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Poster Presentations

Group 1: Development of Polymer Electrolyte Materials

P101 Membrane Texturation and OMCVD Catalyst Layer as New MEAs for Fuel Cell Applications

Sophie Mailley, Philippe Capron, Sylvie Escribano, Thierry Krebs
and Isabelle Rougeaux
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P102 Development of Micro Fuel Cell by Using Microelectronic Process for Next Generation of Portable Equipment

Jean Yves Laurent
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P103 Development of High Temperature Proton-Conducting Polymers at ECN

Dana Ionescu, Michiel de Heer, Gaby Janssen and André Wakker
Energy research Centre of the Netherlands, Petten / The Netherlands

P104 Fuel Cell Membrane for High-Temperature PEFC Operation

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P105 Nanometric Platinum and Platinum-Alloy-Supported Catalysts for Oxygen Reduction in PEM Fuel Cells

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P106 Design and Manufacturing of Bipolar Plates for Low-Pressure Polymer Electrolyte Fuel Cell

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P107 Study of a 5kW PEMFC Using Experimental Design and Statistical Analysis Techniques

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- P108 The Use of Heteropoly Acids in Proton Exchange Membrane Fuel Cells**
 Andrew M. Herring¹, John A. Turner³, Steven F. Dec², Fanqin Meng¹,
 Ronald J. Stanis^{1,3}, Niccolo Aieta¹, Mei-Chen Kuo¹ and James Horan²
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- P109 Co-Sputtering: A Novel Platinum-Carbon Catalyst Preparation Method**
 Andreas Reiner¹, Faegheh Hajbolouri¹, Max Döbeli², Alexander Wokaun¹
 and Günther G. Scherer¹
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- P110 Flame Aerosol Synthesis of Unsupported Pt-Ru Anode Catalysts for Methanol Oxidation in Fuel Cells**
 Debasish Chakraborty¹, Henrik Bischoff¹, Ib Chorkendorff^{1,2} and Tue Johannessen¹
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- P111 Novel Monomer System for Radiation Grafted Fuel Cell Membranes**
 Michal Slaski, Lorenz Gubler, Günther G. Scherer and Alexander Wokaun
 Paul Scherrer Institut, Villigen PSI / Switzerland
- P112 Di- and Triblock Co-Ionomer**
 Olivier Diat¹, Laurent Rubatat², Barbara Frisken², Zen Shi², Steve Holdcroft²,
 Petr Stepanek⁴, Daniel Gromadzki⁴, Jan Lokaj⁴, Miroslav Janata⁴
 and Frederic Nallet³
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- P113 A Comparison Method for Bipolar Plate Material Choice**
 Jean-Philippe Poirot-Crouvezier
 CEA Grenoble LITEN, Grenoble / France
- P114 Freezing Processes in PEM Fuel Cells**
 Michael Oszcipok, Alexander Hakenjos, Dirk Riemann and Christopher Hebling
 Fraunhofer Institute for Solar Energy Systems, Freiburg / Germany
- P115 Recycling of Precious Metals Containing PEMFC Components**
 Ralf Zuber, Christian Hagelueken and Joachim Koehler
 Umicore AG&Co KG, Hanau / Germany
- P116 Investigation of the Performance of RuSe_x/C Catalysts for the Oxygen Reduction Reaction in DMFC Cathodes**
 Dietmar Gerteisen, Alex Hakenjos and Jürgen O. Schumacher
 Fraunhofer Institute for Solar Energy Systems, Freiburg / Germany

- P117 Hydrophilicity and Hydrophobicity Study of Catalyst Layers in Proton Exchange Membrane Fuel Cells**
 Hongmei M. Yu^{1,2}, Christoph Ziegler¹, Christopher Hebling¹ and Michel Oszcipok¹
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- P118 Effects of Silica Addition to the Methanol Oxidation Catalysts in Direct Methanol Fuel Cells**
 Chanhee Park, Myoungki Min, Hyea Kim, Chan Kwak, Hojin Kweon and Sihyun Lee
 Samsung SDI Co., Suwong, Kyonggi-Do / KOREA
- P119 Preparation of Cr/Pt/C Catalysts by the Controlled Surface Modification of Pt/C Using an Organometallic Precursor**
 Peter Wells¹, Richard Wiltshire¹, Colin King¹, Dave Thompsett², Eleanor M. Crabb³ and Andrea E. Russell¹
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- P120 Fuel Cell Electrocatalysts Studied by Inelastic Neutron Scattering**
 Colin R. King¹, Andrea E. Russell¹, Anibal J. Ramirez-Cuesta², Philip C. H. Mitchell³ and Dave Thompsett⁴
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 Joerg Belack and Carsten Henschel
 PEMEAS GmbH, Frankfurt am Main /Germany
- P122 PEMFC Based on the Short-Side-Chain Perfluorosulfonic Acid Ionomer**
 Luca Cirillo, Luca Merlo, Alessandro Ghielmi and Vincenzo Arcella
 Solvay Solexis S.p.A., R&D Center, Bollate / Italy
- P123 Flexible Graphite Foil Solutions for Low-Cost PEM Fuel Cell Systems**
 Jochen Roser¹, Alexander Dyck², Viktor Gogel¹, Bernd Bauer³, Hans Holdik³, Hendrik Dohle⁴, Martin Müller⁴, Susanne Felber⁵ and Peter Wilde⁵
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- P124 Electrodeposition and Sputter Deposition of Platinum Nanoparticles on Gas Diffusion Electrodes**
 Leonardo Giorgi¹, Luciano Pilloni¹, Rossella Giorgi¹, Emanuele Serra¹, Marco Alvisi², Giovanna Galtieri², Alessia Cemmi³, Claudia Paoletti⁴ and Mauro Pasquali⁴
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Group 2: Model-Based Analysis of Fuel Cell Components

P201 An Optimal Heat & Water Management Analysis of Polymer Electrolyte Fuel Cells

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and Chang-Soo Kim²

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P202 Simulation of a Dynamic PEMFC Membrane Model with Spectral Methods

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P203 An Analysis of Proton Electrolyte Membrane Fuel Cell (PEMFC) at Start-ups and Shutdowns

Mustafa Fazıl Serincan and Serhat Yeşilyurt
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P204 Transient Analysis of Current Density and Water Distribution in PEM Fuel Cell

Jing T. Kuo and Ming J. Hsin
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P205 Multi-Parameter Sensitivity Analysis of a Proton Exchange Membrane Fuel Cell Model

Samir Jemeï, Daniel Hissel, Marie-Cécile Péra and Jean-Marie Kauffmann
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P206 A Non-Linear Space State PEFC Model Considering Liquid Water Dynamics over Membrane Hydration

Andres Hernandez, Daniel Hissel and Rachid Outbib
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P207 First Investigations of Local Current Density Distribution over the Flow Field Channel and Rib

Mathias Reum, Stefan A. Freunberger, Franziska Fürholz and Felix N. Büchi
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P208 3D Steady State Thermal Modeling of a Three-Cell PEMFC Stack

Laurent Dumercy, Raynal Glises and Jean-Marie Kauffmann
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P209 Electrical Analogy Modelling of PEFC System Fed by a Compressor

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P210 Homogenisation of the Current Density Distribution in Polymer Electrolyte Fuel Cells

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P211 Laser Doppler Anemometry Study of Reactant Flow in Fuel Cell Channels

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P212 Dynamic Modeling of a PEM Fuel Cell Stack

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P213 Simple Numerical Model for the Cathodic Two-Phase Gas Flow of a PEFC

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P214 Spatial Characterizations of Planar Air-Breathing PEMFC

Andreas Schmitz, Marco Tranitz, Steffen Eccarius and Christopher Hebling
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Group 3: Applications

P301 Pump it up! Pumps and Compressors for Fuel Cell Applications

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P302 Performance Characterisation of a 4-Wheel DMFC Scooter

Holger Janßen, Ludger Blum, Nicola Kimiaie, Andreas Maintz, Jürgen Mergel, Martin Müller and Detlef Stolten

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P303 The Applications and the Operating Characteristics of an Air Cooled PEMFC

Young-Jun Sohn, Gu-Gon Park, Sung-Dae Yim, Tae-Hyun Yang, Young-Gi Yoon, Sukkee Um, Won-Yong Lee and Chang-Soo Kim

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P304 High Temperature DMFC Stack Operating with Non-Fluorinated Membranes

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P305 Characteristics of a Hybrid Power Source on Direct Methanol Fuel Cell

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P306 Fuel Cell Research Activities in South Africa

Thembelihle Masombuka, Christopher Masuku, Kenny Mathe and Mark Rohwer
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P307 Fuel Cells for Commercial Transport Airplanes: Needs and Opportunities

Joe Breit and Joanna Szydlo-Moore

Boeing Commercial Airplanes & Phantom Works

Group 4: Reforming

- P401 Influence of Diesel Fuel Composition on Autothermal Reforming Process**
Martin Konrad, Lutz Hartmann, Christian Mengel, Klaus Lucka and Heinrich Köhne
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- P402 Diesel Steam Reforming for PEM Fuel Cells**
Martin Konrad, Lutz Hartmann, Christian Mengel, Klaus Lucka
and Heinrich Köhne
Oel-Wärme-Institut gGmbH, Herzogenrath / Germany
- P403 Design and Test of a Two-Stage Water-Gas-Shift Reactor at a 5 kW_e- Scale**
Joachim Pasel, Remzi Can Samsun, Andreas Tschauder, Dirk Schmitt,
Ralf Peters and Detlef Stolten
Forschungszentrum Jülich GmbH, Jülich / Germany
- P404 Optimized Mixture Formation for Diesel Fuel Processing**
Zdenek Porš, Rudolf Dahl, Ralf Peters and Detlef Stolten
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- P405 A Power System for Remote Applications Based on PEM Fuel Cell**
Maria del Pilar Argumosa and Rafael Ben Pendones
INTA. Renewable Energy Department, MADRID / SPAIN
- P406 Hydrogen Peroxide Production on Anthraquinone Grafted Carbon Electrode
in the Fuel Cell Reactor**
Elena Lobyntseva, Tanja Kallio and Kyösti Kontturi
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- P407 Behavior of Sulfur-Free Odorants in Natural Gas Fed PEM Fuel Cell Systems**
Ulrich Hennings and Rainer Reimert
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- P408 Flow Sheet Options for Natural Gas Fed Fuel Cells
- Processes and System Efficiencies -**
Ulrich Hennings, Markus Brune and Rainer Reimert
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- P409 The Effect of NaCl in Cathode Air Stream on PEMFC Performance**
Mikko S. Mikkola¹, Francisco A. Uribe², Tommy Rockward² and Eivind Stenersen³
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- P410 High-Power Ethylene Glycol - Air Fuel Cell**
Vladimir Livshits and Emanuel Peled
Tel-Aviv University, Tel-Aviv / Israel

- P411 Thermodynamic Analysis of Hydrogen Production from Ethanol**
Salvatore P. Cicconardi and Alessandra Perna
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- P412 Investigation of Electrochemical Reaction of Borohydride for Direct Borohydride Fuel Cell**
Tae-Hyun Yang¹, Jung-Woo Lee², Palinchamy Krishnan¹, Won-Yong Lee¹, Yong-Kwon Suhl² and Chang-Soo Kim¹
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- P413 Hydrogen Generator for Portable Fuel Cell Using Sodium Borohydride**
Tae-Hyun Yang, Palanichamy Krishnan, Young-Jun Sohn, Gu-Gon Park, Sung-Dae Yim, Young-Gi Yoon, Sukkee Um, Won-Yong Lee and Chang-Soo Kim
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- P414 Switching to a Hydrogen Fuel Cell Economy: Net Impact on Emissions and Energy Use of Replacing Conventional Internal Combustion Engine Vehicles with Hydrogen Fuel Cell Vehicles**
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- P415 Development of a Compact and Efficient Fuel Processor Applied to PEFC Cogeneration System**
Noboru Hashimoto, Susumu Kobayashi, Manabu Mizobuchi and Toru Nakamura
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- P416 The Compact Fuel Processor for 35W PEMFC System**
Dong-Uk Lee, Ju-Yong Kim, Zin Park, In-Hyuk Son, Sang-jun Kong, Dong-Myung Suh and Chan-ho Lee
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- P417 DSP-Based Actively Controlled Fuel Cell/Battery Hybrid DMFC System**
Ri A. Ju, Jin Hong An, Jong Ki Lee and Si Hyun Lee
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- P418 TiO₂ Supported Au Catalysts for Selective Catalytic Oxidation of CO to CO₂ in Fuel Cell Operating Conditions**
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- P419 Reduction of Pt Catalyst Load in PEM Fuel Cells by Magnetron Sputtering**
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