



Europe



Africa



Brazil



China



India

MRS
Russia

Russia



IV World Materials Summit®

Materials: A Key Enabling Technology for Secure
Energy & Sustainable Development

October 14-15, 2013

Council of Europe, Strasbourg, France

Context:

This World Materials Summit in Europe, will be the fourth in a series that has circulated the globe over the past six years; starting in Lisbon, Portugal on 4-5 October 2007, continuing in Suzhou, Shanghai, China on 12-15 October 2009 and most recently in Washington DC, USA on 8-12 October 2011.

Viewed from a strategic perspective, Advanced Materials are the basis for key enabling technologies. Consequently this field, ranging from R&D to manufacturing, is regarded worldwide as a driver for sustainable economic growth. The European Commission, e.g., identified especially Advanced Materials as one out of 6 Key Enabling Technologies ensuring that European industry can compete successfully on the global stage. Mastering Advanced Materials help to transform – mature as well as new innovative – industries from resource intensive to knowledge intensive ones. The Commission's European Competitiveness Report 2010 indicated a global current market volume of EUR 646 billion (around 2006/2008), which is projected to grow to over EUR 1 trillion by 2015. Our international colleagues indicate similar figures.

This World Summit is therefore very timely in view of the ongoing economic crisis across the globe. It will provide a unique forum for discussing global research, development and innovation issues for materials for energy. It will provide a series of recommendations for Policy Makers designed to accelerate the contribution that Advanced Materials can make to accelerate global economic growth.

PRELIMINARY PROGRAMME:

Monday morning October 14th, 2013

PLENARY SESSION Meeting room 5	
9:00	WELCOME ADDRESSES
Session chair	R. MARTINS E-MRS President
	J. GUIMARAES President CAPES, Brazil
	Y. HAN Secretary General Chinese MRS (C-MRS)
	G. SUNDARARAJAN President MRS India (I-MRS), Director ARCI, Hyderabad, India
	J. ZIMBA Immediate Past President Africa MRS
	P. OMLING President ESF & VP Science Europe
	S. CANDEL Member French Academy of Sciences, École Centrale Paris, France
	F. LOOS V.P. Regional Government, former French Minister of Industry and President French Energy Agency (ADEME)
	G. FIORASO (*) French Minister for Research
9:30	OBJECTIVES
	NEED FOR WORLDWIDE MATERIALS CREATIVITY FOR SUSTAINABLE ENERGY PRODUCTION AND CLIMATE CONTROL
Session chair	G. KALONJI Assistant Director-General for Natural Sciences, UNESCO
9:30	A. TAJANI European Commissioner for Industry (*)
9:40	M. GALVIN Director Materials NSF, USA "Materials and sustainability"
10:00	X. YAO Director Climate, Energy & Tenure, FAO /UNO
10:20	A. HURD Office of the S&T Adviser, Dept of States, USA "International perspectives on critical materials"
10:40	DISCUSSION
11:00	COFFEE BREAK

(*) Subject to availability

	WORLD ENERGY CHALLENGES
Session chair	B. RAJ President Academy of Engineering, India
11:15	C. ZEREFOS Academician, Athens, Greece "Global Change in an unstable World"
11:50	J.P. REICH Scientific Director, GDF Suez, France "Powering the Planet in the future"
12:25	D. MACKAY University of Cambridge and Dept. Energy & Climate Change, UK government
12:50	DISCUSSION
13:00	LUNCH

Monday afternoon October 14th, 2013

The focus sessions will be devoted to in-depth analysis of key issues concerning materials and innovation for competitive global economies focussing on energy.

The format of each focus session will comprise keynote presentations setting the international context, followed an interactive exchange with the invited audience.

FOCUS SESSIONS			
Meeting room 5		Meeting room 6	
	RARE EARTHS		SHALE GAS
Session chair	H. TU Vice President, China Nonferrous Metals Industry Association	Session chair	N. TZAVELA Member European Parliament and ITRE Committee
14:15	G.YONG, S. ZHOU CAE, China "Availability"	14:15	V. A. KUUSKRAA President of Advanced Resources International, Inc., USA "Shale gas resources and activity – the US and the world"
14:55	G. SUNDARARAJAN President MRS India (I-MRS), Director ARCI, Hyderabad, India "Status of rare earths in India"	14:45	H. THOMAS Director, Cardiff University, Royal Academy of Engineering "Report on shale gas extraction in the U.K"
15:15	R. C. EWING University of Michigan, USA "Rare earths elements: geologic resources and projected demand"	15:15	K. KURZYDLOWSKI Director, UTW, Poland "Materials issues in shale gas technologies"
15:35	G. SEXTL⁽¹⁾ / P. BRESSLER⁽²⁾ ⁽¹⁾ Director, ISC Fraunhofer Würzburg, Germany; ⁽²⁾ Director, Fraunhofer Office Brussels, Belgium "Recycling"	15:45	DISCUSSION
15:55	DISCUSSION		
16:05	COFFEE BREAK		COFFEE BREAK

FOCUS SESSION Meeting room 5	
	ELECTRICAL ENERGY PRODUCTION AND MANAGEMENT
Session chair	Z. ALFEROV President Physics Russian Academy of Sciences, Russia
	NUCLEAR
16:20	B. RAJ President Academy of Engineering, India
16:40	P. BREITENSTEIN, J. BRUEZIERE AREVA, France
17:00	E. HAN China "Materials degradation on micro and nano –scale and its influence on Safety and Reliability for Nuclear Power Plants: current status, research trends and challenges"
	FUSION
17:20	S. ORLANDI Director ITER "From IV Generation NPPs to Fusion: where we are, what is required and where we expect to go"
	PHOTOVOLTAICS
17:40	S. DENGYUAN CTO, Yingli Green Energy, China
18:00	M. FISCHER Director R&D, Hanwha Q-Cells / SEMI Europe, Germany "International Technology Roadmaps for PV (ITRPV)"
18:20	J. MARTINEZ DUART Autónoma University of Madrid , Spain "Comparison between PV and CSP solar electricity: LCOE present and predictable costs, and carbon abatement economics"
	SMART GRID
18:40	G-C. CHI⁽¹⁾ & Y. CHEN⁽²⁾ ⁽¹⁾ Chair Professor, University System of Taiwan ⁽²⁾ Associate Research Fellow, Taiwan Institute of Economic Research "The development of smart grid in Taiwan"
19:00	DISCUSSION
19:20	END OF DAY 1

Tuesday morning October 15th, 2013

FOCUS SESSIONS			
Meeting room 5		Meeting room 6	
	CARBON RECOVERY AND ENERGY STORAGE		FROM BIOMASS TO SYNFUEL
Session chair	M. DRESSELHAUS MIT, USA	Session chairs	J. GUIMARAES , CAPES, Brazil X. YAO , FAO / UNO
9:00	J. AMOUROUX E-MRS & ENSCP, France "Introduction: recycling of CO2 in chemical fuel"	9:00	O. DUBOIS FAO / UNO
9:20	K. P. ROETTGEN Head of E.ON Innovation Centre Energy Storage, Germany "Energy Supply: competition of storage technology"	9:20	C.A. LABATE Uni Sao Paulo – CTBE, Brazil "Bioethanol and bioplastics production in Brazil"
9:40	A. G. KONSTANDOPOULOS Aerosol & Particle Technology Laboratory, CPERI/CERTH, Thessaloniki, Greece "Sun, water and carbon dioxide: reusable resources for a sustainable future"	9:40	D. A. GOMES ARANDA Federal University of Rio de Janeiro, Brazil "Microalgae to Biofuels - Biorefinery Perspective"
10:00	Z. ISMAGILOV Institute of Coal Chemistry and Material Science, RAS, Russia "Importance of catalysts"	10:00	G. F. DE SANTI Director, JRC, Institute for Energy and Transport – European Commission
10:20	X. WANG CAS, China "Transformation into polymers"	10:20	P. RUTBERG St. Petersburg, Russia "Application of different plasmas for syngas generation aiming synthetic liquid fuels production"
10:40	C. SITA Chief Director: Hydrogen and Energy. South Africa "Synfuel"	10:40	M. R. TREDICI EABA, Italy "Micro-algae for Energy"
11:00	DISCUSSION	11:00	DISCUSSION
11:10	COFFEE BREAK		COFFEE BREAK

FOCUS SESSION
Meeting room 5

	CARS OF THE FUTURE
Session chair	V. LAMBERTINI FIAT, Italy
11:30	V. LAMBERTINI FIAT, Italy "Novel materials enabling sustainable mobility of the future"
11:50	T. BRUNNER BMW, Toyota, Germany/Japan "Hydrogen fuel cell technology – prospect and challenges for future emission-free mobility"
12:10	F. SEYFRIED VW, Germany "Biofuel & hybrid"
12:30	R. OTTEN Strategy and Communication Audi e-gas project, Audi, Germany "Audi e-fuels: Potential energy carriers of the future based on CO2"
12:50	DISCUSSION
13:00	LUNCH

Tuesday afternoon October 15th, 2013

FOCUS SESSIONS
Meeting room 5

Meeting room 6

	BATTERIES		LIGHT MATERIALS
Session chair	G. CREAN Scientific Director, Division of Technological Research, CEA, France	Session chair	G. SOLORZANO PUC-Rio, Brazil
14:00	F. LAMBERT CEA-LITEN, France "Situation seen by research"	14:00	M. DRESSELHAUS MIT, USA "Perspectives on Graphene research"
14:20	J. HUSLAGE VW, Germany "Material research for the next generation of automotive batteries! View from the automotive industry"	14:20	A. C. FERRARI Cambridge, U.K. "Graphene future emerging technology"
14:40	X. HUANG Institute of Physics, CAS, China "Recent developments of cathode materials and Li-ion batteries for new energy vehicles in China"	14:40	A. REUTER Fraunhofer IWES, Germany "New approaches for the use of composite materials for wind turbines"
15:00	DISCUSSION	15:00	DISCUSSION

PANEL DISCUSSIONS

Meeting room 5

	CONVERGENCE OF POLICY AND SCIENCE
Session chairs	M. KLEIBER President Academy of Sciences, Poland President European Materials Forum (EMF) R. LINKOHR Founder of STOA, European Parliament Former MEP
Moderator	T. RADFORD Journalist, U.K
15:10	DISCUSSION WITH POLICY MAKERS
	M. DA GRAÇA CARVALHO Member of European Parliament, ITRE Committee Rapporteur of Horizon 2020 European next framework programme "Future Energy supply for Europe" J. AMOUROUX E-MRS & ENSCP, Paris "Introduction: Carbon recovery for a sustainable development: a new step for energy storage needed for increased renewable energy contributions"
Panelists	X. YAO , Director Climate, Energy & Tenure, FAO /UNO A. TAJANI , European Commissioner for Industry A. CORREA DE CAMPOS , Member of European Parliament / President STOA M. MATIAS , Member of European Parliament / Horizon 2020 N. TZAVELA , Member of European Parliament / ITRE Committee G. FIORASO , French Minister of Research
16:40	<i>COFFEE BREAK</i>
17:00	DISCUSSION AMONG THE ACADEMIA
Panelists	J. GUIMARAES , President CAPES, Brazil L. ZHOU , Chinese Academy of Sciences, China Y. HAN , Institute of Aeronautics, China P. OMLING , President ESF /Vice President Science Europe B. RAJ , President Indian Academy of Technology, India M. BOUSMINA , Chancellor of Hassan II Academy of Science, Morocco Z. ALFEROV , President Physics Russian Academy of Sciences, Russia A. NAUMOVETS , Academy of Sciences, Ukraine M. GALVIN , Director Materials NSF, USA M. DRESSELHAUS , MIT, USA A. HURD , Office S&T Adv.US Dept. of States, USA
18:20	SUMMIT OUTCOMES (including Young Researchers Forum)
Moderators	G. SMITH , Oxford University, U.K. E. KAUFMANN , ANL, USA
19:00	END OF DAY 2