

List of Posters

9th European SOFC Forum

29 June to 2 July 2010

Kultur. Und Kongresszentrum Luzern / Switzerland

On Dosing Units Suitable for Fuel Cell Applications
Axel Müller, Michael Gunkel, Michael Müller, Thomas Rolland
Thomas Magnete GmbH, Herdorf / Germany

Single-Chamber, Micro-Tubular, Solid Oxide Fuel Cells: A Short-Term Degradation Study
Naveed Akhtar, Stephen P. Decent and Kevin Kendall
University of Birmingham, Birmingham / United Kingdom

Physico-chemical properties of $\text{Ln}_{0.5}\text{A}_{0.5}\text{Co}_{0.5}\text{Fe}_{0.5}\text{O}_{3-\delta}$ (Ln: La, Sm; A: Sr, Ba) cathode materials and their performance in electrolyte supported IT-SOFC
Konrad Świerczek
AGH University of Science and Technology, Kraków / Poland

Impedance Spectroscopy of $\text{Pr}_{0.8}\text{Sr}_{0.2}\text{Fe}_{0.8}\text{M}_{0.2}\text{O}_3$ (M = Cr, Ga) Materials for Solid Oxide Fuel Cell Cathode
Idoia Ruiz de Larramendi, Nagore Ortiz-Vitoriano, José Ignacio Ruiz de Larramendi, María Isabel Arriortua and Teófilo Rojo
University of the Basque Country, Bilbao / Spain

Improving Electronic Conductivity of Perovskite Thin Films Obtained by Laser Ablation
Idoia Ruiz de Larramendi, Ricardo Pinedo, Javier Alonso, José Ignacio Ruiz de Larramendi and Teófilo Rojo
University of the Basque Country, Bilbao / Spain

SOFC Stacks for Mobile Applications
Michael Lang, Christina Westner, Raphael Geieregger and Bernhard Bentlohner
DLR, Institute for Technical Thermodynamics, Stuttgart / Germany

Sulfur Poisoning of Solid Oxide Fuel Cell Anode
Ting Shuai Li, Tao Chen, Wei Guo Wang and Cheng Xu
Ningbo Institute of Material Technology & Engineering, Ningbo City / P.R. China

SOFC Development at LBNL
Michael Tucker, Lutgard DeJonghe
Lawrence Berkeley National Laboratory, Berkeley, CA / USA

Innovative Manufacturing Technologies for Low-Cost High-Volume SOFC Fabrication
Oliver Büchler, Wolfgang Schafbauer, Robert Mücke, Norbert H. Menzler
FZ Jülich, IEF-1, Jülich / Germany

Ionic Conduction in Y-doped Barium Zirconate from First Principles
Rojana Pornprasertsuk, Onthida Kosasang and Friedrich B. Prinz
Chulalongkorn University, Bangkok / Thailand

Microwave Sintering for the Fabrications of Anode Support Solid Oxide Fuel Cells
Zhenjun Jiao, Naoki Shikazono, Nobuhide Kasagi
The University of Tokyo, Tokyo / Japan

Barrier-Layer Structures to Mitigate Carbon-Deposit Formation in Bio-Fueled Solid-Oxide Fuel Cells
Daniel Storzjohann, Neal P. Sullivan, Robert J. Kee, Huayang Zhu
Colorado School of Mines, Golden, CO / USA

The effect of room temperature and high temperature exposure on the elastic modulus, hardness and fracture toughness of glass-ceramic sealants
Yilin Zhao, Jürgen Malzbender and Sonja M. Gross
FZ Jülich GmbH, Jülich / Germany

Experimental and Numerical Studies on Reaction Kinetics of Methane/Steam Reforming Process on Ni/SDC Catalyst
Grzegorz Brus, Yusuke Noro, Shinji Kimijima and Janusz S. Szymol
AGH – University of Science and Technology, Krakow / Poland

Parametric study of a planar SOFC performance and sensitivity analysis using a 3D numerical model
Yaser Mollayi Barzi, Arman Raoufi
Niroo Research Institute, Tehran / Iran

Oxygen conduction in highly ordered frameworks: the case of $\text{La}_2\text{CoO}_{4+\delta}$
Loïc Le Dréau (1), Werner Paulus (2), Jürg Schefer (2) and Olivier Hernandez (3)
(1) University of Rennes 1, Rennes / France
(2) Paul Scherrer Institut (PSI), Villigen PSI / Switzerland
(3) CNRS, Rennes / France

Thermiculite 866 --- A Service Proven, High Temperature, Compression Gasket for SOFC Applications

John Hoyes

Flexitallic Ltd, Cleckheaton / United Kingdom

Durability of SOFCs using sulphur containing fuels

Anke Hagen, Jens Rasmussen

Risø DTU, Roskilde / Denmark

SOFC Ni/YSZ Anode Structure Characterization

Samir Kerrache, A. Faes, P. Tanasini, Z. Wuillemin, A. Hessler-Wyser, J. R. Izzo Jr., W. K. S. Chiu, C. Comninellis, J. Van herle
EPFL, Lausanne / Switzerland

SOFC LSM/YSZ Cathode Structure Characterization

Samir Kerrache, P. Tanasini, A. Faes, Z. Wuillemin, A. Hessler-Wyser, J. R. Izzo Jr., W. K. S. Chiu, C. Comninellis, J. Van herle
EPFL, Lausanne / Switzerland

Experimental and modelling study of a segmented SOFC operated with methane-steam mixtures

Caroline Willich, Stefan Gewies, Wolfgang G. Bessler, Günter Schiller

DLR, Stuttgart / Germany

Preliminary characterization tests of SOFC stacks for micro-CHP application

Stephen McPhail, Angelo Moreno, Gabriele Discepoli and Giovanni Cinti

ENEA, Rome / Italy

Biogas SOFC μ CHP – A simple process concept with high electrical efficiency Marc Heddrich, Matthias Jahn, Conrad Kaden, Alexander Michaelis

Fraunhofer IKTS, Dresden / Germany

Effects of chromium surface layers on the oxygen exchange kinetics of $\text{La}_{0.6}\text{Sr}_{0.4}\text{CoO}_{3-\delta}$

Min Yang, Edith Bucher and Werner Sitte

University of Leoben, Leoben / Austria

Mechanical performance of reactive-air-brazed (RAB) ceramic/metal joints for SOFC applications

Bernd Kuhn, Jörg Brandenberg, Tim Bause, Jürgen Malzbender, Rolf W. Steinbrech, and Lorenz Singheiser

FZ Jülich, IEF-2, Jülich / Germany

Continuous particle size distribution analysis of porous $\text{La}_{0.6}\text{Sr}_{0.4}\text{CoO}_{3-\delta}$ cathodes

Iain Robertson, Lorenz Holzer, Michel Prestat, Thomas Graule

Empa, Duebendorf / Switzerland

Reactivity and oxidation study between metallic interconnects and protective layers in SOFC

V. Miguel-Pérez, A. Martínez-Amesti, K. Vidal, A. Larrañaga, M. L. Nó and M. I. Arriortua

Universidad del País Vasco & Euskal Herriko Unibertsitatea (UPV/EHU), Leioa / Spain

Electrochemical Properties of $\text{Ln}_{0.5}\text{Ba}_{0.5}\text{FeO}_3$ Perovskites: Effects of the Average Ionic Radius

Ana Ecija, K. Vidal, A. Larrañaga, A. Martínez-Amesti, M.L. Nó and M.I. Arriortua

Universidad del País Vasco (UPV/EHU), Leioa / Spain

Investigation of H_2 and CO Oxidation at YSZ Surface: Density Functional Theory Calculations and Temperature-Programmed Desorption Study

Alexandr Gorski, Vitaliy Yurkiv, Dzmitry Starukhin, Hans-Robert Volpp

Heidelberg University, Heidelberg / Germany

Ni substituted titanates presenting exsolution of Ni nanoparticles as new hydrogen electrode materials for SOFC or SOEC

Charline Lebrun (1)(2), T. Delahaye (1), K. Couturier (1), O. Joubert (1)(2)

(1) CEA, LITEN, Grenoble / France

(2) CNRS, Université de Nantes, Nantes / France

Fabrication and Characterization of Ni/ScSZ Cermet Anode Films for Intermediate Temperature SOFCs

Mahendra Rao Somalu, Vladimir Yufit and Nigel Brandon

Imperial College London, London / UK

Analysis and test of bio-liquid fuels in SOFC cells

Andrea Lanzini, Pierluigi Leone, Massimo Santarelli

Politecnico di Torino, Torino / Italy

Water vapor and SO_2 poisoning effect on the long-term durability of SOFC cathodes

Run-Ru Liu, Yusuke Shiratori, Toshihiro Oshima and Kazunari Sasaki

Kyushu University, Nishi-ku Fukuoka / Japan

Study of the Carbon Infiltration into Ni-YSZ Cermet under Hydrocarbon Fuels

Yongmin Kim, Suk Woo Nam

KIST, Seoul / Korea

Interfacial Stability and Cation Diffusion across the LSCF/GDC interface

Manabu Izuki, Manuel E. Brito, Katsuhiko Yamaji, Teruhisa Horita

AIST, Tsukuba / Japan

Using Ni/YSZ Cathode-Supported Solid Oxide Electrolyser Cells for Hydrogen Production
Cheng Xu, Jun Feng Ding, Ting Shuai Li and Wei Guo Wang
Ningbo Institute of Materials Technology and Engineering, Ningbo / China

Oxygen diffusion mechanisms in GdBaCo₂O_{5+δ} layered oxide cathodes for ITSOFCs
Albert Tarancón, David Parfitt, Alexander Chronos, Robin W. Grimes, John A. Kilner
IREC, Catalonia Institute for Energy Research, Barcelona / Spain

Fabrication of High Performance NiFe-supported SOFC Using Gd-doped Ceria Electrolyte
Young Jin Kang, Gyeong Man Choi
Pohang University of Science and Technology (POSTECH), Pohang / Korea

Area specific resistance of oxide scales grown on ferritic alloys for Solid Oxide Fuel Cell interconnects
Stefan Meigel, Egle Girdauskaite, Viktor Sauchuk, Mihails Kusnezoff
Fraunhofer IKTS, Dresden / Germany

METSOFC – A Joint European Effort on Metal Supported SOFC
Niels Christiansen (1), Mikael Schuisky (2), Keith Murray (3), Severine Ramoussed (4), Peter Prenninger (5) Jan-Erik Svensson (6),
André Weber (7), (1) Topsøe Fuel Cell A/S, Lyngby, / Denmark
(2) Sandvik Materials Technology AB, Sandviken / Sweden
(3) Sandvik Osprey Limited, Neith / United Kindgom
(4) Risø DTU, Roskilde / Denmark
(5) AVL GmbH, Granz / Austria
(6) Chalmers University of Technology, Göteborg / Sweden
(7) KIT, Karlsruhe / Germany

Simulation and Exergy Analysis of Solid Oxide Fuel Cell-Micro Gas Turbine Hybrid System Utilizing Biosyngas
Suranat Wongchanapai, Hiroshi Iwai, Motohiro Saito and Hideo Yoshida
Kyoto University, Kyoto / Japan

Influence of structure texturation on electrical properties of barium cerate sputter deposited coatings
Mohammad Arab Pour Yazdi, Pascal Briois, Samuel Georges, Alain Billard
LERMPS-UTBM, Belfort / France

Internal Reforming Kinetics in SOFC-Anodes
Alexander Kromp, André Leonide, André Weber and Ellen Ivers-Tiffée
KIT, IWE, Karlsruhe / Germany

Influence of GDC Interlayer Structure on Electrochemical Performance of LSCF Cathode-based SOFCs
Jong-Ho Lee, Hwa Young Jung, Sun-Hee Choi, Ho-il Ji
KIST, Seoul / Korea

Microstructure and Transport Properties of GdBaCo₂O_{5+δ} Epitaxial Thin Films\$
Mónica Burriel, Montse Casas-Cabanas, James Zapata, Haiyan Tan, Jo Verbeeck, Gustaaf Van Tendeloo, Stephen J. Skinner, John A.
Kilner, José Santiso
Imperial College London, London / United Kingdom

Study on newly designed metal foam supported SOFC for indirect internal reforming of n-butane
Gyujong Bae, Joongmyeon Bae,
KAIST, Daejeon / Korea

Characterization of Ti- and Zr-doped LaCrO₃ as anode materials for Solid Oxide Fuel Cell
Chia-Fen Tsai, Chia-Kan Hao, Chi-Shen Lee, MC Lin
National Chiao Tung University, Hsinchu / Taiwan

Microtubular Solid Oxide Fuel Cell on Nickelate Cathode Support
Henning Luebbe, Stefan Diethelm, Jan Van herle, Heinrich Hofmann, Paul Bowen
EPFL, Lausanne / Switzerland

Pressurized SOFC System Simulation in the Hybrid Power Plant
Florian Leucht, Wolfgang G. Bessler, Josef Kallo, K. Andreas Friedrich
DLR, Stuttgart / Germany

Sulfur Poisoning of SOFCs: Dependence on operational parameters
Tomoo Yoshizumi, Eiji Yuki, Yusuke Shiratori and Kazunari Sasaki
Kyushu University, Nishi-ku, Fukuoka / Japan

Multi-physics simulation for internal reforming solid oxide fuel cells
Joonguen Park, Gyujong Bae and Joongmyeon Bae
KAIST, Yuseong-Gu, Daejeon / Korea

A Comparison of Layered Perovskite Cathodes under Different Solid Oxide Fuel Cell Environments
Matthew Sharp, Lydia Fawcett, John Kilner, Stephen Skinner
Imperial College University, London / United Kingdom

SOFC cathode material with low thermal expansion coefficient based on the system LnBaCo₃ZnO_{7+δ}
José M. Serra, Vicente Vert
Instituto de Tecnología Química (UPV-CSIC), Valencia / Spain

A Comparative Study of Fabrication Procedures for Patterned Anodes

Annika Utz (1), H. Störmer (2), T. Knapp (1), K. Ilin (3), P.-J. Jakobs (4), M. Siegel (3), E. Ivers-Tiffée (1)
1) Institut für Werkstoffe der Elektrotechnik (IWE)
2) Laboratorium für Elektronenmikroskopie (LEM)
3) Institut für Mikro- und Nanoelektronische Systeme (IMS)
4) Institut für Mikrostrukturtechnik (IMT)
all KIT, Karlsruhe / Germany

Synthesis and Characterisation of Mixed Electronic / Protonic Conductors as Anode Materials for SOEC

G. Goupil (1), T. Delahaye (1), P. Berger (2), F. Lefebvre-Joud (1)
(1) CEA, LITEN, Grenoble / France
(2) CEA-DSM/IRAMIS/SIS2M, Grenoble / France

X-ray Computed Tomography of Solid Oxide Fuel Cell Electrodes for Non-destructive Phase Reconstruction and Analysis

John R. Izzo Jr., Kyle N. Grew, George J. Nelson, Wilson K. S. Chiu
University of Connecticut, Storrs, CT / USA

Development of Ni-LaNbO₄ cermets and thin film technology for a stable proton conducting SOFC

Anna Magrasó (1), Marie-Laure Fontaine (2), Ann Mari Svensson (3), Truls Norby (1)
(1) University of Oslo, Oslo / Norway
(2) SINTEF, Oslo / Norway
(3) SINTEF, Trondheim / Norway

Development of colloidal suspension spraying for LSCF cathodes

Rémi Costa, Johannes Arnold
DLR, Stuttgart / Germany

Spray pyrolysed and flame sprayed La_{0.2}Sr_{0.7}TiO₃ powders applicable for Solid Oxide and Direct Carbon Fuel Cells anodes

Dariusz Burnat, Andre Heel, Lorenz Holzer, Thomas Graule
EMPA, Duebendorf / Switzerland

Computational Study for Sulfur Poisoning on a SOFC Anode Using Density Functional Theory

Teppei Ogura, Takayoshi Ishimoto, Ryo Nagumo, Michihisa Koyama
Kyushu University, Fukuoka / Japan

RF sputtering deposition of BCZY proton conducting electrolytes

Simona Barison (1), L. Doubova (1), A. Sanson (2)
(1) CNR-IENI, Padova / Italy
(2) CNR – ISTECC, Faenza / Italy

Zirconia based thin films by ultrasonic aerosol assisted chemical vapour deposition (UAA-CVD)

Meike V.F. Schlupp, Jennifer L.M. Rupp, Anja Bieberle-Hütter, Ludwig J. Gauckler
ETH Zürich, Zürich / Switzerland

Influence of the sintering additive on the microstructure and electrical conductivity of BaCe_{0.9}Ln_{0.1}O_{3-δ}

P. Núñez, M. Amsif, D. Marrero-López, Stanislav N. Savvin, J.C. Ruiz-Morales
Universidad de La Laguna, La Laguna, Tenerife / Spain

Degradation of ASC Performance by Cr-Poisoning

Michael Kornely, Anita Neumann, Norbert. H. Menzler, Ellen Ivers-Tiffée
KIT, IWE, Karlsruhe / Germany

Performance Limiting Factors in anode-supported Cells Originating from Metallic Interconnector (MIC) Design

Michael Kornely, André Weber, Ellen Ivers-Tiffée
KIT, IWE, Karlsruhe / Germany

A microwave assisted Pechini method for the LSGM synthesis

Stefano Boldrini (1), S. Fasolin (2), C. Mortalò (2), M. Fabrizio (2)
(1) CNR-ISIB, Padova / Italy
(2) CNR-IENI, Padova / Italy

The Status of SOFC Development at eZelleron

Sascha Kühn, Gerhard Buchinger, Katrin Klein
eZelleron GmbH, Dresden / Germany

Air Side Contamination in SOFC Stack Testing

J. Andreas Schuler, Christian Gehrig, Zacharie Wullemmin, Joerg Wochele, Albert Schuler, Aïcha Hessler-Wyser, Jan Van herle
EPFL, Lausanne / Switzerland

Nanoscaled La_{0.6}Sr_{0.4}CoO_{3-δ} as intermediate temperature SOFC cathode: Microstructure and electrochemical performance

Jan Hayd, Uwe Guntow, Ellen Ivers-Tiffée
KIT, IWE, Karlsruhe / Germany

Interaction of CROFER-22 with apatite-type lanthanum silicate electrolytes for SOFCs

Christos Argirusis, Anna Gaki, Petros Pandis, Pavlos Sakkas, Georgia Sourkouni Vassilis Stathopoulos
National Technical University of Athens, Athens / Greece

MW-assisted Polyol mediated synthesis of Gadolinium-Doped Ceria nanopowders

Elisa Mercadelli (1), Alessandra Sanson (1), Stefano Boldrini (2)

(1) CNR – ISTECC, Faenza / Italy

(2) CNR – ISIB, Padova - Italy

Reconstruction of Porous Electrodes by FIB/SEM for Detailed Microstructure Modeling

Jochen Joos, Thomas Carraro, André Weber, Ellen Ivers-Tiffée

KIT, IWE, Karlsruhe / Germany

Chromium evaporation from plastically deformed pre-coated Sandvik Sanergy HT 22% Cr ferritic interconnect steel

Ulf Bexell, Mikael Schuisky, Jan Froitzheim, Jan-Erik Svensson

AB Sandvik Materials Technology, Sandviken / Sweden

Alcohol Fed Micro-Tubular SOFCs

Kevin V. Galloway, Nigel M. Sammes

Colorado School of Mines, Golden, CO / USA

A Dynamic 1D Stack Model for SOFC

Dino Klotz, Jan Philipp Schmidt, André Weber, Ellen Ivers-Tiffée

KIT, IWE, Karlsruhe / Germany

Characterisation of the Effects of an Experimental Apparatus on the Performance of a MT-SOFC

Vincent Lawlor, Stefan Griesser, Christoph Hochenauer, Buchinger Gerhard

Upper Austria University of Applied Science, Wels / Austria

Transport properties of co-doped $(La,A)_{9.66}(Si,B)_6O_{26.5\pm\delta}$ with adjusted oxygen stoichiometry

Isabel Antunes, Cristina Fernandes, Filipe Figueiredo, Duncan Fagg, Jorge Frade

Aveiro University, CICECO, Aveiro / Portugal

The impact of heterogeneities on the carbonation tolerance of BaBO₃ perovskite materials, B = Ce, Zr

Jorge R. Frade, Isabel Antunes, Ana Brandão and Duncan P. Fagg

Aveiro University, CICECO, Aveiro / Portugal

Fabrication and Characterisation of Anode Supported Apatite type Electrolyte Coatings Deposited by Atmospheric Plasma Spraying

Vassilis Stathopoulos, Elias Georgiopoulos, Christos Argirusis, Georgia Sourkouni, Evangelia Xenogiannopoulou, Dimitra

Kanellopoulou, Costas Stournaras, Eric Louradour, Jean-Pierre Joulin

Technological Educational Institute of Chalkida, Psahna, Greece

Development of a Solid Oxide Fuel Cell (SOFC) for the Utilisation of Coal Mine Gas

Ludger Blum, Andreas Dengel, Bodo Gross, L.G.J. de Haart

FZ Jülich, Jülich / Germany

Experimental results from the final prototype SOFC-based μ CHP system developed within the framework of the EU Project FlameSOFC

Stefan Voss, Alexandra Loukou, Dimosthenis Trimis

Technical University Bergakademie Freiberg, Freiberg / Germany

Multi-Phase Tubular Perovskite-Based Anodes for Use in Hydrocarbon-Fuelled Solid-Oxide Fuel Cells

Sean Babiniec, Neal P. Sullivan, Amy Richards, Nicolaus Faino

Colorado School of Mines, Golden, CO / USA

Ethanol internal steam reforming in intermediate temperature SOFC

Stefan Diethelm, Jan Van herle, Daniel Favrat

EPFL, Lausanne / Switzerland

Catalytic reforming on hexaaluminate-based catalyst supports

Nicholas E. McGuire, Neal P. Sullivan, David Wickham, Robert J. Kee

Colorado School of Mines, Golden, CO / USA

Enhancement of SOFC anodes properties by a low processing deposition method

Pierluigi Leone, Massimo Santarelli, Gustavo Ortigoza, Andrea Lanzini, Fabio Deorsola, Angelo Debenedetti

Politecnico di Torino, Torino / Italy

Microstructure Change of SOFC Anode Caused by Electrochemical RedOx Cycles

Norikazu Takagi, Norikazu Takagi, Yoshinori Nakamura, Naoki Shikazono, Nobuhide Kasagi

The University of Tokyo, Tokyo / Japan

Nanostructured Composite Cathode Preparation for IT-SOFC by RF Induction Plasma

Yan Shen, François Gitzhofer

Université de Sherbrooke, Sherbrooke, QC / Canada

Fabrication and electrochemical characterization of microtubular IT-SOFC using ceria nanopowders

Vanesa Gil, Jonas Gurauskis, Rosa I. Merino, Ángel Larrea and Victor Orera

CSIC-Universidad de Zaragoza, Zaragoza / Spain

Coarsening and Oxidation Kinetics of Nickel Gadolinia-doped Ceria Anodes

Henning Galinski, Jennifer L.M. Rupp, Anja Bieberle-Hütter, Ludwig J. Gauckler

ETH Zürich, Zürich / Switzerland

Comparing specifications for Solid Oxide Electrolyser Cells combined to Wind Turbine or Nuclear Power Scenarios with first test results from RelHy project

John Bøggild Hansen (1), Thomas Nietsch (2)
(1) Haldor Topsøe A/S, Lyngby / Denmark
(2) Helion, Aix-en-Provence / France

Anode Microstructure and Polarization Property
in 10x10 cm² Anode-supported SOFCs

Hae-Ryoung Kim, Ho-il Ji, Hae-Weon Lee and Jong-Ho Lee
KIST, Seoul, Korea

Comparison of performance of Solid Oxide Fuel Cells with oxygen ion-conducting electrolyte and proton-conducting electrolyte
Wojciech Zając, Janina Molenda
AGH University of Science and Technology, Kraków / Poland

Computer simulation of defect formation in LSGM

Asghar Malekifar, Esmail Saievar
Dorud Branch Islamic Azad University, Dorud, Lorestan / Iran

Patterned nickel anodes for SOFC: Microstructure and impurity analysis

Heike Störmer (1), A. Utz (2), E. Ivers-Tiffée (2), D. Gerthsen (2)

1) KIT, LEM, Karlsruhe / Germany

2) KIT, IWE, Karlsruhe / Germany

Electrochemistry and mechanism of hydrogen oxidation at Ni/YSZ patterned anodes

Marcel Vogler, A. Utz, H. Störmer, A. Weber, D. Gerthsen, E. Ivers-Tiffée, W. G. Bessler
DLR, Stuttgart / Germany

Durability and Reliability of a Mixed Conducting Cathode Interface under Operation

Tatsuya Kawada, Mi-Young Oh, Atsushi Unemoto, Koji Amezawa
Tohoku University, Sendai / Japan

Optimization of Solid Oxide Fuel Cell Materials Structure and Porosity

Enn Lust
University of Tartu, Tartu / Estonia

Development of SOFC System Using Syngas as Fuels through External Steam-reforming of Methane

Shenghu Zhou, Qin Wang, Jing Shao and Wei Guo Wang.
Ningbo Institute of Material Technology & Engineering, Ningbo / China

B-site doping of Lanthanum Strontium Titanate for SOFC Anodes

David Miller John Irvine
University of St Andrews, St Andrews / United Kingdom

Life Cycle Assessment of a SOFC micro CHP Unit

D. Giannopoulos, M.A. Founti
National Technical University of Athens, Athens / Greece

Hydrogen Production from Ethanol Reforming for Use in Fuel Cell Power Systems - A kinetics approach

G. Vourliotakis, G. Skevis, M.A. Founti
National Technical University of Athens, Athens / Greece

Electrochemical Impedance Spectroscopy (EIS) for SOFC Short Stacks

Christina Westner, Michael Lang, Raphael Geierregger and Bernhard Bentlohner
DLR, Stuttgart / Germany

Internal Steam Reforming of CH₄ on a new carbon tolerant Au-Ni/GDC SOFC anode

Stylianos G. Neophytides (1), D.K. Niakolas (1), J.P. Ouweltjes (2), B. Rietveld (2)

(1) Foundation for Research and Technology, Rion, Patras / Greece

(2) Energy research Centre of the Netherlands ECN, Petten / The Netherlands

Preparation and Characterization of Nanostructured Anode (Al_{0.15} Ni_{0.85}-CDC) for SOFC

Ghazanfar Abbas (1)(2), M.Asharf Chaudhry (1)
(1) Bahauddin Zakaria University, Multan / Pakistan
(2) COMSATS Institute of Information Technology / Pakistan

Optimisation of the SOFC Cathode Material Ca₃Co₄O_{9.5}

Aurélien Rolle, Samir Boulfrad, Sylvie Daviero-Minaud, Kensaku Nagasawa, Hiro Nakatsugawa, Olivier Menétré, John Irvine
ENSCL / UST Lille 1, Villeneuve d'Ascq / France

Effects of Ca incorporation to Cu-CeO₂ based anodes on the SOFC performance

Araceli Fuerte, Rita Ximena Valenzuela, María José Escudero, Loreto Daza
CIEMAT, Madrid / Spain

La₂NiO_{4+δ} Potential Cathode Material on La_{0.9}Sr_{0.1}Ga_{0.8}Mg_{0.2}O_{2.85} electrolyte for Intermediate Temperature Solid Oxide Fuel Cell

María José Escudero, Araceli Fuerte, Loreto Daza
CIEMAT, Madrid / Spain

Scratch testing as a tool to evaluate the adhesion of thermally grown oxides on ferritic interconnect steel
Ulf Bexell, Mikael Schuisky, Mikael Olsson
AB Sandvik Materials Technology, Sandviken / Sweden

Test and characterization of Delphi's Solid Oxide Fuel Cell Auxiliary Power Units (SOFC APU) fed with natural gas and Diesel fuel
Samir Jemeï, Jerome Mulot, Marie-Cécile Péra, Jean-Marie Kauffmann
University of Technology of Belfort Montbeliard, University of Franche-Comte, CNRS, Belfort / France

Comparative study of different Bio fuel based SOFC
Rizwan Raza (1), Bin Zhu (2)
(1) Royal Institute of Technology (KTH), Stockholm / SWEDEN
(2) GETT Fuel Cell AB, Stockholm / Sweden
2R-Cell™ from Fiaxell Sàrl - A reliable anode supported thin electrolyte SOFC cell resistant to multiple thermal and redox-cycles
Raphael Ihringer
Fiaxell Sàrl, Lausanne / Switzerland

Synthesis and electrical conductivity of $Sr_{1-x}La_xTiO_3$ by citric acid method
Zhenwei Wang, Masashi Mori
CRIEPI, Yokosuka, Kanagawa / Japan

Operation of 1.3kW class anode-supported flat tubular SOFC stack
Tak-Hyoung Lim, Jae-Layng Park, Seok-Joo Park, Seung-Bok Lee, Rak-Hyun Song, Dong-Ryul Shin
KIER, Daejeon / Korea

Fabrication of LSCF/CGO Composite Used as SOFC Cathode Material
Jae Layng Park, Tak-hyoung Lim, Seung-bok Lee, Seok-joo Park, Dong-ryul Shin, Rak-hyun Song
KIER, Daejeon / Korea

Fabrication of anode functional layer for SOFC by using nano NiO powder synthesized by pulsed wire evaporation (PWE) method
Hae-won Kim, Dong-ju Kim, Seok-joo Park, Tak-hyoung Lim, Seungbok Lee, Rak-hyun Song, Dong-ryul Shin
KIER, Deajon / Korea

Microtubular SOFCs- Review of Properties and Performance
Katie Howe, Kevin Kendall
University of Birmingham, Edgbaston / United Kingdom

Sol-gel process to prepare an anode supported YSZ electrolyte for SOFC
Emilie Courtin, Philippe Boy, Nathalie Poirot, Christel Laberty-Robert, Luc Bianchi
CEA, DAM Le Ripault, Monts / France

Cycling performance of Integrated Planar SOFCs
Waldemar Bujalski (1), Artur Majewski (1), Kevin Kendall (1), Gavin Reade (2)
(1) University of Birmingham, Birmingham / United Kingdom
(2) RRFCS Ltd., Loughborough / United Kingdom

Effect of Mn-Co Spinel Coating for ZMG232L and Improved Fe-Cr Ferritic Alloy for SOFC Interconnects on Oxidation Behaviour and Cr-Evaporation
Toshihiro Uehara (1), Nobutaka Yasuda (1), Masayuki Okamoto (1), Yoshitaka Baba (2)
(1) Hitachi Metals, Ltd., Shimane / Japan
(2) Tokyo Gas Co., Ltd., Tokyo / Japan

Investigation of SOFC Performance and Durability Evaluations
Tohru Yamamoto, Yoshihiro Mugikura
CRIEPI, Yokosuka, Kanagawa / Japan

Electrophoretic deposition of 8YSZ nanoparticles on cathode substrate
Hanna-Mari Tikkanen, Crina Suci, Ivar Warnhus, Alex Hoffmann.
University of Bergen, Bergen / Norway

Microstructural analysis of oxide layer formation of ferritic stainless steel interconnect
Dong-Ik Kim (1), Seung Hee Hong (1)(2), Heung Nam Han (2), In-Suk Choi (1), Jae-Pyoung Ahn (1), Seung Hee Han (1), Young Whan Cho (1)
(1) KIST, Seoul / Korea
(2) Seoul National University, Seoul / Korea

Current status of cathode materials for intermediate temperature solid oxide fuel cells and investigation of the behaviour of some materials as: $Nd_{2-x}Sr_xNiO_{4-δ}$, $La_{2-x}Sr_xCuO_{4-δ}$ and $Pr_{2-x}NiO_{4-δ}$
Stefan Simeonov (1), Hui Zhao (2), Jean-Marc Bassat (3), Jean-Claude Grenier (3), Maria Machkova (1),
(1) University of Chemical Technology and Metallurgy, Sofia / Bulgaria
(2) Heilongjiang University, Harbin / China
(3) ICMCB-CNRS, Univ. Bordeaux I, Pessac / France

Novel method of internal barrier layer formation for Cr diffusion to the surface of Crofer 22APU Interconnects
Natalya Ledukhovskaya, Elena Frolova, Gennady Strukov and Sergey Bredikhin
Solid State Physics, Russian Academy of Sciences, Chernogolovka / Russia

Current instability in solid oxide fuel cells
Ilya Burmistrov, Sergey Bredikhin
Solid State Physics, Russian Academy of Sciences, Chernogolovka / Russia

Hydrogen Production by Steam Electrolysis with Tubular SOEC SOFC
Ji-Haeng Yu, Sang-Kuk Woo, In-Sub Han, D.-W. Seo
KIER, Deajeon / Korea

The effects of high pressure oxygen, microstructure on LSM/8YSZ SOFC cathode performance
John E. Taney, Stephen R. Gamble, John T.S. Irvine
University of St Andrews, St Andrews / United Kingdom

Structure property relationship in layered-type cathode materials $\text{PrBa}_{0.5}\text{Sr}_{0.5}\text{Co}_2\text{O}_{5+\delta}$ for SOFCs
Abul Azad, JH Kim, John TS Irvine
University of St Andrews, St Andrews / United Kingdom

The performance optimisation of SOFC by infiltrating the active electrode in tri-layer YSZ matrix
Min-fang Han, Ze Liu, Su-ping Peng
China University of Mining & Technology (CUMTB), Beijing / China

Hybrid Direct Carbon fuel Cells (HDCFC) and pyrolysis process of biomass
Alfredo Damiano Bonaccorso, John T.S. Irvine
University of St Andrews, St Andrews / United Kingdom

Multi-scale models for sulfur poisoning in solid oxide fuel cell anodes
Dayadeep Monder, Kunal Karan
Queens - RMC Fuel Cell Research Centre, Kingston / Canada

Next-Generation Ceramic Coatings for Stainless Steel SOFC Interconnects
Matthew Seabaugh, Michael Day, Michael Beachy, Sergio Ibanez, Robin Kimbrell, Scott Swartz
NexTech Materials, Ltd, Lewis Center, OH / USA

Micro-structural Modeling of SOFC Anodes
Martin Søggaard, Tania Ramos, Mogens Mogensen
Risø - Technical University of Denmark, Roskilde / Denmark

Sol-gel Route for Synthesis of Apatite-type Lanthanum Silicate Powders
Chieko Yamagata, Nelson Batista de Lima, Sonia R. M. Castanho, Jivaldo Rosario Matos
Universidade de São Paulo, São Paulo / Brazil

Investigations of Electrochemistry in High Temperature Oxygen Electrodes by Impedance Spectroscopy and Current-Potential Sweep
X-D Zhou (1), JY Huo (1), J. Templeton (2), JW Stevenson (2)
(1) University of South Carolina, Columbia, SC / USA
(2) Pacific Northwest National Laboratory, Richland, WA / USA

Progress of Hexis' stack and materials development
Andreas Mai, Boris Iwanschitz, Roland Denzler, Dirk Haberstock, Alexander Schuler
Hexis AG, Winterthur / Switzerland

Ceria-Zirconia based anodes for the direct oxidation of methane in SOFC
Marta Boaro, Chiara Abate, Matteo Ferluga, Alfonsina Pappacena, Alessandro Trovarelli
Università di Udine, Udine / Italy

Development and Performance of a 1kW SOFC Power Package
Suk Woo Nam, Seo-Ho Seo, Young-Sung Yoo
KIST, Seoul / KOREA

Langasites as interstitial oxide ion conductors for SOFC electrolytes
Maria Tsiamtsouri, Christopher I. Thomas, John B. Claridge and Matthew J. Rosseinsky
University of Liverpool, Liverpool / United Kingdom

Single-chamber SOFCs based on GDC and LSGM electrolytes
M. Morales (1), J. J. Roa (1), X. G. Capdevila (1), J. Tartaj (2), S. Piñol (3), M. Segarra (1)
(1) University of Barcelona, Barcelona / Spain
(2) Instituto de Cerámica y Vidrio, Cantoblanco / Spain
(3) Institut de Ciència de Materials de Barcelona, Bellaterra / Spain