

PROGRAMME

European Technical School on Hydrogen and Fuel Cells 2013

Agapi Beach Hotel, Heraklion, Crete, 23-27 September 2013



Sunday, 22 September 2013

After 15:00	Check-in
19:00-20:00	Registration and welcome drink
20:00-22:00	Dinner and get together evening

Monday, 23 September 2013

Topical Lectures

Topical lectures on the key themes: safety, storage and fuel cells

09:45-10:00	Registration
10:00-10:10	Opening of the Technical School Vladimir Molkov, Sile Brennan, UU (UK)
10:10-11:10	Priorities of Hydrogen and Fuel Cell Research in Europe Jean-Luc Delplancke, The Fuel Cells and Hydrogen Joint Undertaking, European Commission (Belgium)
11:10-11:30	<i>Coffee and networking</i>
11:30-12:30	Priorities of Hydrogen and Fuel Cell Research in USA Aaron Harris, Sandia National Laboratory (USA) Subject to Change!
12:30-14:00	<i>Lunch</i>
14:00-14:45	State-of-the-art and research priorities in the hydrogen safety Alexei Kotchourko, KIT (Germany)
14:45-15:30	Hydrogen: production, storage, applications and safety Andreas Züttel, EMPA (Switzerland)
15:30-15:50	<i>Coffee and networking</i>
15:50-16:35	Fuel Cells: state-of-the-art and bottlenecks Toby Reisch, Intelligent Energy (UK)
16:35-17:05	Panel discussion

Tuesday, 24 September 2013

Instrumentation Workshop (Morning Session)

This session concentrates on recent advances in the research techniques and methods applicable for state-of-the-art research. 15 minutes presentation with 5 minutes for questions

09:45-10:05	Measurement instrumentation at the KIT HyKa facilities Andreas Friedrich, Pro-Science (Germany)
10:05-10:25	Synthesis and characterization of hydrogen storage materials at KIT-INT Ulrich Ulmer, KIT-INT (Germany)
10:25-10:45	Challenges with neutron diffraction under high hydrogen pressure Magnus Sorby, IFE (Norway)
10:45-11:05	<i>Coffee</i>
11:05-11:25	HyMat: the hydrogen embrittlement testing facility! Presentation and possibilities Jean-Baptiste Jorcin, TecNALIA (Spain)
11:25-11:45	From research to industrial deployment - activities in ENEA on H2 and HTFC Stephen McPhail, ENEA (Italy)
11:45-12:05	Probing the surface of a hydrogen storage material and making it functional Renauld Delmelle, EMPA (Switzerland)
12:05-12:25	Instrumented PEM fuel cell for innovative in situ measurement Edward Brightman, NPL (UK)
12:25-14:00	<i>Lunch</i>

Tuesday, 24 September 2013

Instrumentation Workshop (Afternoon Session)

14:00-14:20	Friction experiments in liquid hydrogen – how to set up a laboratory U. Schmidtchen, BAM (Germany)
14:20-14:40	Neutron imaging of liquid water in fuel cells Pierre Boillat, PSI (Switzerland)
14:40-15:00	User guidance and demonstration of UU numerical modelling tools available on Cyber Laboratory software suite James Keenan, UU (UK)
15:00-15:20	Water management in PEM fuel cell: recent developments G�rard Gebel, CEA (France)
15:20-16:00	<i>Coffee</i> and Poster Display (reflecting work in progress)*
16:00-16:20	Physical adsorption characterisation of hydrogen sorbents Theodore Steriotis, NCSR D (Greece)
16:20-16:40	Hydrogen for transport from renewable energy in Mid-Norway Paul Inge Dahl, SINTEF (Norway)
16:40-17:00	Hydrogen sensors Stefan Ledin, HSL (UK)

*Note: posters will be displayed throughout the week; at this time the authors will be present to answer questions

Wednesday, 25 September 2013

Morning Session: Cyber Laboratory – addressing scientific bottlenecks through modelling and simulations

09:45-10:45	Expert Panel on Hydrogen Safety. Chair: Dmitriy Makarov (UU) Rayleigh-Taylor instability modelling , James Keenan (UU) Gaps in hydrogen deflagration modelling , Valeria Di Sarli (Istituto di Ricerche sulla Combustione) Hydrogen detonations and DDT , Alexei Kotchourko (KIT) Modelling of fires with CFD status of modelling , Stefan Ledin (HSL)
10:45-11:05	<i>Coffee</i>
11:05-12:05	Expert Panel on Hydrogen Storage. Chair: Thanos Stubos (NCSR D) Molecular simulation for hydrogen storage materials , Vasanth Kumar Kannuchamy (University of Alicante / NCSR D) Modelling and simulations for integrated hydrogen storage - fuel cell systems , Thanos Stubos & Theodore Steriotis (NCSR D)
12:05-13:05	Expert Panel on Fuel Cells. Chair: Gerard Gebel (CEA) MEA modelling at CEA/LCPem , Pascal Schott, CEA (France)
13:05-14:35	<i>Lunch</i>

Afternoon

15:00-20:45	Excursion: a boat trip to Spinalonga island
20:45-22:00	Dinner at the hotel

Thursday: 26 September 2013

Advanced Research Workshop 1 (Morning Session)

This session is conference style. Researchers within and external to the project will showcase their latest research
20 minutes maximum presentation with 5 minutes for questions

09:45-10:10	A new mechanism of super-high pressure generation in hydrogen-oxidiser systems Valeria Di Sarli, Istituto di Ricerche sulla Combustione, Consiglio Nazionale delle Ricerche (CNR), Italy
10:10-10:35	Experimental test of innovative materials based on calcium aluminates for SE-SR Federico Gallorini, University of Perugia (Italy)
10:35-11:00	PEM Fuel Cell activities of HySa Systems competence centre Piotr Bujlo, HySa Systems, University of the Western Cape (South Africa)
11:00-11:20	<i>Coffee</i>
11:20-11:45	Safety of hydrogen use indoors: recent progress at Ulster Vladimir Molkov, UU (UK)
11:45-12:10	Investigation of glasses as hydrogen storage material U. Schmidtchen, BAM (Germany)

Thursday: 26 September 2013

Advanced Research Workshop 1 (Afternoon Session)

12:10-12:35	Advanced materials research in ENEA Stephen McPhail, ENEA (Italy)
12:35-14:00	<i>Lunch</i>
14:00-14:25	Flame propagation regimes in a stratified semi-confined layer of hydrogen-air mixtures Mike Kuznetsov, KIT-IKET (Germany)
14:25-14:50	Development of low-cost BCC hydrogen storage alloys Ulrich Ulmer, KIT-INT (Germany)
14:50-15:15	Investigation of fuel cell start-up and shut-down degradation mechanism Edward Brightman, NPL (UK)
15:15-15:35	<i>Coffee</i>
15:35-16:00	Operating PEMFC with low quality hydrogen Jari Ihonen, VTT (Finland)
16:00-16:25	Numerical simulation of gas releases in enclosed space Boris Chernyavskiy, UU (UK)
16:25-16:50	Surface chemistry of Ti on NaAlH₄ studied by XPS Renauld Delmelle, EMPA (Switzerland)
16:50-17:00	Closing remarks

Friday, 27 September 2013

Advanced Research Workshop 2

This session is conference style. Researchers within and external to the project will showcase their latest research
20 minutes maximum presentation with 5 minutes for questions

09:45-10:10	Recent experimental results from the JRC-IET high pressure gas tanks testing facility Nerea De Miguel-Echevarria, JRC (The Netherlands)
10:10-10:35	High temperature membranes for hydrogen separation processes Paul Inge Dahl, SINTEF (Norway)
10:35-11:00	Combustion modelling using the ADREA-HF code Alexandros Venetsanos, NCSR D (Greece)
11:00-11:20	<i>Coffee</i>
11:20-11:45	Methods and results of MCFC test for CCS applications Giovanni Cinti, University of Perugia (Italy)
11:45-12:10	Influence of humidity on hydrogen embrittlement of steels Laurent Briottet, CEA (France)
12:10-12:35	Combining imaging with advanced electrochemical methods Pierre Boillat, PSI (Switzerland)
12:35-14:05	<i>Lunch</i>
14:05-14:30	Investigation of hydride powder bed breathing during cycling under hydrogen for different compressive stresses Vasile Iosub, CEA (France)
14:30-14:55	Novel approaches to venting Stefan Ledin, HSL (UK)
14:55-15:20	Contribution to the evaluation of the sensitivity of hydrogen embrittlement mechanisms for high strength steel alloys Jean-Baptiste Jorcin, Tecnalia (Spain)
15:20-15:40	<i>Coffee</i>
15:40-16:05	Tracking SOFC degradation Josef Mertens, Juelich (Germany)
16:05-16:35	Round table discussion and close of the School
20:00- 22:00	Gala dinner at the Greek Taverna

Saturday, 28 September 2013

12:00	Latest check-out time for all participants
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