

Sunday 19 June 2011

18:00 **Registration Desk**
Pre - Registration

18:00 **Welcome Party**

ICH2P-11 PROGRAM OVERVIEW

Monday 20 June 2011

- 8:30** **Registration Desk**
Registration
- 8:45** **Auditorium "Vergina"**
Opening Ceremony
- 9:00** **Auditorium "Vergina"**
Plenary lecture by Prof. Ibrahim Dincer
Sustainable Hydrogen Production Options and the Role of IAHE

9:50		
Auditorium "Vergina" Hydrogen aspects and steam reforming	Room 1 "Aiolos" Electrolysis, electrochemical reactors and fuel cells	Room 2 "INA" Novel hydrogen storage technologies

11:10 **Coffee Break and Exhibition**

11:30		
Auditorium "Vergina" Thermochemical cycles	Room 1 "Aiolos" Electrolysis, electrochemical reactors and fuel cells	Room 2 "INA" Photocatalytic processes

12:50 **Lunch Break**

- 14:30** **Auditorium "Vergina"**
Plenary lecture by Prof. Anastasios Melis
Photosynthesis for Hydrogen and Fuels Production

15:20		
Auditorium "Vergina" Biomass and biological hydrogen production	Room 1 "Aiolos" Thermochemical cycles	Room 2 "INA" Conventional hydrogen production processes

16:40 **Coffee Break and Exhibition**

17:00		
Auditorium "Vergina" Biomass and biological hydrogen production	Room 1 "Aiolos" Hydrogen aspects and steam reforming	Room 2 "INA" Novel hydrogen storage technologies

- 18:30** **Room "Zefyros"**
Executive Committee meeting of EHA
- Room 1 "Aiolos"**
Executive Committee meeting of the Nuclear Hydrogen Division of IAHE

Tuesday 21 June 2011

8:30 **Registration Desk**
Registration

9:00 **Auditorium "Vergina"**
Plenary lecture by Prof. Tatsuya Kodama
High-temperature Solar Thermochemical Hydrogen Production

9:50

Auditorium "Vergina"	Room 1 "Aiolos"	Room 2 "INA"
Solar hydrogen/Fuels production systems	Electrolysis, electrochemical reactors and fuel cells	Biomass and biological hydrogen production

11:10 **Coffee Break and Exhibition**

11:30

Auditorium "Vergina"	Room 1 "Aiolos"	Room 2 "INA"
Solar hydrogen/Fuels production systems	Electrolysis, electrochemical reactors and fuel cells	Biomass and biological hydrogen production

12:50 **Lunch Break**

14:30

Auditorium "Vergina"	Room 1 "Aiolos"	Room 2 "INA"
Thermochemical cycles	Hydrogen Life Cycle Analysis/Feasibility studies	Hydrogen perspectives from government and industry

15:40

Auditorium "Vergina"	Room 1 "Aiolos"	Room 2 "INA"
Conventional hydrogen production processes	Hydrogen in vehicles	Hydrogen perspectives from government and industry

16:40 **Coffee Break and Exhibition**

17:00

Auditorium "Vergina"	Room 1 "Aiolos"	Room 2 "INA"
Conventional hydrogen production processes	Hydrogen in vehicles	Hydrogen from renewables

18:00 **Exhibition and Poster area**
Poster Session

20:00 **Conference Dinner**
Speech given by Prof. Xenophon Verykios

Wednesday June 22, 2011

8:30 **Registration Desk**
Registration

9:00 **Auditorium "Vergina"**

Plenary lecture by Prof. Maria Flytzani-Stephanopoulos

Highly efficient production of hydrogen with novel catalysts containing only trace amounts of precious metals

9:50		
Auditorium "Vergina"	Room 1 "Aiolos"	Room 2 "INA"
Hydrogen aspects and steam reforming	Electrolysis, electrochemical reactors and fuel cells	Biomass and biological hydrogen production

11:10 **Coffee Break and Exhibition**

11:30		
Auditorium "Vergina"	Room 1 "Aiolos"	Room 2 "INA"
Hydrogen aspects and steam reforming	Electrolysis, electrochemical reactors and fuel cells	Thermochemical cycles

12:50 **Lunch Break**

14:30		
Auditorium "Vergina"	Room 1 "Aiolos"	Room 2 "INA"
Hydrogen aspects and steam reforming	Electrolysis, electrochemical reactors and fuel cells	Emerging concepts

15:50 **Auditorium "Vergina"**
Closing Remarks

16:00 **End of Conference**

Monday 20 June 2011

8:30 **Registration Desk**

Registration

8:45 **Auditorium "Vergina"**

Opening Ceremony

9:00 **Auditorium "Vergina"**

Sustainable Hydrogen Production Options and the Role of IAHE

Prof. Ibrahim Dincer

Chairman: C.C. Agrafiotis

Co-Chairman: S. Voutetakis

09:50 - 11:10

Auditorium "Vergina"

Hydrogen aspects and steam reforming

Chairman: E.S. Kikkinides

9:50 **019REF** A heterogeneous dynamic model for the simulation and optimization of the steam methane reforming reactor

G. Pantoleontos, E.S. Kikkinides, M.C. Georgiadis

10:10 **123REF** Hydrogen production by steam reforming of renewable compounds

G. Garbarino, E. Finocchio, G. Ramis, G. Busca

10:30 **105REF** Hydrogen production by steam reforming of model compound of bio-oil over Ni/CeO₂ - ZrO₂ catalysts

C. Yan

10:50

11:10

Coffee Break and Exhibition

ICH2P-11 MONDAY

Monday 20 June 2011

09:50 - 11:10

Room 1 "Aiolos"**Electrolysis, electrochemical reactors and fuel cells***Chairman: D. Tsiplakides*

- 9:50** **016ELE** Production of H₂ and C₂ hydrocarbons from methane in a proton conducting solid electrolyte cell
V. Kyriakou, C. Athanasiou, I. Garagounis, A. Skodra, M. Stoukides
- 10:10** **026ELE** Long term operation stability tests of intermediate and high temperatures Ni-based anodes' SOFCs directly fueled with simulated biogas mixtures
I.V. Yentekakis, T. Papadam, G. Goula
- 10:30** **050ELE** Nanocomposite membranes containing inorganic oxides from PEM fuel cells
Y. Devrim
- 10:50** **096ELE** Investigation of hydrogenation of Ti films under ion irradiation from water plasma
L. Pranevicius

11:10

Coffee Break and Exhibition

09:50 - 11:10

Room 2 "INA"**Novel hydrogen storage technologies***Chairman: A. Stubos*

- 9:50** **118STO** Investigation of structural properties of ammonia borane and its waste product
O.M. Atanur, G.Y. Ozalp, M.B. Piskin, H.E. Figen, S.M. Yazici
- 10:10** **149STO** Transition metal nanoparticles as catalyst in hydrogen generation from boron based compounds
O. Metin, M. Zahmakıran, T. Ayvali, M. Dinc, S. Ozkar
- 10:30** **198STO** Synthesis of sodium borohydride and electrochemical analysis from reaction products
S. Kuliyeve, B. Ibrahimoglu, S. Fettah
- 10:50** **242STO** Kinetics of hydrogen production from hydrolysis of sodium borohydride over intrazeolite Co(0) nanoclusters in a flow reactor
A. Boran, S. Erkan, S. Ozkar, I. Eroglu

11:10

Coffee Break and Exhibition

ICH2P-11 MONDAY

Monday 20 June 2011

11:30 - 12:50 **Auditorium "Vergina"**
Thermochemical cycles
Chairman: G.F. Naterer

- 11:30** **069THE** A sulfur-iodine flowsheet using precipitation, electro dialysis and membrane separation to produce hydrogen
Y. Shin, K. Lee, Y. Kim, J. Chang, W. Cho, K. Bae
- 11:50** **109THE** Molten salt heat recovery and solidification phase change in the copper-chlorine cycle
S. Ghandehariun, G.F. Naterer, M.A. Rosen
- 12:10** **229THE** Experimental study of reaction rates and steam consumption in a copper (II) chloride fluidized bed reactor
K. Pope, V. Daggupati, G.F. Naterer
- 12:30** **243THE** Heat extraction from molten salt for thermochemical hydrogen production cycles
A.H. Abedin

12:50 **Lunch Break**

11:30 - 12:50 **Room 1 "Aiolos"**
Electrolysis, electrochemical reactors and fuel cells
Chairman: I.V. Yentekakis

- 11:30** **131ELE** The role of Nafion content and metal loading in IrO₂ sputtered electrodes for low temperature PEM water electrolysis
F. Sapountzi, S. Divane, E. Papaioannou, S. Souentie, C. G. Vayenas
- 11:50** **160ELE** The fastest hydrogen sensor using ultrasonic
J. Jung, M. Sonoyama, H. Fujita, M. Inoue, Y. Kato
- 12:10** **167ELE** Ir-Pt electrocatalysts for proton exchange membrane water electrolyzers
K.M. Papazisi, S. Balomenou, D. Tsiplakides
- 12:30** **181ELE** Conductivity measurements of aqueous and immobilized potassium hydroxide
F. Allebrod, P.L. Mollerup, C. Chatzichristodoulou, M.B. Mogensen

12:50 **Lunch Break**

Monday 20 June 2011

11:30 - 12:50

Room 2 "INA"

Photocatalytic processes

Chairman: K.S. Triantafyllidis

11:30

071PHO

Hydrogen production by sonopholysis

M. Filipponi

11:50

170PHO

Photocatalytic reactor design for energy and environmental applications

G.N. Nomikos, D.I. Kondarides, V.G. Mavrantzas, X.E. Verykios

12:10

093PHO

Towards photocatalytic water-splitting by size-selected MoS₂ nanoclusters

M. Cuddy

12:30

138PHO

Non-supported alpha-Fe₂O₃ nanocrystals as photocatalysts for water oxidation

T.K. Townsend, F.E. Osterloh, E.M. Sabio, N. Browning

12:50

Lunch Break

ICH2P-11 MONDAY

Monday 20 June 2011

14:30 Auditorium "Vergina"
Photosynthesis for Hydrogen and Fuels Production
 Prof. Anastasios Melis
Chairman: I.F. Dincer
Co-Chairman: V.T. Zaspalis

15:20 - 16:40 Auditorium "Vergina"
Biomass and biological hydrogen production
Chairman: A. Grudulus

15:20 040BIO Optimizing biohydrogen production from mushroom waste using anaerobic mixed cultures
I.Y. Sung, C.H. Lay, K. Gopalakrishnan, C.Y. Chu, F.Y. Chang, C.C. Chen, C.Y. Lin

15:40 059BIO Comparison of energy yields in sequential anaerobic production of H₂ and electricity or H₂ and CH₄
M. Nissilä, D. Karadag, J.A. Puhakka

16:00 318BIO Bio-hydrogen production by anaerobic and facultatively anaerobic bacteria pure cultures and associations using various substrates in experimental test-systems

I. Klepere

16:20 314BIO Comparative biohydrogen production by "dark" Fermentation from glycerol using different selected microbial strain (s)
B.T. Maru, M. Constanti, F. Medina, A.M. Stchigel, J.E. Sueiras

16:40 Coffee Break and Exhibition

Monday 20 June 2011

15:20 - 16:40

Room 1 "Aiolos"
Thermochemical cycles
Chairman: F. Wang

- 15:20 251THE** Pinch analysis for effective heat recovery in the Cu-Cl cycle of hydrogen production
S. Ghandehariun, M. A. Rosen, G.F. Naterer, Z. Wang
- 15:40 321THE** Hydrogen via thermochemical cycles: low temperature multicomponent SO₂-O₂-H₂O vapour-liquid equilibrium in the hybrid sulphur and sulphur iodine cycles
M.A. Romero, R. Elder, R.W.K. Allen
- 16:00 066THE** Experimental cupric chloride drying studies of spray atomization
M. Slowikowski, G.F. Naterer, V. Daggupati
- 16:20 112THE** Hydrolysis and measured conversion of solid cupric chloride in a fluidized bed reactor
V. Daggupati, K. Pope, G.F. Naterer, K.S. Gabriel, Z.L. Wang

16:40

Coffee Break and Exhibition

15:20 - 16:40

Room 2 "INA"
Conventional hydrogen production processes
Chairman: V. Zaspalis

- 15:20 027CON** Silica microporous membranes in catalytic membrane reactors for dehydrogenation processes
D. Koutsonikolas, S. Kaldis, V.T. Zaspalis, G.P. Sakellariopoulos
- 15:40 100CON** Hydrogen production via underground coal gasification
A. Yildirim
- 16:00 114CON** Experimental study of hydrogen production and soot particulate matter emissions from rich-combustion in inert porous media
A. Loukou, I. Frenzel, D. Trimis
- 16:20 021CON** Solar Hydrogen/Fuels Production Systems
Z. Wang, K. Gabriel, G. Naterer

16:40

Coffee Break and Exhibition

ICH2P-11 MONDAY

Monday 20 June 2011

17:00 - 18:20		Auditorium "Vergina" Biomass and biological hydrogen production <i>Chairman: I. Eroglu</i>
17:00	089BIO	Comparison of mesophilic and thermophilic anaerobic hydrogen production by hot spring enrichment culture <i>D. Karadag, J.A. Puhakka, M. E. Nissila</i>
17:20	090BIO	Hydrogen-rich gas production from biomass wastes by catalytic steam gasification <i>E. David</i>
17:40	140BIO	Improvement of integrated dark-photo fermentation biological hydrogen production processes by removing ammonium ion <i>D.D. Androga, E. Ozgur, U. Gunduz, M. Yu cel, I. Eroglu</i>
18:00	142BIO	Continuous biological hydrogen production by rhodobacter capsulatus HUP-Mutant in pilot solar tubular photobioreactor using artificial medium <i>E. Boran, E. Ozgur, M. Yu cel, U. Gunduz, I. Eroglu</i>
18:20	End of Conference Day	
18:30	Room "Zefyros" Executive Committee meeting of EHA	
	Room 1 "Aiolos" Executive Committee meeting of the Nuclear Hydrogen Division of IAHE	

Monday 20 June 2011

17:00 - 18:20		Room 1 "Aiolos" Hydrogen aspects and steam reforming <i>Chairman: G. Karagiannakis</i>
17:00	209REF	Exergy efficiency analysis in hydrogen production via sorption enhanced steam methane reforming <i>C.S. Martavaltzi, K.F. Tzanetis, A. Lemonidou</i>
17:20	400REF	On the move – An overview of current Fuel Cell Hydrogen Joint Undertaking Projects <i>M. Krambousanos</i>
17:40	102REF	Production of hydrogen by hydrolysis and steam reforming of dimethyl ether over bifunctional catalysts: effect of preparation procedure and addition of promoter <i>C. Yan</i>
18:00		
18:20		End of Conference Day
18:30		Room "Zefyros" Executive Committee meeting of EHA
		Room 1 "Aiolos" Executive Committee meeting of the Nuclear Hydrogen Division of IAHE

Monday 20 June 2011

17:00 - 18:20		Room 2 "INA" Novel hydrogen storage technologies / Hydrogen separation processes <i>Chairmen: S.M. Yazici / N.D. Vlachos</i>
17:00	235STO	Hydrogen storage with the use of nanoporous carbon supports and scaffolds <i>T. Steriotis, G. Charalambopoulou, A. Bourlinos, D. Giasafaki, A. Ampoumogli, P. Trikalitis, A. Stubos</i>
17:20	264STO	Hydrogen sorption of modified oxides <i>L. Grinberga, A. Sivars, J. Kleperis</i>
17:40	012SEP	Development of the membrane permeator for hydrogen purification to national hydrogen and fuel cell center from Romanian: technical aspects <i>I. Iordache</i>
18:00	221SEP	Selective hydrogen absorption from gaseous mixtures by the BCC T-V alloys <i>S. Suwarno, J.K. Solberg, V.A. Yartys, J.P. Maehlen, B. Krogh, B.T. Børresen, E.O. Fernández</i>
18:20	End of Conference Day	
18:30	Room "Zefyros" Executive Committee meeting of EHA	
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Tuesday 21 June 2011

8:30 **Registration Desk**
Registration

9:00 **Auditorium "Vergina"**
High-temperature Solar Thermochemical Hydrogen Production
Prof. Tatsuya Kodama
Chairman: A.G. Konstandopoulos
Co-Chairman: G.F. Naterer

09:50 - 11:10 **Auditorium "Vergina"**
Solar hydrogen/Fuels production systems
Chairman: M. Kostoglou

9:50 **155SOL** Effect of reactor geometry on the temperature distribution of hydrogen producing solar reactors
N.E. Ghazal, J. Costandy, M.A. Shammasi, N. Ozalp

10:10 **214SOL** Development and test of a solar decomposer of sulphuric acid for thermochemical hydrogen production
D. Thomey, F. Lennartz, D. Schollgen, L.D. Oliveira, J.P. Sack, M. Roeb, C. Sattler

10:30 **315SOL** Thermal and optical analysis of a 100 kWth multi-tubular reactor for hydrogen production based on a two-step thermochemical cycle integrated in a solar tower
M.M. Betancourt, V.G. García-Orta, A.G. Pardo, J.G. Aguilar, M. Romero, A. Iranzo, A. Salva, E. Tapia

10:50 **323SOL** Performance analysis of a water splitting reactor with hybrid photochemical conversion of solar energy
E. Baniasadi, I.F. Dincer, G.F. Naterer

11:10 **Coffee Break and Exhibition**

Tuesday 21 June 2011

09:50 - 11:10

Room 1 "Aiolos"**Electrolysis, electrochemical reactors and fuel cells***Chairman: M.S. Stoukides*

- 9:50** **187ELE** Simulation of polymer electrolyte membrane fuel cell stack displacements under random vibration
H. Shen
- 10:10** **147ELE** Investigation of Stainless-Steel–Resorcinol-Formaldehyde (SS-RF) electrode-catalyst for alkaline electrolyser operation
T.G. Douglas
- 10:30** **152ELE** Measurement of the through-plane thermal conductivity of carbon paper diffusion media for the temperature range from -20°C to +120°C
N. Zamel
- 10:50** **164ELE** Development of anode-supported flat-tube SOFC stack having a new IC design
S.B. Lee, J.W. Lee, T.H. Lim, S.J. Park, R.H. Song, D.R. Shin

11:10

Coffee Break and Exhibition

09:50 - 11:10

Room 2 "INA"**Biomass and biological hydrogen production***Chairman: C. Varrone*

- 9:50** **162BIO** Biohydrogen production from dairy manure blended with sucrose
N. Khandan, K.R.J. Perera
- 10:10** **168BIO** Temperature resistant mutants of rhodobacter capsulatus generated by evolutionary engineering approach and effects of temperature resistance on hydrogen production
A. Gokce, Y. Ozturk, Z.P. Cakar, M. Yu cel
- 10:30** **197BIO** The effects of temperature and light intensity on organic acid utilization of photosynthetic bacteria during biohydrogen production process
P. Sevinc, I. Eroglu, M. Yu cel, U. Gunduz
- 10:50** **210BIO** Statistical optimization of biohydrogen and ethanol production from crude glycerol by enriched activity sludge
C. Varrone, B. Giussani, G. Izzo, G. Massini, A. Marone, A. Signorini, A. Wang

11:10

Coffee Break and Exhibition

Tuesday 21 June 2011

11:30 - 12:50		Auditorium "Vergina" Solar hydrogen/Fuels production systems <i>Chairman: C.C. Agrafiotis</i>
11:30	275SOL	Experimental study and simulation of a photochemical reactor for solar hydrogen generation from water <i>C.F. Zamfirescu, I.F. Dincer, G.F. Naterer</i>
11:50	258SOL	Effect of seeding on hydrogen and carbon particle production in a 10 MW solar thermal reactor for methane decomposition <i>G. Patrianakos, M. Kostolgu, A.G. Konstandopoulos</i>
12:10	259SOL	Materials for solar-aided production of hydrogen from water: kinetic studies of the two-step redox pair-based thermochemical cycles <i>C.C. Agrafiotis, A. Zygogianni, C. Pagoura, A.G. Konstandopoulos, M. Kostoglou</i>
12:30	014SOL	Solar syngas production from CO ₂ and H ₂ O in a two-step thermochemical cycle via Zn/ZnO redox reactions: Thermodynamic cycle analysis <i>P.G. Loutzenhiser, A. Steinfeld</i>
12:50		Lunch Break
11:30 - 12:50		Room 1 "Aiolos" Electrolysis, electrochemical reactors and fuel cells <i>Chairman: M.Ouzounidou</i>
11:30	171ELE	Developing a new method for the preparation of catalyst coated membranes via LbL technique for PEM fuel cells <i>H. Deligoz, S. Yilmazturk, T. Gümüşoglu, G.A. Ari, M.A.F. Oksuzomer</i>
11:50	184ELE	Performance and durability of MEA prepared with hydrocarbon based membrane by decal transfer process <i>S.-D. Yim</i>
12:10	186ELE	On the use of electrodeposited Ni-W alloy coatings as cathodes for hydrogen evolution in potassium hydroxide solution – a reduction of energy consumption <i>G.S. Tasic, M.P. Marceta, V.M. Nikolic, M.M. Tasic, A.D. Maksic</i>
12:30	200ELE	Numerical and experimental analysis of SOFC <i>S. Aksongur</i>
12:50		Lunch Break

Tuesday 21 June 2011

11:30 - 12:50

Room 2 "INA"

Biomass and biological hydrogen production

Chairman: I. Klepere

- 11:30** **223BIO** Hydrogen production from vegetable waste by bioaugmentation of indigenous fermentative communities
A. Marone, G. Massini, C. Patriarca, A. Signorini, C. Varrone, G. Izzo
- 11:50** **320BIO** Building up bioreactor prototype and optimisation for experiments with hydrogen and methane gas producing microorganisms
A. Gruduls
- 12:10** **068BIO** Steam and air fed biomass gasification: energy and exergy comparisons
M. Hosseini, I. Dincer, M. Rosen
- 12:30** **070BIO** Biological hydrogen production performance in a draft tube fluidized bed bioreactor with immobilized cell
C.Y. Chu, S.Y. Wu, Y.C. Shen, Y.C. Li, C.Y. Lin

12:50

Lunch Break

Tuesday 21 June 2011

14:30 - 15:30 **Auditorium "Vergina"**
Thermochemical cycles
Chairman: A.G. Konstandopoulos

- 14:30** **254THE** Oxide -based candidate catalysts for the reduction of SO₃ into SO₂: a key step for H₂ production via sulphur-based thermochemical cycles
G. Karagiannakis, C.C. Agrafiotis, A. Zygogianni, C. Pagkoura, A.G. Konstandopoulos
- 14:50** **148THE** System integration of hydrolysis, oxygen and hydrogen generation processes in Cu-Cl thermochemical water splitting
Z. Wang, G. Marin, G.F. Naterer
- 15:10** **237THE** Process simulation and analysis of a copper chlorine thermochemical water decomposition cycle for nuclear-based hydrogen production
M.F. Orhan, I. Dincer, M.A. Rosen

14:30 - 15:30 **Room 1 "Aiolos"**
Hydrogen Life Cycle Analysis/Feasibility studies
Chairman: I.F. Dincer

- 14:30** **074LCA** Exergoeconomic analysis of hydrogen production from biomass gasification
Y. Kalinci, A. Hepbasli, I.F. Dincer
- 14:50** **273LCA** Comparative Life Cycle Assessment of hydrogen and other selected fuels
K. Hacetoglu, M.A. Rosen, I.F. Dincer
- 15:10** **003LCA** Hydrogen energy for indian transport sector: a well-to-wheel techno-economic and environmental feasibility analysis
B.S. Reddy, P. Balachandra

14:30 - 15:30 **Room 2 "INA"**
Hydrogen perspectives from government and industry
Chairman: E. Varkaraki

- 14:30** **128GOV** South African energy profile and hydrogen production for fuel cell applications
D. Bessarabov, F.V. Niekerk, F.V.D. Merwe, J.V. Ravenswaay, B. North, M. Mathe
- 14:50** **202GOV** Hydrogen refuelling station in Hamburg HafenCity. A status report
C. Wulf, D. Hustadt, M. Kaltschmitt, O. Weinmann
- 15:10** **217GOV** Hydrogen energy in the developing world: oxymoron or opportunity?
N. Lymberopoulos, F. Villatico, O. Tabakoglu, M. Hatipoglu

Tuesday 21 June 2011

15:40 - 16:40

Auditorium "Vergina"**Conventional hydrogen production processes***Chairman: O.M. Dudnyk*

15:40 **098CON** H₂ production by methane decomposition: catalytic and technological aspects

F. Frusteri

16:00 **106CON** Catalytic decomposition of methane for the CO_x free hydrogen production over modified Ni-SiO₂ catalysts

V. Akula

16:20 **213CON** Theoretical and experimental investigation of low temperature water-gas shift membrane reactor

M. Basu, A. Mondal, B. Mandal

15:40 - 16:40

Room 1 "Aiolos"**Hydrogen in vehicles***Chairman: D. Zarvalis*

15:40 **125VEH** The research on efficiency of using HHO gas (oxyhydrogen) in petrol internal combustion engines

A. Rimkus, S. Pukalskas, J. Matijosius

16:00 **179VEH** Synthesis gas generation on-board a vehicle: R&D, trials, perspectives

V.A. Kirillov

16:20 **317VEH** Behavior of dimensionless parameters for the in-cylinder heat transfer in hydrogen fueled engine

M.M. Rahman, K.I. Hamada

15:40 - 16:40

Room 2 "INA"**Hydrogen perspectives from government and industry***Chairman: E. Irakleous*

15:40 **247GOV** The hydrogen implementing agreement of the International Energy Agency and the participation of Greece

E. Varkaraki, M.R.D. Valladares, A.G. Garcia-Conde

16:00 **262GOV** Hydrogen as a fuel and energy storage in Germany

O.M. Ehret

16:20 **319GOV** Renewable hydrogen market development: forecasts and opportunities for Latvia

J. Dimants

16:40

Coffee Break and Exhibition

Tuesday 21 June 2011

17:00 - 18:00		Auditorium "Vergina" Conventional Hydrogen production processes <i>Chairman: F. Frusteri</i>
17:00	246CON	Hydrogen rich gas generation using plasma gasification of Ukrainian anthracite and brown coal <i>V.A. Zhovtianskyi, O.M. Dudnyk, I.O. Nevzgliad, I.S. Sokolovska</i>
17:20	133CON	Effects of PVP on the preparation of nanosized Al ₂ O ₃ supported Ni catalysts by POLYOL method for catalytic partial oxidation of methane <i>T.G. Altınçekiç, E. Bayrakdar, M.A.F. Öksüzömer</i>
17:40	274THE	Photochemical cell for cuprous chloride disproportionation and hydrogen generation with the Cu-Cl cycle <i>C. Zamfirescu, G.F. Naterer, I.F. Dincer</i>
17:00 - 18:00		Room 1 "Aiolos" Hydrogen in vehicles <i>Chairman: D. Zarvalis</i>
17:00	322VEH	Smart grids meets green transportation <i>R. Schmid</i>
17:20	178VEH	Hydrogen generation with the exhaust energy of internal combustion engine <i>J.H. Lu</i>
17:40	145VEH	Effect of hydrogen addition on combustion and emission characteristics of a SI engine at idle condition <i>Y. Karagoza, M. Eroglu, E. Oraka, T. Sandalcia</i>
17:00 - 18:00		Room 2 "INA" Hydrogen from renewables <i>Chairman: M. Taxiarchou</i>
17:00	238REN	Implementation of a hybrid energy system combining RES and H ₂ in an office building in Lavrion-Greece <i>I. Paspaliaris, M. Taxiarchou, A. Peppas, P. Benardos, S. Carosio, G. Urbano, A. Monero, R. De Laurentiis</i>
17:20	325REN	A thermodynamic study on renewable energy based hydrogen production and storage systems <i>H. Caliskan, I.F. Dincer, A. Hepbasli</i>
17:40	267REN	Performance assessment of an integrated absorption-hydrogen liquefaction system using geothermal energy <i>M.A. Gadalla</i>
18:00	Poster session and Exhibition	
20:00	End of Conference Day	
20:00	Conference Dinner <i>Speech given by Prof. Xenophon Verykios</i>	

Tuesday 21 June 2011

18:00 **Poster session and Exhibition**
Poster area
Hydrogen aspects and steam reforming

- 013REF** Structural and mechanistic aspects for the low temperature steam reforming of ethanol over supported noble metal catalysts
P. Panagiotopoulou, X. Verykios
- 024REF** Steam reforming of methanol, ethanol, n-heptane and iso-octane over a copper-based catalyst to produce hydrogen
C. Ji, X. Dai
- 062REF** Hydrogen production by steam reforming of methane over nickel catalysts prepared by successive impregnation method
N. Salhi, A. Boulahouache, M. Belacel, S. Benadji, C. Rabia
- 169REF** Numerical study of miniature methanol-steam reformer performance under various external heat transfer conditions
R. Chein
- 206REF** The study of parameter optimizations for hydrogen rich gas production by CPOX reforming
Y.B. Jo

18:00 **Poster area**
Thermochemical cycles

- 101THE** Thermalhydraulic and heat transfer correlations for an intermediate heat exchanger linking a supercritical water-cooled reactor and a copper-chlorine cycle of hydrogen production
S. Mokry, A. Lukomski, K. Gabriel, I. Piro, G.F. Naterer
- 113THE** Energy and exergy analyses of Magnesium-Chlorine (Mg-Cl) thermochemical cycle
M.T. Balta, I.F. Dincer, A. Hepbasli
- 115THE** Gas-solid flow and heat transfer in a molten salt reactor for thermochemical water splitting
G.D. Marin, Z. Wang, G.F. Naterer, K. Gabriel
- 244THE** Lab management practices for high temperature reactors of thermochemical hydrogen production
E. Secnik, Z. Wang, G.F. Naterer, K.S. Gabriel

Tuesday 21 June 2011

18:00 Poster area Biomass and biological hydrogen production

- 068BIO** Steam and air fed biomass gasification: energy and exergy comparisons
M. Hosseini, I. Dincer, M. Rosen
- 163BIO** Redox balancing and hydrogen production of photosynthetic bacterium *rhodobacter capsulatus*
Y. Ozturk, M. Yucel, U. Gunduz, I. Eroglu
- 224BIO** Influence of upflow velocity, C/N ratio and bed height in anaerobic fluidized bed reactor in hydrogen production
A.R. Barros, E.L. Silva
- 313BIO** Biogas and hydrogen production potential based on milk-processing waste water for Turkey
Z. Oktay, C. Coskun, I. Dincer, M. Bayraktar

18:00 Poster area Conventional hydrogen production processes

- 107CON** Thermodynamic analysis of hydrogen generation from coke oven gas
W.H. Chen, J.J. Lu

18:00 Poster area Electrolysis, electrochemical reactors and fuel cells

- 135ELE** Preparation and characterization of La_{0.8}Sr_{0.2}Ga_{0.83}Mg_{0.17}O₃ electrolyte by POLYOL method for solid oxide fuel cells
F. Oksuzomer, R.S. Kuguoglu, T.G. Altincekic, M.A. Gurkaynak
- 143ELE** Construction of graphene/Pt nanoparticle nanohybrids as an electrocatalyst for fuel cells
W.H. Hong, B.G. Choi, D. Jung
- 153ELE** Synthesis and characterization of polypyrrole/carbon composite as a catalyst support for fuel cell applications
T. Oznuluer, F. Memioglu, M. Ak, A. Bayrakceken
- 165ELE** Ceramic and glass composite interconnects for solid oxide fuel cells
S.B. Lee, S.H. Pi, J.W. Lee, T.H. Lim, S.J. Park, R.H. Song, D.R. Shin
- 166ELE** Redox behavior of Ni-YSZ composite anode support for solid oxide fuel cells: effects of exposure time and pore former
J.W. Lee, Y.H. Heo, T.H. Lim, S.B. Lee, S.J. Park, R.H. Song, D.R. Shin

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- 177ELE** Development of a 0.16 kW HT PEM FC based pilot power plant
V. A. Kirillov
- 190ELE** Ni-W alloys electrodeposited on a Ni substrate electrode - electrodeposition vs. in situ activation for hydrogen production via alkaline electrolysis
M.M. Tasic, M.P. Marceta, G.S. Tasic, D.P. Saponjic, S. Miulovic, V.M. Nikolic
- 194ELE** Preparation and characterization of ionically cross-linked polyelectrolyte complex membranes for direct methanol fuel cells
H. Deligoz, T. Gumusoglu, G.A. Ari
- 201ELE** Raising efficiency of hydrogen production via alkaline water electrolysis
A.D. Maksic, G.S. Tasic, V.M. Nikolic, D.P. Saponjic, S.M. Miulovic, M.P.M. Kaninski
- 207ELE** Stability of the Ni-Mo based cathode for the alkaline hydrogen production
D.P. Saponjic, V.M. Nikolic, S.M. Miulovic, G.S. Tasic, M.P.M. Kaninski
- 208ELE** A study of the Co-W activated Ni cathodes for hydrogen generation
S.M. Miulovic, V.M. Nikolic, G.S. Tasic, A.D. Maksic, M.P.M. Kaninski

18:00 Poster area Emerging concepts

- 108EME** An experimental study on hydrogen production from water using activated carbon as a reducing agent
W.H. Chen
- 183EME** Aluminum activated by liquid alloys as the material for the course of pure hydrogen
T.V. Polyanskaya
- 185EME** Mechanism of activation of Al and Al-base alloys by the Ga-In eutectic
A.I. Nizovskii
- 233EME** Hydrogen generation from water by means of activated aluminum
A.V. Ilyukhina, A.S. Ilyukhin, E.I. Shkolnikov

Tuesday 21 June 2011

18:00	Poster area Hydrogen from renewables
241REN	Simulation of a hybrid energy system combining RES and H ₂ systems using TRNSYS. Case Study: an office building in Lavrion-Greece <i>L. Karalis, A. Peppas, I.Paspaliaris</i>
265REN	Wind -hydrogen systems: opportunities and challenges <i>E. Varkaraki</i>
311REN	Performance Investigation of Hydrogen Production from a Hybrid Wind-PV System <i>Z. Oktay, E. Akyuz, I. Dincer</i>
18:00	Poster area Hydrogen Life Cycle Analysis/Feasibility studies
199LCA	Life cycle assessment of a hydrogen refueling station <i>C. Wulf, M. Kaltschmitt</i>
18:00	Poster area Hydrogen perspectives from government and industry
020GOV	Photo-voltaic supported fuel cell and battery for electrical tour boats at the Turkish Dalyan Channel <i>N. Ozgur</i>
268GOV	Latvian Hydrogen Association: researches and implementation of hydrogen technologies in Latvia <i>J. Kleperis</i>
18:00	Poster area Novel hydrogen storage technologies
119STO	Thermal decomposition characteristics of ammonia borane as hydrogen source <i>A.K. Figen, H. Erguven, G.Y. Ozalp, S. Yazici, S. Piskin</i>
137STO	A potential method for producing Mg ₂ Ni as hydrogen storage alloy <i>F. Erden, I. Karakaya, M. Erdogan</i>
331STO	Oleylamine stabilized palladium(0) nanoclusters as highly active heterogeneous catalyst for the dehydrogenation of ammonia borane <i>O. Metin, S. Duman, S. Ozkar</i>
336STO	Effect of Na ₂ CO ₃ and NaOH on the production of sodium borohydride <i>I. Kayacan, O.M. Dogan, B.Z. Uysal</i>

Tuesday 21 June 2011

18:00 Poster area Photocatalytic processes

- 227PHO** Zn₂x(CuIn)_{1-x}S₂ photocatalysts synthesis by a hydrothermal process using H₄EDTA as complexing and surfactant agent
R. Banica, T. Nyaril, A. I. Bucur
- 260PHO** Photochemical characteristics of TiO₂ nanostructured layers for hydrogen production
L. Grinberga, J. Linitis, J. Kleperis

18:00 Poster area Solar hydrogen/Fuels production systems

- 203SOL** Hydrothermal synthesis and characterization of mixed II-III₂-VI₄ photocatalysts for solar hydrogen production
T. Nyari, R. Banica, E. Indrea, V. Sasca
- 261SOL** Solar carbon-neutral syngas generation by H₂O and CO₂ splitting thermochemical cycles
A. Zygogianni, C. Pagoura, G. Karagiannakis, C. Agrafiotis, A.G. Konstandopoulos
- 263SOL** On the modeling of hydrogen production via thermochemical cycles in monolithic reactors exploiting solar energy
M. Kostoglou, C.P. Lekkos, A.G. Konstandopoulos

Wednesday 22 June 2011

- 8:30** **Registration Desk**
Registration
- 9:00** **Auditorium "Vergina"**
Highly efficient production of hydrogen with novel catalysts containing only trace amounts of precious metals
Prof. Maria Flytzani-Stephanopoulos
Chairman: M.S. Stoukides
Co-Chairman: A. Lemonidou

09:50 - 11:10 **Auditorium "Vergina"**
Hydrogen aspects and steam reforming
Chairman: L.T. Nalbandian

- 9:50** **134REF** A novel membrane reactor concept for hydrogen production from the decomposition of water and simultaneous production of synthesis gas over ceramic materials
L.T. Nalbandian, A.P. Evdou, V.T. Zaspalis
- 10:10** **136REF** Development of multi fueled units for hydrogen and energy production
A. Basagiannis, A. Stavarakas, T. Halkides
- 10:30** **156REF** Support and alloy effects on activity and product selectivity for ethanol steam reforming over supported nickel cobalt catalysts
L. Chen
- 10:50** **182REF** Reforming of dimethyl ether to hydrogen-rich gas for HT PEM fuel cells
V.A. Sobyenin, V.A. Kirillov, S.D. Badmaev, P.V. Snytnikov, V.D. Belyaev, V.D. Mescheriakov

11:10 **Coffee Break and Exhibition**

Wednesday 22 June 2011

09:50 - 11:10 **Room 1 "Aiolos"**
Electrolysis, electrochemical reactors and fuel cells
Chairman: A. Papadopoulos

- 9:50** **189ELE** Disturbance rejection sensitivity analysis in an integrated methanol reforming and fuel cell system
D. Ipsakis, S. Voutetakis, P. Seferlis, S. Papadopoulou
- 10:10** **192ELE** The prospects of an internal reforming methanol fuel cell
G. Avgouropoulos, J. Papavasiliou, T. Ioannides, S. Neophytides
- 10:30** **215ELE** Electrocatalysis of oxygen evolution reaction in PEM water electrolysis on a Ebonex supported Pt- based binary compounds
A. Stoyanova, G. Borisov, E. Lefterova, E. Slavcheva
- 10:50** **218ELE** Ab-initio development of CaNi₅-XMX compounds for metal hydride batteries
O. Mugan, M.K. Aydinol

11:10 **Coffee Break and Exhibition**

09:50 - 11:10 **Room 2 "INA"**
Biomass and biological hydrogen production
Chairman: S. Bezergianni

- 9:50** **313BIO** Biogas and hydrogen production potential based on milk-processing waste water for Turkey
Z. Oktay, C. Coskun, I. Dincer, M. Bayraktar
- 10:10** **073BIO** Enhanced bio-hydrogen production by immobilized Clostridium sp. T2 on biological carrier
L. Zhao, A.J. Wang, G.L. Cao, N.Q. Ren
- 10:30** **159BIO** Potential for using isolated bacterial strains for production of biohydrogen from oil palm trunk
P. Noparat, P. Prasertsan, S. O-thong
- 10:50** **232BIO** Operation of an innovative pilot plan for the biohythane production from the Organic Fraction of Municipal Solid Waste (OFMSW)
E. Trably

11:10 **Coffee Break and Exhibition**

Wednesday 22 June 2011

11:30 - 12:50 Auditorium "Vergina"
Hydrogen aspects and steam reforming
Chairman: S. Voutetakis

- 11:30 195REF** Experimental study on syngas production via biogas reforming with water
T. Kim, S. Song, K.M. Chun
- 11:50 219REF** Alcohol reforming on cobalt-based catalysts prepared from organic salt precursors
E. Papadopoulou, D. Delimaris, A. Denis, A. Machocki, T. Ioannides
- 12:10 220REF** Hydrogen production via reforming of the aqueous fraction of bio-oil in a pilot plant unit
M. Ouzounidou, I. Grigoriadis, G. Dourou, A. Lemonidou, S. Voutetakis
- 12:30 256REF** Hydrogen production from methanol, dimethyl ether and bioethanol for fuel cell applications
P.V. Snytnikov, S. Badmaev, G. Volkova, D. Potemkin, M. Zyryanova, V. Belyaev, V. Sobyenin

12:50 Lunch Break

11:30 - 12:50 Room 1 "Aiolos"
Electrolysis, electrochemical reactors and fuel cells
Chairman: A. Bayrakceken

- 11:30 230ELE** Nanostructured nickel-based electrodeposits as electrocatalysts for microbial electrolysis cells
M. Mitov, Y. Hubenova
- 11:50 266ELE** Current behaviour during pulsed DC electrolysis of water
J. Kleperis
- 12:10 312ELE** Combustion chemistry aspects of high-temperature reforming for fuel cell applications
G. Skevis, G. Vourliotakis, M. Founti
- 12:30 056ELE** Acetic acid internal reforming in a solid oxide fuel cell reactor using Cu-CeO₂ anodic composites
N. Kaklidis, G. Pekridis, G.E. Marnellos

12:50 Lunch Break

Wednesday 22 June 2011

11:30 - 12:50		Room 2 "INA" Thermochemical cycles <i>Chairman: T. Kodama</i>
11:30	065THE	Particle moisture and size distribution in solid cupric chloride drying processes <i>M. Slowikowski, G.F. Naterer</i>
11:50	101THE	Thermalhydraulic and heat transfer correlations for an intermediate heat exchanger linking a supercritical water-cooled reactor and a copper-chlorine <i>S. Mokry, A. Lukomski, K. Gabriel, I. Pioro, G.F. Naterer</i>
12:10	113THE	Energy and exergy analyses of Magnesium-Chlorine (Mg-Cl) thermochemical cycle <i>M.T. Balta, I.F. Dincer, A. Hepbasli</i>
12:30	115THE	Gas-solid flow and heat transfer in a molten salt reactor for thermochemical water splitting <i>G.D. Marin, Z. Wang, G.F. Naterer, K. Gabriel</i>
12:50	Lunch Break	

Wednesday 22 June 2011

14:30 - 15:50		Auditorium "Vergina" Hydrogen aspects and steam reforming <i>Chairman: A. Lemonidou</i>
14:30	011REF	Plasma stabilized partial oxidation reformer of liquid hydrocarbons into syngas <i>A. Nikipelov</i>
14:50	117REF	Steam reforming of glycerol, the side product of biodiesel for hydrogen production <i>A.C.C. Chang</i>
15:10	212REF	Hydrogen production with simultaneous CO ₂ separation via sorption enhanced reforming of methane <i>C.S. Martavaltzi, E.S Pampaka, S. Chatoutsidou, E.A. Korkakaki, T. Pefkos, A.A. Lemonidou</i>
15:30	272REF	Modified commercial Faujasite as Co support for the steam reforming of bioethanol. Influence of mesoporosity and alkaline metals on the catalytic performance <i>A. Chica, J.F.D. Costa-Serra, M.T. Navarro, F. Rey</i>
15:50	Auditorium "Vergina" Closing Remarks	
16:00	End of Conference	

Wednesday 22 June 2011

14:30 - 15:50		Room 1 "Aiolos" Electrolysis, electrochemical reactors and fuel cells <i>Chairman: G.E. Marnellos</i>
14:30	063ELE	Intelligent optimisation of a renewable energy Photovoltaic / PEM Fuel Cell hybrid system <i>M. Hatti</i>
14:50	067ELE	Hydrogen production by water electrolysis : Part 2: Effects of the electrolyte type on the performances of electrolysis with a tension generator or a photovoltaic module to the wire of the sun <i>R.B. Slama</i>
15:10	188ELE	Automation design and simulated operation of a solar-hydrogen integrated system located at CERTH/CPERI <i>C. Ziogou, D. Ipsakis, F. Stergiopoulos, S. Papadopoulou, S. Bezergianni, S. Voutetakis</i>
15:30	204ELE	Parameters influencing long term performance and durability of PEM fuel cells <i>E.S. Sayin, A. Bayrakceken, I. Eroglu</i>
15:50	Auditorium "Vergina" Closing Remarks	
16:00	End of Conference	

Wednesday 22 June 2011

14:30 - 15:50		Room 2 "INA" Emerging concepts <i>Chairman: G. Patrianakos</i>
14:30	092EME	Catalytic degradation of plastic wastes into fuel compounds <i>E. David</i>
14:50	176EME	Effects of aluminum particle size, galinstan content and reaction temperature on hydrogen generation rate using activated aluminum and water <i>J. Kandasamy, I.S. Gokalp, C. Chauveau</i>
15:10	172EME	Hydrogen production by plasmas <i>J. Mizeraczyk</i>
15:30	234EME	Aluminum-water generator of hydrogen for portable fuel cells <i>A.S. Ilyukhin, A. Ilyukhina, E. Shkolnikov</i>
15:50	Auditorium "Vergina" Closing Remarks	
16:00	End of Conference	