so they can focus on their core. CCE serves all companies that create mechanical and electromechanical products.

CD-adapco

60 Broadhollow Rd
Melville, NY 11747
United States
www.cd-adapco.com

Booth #601

CD-adapco is the world's largest independent CFD-focused provider of engineering simulation software, support and services. We have over 30 years of experience in delivering industrial strength engineering simulation to a wide range of industries and application areas.

Centro Estero Per L'Internazionalizzazione

Corso Regio Parco 27
Torino 10152
Italy
www.centroestero.org

Booth #713

Based in Torino, Piemonte Agency is the key reference point for foreign enterprises wishing to come to know about the local economic system, looking for information on business opportunities in the area and searching for a quality business destination for direct investment. The Agency focuses chiefly on attracting foreign direct investment, increasing the presence of local companies and their competitiveness on international markets, promoting the region's tourist offer and products worldwide, training in foreign trade.

Chrysler Group LLC

800 Chrysler Dr
Auburn Hills, MI 48326
United States
<http://www.chryslergroupllc.com>

Booth #607

Chrysler Group LLC, formed in 2009 to establish a global strategic alliance with Fiat S.p.A., produces Chrysler, Jeep, Dodge, Ram, Mopar, SRT and Fiat vehicles and products. With the resources, technology and worldwide distribution network required to compete on a global scale, the alliance builds on Chrysler Group's culture of innovation, first established by Walter P. Chrysler in 1925, and Fiat's complementary technology that dates back to its founding in 1899. Headquartered in Auburn Hills, Mich., Chrysler Group's product lineup features some of the world's most recognizable vehicles, including the Chrysler 300 and Town & Country, Jeep Wrangler, all-new Dodge Dart, Ram 1500, Jeep Grand Cherokee SRT8 and Fiat 500. Fiat contributes world-class technology, platforms and powertrains for small- and medium-size cars, allowing Chrysler Group to offer an expanded product line including environmentally friendly vehicles.

OEM

Comfort Motion Technologies (CMT)

2701 Enterprise Dr. Suite 121
Anderson, IN 46013
United States
www.comfortmotion.com

Booth #1118

Comfort Motion Technologies' (CMT) patented, powered memory seat software automates continuous, subtle changes in a vehicle's seat position. The benefits of this subtle motion include a reduction in tissue fatigue and improvements in comfort, alertness, and reaction time.

Concepts NREC

217 Billings Farm Rd
White River Junction, VT 05001-9486
United States
www.conceptsnrec.com

Booth #313

Concepts NREC is an independent, full-service turbomachinery design/development organization offering Engineering Services (complete solution development from concept through performance testing), the Agile Engineering Design System® (turbomachinery-specific CAE/CAM design and analysis software) and Manufacturing Services (in-house machining center/mechanical assembly shop with 5-axis CNC mills) for Turbochargers, Fans, Blowers, and Pumps.

INNOVATIVE EXHIBITOR PROFILES

Continental Engineering Services

1 Continental Dr
Auburn Hills, MI 48326
United States
Italy
www.conti-engineering.com
Booth #614

Continental Engineering Services: As an independent operating provider of comprehensive engineering services, we are focused on following areas: Brakes, Safety and Chassis Engineering, Driver Assistance Systems, Hybrid and Electric Drives, Transmission and Engine Control, Exhaust Aftertreatment, Interior and Air Conditioning Control, Displays, AUTOSAR Software, System Engineering, and Functional Safety Management.

Controlled Power Technology

Units 2-4 Westmayne Industrial Estate
Bramston Way
Laindon Essex SS15 P
United Kingdom
www.cpowert.com
Booth #518

Controlled Power Technologies offers a family of evolutionary CO₂ reduction modular functionality powertrain products based on Nidec-Emerson Motor's switched reluctance motor technology with integrated power and control electronics. All are applicable to existing 12V/24V and future 48V under-hood architectures and they support micro, mild and full hybrid powertrain strategies.

Convergent Science Inc

6405 Century Ave Ste 102
Middleton, WI 53562
United States
www.convergecf.com
Booth #300

Convergent Science Inc. has developed the CONVERGE CFD code for modeling internal combustion engines. CONVERGE generates a mesh automatically at runtime and varies the resolution to resolve gradients using adaptive mesh refinement. CONVERGE is loaded with physical models for spray, turbulence and combustion needed to accurately model any engine type.

Core Molding Technologies Inc

800 Manor Park Dr
Columbus, OH 43228
United States
www.coremt.com
Booth #931

Core Molding Technologies is a molder of composite materials and a compounder of sheet molding compound (SMC) with over 30 years of industry experience. Our new low density material formulations are helping the automotive industry find lightweight solutions to meet the future CAFE challenge. Stop by to learn more!

Consulate General of Canada Detroit

Department of Foreign Affairs & International Trade
600 Renaissance Ctr Ste 1100
Detroit, MI 48243
United States
www.detroit.gc.ca
Booth #302

The mandate of Foreign Affairs and International Trade Canada is to manage Canada's diplomatic and consular relations and to encourage the country's international trade. The Consulate General of Canada Detroit is responsible for representing Canada's interests in a territory that includes: Michigan, Ohio, Indiana and Kentucky.

D

D & V Electronics Ltd

130 Zenway Boulevard
Woodbridge, Ontario L4H 2Y7
Canada
www.dvelectronics.com
Booth #307

D&V Electronics is testing the future of hybrid / electric vehicle motors and controllers combining proven reliability with performance, accuracy and modularity. D&V's EPT series of electric powertrain testers are built for endurance, laboratory and end of line production testing including the complete vehicle simulation of motors, inverters and batteries.

Daesung Electric Co. Ltd.

8-27 B/L
743-5 Wonsi-dong Danwon-gu
Ansan 425-090
South Korea
www.dsec.co.kr/en/default.jsp
Booth #1230

Daesung Electric has been developing and producing parts for automotive electronic control devices mobile communication devices and home appliances since its founding in 1973 as a producer of switches and relays. Continuous R&D and marketing efforts, DAESUNG has grown to become South Korea's number one automotive parts supplier.

Doyle Rotary Engine

139 Deborde Cir
Red Oak, TX 75154
United States
doyle Rotary.com
Booth #408

The Doyle Rotary is an internal combustion engine being developed and funded by the inventor, Lonny Doyle. The current prototype is nearing completion and will be the first testable DRE. It's 50% smaller than an engine of the same displacement and is expected to have higher efficiencies and lower emissions.

dSPACE Inc

50131 Pontiac Trl
Wixom, MI 48393
United States
www.dspaceinc.com
Booth #325

dSPACE is the world's leading provider of hardware and software tools for developing and testing sophisticated electronic control systems. For over 20 years, dSPACE's high-quality, off-the-shelf software and hardware tools have empowered engineers to design and innovate, while dramatically reducing development times and cost. To learn more, visit our website.

See our ad on cover 2

Dynamic Intelligent Solutions

22832 Macomb Industrial Dr
Clinton Twp, MI 48036
United States
www.dynamic3dmeasure.com
Booth #1125P

DIS extensive experience and partnerships gives us first-hand knowledge of the requirements and challenges of product testing and measurement technology allowing us to innovate current testing methods, delivering dynamic results to customers.

E

Element Materials Technology Wixom

51229 Century Ct
Wixom, MI 48393
United States
www.element.com
Booth #1133

Element is a network of independent material testing laboratories located across Europe and the United States of America. Element provides clients with a wide range of materials testing, failure analysis & consultancy, product testing and specification/qualification support. Please visit our website for more information.

Ecomotive Solutions

Via San Carpofo 33
Gabiano AL 15020
Italy
www.ecomotive-solutions.com
Booth #713

Production: Ecomotive Solutions designs and produces engine control systems for the management of Heavy Duty and Light Commercial Vehicles, Passenger Cars and Removable Energy Co-generators. Our d-gid (diesel-gas dynamic injection) is conceived to control a diesel engine fuelled with a mixture of air and Natural Gas (also suitable CNG, LNG, LPG, Bio-Gas, Syngas), ignited by a small pilot injection of diesel oil. d-gid is the most efficient, cost-effective approach to diesel-gas blending: this dual-fuel technology grants lower exhaust gas emissions and significant cuts in transport costs.

ECotality Inc

1 Montgomery St Ste 2525
San Francisco, CA 94104
United States
www.ecotality.com/
Booth #915

ECotality, Inc. (ECTY), headquartered in San Francisco, California, is a leader in clean electric transportation and storage technologies with a history in electric transportation dating back to 1989. With an aggressive development model strengthened by innovative technologies, acquisitions, and strategic partnerships and alliances, we strive to accelerate the market applicability and acceptance of clean technologies to replace carbon-based fuels.

EDAG Inc

275 Rex Blvd
Auburn Hills, MI 48326
United States
www.edag-us.com
Booth #308

EDAG, Inc is a global engineering concern, developing production ready solutions to meet the mobility needs of the future. EDAG's capabilities include design, engineering, vehicle integration and homologation, CAE and prototype build with show vehicle construction and paint. As an ITAR company, military projects have been completed onsite following all protocols.

Silver
Partner

F

FEV Inc

4554 Glenmeade Ln
Auburn Hills, MI 48326
United States
fev.com

Booth #401

FEV is an internationally recognized leader in the design and development of both conventional and alternative transportation energy systems. The company also develops technology solutions for the energy industry and is a major supplier of advanced testing and instrumentation products and services.

See our ad on cover 4

**Platinum
Partner**

Ford Motor Co

2400 Village Rd
Dearborn, MI 48124
United States
www.ford.com

Booth #1007

Ford will Display examples of our Global strategy to lead on Design and Technology. At the exhibit, Ford's technology range on display will include electrification, powertrain and infotainment technologies to name a few. Ford's design leadership will also be showcased in our exhibit for attendees to see up close. We plan to have the new Focus Electric and 2013MY Fusion Hybrid at our exhibit along with static displays.

OEM

From Concept To Car

Corso Regio Parco 27
Torino 10152
Italy
www.fromconcepttocar.com

Booth #713

Devised in 2002 by the Torino Chamber of Commerce and the Foreign Trade Office – Piemonte Chambers of Commerce, the project From Concept to Car aims at promoting the unique features of the Piemonte automotive industry: comprehensive vehicle design and manufacture in the same region, from the drawing board to the finished car. Through its technical Team, From Concept to Car provides foreign Buyers with a valuable free support in their outsourcing activities, as it offers the opportunity to get in touch with over 150 top-flight suppliers, chosen among 1400 on the strength of their technical, qualitative and logistic capabilities.

Futronic Co., Ltd.

#1476 U-Dong Haeundae-Gu
Busan 612-020
South Korea
www.futronic.co.kr

Booth #1218

FUTRONIC is the recognized innovator in advanced products and technologies that satisfy customer needs in automotive sensors and electric control units. Globalization, advanced technology, zero tolerance and cost competitiveness are the basis on which Futronic is built.

G

GE Global Research

1 Research Center
Niskayuna, NY 12309
United States

Booth #1101

What if you could charge your electric car in under 30 minutes? What if your car could "talk" to your house to manage electricity and save money? It can do this, and more. Keeping with the "Get Connected" theme of SAE

**Tier One
Strategic Partner**

2012 World Congress, Nissan and its strategic partner, GE, will showcase interactive exhibits that demonstrate the integration of electric cars like the Nissan LEAF into the home via the latest SmartGrid technologies. Other demonstrations will include CHAdeMO DC quick charging and vehicle-to-home, reverse-flow power management with Nissan LEAF. Nissan's display will also include the all-new 2013 Altima sedan, which goes on sale this Summer.

General Motors Company

30001 Van Dyke Ave
Warren, MI 48093
United States
www.gm.com

Booth #425

The General Motors exhibit will feature a variety of technologies aimed at seamlessly and intuitively connecting drivers to their vehicles, as well as providing better connectivity between the vehicle and the outside world. Featured among these technologies will be the recently revealed Cadillac CUE HMI and advanced OnStar capability.

OEM

Gradient Lens Corporation

207 Tremont St Ste 1
Rochester, NY 14608
United States
www.gradientlens.com

Booth #301

Gradient Lens Corporation designs, manufactures and sells Hawkeye® Rigid, Flexible and Video Precision Borescopes. Hawkeyes deliver world-class image quality, at a fraction of the cost of comparable instruments. Over 70 models of rigid, flexible, and video borescopes, and accessories, are in stock and ready for delivery.

Grail Engine Technologies

1205 Manor Dr
Chapman, KS 67431
United States
www.grailengine.com

Booth #436

Grail Engine Technologies has developed the most advanced true-stroke technology. A non-conventional oil cross contaminated two stroke with a multi-fuel, uniform temperature, uni-flow, HCCI, spark ignition, intake compression to power exhaust, adaptable on-the-fly ICE true hybrid engine.

H

Hart Energy - International Fuel Quality Center

1616 S Voss Rd Ste 1000
Houston, TX 77057
United States
ifqc.org

Booth #414

Established in 1998, the International Fuel Quality Center (IFQC) brings together the world's leading refining, automobile and engine manufacturers, technology suppliers & government agencies facilitating and improving their understanding of fuel quality issues.

Honda R&D

1919 Torrance Blvd
Torrance, CA 90501
United States
www.honda.com

Booth #407

Honda - Connected & Fun - Personal Mobility of the Future. This year Honda's Solar Panel, Home Battery Unit and Co-Generation power unit showcase Home Energy Technologies and Solutions, while the all-new Honda Integra Motorcycle, and new 700 cc engine display represent the latest in FUN Personal Mobility.

OEM

Hong Kong Trade Development Council

333 N Michigan Ave Ste 2028
Chicago, IL 60601
United States
www.hktcdc.com

Booth #632

Established in 1966, the Hong Kong Trade Development Council (HKTDC) is the international marketing arm for Hong Kong-based traders, manufacturers and service providers. With more than 40 offices, including 11 on the Chinese mainland, HKTDC promotes Hong Kong as a platform for doing business in China and throughout Asia.

Horiba

5900 Hines Dr
Ann Arbor, MI 48108
United States
www.horiba.com

Booth #919

HORIBA's, the industry's proven emissions-testing leader for nearly 50 years, will display their new, extremely-accurate motor exhaust gas analyzer with quantum cascade laser technology. QCL offers rapid and simultaneous measurement of the four main nitrogen compounds. HORIBA engineers will be available to discuss a wide variety of ways to increase fuel economy, and improve vehicle performance.

**Silver
Partner**

Hyosung Corporation

119 Mapo-daero Mapo-gu
Seoul 121720
South Korea
www.hyosung.com

Booth #1231

Hyosung was quick to spot a market opportunity in the rising demand for electric vehicle, opening a new era in eco-friendly technology. Hyosung successfully developed electric traction motor and slow/quick charger(charging infrastructure) for electric vehicle. Founded in 1957, Hyosung has grown as one of the most prestigious conglomerates in South Korea.

Hyundai Motor Group

772-1 Jangduk-Dong Hwaseong-Si
Gyeonggi-Do 445 706
South Korea
www.hatci.com

Booth #731

Hyundai Motor Group, which includes Hyundai Motor Company and Kia Motors, is South Korea's largest automobile manufacturer. The automotive sector of Hyundai Motor Group was formed in 1998 when Hyundai Motor Company purchased Kia Motors. In 2011, HMG sold 6.6 million vehicles globally.

OEM

Hyundai-Metia

192-7 Shinchon-dong Changwon-City
Kyongnam 641-370
South Korea

Booth #1233**IAV Automotive Engineering Inc.**

15620 Technology Dr
Northville, MI 48168
United States
www.iav.com/us

Booth #701

As a leading engineering partner for all major car manufacturers and suppliers, IAV offers over 25 years of experience and a range of competencies that is unique in its breadth.

INNOVATIVE EXHIBITOR PROFILES

Ikeuchi USA Inc

8110 Beckett Center Dr
West Chester, OH 45069
United States
www.ikeuchiusa.com

Booth #936

Ikeuchi USA, Inc. is the North American office for H. Ikeuchi & Co. Ltd., which is headquartered in Osaka, Japan. Ikeuchi has been providing industrial spray nozzles and humidification products for over 50 years. We are now bringing our popular products to the North American market.

International Products Corp

201 Connecticut Dr
Burlington, NJ 08016
United States
www.ipcol.com

Booth #1121

We've provided innovative solutions for automotive manufacturing facilities for over 30 years; significantly decreasing costs, and improving quality and safety. Our line of P-80 temporary rubber lubricants allow o-rings, hoses, bushings, grommets and other rubber parts to slide easily into place and stay there without damage.

Intrepid Control Systems Inc

31601 Research Park Dr
Madison Heights, MI 48071
United States
www.intrepidcs.com

Booth #400

Intrepid Control Systems makes network adapters and tools for many markets, including CAN, J1939, UDS (ISO14229), J1708/J1587, RP1210, J2534, LIN, FlexRay, I2C and SPI. Tools for diagnostics, CCP/ XCP, stand-alone datalogging, and stand-alone flashing. Tools for heavy duty, military, passenger car, and aerospace applications. Find out more at <http://www.intrepidcs.com>.

Ixetic GmbH

Georg-Schaeffler-str 3
Bad Homburg 61352
Germany
www.ixetic.com

Booth #537

ixetic GmbH, which is based in Bad Homburg (Hesse/Germany), is a leading global manufacturer of hydraulic and vacuum pumps for the automotive industry. The company's turnover in 2011 totalled around €300 million. At its sites in Bad Homburg and Hückeswagen (Bergisches Land), Germany, and its plants in Plovdiv (Bulgaria) and Shanghai (China) the company employs a total of approximately 1400 employees. It also has subsidiaries in Brunswick (USA) and Yokohama (Japan), a joint venture with DSI, Bangalore (India) and a partnership with DHB in Porto Alegre (Brazil). Ixetic's product range includes hydraulic pumps for steering, chassis and transmission applications, vacuum pumps for brake systems, lubricating oil pumps, and innovative thermal management concepts for electric vehicles.

Manufacturing plants are located in Japan, Mexico, China and soon in Thailand, producing over 4 million ATs per year. Jatco strives for customer focus and sustainability for the future of the automotive society.

K

Kienle + Spiess GmbH

Bahnhofstrasse 23
Sachsenheim 74343
Germany
www.kienle-spiess.com

Booth #537

Kienle + Spiess offers world-leading modern punching and die-casting technology for manufacturing components for electric motors and generators such as stator, rotors and segment laminations. Our company's head office is located in Sachsenheim (Germany) since their establishment in 1935. In addition, we manufacture at four European sites: Sachsenheim, Vaihingen (Germany), Tokod (Hungary) and Bilston (Great Britain). With a revenue of 200 Mio. EUR (2010) and 1200 employees, we offer customers a unique range of products, technical solutions and services. These are highly diverse and cover the whole value-creation range – from electric steel to die-cast rotors, from tooling design to finished components. Our manufacturing and product quality is trusted by clients in the field of Automotive, Air Movement, Pumps and Industrial Application. Kienle+Spiess, with traditional values and innovative ideas, is focused on offering innovative technologies for increasing efficiency of electric motors.

KIPP Car Comfort Systems

Gottlieb-Daimler-Strasse 19
Sulz Neckar 72172
Germany
www.kipp-ccs.com

Booth #537

For some years now, KIPP CAR COMFORT SYSTEMS has been on the road to success by focusing on comfort solutions for automobiles. Storage space and operating systems for car boots and components designed to enhance driving comfort in convertibles are among the best known developments accomplished by the motivated team based in Sulz am Neckar. KIPP is an innovative engineering partner for the automotive industry and transforms good ideas into smart, marketable product solutions. The manufacturing processes we offer are Tooling, Prototyping, Processing, Finishing, Milling, Turning, Diecasting (zinc, aluminium, magnesium), Injection moulding (thermoplastics and thermosets), Metal- and non-ferrous metalworking, Surface finishing and Assembly.

Korea Hitek Co Ltd

Ansan-Si
836-7, Wonsi-Dong
Gyeonggi-Do 425-090
South Korea
www.koreahitek.co.kr

Booth #1221

After foundation on 1978, as 1st Tier supplier of KIA motors, KoreaHitek has been evolved itself continuously. From car door switch, which shows our high-quality management, to MDPS(Motor Driving Power Steering), which is the proof of deep trust of Hyundai Motors, KoreaHitek has various products for automotive electronic components.

Korea Powder Metallurgy Co.,Ltd.

Injusandan-ro 111 Inju-myon
Asan-si Chungnam 336-831
South Korea
www.korpm.co.kr

Booth #1330

Korea Powder Metallurgy Co., Ltd. was established as the first powder metallurgy company in South Korea in 1967. KPM's main products are engine head parts, transmission parts, shock-absorber, timing system parts, and other sintered parts for automobiles. We do promise to reward you with the world's best products.

KOTRA/ AIN Global

Ste 101
101 W Big Beaver Rd
Troy, MI 48084
United States
www.kotrana.org

Booth #M1331

KOTRA serves as a vital bridge between Korea and its trading partners to promote mutual prosperity by facilitating international commerce and investment. AIN Global foundation is a non-profit entity to assist Korean Automotive industries in their globalization. AIN Global organizes and supports international automotive exhibitions and business meetings.

KSM Castings GmbH

Cheruskerring 38
Hildesheim 31137
Germany
www.ksmcastings.com

Booth #537

KSM Castings is a global foundry company developing and producing aluminum and magnesium components for the automotive industry (sub-frames, steering knuckles / wheel carriers, BiW structures, transmission housings, steering housings, gas injection pump housings). KSM Castings operates six plants in Europe and China. KSM offers the whole range of service from CAD design, topology optimization, FE analysis, process simulation, tests and validation up to serial production. The large variety of production processes like high pressure die casting, Controlled Vacuum Casting (CVC™), Counter Pressure Casting (CPC), permanent mold casting, tilt casting (MTC™) as well as machining and assembly enables KSM to offer a solution to the customer that is tailored to his specific demands.

Lauterbach Inc

4 Mount Royal Ave
Marlborough, MA 01752
United States
www.lauterbach.com

Booth #837

Lauterbach is the leading provider of universal and modular microprocessor development tools with support for a wide variety of different architectures and platforms including ARM, PowerPC, TriCore, V850, SH4, MC9S12, S08 and many other cores/CPUs. Lauterbach is an internationally well established company with blue chip customers around the world.

J

JATCO Ltd

30893 Century Dr
Wixom, MI 48393
United States
www.jatco.co.jp/ENGLISH/index.html

Booth #1024

Jatco, Ltd. is the world's largest producer of continuously variable transmissions, with AT design and testing in Japan, United States, France or Korea.

M

Mentor Graphics Corp

8005 SW Boeckman Rd
Wilsonville, OR 97070
United States
www.mentor.com

Booth #437

Mentor Graphics provides one of the most comprehensive set of electrical and electronic design automation solutions for the automotive, commercial vehicle, and off-highway industries around the world, including OEMs and Tier 1 suppliers. System design tools from Mentor Graphics help you control the increasing complexity of designing and manufacturing today's vehicles.

MIRA Ltd

Watling Street
Nuneaton Warwickshire CV10 0TU
United Kingdom
www.mira.co.uk

Booth #630

MIRA is a world-class whole vehicle engineering and consultancy company, with a global reputation for innovation, testing and design. With 65 years of rich engineering heritage, MIRA hosts over 500 industry experts, 90 km of specialized proving ground and over 30 major test facilities. MIRA Technology Park offers a unique and exciting proposition to businesses engaged in research and development within the transport sector. Located in the centre of England this world class facility will be the premier transport sector research and development technology park in Europe.

MSC Software Corporation

2 Macarthur Place
Santa Ana, CA 92707
United States
www.mscsoftware.com

Booth #406

MSC Software is one of the ten original software companies and the worldwide leader in multidiscipline simulation. MSC Software helps companies improve quality, save time and reduce costs associated with design and test of manufactured products. For additional information about MSC Software's products and services, please visit: www.mscsoftware.com.

N

Nissan

39001 Sunrise Dr
Farmington Hills, MI 48331
United States
www.nissan-usa.com

Booth #1101

Nissan will continue to offer innovative products and services today and in the future. What drives us—and gives birth to new value—is the Nissan spirit, embodied in the phrase "The power comes from inside." Nissan builds high-quality cars that are safe and have the bold design and innovative technology to satisfy our customers' needs. As a responsible corporate citizen, Nissan is committed to contributing to the advancement of society and the preservation of our natural environment. Our corporate vision is "enriching people's lives."

OEM

NRC Automotive

800 Collip Circle
London, ON N6G 4X8
Canada
www.nrc-cnrc.gc.ca/automotive

Booth #302

NRC Automotive will connect your company to advanced automotive technologies. Our world-class R&D and facilities can help improve vehicle lightweighting through the use of composites, bio-composites, bioplastics and aluminium. Our R&D can also help improve powertrain efficiency and electric vehicle range.

O

Objet, Inc.

5 Fortune Dr
Billerica, MA 01821
United States
www.objet.com

Booth #1115

Objet is a leading provider of high quality, cost effective inkjet-based 3D printing systems and materials. A global company, Objet has offices in North America, Europe, Japan, China, Hong Kong, and India.

OneGene Electronics Inc

311-3 jeunggeo-ri Hyangnam-eup
Hwaseong-si Gyeonggi-do
South Korea
www.onegene.com

Booth #1318

ONEGENE and ONEGENE Electronics specialize in climate control temperature and humidity sensors, brushless DC motors, and oil cooler / radiator heat exchanger products for both automotive and commercial applications. Our main customers include major automotive OEM's including Ford Motor Company, GM, Honda and Hyundai/Kia Motor Corp.

Optrand Inc

46155 Five Mile Rd
Plymouth, MI 48170
United States
www.optrand.com

Booth #712P

Optrand, Inc., located in Plymouth, Michigan develops, markets, and licenses its miniature, as small as 1.7mm in diameter, and high temperature, up to 420°C, In-Cylinder Pressure Sensors for use in R&D as well as monitoring and control of production engines. Optrand's sensors target in particular integration with cylinder head gaskets, spark plugs, glow plugs, and fuel injectors.

P

Pinnacle Engines

1300 Industrial Rd Ste 1A
San Carlos, CA 94070
United States
www.pinnacle-engines.com

Booth #430

Pinnacle Engines is a global high-efficiency engine company. Pinnacle has developed an ultra-efficient engine design based on a four-stroke, spark-ignited (SI) opposed-piston sleeve-valve architecture using conventional engine manufacturing technology. Pinnacle is commercializing the technology now in conjunction with a major Asian vehicle OEM for high volume production beginning in 2013.

PLK Technologies Co., LTD.

Yangpyeong-Dong 3Ga
12th fl Innoplex Bldg 13
Yeongdeungpo-Gu Seoul 150-103
South Korea
www.plk.co.kr

Booth #1320

PLK strong on image recognition technology and produce the advance safety camera system.

Politecnico di Torino

Corso Duca degli Abruzzi 24
Torino I-10129
Italy

www.polito.it/h2polito

Booth #713

This year the Team H2Polito is developing a telemetry and HMI system for their low consumption vehicles, IDRApegasus and XAM, using an Android smartphone application. The app is designed to: • get pilot's steering system commands and send them to the powertrain ECU (Human Machine Interface), • collect data from the vehicle electronic embedded systems (Fuel Cell or combustion engine state, temperature, rear wheel steering angle, sensors, and also the state of charge of the supercapacitors), • add data from smartphone sensors (GPS positioning, accelerometer state, lap time), • log all data to a local file and at the same time send everything to a PC client that stores data into a DBMS (Telemetry). The app could be able to modify in real time vehicle parameters getting commands from the PC client to change strategy, powertrain efficiency. All the infrastructure is made using standardized protocols and interfaces such as USB, CANbus and GPRS/UMTS.

PPT Vision Inc

6301 W Old Shakopee Rd
Bloomington, MN 55438
United States
www.pptvision.com

Booth #1119

PPT Vision defines and installs high-performance embedded vision systems and custom-tailored solutions to inspect parts and assembly processes and ensure the highest quality standards in major automotive plants globally. PPT is a trusted leader in the machine vision industry, with exceptional results in sophisticated automotive applications – guaranteed. Visit us at pptvision.com.

Prett Electric Corp

1721 White Horse Rd
Greenville, SC 29605
United States
www.prettlus.com

Booth #813

Innovation and Technology for the future At PRETTL Automotive, our engineers focus on superior product design, efficient production planning and highly cost-effective manufacturing. Our product range includes interior lighting modules, user interfaces, electronic and electromechanical assemblies, cable assemblies and high voltage applications for electric vehicles.

Pridgeon & Clay

50 Cottage Grove St SW
Grand Rapids, MI 49507
United States
www.pridgeonandclay.com

Booth #419

Pridgeon & Clay produces high quality metal stampings and fine blank components with a long standing focus on innovation. Utilizing a strategic combination of Advanced Engineering, an A2LA Laboratory, Design, Prototyping, Research & Development and Six Sigma Manufacturing, P&C is committed to providing engineered solutions for High Volume Production.

INNOVATIVE EXHIBITOR PROFILES

PROMEXICO

Camino A Santa Teresa No 1679
Mexico Distrito Federal 01900
Mexico
promexico.gob.mx
Booth #631

PROMEXICO is responsible for Mexico's participation in the world's economy, assisting OEM's. Tier-I, Tier-II Companies to establish business partnerships aimed to complement and strengthen their competitive edge, enhance innovative contributions and develop new technologies for the global market, where increased economic globalization tendencies open new opportunities in North America.

Protean Electric

100 W Big Beaver Rd Ste 200
Troy, MI 48084
United States
www.proteanelectric.com
Booth #801

Protean Electric is a leading clean technology company that has developed a fully integrated, in-wheel motor, direct-drive solution for cars and light-duty trucks. Protean Electric is strategically positioned to play a major role in the hybrid and electric vehicle market by offering unique packaging advantages, performance and fuel economy benefits and cost savings.

Proto Manufacturing

12350 Universal Dr
Taylor, MI 48180
United States
www.protoxrd.com
Booth #600

Residual stress affects crack growth, fatigue life, stress corrosion cracking and distortion. For over 25 years, Proto has been providing both measurement services and equipment for measuring residual stress. Proto's leading edge x-ray diffraction (XRD) technology is portable, cost effective and provides data for making informed engineering decisions on components.

PSM International

12223 CR Koon Highway
Newberry, SC 29108
United States
www.psminternational.com
Booth #925

PSM is the global leader in the design and supply of engineered fastener solutions for the automotive industry. From design concept to full production PSM has key people around the globe to provide the support and guidance expected from the automotive sector.

PTM Corporation

6560 Bethuy Rd
Fair Haven, MI 48023
United States
www.ptmcorporation.com
Booth #536

PTM has been producing metal stamping since 1972. Our expertise and experience is wide ranging, to include detail part design, rapid prototype, tool build, and high volume production. PTM has literally produced billions of metal stamping for our clients. From small clips to car roofs we've done it all!

R

Raydiance

2199 S McDowell Blvd
Petaluma, CA 94954
United States
www.raydiance.com
Booth #418P

Raydiance uses ultra-short laser pulses to micro-drill fuel injector nozzles. Benefits include a) < 100 um holes, b) Virtually zero Heat-Affected Zone (HAZ), c) Shape Control (round or oval holes), d) Taper Control (positive, zero or negative taper), e) Angled holes, f) ~ 2 seconds/hole, g) Ra ~ 0.2 um ----- The Raydiance R-Drill is the ultimate tool for prototyping & producing new injector designs.

Reaction Design

6440 Lusk Blvd Ste D205
San Diego, CA 92121
United States
www.reactiondesign.com
Booth #1037

Reaction Design, the leader in combustion simulation, enables transportation manufacturers to rapidly achieve their performance and emissions goals by offering accurate fuel models and modern computer aided analysis software. Design more efficient and less polluting engines with predictive modeling solutions based on the latest innovations in combustion science.

REM Surface Engineering

325 W Queen St
Southington, CT 06489
United States
www.remchem.com
Booth #1000

REM, the inventor of the Rapid ISF Process, is a global provider of surface engineering products and services. A supplier to high-end automotive racing for over a decade, REM recognizes the growing demand for energy efficiency and increased component life and is working with automotive companies to fulfill these needs.

Rheinfelden ALLOYS GmbH & Co Kg

Friedrichster 80
Rheinfelden D-79618
Germany
www.rheinfelden-alloys.eu
Booth #537

Rheinfelden ALLOYS GmbH & Co. KG specializes in developing, customizing, producing and selling hi-tech aluminum casting alloys. 75% of the aluminum casting alloys made, are supplied into the automotive industry. Throughout the European premium car makers the alloys Silafont™-36, Magsimal™-59 and Castasil™-37 can be found. These alloys were developed in the RHEINFELDEN Tech Center and are applied for light weight applications of passenger cars, such as space-frame-nodes, sub-frames, suspension control arms, door frames, engine mounts, gear box housings, convertible roof components and others. Rheinfelden ALLOYS' partner for production and sales of Silafont™-36 is Noranda Aluminum, New Madrid, Missouri.

S

SAE International

400 Commonwealth Dr
Warrendale, PA 15096
United States
www.sae.org
Booth #100

Co-located with the SAE Marketplace, the SAE booth can be found at the front entrance of the exhibit hall near registration. Now, "all things SAE" are in one convenient location. And just as SAE is your ultimate knowledge source connecting you to the people and technical solutions you seek, so too is this new, all-inclusive section at the SAE World Congress. Here, discover what SAE International can offer you!

SAE International & SAE Marketplace

400 Commonwealth Dr
Warrendale, PA 15096
United States
www.sae.org
Booth #100

The SAE Marketplace is located at the front entrance of the exhibit hall near registration. Co-located with the SAE booth, now "all things SAE" are in one convenient location. All resources from the SAE 2012 World Congress are available for purchase at the Marketplace: you can download event papers, purchase 2012 Special Publications, or pick up newly released SAE book titles. Plus, see a demonstration of the e-books and SAE Papers Collections as well as the SAE Digital Library—industry's most current and comprehensive source for mobility engineering information.

Scuderi Group LLC SCUDERI Engine

Suite 33
1111 Elm Street
West Springfield, MA 01089
United States
www.ScuderiEngine.com
Booth #907

Scuderi Group is an engine development company advancing the ICE with new split-cycle technology proven to increase fuel efficiency, produce more power, and reduce emissions beyond what conventional engines can achieve now. The SCUDERI™ Engine provides the manufacturability, footprint and efficiency gains required by the world's largest engine development companies.

Sensor Products Inc.

300 Madison Ave Ste 2
Madison, NJ 07940
United States
www.sensorprod.com
Booth #602

Madison, NJ USA based Sensor Products Inc. has been a leader in the field of tactile surface pressure and force sensors since 1990. Our products are analytical tools used in manufacturing and R&D processes by engineers and technicians. Our clients include the large Fortune 500 industrial companies and thousands of smaller manufacturing firms.

Shilla Industrial Co Ltd Overseas Sales Team

100-1 Buksa-dong Jain-myeon
Kyungsan-city
Kyungbuk 712-850
South Korea
www.shillaind.co.kr/
Booth #1332

1. Electric Coil Assembly For Transference & Differential Case; 2. Magnetic Clutch Assembly For Air Compressor; 3. Forging & Machining Parts; 4. Field Coil Assembly; 5. Clutch Coil For Electric Water Pump; 6. Various Solenoids

Shinhan Precision Co Ltd

1-89 Woramdong Dalseogu
Daegu 704-832
South Korea
www.semcast.co.kr/
Booth #1326

A manufacturer of high quality aluminum Die-casting which is equipped machining lines, sub assembly lines.

Sichuan Zhongzi Exhaust Purge Co Ltd

No 12 Xixin Rd High Tech District
Chengdu 611731
China
www.zzjh.com.cn
Booth #1120

One of the leading company's in China specializing in development & manufacture & sales of catalyst for motorcycles, gasoline vehicles (Close couple catalyst, Three-way catalyst), diesel vehicles (DOC, DPF, Fe-zeolite SCR, Cu-zeolite SCR) and CNG/LNG/LPG vehicles. We have independent intellectual property rights for those catalysts and have close cooperation with Doctor Mr.Chen, who is the top expert in the field of catalytic products in China,

Siemens PLM Software

5800 Granite Pkwy Ste 600
Plano, TX 75024
United States
www.siemens.com
Booth #807

Siemens PLM Software is a leading global provider of product lifecycle management (PLM) software and services with 7 million licensed seats and more than 71,000 customers worldwide. Headquartered in Plano, Texas, Siemens PLM Software works collaboratively with companies to deliver open solutions that help them turn more ideas into successful products.

Simerics Inc

303 Williams Ave Ste 123
Huntsville, AL 35801
United States
www.simerics.com
Booth #612

Simerics develops, markets, and supports CAE software for the virtual simulation and testing of fluid pumps, valves, compressors, and motors. Simerics is focused on providing tools that allow manufacturers to reduce expensive hardware testing and provide unique insight into your products. PumpLinX is a virtual test bed, uniquely suited for the analysis of pumps, valves, motors, compressors, and other fluid devices with rotating or sliding components. It provides rigorous and robust simulation of flow, pressure, and cavitation in a device. PumpLinX provides unique insight over hardware testing by allowing the engineer to see inside the component with straightforward analysis.

SLW Automotive

1955 Hamlin Rd
Rochester Hills, MI 49307
United States
www.slwauto.com
Booth #402

SLW Automotive designs, develops and manufactures pumps for the automotive/mobile markets. Current applications include: fixed & variable oil pumps, transmission pumps, AWD actuation pumps, DCT pumps, vacuum pumps, tandem oil/vacuum pumps, brushed & brushless DC electric pumps and transfer case pumps.

Solutia Inc

World Headquarters
575 Maryville Centre Dr
Saint Louis, MO 63141
United States
www.solutia.com
Booth #513

Solutia is a market-leading performance materials and specialty chemicals company. Automotive products include Saflex® polyvinyl butyral interlayers for glass lamination and XIR® heat reduction film. Automotive engineers are taking advantage of the variety of benefits these products offer including heat (IR) reduction, weight savings, sound reduction, safety, security and UV protection.

SpaceClaim Corporation

150 Baker Avenue Ext
Concord, MA 01742
United States
www.spaceclaim.com
Booth #501

SpaceClaim, the leading provider of 3D Direct Modeling software, provides a complete solution for engineering and manufacturing organizations to innovate faster, win more business, and get products to market faster. SpaceClaim's acclaimed software is easy to learn and use and is completely CAD-neutral. It enables engineers and other manufacturing professionals to rapidly create new designs or manipulate and edit existing 2D and 3D geometry, without the complexity of traditional CAD.

SPAL USA

1731 SE Oralabor Rd
Ankeny, IA 50021
United States
www.spalusa.com
Booth #1019

SPAL Automotive is a global OEM manufacturer of DC axial cooling fans and centrifugal blowers with a focus on sealed brushless motor technology. For 50 years SPAL has provided the finest quality and value products to serve the auto, truck, bus, off-highway, stationary, power sports, military and various other markets including the EV, Hybrid and Battery cooling markets.

Synergeering Group LLC

25335 Interchange Ct
Farmington Hills, MI 48335
United States
www.rapidnylon.com
Booth #503

Synergeering Group, LLC is a full service provider of RapidNylon; large, fully functional prototype parts using GF-Nylon material. With two state of the art LS machines, each with the world's largest build area, we produce the most durable prototype parts with industry leading quality and unrivaled delivery time.

T

Tata Technologies

41050 W 11 Mile Rd
Novi, MI 48375
United States
www.tatatechnologies.com
Booth #937

Tata Technologies enables ambitious manufacturers to build better products through engineering services outsourcing, product development IT and manufacturing enterprise processes. Manufacturers deliver innovative, safer, sustainable products at a lower cost through the Tata Technologies four lines of service: Vehicle Programs & Development, Engineering & Design, Enterprise Solutions, and PLM Solutions.

Texas Economic Development

221 E 11th St Fl 4
Austin, TX 78701
United States
<http://governor.state.tx.us/ecodev/eff>
Booth #618

Texas supports innovative companies with exceptional technology by helping them introduce their products into the marketplace. To date, Texas has allocated more than \$169 million in funds to 133 high-tech companies. Visit booth 618 to learn how Texas has launched various auto related products and projects in Texas.

TI Automotive

1272 Doris Rd
Auburn Hills, MI 48326
United States
www.tiautomotive.com
Booth #531

Fluid thinking™ shapes the mindset of TI Automotive. Our industry-leading, award-winning fluid storage, carrying and delivery technology helps global automakers improve fuel economy, performance and emissions. With 18,500 employees at 130 locations in 28 countries, our strength lies in our ability to meet the needs of tomorrow's auto industry.

Torino Chamber of Commerce

Via S Francesco da Paola 24
Torino 10123
Italy
www.to.camcom.it
Booth #713

The Torino Chamber of Commerce is a public institution which represents more than 236,000 companies working in the district. Its mission is to foster the growth of local economy and enhance it through effective and targeted initiatives. The promotional activities are focused on the local economic development: services for the production system, for the market, sharing of infrastructure companies, grants etc. Moreover the Torino Chamber of Commerce promotes the local excellences abroad, with a focus on the hi-tech sectors, such as automotive, aerospace, IT, nanotech and biotech.

Tour Engine Inc

6340 Raydel Ct
San Diego, CA 92120
United States
www.tourenge.com
Booth #613P

Tour Engine has recently started testing its second-generation split-cycle IC engine with a modified cross-over valve. The TourEngine™ design has the potential for high efficiency and power density, with low emissions. Two independent computer simulations predict above 56% BTE at conventional operating conditions, while utilizing existing engine hardware and componentry.

INNOVATIVE EXHIBITOR PROFILES

Transportation Research Center Inc

10820 State Route 347
East Liberty, OH 43319
United States
www.trcpg.com

Booth #912

TRC Inc. specializes in research and development testing. Brake, crashworthiness, durability, fuel economy, emissions, and performance testing is conducted at the independent automotive proving ground. Facilities include a 7.5 mile test track, 50-acre vehicle dynamics area, 9,000 ft. x 84 ft. skid pad, off-highway area, crash facility, and emissions facility.

TRUWIN

1675-7 shinil-dong daeduk-gu
Daejeon 306230
South Korea
www.truwin.co.kr

Booth #1227

Our staff in sales, development, and production guarantee a successful product implementation. We combine everything in a strong company group: electronics-/ development and production as well as tools-, plastics-technology and connectivity. We constantly invest in our know-how and technology and maintains a customer responsibility for manufacturing high quality products on automated systems and equipment.

U

ULVAC Inc.

401 Griffin Brook Dr
Methuen, MA 01844
United States
www.ulvac.com

Booth #1012

ULVAC manufactures thin film deposition systems and vacuum equipment used in the manufacture of advanced automotive assemblies and components, for the Automotive Industry. This equipment can be used in the manufacture of: motors, power control units, batteries, mirrors, lighting, radiators, EGR coolers, window glazing, and instrument panels.

Univ of Michigan Transportation Res Inst

2901 Baxter Rd Rm 305
Ann Arbor, MI 48109
United States
www.umTRI.org

US Army TARDEC National Automotive Center

6501 E 11 Mile Rd
Warren, MI 48397
United States
www.tardec.army.mil

U.S. Army Tank Automotive Research, Development and Engineering Center (TARDEC). As the DOD focal point for research, development, engineering and technology integration for ground vehicle systems, TARDEC continuously looks for new partners who can support our key technology thrust areas. The connecting point into TARDEC is the National Automotive Center (NAC) whose technical experts will be available to discuss your collaborative ideas.

US Dept of Transportation

8301 Greensboro Dr
Mc Lean, VA 22102
United States
www.its.dot.gov/connected_vehicle/connected_vehicle.htm

Booth #1212

The U.S. Department of Transportation's ITS research program focuses on intelligent vehicles, intelligent infrastructure and the creation of an intelligent transportation system through integration with and between these components. The program supports the overall advancement of ITS through investments in major research initiatives, exploratory studies and a deployment support program.

US Environmental Protection Agency

2000 Traverwood Dr
Ann Arbor, MI 48105
United States
www.epa.gov/otaq

Booth #1131

US EPA: The Office of Transportation and Air Quality (OTAQ). This exhibit highlights the programs of USEPA's Office of Transportation and Air Quality including opportunities available at Greener Global Transport: 5th International Environmentally Friendly Vehicle Conference in Baltimore, MD, September 10-12, 2012. The conference hosted by USEPA, USDOE and Environment Canada will bring together world experts and government leaders involved in advancing and marketing vehicle technology internationally. The Office of Transportation and Air Quality's mission is to harmonize mobile sources with environment by advancing clean fuels and technology and promoting livable communities. OTAQ accomplishes its mission through implementing national air pollution policy and programs as required by the Clean Air Act, Energy Policy and Conservation Act, and Energy Independence and Security Act, for vehicles, engines, and fuels. OTAQ manages all national clean fuel programs, vehicle and engine standards and certification, in-use compliance, and recall programs as well as fuel economy and CAFE compliance for U.S. vehicles and engines.

V

VAC Sales USA LLC

2935 Dolphin Dr Ste 102
Elizabethtown, KY 42701
United States
www.vacuumschmetze.com

Booth #908

VACUUMSCHMETZE GmbH & Co. KG is a leading global manufacturer of advanced magnetic materials and related products. VAC develops and produces a variety of Rare Earth Permanent Magnets, Soft Magnetic Materials & Parts, and Cores & Inductive Components. We customize these materials and parts for optimized solutions.

Victrex Polymer Solutions

300 Conshohocken State Rd Ste 120
West Conshohocken, PA 19428
United States
www.victrex.com

Booth #615P

Victrex Polymer Solutions is exclusively focused on the manufacture of high performance PEEK polymers. Lightweight VICTREX PEEK polymers are thermoplastic materials that have replaced metals, polyamide-imide, and polyimide in automotive applications for more than 30 years. PEEK components can help increase fuel economy, lower NVH, and reduce total system costs.

WARDSAUTO

3000 Town Ctr Ste 2750
Southfield, MI 48075
United States
www.wardsauto.com

Booth #M1319

WardsAuto is a world leader in auto industry information, publisher of WardsAuto.com premium online service, WardsAuto World magazine, Ward's Engine and Vehicle Technology Update, and organizer of WardsAuto Interiors Conference. Visit <http://wardsauto.com> for details on WardsAuto products and services, to sign up for WardsAuto newsletters, and more.

Y

YOUNGSHIN PRECISION CO., LTD

408 Oya Ri Cheon Buk Myeon
Gyeong Ju Si 780874
South Korea
www.ys-kr.com

Booth #1219

Established Year: 1987 - No. of Employees: 386 - Annual Sales Volume (2011): US\$ 200 Mil - Certification: ISO9001 & QS9000, ISO/TS 16949, ISO 140001 - Main Customer - Korea: Hyundai/Kia Motors, Renault Samsung, GM Korea, Mando, Mobis - North America: GMNA, GM Canada, Nissan - Other Countries: GME, GM Holden, GMTH, SGM, Mahindra & Mahindra, Ford Australia, Hitachi Unisia

Yuyao Ruiqi Electronics Co Ltd

No 17 Changning Road Economy Dev Zone
Yuyao Zhejiang
China
www.yyxddz.com.cn

Booth #412

Our company is located in Ningbo city, Zhejiang province, China and specialized in manufacturing automotive meter dials, SBR (safety belt reminder) etc. The both products are all made by most excellent of raw materials and environmentalist printing.

Other Exhibitors

WWJ Newsradio 950

26495 American Dr
Southfield, MI 48034
United States
www.cbsdetroit.com

Booth #130

WWJ Newsradio 950 is Michigan's only all-news radio station. Owned and operated by CBS Radio, WWJ is Live, Local and Committed to delivering metro Detroit with the most up-to-the minute news, traffic and weather together every ten minutes on the 8's, sports, business, features, community, and lifestyle information.

SAE International - Mobility History Committee

400 Commonwealth Drive
Warrendale, PA 15096
United States

Lobby Area of Wayne Hall

University Student Displays

Ferris State University

1201 S State St
Big Rapids, MI 49307
United States
Booth #200U

Lawrence Technological University

21000 W 10 Mile Rd
Southfield, MI 48075
United States
www.ltu.edu

Booth #220U

Lawrence Technological University and Blue Devil Motorsports is a student run racing organization that consists of four teams; Formula SAE, Formula Hybrid SAE, Baja SAE and Aero Design SAE. These teams work together to run an affective and efficient organization that interacts with industry to promote quality engineering and business practices. Lawrence Technological University is located in Southfield, MI.

Michigan Technological University

1400 Townsend Dr
Houghton, MI 49931
United States
sae.students.mtu.edu/

Booth #112U

Michigan Tech's SAE student chapter is comprised of 6 student design series including Aero, Baja, Clean Snowmobile Challenge, Formula, Hybrid Vehicle and Super Mileage Systems.

Milwaukee School of Engineering

1025 N Milwaukee St
Milwaukee, WI 53202
United States
sae.groups.msoe.edu

Booth #124U

Milwaukee School of Engineering's SAE chapter is the 7th largest in the nation. Students can get involved through bi-weekly presentations or through the Supermileage, Formula Hybrid or Baja projects. At SAE World Congress, students will be representing the chapter, with the Supermileage vehicle on display. (<http://sae.groups.msoe.edu>)

University of Michigan

2101 Bonisteel Blvd
Ann Arbor, MI 48109
United States

Booth #118U

The University of Michigan SAE Student Chapter serves as an industry liaison to foster enthusiasm and interest for automotive and mobility related careers at the University of Michigan - Ann Arbor. Our exhibit features several students built vehicles that will be competing in upcoming SAE Collegiate Design Series™ events.

Wayne State University

5050 Anthony Wayne Dr Ste 1530
Detroit, MI 48202
United States
fsae.eng.wayne.edu/

Booth #208U

Wayne State University's Formula SAE team is composed of both undergraduate and graduate students from different engineering disciplines and many other majors. In Formula SAE, our team campaigns an open-wheel race car against other schools from all over the world.

Western Michigan University

4601 Campus Dr
Kalamazoo, MI 49008
United States
Booth #106U

Western Michigan University's student chapter of SAE is constantly exploring new connections to further advance its student design series vehicles. By Getting Connected, WMU's Formula SAE and Baja SAE programs have focused on working together on the development of shared components, sponsorship resources, and much more. Be sure to visit and talk to our excited members to learn more!

Career Fair Exhibitors

Aerotek

7301 Parkway Dr
Hanover, MD 21076
United States
www.aerotek.com

Booth #904CF

Alpine Electronics of America

27101 Hills Tech Ct
Farmington Hills, MI 48331
United States
www.alpine-usa.com/company/careers

Booth #703CF

B/E Aerospace Inc

1455 Fairchild Rd
Winston-Salem, NC 27105
United States
www.beaerospace.jobs

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Behr America Inc

2700 Daley Dr
Troy, MI 48083
United States
http://behr.de/internet/cms_usa.nsf/

Booth #704CF

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United States
www.bendix.com/careers

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www.borgwarner.com/careers

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Farmington Hills, MI 48331
United States
www.calsonic.com

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2340 S Fairfax Ave
Los Angeles, CA 90016
United States
<http://www.codaautomotive.com>

Booth #702CF

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2400 Executive Hills Blvd
Auburn Hills, MI 48306
United States
www.careers-continental.com

Booth #603CF

d. Diversified Services

30150 Telegraph Rd Ste 215
Bingham, MI 48025
United States
www.ddiversified.com

Booth #504CF

Delphi

5820 Delphi Dr
Troy, MI 48315
United States
<http://delphi.com/about/careers/>

Booth #802CF

Delta Staffing

5730 Bella Rosa Ste 300
Clarkston, MI 48348
United States
www.delta-staffing.com

Booth #304CF

Detroit Diesel Corporation

13400 West Outer Dr
Detroit, MI 48239-4001
United States
<https://www.detroitdiesel.com/about/employment.aspx>

Booth #203CF

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2339 Commerce Dr
Farmington, MI 48335
United States
www.ees-na.com
Booth #103CF

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1200 E. 151st St
Olathe, KS 66062
United States
www.garmin.com/careers
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900 N Squirrel Rd
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www.faurecia.com
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Auburn Hills, MI 48326
United States
www.grupoantolin.com
Booth #405CF

Hella Corporate Center USA

43811 Plymouth Oaks Blvd
Plymouth, MI 48170
United States
www.hellausa.com
Booth #502CF

Hitachi Automotive Systems Americas Inc

301 Mayde Rd
Berea, KY 40403
United States
www.hitachi-automotive.us
Booth #205CF

Hyundai America Technical Center Inc (HATCI)

6800 Geddes
Superior Township, MI 48198
United States
www.hatci.com
Booth #804CF

John Deere

One John Deere Pl
Moline, IL 61265
United States
www.johndeere.jobs
Booth #805CF

KPIT Infosystems Inc

33 Wood Ave S Ste 270
Iselin, NJ 08830
United States
www.kpitcummins.com
Booth #605CF

LHP Software

1888 Poshard Dr
Columbus, IN 47201
United States
www.lhpsoftware.com/careers
Booth #401CF

Lubrizol Corp

29400 Lakeland Blvd
Wickliffe, OH 44092
United States
www.lubrizol.com
Booth #202CF

Magna International

1870 Technology Dr
Troy, MI 48083
United States
www.magnacareers.com
Booth #600CF & 602CF

Magneti Marelli

3900 Automation Ave
Auburns, MI 48326
United States
www.magnetimarelli.com
Booth #403CF

MAHLE Industries Incorporated

23030 Haggerty Rd
Farmington Hills, MI 48335
United States
www.us.mahle.com
Booth #301CF

MillenWorks-Textron

1361 Valencia Ave
Tustin, CA 92780
United States
www.millenworks.com/careers.html
Booth #701CF

Nexteer Automotive

3900 Holland
Saginaw, MI 48601
United States
www.nexteer.com/careers.html
Booth #305CF

Nissan North America, Inc.

One Nissan Way
Franklin, TN 37067
United States
www.nissan.jobs
Booth # 300CF

Panasonic Automotive Systems Company of America

776 Hwy 74 S
Peachtree City, GA 30269
United States
www.panasonic.com
Booth #705CF

Pierburg

875 S Opdyke Rd
Auburn Hills, MI 48326
United States
www.kspg.com
Booth #501CF

Pratt & Miller Engineering

29600 WK Smith Dr
New Hudson, MI 48165
United States
www.prattmiller.com
Booth #400CF

Ricardo Inc

40000 Ricardo Dr
Ypsilanti, MI 48111
United States
www.ricardo.com
Booth #303CF

Robert Bosch LLC

38000 Hills Tech Dr
Farmington Hills, MI 48331
United States
<http://boschjobs.com/>
Booth #700CF

Satyam-Venture Engineering Services Pvt Ltd

850 Stephenson Hwy Ste 512
Troy, MI 48083
United States
www.satyamventure.com/html/careers.htm
Booth #902CF

Schaeffler Group USA

308 Springhill Farms Rd
Fort Mill, SC 29715
United States
www.schaeffler.us
Booth #104CF

Southwest Research Institute

6220 Culebra Rd
San Antonio, TX 78238
United States
www.swri.jobs
Booth #105CF

SPX Service Solutions

28635 Mound Rd
Warren, MI 48092
United States
www.spx.com/careers
Booth #404CF

Technology Services Partners Inc A CSC Company

4651 Salisbury Rd Ste 155
Jacksonville, FL 32256
United States
www.tspi.com
Booth #102CF

Toyota

25 Atlantic Ave
 Erlanger, KY 41018
 United States
www.toyota.com
Booth #204CF

Toyota Boshoku America

28000 West Park Dr
 Novi, MI 48377
 United States
www.toyota-boshoku.com/global/index.html
Booth #503CF

Transonic Combustion

461 Calle San Pablo
 Camarillo, CA 93012
 United States
www.tscombustion.com
Booth #604CF

TTi Global (Technical Training Inc)

2750 Product Dr
 Rochester Hills, MI 48309
 United States
www.ttinai.com/TTI/
Booth #402CF

University of Michigan

Dearborn College of Engineering & Computer
 Science
 4901 Evergreen Rd Engineering Complex
 Dearborn, MI 48128
 United States
www.engin.umd.umich.edu
Booth #302CF

US Navy

1155 Brewery Park Blvd Ste 320
 Detroit, MI 48207
 United States
www.navyreserve.com/careers.html
Booth #100CF

Volkswagen Group of America,

Chattanooga Operations LLC
 8001 Volkswagen Dr
 Chattanooga, TN 37416
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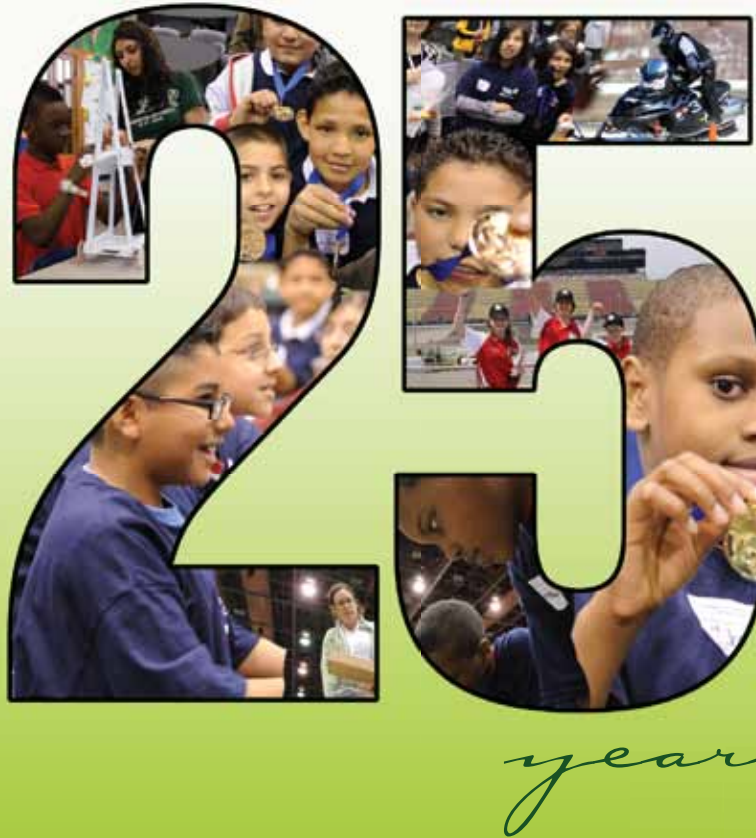


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