

# FINAL PROGRAMME

Wednesday, April 6, 2016

PLENARY LECTURES		
<i>Chairperson</i> <b>Karel Bouzek</b>		<b>Balling Hall</b>
	<b>Opening</b>	<b>13:00 – 13:20</b>
<b>PL01</b>	<u>J.-L. Delplanck</u> <b>The Fuel Cells and Hydrogen Joint Undertaking: Past, Present and Future</b>	<b>13:20 – 13:50</b>
<b>PL02</b>	<u>D. Jones</u> <b>Fuel Cells and Hydrogen Joint Program within EERA structure</b>	<b>13:50 – 14:20</b>
<b>PL03</b>	<u>H. Klingenberg</u> <b>The Hamburg Experience in the Context of Pan-European Procurement of Fuel Cell Buses</b>	<b>14:20 – 14:50</b>
<b>PL04</b>	<u>S. Goldner</u> <b>Hydrogen PEM Fuel Cells for mobile applications HyRange(R) 25 for duty vehicles and city buses</b>	<b>14:50 – 15:20</b>
<b>PL05</b>	<u>R. Vreys</u> , D. Thomas, F. Smeets, J. Vae <b>Alkaline vs PEM electrolyzers: lessons learnt from Falkenhagen and WindGas Hamburg</b>	<b>15:20 – 15:50</b>
Coffee break		15:50 – 16:30

LECTURES: IMPLEMENTATION OF H <sub>2</sub> TECHNOLOGIES IN EUROPEAN REGIONS AND THEIR SUPPORT		
<i>Chairperson</i> <b>Martin Fišer</b>		<b>Balling Hall</b>
<b>L01</b>	<u>J. Kupecki</u> <b>Status of the development and implementation of high temperature fuel cells in Poland</b>	<b>16:30 – 16:45</b>
<b>L02</b>	J. L. Margitfalvi <b>Activity in Hungary in the area of hydrogen technologies</b>	<b>16:45 – 17:00</b>
<b>L03</b>	<u>I. Iordache</u> , I. Stefanescu, M. Buga, D. Schitea, A. Marinou <b>Hydrogen, insights and perspectives in Romania</b>	<b>17:00 – 17:15</b>
<b>L04</b>	<u>K. Stehlík</u> , K. Bouzek <b>Current Activities in Hydrogen Technologies in Czech Republic and Slovakia</b>	<b>17:15 – 17:30</b>
<b>L05</b>	<u>F. Barbir</u> , A. Đukić <b>Hydrogen and Fuel Cell Activities and Perspectives in Croatia</b>	<b>17:30 – 17:45</b>
<b>L06</b>	<u>J. Proost</u> <b>Challenges and pitfalls while establishing a H<sub>2</sub> mobility plan for Belgium</b>	<b>17:45 – 18:00</b>
<b>L07</b>	<u>R. Vreys</u> , D. Thomas, W. van der Laak, M. Meeus, D. Mertens <b>Power-to-Gas roadmap for Flanders</b>	<b>18:00 – 18:15</b>
Coffee break		18:15 – 18:45

<b>PANEL DISCUSSION ON THE TOPIC: Implementation of H<sub>2</sub> technologies in European regions and their support</b>	<b>18:45 – 20:00</b>
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POSTER SESSION WITH WALKING DINNER		20:00 – 21:30
<i>Chairperson</i> <b>Ján Híveš</b>		<b>Balling Hall</b>
<b>P01</b>	<u>J. Proost</u> , Q. de Radiguès, A. Delvaux, F. Van Wonterghem <b>Electrochemical process intensification of hydrogen production using 3-D electrodes</b>	
<b>P02</b>	<u>A. Giurg</u> , R. Kodým, M. Paidar, K. Bouzek <b>Study of gas distribution in flow fields for PEM fuel cell</b>	
<b>P03</b>	<u>P. Novotný</u> , M. Tomáš, T. Němec, F. Maršík <b>Low temperature PEM fuel cell performance diagnosed by electrochemical impedance spectroscopy</b>	
<b>P04</b>	<u>J. Mališ</u> , M. Paidar, K. Bouzek <b>Design of mobile 200 W PEM fuel cell system</b>	
<b>P05</b>	<u>M. Tkáč</u> , K. Stehlík <b>Hydrogen technologies in mining applications</b>	
<b>P06</b>	<u>Y. Al-sagheer</u> , R. Steinberger-Wilckens <b>Economic Optimal Control of Using Hydrogen as an Energy Carrier in Power Peak Shaving under Certainty Condition</b>	
<b>P07</b>	<u>S. A. Archer</u> , R. Murphy, R. Steinberger-Wilckens <b>Assessment of Sustainable Hydrogen Pathways from Biomass</b>	
<b>P08</b>	<u>M. Stano</u> , A. Letkovský <b>Formation of NO<sub>x</sub> by unpremixed hydrogen flames in air</b>	
<b>P09</b>	<u>J. Marek</u> , J. Čáslavský, O. Doležal, J. Navrátil <b>Open Online Course about Hydrogen Technologies</b>	
<b>P10</b>	F. Barth, <u>W. Vanhoudt</u> , M. Londo, J. C. Jansen, K. Veum, J. Castro, K. Nürnberger, M. Altmann <b>EU-wide implementation of Guarantee of Origin system of Green Hydrogen - FCH JU FP7 project</b>	

Thursday, April 7, 2016

LECTURES: SESSION I		
<i>Chairperson Karin Stehlik</i>		<b>Balling Hall</b>
L08	<u>H. Bergmann</u> History of Electrochemical Water Electrolysis -a Spotlight on the Beginnings	9:00 – 9:20
KL01	<u>R. Steinberger-Wilckens</u> Preparing Fuel Cells for Market Entry	9:20 – 10:00
L09	<u>F. Heubner</u> , <u>L. Röntzsch</u> , <u>B. Kieback</u> Anisotropic Stress Generation of Metal Hydride Composites	10:00 – 10:20
L10	<u>I. Saldan</u> , <u>C. Milanese</u> , <u>V. Kessler</u> Hydrogen storage materials based on magnesium borohydride	10:20 – 10:40
L11	<u>Y. Amao</u> , <u>A. Kai</u> Hydrogen production from formic acid with platinum nano-particle at a room temperature	10:40 – 11:00
Coffee break		11:00 – 11:30

LECTURES: SESSION I		
<i>Chairperson Henry Bergmann</i>		<b>Balling Hall</b>
KL02	<u>G. Menzen</u> Hydrogen Technology Developments - Key Area of the German Energy Research Programme	11:30 – 12:10
L12	<u>C. I. Müller</u> , <u>T. Rauscher</u> , <u>A. Gabler</u> , <u>M. Köhring</u> , <u>B. Kieback</u> , <u>W. Schade</u> , <u>L. Röntzsch</u> Femtosecond-laser structuring of Ni electrodes for highly active hydrogen evolution electrodes	12:10 – 12:30
L13	<u>J. Hnát</u> , <u>T. Jadrná</u> , <u>J. Schauer</u> , <u>M. Paidar</u> , <u>K. Bouzek</u> Laboratory scale alkaline water electrolyzers stack – design and operational characteristics	12:30 – 12:50
L14	<u>Y. Pihosh</u> , <u>K. Mawatari</u> , <u>Y. Kazoe</u> , <u>T. Kitamori</u> Development of a nanostructured heterojunction $WO_3/BiVO_4$ photoanode for efficient photocatalytic $H_2$ production	12:50 – 13:10

TECHNICAL EXCURSIONS	14:30 – 18:00
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Conference Dinner	20:00 – 22:30
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Thursday, April 7, 2016

LECTURES: CISTEM PROJECT		
<i>Chairperson Qingfeng Li</i>		<b>Education Center</b>
C-KL01	<u>P. Wagner</u> CISTEM – Construction of Improved HT-PEM MEAs and Stacks for Long Term Stable Modular CHP Units	9:00 – 9:40
C-KL02	<u>P. Beckhaus</u> , <u>S. Brokamp</u> , <u>M. Grundler</u> , <u>M. Kouachi</u> , <u>U. Misz</u> , <u>A. Heinzel</u> HT-PEM fuel cell stacks – component production and qualification	9:40 – 10:20
C-L01	<u>T. Steenberg</u> , <u>H. R. Garcia</u> , <u>H. A. Hjuler</u> , <u>C. Terkelsen</u> , <u>S. M. Alfaro</u> HTPEM Membrane Electrode Assembly for CHP applications	10:20 – 10:40
C-L02	<u>J. Lobato</u> , <u>H. Zamora</u> , <u>J. Plaza</u> , <u>P. Cañizares</u> , <u>M. A. Rodrigo</u> Are SiC based materials good candidates for electrodes in HT-PEMFCs?	10:40 – 11:00
Coffee break		11:00 – 11:30

LECTURES: CISTEM PROJECT		
<i>Chairperson Peter Wagner</i>		<b>Education Center</b>
C-KL03	<u>M. T. D. Jakobsen</u> , <u>J. O. Jensen</u> , <u>L. N. Cleemann</u> , <u>Q. F. Li</u> Durability Issues and Status of HT-PEM Based on Acid Doped Polybenzimidazoles	11:30 – 12:30
C-L03	<u>F. J. Pinar</u> , <u>M. Rastedt</u> , <u>N. Pilinski</u> , <u>P. Wagner</u> Determination of Life Times of HT-PEM MEAs and Fuel Cell Systems	12:10 – 12:30
C-L04	<u>M. Prokop</u> , <u>M. Paidar</u> , <u>K. Bouzek</u> , <u>H. Zamora</u> , <u>J. Lobato</u> Influence of catalyst support on catalyst activity in phosphoric acid environment	12:30 – 12:50
C-L05	<u>E. Pohl</u> , <u>J. vom Schloß</u> , <u>A. Stark</u> Experimental characterization of HT-PEM based modular CHP systems for district heating applications	12:50 – 13:10

Friday, April 8, 2016

LECTURES: SESSION I		
Chairperson Robert Steinberger-Wilckens		Balling Hall
L15	<u>J. Kupecki</u> , J. Milewski Selection of key parameters in the dynamic modeling of solid oxide fuel cell stacks in stationary applications	9:00 – 9:20
L16	<u>P. Vágner</u> , R. Kodým, F. Karas, K. Bouzek Thermodynamic analysis of solid oxide co-electrolysis cathode reactions	9:20 – 9:40
L17	<u>J. Brabandt</u> , F. Mittmann, R. Blumentritt, O. Posdziech, M. Gruber Pressurised high temperature co-electrolysis as effective source for Power-to-X applications	9:40 – 10:00
L18	<u>F. Karas</u> , M. Paidar, K. Bouzek Testing of the SOECs prepared by tape casting from water based slurries	10:00 – 10:20
L19	<u>J.-E. Hong</u> , M. Bianco, J. Van herle, R. Steinberger-Wilckens Evaluation of Manganese-Cobalt-Iron Spinel Protective Coatings Fabricated by a Wet Powder Spraying Method for Solid Oxide Fuel Cell Metallic Interconnects	10:20 – 10:40
L20	<u>J. Haller</u> , T. Link A novel high efficient zero-emission process for stationary internal combustion engines utilizing Hydrogen and Oxygen – A thermodynamic concept	10:40 – 11:00
Coffee break		11:00 – 11:30

LECTURES: SESSION I		
Chairperson Vladimír Matolín		Balling Hall
L21	<u>M. Rastedt</u> , F. J. Pinar, P. Wagner, A. Dyck, H. R. García, T. Steenberg, H. A. Hjuler, M. Paidar, K. Bouzek Long-term testing investigations in single HT-PEM fuel cells for CHP applications: The CISTEM approach	11:30 – 11:50
L22	<u>N. Pilinski</u> , V. Tullius, W. Germer, P. Wagner, A. Dyck Phosphoric Acid Distribution after Load Cycling at high Current Densities with different Types of HT-PEM MEAs	11:50 – 12:10
L23	<u>I. Kundler</u> , T. Hickmann, R. Henkel Critical Parameters in Bipolar Plates and Gaskets for Fuel Cells	12:10 – 12:30
L24	J. Lobato, H. Zamora, J. Plaza, P. Cañizares, <u>M. A. Rodrigo</u> Assessment of advanced carbonaceous materials in the preparation of improved electrodes for HT-PEMFCs	12:30 – 12:50
L25	<u>A. El-kharouf</u> , R. Steinberger-Wilckens The effect of cation contamination from metallic bipolar plates on the performance and lifetime of the MEA	12:50 – 13:10

STUDENT AWARDS PRESENTATION AND CLOSING CEREMONY	13:10 – 14:00
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Friday, April 8, 2016

LECTURES: CISTEM PROJECT		
Chairperson Thomas Steenberg		Education Center
C-KL04	<u>F. Erne</u> HT-PEM in CHP-Application: Technical and cost challenges	9:00 – 9:20
C-L06	<u>E. Pohl</u> , J. vom Schloß Numerical performance optimization of a modular HT-PEM based CHP system considering seasonal effects and degradation effects	9:20 – 10:00
C-L07	<u>M. Drakselová</u> , R. Kodým, D. Šnita, K. Bouzek Three-dimensional mathematical model of industrial scale HT PEM fuel cell stack	10:20 – 10:40
LECTURES: SESSION II		
L26	<u>T. Bystron</u> , M. Prokop, K. Bouzek Electrochemistry of Selected Phosphorus Oxoacids on a bulk Pt electrode	10:40 – 11:00
L27	<u>M. Prokop</u> , M. Carda, A. Giurg, T. Bystron, M. Paidar, K. Bouzek Kinetics of O <sub>2</sub> reduction on Pt/C catalyst for high-temperature PEM fuel cell application	10:40 – 11:00
Coffee break		11:00 – 11:30

LECTURES: SESSION II		
Chairperson Aleš Doucek		Education Center
L28	<u>L. Polák</u> , A. Doucek, J. Poláková Hydrogen based renewable energy storage system with an integrated unit for hydrogen methanation	11:30 – 11:50
L29	<u>A. Ostroverkh</u> , P. Kúš, M. Dubau, M. Vaclavu, V. Matolin Nanoparticle-layer substrate for low Pt content PEMFC catalysts	11:50 – 12:10
L30	<u>M. Morte</u> AI Strategies for Fuel Cell Hybrid Vehicles in Smart Grids	12:10 – 12:30
L31	<u>J. Hrdlička</u> , V. Buday, T. von Unwerth, S. Gößling Development of passive recirculation for uninterruptible power supply	12:30 – 12:50
L32	<u>J. L. Margitfalvi</u> , A. Tompos The role of materials research in the success of „hydrogen economy”	12:50 – 13:10