

HYDROGEN DAYS 2015

FINAL PROGRAMME

Wednesday, March 18, 2015

11:00 - 14:00 **On site registration**

14:00 - 14:10 **Opening Ceremony**

Chairman: Karel Bouzek

14:10 - 14:50 **PL 01** N. Witzanyová, D. Štric
EERA as a player in European energy research

14:50 - 15:30 **PL 02** J. Richter, K. Stehlík
SUSEN – Closing the gap to tomorrow’s energy technology

15:30 - 16:00 **PL 03** M. Křepelka
Key Drivers of European Power Market Development – EU Policies and Technology

16:00 - 16:30 **Coffee break**

Chairman: Martin Fišer

16:30 - 17:00 **PL 04** I. Iordache, D. Schitea, I. Stefanescu, A. Marinoiu, G. Badea
Insights, perspectives and recommendations for a hydrogen economy in Romania and East Europe

17:00 - 17:30 **PL 05** K. Bouzek, K. Stehlík
Hydrogen technologies in Czech Republic and their representation by the Czech Hydrogen Technology Platform - HYTEP

17:30 - 18:00 **PL 06** R. Steinberger-Wilckens, S. Archer
Hydrogen from biomass - a complex process

18:00 - 18:30 **PL 07** M. Bertoncini
Grid-scale solid hydrogen energy storage for multi-utility optimization

- P 01** R. Fiala, J. Drnec, M. Václavů, M. Vorokhta, I. Khalakhan, V. Matolín
X-ray absorption study of sputtered platinum doped cerium oxide catalyst used in proton exchange membrane fuel cell
- P 02** M. Tomáš, I.S. Biswas, P. Gazdzicki, L. Kullová, M. Schulze
An artificial degradation of gas diffusion layers
- P 03** P. Novotný, T. Němec, M. Tomáš, F. Maršík
High temperature PEM fuel cell performance under different operating conditions
- P 04** M. Vaclavu, R. Fiala, M. Vorokhta, I. Khalakhan, I. Matolinova, V. Matolin
Nanostructured low platinum-content fuel cell catalysts for “on-chip” applications
- P 05** A. Giurg, R. Kodým, M. Paidar, K. Bouzek
Pressure drop measurements in the flow fields for PEM fuel cells
- P 06** I. Boshnakova, E. Petkucheva, E. Lefterova, E. Slavcheva
Comparative study on different Magnelli-phase titania trademarks as catalyst supports for electrolytic hydrogen generation
- P 07** J. Mališ, K. Bouzek, M. Paidar
Hydrogen permeability of selected perfluorinated sulphonated membranes in PEM water electrolysis
- P 08** J. Schauer, J. Žitka, J. Hnát, K. Bouzek
Anion-selective catalyst binders for alkaline electrolyzers
- P 09** M. Tkáč, K. Stehlík, M. Kryková
Review of hydrogen production by high temperature electrolysis
- P 10** M. Kim, Y.-J. Sohn, T.-H. Yang
Feasibility study of high-altitude long-endurance unmanned aerial vehicles using regenerative fuel cell systems
- P 11** L. Červenka, J. Vávra
Using hydrogen as working gas in stirling engine
- P 12** E. Baraj, S. Vagaský, T. Hlinčík, K. Ciahotný, V. Tekáč
The conversion of hydrogen and carbon dioxide to methane
- P 13** R. A. Tufa, D. Chanda, R. Kodým, M. Němeček, E. Curcio, K. Bouzek
Hybrid reverse electrodialysis-hydrogen (RED-H2) energy system: performance analysis and optimization
- P 14** A. Milewska, J.M. Hanlon, L.Bravo-Diaz, D.H. Gregory, M. Bielewski
Numerical simulations for portable hydrogen applications

Thursday, March 19, 2015

Chairman: Robert Steinberger-Wilckens

9:00 - 9:20	L 01 <u>E. Petkucheva</u> , E. Lefterova, J. Heiss, U. Schnakenberg, E. Slavcheva Ti-Au-Pt and Ti-Pd-Pt multilayered magnetron sputtered catalysts for hydrogen energy systems
9:20 - 9:40	L 02 <u>V. Matolín</u> , M. Dubau, R. Fiala, J. Lavková, M. Václavů, M. Vorokhta, I. Matolínová Proton exchange membrane fuel cell made of magnetron sputtered Pt-CeOx and Pt-Co thin film catalysts
9:40 - 10:00	L 03 <u>D. Chanda</u> , A. Dobrota, J. Hnát, M. Paidar, I. Pasti, K. Bouzek Reduced graphene oxide as an efficient hydrogen evolution electrocatalyst in alkaline water electrolysis – experiments and DFT modelling
10:00 – 10:20	L 04 <u>J. Hnát</u> , J. Žitka, M. Paidar, K. Bouzek Properties of novel anion selective material with DABCO functional groups for alkaline water electrolysis
10:20 - 10:40	L05 <u>J. Poláková</u> , A. Doucek, P. Hájek Innovative technology of alkaline electrolysis
10:40 - 11:00	L 06 <u>M. Paidar</u> , K. Vazač, M. Roubalík, K. Bouzek Feasibility of alkaline water electrolysis with cation-selective membrane
11:00 - 11:20	Coffee break
Chairman: Vladimír Matolín	
11:20 - 11:40	L 07 <u>J. Vávra</u> , M. Takáts Hydrogen – methane blend as an internal combustion engine fuel
11:40 - 12:00	L 08 <u>D. R. Park</u> , J. D. Kim, B. G. Kim, J. W. Kim Natural gas based steam reformer for PEM FC
12:00 - 12:20	L 09 <u>H. X. Nunes</u> , M. J. F. Ferreira, C. M. Rangel, A. M. F. R. Pinto Novel high-performance batch mini reactor for hydrogen production from catalytic hydrolysis of sodium borohydride for portable applications
12:20 - 12:40	L 10 <u>Y. Amao</u> , A. Kai Development of polymer-dispersed platinum nano-particle for the catalyst of hydrogen production from formic acid
12:40 - 13:00	L 11 <u>J. Kim</u> , S. Son, D. Park, B. Kim, J. Kim, W. Bang Study on THT, TBM adsorption properties of mesoporous material for fuel cell
13:00 - 14:20	Lunch
14:40 - 18:00	Technical Excursions
19:30 - 22:00	Conference Dinner

Friday, March 20, 2015

Chairman: Aleš Doucek

9:00 - 9:20	L 12 <u>M. Rastedt</u> , F.J. Pinar, N. Pilinski, P. Wagner HT-PEM degradation aspects
9:20 - 9:40	L 13 <u>M. Prokop</u> , T. Bystron, K. Bouzek Kinetics of H₃PO₃ electrochemical oxidation on a bulk Pt electrode
9:40 - 10:00	L 14 <u>T. Bystron</u> , M. Prokop, K. Bouzek Degradation of Pt catalyst in high temperature PEM fuel cell
10:00 - 10:20	L 15 <u>R. Kodým</u> , T. Bystroň, K. Bouzek Investigation of Pt oxidation kinetics at high temperature PEM fuel cell conditions
10:20 - 10:40	L 16 <u>M. Drakselová</u> , R. Kodým, D. Šnita, K. Bouzek Three-dimensional mathematical model of the high temperature PEM fuel cell stack
10:40 - 11:00	L 17 <u>S. Megel</u> , C. Dosch, S. Rothe, N. Trofimenko, M. Kusnezoff, A. Michaelis, C. Bienert, M. Brandner, S. Skrabs, A. Venskutonis, L. S. Sigl CFY-stacks for use in stationary SOFC and SOEC applications

11:00 - 11:20 **Coffee break**

Chairman: Karin Stehlík

11:20 - 11:40	L 18 <u>F. Karas</u> , R. Kodým, M. Paidar, K. Bouzek Kinetic parameters of oxygen evolution reaction in high temperature water electrolysis process
11:40 - 12:00	L 19 <u>M. Dillig</u> , J. Karl Thermal control of solid oxide electrolyser cells / fuel cells with high temperature heat pipes
12:00 - 12:20	L 20 <u>O. Posdziech</u> , J. Brabandt Development of high-temperature electrolyzers for renewable electricity storage
12:20 - 12:40	L 21 <u>P. Vágner</u> , M. Pavelka, F. Maršík Solid oxide fuel cells efficiency prediction

12:40 - 13:00 **Student Award Presentation and Closing Ceremony**

13:00 - 14:20 **Lunch**