# F O R U M  P R O G R A M M E

## September 4th, 2007 (Tuesday)

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| 16.00 – 21.00 | *Registration* |

## September 5th, 2007 (Wednesday)

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| 8.30 – 9.00 | *Opening (J. Molenda, K. Jeleń, J. Buzek)* |
| | **Session „SOFC"** |
| 9.00 – 9.40 | **C. Vayenas** „Fuel Cells and our energy future" |
| 9.40 – 10.20 | **K. Funke** „Mechanisms of localized and translational ionic motion in materials with disordered structures" |
| 10.20 – 10.50 | *Coffee break* |
| 10.50 – 11.30 | **I. Kosacki** „Advanced nanoscaled ion conductors for energy application" |
| 11.30 – 11.50 | **F. Krok** „$Bi_2O_3$-based Oxide Ion Conductors" |
| 11.50 – 12.10 | **J. Molenda** „Development of functional materials for SOFC's cathodes" |
| 12.10 – 12.30 | **B. Dąbrowski** „Synthesis, oxygen vacancy ordering, and properties of $La_{1-x}Sr_xMnO_{3-\delta}$" |
| 12.30 – 12.50 | **P. Tomczyk** „Characteristics of the oxygen electrode reaction for various solid electrolytes" |
| 12.50 – 13.10 | **K. Przybylski** „Metallic interconnects for application in planar Solid Oxide Fuel Cells" |
| 13.30 – 15.00 | *Lunch* |
| 15.00 – 15.40 | **A. Atkinson** „Mechanical issues in Solid Oxide Fuel Cells" |
| 15.40 – 16.20 | **L. Gauckler** „Materials and methods for miniaturization of Solid Oxide Fuel Cells" |
| 16.20 – 17.00 | **I. Riess** „Single chamber Solid Oxide Fuel Cells – a critical review" |
| 17.00 – 17.20 | **J. Szmyd** „Numerical modelling of radiative heat transfer in an internal indirect reforming type SOFC" |
| 17.20 – 17.40 | *Coffee break* |
| 17.40 – 18.00 | **M. Miller** „Development of SOFC technology at IEn" |
| 18.00 – 18.20 | **G. Paściak** „Research works and example applications of PEMFC and SOFC at the Wroclaw Division of Electrotechnical Institute" |
| 19.00 | *Supper (outside Daglezja hotel)* |

## September 6th, 2007 (Thursday)

### Session „SOFC"

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| 9.00 – 9.40 | **J. T. S. Irvine** „Fuel electrodes for Solid Oxide Fuel Cells" |
| 9.40 – 10.20 | **H. Nabielek** „Fuel Cell research in Europe" |
| 10.20 – 10.40 | **P. Jasiński** „Net shape technology for SOFC fabrication" |
| 10.40 – 11.10 | *Coffee break* |

### Session „PEM & DMFC"

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| 11.10 – 11.50 | **A. Wieckowski** „Low temperature Fuel Cell technologies: materials and new device concepts" |
| 11.50 – 12.10 | **W. Wieczorek** „Proton conducting gel electrolytes" |
| 12.10 – 12.30 | **P. Kulesza** „ Development of new materials electrocatalytic towards Oxygen Reduction with respect to possible applications in Low-Temperature Fuel Cells" |
| 12.30 – 12.50 | **A. Czerwiński** „Multicomponent anode catalysts for direct methanol Fuel Cells (DMFCs)" |
| 13.00 – 15.00 | *Lunch* |
| 15.00 – 18.30 | *Excursion* |
| 19.00 | *Banquet* |
| 20.30 – 21.30 | **Poster session** |

## September 7th, 2007 (Friday)

### Session "Hydrogen production and storage"

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| 9.00 – 9.20 | **J. Kijeński** „Industrial gases as a potential hydrogen sources in Poland" |
| 9.20 – 9.40 | **J. Augustynski** „Tandem photo-electrochemical device for sunlight-driven hydrogen production" |
| 9.40 – 10.00 | **M. Radecka** „Photoelectrochemical spliting of water" |
| 10.00 – 10.20 | **E. Łunarska** „Hydrogen degradation of structural materials" |
| 10.20 – 10.50 | *Coffee break* |
| 10.50 – 11.30 | **A. Züttel** „Hydrogen storage materials for mobile applications" |
| 11.30 – 12.10 | **E. Akiba** „Japanese R & D projects on hydrogen storage materials" |
| 12.10 – 12.30 | **H. Drulis** „Thermodynamical properties of $La_{1-x}RNi_{5-y}Al_y$ (R-rare earth elements) hydrogen storage system" |
| 12.30 – 12.50 | **H. Figiel** „Structural and magnetic transformations in $REMn_2H_x$ hydrides" |
| 12.50 – 13.10 | **J. Kaleta** „Testing of composite high pressure vessels for automotive hydrogen" |
| 13.20 – 15.00 | *Closing & Lunch* |

# P O S T E R  S E S S I O N

P-1. A. Trenczek-Zając, M. Radecka, K. Zakrzewska and M. Rękas

PHOTOELECTROCHEMICAL PROPERTIES OF TITANIUM DIOXIDE $TiO_2$ WITH MODIFIED ANIONIC SUBLATTICE

P-2. K. Schneider, M. Sikora, Cz. Kapusta, K. Michalow, Th. Graule, A. Vital, M. Radecka, M. Rekas, D. Zajac

XAFS STUDY OF $TiO_2$-BASED PHOTOELECTRODE MATERIALS

P-3. B. Zielińska, R. J. Kaleńczuk

A COMPARISON OF $LiNbO_3$ AND $LiTaO_3$ IN THE REACTION OF PHOTOCATALYTIC HYDROGEN GENERATION

P-4. K. Urbaniec, R. Grabarczyk

RAW MATERIALS FOR FERMENTATIVE HYDROGEN PRODUCTION

P-5. M. Jasiński, M. Dors and J. Mizeraczyk

PRODUCTION OF HYDROGEN VIA METHANE REFORMING USING ATMOSPHERIC PRESSURE MICROWAVE PLASMA

P-6. G. Łabojko, K. Słowik

CONCEPT AND CONSTRUCTION OF PROCESS GAS CONVERSION RESEARCH UNIT FOR HYDROGEN ENRICHMENT

P-7. A. Lemanski, M. Jasiurkowska, K. Schneider, CZ. Kapusta, P. C. Riedi, O. Isnard and D. Fruchart

NMR STUDY OF $Nd_2Fe_{14}BH_X$ HYDRIDES

P-8. N. B. Selvaraj, H. Figiel, J. Żukrowski, J. Niewolski, S. Frysztak, M. Polański, D. Chapelle, D. Perreux

CHARACTERIZATION AND PERFORMANCE OF $LaNi_{4.78}Sn_{0.22}$ AS A HYDROGEN STORAGE MATERIAL

P-9. A. Tomaszewska, Z.M. Stępień

HYSTERESIS OF FIELD DESORPTION OF HYDROGEN FROM A COBALT SURFACE

P-10. M. Nowak, P. Szperlich, A. Nowrot, J. Szala and D. Stróż

SENSOR PROPERTIES AND POSSIBILITY OF HYDROGEN ADSORPTION IN ANTIMONY SULFOIODIDE GEL

P-11. T. Kobiela, M. Moors, W. Linhart, I. Cebula, A. Krupski, C. Becker, K. Wandelt

CHARACTERIZATION AND ADSORPTION PROPERTIES OF ULTRATHIN Au FILMS DEPOSITED ON Pt(111)

P-12. M. Malys, W. Wrobel, F. Krok, I. Abrahams and J.R. Dygas
STRUCTURE AND PHASE STABILITY IN AN ORTHORHOMBIC BIMEVOX, $Bi_2Mg_{0.07}V_{0.93}O_{5.395-\delta}$

P-13. P. Pasierb, M. Wierzbicka and M. Rękas

STRUCTURAL, MICROSTRUCTURAL AND ELECTRICAL PROPERTIES OF $BaCeO_3$ – BASED PROTON CONDUCTORS

P-14. P. Płończak, B. Kusz, P. Jasiński

FABRICATION OF SOLID OXIDE FUEL CELL SUPPORTED ON SPECIALLY PERFORMED FERRITE-BASED PEROVSKITE CATHODE

P-15. K. Schneider, P. Peczkis, Cz. Kapusta, D. Zajac P. Pasierb and M. Rękas

XAFS STUDY OF PROTONIC SOLID ELECTROLYTES

P-16. A. Madany, P. Jasiński, A. Nowakowski
SILVER AS A CATHODE FOR INTERMEDIATE TEMPERATURE SOLID OXIDE FUEL CELL

P-17. S. Molin, B. Kusz, M. Gazda, P. Jasiński

EVALUATION OF POROUS 430L STAINLESS STEEL FOR SOFC OPERATION AT INTERMEDIATE TEMPERATURES

P-18. Cz. Pawlaczyk, K. Pogorzelec-Glaser, A. Pietraszko and P. Ławniczak

CONDUCTIVITY AND STRUCTURE OF SOME CRYSTALS WITH TRIAZOLE MOLECULES

P-19. K. Siarka

THE ROLE OF THERMALL EFFICIENCY OF CHEMICAL REACTION AND THE STABILITY OF SUBSTANCE ON MODELLING PHENOMENA IN FUEL CELLS

P-20. E. Kurgan

NUMERICAL MODELING OF MASS AND CURRENT DENSITY DISTRIBUTION IN ANISOTROPIC ELECTRODES OF THE PEM FUEL CELL