EFCF 2020
14th European SOFC & SOE Forum

Chaired by:
Prof. Dr. Dr. Anke Hagen
Prof. Dr. Peter Vang Hendriksen
DTU Technical University of Denmark

Featuring:
- Solid Oxide Technologies
  - Fuel Cells, Electrolysers & Membrane Reactors
  - CO₂ Emission Reduction & Reuse
- Exhibition: Suppliers, Materials, Testing, Components, SO-Technologies
- Tutorials: FCH – Fuel Cell, Electrolyser & Hydrogen
- EIS – Electrochemical Impedance Spectroscopy
- Grid Service Market & VPP Symposium on Flexibility, P2X,
  - Utilities & ESCO oriented Business, Demand Side Response DSR

CALL for PAPERS

24th International Conference in Series with Exhibition & FCH/EIS Tutorials
Lucerne, Switzerland, 30 June – 3 July

14th European SOFC & SOE Forum

MISSED the DEADLINE catch the last chance for ORAL:
Become immediately a New Author & inform DTU@EFCF.com when you submit.
Note: Evaluation goes on and it will become more & more difficult to consider late uploads for inclusion in the oral program.

www.EFCF.com
EUROPEAN FUEL CELL FORUM forum@efcf.com
The 14th EUROPEAN SOFC & SOE FORUM 2020 addresses issues of science, engineering, materials, systems, applications and markets for all types of Solid Oxide Fuel Cells (SOFC), Solid Oxide Electrolysers (SOE) and Solid Oxide Membrane Reactors (SOMR). Additionally the upcoming issue of CO2 emission reduction and reuse is addressed as well. The forum is the largest international meeting on Solid Oxide Technologies building the bridge from science to application. Business opportunities will be identified for manufacturers, industry, operators and investors. Although a Europe-based event, participants are invited from all continents. About 500 participants and 30 exhibitors are expected. The European Fuel Cell Forum is a leading international meeting place providing an excellent opportunity to present recent technical progress, establish new contacts, and to exchange technical, industrial and business information.

A Scientific Advisory Committee has been formed to evaluate and structure the technical programme. This panel exercises full scientific independence in all technical matters. All papers presented as lectures or posters will be collated in electronic proceedings, which will be made available to all participants at the time of registration. Later a final version will be published with ISBN in the www.EFCF.com/Library. Various other scientific publication possibilities are offered (see Publication Policy). All participants will also receive up-dated programmes of the conference and special events, overview of all contributions, authors, institutions and exhibitors.

Technical Status and Achievements: The following companies have presented in the previous SOFC & SOE edition:
- Anan Kasei
- AVL
- Boeing
- Bosal
- Robert Bosch
- Cap Co
- Ceraco Ceramic Coating
- Ceramatec
- Ceramic Powder Technology
- CeramTec
- Ceres Power
- CerPoTech
- Convion
- EBZ
- Elcogen
- Haldor Topsøe
- Hexis/Viessmann
- Kerafol
- Nissan
- Plansee
- SOLIDpower
- Sunfire
- Sylfen
- ThyssenKrupp
- Toho Gas
- Tokyo Gas

The three-day conference will feature parallel sessions with invited and contributed papers and posters. The Scientific Advisory Committee ensures that all presentations are of high quality. The technical programme will range from fundamental science and discussions on new materials, through cell, stack, and system development, to the latest achievements from commercial deployment. The 2020 Motto is:

Enabling Solid Oxide Technologies – Developments and Achievements

The EFCF 2020 conference topics are set but not limited to:

- State-of-the-art and novel materials
- State-of-the-art and novel cell/stack designs and manufacturing routes
- Emerging technologies based on solid oxides e.g.: Proton conducting oxide fuel and electrolysis cells and oxygen membrane reactors
- Degradation mechanisms & overall lifetime from materials to system level
- Advanced characterization techniques
- Cell, stack & system modelling and optimization
- Balance of plant components
- System design and performance
- Solid oxide technology integration and energy system perspectives e.g.: CO2 capture and re-use, Power-to-X, VPP, Grid Services, etc.
- Product presentations, demonstrations, and novel concepts
- Technology status at industry and major groups
- Others such as training education and cross-cutting initiatives/studies, R&D,...

The other contributions will be published as open accessible online publication with ISBN 978-3-905592-25-2 on www.EFCF.com/Proceedings. Authors who do not wish inclusion in the ISBN web publication, e.g. due to publication elsewhere, can opt out. The publication opportunities remain completely free for the authors. Final Announcement, program and registration details are distributed by letter post and announced on www.EFCF.com in March 2020.
Members of academic institutions, R&D organizations, engineering firms and industry are invited to submit contributions for oral or poster presentation at the 14th EUROPEAN SOFC & SOE FORUM 2020. Technical abstracts dealing with the topic area may be uploaded via the Author Center by 30 November 2019.

The submission procedure is:
1. Download Abstract Template, Instructions & Samples from www.EFCF.com/Download
2. Upload your one-page abstract at www.EFCF.com/Upload by 30 November 2019
3. Receive notification about acceptance in February 2020. This obliges you to submit a full length manuscript by 30 April 2020, which is mandatory & a condition to be scheduled as either an oral or poster in the final program.

Please consult the time schedule for details of privileges offered for early registration. EFCF cannot provide financial support to authors of papers. Presenting authors are required to register for the forum and to pay the appropriate registration fee. Attractive rebates are offered for group registration (starting from 3 people), and exhibitors are entitled to up to a 55% rebate on conference fees, and may additionally profit from “Early Bird” and loyalty discounts on both fees. For Frequently Asked Questions please visit www.EFCF.com/FAQ or email DTU@efcf.com.

Abstract Submission
www.EFCF.com/AuthorCenter

Exhibition
www.EFCF.com/Exhibition, registration on www.EFCF.com/ByB

Why exhibit at EFCF?

- Efficient & Effective
  - Contact with the right people, who understand and benefit from your added values and participate in the purchasing decision.
  - Valuable Contacts
- Complete & Convenient
  - Booth fees include supplies, services and VAT.
  - Profits from striking offers such as a fully equipped booth from 800 CHF when 2 participants are booked.
  - All Inclusive

Exhibition www.EFCF.com/Exhibition

Forum

Time Schedule and Events

- Deadline for submission of abstracts via www.EFCF.com/upload
- Deadline for early registration privileges
- Final Announcement with definitive oral programme as well as up-to-date poster and exhibitor list
- Deadline for regular registration privileges and holding of convenient hotels
- Exhibition & poster set-up, 16:00 Opening of Exhibition and Registration, 18:00 “Welcome Reception”
- International and Industrial Overviews – Keynotes – Oral and Poster Sessions, Exhibition
- “Swiss Surprise Night”: An enjoyable exchange event with Swiss cuisine, folklore, culture and drinks
- “Dinner on the Lake”: Unique pleasure boat tour with music and picturesque scenery, an unforgettable networking event
- Oral and Poster Sessions – Plenary Keynotes, Exhibition, Schoenbein Medal Award, Closing Ceremony

Venue
www.EFCF.com/Lucerne

EF CF events are traditionally held at the Culture and Convention Centre Lucerne (KKL) in conjunction with the Solid Oxide Technology and Supplier Exhibition. Additional events include the popular FC&H2 Tutorial, the often sold out EIS Tutorial on Electrochemical Impedance Spectroscopy, and the application oriented Grid Service Markets Symposium “GSM 2020” with an extra VPP panel (EF CF participants get 85% rebate). The KKL conference centre is in a well-known, central location on the picturesque waterfront of the Lake Lucerne, easy to reach by plane, train and car, and within a short walk from charming hotels and the historical town centre.

Fees
www.EFCF.com/Fee

- Students, trainees and unemployed persons etc. with valid identification
- Members of government, universities, consultants etc.
- Members of industry and commerce (incl. 600 CHF donation for student support)
- Late charge for registrations from 01 March/01 May 2020 for On-Site registration
- EIS Tutorial: Electrochemical Impedance Spectroscopy: Regular (ask for early bird & group rebate)
- FC&H2 Tutorial: Fuel Cells & Hydrogen: Regular (ask for early bird & group rebate)

One Swiss Franc (“CHF”) is valued at about 0.89 EURO, 1.01 US Dollar, 111 YEN, 7.30 CNY (Aug 2019). The fees include access to conference and exhibition, conference proceedings of the EFCF 2020, conference bag, business lunches, refreshments, welcome receptions on Sunday with wine and beer and the Dinner on the Lake on Thursday (pleasure boat trip on picturesque lake). Optional, Swiss Surprise on Wednesday (120 CHF pp). Post conference access to all allowed presentations and available ISBN proceedings back to 1994 is included.

Support:
Excellent Student Support Fund
www.EFCF.com/ESSF

Researcher Support & Sponsorship
www.EFCF.com/RSS

The ESSF offers support to 3 students providing first class scientific contributions in the form of free registration and a contribution towards accommodation.
In her current position she leads the development of electrochemical characterisation of solid oxide cells and other electrochemical devices, and is responsible for the coordination of the solid oxide fuel cell program at DTU Energy. Anke Hagen is author/co-author of 91 publications in reviewed scientific journals (134 in total), several book chapters and two patents.

Anke held research positions at the University of Leipzig, Germany, Yale University, USA, University of Oldenburg, Germany, and Technical University of Denmark. Her research focused on heterogeneous catalysis, before she joined the research staff at the former Risø National Laboratory to work on electrochemistry and solid oxide cells in 2003, since 2007 part of the Technical University of Denmark. In her current position she leads the development of electrochemical characterisation of solid oxide cells and other electrochemical devices, and is responsible for the coordination of the solid oxide fuel cell program at DTU Energy. Anke Hagen is author/co-author of 91 publications in reviewed scientific journals (134 in total), several book chapters and two patents.

Scientific Advisory Committee

- Prof. Ludger Blum, Forschungszentrum Jülich, DE
- John Bagstad Hansen, Haldor Topsoe, DK
- Dr. Brian Borghun, FuelCell Energy, CA
- Prof. Nigel P. Brandon, Imperial College London, UK
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- Dr. Subhashish Mukherjee, Ceres Power, UK
- Peter Stanley Jørgensen, DTU, DK
- Xiufu Sun

Prof. Peter Vang Hendriksen

heads the section “Mixed conductors” at the Department of Energy Conversion and Storage at the Technical University of Denmark (DTU) which currently counts ca. 20 employees. Peter did his Ph.D. at the Laboratory of Technical Physics, DTU, from where he graduated in 1993 with a dissertation on magnetic properties of nanoparticles. Immediately after, he joined the research group at the former Risø National Laboratory in Denmark working on development of solid oxide fuel cells. Initially he worked on modelling of stacks but soon got involved in materials development and testing activities. He became a member of the management team in 2003.

Peter has led several projects on materials and component development both in the area of SOFC and SOEC, and has served as work package leader coordinator on multi-partner European projects in the related area of oxygen transport membranes. His current research involves synthesis and characterization of functional oxides (charge transport and catalytic properties), high temperature corrosion, mechanical and fracture-mechanical issues in functional ceramics and various aspects of SOEC development. He is the author/co-author of more than 125 papers in reviewed scientific journals, 75 conference papers, 18 patents and several book chapters.