

FINAL ANNOUNCEMENT

18th conference in series of the European Fuel Cell Forum in Lucerne

11th EUROPEAN SOFC & SOE FORUM 2014

1–4 July 2014

KKL Lucerne / Switzerland

Conference Chairmen:

Niels Christiansen Topsoe Fuel Cells A/S

John Bøgild Hansen Haldor Topsøe A/S



International Solid Oxide Fuel Cell
and Electrolyser Conference
with Exhibition and Tutrial

1 July 2014
FUEL CELL TUTORIAL
by Dr. Günther G. Scherer, ex PSI Villigen
Dr. Jan Van herle, EPF Lausanne

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Convenient hotel rooms are being held until 30 April 2014

Schedule of Events

Motto 2014: Solid Oxide Fuel Cells and Electrolysers: Key enabling technologies for sustainable energy scenarios.

Tuesday, 1 July 2014

11:00–16:00	Exhibition set-up	16:00–18:00	Poster pin-up / Official opening of the exhibition
09:30–10:00	Tutorial Registration at KKL on the 2 nd floor in the Club Rooms above the Auditorium	16:00–18:00	On-site Registration is open, to be continued on the following days
10:00–17:00	Tutorial held by Dr. Gunther G. Scherer & Dr. Jan Van herle	18:00–19:00 from 19:00	Welcome gathering on terrace of the KKL above the registration area Thank-you Dinner with special invitation only

Wednesday, 2 July 2014

08:00–16:00	On-site Registration is open, to be continued on the following days	09:00–18:00	Access to poster area and exhibition are open
08:00–09:00	Speakers Breakfast in the Auditorium Foyer on the 1 st floor of the KKL above sector A of the exhibition	12:30	Press Conference by invitation only and continued in the following event
09:00–18:00	Conference sessions 1–6 including plenary presentations on «International Overviews» from Japan, USA, China and Europe, extended poster presentation by authors, networking and exhibition	13:30–17:15	«Strom und Wärme Rondo» in German for Swiss Energy Stakeholders
		18:30–23:00	Swiss Surprise Event, separate registration for 80 places to be booked on a first-come-first-served basis

Thursday, 3 July 2014

08:00–09:00	Speakers Breakfast in the Auditorium Foyer on the 1 st floor of the KKL above sector A of the exhibition	09:00–18:00	Conference sessions 7–12 key notes on «the Role of SOFC in a Balanced Energy Strategy», extended poster presentation by authors, networking & exhibition
09:00–18:00	Access to poster area and exhibition are open	19:30–23:30	Great Dinner on the Lake

Friday, 4 July 2014

08:00–09:00	Speakers Breakfast in the Auditorium Foyer on the 1 st floor of the KKL above sector A of the exhibition	09:00–12:00	Access to poster area and exhibition are open
09:00–16:30	Conference sessions 13–17 including key notes on «SOFC for Distributed Power Generation», poster presentation, networking and exhibition	12:00–14:00	Poster removal
		15:30–16:30	Closing & Award Ceremony: Christian Friedrich Schönbein & Hermann Göhr
		16:30–17:00	Goodbye coffee and travel refreshment in front of the Luzerner Saal

The European Fuel Cell Forum

The sole purpose of the European Fuel Cell Forum is the promotion of fuel cell and hydrogen technologies through the EFCF conference, literature and media. It is an enabling, high level exchange platform providing scientific sessions, exhibitions, tutorials as well as international project meeting support and recreational networking events at the very charming, inspirational location of Lake Lucerne.

Every summer the European Fuel Cell Forum invites more than 6,000 stakeholders to participate in this internationally recognised event held on the shores of Lake Lucerne, in the heart of Switzerland. More than 300 contributions and posters will be presented in 27 partially parallel sessions during 3 intensive and stimulating days. Beside the high level scientific content, the targets, status, programmes and future calls of Japan, USA, China and Europe will be outlined. Overviews of R&D at top institutions and the development status of very prominent companies and major groups worldwide will be presented. To recognise the excellent poster contributions two extended poster sessions are held and posters remain accessible throughout the entire conference. Based on the increasing number of submissions, 550 to 600 participants from 35–40 countries are expected this year.

The EFCF now has a heritage of 20 years! Already in 1994 the 1st EUROPEAN SOFC FORUM 1994 attracted highly qualified international speakers as well as a global audience. Over the years a high quality conference series has been established, and the conference topics alternate yearly. On even years the conference concentrates on «High Temperature Fuel Cells (HTFC)» expanded in recent years to include «HT Electrolysis (HTE)». On odd years the conference concentrates on «Hydrogen Fuel Cells (H2FC)» or «Low Temperature Fuel Cells» and «Hydrogen Production, Storage and Infrastructure (H2PSI)». Keeping up with this tradition the 11th EUROPEAN SOFC & SOE FORUM 2014 is based around «High Temperature Fuel Cell and Electrolysis (HTFC, HTE)». Many strong relationships and contacts have been established

in these events over the years. This is thanks to a caretaking organisation with dedicated advisors and conference chairs, which have a watchful eye on scientific quality. Unlike many commercial conferences, this event is organised by fuel cell technologists and scientists. For many years as active members of the European fuel cell and hydrogen community, they have been observing the trends and following the recommendations from the EFCF international board of advisors. The conference organisers ensure that the stakeholder's needs are always the focus of the European Fuel Cell Forum.

With strong dedication, our goal is to continue to grow the European Fuel Cell Forum as one of the most prominent meeting places for the comprehensive exchange of scientific and technical information and for high-level networking. All of this creates an environment that will enable scientific breakthroughs and the transfer into the industry.

For this 20-year jubilee conference we would like to thank our two highly recognised Chairs: Niels Christiansen from Topsoe Fuel Cells A/S & John Bøgild Hansen from Haldor Topsøe A/S in Denmark for their much appreciated collaboration and highly experienced input. Together with them we can offer you a sound scientific programme, unforgettable side events and invite you to the well-known and pleasant surroundings of Lucerne. Finally, we would like to thank all the authors, exhibitors and suppliers for their excellent contributions, the Scientific Advisory Board for their review work and our staff members for fastidiously taking care of all the organisational details. Together with the numerous participants and exhibitors, the stage has been set for an exuberant 11th EUROPEAN SOFC & SOE FORUM 2014.

Thank you and we look forward to seeing you in Lucerne this July
Olivier Bucheli & Michael Spirig

European Fuel Cell Forum Luzerne/Switzerland

www.EFCF.com



11th European SOFC & SOE Forum

Conference Chairmen:

Niels Christiansen Topsoe Fuel Cells A/S

John Bøgild Hansen Haldor Topsøe A/S

The 2014 conference stands under the Motto:

Solid Oxide Fuel Cells and Electrolysers: Key enabling technologies for sustainable energy scenarios

Considerable progress has been made in the SOFC (Fuel Cell) and SOE (Electrolyzer) technologies, ranging from material and component development to demonstration and market entry of systems. SOFC is gaining increased attention as a key technology for energy systems with a high share of renewable, intermittent power production. At the 11th European SOFC Forum 2014, a complete overview of the state of the art – including materials, cell and stacks, processing, modelling and diagnostics, system design and operation, product ideas and potential markets – will be given at a three day technical conference. The conference will be chaired by Niels Christiansen of Topsoe Fuel Cell A/S and John Bøgild Hansen of Haldor Topsøe A/S.

Addressing issues of science, engineering, applications, market possibilities and future trends, the European SOFC Forum 2014 is aiming at a fruitful dialogue between researchers, engineers, and manufactures, between hardware developers and potential users, between academia, industry, and electric power and gas utilities. The technical program comprises

current results, challenges and trends in the field of SOFC and SOE technologies, including solid PCFC and MIEC, and the event is a unique opportunity for networking within and across different disciplines.

Aiming at high quality and relevance, the technical program has been set up by a Scientific Committee. The Committee has the task of ensuring full independence in all scientific and technical matters. All papers presented as lectures or posters will be collated in the electronic proceeding, which will be distributed to all participants at the time of registration and later distributed to libraries, research institutions and universities. In a special edition of the international Journal of Fuel Cells, some selected contributions will be published

For a fascinating conference
Niels Christiansen & John Bøgild Hansen

Conference language is English

Chaired by: Niels Christiansen

Niels Christiansen is CIO at Topsoe Fuel Cell A/S, responsible for innovation on SOFC. Graduating 1978 in material science and chemical engineering from the Danish Technical University, he had a position as project manager at the Danish Technological Institute on advanced materials until 1988. Subsequently he worked on bio-ceramics, and founded 1984 the Danish Ceramic Society. In 1989 he lead the SOFC development at Haldor Topsøe A/S, in close cooperation with Risø National Laboratory. He has supervised R&D projects on catalyst raw materials, ceramic membranes and superconductors, acted as coordinator of various industrial collaboration projects.

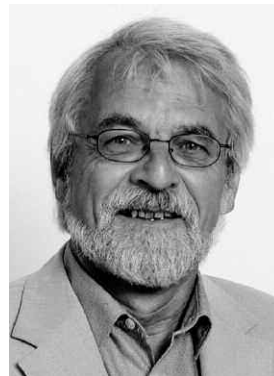


With the establishment of Topsoe Fuel Cells A/S in 2004, he became responsible for SOFC R&D and innovation and coordinated the EU projects on next generation SOFC technology METSOFC and METSAPP. Niels Christiansen is member of the board of the Danish Society for Hydrogen and Fuel Cells. He is the inventor of 14 patents and has published and presented advances in SOFC development for more than 20 years worldwide.

Chaired by: John Bøgild Hansen

John Bøgild Hansen is Senior Scientist & Advisor to Management in the Company Management of Haldor Topsøe A/S. He graduated with a MSc in Chemical Engineering from DTU in 1975 and has been employed by Haldor Topsøe since then. Initially he worked in the catalyst division but in 1979 joined the R&D Division where he became department manager in 1985. He was responsible for fuel processing for fuel cells, ammonia, methanol, DME, gasoline and reforming catalyst as well as the related process technology development.

In 2000 he became senior scientist and advisor to the chairman, Dr. Haldor Topsøe mainly on energy related issues as hydrogen and synthetic fuel production, fuel cell and electrolyser system development as well as biomass utilisation. John Bøgild Hansen holds 26 patents and has made more than 60 publications.



Supported by the Scientific Organizing Committee

Dr. Anke Hagen, DTU, Denmark
Prof. John Irvine, University of St Andrews, UK
Prof. John Kilner, Imperial College, UK
Dr. Mogens Mogensen, DTU, Denmark

Prof. Robert Steinberger-Wilckens,
University of Birmingham, UK
Dr. André Weber, KIT, Germany

International Board of Advisors

of the EUROPEAN FUEL CELL FORUM

The International Board of Advisors guides the European Fuel Cell Forum in technical and strategic matters. It is currently constituted by the following distinguished experts:

Prof. Joongmyeon Bae, KAIST, South Korea
 Prof. Frano Barbir, Unido, Croatia
 Dr. Ulf Bossel, ALMUS AG, Switzerland
 Dr. Christiansen Niels, Topsoe Fuel Cells A/S, Denmark
 Dr. Olaf Conrad, University of Cape Town, South Africa
 Dr. Karl Föger, Ceramic Fuel Cells Ltd., Australia
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 Prof. Kazunari Sasaki, Kyushu University, Japan
 Dr. Günther G. Scherer, Paul Scherrer Institut, Switzerland

Dr. Günter Schiller, DLR Stuttgart, Germany
 Dr. Subhash C. Singhal, Pacific Northwest National Lab., U.S.A.
 Dr. Martin Smith, University of St. Andrews, United Kingdom
 Prof. Robert Steinberger-Wilckens, Uni Birmingham, United Kingdom (Chair)
 Prof. Constantinos G. Vayenas, University of Patras, Greece
 Dr. Christian Wunderlich, IKTS, Germany

Scientific Advisory Committee

of the 11th EUROPEAN SOFC & SOE FORUM 2014

Mr. Niels Christiansen, Topsoe Fuel Cell A/S, Denmark (Chair)

Mr. John Bøgild Hansen, Haldor Topsøe A/S, Denmark (Chair)

Prof. Ludger Blum, FZ Juelich, Germany
 Prof. Nigel P. Brandon, Imperial College, UK
 Ms. Annabelle Brisse, ElfER, Germany
 Dr. Karl Föger, CFCL, Germany
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 Dr. Ellen Ivers-Tiffée, KIT, Germany
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 Prof. Florence Lefebvre-Joud, CEA-LITEN, France
 Dr. Dario Montinaro, SOFCpower, Italy
 Mr. Søren Primdahl, Topsoe Fuel Cell A/S, Denmark
 Dr. Mark Selby, Ceres Power, UK
 Dr. Jan Van herle, EPFL, Switzerland

A Scientific Advisory Committee has been formed to structure the technical program of the this years conference. This panel has exercised full scientific independence in all technical matters.

Date and Place

The 11th EUROPEAN SOFC & SOE FORUM 2014 will be held from 1st to 4th July 2014 in the renowned Kultur- und Kongresszentrum Luzern KKL in Lucerne, Switzerland. The parallel lectures will be presented in the «Luzerner Saal» and the «Auditorium», while all posters will be permanently exhibited in the «Club Rooms». The KKL is located next to the railway station on the shore of Lake Lucerne. Boats, water front activities, spectacular views of the old town and snow-capped mountains add to the charm of the conference venue.

Technical Program

This conference will exclusively deal with high temperature fuel cells (HTFC) and electrolysis technologies (HTEC). In addition, the worldwide fuel cell and hydrogen programs and up-coming calls from Japan, USA, China and Europe will be outlined by high level representatives. There are further keynotes on «the role of Solid Oxide Fuel Cells in a Balanced Energy Strategy» and on «SOFC for distributed generation market in the U.S.». The oral and poster presentations cover overviews of R&D at top institutions and the development status of prominent companies and major groups worldwide as well as material, manufacturing, diagnostics, modelling from cell to stack and system including components and balance of plant. An attractive four-day programme, starting with a tutorial, offers product presentations, scientific lectures, demonstrations, posters and exhibits. Altogether, more than 300 scientific contributions will be presented i.e. 110 oral presentations in 25 sessions and nearly 200 posters in two large dedicated poster sessions, with extended time for discussion. The poster rooms are permanently accessible throughout the entire event.

All events are held in the same building. Registration covers unrestricted admission to conference and exhibition. European global developers present innovative high temperature fuel

cell and electrolysis solutions and as well as materials, development equipment, fuel cell components and supplies. The technical programme is designed to inform representatives from industry, trade, finance, utilities and users as well as planners, engineers, technology brokers and members of the scientific research community. Technical information is available from the exhibitors. Applications of high temperature fuel cell and electrolysis technologies will also be addressed. The 11th EUROPEAN SOFC & SOE FORUM 2014 will be the major international event on these subjects this year.

Exhibition

Fuel cell and electrolysis products are exhibited in the lobby area of the lecture halls. Developers of SOFC, SOE, system hardware and suppliers of components, instruments, test stands, production technologies as well as research laboratories from all parts of the world are invited to exhibit their products and services and find new clients. Please contact the EUROPEAN FUEL CELL FORUM or visit www.EFCF.com for further information. The names of confirmed exhibitors are listed in the rear part of the booklet.

Special Swiss Event «Strom und Wärme» Rondo

Each year EFCF organizes also more Swiss Energy and Mobility related events for a better public and political awareness and/or focussed information for dedicated stakeholder groups. The form of this specific event is usually a demo with attractive and impressive objects like cars, ships, fuelling stations and so on. This year an intensive session with 6–8 industry elevator speeches addressed to Swiss Energy Stakeholders is planned. In the so called «Strom und Wärme Rondo» held in German on Wednesday, 2 July 2014 in the afternoon 50–100 energy supply experts and politicians are expected.

International Project Meetings

As many internationally relevant persons participate at the EUROPEAN FUEL CELL FORUM, the Monday and Tuesday of the conference week offer an ideal opportunity for international project meetings. Please feel free to use this time to schedule your meetings on these days for any ongoing projects, setting-up of new projects or for other related events such as an IEA workshop.

To simplify project initiators' and organisers' life, the organisation of such events for registered participants and exhibitors is actively supported by our organisation. Get more information and download a registration form on www.EFCF.com or send an e-mail to forum@efcf.com.

Proceedings (ISBN 3-905592-16-9) – Publication Policy

The complete conference proceedings will be available in electronic form and distributed in Lucerne at the time of registration to all participants. According to the authors' wishes, they will be edited and included in the web-accessible proceedings under the ISBN 3-905592-16-9. Proceedings of previous EUROPEAN FUEL CELL FORUM events will also become available under their ISBN on www.EFCF.com. Authors have also the possibility to withdraw their contribution from the web-publication if they wish so, e.g. if they wish to publish the work «elsewhere» in a scientific publication.

The Scientific Advisory Board of the EFCF conference will select a limited number of contributions for the inclusion in a Special Issue of «FUEL CELLS – From Fundamentals to Systems» (Impact Factor 2012: 3.149, www.fuelcells.wiley-vch.de). These selected papers will need to comply with the Journal's guidelines and go through a peer-review process (see Publication Policy on www.EFCF.com).

Presentation available with approved participant login

At any EFCF conference, participants are not permitted to take pictures of the presentations. This allows presenters to show their latest results that are intended for publication in a scientific paper at a later date. However, presenters usually indicate their willingness to share their presented and eventually copyedited slides to the conference registrants. Upon receiving the authors permission presentations will be made available on www.EFCF.com for all registered participants of the EUROPEAN FUEL CELL FORUM with an approved login. To obtain download rights after the conference, post-register is possible by «filing Contact Data» on the www.EFCF.com on-line form.

Who should attend?

The conference with exhibition offers an attractive programme for potential users of fuel cells, decision makers, researchers and engineers in industry, laboratories, academic institutions, governments, investors, consultants and electric power engineers. The event provides many opportunities for informal exchanges between industry, market and academia, a platform for technology transfer and recruitment of qualified students and trainees. The 11th EUROPEAN SOFC & SOE FORUM 2014 combines the personal atmosphere of a workshop with the format of a scientific conference. This is the time and the place where decision makers meet politicians, inventors meet investors, engineers meet scientists, utilities meet manufacturers and users meet providers. Participants from all continents are invited and welcome to this prestigious event.

The Tutorial is an excellent Kick-Start to the 11th EUROPEAN SOFC & SOE FORUM 2014 Tuesday, 1 July 2014, from 09:30 to 17:00

The Tutorial will provide the basic concepts required to address the general but also more specialised field of fuel cells. Fuel cell technology is interdisciplinary par excellence, and requires knowledge in electrochemistry, materials science, mechanical and electrical engineering, catalysis, corrosion, thermal management, systems engineering etc. The course will cover these different aspects as broadly as possible, illustrated by many examples. All fuel cell families will be addressed i.e Hydrogen Fuel Cells (H_2FC) and High Temperature Fuel Cells (HTFC) as well as Hydrogen Production, Storage and Infrastructure (H_2PSI). Applications and examples will be mostly surrounding the two most popular fuel cell types, PEFC (G. G. Scherer = GGS) and SOFC (J. Van herle = JVh), this is due to the expertise of both lecturers in their respective specialties.

The Tutorial will be targeted to newcomers as well as those who have been working in the area of fuel cells for some time. Participants will gain, or revise, current understanding of the operation and key challenges of fuel cell technology, where considerable progress in recent years has been achieved and new insights gathered. The requirements for fuel cell market introduction will be discussed.



Dr. Günther G. Scherer



Dr. Jan Van herle

The Tutorial lecture topics are fuel cell operating principles, thermodynamics, kinetics, efficiencies, central notions such as electrolyte ionic conductivity, electrode overpotential, triple phase boundary, Nernst equation, fuel reforming, cell and stack architectures and design, fuels (both fossil and renewable) for different fuel cells including their treatment, all fuel cell families (SOFC, MCFC, PAFC, PEFC/DMFC, AFC).

Tutorial Schedule:

- 09:30 Registration, welcome refreshments
- 10:00 Lecture 1: Fundamentals of Electrochemical Energy Conversion (GGS)
- 10:45 Lecture 2: Characteristics of the Important Fuel Cell Technologies (GGS)
- 11:30 Coffee break
- 11:45 Lecture 3: Fuels for fuel cells, fuel processing (JVh)
- 12:30 Lunch break
- 14:00 Lecture 4: Applications of Polymer Electrolyte Fuel Cells PEFC (GGS)
- 14:45 Lecture 5: System aspects, applications of High Temperature Fuel Cells SOFC, ... (JVh)
- 15:30 Coffee break
- 15:45 Lecture 6: State-of-the-art, challenges, summary (JVh)
- 16:30 End of Tutorial, Possibility to visit the exhibition

The Tutorial language is English.

Register online at www.EFCF.com

Each participant will receive a copy of all of the Tutorial lectures. The tutorial registration fee for all participants is CHF 500.—.

Morning

Wednesday, July 2, 2014

Morning

Oral Session Programme

A	1	Luzerner Saal	Chair: Niels Christiansen, John Bøgild Hansen, O. Bucheli, M. Spirig
09:00		P1: Opening Session International Overview – Japan, US, China (A01)	
09:00		Welcome by the Organizers (A0101) Olivier Bucheli, Michael Spirig – European Fuel Cell Forum, Luzern/Switzerland	
09:05		Welcome by the Chairs (A0102) Niels Christiansen (1), John Bøgild Hansen (2), (1) Topsoe Fuel Cells A/S, (2) Haldor Topsoe A/S, Lyngby/Denmark	
09:15		Welcome to Switzerland the Smart Research Place (A0103) Stefan Oberholzer, Rolf Schmitz, Walter Steinmann Swiss Federal Office of Energy, Bern/Switzerland	
09:30		Development and Application of SOFC technology in Japan (A0104) Kenji Horiuchi Fuel Cell and Hydrogen Technology Development Dept., New Energy and Industrial Technology Development Organization (NEDO), Kawasaki City Kanagawa/Japan	
09:50		Status of the US SECA Program – 2014 (A0105) Briggs M. White U.S. DOE National Energy Technology Laboratory, Power Systems Division, Morgantown/USA	
10:10		SOFC Development in China (A0106) Minfang Han, Suping Peng Union Research Center of Fuel Cell, China University of Mining and Technology, Beijing/China	
10:30		Break – Ground Floor in the Exhibition	

Session Overview			Auditorium		
Luzerner Saal		Page			Page
1	P1: Opening Session International Overview – Japan, US, China	10	A		
2	P2: European Overview	11	A		
3	R&D at Institutes – Overviews	12	A	SOFC & SOE electrodes I	12 B
4	Club Room 3–8	Poster Session I covering All Oral Session Topics			26–39
5	Company & Major groups development status I (EU)	13	A	New Materials and Processing	13 B
6	Company & Major groups development status II (Worldwide)	14	A	Durability and lifetime prediction	14 B
7	P3: Balanced Energy Strategy – The Role of SOFC	16	A		
8	Company & Major groups development status III (Worldwide)	17	A	SOFC & SOE electrodes II	17 B
9	Cell and stack design – State of the Art	18	A	Novel materials for SOFC & SOE electrolytes	18 B
10	Club Room 3–8	Poster Session II covering All Oral Session Topics			26–39
11	Manufacturing	19	A	Mechanical modelling and reliability	19 B
12	SOFC System design, integration and optimisation	20	A	Diagnostic, characterisation and electrochemical modelling I	20 B
13	Diagnostic, characterisation and electrochemical modelling II	22	A	SOE cells and stacks	22 B
14	Interconnect, sealing and coating	23	A	SOE systems	23 B
15	Cell and stack design – next generation	24	A	Balance of Plant and fuel conditioning	24 B
16	P4: SOFC for Distributed Power Generation	25	A		
17	P5: Closing Ceremony	25	A		
					Legend: Px = Plenary

A 2	Luzerner Saal	Chair: Niels Christiansen, John Bogild Hansen
11:00	P2: European Overview (A02)	
11:00	The Fuel Cells and Hydrogen Joint Undertaking: Past, Present and Future (A0201) Bert de Colvenaer, Jean-Luc Delplancke FCH JU, Brussels/Belgium	
11:25	5 Min to change to Auditorium for B03 Session	



Morning

Wednesday, July 2, 2014

Morning

3 A	Luzerner Saal Chair: Florence Lefebvre-Joud, Robert Steinberger-Wilckens	3 B	Auditorium Chair: Nigel Brandon, Werner Sitte
11:30	R&D at Institutes – Overviews (A03)	11:30	SOFC & SOE electrodes I (B03)
11:30	Overview on the Jülich SOFC Development Status (A0301) Ludger Blum, L.G.J. (Bert) de Haart, Jürgen Malzbender, Norbert H. Menzler, Josef Remmel Forschungszentrum Jülich GmbH, Jülich/Germany	11:30	Solid-gas interactions at the surface of $\text{La}_{0.6}\text{Sr}_{0.4}\text{Co}_{0.3}\text{d}$ cathodes and their impacts (B0301) Jan Hayd, Ellen Ivers-Tiffé Institut für Werkstoffe der Elektrotechnik (IWE), Karlsruhe Institute of Technology (KIT), Karlsruhe/Germany
11:45	Overview and Perspectives of SOFC Technology Development in Taiwan (A0302) Ruey-yi Lee, Yung-Neng Cheng, Wen-Tang Hung, Ning-Yih Hsu, Chang-Sing Hwang, Maw-Chwain Lee, Li-Fu LinInstitute of Nuclear Energy Research, Longtan Township/Taiwan	11:45	(Mn,Mg)FeCrO₄ asElectrode Support Materials and Coatings for Solid Oxide Fuel Cells (B0302) Elena Stefan, John T.S. Irvine, School of Chemistry, University of St Andrews, St. Andrews/UK
12:00	Overview of SOFC/SOEC development at DTU Energy Conversion (A0303) Anke Hagen Department of Energy Conversion and Storage, Technical University of Denmark, Risø Campus/Denmark	12:00	IT SOFC Cathodes Based on Pr Nickelates/Cobaltites: Design and Performance (B0303) Vladislav Sadykov (1), Nikita Ereemeev (1), Ekaterina Sadovskaya (1), Arkady Ishchenko (1), Vladimir Pelipenko (1), Aleksei Salanov (1), Tamara Krieger (1), Vladimir Belyaev (1), Vladimir Rogov (1), Vyacheslav Ivanov (1), Zakhar Vinokurov (1), Aleksandr Shmakov (1), Oleg Bobrenok (2), Nikolai Uvarov (3), Yuri Ohlupin (3), Artem Ulikhin (3), Josef Mertens (4), Izaak C. Vinke (4), Robert Steinberger-Wilckens (5), James Watton (5), Aman Dhir (5), Nikkia McDonalds (5) (1) Novosibirsk State University, Borekov Institute of Catalysis, Novosibirsk/Russian Federation, (2) Institute of Thermal Physics SB RAS, Novosibirsk/Russia, (3) Institute of Solid State Chemistry and Mechanical Activation, Novosibirsk/Russia, (4) Institute of Energy and Climate Research, Forschungszentrum Jülich, Jülich/Germany, (5) University of Birmingham, Edgbaston/UK
12:15	NEXT-FC: A Challenge of Next-Generation Fuel Cell Research Center for Tight Industry-academia Collaborations (A0304) Kazunari Sasaki (1,2,3,4) (1) Kyushu University, Next-Generation Fuel Cell Research Center (NEXT-FC), Fukuoka/Japan, (2) Kyushu University, International Research Center for Hydrogen Energy, Fukuoka/Japan, (3) Kyushu University, Faculty of Engineering, Fukuoka/Japan, (4) Kyushu University, International Institute for Carbon-Neutral Energy Research (WPI-I2CNER), Fukuoka/Japan	12:15	Parameter Identification on Polarization Resistance of SOFC Anode with Magnetically Aligned Ni (B0304) Keisuke Nagato (1), Naoki Shikazono (2), Masayuki Nakao (1), Jan Hayd (3), Dino Klotz (3), Ellen Ivers-Tiffé (3) (1) Graduate School of Engineering, The University of Tokyo, Tokyo/Japan, (2) Institute of Industrial Science, The University of Tokyo, Tokyo/Japan, (3) Institut für Werkstoffe der Elektrotechnik, Karlsruher Institut für Technologie, Karlsruhe/Germany
12:30	Lunch – 2nd Floor on the Terrace / Coffee – Ground Floor in the Exhibition & 2nd Floor in the Poster Session		

A4 Club Room 3–8		Niels Christiansen, John Bogild Hansen	
13:15	Poster Session I covering All Oral Session Topics		
A5 Luzerner Saal		B5 Auditorium	
Chair: Mark Selby (tbc), Jürgen Rechberger		Chair: John Irvine, Scott Barnett	
15:00	Company & Major groups development status I (EU) (A05)	15:00	New Materials and Processing (B05)
15:00	Hexis and the SOFC System Galileo 1000 N – past, present, future (A0501) Andreas Mai, Boris Iwanschitz, J. Andreas Schuler, Roland Denzler, Volker Nerlich, Alexander Schuler Hexis Ltd., Winterthur/Switzerland	15:00	Development of a coking-resistant NiSn anode for direct methane SOFC (B0501) Nicky Bogolowski, Jean-Francois Drillet Dechema Forschungsinstitut, Frankfurt/Germany
15:15	Scale-up of Metal-supported Thin-Film SOFC Manufacturing with improved Quality Assurance at Plansee (A0502) Wolfgang Schafbauer, Markus Haydn, Thomas Franco, Andreas Venskutonis, L.S. Sigl Plansee SE, Reutte/Austria	15:15	Toward Understanding Electrical Behavior of Proton Conducting Ceramic Oxides (B0502) Jong-Sook Lee (1), Young-Hun Kim (1), Gye-Rok Kim (1), Dong-Chun Cho (1), Eui-Chol Shin (1), Dieu Nguyen (1), John G. Fisher (1), Jong-Ho Lee (2), Byung-Kook Kim (2), Ji Haeng Yu (3) (1) School of Materials Science and Engineering, Chonnam National University, Gwangju/Korea, (2) High-temperature Energy Materials Research Center, Korea Institute of Science and Technology, Seoul/Korea, (3) Energy Materials and Convergence Research Department, Korea Institute of Energy Research, Daejeon/ Korea
15:30	Ceramic Fuel Cells BlueGen – Market Introduction Experience (A0503) Karl Föger, Richard Payne Ceramic Fuel Cells Group, Heinsberg/Germany	15:30	A new route for preparing porous metallic supports for 3G SOFC (B0503) Dalya Alkattan, Pascal Lenormand, Patrick Rozier, Florence Ansart CIRIMAT-LCMIE UMR 5585, Université Paul Sabatier, Toulouse/France
15:45	Development and Manufacturing of SOFC-Based Products at SOFCpower SpA (A0504) Massimo Bertoldi (1), Olivier Bucheli (2), Alberto V. Ravagni (1,2) (1) SOFCpower SpA, Mezzolombardo/Italy, (2) HTceramix SA, Yverdon-les-Bains/Switzerland	15:45	Fabrication of Ultra-thin Electrolytes for Low Temperature Operation of SOFCs at 600~650 °C (B0504) Jong-Ho Lee, Hae-Ryung Kim, Jongsup Hong, Hyoungchul Kim, Kyung Joong Yoon, Ji-Won Son, Byung-Kook Kim, Hae-June Je, Hae-Weon Lee High Temperature Energy Materials Research Center, Korea Institute of Science and Technology, Seoul/Korea
16:00	Break – Ground Floor in the Exhibition & 2 nd Floor in the Poster Session		

Afternoon

Wednesday, July 2, 2014

Afternoon

A 6	Luzerner Saal Chair: Karl Föger, Dario Montinaro	B 6	Auditorium Chair: Bert de Haart, Kazunari Sasaki (tbc)
<p>16:30</p> <p>16:30</p> <p>16:45</p> <p>17:00</p> <p>17:15</p> <p>17:30</p> <p>17:45</p>	<p>Company & Major groups development status II (Worldwide) (A06)</p> <p>Operation Results from the Topsoe PowerCore (A0601) Henrik Weineisen, Jonas Lundsted Poulsen Topsoe Fuel Cell A/S, Kgs. Lyngby/Denmark</p> <p>eneramic© – The Mobile SOFC Power Generator Well on its Way to Commercialization (A0602) Sebastian Reuber, Andreas Pönicke, Christian Wunderlich, Alexander Michaelis Fraunhofer IKTS, Institute for Ceramic Technologies and Systems, Dresden/Germany</p> <p>Diesel based SOFC-APU for Marine Applications (A0603) Pedro Nehter (1), Nils Kleinohl (2), Ansgar Bauschulte (2), Keno Leites (3) (1) ThyssenKrupp Marine Systems GmbH, Operating Unit HDW, Kiel/Germany, (2) OEL-Waerme-Institut GmbH,, (3) ThyssenKrupp Marine Systems GmbH, Operating Unit Blohm+Voss,</p> <p>System Development Activities at sunfire (A0604) Oliver Posdziech, Michael Pruggmayer, Markus Kunkis Sunfire GmbH, Dresden/Germany</p> <p>Robust, Low-Cost, Efficient Steel Cell Stack Development at Ceres Power (A0605) Robert Leah, Adam Bone, Ahmet Selcuk, Mike Lankin, Robin Pierce, Lee Rees, Andrew Clare, Stephen Hill, Carl Matthews, Subhasish Mukerjee, Mark Selby, Ceres Power Ltd., Horsham/UK</p> <p>State of the art in Microtubular Solid Oxide Fuel Cells (mSOFC) (A0606) Michaela Kendall, Kevin Kendall Adelan, Birmingham/UK</p>	<p>16:30</p> <p>16:45</p> <p>17:00</p> <p>17:15</p> <p>17:30</p> <p>17:45</p>	<p>Durability and lifetime prediction (B06)</p> <p>Design of Accelerated Lifetime Tests for SOFCs (B0601) André Weber, Julian Szász, Alexander Kromp, Cornelia Endler-Schuck, Ellen Ivers-Tiffée, Institut für Werkstoffe der Elektrotechnik (IWE), Karlsruher Institut für Technologie (KIT), Karlsruhe/Germany</p> <p>Performance Potential and Durability of Intermediate Temperature Solid Oxide Cells (B0602) Scott A Barnett, Kyle Yakal-Kremski, David Kennouche, Gareth Hughes, Ann Call, Elizabeth Miller, Justin Railsback, Zhan Gao, Department of Materials Science & Engineering, Northwestern University, Evanston/USA</p> <p>Decrease of the electrochemically active surface in mixed ionic-electronic conductors (MIECs) by impurity segregation (B0603) Helena Tellez (1), John Druce (1), Young-Wan Ju (1), Tatsumi Ishihara (1), John Kilner (1,2), (1) International Institute for Carbon-Neutral Energy Research, Kyushu University, Fukuoka/Japan, (2) Department of Materials, Imperial College London, London/UK</p> <p>Effect of Biogas Contaminants on the Performance of Anode Supported SOFC (B0604) Hossein Madi (1), Jan Van herle (1), Christian Ludwig (2) – (1) FUELMAT Group, Faculty of Engineering Sciences (STI), Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne/Switzerland, (2) Paul Scherrer Institut, General Energy Research Department, Bioenergy and Catalysis Laboratory, Villigen PSI/Switzerland</p> <p>Towards Comprehensive Description of Stack Durability/Reliability Behavior (B0605) Harumi Yokokawa – Institute of Industrial Science, The University of Tokyo, Tokyo/Japan</p> <p>Nickel Sintering Processes in a SOFC Anode (B0606) Léonard Kröll, Bert de Haart, Ico Vinke, Rüdiger.-A. Eichel Institute of Energy and Climate Research – Fundamental Electrochemistry (IEK-9) Forschungszentrum Jülich GmbH Ostring 010, Jülich/Germany</p>
18:00	End of Sessions		
18:30	Swiss Surprise Registered participants meet between KKL and railway station		



Klewenalp 2012



On the roof of uni of applied science HSLU 2012



Morning

Thursday, July 3, 2014

Morning

A 7	Luzerner Saal	John Bøgild Hansen, Niels Christiansen
09:00	P3: Balanced Energy Strategy – The Role of SOFC (A07)	
09:00	Role of Solid Oxide Fuel Cells in a Balanced Energy Strategy (A0701) Eric D. Wachsman University of Maryland Energy Research Center, Maryland/USA	
09:25	5 Min to change to Auditorium for B08 Session	

A 8	Luzerner Saal Chair: Dan Rastler, Nguyen Q. Minh (tbc)	B 8	Auditorium Chair: John Kilner, Mihail Kusnezoff
<p>09:30</p> <p>09:30</p> <p>09:45</p> <p>10:00</p> <p>10:15</p>	<p>Company & Major groups development status III (Worldwide) (A08)</p> <p>Solid Oxide Fuel Cell Development at Versa Power Systems (A0801) Brian Borglum Versa Power Systems, Calgary, Alberta/Canada</p> <p>Saint-Gobain's All Ceramic SOFC Stack: Architecture and Performance (A0802) Robin Barabasz, Emma Dutton, Guangyong Lin, Aravind Mohanram, Yeshwanth Narendar, John Pietras, Chunming Qi, Zachary Patterson, Sophie Poizeau, Ayhan Sarikaya, Morteza Zandi Saint-Gobain Corporation, Northborough/USA</p> <p>The EN 500 P – a compact and highly efficient SOFC module for various off-grid markets (A0803) Matthias Boltze, Gregor Holstermann, Arne Sommerfeld, Alexander Herzog new energyday GmbH, Neubrandenburg/Germany</p> <p>SOEC Development Status at sunfire (A0804) Danilo Schimanke, Thomas Strohbach, Denis Klemm, Christian Geipel sunfire GmbH, Dresden/Germany</p>	<p>09:30</p> <p>09:45</p> <p>10:00</p> <p>10:15</p>	<p>SOFC & SOE electrodes II (B08)</p> <p>Oxygen Surface Exchange Coefficients and SOFC Cathode Performance (B0801) Briggs White (1), Shiwoo Lee (1), Kirk Gerdes (1), Xingbo Liu (2) U.S. DOE National Energy Technology Laboratory, Power Systems Division, Morgantown/USA, (2) Department of Mechanical and Aerospace Engineering, West Virginia University, Morgantown/USA</p> <p>Effect of the current polarisation on the versatility of $\text{SrCoO}_{3-\delta}$ derivatives as electrodes for solid oxide fuel cells and electrolyzers (B0802) D. Pérez-Coll (1), J. A. Alonso (2), S. Skinner (3), J. Kilner (3), A. Aguadero (3) (1) Instituto de Cerámica y Vidrio, CSIC, Madrid/Spain, (2) Instituto de Ciencia de Materiales, CSIC, Madrid/Spain, (3) Department of Materials, Imperial College, London/UK</p> <p>Cathode Reaction Mechanism of $\text{CO}_2/\text{H}_2\text{O}$ Co-electrolysis in Solid Oxide Electrolyte Cells (B0803) Jongsup Hong, Hyoungchul Kim, Kyung Joong Yoon, Jong-Ho Lee, Hae-June Je, Byung-Kook Kim High Temperature Energy Materials Research Center, Korea Institute of Science and Technology (KIST), Seoul/South Korea</p> <p>$\text{La}_{0.3}\text{Ca}_{0.7}\text{Fe}_{0.7}\text{Cr}_{0.3}\text{O}_{3-\delta}$ as a novel anode material for solid oxide electrolysis cells (B0804) Beatriz Molero-Sánchez, Paul Addo, Min Chen, Scott Paulson, Viola Birs Department of Chemistry, University of Calgary, Alberta/Canada</p>
10:30	Break – Ground Floor in the Exhibition		

Morning

Thursday, July 3, 2014

Morning

9 A	Luzerner Saal Chair: Anke Hagen, Mark Cassidy	9 B	Auditorium Chair: Ellen Ivers-Tiffée, Harumi Yokokawa
11:00	Cell and stack design – State of the Art (A09)	11:00	Novel materials for SOFC & SOE electrolytes (B09)
11:00	High-performance SOFC stacks tested under different reformat compositions (A0901) Z. Wuillemin (1), S. Ceschini (2), Y. Antonetti (1), C. Beetschen (1), S. Modena (2), D. Montinaro (2), T. Cornu (3), O. Bucheli (1), M. Bertoldi (2) (1) HTceramix SA – SOFCpower, Yverdon-les-Bains/Switzerland, (2) SOFCpower S.p.A., Mezzolombardo/Italy, (3) Ecole Polytechnique Fédérale de Lausanne, Lausanne/Switzerland	11:00	Isolating the influence of microstructural and strain properties on the oxygen ion transport in YSZ thin films (B0901) George F. Harrington (1), Andrea Cavallaro (1), Stephen J. Skinner (1), David W. McComb (2,1), John A. Kilner (1) (1) Department of Materials, Imperial College London, London/UK, (2) Department of Materials, The Ohio State University, Columbus/USA
11:15	Fuel flow distribution in SOFC stacks revealed by impedance spectroscopy (A0902) R. R. Mosbæk (1), J. Hjelm (1), R. Barfod (2), P. V. Hendriksen (1) (1) DTU Energy Conversion, Roskilde/Denmark, (2) Haldor Topsøe A/S, Lyngby/Denmark	11:15	Tailoring in situ growth of nanoparticles towards applications (B0902) Dragos Neagu, John T.S. Irvine School of chemistry, University of St Andrews, St. Andrews/UK
11:30	Thermomechanical optimisation of a SOFC stack: A new product design and its operation (A0903) Murat Peksen, Ali Al-Masri, Ro. Peters, Ludger Blum, Detlef Stolten Institute of Energy and Climate Research (IEK), Electrochemical Process Engineering (IEK-3), Jülich/Deutschland	11:30	Praseodymium-Lanthanum Nickelates $\text{Pr}_{2-x}\text{La}_x\text{NiO}_{4+\delta}$ as Cathodes for Metal Supported SOFCs (B0903) Vaibhav Vibhu, Aline Rougier, Sébastien Fourcade, Jean-Claude Grenier, Jean-Marc Bassat CNRS, Université de Bordeaux, ICMCB, Pessac/France
11:45	How SOFC stack performance depends on the interaction of MIC design and cathode material (A0904) H. Geisler, A. Kromp, A. Weber, E. Ivers-Tiffée Institut für Werkstoffe der Elektrotechnik (IWE), Karlsruher Institut für Technologie (KIT), Karlsruhe/Germany	11:45	The Suppression Mechanism for Carbon Deposition on the Ni Surface Supported by Various Oxides (B0904) Taiki Shindo(1), Satoshi Watanabe(1), Shin-ichi Hashimoto(2), Keiji Yashiro(1), Tatsuya Kawada(1) (1) Graduate School of Environmental Studies, Tohoku University, Sendai/Japan, (2) Graduate School of Engineering, Tohoku University, Sendai/Japan
12:00	Short stack and full system test using a ceramic A-site deficient strontium titanate anode (A0905) Maarten C. Verbraeken (1), Boris Iwanschitz (2), Elena Stefan (1), Mark Cassidy (1), Ueli Weissen (2), Andreas Mai (2), John T.S. Irvine (1) (1) School of Chemistry, University of St Andrews, St Andrews/UK, (2) Hexis AG, Winterthur/Switzerland	12:00	$\text{PrBaCo}_2\text{O}_{5+\delta}$ based MIEC's as oxygen electrodes for reversible solid oxide cells (B0905) John Druce (1), Helena Tellez (1), John Kilner (1,2), Tatsumi Ishihara (1) (1) International Institute for Carbon Neutral Energy Research (wpi-I2CNER), Kyushu University, Fukuoka/Japan, (2) Department of Materials, Imperial College London, London/UK
12:15	SOFC stack performance under high current densities and fuel utilizations (A0906) Qingping Fang, Ludger Blum, Roland Peters, Detlef Stolten Forschungszentrum Jülich GmbH, Institute of Energy and Climate Research (IEK-3), Jülich/Germany	12:15	Characterization of Novel Structured Solid Oxide Cells Fabricated by A Phase-inversion Method (B0906) Chenghao Yang – New Energy Research Institute, College of Environment and Energy, South China University of Technology, Guangzhou/China
12:30	Lunch – 2nd Floor on the Terrace Coffee – Ground Floor in the Exhibition & 2nd Floor in the Poster Session		

A 10 Club Room 3–8		Chair: John Bøgild Hansen, Niels Christiansen	
13:15	Poster Session II covering All Oral Session Topics		
A 11 Luzerner Saal		Chair: Søren Primdahl, (tba)	
15:00	Manufacturing (A11)		
15:00	Towards large-scale/industrial Fabrication of Anode-Supported Cells – Detailed Performance Study of Different Coating Techniques for Anode and Electrolyte (A1101) J. Szász (1), D. Klotz (1), N. H. Menzler (2), E. Ivers-Tiffée (1) (1) Institut für Werkstoffe der Elektrotechnik (IWE), Karlsruhe Institute of Technology (KIT), Karlsruhe/Germany, (2) Forschungszentrum Jülich GmbH, Institute of Energy and Climate Research (IEK), Jülich/Germany		
15:15	Co-fired SOFC Roll Support with Impregnated Catalysts Produced by Sequential Tape Casting (A1102) Mark Cassidy, Marina MacHado, Chengsheng Ni, Julie Nairn, John Irvine School of Chemistry, University of St Andrews, St Andrews/UK		
15:30	Co-extrusion of Multi-layer Ceramic Hollow Fibers for Micro-tubular SOFC (A1103) Tao Li, Zhentao Wu, Kang Li Department of Chemical Engineering, Imperial College London, London/UK		
15:45	Effects of sintering temperature on composition, microstructure and electrochemical performance of spray pyrolysed LSC thin film cathodes (A1104) Omar Pecho (1,2), Lorenz Holzer (1), Zhèn Yáng (2), Julia Martynczuk (2), Thomas Hocker (1), Robert J. Flatt (3), Michel Prestat (1,2) (1) Institute of Computational Physics, Zurich University of Applied Sciences (ZHAW), Winterthur/Switzerland, (2) Nonmetallic Inorganic Materials, ETH Zurich, Zurich/Switzerland, (3) Institute for Building Materials, ETH Zurich, Zurich/Switzerland		
16:00	Break – Ground Floor in the Exhibition & 2 nd Floor in the Poster Session		
B 11 Auditorium		Chair: Alan Atkinson, Ludger Blum	
15:00	Mechanical modelling and reliability (B11)		
15:00	Accelerated creep of Ni-YSZ anodes during reduction (B1101) Henrik Lund Frandsen, Fabio Greco, Malgorzata Molin, De Wei Ni, Peter Vang Hendriksen Technical University of Denmark, Roskilde/Denmark		
15:15	Homogenization techniques for stack designs with complex geometry (B1102) Yuriy Elesin, Mads Find Madsen, Thomas Karl Petersen Topsoe Fuel Cell., Kgs. Lyngby/Denmark		
15:30	Thermo mechanical FEA of SOFC (B1103) Matej Smolnikar, Paul Siegfried Hassler, Vincent Lawlor, Juergen Rechberger AVL LIST GMBH, Graz/Austria		
15:45	Unraveling microstructure effects in Ni-YSZ anodes by 3D-analysis, FE-simulation and experimental characterization (B1104) L. Holzer (1), T. Hocker (1), B. Iwanschitz (1), O. Pecho (1,2), R. Flatt (2), G. Gaiselmann (3), M. Neumann (3), B. Iwanschitz (4) (1) Zurich University of Applied Sciences (ZHAW), ICP, Winterthur/Switzerland, (2) Institute for Building Materials, ETH Zurich, Zurich/Switzerland, (3) Institut of Stochastics, Ulm University, Ulm/Germany, (4) Hexis SA, Winterthur/Switzerland		

Afternoon

Thursday, July 3, 2014

Afternoon

A 12	Luzerner Saal Chair: Jari Kiviaho, Andreas Mai	B 12	Auditorium Chair: Uli Vogt, Min-Fang Han
16:30	SOFC System design, integration and optimisation (A12)	16:30	Diagnostic, characterisation and electrochemical modelling I (B12)
16:30	Simulation of a small scale propane-driven SOFC system with anode off-gas recycling (A1201) Shaofei Chen (1), Reinhard Leithner (2) – (1) TLK-Thermo GmbH, Braunschweig/Germany, (2) Institute for Energy and Process Systems Engineering, Technische Universität Braunschweig, Braunschweig/Germany	16:30	From Cell Measurement to Stack Modeling – What can we learn from Small Area Cell Measurements? (B1201) – D. Klotz, A. Weber, E. Ivers-Tiffée Institut für Werkstoffe der Elektrotechnik (IWE), Karlsruher Institut für Technologie (KIT), Karlsruhe/Germany
16:45	Thermodynamic system study of a natural gas combined cycle (NGCC) plant with direct internal reforming (DIR) solid oxide fuel cell (SOFC) for flexible hydrogen and power production (A1202) Aditya Thallam Thattai (1), Theo Woudstra (2), P. V. Aravind (3) – (1) Section Energy Technology, Delft/The Netherlands, (2) Process & Energy Department, Delft/The Netherlands, (3) Faculty of 3mE, Delft/The Netherlands	16:45	Development of Modelling and Testing for Analysis of Degradation in Solid Oxide Fuel Cells (B1202) John Geoffrey Maillard (1), Robert Steinberger-Wilkens (1), Aman Dhir (1) (1) Centre for Hydrogen & Fuel Cells, University of Birmingham, Birmingham/UK
17:00	DESTA: SOFC APUs for Heavy Duty Truck Idling – a Progress Report (A1203) Jürgen Rechberger (1), Andreas Kaupert (2), Christoffer Graae Greisen (3), Jonas Hagerskans (4), Ludger Blum (5) (1) AVL List GmbH, Graz/Austria, (2) Eberspächer Climate Control Systems GmbH & Co. KG, Germany, (3) Topsoe Fuel Cell, Denmark, (4) Volvo Truck, Sweden, (5) Forschungszentrum Jülich GmbH, Germany	17:00	Advanced impedance modeling of solid oxide electrochemical cells (B1203) Christopher Graves, Johan Hjelm Department of Energy Conversion and Storage, Technical University of Denmark, Roskilde/Denmark
17:15	SOFCOM Project: analysis of the SOFC DEMO plants in Torino (biogas) and Helsinki (syngas) (A1204) M. Santarelli (1), J. Kiviaho (2), R. Singh (3), L. Meucci (4), L. Vega (5), V. Chiodo (6), J. Jevulski (7), S. Herrmann (8) (1) Energy Department, Politecnico di Torino, Torino/Italy, (2) Technologist Tutkimuskeskus VTT, Espoo/Finland, (3) Topsoe Fuel Cells, Kgs. Lyngby/Denmark, (4) Società Metropolitana Acque Torino, Torino/Italy, (5) Matgas 2000 A.I.E., Barcelona/Spain, (6) Consiglio Nazionale delle Ricerche-ITAE, Roma/Italy, (7) Instytut Energetyki, Warszawa/Poland, (8) Technical University of Munich, Muenchen/Germany	17:15	Effect of microstructure and crystalline orientation on oxygen surface exchange and diffusion in Gd-doped ceria thin films (B1204) Katherine Develos-Bagariniao, Haruo Kishimoto, Mina Nishi, Fangfang Wang, Do-Hyung Cho, Katsuhiko Yamaji Energy Technology Research Institute, National Institute of Advanced Industrial Science and Technology, Ibaraki/Japan
17:30	Operating Results of the SOFC20 Stationary SOFC CHP System using a CFY-Stack Platform (A1205) Martin Hauth (1), Jürgen Rechberger (1), Stefan Megel (2), Mihails Kusnezoff (2) (1) AVL List GmbH, Graz/Austria, (2) Fraunhofer IKTS, Dresden/Germany	17:30	In situ Optical Studies of SOFCs Operating with Dry and Humidified Methane: Mechanisms of Coke Suppression (B1205) Melissa D. McIntyre, Robert A. Walker Chemistry & Biochemistry Department, Montana State University, Bozeman/Montana
17:45	Experience with a 20 kW SOFC System (A1206) – Roland Peters, Ludger Blum, Robert Deja, Ingo Hoven, Wilfried Tiedemann, Stefan Küpper, Detlef Stolten – Forschungszentrum Jülich GmbH, Institute of Energy and Climate Research, Jülich/Germany	17:45	Microstructural analysis of a metal-supported SOFC after redox-cycling (B1206) D. Roehrens (1), O. Büchler (1), D. Sebold (1), W. Schafbauer (2), M. Haydn (2), Th. Franco (2), N.H. Menzler (1), H.P. Buchkremer (1) – (1) Forschungszentrum Jülich GmbH, Institute of Energy and Climate Research, Jülich/Germany, (2) Plansee SE, Innovation Services, Reutte/Austria
18:00	End of Sessions		
19:30	Dinner on the Lake		
	Boarding 19.20, Lake side of KKL pier 5/6 – back 23.30 (short stop in Brunnen 22.30 for early return by train)		



Morning

Friday, July 4, 2014

Morning

A 13	Luzerner Saal Chair: Andre Weber, Jan Van herle	B 13	Auditorium Chair: Brian Borglum, Danilo Schimanke
09:00	Diagnostic, characterisation and electrochemical modelling II (A13)	09:00	SOE cells and stacks (B13)
09:00	SOFC anode phases characterization and determination of charge transfer mechanisms (A1301)	09:00	Methane Production Using Pressurized SOECs (B1301)
	Selma A. Venâncio, Bernardo J. M. Sarruf, Paulo Emilio V. de Miranda Hydrogen Laboratory – Coppe, Federal University of Rio de Janeiro, Rio de Janeiro/Brazil		Xiufu Sun, Alfredo D. Bonaccorso, Christopher Graves, Sune D. Ebbesen, Søren H. Jensen, Anke Hagen, Mogens Bjerg Mogensen, Peter Holtappels Department of Energy Conversion and Storage, Technical University of Denmark, Roskilde/Denmark
09:15	Measurements of local chemistry and structure in Ni(O)-YSZ composites during reduction using energy-filtered environmental TEM (A1302)	09:15	Long-Term Operation of Electrolyte Supported Solid-Oxide Cells in the Steam Electrolyser Mode (B1302)
	Q. Jeangros (1), T.W. Hansen (2), J.B. Wagner (2), R.E. Dunin-Borkowski (3), C. Hébert (1), J. Van herle (4), A. Hessler-Wyser (1) – (1) Interdisciplinary Centre for Electron Microscopy, EPFL, Lausanne/Switzerland, (2) Center for Electron Nanoscopy, Technical University of Denmark, Lyngby/Denmark, (3) Ernst Ruska-Centre, Jülich ResearchCentre, Jülich/Germany, (4) Fuelmat Group, EPFL, Lausanne/Switzerland		Annabelle Brisse (1), Josef Schefold (1), Andreas Glauche (2) (1) European Institute for Energy Research (EIFER), Karlsruhe/Germany, (2) Kerafol GmbH, Eschenbach/Germany
09:30	Surface Compositional Changes in Mixed Conducting Fluorite-Perovskite Composite Electrode Materials (A1303)	09:30	Experimental evaluation of controlled gas leakages effects in SOFC and SOE modes (B1303)
	John Druce (1), Helena Tellez (1), Tatsumi Ishihara (1), John Kilner (1,2) (1) International Institute for Carbon Neutral Energy Research (wpi-I2CNER), Kyushu University, Fukuoka/Japan, (2) Department of Materials, Imperial College London, London/UK		B. Morel, A. Moutte, M. Reytier French Alternative Energies and Atomic Energy Commission CEA-LITEN, Grenoble/France
09:45	3D Imaging and Characterisation of Infiltrated Ni-GDC Electrodes (A1304)	09:45	Electrochemical performances of a Single Repeat Unit (SRU) in steady-state and transient electrolysis operation at intermediate temperature (B1304)
	Masashi Kishimoto, Marina Lomberg, Enrique Ruiz-Trejo and Nigel Brandon Department of Earth Science and Engineering, Imperial College London, London/UK		Karine Couturier, André Chatroux, Thomas Donnier-Maréchal, Stéphane Di Iorio, Aude Brevet, Florence Lefebvre-Joud CEA-LITEN, Grenoble/France
10:00	In-Situ Surface analysis of SOFC cathode materials using Low Energy Ion Scattering (A1305)	10:00	Durable Solid Oxide Electrolysis Cells for Hydrogen Production (B1305)
	Mathew Niania, Richard J. Chater, Stephen J. Skinner, John A. Kilner Department of Materials, Imperial College London, Royal School of Mines, London/UK		Xiufu Sun, Ming Chen, Peter Vang Hendriksen, Mogens Bjerg Mogensen Department of Energy Conversion and Storage, Technical University of Denmark, Roskilde/Denmark
10:15	Analysis of SOFC Stack Temperature Estimation in System Environment with Multivariable Regression Models (A1306)	10:15	Operational Robustness Studies of Solid Oxide Electrolysis Stacks (B1306)
	Matias Halinen, Antti Pohjoranta, Jari Pennanen, Jari Kiviaho Technical Research Centre of Finland VTT, Fuel cells, Espoo/VTT/Finland		Karen Wonsyld, Lone Bech, Jens Ulrik Nielsen, Claus Flemming Friis Pedersen Haldor Topsoe A/S, Kgs. Lyngby/Denmark
10:30	Break – Ground Floor in the Exhibition		

A 14	Luzerner Saal Chair: Maria Parco Camacaro, Peter Vang Hendriksen (tbc)	B 14	Auditorium Chair: Annabelle Brisse, Mogens Mogensen
11:00	Interconnect, sealing and coating (A14)	11:00	SOE systems (B14)
11:00	Multilayered PVD Coating for Interconnector Steel (A1401) – Mats W Lundberg, Robert Berger, Jörgen Westlinder – AB Sandvik Materials Technology, Sandviken/Sweden	11:00	Synthetic Natural Gas Production via Co-Electrolysis (B1401) G. Botta (1), M. Solimeo (1), P. Leone (2), P.V. Aravind (1) (1) P&E, Technische Universiteit Delft, TuDelft, Delft/Netherlands, (2) DENERG, Politecnico di Torino, Torino/Italia
11:15	Effect of Composition, Microstructure and Service Environment on the Long Term Oxidation Behavior of Ferritic Interconnect Steels (A1402) Leszek Niewolak (1), Heike Hattendorf (2), Egbert Wessel (1), Willem Joseph Quadackers (1) (1) Forschungszentrum Jülich, Institute of Energy Research, Jülich/FRG, (2) OUTOKUMPU/VDM, Werdohl/FRG	11:15	Coupling of a 3 Phase Methanation Reactor and a High Temperature Electrolyser using Matlab Simulink (B1402) Régis Anghilante (1), Jonathan Lefebvre (2) (1) EIFER, Karlsruhe/Germany, (2) DVGW-EBI, Karlsruhe/Germany
11:30	Oxide (Cr2O3) scale growth on metallic interconnects and its impact on ohmic resistance: Combined study of image analysis and modeling (A1403) – Markus Linder (1,2), Thomas Hocker (1), Lorenz Holzer (1), K. Andreas Friedrich (2), Boris Iwanschitz (3), Andreas Mai (3), J. Andreas Schuler (3) (1) ICP, ZHAW, Winterthur/Switzerland, (2) DLR, Stuttgart/Germany, (3) Hexis AG, Winterthur/Switzerland	11:30	Solar Heat and Power for a SOE process (B1403) Martin Roeb, Nathalie Monnerie, Anis Houaijia, Dennis Thomey, Stefan Breuer, Jan Säck and Christian Sattler Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Institute of Solar Research, Köln/Germany
11:45	Surface properties of interconnects: development and understanding for SOE application (A1404) Aude Brevet (1), Emmanuel Rigal (1), Maria Rosa Ardigo (2), Ioana Popa (2), Sébastien Chevalier (2), Valérie Parry (3), Alain Galerie (3), Clara Desgranges (4), Frédéric Perry (5), Richard Laucourmet (1), Cyril Rado (1), Karine Couturier (1), Marie Petitjean (1), Julie Mouglin (1), Richard Bousquet (6), Pauline Girardon (7) (1) CEA, LITEN, Grenoble/France, (2) ICB, UMR 6303 CNRS – University of Burgundy, Dijon/France, (3) SIMaP, INP Grenoble, St. Martin d'Hères/France, (4) CEA, DEN, DANS, DPC, SCCME, LECNA, Gif-sur-Yvette/France, (5) PVDco sarl, Baccarat/France, (6) Aperam Alloys Imphy, Centre de Recherche, Imphy/France, (7) Aperam, Centre de Recherche, Isbergues/France	11:45	Modeling and experimental study of effect of pressure on SOEC performances (B1404) Quentin Cacciottolo (1,2), Julien Vulliet (2), Virginie Lair (1), Michel Cassir (1), Armelle Ringuedé (1) (1) LECIME, UMR 7575, Chimie ParisTech, Paris/France, (2) CEA DAM Le Ripault, Monts/France
12:00	Chromium evaporation from mechanically deformed pre-coated Crofer 22 APU (A1405) Hannes Falk Windisch, Jan-Erik Svensson, Jan Froitzheim Chalmers University of Technology, Energy and Materials, Göteborg/Sweden	12:00	Performance and lifetime of Solid Oxide Electrolyzer Cells and Stacks (B1405) Annabelle Brisse, Josef Schefold, Qingxi Fu, Gaël Corre European Institute For Energy Research, Karlsruhe/Germany
12:15	Coating developments for Metal-supported Solid Oxide Fuel Cells (A1406) M. Stange (1), C. Denonville (1), Y. Larring (1), A. Brevet (2), J. Mouglin (2), P.O. Larsson (3) (1) SINTEF, Oslo/Norway, (2) CEA-LITEN, Grenoble/France, (3) HÖGANÄS AB, Höganäs/Sweden	12:15	Dynamic reversible SOC applications: Performance and Durability with simulated load/demand profiles (B1406) Domenico Ferrero, Andrea Lanzini, Pierluigi Leone, Massimo Santarelli Politecnico di Torino – Energy Department (DENERG), Torino/Italy
12:30	Lunch – 2nd Floor on the Terrace		Coffee – Ground Floor in the Exhibition & 2nd Floor on the Terrace

Afternoon

Friday, July 4, 2014

Afternoon

A 15	Luzerner Saal Chair: Wachsmann, Jong Ho Lee	B 15	Auditorium Chair: Pedro Nehter, Matti Noponen
13:30	Cell and stack design – next generation (A15)	13:30	Balance of Plant and fuel conditioning (B15)
13:30	Planar Metal Supported Solid Oxide Fuel Cells by Conventional Ceramic Processing Routes (A1501) Mario Montinaro (1), Pradnyesh Satardekar (2), Vincenzo M. Sglavo (2) (1) SOFCpower SpA, Mezzolombardo/Italy, (2) University of Trento, DIMTI, Trento/Italy	13:30	SOFC fed with European standard road diesel by an adiabatic pre-reforming fuel processor (B1501) Nils Kleinohl (1), John Bøgild Hansen (2), Pedro Nehter (3), Hassan Modarresi (2), Ansgar Bauschulte(1), Jörg vom Schloß(1), Klaus Lucka(1) (1) OWI OEL-Waerme-Institut GmbH, Herzogenrath/Germany, (2) HALDOR TOPSØE A/S, Lyngby/Denmark, (3) ThyssenKrupp Marine Systems AG, Operating Unit HDW, Kiel/Germany
13:45	Preparation of Metal-supported SOFC using Low Temperature Ceramic Coating Process (A1502) Jong-Jin Choi, Joon-Hwan Choi, Dong-Soo Park Korea Institute of Materials Science, Functional Ceramics Group, Changwon, Gyeongnam/South Korea	13:45	Fuel and air side subsystems development for SOFC power plant (B1502) Jari Kiviahio Technical Research Centre of Finland VTT, Fuel cells, Espoo/VTT/Finland
14:00	New SOFC-stack design with parallel connected cells (A1503) Andreas Lindermeir (1), Christoph Immisch (1), Christian Szepanski (1), Jens Hamje (2), Abdelhamid Bentaleb (3), Lars Dörner (4) (1) Clausthaler Umwelttechnik-Institut GmbH, Clausthal-Zellerfeld/Germany, (2) TU Clausthal, Institut für Schweißtechnik und Trennende Fertigungsverfahren (ISAF), Clausthal-Zellerfeld/Germany, (3) TU Clausthal, Institut für Elektrische Energietechnik und Energiesysteme (IEE), Clausthal-Zellerfeld/Germany, (4) TU Clausthal, Institut für Metallurgie (IMET), Clausthal-Zellerfeld/Germany	14:00	Development of an SOFC-Inverter-System for µCHP and mobile applications with integrated degradation monitoring (B1503) Falk Schröter NOVUM engineering GmbH i.G., Dresden/Germany
14:15	Operation of SOFC short stacks with integrated planar high temperature heat pipes (A1504) Marius Dillig, Jürgen Karl University of Erlangen-Nuremberg, Institute of Energy Process Engineering, Nürnberg/Germany	14:15	Micro-reformer for hydrogen-rich gas generation for a portable micro-SOFC system (B1504) D. Pla (1), I. Garbayo (1), N. Jiménez (3), M. Salleras (2), A. Morata (1), N. Sabaté (2), J. Llorca (3), A. Tarancón (1) (1) Catalonia Institute for Energy Research (IREC), Department of Advanced Materials for Energy, Barcelona/Spain, (2) IMB-CNM (CSIC), Institute of Microelectronics of Barcelona, National Center of Microelectronics, CSIC, Campus UAB, Barcelona/Spain, (3) INTE, Institut de Tècniques Energètiques, Universitat Politècnica de Catalunya, Barcelona/Spain
14:30	Development of a prototype portable SOFC system Using Commercially Available LPG Cartridge (A1505) Hirofumi Sumi, Toshiaki Yamaguchi, Koichi Hamamoto, Toshio Suzuki, Yoshinobu Fujishiro National Institute of Advanced Industrial Science and Technology (AIST), Nagoya/Japan	14:30	Experimental Investigation of Peripheral Components in a SOFC/Gas Turbine Hybrid Power Plant (B1505) Mike Steilen, Christian Schnegelerberger, Moritz Henke, Caroline Willich, Josef Kallo, K. Andreas Friedrich German Aerospace Center (DLR), Institute of Technical Thermodynamics, Stuttgart/Germany
14:45	Development of metal foam supported SOFCs (A1506) Feng Han (1), Robert Semerad (2), Rémi Costa (1) (1) German Aerospace Center, Institute of Technical Thermodynamics, Stuttgart/Germany, (2) Ceraco Ceramic Coating GmbH, Ismaning/Germany	14:45	Integrated Air Preheater and anode Off-gas Oxidizer (B1506) Yves De Vos, Jean-Paul Janssens – Bosal ECS NV, Lummen/Belgium
15:00	5 Min to change from B15 Session to Luzerner Saal for A16 Session		

A 16	Luzerner Saal	Chair: John Bøgild Hansen, Niels Christiansen
15:05	P4: SOFC for Distributed Power Generation (A16)	
15:05	Distributed Generation Market Analysis for Solid Oxide Fuel Cells in the U.S. (A1601) Dan Rastler Electric Power Research Institute, Palo Alto/USA	

A 17	Luzerner Saal	Chair: Niels Christiansen, John Bøgild Hansen, M. Spirig, O. Bucheli
15:30	P5: Closing Ceremony (A17)	
15:30	Summary by the Chairs (A1701) John Bøgild Hansen (1), Niels Christiansen (2) – (1) Haldor Topsoe A/S, (2) Topsoe Fuel Cells A/S, Lyngby/Denmark	
15:42	Information on Next EFCF: 5th PEFC and H₂ Forum 2015 – 12th European SOFC and SOE Forum 2016 (A1702) Michael Spirig, Olivier Bucheli – European Fuel Cell Forum, Luzern/Switzerland	
15:54	Award for the Best Paper (A1703) tbc – Carl-Albrecht Schiller – Zahner-Elektrik GmbH & Co. KG, Kronach/Germany	
16:06	Friedrich Schönbein Award for the Best Poster, Best Science Contribution, Medal of Honour (A1704) Olivier Bucheli, Ulf Bossel, Michael Spirig – European Fuel Cell Forum, Luzern/Switzerland	
16:18	Thank you and Closing by the Organizers (A1705) Olivier Bucheli, Michael Spirig – European Fuel Cell Forum, Luzern/Switzerland	
16:30	End of Sessions – End of Conference Conference Good by coffee and travel refreshment in front of the Luzerner Saal	

Poster List

Club Rooms 3–8

Chair: Niels Christiansen, John Bøgild Hansen

A4 Poster Session I covering All Oral Session Topics
A10 Poster Session II covering All Oral Session Topics

Wednesday, July 2, 2014
Thursday, July 3, 2014

Afternoon 13:15–15:30
Afternoon 13:15–15:30

P1: Opening Session International Overview – Japan, US, China**A01****A review of solid oxide fuel cell activities in Iran (A0107)**

Alireza Babaei

School of Metallurgy and Materials Eng., College of Engineering, University of Tehran, Tehran/Iran

P2: European Overview**A02****Fuel Cell Systems in CHP Applications: Inter-Regional Target and Target Attainment Analysis using the Technology Management Tool TEMONAS (A0207)**

Herbert Wancura (1), Aleksander Nowak (2), Michael Spirig (3)

(1) synergesis.consulting, Graz/Austria, (2) CSMS, Pszczyna/Poland, (3) Fomenta AG, Buttikon/Switzerland

Fuel Cell Added Value for Early Market Applications (A0208)

Scott Hardman

University of Birmingham, Chemical Engineering, Birmingham/UK

Accessing Fuel Cell opportunities in European Research and Innovation (A0209)

Julian Randall, Sibylla Martinelli

Bern/Switzerland

Company & Major groups development status I (EU)**A05****Performance of Ceres Power Steel Cell Stacks in a 1kW-Class Natural-Gas Fuelled Fuel Cell Module (A0507)**

Paul Barnard, Mark Selby, Chris Evans, Martin Schmidt, Simone Dozio, Alexander McNichol, Tomasz Domanski, Don Nicholls

Ceres Power Ltd., Horsham/UK

SOFC & SOE electrodes I**B3****Impregnating porous scaffolds for accelerated development of SOFC anodes (B0307)**

Paul Boldrin, Enrique Ruiz-Trejo, Nigel P Brandon

Department of Earth Science and Engineering, Imperial College London, London/UK

Thermodynamic Evaluation of LSCF Cathode Stability and Tolerance towards Gas Impurities (B0308)

Weiwei Zhang, Ming Chen, Peter Vang Hendriksen, Wolff-Ragnar Kiebach

Department of Energy Conversion and Storage, Technical University of Denmark, Roskilde/Denmark

LSM-GDC cathode improvement through nanocatalyst infiltration (B0309)

Laura Navarrete, Cecilia Solís, Jose M. Serra

Instituto de Teconología Química, Valencia/Spain

The Potential Influence for SOFC Cathode Crystallographic Parameters (B0310)

Indrek Kivi, Jaan Aruväli, Kalle Kirsimäe, Alar Heinsaar, Gunnar Nurk, Enn Lust

University of Tartu, Tartu/Estonia

Novel Ordered Mesoporous Architectures for Highly Stable Electrodes in Solid Oxide Cells (B0311)

L. Almar (1), T. Andreu (1), A. Morata (1), M. Torrell (1), A. Tarancón (1)

(1) Catalonia Institute for Energy Research (IREC), Department of Advanced Materials for Energy, Barcelona/Spain

Fuel side CO/CO₂ studies of high performance La_{0.3}Sr_{0.7}Fe_{0.7}Cr_{0.3}O_{3-δ} RSOFC electrodes (B0312)

Paul Addo, Beatriz Molero-Sanchez, Min Chen, Scott Paulson, Viola Birss

Department of Chemistry, University of Calgary, Alberta/Canada

Properties of Copper Doped Neodymium Nickelate Oxide as Cathode Material for Solid Oxide Electrolyzer (B0313)

Kyoung Jin Lee, Yeong Ju Choe, Ye Sol Lim, Hae Jin Hwang

Division of Materials Science and Engineering, Inha University, Incheon/Korea

Company & Major groups development status II (Worldwide) A06

SOFC Kit for Teaching, Training and Demonstration (A0607)

Ulf Bossel
Almus AG, Oberrohrdorf/Switzerland

Company & Major groups development status III (Worldwide) A08

Status of Elcogen unit cell and stack development (A0807)

Matti Noponen
Elcogen, Espoo/Finland

Cell and stack design – State of the Art A09

Dynamic SOFC Modeling with Designed Experiments and Time-series Model Identification (A0907)

Antti Pohjoranta, Matias Halinen, Jari Pennanen, Jari Kiviaho
Technical Research Centre of Finland VTT, Fuel cells, Espoo/VTT/Finland

High Efficiency Operation of Ceres Steel Cell Stacks: a Cost Effective Solution for Stationary Power Generation (A0911)

Robert Leah, Mark Selby, Adam Bone, Alexander McNichol, Lee Rees, Subhasish Mukerjee
Ceres Power Ltd., Horsham/UK

Operating characteristics of an anode-supported planar SOFC stack with post-operation three-dimensional reconstruction of the electrodes microstructure (A0912)

Grzegorz Brus (1,2), Tetsushi Isomoto (1), Hiroshi Iwai (1), Motohiro Saito (1), Hideo Yoshida (1), Yosuke Komatsu (3), Remigiusz Nowak (2), Janusz S. Szmyd (2)
(1) Kyoto University, Kyoto/Japan, (2) AGH University of Science and Technology, Krakow/Poland, (3) Shibaura Institute of Technology, Saitama/Japan

Issues on Stack Development for Planar Solid Oxide Fuel Cells (A0913)

Wei Wu, Wanbing Guan, Le Jin, Huijuan Zhai, Wei Guo Wang
Ningbo Institute of Materials Technology and Engineering, Ningbo/PR China

Influences of the gas pressures and flow rates on the maximal power of SOFC by using the Design of Experiment methodology (A0914)

Salim Daoudi, Bouzid Chebbah
University of BBA, Faculty of the Sciences and Technology, Bordj Bou Arreridj/Algeria

SOFC Cathode Design Optimization using the Finite Element Method (B0314)

Martin Andersson, Bengt Sundén
Department of Energy Sciences, Lund University, Lund/Sweden

Performance of redox anode supported cell tested with different ceria buffer layer and LSC-based cathodes (B0315)

Pierre Coquoz (1), Raphaël Obrist (1), Giulia Di Domenicantonio (1), Pascal Briois (2), Alain Billard (2), Raphaël Ihringer (1)
(1) Fiixell Sàrl, Lausanne/Switzerland, (2) IRTEs-LERMPS, UTBM, EA7274, Belfort/France

New Materials and Processing B05

Nanoscaling SOFC Electrodes – Boosting the Performance of Anode Supported Cells (B0507)

D. Klotz (1), J. Hayd (1), J. Szász (1), N. Menzler (2), E. Ivers-Tiffée (1)
(1) Institut für Werkstoffe der Elektrotechnik (IWE), Karlsruher Institut für Technologie (KIT), Karlsruhe/Germany, (2) Forschungszentrum Jülich GmbH, Institute of Energy and Climate Research (IEK), Jülich/Germany

Evaluation of Cobalt-Cerium coated AISI 441 as interconnect material – linking electrical properties to oxide scale evolution (B0508)

J.G. Grolig, J.-E. Svensson, J. Froitzheim
Environmental Inorganic Chemistry, Chalmers University of Technology, Göteborg/Sweden

Enhanced oxygen surface exchange of $\text{La}_2\text{Ni}_{4.8}$ by silver deposition (B0509)

Andreas Egger, Werner Sitte
Montanuniversität Leoben, Chair of Physical Chemistry, Leoben/Austria

Progress in the development of Nickel-less SOFCs: status of the EU project EVOLVE (B0510)

Rémi Costa (1), Asif Ansar (2)
(1) German Aerospace Center, Institute of Technical Thermodynamics, Electrochemical Energy Technology, Stuttgart/Germany, (2) Saan Energi AB, Lund/Sweden

Correctly predicting the effect of thin film coatings on long term SOFC Interconnect durability in air side environments (B0511)

Rakshith Sachitanand, Jan-Erik Svensson, Jan Froitzheim
Division of Energy and Materials, Department of Chemical and Biological Engineering, Göteborg/Sweden

Manufacturing

A11

Effect of Co and Cr on Sintering and Conductivity of CGO Electrolyte (A1108)

Samuel Taub, Xin Wang, John A. Kilner, Alan Atkinson
Department of Materials, Imperial College, London/UK

Combustion synthesis of $\text{LaNi}_{0.6}\text{Fe}_{0.4}\text{O}_3$ perovskite as cathode contact material for IT-SOFCs (A1109)

K. Vidal (1), A. Morán-Ruiz (1), A. Larrañaga (1), M. A. Laguna-Bercero (2), J. M. Porras-Vázquez (3), P. R. Slater (3), M. I. Arriortua (1)
(1) Facultad de Ciencia y Tecnología, Universidad del País Vasco/Euskal Herriko Unibertsitatea (UPV/EHU), Bilbao/Spain,
(2) CSIC-Universidad de Zaragoza, Instituto de Ciencia de Materiales de Aragón (ICMA), Zaragoza/Spain,
(3) University of Birmingham, School of Chemistry, Birmingham/UK

Anode Fabrication for Hydrocarbon Fuelled Solid Oxide Fuel Cell: Electrodeposition vs. Infiltration (A1110)

Zadariana Jamil (1,2), Enrique Ruiz-Trejo (1), Paul Boldrin (1), Nigel P Brandon (1)
(1) Department of Earth Science and Engineering, Imperial College London, London/UK,
(2) Faculty of Civil Engineering, Universiti Teknologi MARA Pahang, Pahang/Malaysia

 $\text{Gd}_{0.2}\text{Ce}_{0.8}\text{O}_{1.9}$ colloidal nanocrystals derived nanostructured NiO/GDC composites for an anode material of low-temperature SOFC (A1111)

Manami Arai, Kazuyoshi Sato, Jean-Christophe Valmalette
Division of Environmental Engineering Science, Gunma University, Gunma/Japan

Recovery of Metals and Rare Earths from Spent Solid Oxide Fuel Cells Stacks (A1112)

Dario Montinaro (1), Anna Dalvit (1), Claudia Coltrini (2), Roberto Dal Maschio (2)
(1) SOFCpower SpA, Mezzolombardo/Italy, (2) University of Trento, DIMITI, Trento/Italy

Fabrication and Characterization of Functionally Graded Cathodes Based on in-situ Formed $\text{Sm}_{0.5}\text{Sr}_{0.5}\text{CoO}$ for Metal-Supported Solid Oxide Fuel Cells (A1113)

Hengyong Tu, Milan Guo, Xiaolong Yang, Qingchun Yu
Institute of Fuel Cell, School of Mechanical Engineering, Shanghai Jiao Tong University, Shanghai/China

Fabrication of Graded Anode-Supported Microtubular SOFCs via Aqueous Gel-casting and Electrospinning Route (A1114)

E. Xuriguera (1,2), M. Morales (1), M. Niubó (1), J.A. Padilla (1), A. Cirera (2), M. Segarra (1)
(1) Centre DIOPIA, IN2UB, Departament de Ciència dels Materials i Enginyeria Metal·lúrgica, Facultat de Química, Universitat de Barcelona, Barcelona/Spain, (2) MIND/IN2UB, Electronics Department, Universitat de Barcelona, Barcelona/Spain

Structure and Electrochemical Studies of Modulated $\text{LaNb}_{1-x}\text{W}_x\text{O}_{4+d}$ Phases as a New Electrolyte for SOFC (B0512)

C Li, S Pramana, SJ Skinner
Department of Materials, Imperial College London, London/UK

Silver-Gd doped ceria membranes for the partial oxidation of methane (B0513)

Enrique Ruiz-Trejo (1), Paul Boldrin (1), Jingwen Yu(1), John Medley-Hallam(1), Alan Atkinson(2), Robert I. Gruar(3), Chris Tighe(3), Jawwad Darr(3), Nigel P Brandon (1)
(1) Department of Earth Science and Engineering, Imperial College London, London/UK,
(2) Department of Materials, Imperial College London, London/UK,
(3) Department of Chemistry, University College London, London/UK

La-doped SrTiO_3 as electronic conductor in metallic supports for SOFC (B0514)

Sabrina Presto (1), Francesco Perrozzi (1,2), Roberto Spotorno (2), Feng Han (3), Rémi Costa (3), Paolo Piccardo (1,2), Massimo Viviani(1)
(1) CNR-IENI, Genoa/Italy, (2) DCCI -University of Genoa, Genoa/Italy, (3) DLR-ITT, Stuttgart/Germany

Electrochemical investigation of Ni-Co/CGO composite catalyst as protective layer for a Solid Oxide Fuel Cell anode fed with biofuel (B0515)

M. Lo Faro (1), R. M. Reis (2), G. G. A. Saglietti (2), A. S. Aricò (1), E. A. Ticianelli (2)
(1) CNR-ITAE, Messina/Italy, (2) USP-IQSC, São Carlos/SP/Brasil

Fabrication of apatite-type lanthanum silicate films and anode supported solid oxide fuel cells using nano-sized printable paste (B0516)

Ryohei Mori (1), Hiroyuki Mieda (2), Takahiro Funahashi, Atsushi Mineshige (2), Tetsuo Yazawa (2), Hideki Yoshioka (3)
(1) Fuji Pigment Co,Ltd, Hyogo prefecture/Japan, (2) Hyogo prefectural University, Hyogo prefecture/Japan

Magnesium Doped Lanthanum Silicate Synthesis with Apatite-type Structure for Use as an Electrolyte in IT-SOFC (B0517)

Chieko Yamagata, Agatha Matos Misso, Daniel Ricco Elias, Fernando Santos Silva, Vanessa Galvao Rodrigues, Sonia R. H. Mello-Castanho
Energy and Nuclear Research Institute, University of São Paulo, São Paulo/Brazil

Combinatorial approach on fabrication and characterization of $\text{La}_{0.8}\text{Sr}_{0.2}\text{Mn}_x\text{Co}_{1-x}\text{O}_{3\pm\delta}$ thin films (B0518)

A.M. Saranya (1), A. Morata (1), M. Burriel (2), John A. Kilner (2), A. Tarancon (1)
(1) Catalonia Institute for Energy Research (IREC), Department of Advanced Materials for Energy, Barcelona/Spain, (2) Department of Materials, Imperial College London, London/UK

Controlled Porosity of Solid Oxide Fuel Cell Electrodes by Colloidal Processing and Aqueous Tape Casting (A1115)

Johanna Stiernstedt (1,2), Elis Carlström (1), Bengt-Erik Mellander (2)

(1) Swerea IVF AB, Mölndal/Sweden, (2) Department of Applied Physics, Chalmers University of Technology, Göteborg/Sweden

The Effect of Sintering Conditions on the Oxygen Ionic Conduction Property of Composite SOFCs Cathode (A1116)

Meiling Li, Meng Ni, Geoffrey Q.P. Shen, Building Energy Research Group, Department of Building and Real Estate, The Hong Kong Polytechnic University, Kowloon/Hong Kong

Synthesis and mechanical properties of a glass matrix-YSZ nanoparticles composite for SOFCs applications (A1117)

Zohreh hamnabard (1), Fateme Heydari (2), Amir Maghsoudipour (2)

(1) Laser & Optic research School, Tehran/Iran, (2) Materials & Energy Research Center, Karaj/Iran

Development of Plasma Sprayed Mo-Mo₂C/ZrO₂ Anode Layer for Solid Oxide Fuel Cells (A1119)

N. H. Faisal (1,2), R. Ahmed (2,3), S. P. Katikaneni (4), S. Souentie (4), M. F. A. Goosen (5)

(1) College of Engineering, Alfaisal University, Riyadh/Saudi Arabia, (2) School of Engineering, Robert Gordon University, Aberdeen/UK, (3) School of Engineering and Physical Sciences, Heriot-Watt University, Riccarton, Edinburgh/UK, (4) Research & Development Centre, Dhahran/Saudi Arabia, (5) Office of Research & Graduate Studies, Alfaisal University, Riyadh/Saudi Arabia

SOFC with supported dual-layer Ni-cermet anode produced by combustion synthesis (A1120)

Denis Osinkin (1), Nina Bogdanovich (1), Viktor Zhuravlev (2)

(1) Institute of High-Temperature Electrochemistry, Ural Branch of RAS, Yekaterinburg/Russia, (2) Institute of Solid State Chemistry, Ural Branch of RAS, Yekaterinburg/Russia

Influence of Starch Content on Electrochemical Performance of Fuel-Supported Aqueous Tapes (A1122)

Juan Zhou, Qinglin Liu, Siew Hwa Chan

Nanyang Technological University, Singapore/Singapore

Surface control of materials for SOFC applications, tape casting manufacturing and electrical characterization (A1123)

R. Fernández-González (1,2), T. Molina (3), R. Moreno R. (3), A. Makradi (2), P. Núñez (1)

(1) Departamento de Química Inorgánica, Universidad de La Laguna, Santa Cruz de Tenerife/Spain, (2) Centre de Recherche Public Henri Tudor, Luxembourg-Kirchberg/Luxembourg, (3) Instituto de Cerámica y Vidrio, ICV-CSIC, Madrid/Spain

Decomposition of Carbon-Carbonate Mixture at Elevated Temperature (B0519)

Jun Young Hwang, Jun Ho Yu, Kyungtae Kang

Korea Institute of Industrial Technology, Ansan-si/Korea

New materials and low temperature sintering processes for PCFCs (B0520)

G. Taillades (1), P. Pers (1), F. Mauvy (2), P. Batocchi (2), M. Parco (3)

(1) CNRS ICG-AIME, University of Montpellier, Montpellier Cedex 5/France, (2) CNRS, Université de Bordeaux, ICMCB, Pessac Cedex/France, (3) Fundación TECNALIA, San Sebastian/Spain

Durability and lifetime prediction

B06

Degradation of Solid Oxide Electrolysis Cells Operated at High Current Densities (B0607)

Youkun Tao, Sune Dalgaard Ebbesen, Mogens Bjerg Mogensen

Department of Energy Conversion and Storage, Technical University of Denmark, DTU, Risø Campus, Roskilde/Denmark

Effects of biogas contaminants on SOFC short-stack: Tolerable concentration limits for chlorine and siloxane (B0608)

Davide Papurello, Andrea Lanzini, Gustavo Ortigoza, Massimo Santarelli, Rahul Singh

(1) Department of Energy (ENERG), Politecnico di Torino, Torino/Italy, (2) Topsoe FuelCell A/S, Kgs. Lyngby/Denmark

Elementary kinetic modeling of (electro-)chemical degradation mechanisms of the SOFC anode (B0609)

Vitaliy Yurkiv (1,2), Jonathan P. Neidhardt (1,2), Wolfgang G. Bessler (2,3)

(1) German Aerospace Centre (DLR), Institute of Technical Thermodynamics, Stuttgart/Germany, (2) Institute of Thermodynamics and Thermal Engineering (ITW), Universität Stuttgart, Stuttgart/Germany, (3) Institute of Energy System Technology (INES), Offenburg University of Applied Sciences, Offenburg/Germany

Silicon poisoning of La_{0.6}Sr_{0.4}Co_{0.2}Fe_{0.8}O_{3-δ} IT-SOFC cathodes (B0610)

Edith Bucher (1), Jörg Waldhäusl (1), Martin Perz (1), Werner Sitte (1), Christian Gspan (2), Ferdinand Hofer (2)

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Ni/YSZ microstructure optimization for long-term stability of solid oxide electrolysis cells (B0612)

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SOFC System design integration and optimisation**A12****Exploitation of biogas potential in the EU-context via solid oxide fuel cell multi-generation plants (A1207)**

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BioZEG – Highly Efficient Standalone Green Production of Hydrogen and Electricity (A1208)

Arnstein Norheim (1), Arild Vik (1), Bjørn Andresen (1), Øystein Ulleberg (2), Ivar Wærnhus (3)

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Tailoring the electrocatalytic activity of Pt(111) for hydrogen evolution and oxidation reactions with atomic layers of Cu (A1209)

Jakub Tymoczko (1,2), Wolfgang Schuhmann (1,2), Aliaksandr S. Bandarenka (1)

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Development of a SOFC/Battery-Hybrid System for Distributed Power Generation in India (A1210)

Thomas Pfeifer, Markus Barthel, Christian Dosch, Stefan Megel, Matthias Scholz, Christian Wunderlich

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Multiple innovations on a portable propane driven 300 We SOFC system (A1211)

Ralph-Uwe Dietrich (1), Christian Szepeński (1), Andreas Lindermeier (1), Sebastian Stenger (2), Reinhard Leithner (2), Jens Hamje (3), Alexander Oberland (4), Richard Deichmann (5), Lars Dörner (5)

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Experimental Investigation of Anode/Cathode Differential Pressures in a SOFC/Gas Turbine Hybrid Power Plant (A1212)Christian Schnegelberger, Mike Steilen, Moritz Henke, Caroline Willich, Peter-Kalle Hartleif, Josef Kallo, K. Andreas Friedrich
German Aerospace Center (DLR), Institute of Technical Thermodynamics, Stuttgart/Germany**Coupling of SOFC and Refrigeration Systems (A1213)**

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Long-term Stability of Ni-YSZ Anodes Fabricated by Polymeric Precursor Infiltration (B0613)

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Durability Analysis of LSCF Perovskites for Intermediate Temperature SOFC (B0614)

Cornelia Endler-Schuck, Jochen Joos, André Weber, Ellen Ivers-Tiffée

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Reactivity studies of lanthanum strontium titanates with commonly used electrolytes (B0615)

Dariusz Burnat, Andre Heel, Lorenz Holzer, Meike Schlupp, Ulrich Vogt, Thomas Graule

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Stability study of Au-Mo-Ni/GDC anodes for the Internal CH₄ steam reforming reaction in the presence of H₂S (B0616)

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Experimental study of Biosyngas-SOFC integration (B0617)

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Understanding the Degradation of SOFC-Stacks (B0618)

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Investigation of Carbide Formation Properties of Nickel-based Anode Surface by using ReaxFF Molecular Dynamics Simulation (B0619)

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Chemical and thermal stability of SrTiO₃-based materials under SOFC anode operating conditions (B0620)

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SOFC stack feeding with biogas from dry anaerobic digestion of organic fraction of municipal solid waste (A1214)

Davide Papurello(1,2), Lorenzo Tognana(3), Andrea Lanzini(1), Stefano Modena(3), Silvia Silvestri(2), Massimo Santarelli(1)
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Operation of a SOFC – Gas Turbine Hybrid Power Plant with Different Fuels (A1215)

Moritz Henke, Caroline Willich, Mike Steilen, Christian Schnegelberger, Josef Kallo, K. Andreas Friedrich
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Numerical bifurcation and stability analysis of steady states during start-up of a HT-Fuel cell (A1216)

Sumant Gopal Yaji, David Diarra
OWI – Oel Waerme Institut GmbH, Herzogenrath/Germany

Efficiency comparison of SOFC systems with diesel reformers (A1217)

Sangho Lee, Minseok Bae, Joongmyeon Bae, Sai P. Katikaneni
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Comparison between different biofuels for SOFC-GT systems for aircraft application (A1218)

Álvaro Fernandes, Theo Woudstra, P.V. Aravind
Department of Process and Energy, TU Delft, Delft/The Netherlands

Thermal Integration of an SOFC with A High Performance Metal Hydride Storage System: A Systems Approach (A1219)

Arvin Mossadegh Pour, Aman Dhir, Robert Steinberger-Wilckens
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Feasibility study of a power generator system based on micro-SOFCs for portable applications (A1220)

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MCFC-products for CHP-and H₂-applications in Europe (A1221)

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Theoretical Study of the Sulfur Effect on the Properties of BaTiO₃ as Anode for Solid Oxide Fuel Cells (B0621)

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Particle Coarsening in LSM—YSZ Cathode Materials for SOFC (B0622)

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Novel methods for enhancing the H₂S tolerance of Ni/GDC SOFC anodes (B0623)

Foteini Sapountzi (1), Antoinette Boréave (1), Laurence Retailleau-Mével (1), Philippe Vernoux (1), Dimitris Niakolas (2), C. Neofytidis (2)
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Thermodynamics of LSM-YSZ Interfaces- A Revisit with Confirmed La₂Zr₂O₇ Thermodynamic Data (B0624)

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Effects of the Operating Voltage on a Solid Oxide Electrolysis Cell (B0625)

Maria Navasa, Jinliang Yuan, Bengt Sundén
Department of Energy Sciences, Lund University, Lund/Sweden

SOFC & SOE electrodes II

B08

Influence of Surface Properties on Oxygen Reduction Reaction of MIEC Cathode (B0807)

Keiji Yashiro(1), Hiroki Sato(1), Yuki Gonoi(1), Takashi Nakamura(2), Shin-ichi Hashimoto(3), Yusuke Tamenori (4), Koji Amezawa(2), Tatsuya Kawada(1)
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Thermodynamic Modeling and Parametric Study of an Integrated Gasification Fuel Cell (IGFC) (A1222)

Taufiq Bin Nur (1), Takayoshi Ishimoto (2), Yasunori Kikuchi (3,4), Kuniaki Honda (4) and Michihisa Koyama (1,2,4)
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Computational Modelling and Experimental Validation of a Microtubular Solid Oxide Fuel Cell Stack for Unmanned Aerial Vehicles (A1223)

Bostjan Hari (1), Jan Peter Brouwer (2), Antony Meadowcroft (1), Aman Dhir (1), Robert Steinberger-Wilckens (1)
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System performance comparison employing either partial oxidation or anode offgas recirculation as reforming methods within a biogas SOFC system (A1224)

M. P. Heddrich, T. Albrecht, C. Greß, M. Jahn, R. Näge, E. Reichelt
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Anode off-gas recirculation for methane fed solid oxide fuel cells (A1226)

Tsang-I Tsai, Shangfeng Du, Aman Dhir, Robert Steinberger-Wilckens
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Improvement of SOFC-mCHP system integration and demonstration in SICCAS (A1227)

Xiaofeng Ye, Youpeng Chen, Zhongliang Zhan and Shaorong Wang
 Shanghai Institute of Ceramics, Chinese Academy of Sciences (SICCAS), Shanghai/China

Diagnostic, characterisation and electrochemical modelling I + II

A13 + B12

Testing SOFCs at high Current Densities (A1307)

André Weber, Ellen Ivers-Tiffée
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Combined experimental and modeling study of interaction between LSCF and CGO in SOFC cathodes (A1308)

Rémi Costa (1), Roberto Spotorno (3), Claudia Repetto (1), Zeynep İlhan (1), Vitaliy Yurkiv (1,2)
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Core-shell Properties of Strontium-Iron Perovskite Cathode (B0808)

Hong-Yi Chang (1), Yao-Ming Wang (1), Chia-Ming Chang (1), Chia-Hsin Lin (2), Ching-Iuan Sheu (2), Ying-Chang Hung (2)
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Evaluation of La_{0.8}Sr_{0.2}Ti_{1-x}Fe_xO₃ –YSZ Composite Anode for Solid Oxide Fuel Cells (B0809)

Zhiqun Cao, Zhe Lv, Yu Sui, Jipeng Miao, Wenhui Su Center for the Condensed Matter Science and Technology, Department of Physics, Harbin/China

Advanced cathode materials for metal supported cells: the lanthanide nickelates Ln₂NiO_{4+δ} (Ln = La, Pr) (B0810)

A. Rougier (1), A. Flura (1), C. Nicolle (1), V. Vibhu (1), S. Fourcade (1), J.M. Bassat (1), J.C. Grenier (1), A. Brevet (2), J. Mougin (2)
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Y_xZr_{1-x}O_{2-x/2}(YSZ; X=0.06-0.21) colloidal nanocrystals derived nanostructured La(Sr)MnO₃/YSZ composites for a cathode material of intermediate-temperature SOFC (B0811)

Kazuya Horiguchi, Kazuyoshi Sato
 Division of Environmental Engineering Science, Gunma University, Kiryu, Gunma/Japan

Investigation of the Formation of La_{1-x}Sr_xCo_{1-y}Fe_yO_{3-δ} Cathode Materials and Their Interaction with Electrolyte Substrates for Potential SOFC Applications (B0812)

Can Sındıraç, Sedat Akkurt
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A comparison of La_{0.8}Sr_{0.2}MnO_{3-δ}, La_{0.6}Sr_{0.4}Co_{0.2}Fe_{0.8}O_{3-δ} and Pr₂NiO_{4+δ} cathodes on the performance of anode supported microtubular cells (B0813)

M. A. Laguna-Bercero, H. Monzón, J. Silva, M. J. López-Robledo, A. Larrea, V. M. Orera
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Custom Tailoring High-Performance MIEC Cathodes (B0814)

Andreas Messner, Jochen Joos, Moses Ender, André Weber, Ellen Ivers-Tiffée
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Local High Fuel Utilization diagnosis in SOFCs: Design project approach (A1309)

B. Morel, L. Talloire, F. Lefebvre-Joud

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X-ray imaging microtubular fuel cells in operando (A1310)

Samuel J. Cooper, Tao Li, Farid Tariq, Vladimir Yufit, Nick Corps, Robert S. Bradley, Paul R. Shearing, Nigel P. Brandon, John Kilner

Imperial College London, London/UK

Impedance Study of (H_2+H_2O+Ar),Pt|La_{0.9}Sr_{0.1}ScO_{3- α} Interface (A1311)

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Electrochemical and Mechanical Characterization of Anode-Supported Microtubular SOFCs Processed by Gel-casting (A1312)

M. Morales (1), M.A. Laguna-Bercero (2), A. Larrea (2), V.M. Orera (2), F. Espiell (1), M. Segarra (1)

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Impedance spectroscopy studies of the behavior of NiMo–CeO₂ anode in SOFC using H₂S containing fuel (A1313)

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Electrochemical Behavior of Anode Supported Solid Oxide Fuel Cells Under Triode Operation (A1314)

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In-situ SOFC cathode/electrolyte interaction study at operating conditions (A1315)

Florent Tonus, Stephen J. Skinner

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Molecular Dynamics Simulation on Oxide Ion Conduction of La_{0.9}A_{0.1}InO_{2.95} (A=Ca, Sr, Ba) Perovskite Oxides for SOFCs Electrolyte (A1316)

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Internal steam reforming of iso-octane on Co-based anodes in a solid oxide fuel cell (B0815)

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Novel materials for SOFC & SOE electrolytes

B09

Ce_{1-x}Sr_xNbO_{4± δ} : a new oxygen excess and deficient fast ion conductor (B0907)

Cassandra Harris, Dr Stephen Skinner

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Stability studies of La- and Ca-doped SrTiO₃ as anode support for solid oxide fuel cells (B0908)

Lanying Lu, Chengsheng Ni, Mark Cassidy, John Irvine

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Assessment of full ceramic solid oxide fuel cells based on modified strontium titanates (B0909)

Peter Holtappels

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Improvement of the tolerance against oxidation of an anode-supported Solid Oxide Fuel Cell using Atomic Layer Deposition (B0910)

Thomas Keuter, Norbert H. Menzler, Georg Mauer, Frank Vondahlen, Robert Vaßen, Hans Peter Buchkremer

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SOFC materials search by combinatorial pulsed laser deposition:**A case study on La_{0.8}Sr_{0.2}Mn_xCo_{1-x}O_{3± δ} (B09011)**

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Stability and performance of SOFC with LSTN (La_{0.2}Sr_{0.8}Ti_{1-x}Ni_xO_{3- δ})-GDC (Gd_{0.2}Ce_{0.8}O₂) composite anode (B0912)

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Coupled experimental and modeling study of Triode Solid Oxide Fuel Cell (A1317)

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Ab initio study on La_{10-x}Sr_x(Si,Ge)₆O₂₆ apatite electrolyte of SOFC (A1318)

Yangzhou MA, Nouredine Feneche, Omar El-Kedim
IRTES-LERMPS, Belfort Cedex/France

Characterization of Reversible SOFC by Impedance Spectroscopy (A1319)

Eui-Chol Shin (1), Pyung-An Ahn (1), Sun-Dong Kim (2), Sang-Kuk Woo (2), Ji-Haeng Yu (2), Jong-Sook Lee (2)
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A One-dimensional Modelling Approach for Planar Cylindrical Solid Oxide Fuel Cell (A1320)

Dario Marra, Marco Sorrentino, Cesare Pianese, Antonio Mennella
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Development of an Open Source SOFC R&D Test Cell (A1321)

Ross Bailey, Greenlight Innovation Corp., Burnaby BC/Canada

Assessing the effect of electrochemically-driven non-uniformities of heat flux in a microtubular fuel cell on mSOFC temperature distribution (A1322)

Paulina Pianko-Oprych, Ekaterina Kasilova, Zdzisław Jaworski
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Processes, West Pomeranian University of Technology, Szczecin/Poland

Diagnostic, characterisation and electrochemical modelling I + II**A13 + B12****A Raman spectroscopy study of the effect of anodic and cathodic currents on carbon contamination in Ni-based porous electrodes (B1207)**

V. Duboviks, R. C. Maher, G. J. Offer, G. R. Castillo Vega, J. R. Vázquez de Aldana, E. Ruiz-Trejo, M. Kishimoto, L. F. Cohen,
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Characterization of Ni-infiltrated GDC Electrodes for Solid Oxide Cell Applications (B1208)

Marina Lomberg, Masashi Kishimoto, Enrique Ruiz-Trejo, Gregory Offer, Nigel Brandon
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The Manufacture and Testing of Ni-10Sc1CeSZ Anode Supported SOFCs for Intermediate Temperature Operation (B0913)

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Chemical stability of Ni foam-based cermets for metal supported SOFC (B0914)

Francesco Perrozzi (1,2), Sabrina Presto (1), Roberto Spotorno (2), Han Feng (3), Rémi Costa (3), Massimo Viviani (1), Paolo Piccardo (2)
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Elaboration and characterizations of oxide thin films to decrease SOFC Area Specific Resistance (B0915)

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Fabrication of silver-ceramic proton conducting composites for hydrogen separation (B0916)

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Influence of La and Nb co-doping in SrTiO₃ on sintering mechanisms and final microstructures (B0917)

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Mechanical modelling and reliability**B11****Development of residual stresses in a multi-layer tape-casted Solid Oxide Fuel Cell after sintering (B1107)**

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Mechanical Properties of Ni-YSZ Anode Materials for Solid Oxide Fuel Cells (B1108)

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Micromechanical Modeling of Solid Oxide Fuel Cell Anode Supports based on Three-dimensional Reconstructions (B1109)

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Impedance Spectra of Activating/Passivating Solid Oxide Electrodes (B1209)

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Microstructural and chemical characterization of chromium transport from interconnects in intermediate temperature solid oxide electrolysis (IT-SOE) (B1210)

Meike V. F. Schlupp (1), Ji Woo Kim(1), Aude Brevet (2), Cyril Rado (2), Karine Couturier (2), Ulrich Vogt (1,3), Florence Lefebvre-Joud (2), Andreas Züttel (1)

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Towards Understanding Heterogeneous and Electrochemistry at $\text{La}_{0.1}\text{Sr}_{0.9}\text{TiO}_{3-\alpha}$ SOFC anodes (B1211)

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Electrochemical Impedance Study of $\text{AgCu-Ca}_{0.2}\text{Ce}_{0.8}\text{O}_{2-x}$ Anode for SOFCs with Different Fuels (B1212)

Araceli Fuerte, Rita X. Valenzuela, María José Escudero

Centro de Investigaciones Energéticas Medioambientales y Tecnológicas (CIEMAT), Madrid/Spain

Electrochemical characterization of SOFC cells based on $\text{Pr}_2\text{NiO}_{4+\delta}$ and $(\text{La,Sr})(\text{Co,Fe})\text{O}_{3-\delta}$ cathodes with an enhanced GDC diffusion barrier (B1213)

Carlos Boigues Muñoz, Stephen McPhail, Mariangela Bellusci, Dario Montinaro, Fabio Polonara
ENEA C.R. Casaccia, Rome/Italy

Oxygen Isotope Exchange in Oxides with Double Perovskite-Type Structure (B1214)

Vadim Eremin (1), Maxim Ananyev (1, 2), Natalia Porotnikova (1), Andrey Farlenkov (1, 2), Edkhem Kurumchin (1)

(1) Institute of High Temperature Electrochemistry UB RAS, Yekaterinburg city/Russia, (2) Ural Federal University, Yekaterinburg city/Russia

Simulation of Solid Oxide Fuel Cell Anode Microstructure Evolution Using Phase Field Method (B1110)

Zhenjun Jiao, Naoki Shikazono

Institute of Industrial Science, University of Tokyo, Tokyo/Japan

Three Dimensional Analysis of Ni-YSZ Anode During Oxidation and Reduction Processes (B1111)

Takaaki Shimura, Zhenjun Jiao, Naoki Shikazono

Institute of Industrial Science, The University of Tokyo, Tokyo/Japan

Manufacturing and Characterization of Micro Tubular PCFC Fuel Cells & Cell Components (B1112)

Osman Y. Akduman, Erdem F. Ipcizade, Ali M. Soydan, Ali Ata

Gebze Institute of Technology, Kocaeli/Turkey

Fabrication and Characterization of SOFC Based on BIT07 Electrolyte and Reduced $\text{La}_2\text{Mo}_2\text{O}_9$ as Anode-Supported Material (B1113)

Gaëtan Buvat (1,2), Maud Barré (2), Eric Quarez (1), Philippe Lacorre (2), Olivier Joubert (1)

(1) Institut des Matériaux de Nantes UMR CNRS 6502, Université de Nantes, Nantes/France,

(2) Institut des Molécules et Matériaux du Mans UMR CNRS 6283, Université du Maine, Le Mans/France

Determining Vibrational Properties of SOFC Anode Materials Through *ab initio* Calculations (B1114)

Michael Parkes (1), Keith Refson (2), Mayeul d'Avezac (4), Greg Offer (1), Nigel Brandon (1), Nicholas Harrison (3)

(1) Department of Earth Science and Engineering, Imperial College London, London/UK,

(2) Rutherford Appleton Laboratories, Oxfordshire/UK,

(3) Thomas Young Center, Imperial College London, London/UK, (4) Research Software Development Team, University College London, London/UK

Understanding Mechanical Degradation of Ni-based anodes in Solid Oxide Fuel Cells during redox cycling (B1115)

Guansen Cui, Farid Tariq, Masashi Kishimoto, Nigel Brandon

Imperial College London, London/UK

Simulation of Interfacial Cracking Between Sealant and Interconnect in a Planar Solid Oxide Fuel Cell Stack (B1116)

Chih-Kuang Lin (1), Wei-Hong Shiu (1), Si-Han Wu (2), Ruey-Yi Lee (2)

(1) Department of Mechanical Engineering, National Central University, Zhong-Li/Taiwan, (2) Physics Division,

Institute of Nuclear Energy Research, Lung-Tan/Taiwan

Computational Thermal and Fluid Dynamics of an SOFC Stack: Startup Operation (B1117)

Arvin Mossadeq Pour, Amrit Chandan, John Geoffrey Maillard, Robert Steinberger-Wilckens

Centre for Hydrogen & Fuel Cells, University of Birmingham, Birmingham/UK

A Model-Based Understanding of Solid-Oxide Electrolysis Cells: From Hydrogen to Syngas Production (B1215)

Vikram Menon (1,2), Qingxi Fu (3), Olaf Deutschmann (1,4)

(1) Institute for Chemical Technology and Polymer Chemistry, Karlsruhe/Germany, (2) Helmholtz Research School Energy-Related Catalysis, Karlsruhe/Germany, (3) European Institute for Energy Research (EIFER), Karlsruhe/Germany, (4) Institute for Catalysis Research and Technology, Karlsruhe/Germany

Low temperature electrical characterization of SOFC electrolyte layers (B1216)

Eui-Chol Shin (1), Jianjun Ma (1), Ho-Sung Noh (2), Jae-Yeon Hwang (2), Ji-Won Son (2), Jong-Ho Lee (2), Jong-Sook Lee (1)

(1) School of Materials Science and Engineering, Chonnam National University, Gwangju/Korea, (2) High-temperature Energy Materials Research Center, Korea Institute of Science and Technology, Seoul/Korea

OXYGEN ISOTOPE EXCHANGE IN LSM-YSZ COMPOSITE MATERIALS (B1217)

Natalia Porotnikova (1), Maxim Ananyev (1, 2), Vadim Eremin (1), Andrey Farlenkov (1, 2), Edkhem Kurumchin (1)

(1) Institute of High Temperature Electrochemistry UB RAS, Yekaterinburg city/Russia, (2) Ural Federal University, Yekaterinburg city/Russia

Model reduction for solid oxide fuel cell thermal management (B1218)

Periasamy Vijay, Moses O. Tade

Center for Process Systems Computations, Department of Chemical Engineering, Curtin University, Perth/Australia

Numerical Analysis of an SOFC single cell: A Multiphysics Approach (B1219)

Amrit Chandan, Arvin Mossadegh Pour, Nikkia McDonald, John Geoffrey Maillard, Robert Steinberger-Wilckens

Centre for Hydrogen & Fuel Cells, University of Birmingham, Birmingham/UK

Integrated Microstructural-Electrochemical Cell-level Modeling: the LSM-based Jülich cell (B1220)

Antonio Bertei, Josef Mertens, Cristiano Nicoletta

Department of Civil and Industrial Engineering, University of Pisa, Pisa/Italy

Characterization of microtubular Solid Oxide Fuel Cells for mobile applications (B1221)

A. Morata (1), A. Meadowcroft (2), M. Torrell (1), K. Kendall (2), M. Kendall (2), A. Tarancón (1)

(1) Catalonia Institute for Energy Research (IREC), Barcelona/Spain, (2) Adelan, Birmingham/UK

In-situ observation of curvature evolution during the co-sintering of porous triple-layer structure for fabrication of wavy type SC-SOFCs (B1222)

Indae Choi, Jung-Sik Kim

Aero & Auto Eng. Dept, Loughborough University, Loughborough/UK

Three-dimensional Modelling of Microtubular Solid Oxide Fuel Cells (mSOFC) (B1118)

Ali Murat Soydan (1), Michaela Kendall (2), Ali Ata (1)

(1) Nanotechnology Research Center, GYTE, Istanbul/Turkey, (2) Adelan, Birmingham/UK

Diagnostic, characterisation and electrochemical modelling I

B12

The Posters related with this sessions are put in session **A13**

«Diagnostic, characterisation and electrochemical modelling II»

SOE cells and stacks

B13

High temperature steam electrolysis and co-electrolysis activities at stack level at CEA (B1307)

Magali Reytier, Stephane Di Iorio, Julien Petit, Andre Chatroux, Georges Gousseau, Jerome Aicart, Marie Petitjean, Jerome Laurencin, Julie Mougin

CEA, LITEN, Grenoble/France

Transient Operation of a Solid Oxide Electrolyser Stack (B1308)

Qingxi Fu (1), Jakob Bomhard (1), Annabelle Brisse (1), Dario Montinaro (2), Niels Christiansen (3)

(1) European Institute for Energy Research (EIFER), Karlsruhe/Germany,

(2) SOFCpower SpA, Trento/Italy,

(3) Topsoe Fuel Cell A/S, Lyngby/Denmark

Control strategies for an 1 kW SOFC-System for power generation from biogas (B1310)

Jana Oelze, Andreas Lindermeir, Ralph-Uwe Dietrich

Clausthaler Umwelttechnik-Institut GmbH, Clausthal-Zellerfeld/Germany

Numerical Study of Solid Oxide Redox Flow Battery -Geometric Effects on Charge/Discharge Operation (B1312)

Hiroko Ohmori (1,2), Hiroshi Iwai (2)

(1) Corporate R&D Headquarters, Konica Minolta, Inc., Osaka/Japan,

(2) Department of Aeronautics and Astronautics, Kyoto University, Nishikyo-ku, Kyoto/Japan

CO₂-H₂O reduction in tubular solid oxide electrolyzers (B1313)

Lisa Kleiminger, Tao Li, Kang Li, Geoff Kelsall

Imperial College London, Department of Chemical Engineering, London/UK

Fabrication and characterization of microtubular SOEC in coelectrolysis mode (B1314)

H. Monzón, M.A. Laguna-Bercero, V. M. Orera

Instituto de Ciencia de Materiales de Aragón (CSIC-Universidad de Zaragoza), Zaragoza/Spain

Synergetic integration of experimental techniques and computational modeling in SOFC single cells (B1223)

Carlos Boigues Muñoz, Stephen McPhail, Dario Montinaro, Gabriele Comodi
ENEA C.R. Casaccia, Rome/Italy

Interconnect, sealing and coating A14**PVD Coated Stainless Steel Manufactured in Large Scale Production For SOFC Interconnectors (A1407)**

Mats W Lundberg, Robert Berger, Jörgen Westlinder
AB Sandvik Materials Technology, Sandviken/Sweden

Development and Testing of Sealing Glasses for SOFCs based on CFY-Interconnects (A1408)

Axel Rost (1), Jochen Schilm (1), Jens Suffner (2), Mihails Kusnezoff (1), Alexander Michaelis (1)
(1) Fraunhofer Institute for Ceramic Technologies and Systems, Dresden/Germany,
(2) Schott AG – BU Electronic Packaging, Landshut/Germany

Aging Behavior of Reactive Air Braze Seals for SOFC (A1409)

Andreas Pönicke, Jochen Schilm, Mihails Kusnezoff, Alexander Michaelis
Fraunhofer Institute for Ceramic Technologies and Systems, Fraunhofer IKTS, Dresden/Germany

Post-Test Characterization of Metallic Interconnect after Long Term Service in SOFC-Stacks (A1410)

Vladimir Shemet, Daniel Grüner, Christian Geipel*, Anton Chyrkin, Qingping Fang, W. Joe Quadackers
Forschungszentrum Jülich GmbH, Jülich/Germany

Feasibility of using LNF-coated Crofer22APU mesh as cathode contact material for SOFC. (A1411)

A. Morán-Ruiz (1), K. Vidal (1), A. Larrañaga (1), M.A. Laguna-Bercero (2), J.M. Porras-Vazquez (3), P.R. Slater (3), M.I. Arriortua (1)
(1) Euskal Herriko Unibertsitatea (UPV/EHU), Universidad del País Vasco, Leioa (Vizcaya)/Spain,
(2) Instituto de Ciencia de Materiales de Aragón (ICMA), CSIC-Universidad de Zaragoza, Zaragoza/Spain,
(3) School of Chemistry, University of Birmingham, Birmingham/UK

Oxidation-Resistant Manganese and Cobalt Diffusion Coatings for Interconnect Materials in SOFCs (A1412)

Diana Schmidt, Xabier Montero, Mathias C. Galetz, Michael Schütze
DECHEMA-Forschungsinstitut, Frankfurt am Main/Germany

Mechanical properties of sealants and cells (A1413)

Jianping Wei, Goran Pečanac, Jürgen Malzbender
Forschungszentrum Jülich GmbH, IEK-2, Jülich/Germany

Thermal and Electrical Load Cycling Test of SOEC Stack for Hydrogen Production in TMSR (B1315)

Cheng-Zhi Guan, Guo-Ping Xiao, Xin-Bing Chen, Jian-Qiang Wang
Center for Thorium Molten Salt Reactor System, Shanghai Institute of Applied Physics, Chinese Academy of Sciences, Shanghai/China

Development and Characterisation of Solid Oxide Electrolyser Cells (SOEC) (B1316)

M. Hoerlein (1), Guenter Schiller (1), F.Tietz (2)
(1) Deutsches Zentrum für Luft- und Raumfahrt (DLR), Stuttgart/Germany,
(2) Forschungszentrum Jülich, Jülich/Germany

Development of Tubular Solid Oxide Electrolysis Cells (B1317)

Tohru Kato, Yohei Tanaka, Sho Nakamura, Susumu Nagata, Akihiko Momma, Takeo Honda, Akira.Negishi
National Institute of Advanced Industrial Science and Technology (AIST), Ibaraki/Japan

Non Pt Catalysts for Intermediate Temperature Water Electrolysis (B1318)

Irina Petrushina (1), Aleksey Nikiforov (1), Klaus Köhler (2), Simon Mayer (2), Erik Cristensen (1), Niels Bjerrum (1)
(1) Department of Energy Conversion and Storage, Technical University of Denmark, Lyngby/Denmark,
(2) Department of Chemistry, Inorganic Chemistry, Technische Universität München, Garching/Germany

SOE systems**B14****Synthesis of dimethyl ether and methanol via high-temperature co-electrolysis of H₂O and CO₂ (B1407)**

F. Salvati (1,2), M.B. Mogensen (1), A. Pedersen (1), P. Leone (2), A. Lanzini (2)
(1) Department of Energy Conversion and Storage, Technical University of Denmark, Roskilde/Denmark,
(2) Department of Energy, Politecnico di Torino, Torino/Italy

Coupling of SOEC in Co-Electrolysis mode and Dimethyl Ether Synthesis (B1408)

M. Solimeo (1), G. Botta (1), P. Leone (2), P.V. Aravind (1)
(1) P&E, Technische Universiteit Delft, TU Delft, Delft/Netherlands, (2) DENERG, Politecnico di Torino, Torino/Italia

Development of Direct Reversible Solid Oxide Fuel Cells for Power Generation and Hydrogen/Syngas Production (B1409)

Nguyen Q. Minh
Center for Energy Research, University of California, San Diego, La Jolla/USA

Theoretical Study on Pressurized Operation of Solid Oxide Electrolysis Cells (B1410)

Moritz Henke, Caroline Willich, Josef Kallo, K. Andreas Friedrich
German Aerospace Center (DLR), Institute of Technical Thermodynamics, Stuttgart/Germany

Effect of Ceramic Filler Particles on the Sealing Capability of a SrO-CaO-based Glass-Ceramic Sealant (A1414)

Hae-June Je, Hyo-Jin Kim, Kyung-Joong Yoon, Ji-Won Son, Jong-Ho Lee, Byung-Kook Kim, Hae-Won Lee
High-Temperature Energy Materials Research Center, Korea Institute of Science & Technology, Seoul/Korea

Development of Cu-rich Spinel as Coatings for Solid Oxide Fuel Cells (A1415)

Roberto Spotorno (1,2), Simone Valente (1), Paolo Piccardo (1,2), Massimo Viviani (2), Francesco Perrozzi (2)
(1) Dipartimento di Chimica e Chimica Industriale, Università degli Studi di Genova, Genoa/Italy,
(2) Consiglio Nazionale delle Ricerche – Istituto per l'Energetica e le Interfasi, Genoa/Italy

Behavior of commercial ferritic stainless steel during the starting process of intermediate temperature SOFC stacks (A1416)

Paolo Piccardo (1,2), Simone Anelli (2), Roberto Spotorno (2), Francesco Perrozzi (1,2), Sabrina Presto (1), Massimo Viviani (1), Valeria Bongiorno (2)
(1) CNR-IGI, Genoa/Italy, (2) DCCI – University of Genoa, Genoa/Italy

Mechanical properties of interconnects, sealants and gas diffusion layers for planar solid oxide fuel cell stacks. Part I: interconnects and gas diffusion layers (A1417)

Fabio Greco, Arata Nakajo, Jan Van herle
FUELMAT Group, Institute of Mechanical Engineering, Faculty of Engineering Sciences and Technology, Ecole Polytechnique Fédérale de Lausanne, Lausanne/Switzerland

Cell and stack design – next generation

A15

Connection Optimisation for Micro-Tubular Solid Oxide Fuel Cells (A1507)

A.D. Meadowcroft, K.S. Howe, R. Steinberger-Wilckens, A. Dhir Centre for Hydrogen and Fuel Cell Research, Department of Chemical Engineering, University of Birmingham, Birmingham/UK

Fabrication of STS-Supported SOFC with Diffusion Barrier Layer (A1508)

Kun Joong Kim, Sun Jae Kim, Gyeong Man Choi
Fuel Cell Research Center, Department of Materials Science and Engineering, Pohang University of Science and Technology (POSTECH), Pohang/Republic of Korea

Design and analysis of a computer experiment of the flow distribution in fuel cells (A1509)

Thierry M. Cornu, Priscilla Caliendo, Arata Nakajo, Jan Van herle FUELMAT, École Polytechnique Fédérale de Lausanne, Lausanne/Switzerland

Hydrogen production via nuclear co-generation at Research Center Rez (B1411)

Karin Stehlik (1), Aleš Doucek (2)
(1) Research Center Rez, Husinec-Rez/Czech Republic, (2) Hytec, Husinec-Rez/Czech Republic

Intermittent operation of a high temperature electrolyser (B1412)

Floriane Petipas, Annabelle Brisse, Chakib Bouallou
European Institute for Energy Research (EIFER), Karlsruhe/Germany

Balance of Plant and fuel conditioning

B15

Ammonia and ammonia containing fuels for SOFCs – EIS and CFD study (B1507)

Hrishikesh Patel, PV Aravind
Department of Process and Energy, Technical University of Delft., Delft/The Netherlands

Nickel based nano-oxyhydride catalysts for hydrogen production from ethanol at room temperature (B1508)

Louise Jalowiecki-Duhamel (1,2), Wenhao Fang (1,2), Cyril Pirez (1,2), Sébastien Paul (2,3), Mickaël Capron (1,2), Hervé Jobic (4), Franck Dumeignil (1,2,5)
(1) Université Lille Nord de France, Lille/France,
(2) CNRS UMR8181, Unité de Catalyse et Chimie du Solide, UCCS, Villeneuve d'Ascq/France,
(3) Ecole Centrale de Lille, Villeneuve d'Ascq/France,
(4) IRC Lyon Institut de Recherches sur la Catalyse et l'Environnement de Lyon, Villeurbanne Cedex/France,
(5) Institut Universitaire de France, Maison des Universités, Paris/France

Catalytic investigation of Ni-Cu/CGO catalysts in the ATR reaction of methane (B1509)

M. Lo Faro (1), P. Frontera (2), C. Busacca (2), L. Scarpino (2), P.L. Antonucci (2), A. S. Arico (1)
(1) CNR-ITAE, Messina/Italy, (2) Department of Civil Engineering, Energy, Environment and Materials, «University Mediterranea», Reggio Calabria/Italy

Catalytic bioethanol reforming for SOFC applications (B1510)

Heike Ehrich (1), Elka Kraveva (1), Matthias Boltze (2)
(1) Leibniz Institute for Catalysis, Rostock/Germany,
(2) new energy GmbH, Neubrandenburg/Germany

Tri-reforming of Methane Over Ni@SiO₂ Catalyst (B1511)

Artur J Majewski, Joseph Wood
School of Chemical Engineering, University of Birmingham, Birmingham/UK

Fully ceramic-based micro SOFC integrated in silicon (A1510)

Iñigo Garbayo (1,2), Dolors Pla (1), Alex Morata (1), Luis Fonseca (2), Simone Sanna (3), Vincenzo Esposito (3), Neus Sabaté (2), Albert Tarancón (1)

(1) Catalonia Institute for Energy Research (IREC), Barcelona/Spain,

(2) Institute of Microelectronics of Barcelona (IMB-CNM, CSIC), Campus UAB, s/n, Barcelona/Spain,

(3) Technical University of Denmark (DTU-Riso), Roskilde/Denmark

Catalytic hydrogen micro-combustor for SOFC Portable Applications (A1511)

D. Pla (1), L. Almar (1), G. Gadea (1), A. Morata (1), A. Tarancón (1)

(1) Catalonia Institute for Energy Research (IREC), Department of Advanced Materials for Energy, Barcelona/Spain

Three-in-one: single layer low temperature micro-tubular solid oxide fuel cells (A1512)

Shangfeng Du (1), Tsang-I Tsai (1), Bin Zhu (2), Robert Steinberger-Wilckens (1)

(1) School of Chemical Engineering, University of Birmingham, Birmingham/UK,

(2) Department of Energy Technology, Royal Institute of Technology (KTH), Stockholm/Sweden

Manufacturing & Electrical Characterization of Intermediate Temperature Micro Tubular Solid Oxide Fuel Cells (A1513)

Ali Murat Soydan, Ali Ata

Gebze Institute of Technology, Nano Technology Research Center, Kocaeli /Turkey

All porous solid oxide fuel cells (AP-SOFC): a bridging technology between dual and single chambers for operation in dry hydrocarbons (A1514)

Yumin GUO, David Farrusseng

Institut de Recherches sur la Catalyse et l'Environnement de Lyon (IRCELYON), CNRS, Villeurbanne/France

Metal Supported Solid Oxide Fuel Cells: From Materials Development to Single Cell Performance and Durability Tests (A1515)

Aude Brevet (1), Julie Mougin (1), Jean-Claude Grenier (2), Richard Laucournet (1), Per Olof Larsson (3), Dario Montinaro (4),

Lide M. Rodriguez-Martinez (5), Mario A. Alvarez (5), Marit Stange (6), Lionel Bonneau (7), Enrico Concettoni (8)

(1) CEA, LITEN, Grenoble/France,

(2) CNRS, Université de Bordeaux, ICMCB, Pessac/France,

(3) HÖGANÄS AB, Höganäs/Sweden,

(4) SOFCpower, Mezzolombardo/Italy,

(5) Ikerlan, Mondragon/Spain,

(6) Sintef, Oslo/Norway,

(7) Baikowski, La Balme de Sillingy/France,

(8) Loccioni, Angeli di Rosora/Italy

Application of Macro-Porous Al₂O₃ as Support Materials in Diesel Reformer for SOFC (B1512)

Yeon Baek Seong, No-Kuk Park, Tae Jin Lee

School of Chemical Engineering, Yeungnam University, Gyeongbuk/South Korea

Performance and degradation analysis of bio-syngas fed Solid Oxide Fuel Cells (B1513)

Carlos Boigues Muñoz, Stephen McPhail, Domenico Borello Jian Pu, Fabio Polonara

ENEA C.R. Casaccia, Rome/Italy

A new designed plate heat exchanger for cathode air preheating in a 300 W SOFC-System (B1514)

Sebastian Stenger, Shaofei Chen, Reinhard Leithner

Institute for Energy and Process Systems Engineering, Technische Universität Braunschweig, Braunschweig/Germany

A novel power conditioning system for residential fuel cell power plants based on quasi Z-source Inverter (B1515)

Tanel Jalakas, Hannes Agabus

Ubik solutions OÜ, Tallinn/Estonia

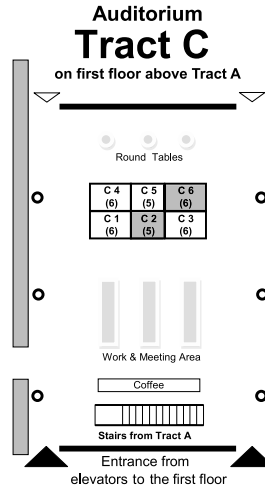
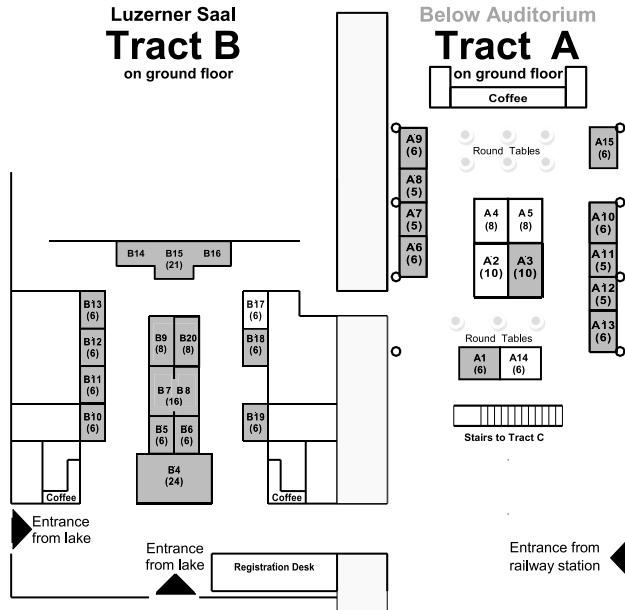


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30 June–3 July 2015

12th
EUROPEAN SOFC & SOE FORUM
28 June–1 July 2016

Floor Plan «FLOORPLAN_Exhibition_EFCF_SOFC_2014-p5-6.pdf»



Legend:

A1-14, B4-19, C1-6 Booth identification
(6), (9), (12), (16), etc. Booth area in square meters



List of Exhibitors

Registered by March 15, 2014

At the time of print of this Final Announcement the following developers, material, measurement tool and component suppliers as well as research institution had registered for the exhibition and/or the demonstration area:

Almus AG **A12**
Switzerland **www.almus-ag.ch**
 UBOCELL SOFC Module, SOFC
 Demonstration Kit

Bronkhorst (Schweiz) AG **B10**
Switzerland **www.bronkhorst.ch**
 Massflowmeters – Controllers,
 Pressuremeters – Controllers

Catacel Corp **A06**
USA **catacel.com**
 Structured Catalysts
 and compact reactors

CAP Co., Ltd. **A11**
Japan **www.cap-co.jp/indexE.html**
 Anode Gas Recycle Blower for SOFC

CEA LITEN **A03**
France **www-liten.cea.fr**
 R&D for SOFC and SOE

CeramTec GmbH **B11**
Germany **www.ceramtec.de**
 Ceramic SOFC components

CerPoTech AS **B12**
Norway **www.cerpotech.com**
 Ceramic Powders

DOWA HD Europe GmbH **A15**
Germany **www.dowa.co.jp/index_e.html**
 SOFC, SOEC single cells, SOFC stacks

EBZ GmbH **B06**
Germany **www.ebz-dresden.de**
 SOFC test rigs, BoP components

Elcogen AS **B18**
Estland **www.elcogen.com**
 Perovskite Type Oxide

Energy Saxony e.V., c/o Fraunhofer IKTS **B04**
Germany **www.energy-saxony.net**
 Network Organisation

eZelleron GmbH **B09**
Germany **www.ezelleron.de**
 Low-emission energy sources for
 mobile power supplies

FLEXITALLIC **A07**
United Kingdom **www.flexitallicsofc.com/**
 Sealing Products

Fiaxell Sàrl **A08**
Switzerland **www.fiaxell.com**
 SOFC Test Set-up, SOFC cells, SOFC interconnection systems

Fomenta AG / Temonas **C02**
Switzerland **www.fomenta.ch**
 FCH Services and Technology Monitoring and Assessment
 Tool

Forschungszentrum Juelich GmbH B07, B08
Germany www.fz-juelich.de
 tba

FuelCell Energy Solutions GmbH B04
Germany www.fces.de
 MCFC Fuel Cells

FuelCon AG B19
Germany www.fuelcon.com
 Test Systems for Fuel Cells and Electrolysers

Fuji-Pigment.Co.Ltd tbd
Japan www.fuji-pigment.co.jp/
 Electrode, Solid Electrolyte Materials (Powder, Paste) for SOFC

Fraunhofer IKTS B04
Germany www.ikts.fraunhofer.de
 Fuel Cell System Eneramic®

HAYNES International AG A09
Switzerland www.haynes.ch
 High-temperature alloys

HTceramix SA B20
Switzerland www.htceramix.ch
 SOFC Stack and Systems

KERAFOL GmbH B05
Germany www.kerafol.com
 Electrolytes, electrolyte supported cells

Plansee SE B13
Austria www.plansee.com
 SOFC Stack Components

Porextherm Dämmstoffe GmbH A13
Germany www.porextherm.de
 Microporous thermal insulation

Sunfire GmbH B04
Germany www.sunfire.de
 SOFC integrated stack module

SOFCpower SpA B20
Italy www.sofcpower.com
 SOFC Stack and Systems

Topsoe Fuel Cell A/S B14, B15, B16
Denmark www.topsoefuelcell.com
 SOFC stack modules

Werner Mathis AG A01
Switzerland www.mathisag.com
 Machines for various coating processes, hydrolization, drying, sintering etc. that are used for production of the MEAs of polyphosphoric acid.

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Special Events

Welcome Gathering

Tuesday, 1st July: 18:00, on the terrace of the KKL above the registration area. Meet old friends, find new ones and enjoy the splendid view of lake and historic town – a perfect start to the conference.

Swiss Surprise (optional, limited to 80 participants)

Wednesday, 2nd July: 18:30, destination to be announced. A special surprise is offered in a unique place near to Lucerne. This is an enjoyable evening with Swiss folklore, music, drinks and Swiss cuisine. Tickets are sold on a first-come-first-served basis for CHF 120.– per person. During your on-line registration please select the option to purchase tickets in advance for you and your guests.

Dinner on the Lake

Thursday, 3rd July: 19:30 Pier 6 («Brücke 6») next to Congress Centre: Historic paddle wheel steamers «Stadt Luzern & Uri» (1927, flagship of the fleet) will take us on a tour of the lake, past magnificent landscape and to the «Rütli» glade, birthplace of Switzerland (1291). Enjoy the unique blend of music, drinks and a candle-light dinner while gliding past beautiful scenery. Live music contributes to this unforgettable evening. This event is included in the registration fee. During your online registration please indicate your attendance and feel free to purchase additional tickets for your guests (CHF 120.– per person).

Entertainment for Accompanying Person

During the European Fuel Cell Forum your guests and yourself have the possibility to explore the beautiful region of Lucerne together with an experienced local guide. Bucher Travel Inc. and the Lucerne Tourist Office are able to organize for you and your guests entertaining trips around local attractions. It is possible to visit in a city tour of Lucerne the medieval part of

town and make afterwards a tour around the picturesque surroundings of Lucerne e.g. Mount Pilatus, the Glass Factory & Mount Stanserhorn, etc. The excursions are arranged locally on a daily base depending on weather conditions and requests. To get more information about the programmes and to book an activity, please visit www.EFCF.com – Registration – Spouse Programmes or contact in advance Bucher Travel Inc., Philippe Heiz, philippe.heiz@buchertravel.ch, +41 41 418 55 42 and/or visit www.luzern.com. The EFCF team can support you on-site at the registration desk in finding further offers and opportunities, except during the main registration time (Tuesday afternoon, Wednesday morning). Accompanying persons may participate in the «Swiss Surprise» and «Dinner on the Lake» for CHF 120.– per person as well as in the lunches on the terrace of the KKL. Please purchase guest tickets as long as they are available during your on-line registration. Additional lunch tickets are only on-site sold until it is fully booked. The exhibitions can always be visited for free.

Tutorial Fee

The fee for the optional Fuel Cell Tutorial by Dr. Gunther G. Scherer (PSI Villigen) and MER Dr. Jan Van herle (EPF Lausanne) covers the lectures, with complete copies of the six hour program, a business lunch and refreshments and the free visit to the exhibition. You do not need to be registered for the Scientific Conference in order to participate in the Tutorial. Please indicate whether or not you wish to take part in these tutorials when you register on-line at www.EFCF.com – record card («Registration, Buttons» «Conference-Registration» and) «On-line Registration». The Tutorial Fee is CHF 500.–.

Conference Services

All participants enjoy full conference privileges, but accompanying persons and guests are kindly asked to buy tickets for meals and social events at the registration desk. The following conference privileges that are contained in the conference package are:

- Participation in the conferences and access to the exhibition
- A copy of the electronic proceedings
- Download of presentations accessible with author permission
- Participation in the following networking events:
Tuesday: Welcome Reception with drinks and snacks
Thursday: Dinner on the Lake on the historical paddle wheel steamers
- Three business lunches (Wednesday to Friday)
- Refreshments during intermissions and breaks.

Not included: Swiss Surprise on Wednesday night. Please order tickets when registering for the conference.

Conference On-line Registration ► www.EFCF.com

Please register On-line for all Forum events (conference, tutorial, side events) and pay by credit card or via bank, if sufficiently in advance. Please also use the on-line registration option for easy hotel reservations finally handled by Bucher Travel Inc. Credit cards are needed to reserve your hotel room, but hotel bills are paid when you depart from Lucerne.

www.EFCF.com record card «Registration» Buttons» Conference-Registration» and «On-line Registration» or Manual Link Input www.EFCF.com/index.php?id=1725

If you are unable to register On-line, please download from www.EFCF.com or order from forum@efcf.com the Off-line **Registration Form** and the **Hotel Reservation Form**. Complete these forms and return them by e-mail or fax to the address shown on the bottom of each form.

Exhibition On-line Registration ► www.EFCF.com

Companies wishing to participate in the exhibition can also register On-line or complete the **Exhibition Registration Form in the Exhibition Packages** and return it to the European Fuel Cell Forum AG (the address shown on the bottom of the form). Payment is possible via bill and bank transfer.

www.EFCF.com record card «Registration», Buttons «Exhibitors-Registration» and «On-line Registration» or Manual Link Input www.EFCF.com/index.php?id=1378

If you have any questions concerning the exhibition please contact exhibition@efcf.com Uta Mummert +49 177 481 14 08.

Free Project Meeting Organisation Service Support Service Enquiry ► www.EFCF.com

Stakeholders, especially project managers, who are interested in the organisational support service for their project meetings, new project set-up meetings or any other meetings, can find further information on

www.EFCF.com record card «Registration», Button «Project Meeting Support» or Manual Link Input www.EFCF.com/index.php?id=1703.

Or order the Free Project Meeting Organisation Support Enquiry Form from forum@efcf.com, Please complete and return the form to the address shown on the bottom of the form.

The following admission fees apply:

Students, Trainees, Unemployed

Full-time students (age 26 or younger), trainees and no-income persons

Student fee (with valid identification) CHF 700.–

Academic Staff, Government, Consultants

Admission of academic staff etc. CHF 1400.–

Industry, Trade and Commerce

Fuel cell developers, manufacturers and distributors pay an extra CHF 600 to support the participation of students and trainees. The 11th EUROPEAN SOFC & SOE FORUM 2014 will provide an excellent platform for finding employment or for head hunting new employees. Participants from industry and commerce benefit from the student support contribution.

Admission of industry etc. CHF 2000.–

Surcharge for Late Registration

Extra fee for late registration from 1st May 2014 CHF 100.–

Extra fee for on-site registration from 1st July 2014 CHF 250.–

One-Day Tickets

One-day registration includes one conference proceedings in electronic form and one Forum Agenda as well as all conference privileges for the day. Please register On-line at www.EFCF.com in advance or pay at the registration desk CHF 700.–

Swiss Surprise (optional)

Tickets for the «Swiss Surprise» event on Wednesday evening (2nd July 2014) are sold on a first-come-first-served basis. As participation is limited to 80 persons, the event is not included in the conference fee. Please order your tickets On-line at www.EFCF.com when you register for the 11th EUROPEAN SOFC & SOE FORUM 2014. (CHF 120.– p.p. incl. 8 % VAT)

Payments of the Registration Fee

Bucher Travel Inc. handles all On-line conference registrations and hotel reservations. The registration fee can be paid by credit card or via bank transfer if sufficiently ahead of time. Payments are confirmed in writing, institutions and companies may request invoices for registration of employees on company stationery. Please accept all bank charges related to the transfer expenses to your payment. All payments must be made in Swiss Francs (CHF). Foreign currency exchange rates for March 2014: 1 CHF ≈ 0.82 EUR ≈ 1.14 USD ≈ 118 JPY ≈ 0.69 GBP. Registrations are accepted as long as space is available.

Cancellation of Registration

Written cancellations of confirmed registrations should reach Bucher Travel Inc. before 31st May 2014. Fees already paid will be refunded, however a charge of CHF 300.– is applicable to cover administration expenses and the cost of the Electronic Proceedings that will be mailed to the registrant after the event. No refunds can be made for cancellations received after 31st May 2014. All withdrawing registrants will receive the Electronic Proceedings of the 2014 conference.

The event is endorsed by

ALPHEA

Rue Jacques Callot
57600 Forbach/France

Bundesverband Mittelständische

Wirtschaft, Unternehmerverband
Deutschlands e. V./Landesverband Schweiz
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SIA (Berufsg. Technik und Industrie)

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Swiss Academy of Engineering Sciences

Seidengasse 16, 8001 Zurich/Switzerland

Swiss Gas and Water Industry Association

Eschengasse 10
8603 Schwerzenbach/Switzerland

TEMONAS Tool Services

TEchnology MONitoring and ASsessment
Tool–FCH–JU development consortium

UK HFC Association

c/o Synnogy, Church Barn
Fullers Close Aldwincle
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Vätgas Sverige

Drottninggatan 21
411 14 Gothenburg/Sweden

VDI Verein Deutscher Ingenieure

Graf-Recke-Strasse 84
40239 Düsseldorf/Germany

Wiley – VCH Publishers

Boschstrasse 12
69469 Weinheim/Germany

Hotel Reservation

➡ www.EFCF.com

The hotel can also be booked On-line: www.EFCF.com record card «Registration», Button «Hotel Booking» or Manual Link Input www.EFCF.com/index.php?id=1707

Bucher Travel Inc. handles all hotel bookings and will confirm the hotel reservations by email and send you information about Lucerne. Hotel expenses are paid at the hotel to the hotel management. If there are further needs contact Philippe Heiz, philippe.heiz@buchertravel.ch, +41 41 418 55 42 and/or visit alternative common hotel booking portals. The European Fuel Cell Forum is not responsible for hotel accommodations. Please make sure to book and register ONLY ONCE!

Lucerne

Lucerne is located in the heart of Switzerland on the shores of Lake of Lucerne. Admired for its beauty and tranquillity, historic paddle wheel steamers connect the romantic town to many piers and charming sites. From Lucerne there you may ascend the picturesque «Mount Rigi», the steep «Mount Pilatus» or reach the high elevation of the Swiss Alps. Cogwheel mountain trains (Funiculars), cable cars and aerial tramways take you through alpine scenery to breath-taking panoramic views of the heights of Switzerland. Many of the most popular tourist destinations in Switzerland can be reached in only 1–3 hours of travel.

Lucerne itself is built along the shores of «Lake Lucerne» and the «Reuss River» which flows out of the lake. The medieval part of Lucerne is closest to the waterfront. Bridges connect both banks of the river, the famous wooden bridge «Kapellbrücke» has been perfectly rebuilt by local artisans after total destruction by a catastrophic fire in 1993. Lucerne is located in the heart of Western Europe so is an ideal place for further travels around the continent before or after the conference.

Travel Arrangements



TRAVEL INFORMATION

Swiss International Air Lines is proud to be the Official Carrier for the 11th EUROPEAN SOFC & SOE FORUM 2014 and is offering special Congress Fares to all participants. These special fares offer reductions of up to 20% depending on the fare type, route and space availability.

Congress fares are valid on the entire SWISS route network for flights to Switzerland, including flights operated by partner airlines under an LX flight number. These fares are bookable for the travel period 14 days prior to and 14 days after the event.

Only **registered congress participants and exhibitors** can take advantage of this offer. After successful On-line registration (see also button Registration and Hotel Reservation) the EVENTCODE will be provided for an easy and convenient booking through SWISS.COM via the following link **www.swiss.com/event**. Please enter your email address and the **EVENTCODE** that is provided on your registration slip.

The special SWISS congress fare is marked with a «C». It may not necessarily be the lowest fare but it offers more flexibility in the event of rebooking or cancellation.

How to get to Lucerne

By car or train:

The Gotthard trans-alpine autobahn and railway pass through Lucerne and provide easy access by car or train from north or south.

By airplane:

Zurich is the gateway for the annual fuel cell conference of the 11th EUROPEAN SOFC & SOE FORUM 2014. Choose Zurich as your destination, the official carrier SWISS offers special conference rates for convenient direct flights to Zurich from all major locations. From here you can take a direct train from Zurich Airport to Lucerne. The train station is below the airport terminal complex. Direct trains leave every 47 minutes past the hour. There are three more connections per hour with one train change in Zurich. The pleasant train journey takes a little bit more than one hour. Most hotels are within walking distance from the Lucerne train station.

We hope you have a pleasant journey!
And we look forward to seeing you in Lucerne!



European Fuel Cell Forum

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