FINAL ANNOUNCEMENT

19th conference in series of the European Fuel Cell Forum in Lucerne

5th EUROPEAN PEFC AND H₂ FORUM 2015

30 June – 3 July 2015

Kultur- und Kongresszentrum
Luzern (KKL) Lucerne/Switzerland
Chaired by Prof. Dr. Frano Barbir

International FUEL CELL and HYDROGEN
Conference with Exhibition and Green Salon Marketplace
including All Hydrogen Fuel Cells (PEFC, HTPEM, AFC, PAFC)
Direct Alcohol Fuel Cells (DMFC) & H₂ production, storage, infrastructure

REGISTER now on www.EFCF.com Convenient hotel rooms are blocked until 30 April 2015
### Schedule of Events

**Motto 2015:** Bringing Hydrogen Fuel Cells & Hydrogen, as part of our energy future, closer to deployment.

#### Tuesday, 30 June 2015

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<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>11:00–16:00</td>
<td>Exhibition set-up</td>
</tr>
<tr>
<td>09:30–10:00</td>
<td>Tutorial Registration (KKL, Clubroom, 2nd Floor above Auditorium)</td>
</tr>
<tr>
<td>10:00–17:00</td>
<td>Tutorial held by Dr. Günther G. Scherer &amp; Dr. Jan Van herle</td>
</tr>
<tr>
<td>16:00–18:00</td>
<td>Poster pin-up (continued on following morning). Official opening of the exhibition. On-site Registration (continued on following days)</td>
</tr>
<tr>
<td>18:00–19:00</td>
<td>Welcome gathering on splendid terrace of the KKL (2nd floor)</td>
</tr>
<tr>
<td>from 19:00</td>
<td>Thank You Dinner with special invitation only</td>
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</tbody>
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#### Wednesday – 1 July 2015

<table>
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<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>08:00–16:00</td>
<td>On-site Registration is open, to be continued on following days</td>
</tr>
<tr>
<td>08:00–09:00</td>
<td>Speakers’ Breakfast (info at the registration desk)</td>
</tr>
<tr>
<td>09:00–18:00</td>
<td>Conference sessions 1–6 including &quot;International Overviews and Programmes&quot; from USA, Europe and South Africa as well as on &quot;Automotive FC Development in Asia with Focus China&quot;, poster presentation by authors, networking and exhibition</td>
</tr>
<tr>
<td>09:00–18:00</td>
<td>Poster area and exhibition are open</td>
</tr>
<tr>
<td>09:00–18:00</td>
<td>&quot;Green Salon&quot;, B2B meeting point and marketplace for a sustainable mobility and energy systems – &quot;Well to Wheel&quot; with focus on FCH technology including complementary technologies</td>
</tr>
<tr>
<td>18:30–23:00</td>
<td>Swiss Surprise Evening – separate registration for 80 places to be booked on a first-come-first-served basis</td>
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#### Thursday – 2 July 2015

<table>
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<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>08:00–09:00</td>
<td>Speakers’ Breakfast, Registration continuation</td>
</tr>
<tr>
<td>09:00–18:00</td>
<td>Conference sessions 7–12 including keynotes on &quot;Electrocatalysis of Oxygen Reduction Reaction&quot; as well as on &quot;Status and future of hydrogen technologies (production/purification and storage)&quot;, poster presentation by authors, networking and exhibition</td>
</tr>
<tr>
<td>13:00</td>
<td>Press Conference by invitation only and continued in the following event</td>
</tr>
<tr>
<td>09:00–18:00</td>
<td>&quot;Green Salon&quot;, B2B marketplace 2nd day, VIP reception and Hydrogen-Partyy</td>
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<tr>
<td>19:30–23:00</td>
<td>Great Dinner on the Lake</td>
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#### Friday – 3 July 2015

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>08:00–09:00</td>
<td>Speakers’ Breakfast, Registration continuation</td>
</tr>
<tr>
<td>09:00–15:30</td>
<td>Conference sessions 13–17 on catalyst structures, manufacturing, FC modelling, Stack and system integration, operation, H₂ production, Portable/Back-up/Renewable, FC Mobility applications, networking and exhibition</td>
</tr>
<tr>
<td>15:30–16:15</td>
<td>Closing &amp; Award Ceremony for best: poster, scientific contribution &amp; medal of honour for outstanding FCH life work</td>
</tr>
<tr>
<td>16:15–17:00</td>
<td>Goodbye coffee and travel refreshment in front the Auditorium</td>
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</table>
The promotion of Fuel Cell and Hydrogen (FCH) technologies through conference, literature and media is the sole purpose of the European Fuel Cell Forum (EFCF). The Forum provides technical sessions, keynotes from internationally renowned speakers, a supporting industry exhibition, a FCH B2B market place “Green Salon”, a tutorial as well as international project meeting support and recreational networking events at a very charming, inspirational location. The European Fuel Cell Forum transforms every summer Lucerne, in the Heart of Switzerland, into the capital of fuel cells and hydrogen. More than 6,000 stakeholders receive the invitation to participate to this international recognised event, with attendants from about 30 countries from 5 continents. About 180 oral contributions and posters will be presented in 27 partially parallel sessions during 3 intensive and stimulating days. Besides the high level scientific content, the status, targets, and future calls of programmes in Europe, USA and South Africa will be outlined. The comprehensive State-of-the-Art overview is completed by excellent keynote presentations. Two dedicated poster sessions are held, while the posters are accessible to the audience for 2 ½ days. 240 participants from 32 countries attended in 2013 and more than 460 from 34 countries in 2014.

Following the International Board of Advisors (www.EFCF.com/IBoA), this year’s event focuses on hydrogen- (H₂FC), direct alcohol- and microbial-fuel cells, electrolysis and hydrogen production, storage and infrastructure (H₂PSI) only. Like in 2013 no high temperature fuel cells such as ceramic fuel cells are included in the programme. Based on the good number of contributions on the called topics, 250 to 300 participants are expected, offering numerous opportunities of top level technical exchange and networking.

The EFCF now has a heritage of 21 years! Already in 1994 the 1st European Fuel Cell Forum attracted highly qualified international speakers as well as a global audience. Over the years a high quality conference series has been established, where topics alternate yearly. In odd years the conference focuses on hydrogen and hydrogen fuel cell technologies. In even years the conference concentrates on Solid Oxide technologies, both fuel cells and electrolysis. This track record of conferences with high technical level builds the base for this years’ edition, the 5th European PEFC and H₂ Forum 2015. Many fruitful contacts and promising solutions have been initiated around 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. 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 EFCF. With strong dedication, our goal is to continue to grow EFCF 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 industry.

We would like to thank our highly recognised Chair: Prof. Dr. Frano Barbir from the University of Split, Croatia for his much appreciated collaboration and highly experienced input. Together with him 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. Special thanks go also to the Scientific Advisory Board (SAC) for their review work, to Dr. Günther G. Scherer for his fruitful inputs and contacts and last but not least to our staff for fastidiously taking care of all the organisational details. Together with the numerous participants and exhibitors, the stage has been set for an exuberant 5th European PEFC and H₂ Forum 2015.

We look forward to seeing you in Lucerne Olivier Bucheli & Michael Spirig
The 2015 conference stands under the Motto: Bringing Hydrogen Fuel Cells & Hydrogen, as part of our energy future, closer to deployment.

At the 5th European PEFC and H2 Forum 2015 the focus is on polymer electrolyte fuel cells and hydrogen production and storage, but other fuel cell types and fuels will be represented as well such as alkaline, direct alcohol, formic acid and microbial fuel cells. The topics range from materials to systems and FC&H demonstrations.

Addressing issues of science, engineering, applications, market possibilities and future trends, the 5th European PEFC and H2 Forum 2015 is aiming at a fruitful dialogue between researchers, engineers, and manufactures, between hardware developers and potential users, between academia and industry. The technical program comprises current results, challenges and trends in the above given fields. Business opportunities will be identified for manufacturers, suppliers and investors. 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 the Scientific Advisory Committee www.EFCF.com/SAC. The Committee has the task of ensuring full independence in all scientific and technical manners. All papers presented as lectures or posters will be collated in the electronic proceedings, 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.

Prof. Dr. Frano Barbir is Professor and Chair of Thermodynamics at Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, University of Split, Croatia. He has been actively involved in fuel cell technology R&D, engineering and applications since 1989, working in U.S. as a researcher and R&D manager in both industry (Energy Partners, Proton Energy Systems) and at universities (Uni of Miami, Uni Connecticut) and in Turkey as the Associate Director of Science and Technology at UNIDO – International Center for Hydrogen Energy Technologies.

His research interests include heat and mass transfer in PEM fuel cells, effects of operational conditions on fuel cell performance and durability, design of fuel cells and fuel cell stacks, fuel cell applications, and hydrogen energy concept and its role in energy future. He has authored and/or co-authored more than 200 papers on FCH published in scientific and technical journals, books, encyclopaedias and conference proceedings, as well as 7 U.S. patents on various aspects fuel cell stack and system design and operation. His book, PEM Fuel Cells: Theory and Practice, published by Elsevier/Academic Press in 2005 (2nd edition 2013), is being used as a textbook at many universities all over the world. He is the Emeritus Editor of the International Journal of Hydrogen Energy (after serving for 13 years as the Associate Editor), and he serves on the Board of Directors of the International Association of Hydrogen Energy.

Prof. Barbir holds a Dipl.-Ing. degree in mechanical engineering and an M.Sc. degree in chemical engineering both from University of Zagreb, Croatia and a Ph.D. degree in mechanical engineering from University of Miami, Coral Gables, FL.
The Tutorial will provide the basic concepts required to address the general but also more specialized 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 (H₂FC) and High Temperature Fuel Cells (HTFC) as well as Hydrogen Production, Storage and Infrastructure (H₂PSI). 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 addressed 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.

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 esign, 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)
- **17:00** End of Tutorial, Possibility to visit the exhibition

The Tutorial language is English. Each participant will receive complete documentation of the Tutorial lectures. Tutorial registration fee for all participants is CHF 500.–.
Date and Place
The 5th European PEFC and H₂ Forum 2015 will be held from 30 June to 3 July 2015 in the renowned Kultur- und Kongresszentrum Luzern KKL in Lucerne/Switzerland. The parallel lectures will be presented in the “Auditorium” and in the “Club Rooms”. The KKL is located next to the Railway Station on the shore of Lake Lucerne. Boat traffic, waterfront activities, as well as spectacular views of the old town and snow-capped mountains add to the charm of the venue.

Technical Program ➤ www.EFCF.com
This conference will deal exclusively with development and application of hydrogen-, direct alcohol- and microbial-fuel cells, electrolysis and hydrogen production, storage and infrastructure. Worldwide fuel cell and hydrogen programmes and strategic deployment projects from Europe, USA and South Africa as well as an overview of automotive FC development in Asia, especially China will be highlighted by top-class representatives.

In the field of fuel cells, the technical contributions range from materials and catalysts, components, stack and systems integration to applications covering the whole value chain. The sessions are grouped in material research, diagnostics, characterisation, modelling, testing, operation and applications as well as technology assessments. In the field of hydrogen the session include H₂ production with emphasis on electrolysis, H₂ storage material and system as well as fuel processing and purification. Keynotes of recognized experts on “electrocatalysis” and “FC applications (Toyota tbc)” as well as on “the status and future of hydrogen technologies” complete the conference to a comprehensive State-of-the-Art overview. An attractive four-day programme, starting with tutorial, offers technical lectures, poster presentations, exhibits, product presentations and demonstrations. All together, 180 contributions will be presented i.e. 125 oral presentations in 26 sessions and 55 posters in two additional extended poster sessions.

Exhibition ➤ www.EFCF.com/ExReg
Suppliers exhibit their products and services to developers and the FCH Industry. Among others, materials, components (sensors, pumps, valves, tube, filters etc.), control devices, diagnosis tools, test benches, manufacturing technologies, qualification & purification systems are exhibited on the ground and first floor, in front of the lecture hall, where refreshments are served during the breaks and networking activities take place, i.e. directly in front of the booths. If you like to book a booth, please visit www.EFCF.com/ByB or please contact the European Fuel Cell Forum for further information. The names of confirmed exhibitors are listed in the rear part of the booklet and the Exhibitor List on www.EFCF.com/Exhibition.

Green Salon ➤ www.EFCF.com/GS
Each year EFCF organizes also a regional (Switzerland and neighbouring countries) Energy and Mobility related event to increase the public and political awareness. Focussed information is provided to selected stakeholder groups. In continuation to 2013 a B2B Market Place for Sustainable Energy & Mobility Solutions called “Green Salon takes place on 1 & 2 July. It is a show from OEMs and operators visualizing from well to wheel the principal readiness.
and availability of the technical elements. H₂ and FC applications together and in interaction with complementary technologies perform as the future energy mobility solution. High lights on 2 July are: The VIP reception for decision makers from politics, finances, authorities, industries and early user groups like fleet and filling station owners and filling station owners; The Hydrogen Party for the public also takes place on 2 July in the afternoon. The “Green Salon” features: Visibility, Contacts, Panel Discussions, Round Tables, Product Presentations, Offers. It results in: Comprehension, Publicity, Awareness, Partnership, Implementation Opportunities

International Project Meetings
As many international experts participate in the 5th European PEFC and H₂ Forum 2015, Monday and Tuesday of the conference week have become more and more established as an ideal opportunity for meetings. Thus take the chance to schedule your meetings on those days for your ongoing projects, setting-up of new projects (FCH JU 2015 call is open) or for other topic related events such as an IEA workshop.

To simplify project initiators’ and organizers’ life, the organisation of such events for registered participants and exhibitors are supported by our organization. Get more information at www.EFCF.com (EFCF 2015, Forum, Networking plus).

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 978-3-905592-19-1. Proceedings of previous European Fuel Cell Forum events will also become available under their ISBN on www.EFCF.com/Lib (Proceedings with ISBN). Authors have also the possibility to withdraw their contribution from the web-publication, if they wish so, e.g. to publish the work "elsewhere" in a scientific publication. The Scientific Advisory Board (SAC) 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: 3.15; 2013: 1.55, 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/PP or …/Download).

Presentation available with approved participant login ➤ www.EFCF.com/Presentation
At the EFCF conferences, participants are not permitted to take pictures of the presentations (literary property). This allows presenters to show their latest results, which are e.g. intended for publication in a scientific paper at a later date. However, presenters usually indicate their willingness to share their presented and eventually copied or edited slides to the conference registrants. Upon receiving the authors permission presentations will be made available on www.EFCF.com/Lib for all registered participants of the European Fuel Cell Forum with an approved login. To obtain down-load rights after the conference, post-registering is possible by "filing Contact Data" on the www.EFCF.com/Presentation 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 of industry, laboratories, academic institutions or governments, investment groups and consultants or electric power and automotive 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 5th European PEFC and H₂ Forum 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, power & transport industry meet OEMs and users meet providers. Participants from all continents are invited and welcome.
**Wednesday, 1 July 2015**

### Session Programm

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<td>Chair: Frano Barbir, M. Spirig, O. Bucheli</td>
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<tr>
<td><strong>P1: Opening Session</strong></td>
<td>09:00</td>
<td>A</td>
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<tr>
<td>International Overview – EU, US and South Africa (HySA) (A01)</td>
<td>Welcome by the Organizers (A0101)</td>
<td></td>
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<tr>
<td>Michael Spirig, Olivier Bucheli</td>
<td>European Fuel Cell Forum, Lucerne/Switzerland</td>
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<tr>
<td>Welcome by the Chair (A0102)</td>
<td>Frano Barbir</td>
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<tr>
<td>FESB University of Split, Split/Croatia</td>
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<tr>
<td>Welcome to Switzerland the Smart Research Place (A0103)</td>
<td>Stefan Oberholzer, Rolf Schmitz, Walter Steimann</td>
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<td>Swiss Federal Office of Energy, Bern/Switzerland</td>
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<tr>
<td>The Status of Hydrogen Fuel Cells and H₂ R&amp;D in the Fuel Cell and Hydrogen Joint Undertaking Program (A0104)</td>
<td>Joao Serrano Gomes</td>
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<tr>
<td>DOE Hydrogen and Fuel Cells Program (A0105)</td>
<td>Nancy Garland</td>
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<td>U.S. Department of Energy, Washington (DC)/USA</td>
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<tr>
<td>Electrochemical Hydrogen Compression and Separation (EHC&amp;S): Demonstrator Developed by HySA Infrastructure (A0106)</td>
<td>Dmitri Bessarabov</td>
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<td>HySA Infrastructure Center (Hydrogen South Africa), North-West University Faculty of Engineering, Potchefstroom/South Africa</td>
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<tr>
<td><strong>Break – Ground + First Floor in the Exhibition &amp; in the Poster Session</strong></td>
<td>10:30</td>
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### Poster Session I

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<td><strong>Poster Session I</strong></td>
<td>09:00</td>
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<tr>
<td>Covering All Oral Session Topics 22 – 25</td>
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<tr>
<td>Characterization of FC materials</td>
<td>09</td>
<td>B</td>
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<tr>
<td>H₂ production: Alkaline electrolyzers</td>
<td>09</td>
<td>B</td>
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<tr>
<td>Non-precious metal FC catalysts</td>
<td>10</td>
<td>B</td>
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<tr>
<td>FC membranes &amp; other components</td>
<td>11</td>
<td>B</td>
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<tr>
<td>Keynote: Electrocatalysis of oxygen reduction reaction</td>
<td>12</td>
<td>B</td>
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<tr>
<td>Keynote: Status and future of hydrogen technologies</td>
<td>12</td>
<td>B</td>
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<tr>
<td>FC monitoring &amp; diagnostics</td>
<td>12</td>
<td>B</td>
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<tr>
<td>H₂ storage in metal hydrides</td>
<td>12</td>
<td>B</td>
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<tr>
<td>New Pt-alloy FC catalysts</td>
<td>13</td>
<td>B</td>
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<tr>
<td>Fuel processing and hydrogen purification</td>
<td>13</td>
<td>B</td>
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<tr>
<td>Degradation studies and modelling</td>
<td>15</td>
<td>B</td>
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<tr>
<td>Membranes for IT &amp; HT PEMFC</td>
<td>15</td>
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<tr>
<td>FC fault and degradation modelling</td>
<td>16</td>
<td>B</td>
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<tr>
<td>Industrial applications/Microbial fuel cell Assessments</td>
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<td>B</td>
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<tr>
<td>New catalyst structures and manufacturing processes</td>
<td>17</td>
<td>B</td>
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<tr>
<td>H₂ production</td>
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<tr>
<td>FC modelling and simulations</td>
<td>18</td>
<td>B</td>
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<tr>
<td>FC Mobility applications/Stack and system integration</td>
<td>18</td>
<td>B</td>
</tr>
<tr>
<td>Stack &amp; system integration, operation strategies</td>
<td>19</td>
<td>B</td>
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<tr>
<td>Portable/Back-up/Renewable</td>
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<tr>
<td>P3: FC-H₂ Mobility System (Toyota)</td>
<td>20</td>
<td>A</td>
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<tr>
<td>P4: Closing Ceremony</td>
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<td>A</td>
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**Legend:** Px = Plenary
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
<th>Presenter(s)</th>
<th>Notes</th>
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<tr>
<td>11:00</td>
<td>P2: Automotive FC Development in China (A02)</td>
<td>Auditorium</td>
<td>Jianbo Zhang, Department of Automotive Engineering, Tsinghua University, Beijing/China</td>
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<tr>
<td>11:25</td>
<td>5 Min to change to Club Room for B03 Session</td>
<td>Club Room</td>
<td>tbc: Mogens Mogensen, Trent Molter</td>
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<tr>
<td>11:30</td>
<td>Overview of automotive FC development in China (A0201)</td>
<td>Auditorium</td>
<td>Jianbo Zhang, Department of Automotive Engineering, Tsinghua University, Beijing/China</td>
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<tr>
<td>11:30</td>
<td>H₂ production: Alkaline electrolyzers (B03)</td>
<td>Club Room</td>
<td>tbc: Mogens Mogensen, Trent Molter</td>
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<tr>
<td>11:45</td>
<td>Pressurized alkaline electrolyser with high efficiency and wide operating range – the project RESelyser (B0301)</td>
<td>Club Room</td>
<td>Regine Reissner (1), G. Schiller (1), E. Guelzow (1), Y. Alvarez-Gallego (2), W. Doyen (2), B. van Craenendonck (3), J. Vaes (3), J.R. Bouwen (4), (1) DLR German Aerospace Center, Inst of Engineering Thermodynamics, Stuttgart/Germany, (2) VITO NV, Mol/Belgium, (3) Hydrogenics Europe NV, Oevel/Belgium, (4) Technical Uni of Denmark (DTU), Department of Energy conversion and Storage, Roskilde/Denmark</td>
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<tr>
<td>12:00</td>
<td>Start/Stop Cycling Test in a PBI-based High Temperature Polymer Electrolyte Membrane Fuel Cell (A0301)</td>
<td>Auditorium</td>
<td>Sébastien Rosini, Fabrice Micoud, Yannick Foureron, Hortense Laforet CEA-LITEN, Grenoble/France</td>
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<tr>
<td>12:00</td>
<td>Impact of Accelerated Stress Tests on High Temperature PEMFC Degradation (A0303)</td>
<td>Auditorium</td>
<td>Dana Schönvogel (1), Maren Rastedt (1), Peter Wagner (1), Michael Wark (2), Alexander Dyck (1), (1) NEXT ENERGY • EWE Research Centre for Energy Technology, Oldenburg/Germany, (2) Inst for Chemistry, Carl von Ossietzky Uni, Oldenburg/Germany</td>
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<tr>
<td>12:15</td>
<td>Pressure and Temperature Influence on Alkaline Electrolysis Performance (B0304)</td>
<td>Club Room</td>
<td>Ulrich R. Fischer, André Voigt, Daniel Tannert, Christian Ziem, Hans-Joachim Krautz, Brandenburg Uni of Technology Cottbus-Senftenberg, Department of Power Plant Technology, Hydrogen Research Center, Cottbus/Germany</td>
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<tr>
<td>11:30</td>
<td>Start-up/shut-down effect on PEMFC stack durability (A0301)</td>
<td>Auditorium</td>
<td>F. Javier Pinar (1), Amanda Schlüterbusch (1,2), Peter Wagner (1), Michael Wark (2), Alexander Dyck (1), (1) NEXT ENERGY • EWE Research Centre for Energy Technology, Oldenburg/Germany, (2) Inst for Chemistry, Carl von Ossietzky Uni, Oldenburg/Germany</td>
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<tr>
<td>11:45</td>
<td>Phase inversion process of novel membranes for alkaline electrolysis (B0302)</td>
<td>Club Room</td>
<td>Dariusz Burt (1), Meike V. F. Schlupp (1), Alexander Bork (1), Corsin Battaglia (1), Ulrich F. Vogt (1,2), (1) Materials for Energy Conversion, Swiss Federal Laboratories for Material Science and Technology (EMPA), Dübendorf/Switzerland, (2) Faculty of Environment and Natural Resources, Crystallography, Albert-Ludwigs-Uni, Freiburg/Germany</td>
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<tr>
<td>12:00</td>
<td>Novel gas separation membranes for alkaline water electrolysis (B0303)</td>
<td>Club Room</td>
<td>Dariusz Burt (1), Meike V. F. Schlupp (1), Andreas Züttel (2), Corsin Battaglia (1), (1) Materials for Energy Conversion &amp; Swiss Federal Laboratories for Material Science and Technology (EMPA), Dübendorf/Switzerland, (2) EPFL SB ISIC PH A2 354 (Bâtiment PH), Station 3, Lausanne/Switzerland, (3) Faculty of Environment and Natural Resources, Crystallography, Freiburg/Germany</td>
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<tr>
<td>12:15</td>
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<td>Club Room</td>
<td>Ulrich R. Fischer, André Voigt, Daniel Tannert, Christian Ziem, Hans-Joachim Krautz, Brandenburg Uni of Technology Cottbus-Senftenberg, Department of Power Plant Technology, Hydrogen Research Center, Cottbus/Germany</td>
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<tr>
<td>12:30</td>
<td>Lunch – 2nd Floor on the Terrace, Coffee – Ground + First Floor in the Exhibition &amp; in the Poster Session</td>
<td>Club Room</td>
<td>tbc: Mogens Mogensen, Trent Molter</td>
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<td>Time</td>
<td>Session/Room</td>
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<tr>
<td>13:15</td>
<td>Poster Session I covering All Oral Session Topics (A04)</td>
<td>- Poster Session I covering All Oral Session Topics (A04)</td>
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</tbody>
</table>
| 14:30 | Auditorium (tbc: Frano Barbir, Joachim Scholta) | **Visualization of GD Liquid Water Invasion below Channel and Rib by X-ray Tomographic Microscopy (A0501)**
A. Lamibrac (1), F. Marone (2), F. Bühler (1); (1) Electrochemistry Laboratory, Paul Scherrer Inst. (PSI), Villigen/Switzerland, (2) Swiss Light Source, Paul Scherrer Inst. (PSI), Villigen/Switzerland |
| 14:45 | | **Uptake of protic electrolytes by polybenzimidazole-type polymers – Model for the adsorption isotherm and electrolyte/polymer interactions (A0502)**
| 15:00 | | **Critical Parameters and Control Strategies for Comparable PEFC Stack Characterization (A0503)**
Jens Mützel, Erich Guelzow, K. Andreas Friedrich, German Aerospace Center (DLR), Stuttgart/Germany |
| 15:15 | | **The development of multi-layered coating and method for the aluminum bipolar plates of a direct methanol fuel cell (A0504)**
S. Gorelov (1), T. Maik John (2), G. Dura (1), J. Wartmann (1), A. Heinzl (1); (1) The Fuel Cell Research Center, Duisburg/Germany, (2) PT&B SILCOR GmbH, Barleben/Germany |
| 15:30 | | **Calculation of effective transport properties of partially saturated gas diffusion layer (A0505)**
Tomasz Bednarek, Georgios Tsotridis, European Commission, Directorate-General Joint Research Centre, Petten/The Netherlands |
| 15:45 | | "Pressed onto" 3Omega method for measuring the thermal properties of gas diffusion layers of fuel cells and the like (A0506)
A. Jacquot (1), Y. Barb (1), M. Jægge (1), E. Firat (2); (1) Fraunhofer-Institut für Physikalische Measurementstechnik, Freiburg/Germany, (2) Zentrum für BrennstoffzellenTechnik ZBT GmbH, Duisburg/Germany |
| 16:00 | Break – Ground + First Floor in the Exhibition & in the Poster Session | - Break – Ground + First Floor in the Exhibition & in the Poster Session |

**Wednesday, 1 July 2015**

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<tr>
<th>Time</th>
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<p>| 16:00 | Break – Ground + First Floor in the Exhibition &amp; in the Poster Session | - Break – Ground + First Floor in the Exhibition &amp; in the Poster Session |</p>
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<tr>
<th>Time</th>
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<th>Location</th>
<th>Speaker(s)</th>
<th>Title</th>
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<tr>
<td>16:30</td>
<td>16:30</td>
<td>Auditorium</td>
<td>Di-Jia Liu, Argonne National Laboratory, Argonne (IL)/United States</td>
<td>Non-predictive metal FC catalysts (A06) Non-Precious Metal Fuel Cell Catalysts Prepared By Rationally Designed Porous Materials (A0601)</td>
</tr>
<tr>
<td>16:45</td>
<td>16:45</td>
<td>Auditorium</td>
<td>Andrew John Dixon, Uni of Leeds, Leeds/United Kingdom</td>
<td>Assessment of potential Co/Fe-N-C active sites arising from heat treated carbon-supported porphyrins (A0602)</td>
</tr>
<tr>
<td>17:00</td>
<td>17:00</td>
<td>Auditorium</td>
<td>Johanna K. Dombrovskis, Anders E.C. Palmqvist, Chalmers University of Technology, Chemical and Biological Engineering, Göteborg/Sweden</td>
<td>Transition metal ion-chelating ordered mesoporous carbons as non-noble metal PEMFC catalysts (A0603) Non-Precious Metal Fuel Cell Catalysts Prepared By Rationally Designed Porous Materials (A0601)</td>
</tr>
<tr>
<td>17:15</td>
<td>17:15</td>
<td>Auditorium</td>
<td>MinJoong Kim, DoHwan Nam, SungJong Yoo, JongHyun Jang, HyoYoungJu Kim, Eun-Ae Cho, HyukSang Kwon, Dept. of Materials Science and Engineering, Korea Advanced Inst. of Science and Technology (KAIST), Daejeon/Republic of Korea</td>
<td>Synthesis of nanofibrous Co-CNxF catalysts with high oxygen reduction reaction activity in alkaline media (A0604)</td>
</tr>
<tr>
<td>17:30</td>
<td>17:30</td>
<td>Auditorium</td>
<td>A. Carbone (1), A. Saccà (1), R. Pedicini (1), I. Gatto (1), A. Romeo (2), L. Monisi Scolaro (2), M. A. Castriciano (3); (1) Istituto di Tecnologie Avanzate per l'Energia &quot;Nicola Giordano&quot;, Messina/Italy, (2) Dipartimento di Scienze Chimiche, Uni of Messina, Messina/Italy, (3) Istituto per lo Studio dei Materiali Nanotrasferribili, c/o Dipartimento di Scienze Chimiche, Messina/Italy</td>
<td>Facile Graphene based Materials and its Application as Low Cost Hydrogen Fuel Cell Catalyst (A0605)</td>
</tr>
</tbody>
</table>

### End of Sessions

**Swiss Surprise** – Registered participants meet between KKL and railway station

**Wednesday, 1 July 2015**
Thursday, 2 July 2015

**A7 Auditorium**

09:00 - Keynote: Electrocatalysis of oxygen reduction reaction (A07)

09:00 - Electrocatalysis of Oxygen Reduction Reaction: Catalyst Development, Theory and Model Systems (A0701)
Piotr Zelenay, Los Alamos National Laboratory, Los Alamos/New Mexico/United States

09:25 - 5 Min to change to Auditorium or Club Room for Session A08 or B08

**A8 Auditorium**

09:30 - PEM fuel cell operation under air and O2 feed: analysis of cell performance and liquid water distributions (A0802)

09:45 - Effect of PEM flow field channels orientation in the liquid water distributions and cell performance (A0803)

10:00 - In situ Diagnostic Tools for Characterization of Pinholes in PEM Fuel Cell Stacks (A0804)

10:30 - Break – Ground + First Floor in the Exhibition & in the Poster Session

**B7 Club Room**

09:00 - Keynote: Status and future of hydrogen technologies (B07)

09:00 - Status and future of hydrogen technologies: Production, purification and storage (B0701)

10:00 - Solid State Approaches for Portable H2 Applications (B0804)

10:15 - Break – Ground + First Floor in the Exhibition & in the Poster Session

**B8 Club Room**

09:30 - H2 storage in metal hydrides (B08)

09:45 - Nanoconfinement of hydride materials into carbon hosts for reversible hydrogen storages in PEMFCs (B0802)

10:00 - Preparation of nanostructured catalysed Mg hydrogen storage materials incorporating ferrovanadium using high-energy reactive ball milling (B0803)

10:15 - Solid State Approaches for Portable H2 Applications (B0804)

10:30 - Break – Ground + First Floor in the Exhibition & in the Poster Session

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**Additional Information**

- **A8 Auditorium**
  - tbc: Daniel Hissel, Felix Buechi

- **B8 Club Room**
  - tbc: Robert Steinberger-Wilckens, Ulrich F. Vogt

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**Panel Discussions**

- **A7 Auditorium**

- **B7 Club Room**
  - Status and future of hydrogen technologies: Production, purification and storage (B0701)

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**Extra Events**

- 5 Min to change to Auditorium or Club Room for Session A08 or B08

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**Authors and Affiliations**

- **A0701**: Piotr Zelenay, Los Alamos National Laboratory, Los Alamos/New Mexico/United States

- **B0701**: Trent Molter, Sustainable Innovations Inc., East Hartford/(CT)/United States

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**Detailed Session Abstracts**

- **A0802**: Alfredo Iranzo, Johannes Biedsford, Maqali Cochet, Pierre Boillat, Felipe Rosa

- **A0803**: Alfredo Iranzo, Johannes Biedsford, Magali Cochet, Pierre Boillat, Felipe Rosa

- **A0804**: Amir Niromand, Mark Olftert, Michael Eikerling, Mark Olftert, Michael Eikerling

- **B0801**: J. Goh, B. Ntsekwana, M. Lototskyy, R. Denys, V. Y arts, B. Pellet, HysA Systems Competence Centre, SAIAMC, Uni of the Western Cape, Bellville/South Africa

- **B0802**: Rapee Gosalarit-Utke, School of Chemistry, Inst. of Science, Suranaree Uni of Technology, Nakhon Ratrasima/Thailand

- **B0803**: Jonathan Goh, Bulewia Ntsekwana, Mykhaylo Lototskyy, Bruno Pellet, HysA Systems Competence Centre, SAIAMC, Uni of the Western Cape, Western Cape/South Africa

- **B0804**: James Hanlon, Laura Bravo Diaz, Marek Bielewski, Aleksandra Milewska, Cedric Dupuis, Duncan H. Gregory

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**Conference Logistics**

- 5 Min to change to Auditorium or Club Room for Session A08 or B08

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**Conference Venue**

- **A7 Auditorium**
  - tbc: Franco Barbir, Pertti Kauranen

- **B7 Club Room**
  - tbc: Gunther Scherer, Huamin Zhang

---

**Conference Organizers**

- **A7 Auditorium**
  - Keynote: Electrocatalysis of oxygen reduction reaction (A07)

- **B7 Club Room**
  - Keynote: Status and future of hydrogen technologies (B07)

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**Contact Information**

- For further information, please contact:
  - A7 Auditorium: Franco Barbir, Pertti Kauranen
  - B7 Club Room: Gunther Scherer, Huamin Zhang

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**Conference Website**

- For more details and updates, visit the conference website: [Conference Website](https://www.conf.org/seminar2015)

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**Conference Venue Addresses**

- **A7 Auditorium**: tbc: Franco Barbir, Pertti Kauranen
- **B7 Club Room**: tbc: Gunther Scherer, Huamin Zhang

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**Conference Logistics**

- 5 Min to change to Auditorium or Club Room for Session A08 or B08

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**Conference Calendar**

- **A0701**: Electrocatalysis of Oxygen Reduction Reaction: Catalyst Development, Theory and Model Systems (A0701)

- **B0701**: Status and future of hydrogen technologies: Production, purification and storage (B0701)
Thursday, 2 July 2015

A9 Auditorium
tbc: Graham Hards, Corisin Battaglia

11:00 New Pt-alloy FC catalysts (A09)
11:00 Opportunities to Improve the Stability and Activity of Electrocatalysts Based on Cu-Core – Pt-Shell Nanoparticles (A0901) Vladimir Guterman (1), Sergey Belenov (1), Natalya Tabachkova (2); (1) Southern Federal Uni, Rostov-on-Don/Russia, (2) National Research Technological Univ. "MISIS", Moscow/Russia
11:15 Effect of heat treatment atmospheres of PtNi nanoparticles as an oxygen reduction electrocatalyst (A0902)
Young-Hoon Chung, In Young Cha, Soo Jin Kim, Dong Young Chung, Yung-Eun Sung, Sung Jong Yoo, Jin Young Kim, Hyong-Juhn Kim, Jong Hyun Jang, Fuel Cell Research Center, Korea Inst. of Science and Technology (KIST), Seoul/Republic of Korea
11:30 FePt supported reduced graphene oxide electrocatalysts for oxygen reduction reaction in polymer electrolyte fuel cells (A0903)
Ramayani Kannan Surbhi Sharma, Robert Steinberger-Wilks PEM Fuel Cell Research group, School of Chemical Engineering, Uni of Birmingham, Birmingham/United Kingdom
11:45 In-situ X-ray Absorption Spectroscopy Investigations of Cubic Pt Nanoparticles as Cathode Catalyst in PEMFCs (A0904)
Julia Melke, Ditty Dixon, Christina Roth, Helmut Ehrenberg, Freie Universität Berlin, Berlin/Germany
12:00 Improved Oxygen Reduction Activity of Pt-alloys Supported on carbon via formation of Heterogeneous Superhydrophobic Structure (A0905)
Mahmoud Reda, CanadElectrochim, Calgary (AB)/Canada
12:15 Development and Scale Up of Enhanced ORR Pt-based Catalysts for PEMFCs (A0906)
Francois van Schalkwyk, Gary Patrnick, HySA/Catalysis – MINTEK, Randburg/South Africa
12:30 Lunch – 2nd Floor on the Terrace, Coffee – Ground + First Floor in the Exhibition & in the Poster Session

B9 Club Room
tbc: Ralf Peters, Kazunari Sasaki

11:00 Fuel processing and hydrogen purification (B09)
11:00 Improved PBI Membranes for High Temperature Electrochemical Hydrogen Purification (B0901)
Kayley Fishel, Yating Mao, Xiaoming Chen, Max Molke, Harry Ploehn, Brian C. Benicewicz, Uni of South Carolina, Columbia (SC)/USA
11:15 On-site hydrogen generation from biodiesel and diesel (B0902)
Stefan Martin (1), Pieter van der Veen (2), David Wails (3), George Karagiannis (4), Mario Costa (5), Jose Luis Marcos (6), Ana Casado (7); (1) German Aerospace Center (DLR), Stuttgart/Germany, (2) HyGear B.V. (HYG), Arnhem/Netherlands, (3) Johnson Matthey PLC. (JM), London/United Kingdom, (4) entre for Research and Technology Hellas (APTL), Thessaloniki/Greece, (5) Inosto Super Técnico (IST), Lisbon/Portugal, (6) Abengoa Bioenergía San Roque, S.A. (ABSR), San Roque/Spain, (7) Abengoa Hidrógeno, S.A. (AH), Sevilla/Spain
11:30 CO free reformate for stationary LT-PEM fuel cells – technical and commercial aspects of selective methanation (B0903)
Lutz Schilling, WS Reformer GmbH, Renningen/Germany
11:45 HIL simulations of a Real-Time Fuel Processor Model (B0904)
Erik Åberg (1), Karin Fröjd (1), Karin Axelson (2), Gregor Dolanc (3), Bostjan Pregelj (3); (1) Modelon A B, Ideon Science Park, Lund/Sweden, (2) PowerCell AB, Göteborg/Sweden, (3) J. Stefan Inst., Ljubljana/Slovenia
12:00 Study on on-board fuel reforming for hydrogen production using exhaust gas (B0905)
Seunghyeon Cho (1), Jongmyeong Bae (1), Juheon Lee (2), Jonghywa Cha (2); (1) Korea Advanced Inst. of Science and Technology, Daejeon/Korea, (2) Hyundai Motors, Gyeonggi-do/Korea
12:15 Operating Strategies for Fuel Processing Systems with Focus on Water-Gas Shift Reactor Stability (B0906)

Morning
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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>13:15</td>
<td>Poster Session II covering all Oral Session Topics</td>
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Afternoon

Thursday, 2 July 2015
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<th>Event</th>
<th>Location</th>
<th>Speaker(s)</th>
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<tr>
<td>14:30</td>
<td>Degradation studies and modelling (A11)</td>
<td>Auditorium</td>
<td>Raffaele Petrone, Daniel Hissel, Marie-Cécile Péra, Didier Chamagne</td>
<td>FCLAB Research Federation, Belfort/France</td>
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<tr>
<td>14:30</td>
<td>A preliminary study on potential analogies between mechanical fatigue theory and electrochemical PEM Fuel Cells aging induced by load cycling (A1101)</td>
<td>Auditorium</td>
<td>Anja Talke (1), Ulrich Misz (2), Gerhard Konrad (1), Angelika Heinzel (2)</td>
<td>FCLA B Research Federation, Belfort/France</td>
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<tr>
<td>14:30</td>
<td>Analysis of the heterogeneities in a PEMFC stack operated with reformate (A1104)</td>
<td>Auditorium</td>
<td>Jiayi Gu (1), Rob Thring (1), Gregory Offer (2)</td>
<td>Paul Scherrer Inst., Electrochemistry Laboratory, Villigen/Switzerland</td>
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<tr>
<td>14:30</td>
<td>Reversible Degradation Modeling of a Segmented PEM Fuel Cell (A1105)</td>
<td>Auditorium</td>
<td>Matteo Zago, Claudio Rabissi, Andrea Baricci, Andrea Casalegno</td>
<td>Politecnico di Milano, Department of Energy, Milano/Italy</td>
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<tr>
<td>14:30</td>
<td>Experimental and Modelling Analyses of DMFC Temporary Degradation (A1106)</td>
<td>Auditorium</td>
<td>Tom Engl, Lorenz Gubler, Thomas J. Schmidt</td>
<td>Paul Scherrer Inst., Electrochemistry Laboratory, Villigen/Switzerland</td>
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<tr>
<td>14:30</td>
<td>Membranes for IT &amp; HT PEMFC (B11)</td>
<td>Club Room</td>
<td>Christopher F. Seidler (1), Cedric Müller (1), Dieter Freude (2), Michael Wark (1)</td>
<td>(1) Inst. for Chemistry, Carl-von-Ossietzky Uni, Oldenburg/Germany, (2) Inst. for Experimental Physics, Leipzig Uni, Leipzig/Germany</td>
</tr>
<tr>
<td>14:30</td>
<td>Synthesis and characterization of cubic mesoporous silica as additives for proton conducting membranes (B1101)</td>
<td>Club Room</td>
<td>Masamichi Nishihara (1,2), Liana Christiani (3), Feng Shiyan (3), Kazunari Sasaki (1, 2, 3)</td>
<td>(1) Intern. Inst. for Carbon-Neutral Energy Research (WPI-IZCNER), Fukuoka/Japan, (2) Next-generation Fuel Cell Research Center (NEXT-FC), Fukuoka/Japan, (3) Graduate School of Engineering, Kyushu Uni, Fukuoka/Japan</td>
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<tr>
<td>14:30</td>
<td>Influence of Temperature Related Operation Faults on HT-PEMFC MEA Performance and Durability (B1103)</td>
<td>Club Room</td>
<td>Carolina Musse Branco, Kun Zhang, Surbhi Sharma, Robert Steinberger-Wilkens</td>
<td>The Centre for Hydrogen and Fuel Cell Research, Birmingham/United Kingdom</td>
</tr>
<tr>
<td>14:30</td>
<td>Multilayer membrane for IT-PEFC (B1104)</td>
<td>Club Room</td>
<td>Michael Wark (1), Christopher F. Seidler (1), Madita Einermann (1), Mahdi S. Bazarian (1), Jann Lippke (2), Peter Behrens (2), Tobias von Zons (3), Adelheid Godt (3)</td>
<td>(1) Inst. for Chemistry, Carl-von-Ossietzky Uni, Oldenburg/Germany, (2) Inst. for Inorganic Chemistry, Leibniz Uni Hannover, Hannover/Germany, (3) Faculty of Chemistry, Bielefeld Uni, Bielefeld/Germany</td>
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16:00 Break – Ground + First Floor in the Exhibition & in the Poster Session
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<tr>
<td>16:30</td>
<td>FC fault and degradation modelling (A12)</td>
<td>Auditorium</td>
<td>Andrey Vasilyev, Dr Sarah Dunnett, Dr Lei Mao, Loughborough Uni, Department of Aeronautical and Automotive Engineering, Loughborough/United Kingdom</td>
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<tr>
<td>16:45</td>
<td>Fault Diagnostic Modelling for Polymer Electrolyte Fuel Cells (A1202)</td>
<td>Auditorium</td>
<td>Ben Davies, Lisa Jackson, Sarah Dunnett, Loughborough University, Department of Aeronautical and Automotive Engineering, Loughborough/United Kingdom</td>
</tr>
<tr>
<td>17:00</td>
<td>Evaluation of Performance and Chemical Degradation Phenomena in Reinforced PFSA Membranes: A Theoretical Study</td>
<td>Auditorium</td>
<td>Georg Futter (1), Thomas Jahnke (1), Arnulf Latz (1,2); (1) German Aerospace Center (DLR), Inst. of Engineering Thermodynamics, Stuttgart/Germany, (2) Helmholtz Inst. Ulm for Electrochemical Energy Storage (HIU), Ulm/Germany</td>
</tr>
<tr>
<td>16:30</td>
<td>Industrial applications/Microbial fuel cell/Assessments (B12)</td>
<td>Club Room</td>
<td>Karin Treyer, Brian Cox, Paul Scherrer Inst. (PSI), Villigen/Switzerland</td>
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<td>16:45</td>
<td>Sustainability assessment of alkaline fuel cells – what can we learn? (B1201)</td>
<td>Club Room</td>
<td>Naveed Akhtar, AFC Energy plc., Cranleigh/United Kingdom</td>
</tr>
<tr>
<td>17:00</td>
<td>Stack Development at AFC Energy- Aiming towards the Deployment of World's Largest Alkaline Fuel Cell System (B1202)</td>
<td>Club Room</td>
<td>Jari Ihonen, Timo Keränen, Henri Karimäki, Pauli Koski, Jaana Viitakangas, Heidi Tuiskula VTT Technical Research Centre of Finland, VTT/Finland</td>
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<tr>
<td>17:15</td>
<td>High Platinum Cost: Obstacle or Blessing for Commercialization of Fuel Cell Technology (B1204)</td>
<td>Club Room</td>
<td>Prakash C Ghosh, Indian Inst. of Technology Bombay, Department of Energy Science and Engineering, Mumbai/India</td>
</tr>
<tr>
<td>17:30</td>
<td>Booster Technology for Hydrogen Compression – Challenges and Solutions (B1205)</td>
<td>Club Room</td>
<td>Matthias Blome, MAXIMATOR GmbH, Nordhausen/Germany</td>
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**Thursday, 2 July 2015**

- **18:00** End of Sessions
- **19:30** Dinner on the Lake Boarding 19.20, Lake side of KKL pier 5/6 – back 23.15 (short stop in Brunnen 22.30 for early return by train)
Morning
A13 Auditorium  tbc: Thomas Schmidt, Francois van Schalkwyk

09:00 New catalyst structures and manufacturing processes (A13)
09:00 Developing Novel, Near-Optimal Pt Electrodes for Hydrogen Fuel Cells via Theoretical Simulations (A1301)
Alessandro Fortunelli (1,2), William A. Goddard (2), Luca Sementa (1), Giovanni Barcaro (1), Fabio R. Negreiros (1), Andrés Jaramillo-Botero (2)
(1) Consiglio Nazionale delle Ricerche (CNR), Pisa/Italy, (2) California Institute of Technology, Pasadena (CA)/USA
09:15 Three-dimensional catalyst electrodes with PdPt nanowire arrays for PEFC applications (A1302)
Yaxiang Lu, Shangfeng Du, Robert Steinberger-Wilckens
University of Birmingham, School of Chemical Engineering, Birmingham/United Kingdom
09:30 Study of Pt electrocatalysts for the oxygen reduction reaction fabricated by pulsed laser deposition (A1303)
S. E. Temmel (1), E. Fabbri (1), R. Kötz (1), D. Pergolesi (1), T. Lippert (1), T. Schmidt (1,2)
(1) General Energy Department, Paul Scherrer Institut, Villigen-PSI/Switzerland, (2) Laboratory of Physical Chemistry, ETH Zürich, Zürich/Switzerland
09:45 New Physical Technologies for Catalyst Synthesis and Anticorrosion Protection (A1304)
Vladimir Fateev, Anton Glukhov, Sergey Nikitin, Vladimir Markelov, Olga Alekseeva, Sergey Grigoriev
NRC Kurchatov Institute, Moscow/Russia
10:00 Effect of Structure of Nafion and Hydrocarbon Ionomer on Oxygen Solubility (A1305)
Yuya Kurihara (1), Takuya Mabuchi (1), Takashi Tokumasu (2); (1) Graduate School of Engineering, Tohoku University, Miyagi/Japan, (2) Institute of Fluid Science, Tohoku University, Miyagi/Japan
10:15 Oleylamine adsorbed Pt nanoparticles as an anion-adsorption-tolerant electrocatalysts towards oxygen reduction reaction (A1306)
Young-Hoon Chung, In Young Cha, Hee Young Park, Soo Jin Kim, Dong Young Chung, Yung-Eun Sung, Sung Jong Yoo, Jin Young Kim, Hyung-Juhn Kim, Jong Hyun Jang
Fuel Cell Research Center, Korea Institute of Science and Technology (KIST), Seoul/Republic of Korea
10:30 Break – Ground + First Floor in the Exhibition & in the Poster Session

Morning
B13 Club Room  tbc: Naveed Akhtar, Philippe Mulard

09:00 H₂ production (B13)
09:00 Development and testing of a pressurized PEM electrolyser (B1301)
E. Varkaraki, D. Shapiro, R. Gashi, D. Corson, A. Closet
Belenos Power Holding, Marburg-Frankfurt/Switzerland
09:15 Degradation of a single cell PEM water electrolyser (B1302)
Jan van der Meere, Dimitri Bessarabov, DST HySA Infrastructure Center of Competence, Faculty of Engineering, North-West Uni, Potchefstroom/South Africa
09:30 High Temperature Alkaline Electrolysis (B1303)
Frank Allebrand, Chrstodoulos Chatzichristodoulou, Karsten Agersted, Mogens B. Mogensen
Technical Uni of Denmark, Department of Energy Conversion and Storage, Roskilde/Denmark
09:45 Water Splitting Using GaN Based Working Electrodes for Hydrogen Generation without Applying Bias (B1304)
Yen Yu Chen (1), Jinn Kang Sheu (1), Ming Lun Lee(2), Wei Chi Lai (1), (1) Department of Photonics, National Cheng Kung Uni, Tainan City/Taiwan, (2) Department of Electro-Optical Engineering, Southern Taiwan Uni of Science and Technology, Tainan City/Taiwan
10:00 Synthesis and characterization of sodium octahydrotriborate NaB₃H₈, a potential fuel for direct liquid-fed fuel cell (B1305)
S. Pylypko, M. Chatenet, M. Cretin, U. B. Demirci, Inst. Européen des Membranes, Montpellier/France
10:15 Effective High Pressure Hydrogen Evolution from Formic Acid without any Compressing (B1306)
Hajime Kawanami (1,3), Masatoshi Iguchi (1,3) Yuichi Manaka (2,3), Yuichiro Himeda (2,3)
(1) National Inst. of Advanced Science and Technology, Research Center for Compact Chemical System, Sendai/Japan, (2) National Inst. of Advanced Science and Technology, Energy Technology Research Inst., Ibaraki/Japan, (3) CREST, Japan Science and Technology Agency, Saitama/Japan
### Morning:

**Friday, 3 July 2015**

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<tr>
<th><strong>A14 Auditorium</strong></th>
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<tr>
<td><strong>11:00</strong></td>
<td>FC modelling and simulations (A14)</td>
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<td><strong>11:00</strong></td>
<td>Pore network modelling of compressed fuel cell components with OpenPNM (A1401)</td>
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<td><strong>11:15</strong></td>
<td>A comparison between X-ray tomography images of water distribution in a gas diffusion layer and pore network scale simulations (A1402)</td>
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<tr>
<td><strong>11:30</strong></td>
<td>Analytical Solutions for PEM Fuel Cell Impedance (A1403)</td>
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<td><strong>11:45</strong></td>
<td>Advanced CFD Analysis of an Air-cooled PEM Fuel Cell Stack Predicting the Loss of Performance with Time (A1404)</td>
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<tr>
<td><strong>12:00</strong></td>
<td>A computationally efficient hybrid 3D analytic-numerical approach for system level modelling of PEM fuel cells (A1405)</td>
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<tr>
<td><strong>12:15</strong></td>
<td>Investigation of energy flow rates in Proton Exchange Membrane Fuel Cells using numerical model (A1406)</td>
</tr>
<tr>
<td><strong>12:30</strong></td>
<td>Lunch – 2nd Floor on the Terrace, Coffee – Ground + First Floor in the Exhibition and in the Poster Session</td>
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<th><strong>B14 Club Room</strong></th>
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<td><strong>11:00</strong></td>
<td>FC Mobility applications/Stack and system integration (B14)</td>
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<td><strong>11:00</strong></td>
<td>AutoStack – Core – Industry led European consortium to develop next generation automotive stack hardware (B1401)</td>
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<td><strong>11:15</strong></td>
<td>Characterization of a Fuel Cell Stack for Use in Material Handling Applications (B1402)</td>
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<tr>
<td><strong>11:30</strong></td>
<td>Fuel Cell Applications for Range Extending and HVAC in Future Vehicle Concepts (B1403)</td>
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<td><strong>11:45</strong></td>
<td>Aircraft APUs: An Economically Viable Niche Market for Fuel Cells? (B1404)</td>
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<td><strong>12:00</strong></td>
<td>Changing the Fate of Fuel Cell Vehicles: Lessons from Tesla Motors (B1405)</td>
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<td><strong>12:15</strong></td>
<td>Future Mobility Demonstrator: Utilizing excess electricity in the mobility sector (B1406)</td>
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**Note:** Times are in 24-hour format.
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<tr>
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<th>Presenter(s)</th>
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<tr>
<td>13:00</td>
<td>A15</td>
<td>Stack and system integration, operation strategies (A15)</td>
<td>Michael Piern, Steven Lis, Marvyn Warmay, Radha Jalan, Suresh Pawha, ElectoChem Inc., Wobum (MA)/USA</td>
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<tr>
<td>13:15</td>
<td>A15</td>
<td>Development of fuel recirculation systems at single cell and stack level for hydrogen fuel impurity studies (A1502)</td>
<td>Jari Ihonen, Pauli Koski, Luis Pérez, Henri Karimáki</td>
<td>VTT Technical Research Centre of Finland, VTT/Finland</td>
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<tr>
<td>14:00</td>
<td>A15</td>
<td>Development of bioethanol fuelled fuel cell system for backup applications – PEMBeyond project (A1505)</td>
<td>Henri Karimáki, Jari Ihonen, Pauli Koski, VTT Centre Technical Research of Finland, VTT/Finland</td>
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<tr>
<td>14:15</td>
<td>A15</td>
<td>Efficient H₂/O₂ polymer electrolyte fuel cells for Re-electrification of Hydrogen Obtained from the Power-to-Gas Process (A1506)</td>
<td>F. N. Büchi (1), C. Peter (1), M. Hofer (1), U. Hannes (2), T. J. Schmidt (1)</td>
<td>VTT Technical Research Centre of Finland, VTT/Finland</td>
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<td>14:45</td>
<td>A15</td>
<td>Portable/Back-up/Renewable (B15)</td>
<td>tbc: Bruno Pollet, Felix Barreras</td>
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<td>13:30</td>
<td>B15</td>
<td>FCH JU Hyper – results from the 100 We Hyper system field testing and risk assessment analysis (B1501)</td>
<td>Agata Godula-Jopek, Airbus Group Innovations, Munich/Germany, Inst. of Chemical Engineering, PAS, Gliwice/Poland</td>
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<tr>
<td>13:45</td>
<td>B15</td>
<td>CFD Modelling of a New PEM Fuel Cell Configuration for Portable Applications (B1502)</td>
<td>Elena Carcadea (1), Derek B Ingham (2), Adriana Marinou (1), Mireia Raceanu (1), Mihai Varlam (1), Dorin Schitea (1), Laurentiu Patularu (1); (1) National Research and Development Inst. for Cryogenics and Isotopic Technologies – ICTR. Valcea, Râșcanu Valcea/Romania, (2) Energy Research Inst. (ERI), School of Chemical and Process Engineering, Uni of Leeds, Leeds/United Kingdom</td>
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<tr>
<td>14:00</td>
<td>B15</td>
<td>PEM Fuel Cell Systems as Backup Solution for POLYCOM Applications (B1503)</td>
<td>Ulrike Trachte, Peter Sollberger, Beat Welling, Lucerne School of Engineering and Architecture, CC Thermal Energy Systems &amp; Process Engineering, Horw/Switzerland</td>
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<tr>
<td>14:15</td>
<td>B15</td>
<td>A Total System Cost Analysis for Low-Temperature PEM Fuel Cell Systems in Combined Heat and Power and Backup Power Applications (B1504)</td>
<td>Max Wei, Shuk Han Chan, Tim Lipman, Ahmad Mayyas, David Gosselin</td>
<td>Fraunhofer ICT-IMM, Fraunhofer Inst. für Chemische Technologie Inststeil IMM, Mainz/Germany</td>
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<tr>
<td>14:30</td>
<td>B15</td>
<td>Hybrid Plant Aarmatt – a novel renewable energy concept applying PEM electrolysis (B1505)</td>
<td>Marcel Rindlisbacher, Regio Energie Solothurn, Solothurn/Switzerland</td>
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<tr>
<td>14:45</td>
<td>B15</td>
<td>Stand-alone PEMFCE system based on solar hydrogen (B1506)</td>
<td>Kréhi Serge Aegbi</td>
<td>FCLA Inst./FEMTO-ST laboratory, Belfort/France</td>
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### Afternoon

#### Thursday, 2 July 2015

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<tr>
<td>15:05</td>
<td>P3: FC-H₃ Mobility System (A16)</td>
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<td>Toyota’s Next Generation Vehicle Strategy &amp; FCV Development (A1601)</td>
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<td></td>
<td>Isotta Cerri, Advanced Technology Division, Production Engineering Group, Toyota Motor Europe, Zaventem/Belgium</td>
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#### Friday, 3 July 2015

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<td>15:30</td>
<td>P4: Closing Ceremony A17</td>
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<td>Summary by the Chair (A1701)</td>
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<td>Frano Barbir, FESB Uni of Split, Split/Croatia</td>
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<td>15:41</td>
<td>Information on Next EFCF: 12th European SOFC &amp; SOE Forum 2016, 6th PEFC &amp; H₂ Forum 2017 (A1702)</td>
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<td></td>
<td>Olivier Bucheli, Michael Spirig, European Fuel Cell Forum, Lucerne/Switzerland</td>
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<tr>
<td>15:52</td>
<td>Friedrich Schönbein Award for the Best Poster, Best Science Contribution, Medal of Honour (A1703)</td>
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<td></td>
<td>Frano Barbir, FESB Uni of Split, Split/Croatia</td>
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<tr>
<td>16:03</td>
<td>Thank you and Closing by the Organizers (A1704)</td>
<td></td>
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<tr>
<td></td>
<td>Michael Spirig, Olivier Bucheli, European Fuel Cell Forum, Lucerne/Switzerland</td>
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**End of Sessions – End of Conference – Goodbye coffee and travel refreshment – in front of the Auditorium**
Durability stress test results  A03

Characterization of FC materials  A05

Identification and quantification of Pt surface sites and of performance losses for PEM fuel cells by selective chemisorption measurement (A0507)  K. Punyawudho (1), K. Wuttikit (1), Y. Zhang (2), J. R. Monnier (2); (1) Department of Mechanical Engineering, Faculty of Engineering, Chiang Mai University, Chiang Mai/Thailand, (2) Department of Chemical Engineering, School of Engineering and Computing, University of South Carolina, Columbia (SC)/United State

Comparison of hydrocarbon-type Block and Random copolymer for Polymer Electrolyte Fuel Cells (A0508)  M. A. Barique (1), Akhiro Ohira (1,2), Tatsuya Oshima (3), Masahiro Rikukawa (3) (1) Fuel Cell Cutting-Edge Research Center (FC-Cubic) TRA, Tokyo/Japan, (2) Research Institute for Ubiquitous Energy Devices, AIST, Ieda/Osaka, (3) Department of Materials and Life Sciences, Sophia University, Tokyo/Japan

La$_2$TiO$_5$-based Solid Oxides for SOFC Applications. Characterisation and Processing (A0509)  Nicoleta Cioatera (1), Elena-Adriana Voinea (1), Aurelie Rolle (2), Cezar-Ionut Spinu (1), Rose-Noelle Vannier (2) (1) University of Craiova, Department of Chemistry, Craiova/Romania, (2) Unité de Catalyse et de Chimie du Solide, Equipe de Chimie du Solide, UMR CNRS 8181, ENSCL/UST, Lille/France

Fabrication and Evaluation of Carbon Based Nanocomposite Tube for Water Splitting and SOFC Electrode (A0510)  Areum Kim (1), Keun Won Kang (1), Eumi Choi (1), Soon Hyeong Kwon (1), Yinhu Cui (1), Sujin Chae (1), Sung Pil Youn (2), Sung Gyu Pyo (1); (1) School of Integrative Engineering, Chung-Ang University, Seoul/Republic of Korea, (2) Fuel Cell Research Center, Korea Institute of Science and Technology, Seoul/Republic of Korea

Effect of Sr Addition on Electrical Conduction Behavior of RE-doped Ceria (A0511)  Elena-Adriana Voinea, Nicoleta Cioatera, Mariana Osiac, Cezar-Ionut Spinu University of Craiova, Craiova/Romania

H$_2$ production: Alkaline electrolyzers  B03

H$_2$ storage: Material and systems  B05

Rod-like FeOOH Catalyst for Ortho-Para Conversion of Hydrogen (B0507)  Jung Hyun Kim, In Wook Nah, Sang Woong Kang, Kang-Bong Lee, In Hwan Oh Center for Energy Convergence, Korea Institute of Science and Technology, Seoul/Republic of Korea

CO$_2$ Methanation Under Atmospheric Pressure Conditions on a Ni catalyst: Experiments and Kinetic Modelling (B0508)  Magda Katoufa (1), Emanuele Giglio (2), Dimitris Katsourinis (1), George Vourliotakis (1), Samir Bensaid (2), Fabio Deorsola (2), Raffaele Pirone (2), Guido Saracco (2), Maria Founti (1) (1) National Technical University of Athens, Athens/Greece, (2) Politecnico di Torino, Torino/Italy

Measurement of hydrogen quantity adsorbed in carbon nanostructures using volumetric method (B0509)  Salim Daoudi (1,2), Nadjema Benkara Mohamed (1,3), Bouzid Chebbah (1) (1) Faculty of Sciences and Technology, Bordj Bouri Arreridj University, El Anasser/Algeria, (2) LPMRN laboratory, Bordj-Bou-Arreridj University, El Anasser/Algeria, (3) SISM Laboratory, Setif University, Setif/Algeria

FC membranes & other components  B06

Optimization of Pack Chromising Process Parameters for Proton Exchange Membrane Fuel Cells Bipolar plates using Box–Behken Experimental Design (B0607)  A. Oladaye, K. Benyounis, J. Stokes (1), A. Olabi School of Mechanical and Manufacturing Engineering, Dublin City University, Dublin/Ireland, (2) University of the West of Scotland, Paisley/United Kingdom

Proton exchange membranes prepared from multi-block copolymers based on poly (arylene ether ketone) (B0608)  Kyuhyun Kang, Dukjoon Kim School of Chemical Engineering, Sungkyunkwan University, Kyunggi/Republic of Korea
Non-precious metal FC catalysts

Ultralow Platinum Decorated Self-active Ordered Mesoporous Carbon for Oxygen Reduction Reaction (A0607)

J. J. Giner-Sanz, E. M. Ortega, V. Pérez-Herranz; IEC group, Dep. Ingeniería Química y Nuclear, Universitat Politècnica de València, Valencia/Spain

FTT based linearity study of a commercial PEM fuel cell (A0808)

J. J. Giner-Sanz, E. M. Ortega, V. Pérez-Herranz; IEC group, Dep. Ingeniería Química y Nuclear, Universitat Politècnica de València, Valencia/Spain

Inductance at Low Frequencies in Electrochemical Impedance Spectroscopy of PEM Fuel Cells (A0810)

I. Pivac, B.Simic, D. Bezmalinovic, I. Tolj, G. Radica, F. Barbir; FESB University of Split, Split/Croatia

New Pt-alloy FC catalysts

SnO2-modified Pt electrocatalyst for ammonia_fueled anion exchange membrane fuel cell (A0907)

Takeou Okanishi, Yu Katayama, Hiroki Muroyama, Koichi Eguchi; Graduate School of Engineering, Kyoto University, Kyoto/Japan

Pd8Ir/C for Hydrogen Oxidation Reaction (A0908)

Fotini Tzorbatzoglou (1), Angeliki Brouzgou (1), Panagiotis Tsiakaras (1,2)
(1) Laboratory of Alternative Energy Conversion Systems, Department of Mechanical Engineering/University of Thessaly, Volos/Greece, (2) Laboratory of Electrochemical Devices based on Solid Oxide Proton Electrolytes/Institute of High Temperature Electrochemistry, Yekaterinburg/Russia

Highly Durable Non-Precious Nitrogen-doped Graphene Electro catalysts for Alkaline Fuel Cells (A0909)

Stephen J. Llyth (1), Jianfeng Liu (2), Takeshi Diao (3), Kazunari Sasaki (1,2,3,5)
(1) International Institute for Carbon Neutral Energy Research (I2CN ER), Fukuoka/Japan, (2) Department of Mechanical Engineering, Fukuoka/Japan, (3) International Research Center for Hydrogen Energy, Fukuoka/Japan, (4) Next Generation Fuel Cell Research Center (NEXT-FC), Fukuoka/Japan, (5) Kyushu University, Fukuoka/Japan

Development of new hybrid membranes for DMFC (B0609)

Rubén Beneito (1), Agustín Merlos (1), Mayte Gil (2), Inés Monfort (2)
(1) Technological Institute of children’s products & leisure (AIU), Alicante/Spain, (2) Technological Institute of Energy (ITE), Valencia/Spain

Silica-sulfonic acid-functionalized hybrid membranes synthesized by sol-gel for direct methanol fuel cells (B0610)

Jadra Mosa, Alicia Durán, Mario Aparicio
Instituto de Cerámica y Vidrio (CSIC), Madrid/Spain

Polyamide based Nanocomposite Membranes for Alkaline Fuel Cell Applications (B0611)

Nanomaterials Mutanga (1), Patrick Nonjola (1), Jaqueline Tembu (2), Thabani Mhlongo (2), Kenneth Ozwomena (1)
(1) CSIR, Material Science and Manufacturing, Pretoria/South Africa, (2) Tshwane University of Technology, Pretoria/South Africa

H2 storage in metal hydrides

Effect of Ni addition on hydrogen storage capacity of beryllium intermetallic compound (B0807)

Jae-Hwan Kim (1), Hirotomo Iwaki (2), Masaru Nakamichi (1)
(1) Fusion Research & Development Directorate, Japan Atomic Energy Agency, Aomori/Japan, (2) Faculty of Education Elementary and Secondary School Teacher Training Program, University of the Ryukyus, Okinawa/Japan

Fuel processing and hydrogen purification

Low Temperature Methanol Steam Reformer with Heat Exchanger Structure Thermally Integrated with a HT-PEMFC (B0907)
Sonja Auvín, Francisco Vidal Vazquez, Jari Pennanen
VTT Technical Research Centre of Finland, VTT/Finland

Hydrogen Gas Purifiers for Fuel Cells (B0908)

Marco Succi, Giorgio Macchi, Simona Pirola, Cristian Landoni
Saes Getters Spa, Milan/Italy

Experimental study on diesel reforming with hydrogen peroxide (B0909)
Gwangwoo Han, Minseok Bae, Joongmyong Bae
Department of Mechanical Engineering, KAIST, Daejeon/Republic of Korea

A 1kW Gasoline Fuel Processors for Mobile PEMFCs (B0910)
Inyong Kang, Woonjin Kang, Byoungwgan Gwak, Younggil Choi
H&power, Inc., Daejeon/Republic of Korea
Hydrogen Polymer Electrolyte Fuel Cell performance on Low Platinum PdPt Anode (A0910)
Angeliki Brouzgou (1,2), Fotini Tzorbatzoglou (1), Panagiotis Tsiakaras (1,2)
(1) Laboratory of Alternative Energy Conversion Systems, Department of Mechanical Engineering/University of Thessaly, Volos/Greece, (2) Laboratory of Electrochemical Devices based on Solid Oxide Proton Electrolytes/Institute of High Temperature Electrochemistry, Yekaterinburg/Russia

Development of a PtCo/C catalyst manufacturing and stabilization method (A0911)
Christoph Grimm, Alexander Schenk, Birgit Pichler, Markus Perchthaler, Viktor Hacker
Graz University of Technology, Institute of Chemical Engineering and Environmental Technology, NAWI, Graz/Austria

Degradation studies and modelling
Mathematical description of voltage decay rates in PEM fuel cells (A1107)
Pawel Gazdzicki, Mathias Schulze, K. Andreas Friedrich; German Aerospace Center (DLR), Stuttgart/Germany

New catalyst structures and manufacturing processes
Structure and proton dynamics in catalytic layer for HT-PEFC (A1307)
Marina Khanef (1), Olaf Holdere (1), Oxana Ivanova (1), Reiner Zorn (1), Huijie Zhang (2), Werner Lehnert (2)
(1) FZ Jülich, JCN Sat M LZ, Garching/Germany, (2) FZ Jülich, IEK-3, Jülich/Germany

Fibrous and tubular structures for PEMFC catalyst supports combining electrospinning, heat treatments and atomic layer deposition (ALD) (A1308)
Antti T. Pasanen (1), Piio Heikilä (1), Matti Putkonen (1), Elina Yli-Rantala (1), Markus Bosund (2), Mika Vähä-Nissi (1); (1) VTT Technical Research Centre of Finland, Tamperë/Finland, (2) Beneq Oy, Espoo/Finland

Synthesis of Carbon Supported Platinum Nanoparticles via Sputtering onto Liquid and their Oxygen Reduction Activities (A1309)
In Young Cha (1,2), Minjeh Ahn (1), Young-Hoon Chung (2), Hee-Young Park (2), Sung Jong Yoo (2), Jong Hyun Jang (2.3), Yung-Eun Sung (1); (1) Seoul National University, School of Chemical and Biological Engineering, Seoul/Republic of Korea, (2) Fuel Cell Research Center, Korea Institute of Science and Technology (KIST); Seoul/Republic of Korea, (3) Green School, Korea University, Seoul/Republic of Korea

Membranes for IT & HT PEMFC
Optimization of Poly2,5 benzimidazole(ABP81) membrane for high temperature fuel cell application (B1107)
Ratikanta Nayak, Prakash C. Ghosh; Fuel Cell Research Facility, Department of Energy Science and Engineering, Indian Institute of Technology Bombay, Mumbai/India

Investigations on the H3PO4-Uptake of Polybenzimidazole type Polymers using RAMAN Spectroscopy (B1108)
Carsten Korte, Fosca Conti, Jürgen Wackerl, Susanne Kuhri, Werner Lehnert Forschungszentrum Jülich GmbH, Jülich/Germany

Industrial applications/Microbial fuel cell/Assessments
Start-up approach based on hybrid system emulator for a pressurized Solid Oxide Fuel Cell Gas Turbine (B1207) U.M. Damo (1), M.L. Ferrari (2), A. Turan (1), A.F. Massardo (2)
(1) School of Mechanical, Aerospace and Civil Engineering, The University of Manchester, Manchester/UK, (2) Thermochemical pow er group, University of Genoa, Genoa/Italy

Eco-friendly textile dye degradation coupled to bioelectricity generation using Microbial Fuel Cell (MFC) technology (B1208) Hilor Pathak, Dhalt Chaudhari; Department of Microbiology, P. D. Patel Institute of Applied Sciences, Charotar University of Science and Technology (CHARUSAT), Gujarat/India

Landfill Leachate: A Promising Substrate for Microbial Fuel Cells (B1209) Jayesh M. Sonawane, Prakash C. Ghosh; Fuel Cell Research Facility, Department of Energy Science and Engineering, Indian Institute of Technology Bombay, Mumbai/India

Accessing Fuel Cell opportunities in European Research and Innovation (B1210)
Julian Randall, Nicole Wyss; Euresearch, Bern/Switzerland

H₂ production
Catalytic Dehydrogenation of NaBH₄ Solution across Pin Fin Structures in a Microchannel Reactor (B1307) Ki Moon Jung (1), Seok Hyun Choi (1), Moon-Sun Chung (2), Hee Joon Lee (1)
(1) School of Mechanical Engineering, Kookmin University, Seoul/Republic of Korea, (2) Hydrogen Energy R&D Center, Korea Institute of Energy Research, Daegu/South Korea

Effect of Iron Oxide Nanoparticles on Dark Fermentative Hydrogen Production from Molasses based Distillery Wastewater (B1308) Sameena. N. Malik (1),Kodhailiyil Sharmugam (2), Atul. N. Vaidya (1), Prakash C. Ghosh (3), Gajanan. S. Kannade (1), Pugalenthi Velan (2), Sandeep. N. Mudiar (1)
(1) CSIR – National Environmental Engineering Research Institute, Maharashtra/India, (2) Department of Biotechnology,
FC modelling and simulations A14

A Low-cost Membrane-less H₂/O₂ Fuel Cell Based on Laminar Flow (A1407)
X. Lu, D. Y. C. Leung, J. Xuan; The University of Hong Kong, Hong Kong/China

2D modeling of two-phase multicomponent transport in direct methanol fuel cells (A1408)
Marie-Dominique Baum (1), Thomas Jahnke (1), Arnulf Latz (1, 2)
(1) German Aerospace Center (DLR), Institute of Engineering Thermodynamics, Stuttgart/Germany, (2) Helmholtz Institute Ulm for Electrochemical Energy Storage (HIU), Ulm/Germany

Dynamic and multiphysics modeling of a PEM electrolyser using the Bond Graph modelling tool (A1409)
Pierre Olivier, Cyril Bourasseau; CEA Grenoble (DRT/LITEN/DTBH/SCSH/L2ED), Grenoble/France

Stack and system integration, operation strategies A15

Development and Characterization of a LT-PEFC Stack with an Extended Temperature Range up to 120 °C (A1507)
Andreas Dreizler, Tiziana Ruiu, Jens Mitzel, Erich Gülczow
German Aerospace Center (DLR), Institute of Engineering Thermodynamics, Stuttgart/Germany

Development of an electrical backup supply based on a novel hybrid fuel cell system (A1508)
V. Lukassek (4), M. Metzen (1), T. Hickmann (2), W. Möring (3), A. Heinzel (4)
(1) University Duisburg-Essen, Duisburg/Germany, (2) Eisenhuth GmbH, Ostfildern am Harz/Germany, (3) ehb GmbH, Langenhagen/Germany, (4) The Fuel Cell Research Center (ZBT), Duisburg/Germany

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E. Torralba-Calleja, A. Serra, D. Gali, M. Della Pirriera, J. Garcia-Montañé
LEITAT Technological Center, Barcelona/Spain

Bharathidasan Institute of Technology, Anna University, Tiruchirappalli/India, (3) Department of Energy Science & Engineering, Indian Institute of Technology, Bombay/India

In-situ O₂ rejuvenation of SO₂ contaminated Polymer Electrolyte Fuel Cell: Electrochemistry, single cell and 5-cells stack studies (B1309)
Biraj Kumar Kakati (1, 2), Anthony RJ Kucernak (1)
(1) Department of Chemistry, London/United Kingdom, (2) Department of Energy, Tezpur/India

FC Mobility applications/Stack and system integration B14

New direct alcohol and hydrogen fuel cells for naval and aeronautical applications (PILCONAIR) (B1407)
Carmen del Río (1), Enrique Morales (1), Miguel A. Razo (2), Isabel Carrillo (3), Eleuterio Mora (3), Emilio Navarro (3), Teresa J. Leo (3), Eduardo Lopez (4), Maria Carmen Garcia (4), Jesus Maellas (4), Berta Moreno (5), Eva Chinarro (5), Jadrza Mosa (5), Mario Aparicio (5)
(1) Institute of Polymer Science and Technology (ICTP-CSIC), Madrid/Spain, (2) Fac. CC. Quimicas – Universidad Complutense de Madrid, Madrid/Spain, (3) ETSI Navales – Universidad Politécnica de Madrid, Madrid/Spain, (4) Dep. Renew. Energy, National Institute for Aerospace Technology (INTA), Madrid/Spain, (5) Institute of Ceramic and Glass, (ICV-CSIC), Madrid/Spain

Development of a Reliable Hydrogen Gas Sensor for Leak Detection in Fuel Cell Vehicles (B1408)
Hiroki Yamamoto, Nobuaki Murakami, Yuri Kuwahara, Saori Yamashita, Takashi Matsumoto, Mitsuhiro Kira, Hiroshi Koda, Kiyonori Oto; FIS Inc., Itami Hyogo/Japan

Optimization of diesel powered FC-based APU power and battery capacity for specified load demand (B1409)
Bostjan Pregelj (1), Daniel T. Mgruniness (2), Janko Petrovic (1), Gregor Dolanc (1), Vladimir Jovan (1)
(1) J. Stefan Institute, Ljubljana/Slovenia, (2) Istanbul Technical University, Electrical & Electronic Faculty, Istanbul/Turkey

Virtualisation of Fuel Cell Hybrid Electric Vehicle Powertrains in a RTD Laboratory Environment (B1410)
Dr.-Ing. Bruno Gnrlich; RWTH Aachen University, Institute of Automobile Engineering (ika), Aachen/Germany

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J. Simunovic, D. Bagaric, N. Golev, D. Bezmalnovic, I. Tolj, G. Radica, F. Barbir
FESB University of Split, Split/Croatia
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Dr. Ivan Tolj, FESB, University of Split, Croatia
Prof. Daniel Hisseil, FCLAB Uni de Franche-Comte, France
Dr. Angelo Esposito, EIFER, Germany
Dr. Joachim Scholta, ZWS, Germany
At the time of print of this Final Announcement the following developers, material, measurement tool and component supplies as well as research institution had registered for the exhibition.

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<tr>
<th>Company</th>
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<td>Airbus Group Innovations München/Germany</td>
<td>100 W HYPER System Portable Power Pack + Battery Charger</td>
<td><a href="http://www.hyperportablepower.com">www.hyperportablepower.com</a></td>
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<tr>
<td>ARBOR Fluidtec AG Niederrohrdorf/Switzerland</td>
<td>Swagelok Products and Services</td>
<td>arbor.swagelok.com</td>
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<td>AVL List GmbH Graz/Austria</td>
<td>THDA Stack Monitoring</td>
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<td>Enterprise Europe Network - Switzerland/Euresearch Bern/Switzerland</td>
<td>Innovation opportunities from Europe and beyond Partnering for your innovation or technology need SME support to access EU research projects</td>
<td><a href="http://www.swisseen.ch">www.swisseen.ch</a></td>
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<td>FIS Inc. Hyogo/Japan</td>
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<td><a href="http://www.fisinc.co.jp">www.fisinc.co.jp</a></td>
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<td>HYPER Co-ordinator London/United Kingdom</td>
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<td><a href="http://www.hyperportablepower.com">www.hyperportablepower.com</a></td>
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<td>Company Name</td>
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<td>Institute of Power Engineering</td>
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<td>Petten/The Netherlands</td>
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<td>Hydrogen High Pressure Pumps, Valves, Fittings, Tubes, Test and Production Equipment</td>
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<td>Regio Energie Solothurn</td>
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<td>S** Simulation Services</td>
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<td>University of Glasgow – School of Chemistry</td>
<td>Glasgow/United Kingdom</td>
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<td>V&amp;F Analyse- und Messtechnik GmbH</td>
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Special Networking Events

Welcome Gathering
Tuesday, 30 June: 18:00, Luzerner Terrace, 2nd floor: Meet old friends, find new contacts and enjoy the splendid view of lake and historic town – a perfect starter to the conference.

Swiss Surprise (optional, limited to 80 participants)
Wednesday, 1 July: 18:30, place to be announced. A special surprise is offered in an unusual place closed to Lucerne: Enjoyable evening with Swiss folklore, music, drinks and dinner. Tickets are sold at a first-come-first-serve-basis for CHF 120.– per person. Please choose this option during your on-line registration on www.EFCF.com/Registration or use the registration form at www.EFCF.com/Download to purchase tickets in advance for you and your guests.

Dinner on the Lake
Thursday, 2 July: 19:30 Pier 6 ("Brücke 6") next to Congress Center: Historic paddle wheel steamer "Stadt Luzern" (1927, flagship of the fleet) will take us past a magnificent landscape to the "Rutli" glade, birthplace of Switzerland (1291). Enjoy the unique blend of music, drinks and candle-light dinner while gliding past beautiful scenery. Live music contributes to this unforgettable evening. This event is included in the registration fee. Please choose this option during your on-line registration on www.EFCF.com/Registration or use the registration form at www.EFCF.com/Download to purchase additional tickets for your guests (CHF 120.– per person).

Entertainment for Accompanying Persons
Bucher Travel and/or Lucerne Tourist offer entertainment programmes for accompanying persons from visits to the medieval part of the town to delightful excursions to the picturesque surroundings of Lucerne. All excursions are arranged locally on a daily basis depending on weather conditions and requests. You can get support and contact information at the registration. Accompanying persons may enjoy the exhibition and "Green Salon" for free and participate in the "Swiss Surprise" and “Dinner on the Lake”. Please purchase guest tickets during on-line registration on www.EFCF.com/Registration or use the registration form (CHF 120.– per person).
Tutorial Registration ➤ www.EFCF.com/Tutorial

The registration for the Fuel Cell Tutorial, given by Dr. Günther G. Scherer (former PSI Villigen) and Dr. Jan Van Herle (EPF Lausanne), covers the lectures with complete documentation of the six hour programme, a starter, a business lunch, sweets, coffees and refreshments. You can register for the Tutorial also without participating at the Scientific Conference. Please indicate your choice during your on-line registration on www.EFCF.com/TutReg or on the registration form at www.EFCF.com/Download. Tutorial Fee is CHF 500.–

Conference Services ➤ www.EFCF.com/Services

All participants enjoy full conference privileges. Accompanying persons and guests are kindly asked to buy tickets for meals and social events at the registration desk. The following conference privileges are contained in the conference package:
– Participation in the conferences and access to the poster area, the exhibition and the Green Salon including H₂ Party
– One copy of the electronic proceedings, agenda and bag inserts
– Download right after conference from www.EFCF.com/Lib of
  – presentations accessible with author permission
  – proceedings of this year and former years.
– Participation in all networking events:
  – Tuesday: Welcome Gathering with drinks and snacks
  – Thursday: Dinner on the Lake with the historical paddle wheel steamers
  – Three business lunches (Wednesday to Friday)
– Refreshments and coffee during intermissions, breaks and goodbye close.

Conference On-line Registration ➤ www.EFCF.com/Registration

Please register on-line at www.EFCF.com/Registration for all Forum events – conference, tutorial, side events – and pay by Credit Card or via bank, if sufficiently in advance. Please use the on-line registration option also for your hotel reservation. Credit cards are only needed to reserve your hotel room, but hotel bills are paid when you leave Lucerne.

In case you cannot register on-line, please obtain the off-line Registration Form and the Hotel Reservation Form from www.EFCF.com/Download or forum@EFCF.com. Complete these forms and return them by e-mail or fax to the address shown on the bottom of each form.

Exhibition Registration ➤ www.EFCF.com/ExReg

Companies wishing to participate in the exhibition can register on-line at www.EFCF.com/ExReg or download the Exhibition Package including the Exhibition Registration Form from www.EFCF.com/Download. Please complete and return the form to the address shown on the bottom of the form.

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

Stakeholders interested in the Free Organization Support Service for their project-, set-up- or other issue-meetings should view www.EFCF.com – Networking plus and mail to forum@EFCF.com.
The following admission fees apply: ➤ www.EFCF.com/Fee

**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 5th European PEFC and H₂ Forum 2015 will provide an excellent platform for recruitment. 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 after 15 May 2015 — newly prolonged CHF 100.–
Extra fee for on-site registration after 29 June 2015 — newly prolonged CHF 250.–

**One-Day Tickets**
Registration includes one conference proceedings in electronic form and one Forum Agenda as well as all conference privileges of the day plus download of presentations accessible with author permission. Please register on-line at www.EFCF.com/Registration in advance or at the registration desk (extra fee for late registration only applies). CHF 700.–

**Tutorial**
Incl. lectures, documents, lunch, refreshments, exhibition, Green Salon CHF 500.–

**Extra Ticket for Dinner on the Lake**
Additional guests tickets for the "Dinner on the Lake," evening event on Thursday (2 July 2015) are sold on a first-come-first-serve basis. Please order your guests tickets on-line at www.EFCF.com/Registration during your registration for the 5th European PEFC and H₂ Forum 2015 or ask on-site. CHF 120.– pp incl. 8 % VAT

**Swiss Surprise (optional)**
Tickets for the entertaining evening event "Swiss Surprise" on Wednesday (1 July 2015) night are sold on a first-come-first-serve basis. Participation is limited to 80 persons and is not included in the conference fee. Please order your and your guests tickets on-line at www.EFCF.com/Registration during your registration for the 5th European PEFC and H₂ Forum 2015 or ask on-site. CHF 120.– pp incl. 8 % VAT

**Payment 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 2015: 1 CHF = 0.94 EUR = 1.01 USD = 122 JPY. 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 2015. 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 2015. Withdrawing registrants will receive the Electronic Proceedings of the 2015 conference.

Hotel Reservation ➞ www.EFCF.com/Registration

The hotel can also be booked On-line: www.EFCF.com/Registration Button "Hotels". 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!

Applicant Training ➞ www.euresearch.ch/en/events

Euresearch Applicant Training for FCH, energy and mobility calls Tuesday 30 June 2015, 14:00 – 16:00. This training is intended for applicants located in Switzerland who are planning to participate in a proposal. You will get call-specific information, tips on the different parts of the application and how to maximise your score. The workshop is free of charge but registration is compulsory. More information and registration see above.

The event is endorsed by

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Lucerne

Lucerne is located in the heart of Switzerland on the Lake of Lucerne admired for its beauty and tranquility. Nostalgic paddle wheel steamers connect the romantic town to charming sites. From there you may ascend picturesque “Mount Rigi” and steep “Mount Pilatus”, or reach the high regions in the Alps of Switzerland. Cogwheel mountain trains, cable cars or aerial tramways take you past alpine scenery to breath-taking panoramic views of the Top of Switzerland. Most of the places can be reached between 1 – 3 hours travel.

Lucerne itself is built along the “Lake of Lucerne” and the “Reuss River”, outflow of the lake. The medieval part is closest to the waterfront. Bridges connect both banks. The famous wooden “Kapellbrucke” has been perfectly rebuilt by local artisan after total destruction by a catastrophic fire in 1993.

Lucerne is located in the heart of Western Europe and is an ideal start location for further travels around the continent before or after the conference.

Travel Arrangements

As official carrier to 5th European PEFC and H₂ Forum 2015 in Lucerne Swiss International Air Lines offers you the best booking flexibility together with Swiss product and service quality, all at a significantly discounted price. As the national airline of Switzerland we offer event participants a reduction of up to 20 % off regular fares. Your stay in Switzerland begins the moment you board one of our aircraft.

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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 resp. east or west.

By airplane:
Zurich is the gateway for the 5th European PEFC and H₂ Forum 2015. Choose Zurich as your destination. The Official Carrier SWISS offers special conference rates for convenient direct flights to Zurich from all major locations. Take the direct train from Zurich Airport to Lucerne. The train station is below the airport terminal complex. Direct trains leave every hour at hr:47. There are three more trains per hour that require changing once in Zurich. The pleasant ride takes a little bit more than one hour. Most hotels are within walking distance from the Lucerne train station and the conference location KKL.

We hope you have a pleasant journey!
and we look forward to welcome you in Lucerne!

European Fuel Cell Forum
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Tel. +41 44-586-5644  Fax +41-43-508 0622
forum@EFCF.com  www.EFCF.com

Following 2013 …see you this June 2015

…and note 4–7 July 2017 for the 6th European PEFC & H₂ Forum
Organized by the European Fuel Cell Forum
Olivier Bucheli & Michael Spirig
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