

CALL for PAPERS

EFCF 2020

24th International Conference in Series
with Exhibition & FCH/EIS Tutorials

Lucerne, Switzerland, 30 June – 3 July

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



www.EFCF.com

EUROPEAN FUEL CELL FORUM forum@efcf.com

 **SWISS**
Official Carrier

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Solid Oxide Technologies

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CO₂ Emission Reduction & Reuse

Scope of the Forum

www.EFCF.com/Scope

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

Technical Programme

www.EFCF.com/Conference

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** presentation, **demonstrations**, and novel **concepts**
- Technology status at **industry** and **major groups**
- **Others** such as training & education and cross-cutting initiatives/studies, RCS,.....

Science & Know-how

Bridge to Product

Industrial Achievements

Publication Policy

www.EFCF.com/PP, www.EFCF.com/Library

All oral and poster presentations are published in Electronic Proceedings distributed to the participants. As in previous years a limited number of contributions will be invited to be included in a Special Issue in the Journal "Fuel Cells – From Fundamentals to Systems" published by Wiley-VCH (see www.EFCF.com/SI). The other contributions will be published as open accessible on-line 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/FA 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**. LATE abstracts will NOT be considered for oral presentation!
3. Receive notification about acceptance in February 2020. This obligates 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 booth fees. For Frequently Asked Questions please visit www.EFCF.com/FAQ or email DTU@efcf.com.

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. Profit from striking offers such as a fully equipped booth from 800 CHF when 2 participants are booked.

All Inclusive

100% visibility

in the core of the Fuel Cell, Electrolyser & Hydrogen community boosts

Product Selling

Forum

Time Schedule and Events

www.EFCF.com/Schedule, www.EFCF.com/Events

30 November 2019	Deadline for submission of abstracts via www.EFCF.com/Upload
1 March 2020	Deadline for early registration privileges
15 March 2020	Final Announcement with definitive oral programme as well as up-to-date poster and exhibitor list
30 April 2020	Deadline for regular registration privileges and holding of convenient hotels
30 June 2020 11:00–16:00	Exhibition & poster set-up, 16:00 Opening of Exhibition and Registration, 18:00 "Welcome Reception"
10:00–17:00	Tutorials: 1. EIS: Electrochemical Impedance Spectroscopy; 2. FC&H ₂ : Fuel Cells. Electrolyser & H ₂ (www.EFCF.com/Tutorials)
1 July 2020 09:00–18:00	International and Industrial Overviews – Keynotes – Oral and Poster Sessions, Exhibition
18:30	"Swiss Surprise Night": An enjoyable exchange event with Swiss cuisine, folklore, culture and drinks
2 July 2020 09:00–18:00	Keynotes – Oral and Poster Sessions, Exhibition, Special Events such as www.GridServiceMarket.com Symposium etc.
19:30	"Dinner on the Lake": Unique pleasure boat tour with music and picturesque scenery, an unforgettable networking event
3 July 2020 09:00–17:00	Oral and Poster Sessions – Plenary Keynotes, Exhibition, Schoenbein Medal Award, Closing Ceremony

Venue

www.EFCF.com/Lucerne

EFCF 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** (EFCF 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 580 CHF incl. 7.7% VAT where applicable
- Members of government, universities, consultants etc. 1280 CHF incl. 7.7% VAT where applicable
- Members of industry and commerce (incl. 600 CHF donation for student support) 1880 CHF incl. 7.7% VAT where applicable
- Late charge for registrations from 01 March/01 May 2020/for On-Site registration 120/220/370 CHF incl. 7.7% VAT where applicable
- EIS Tutorial: Electrochemical Impedance Spectroscopy: Regular (ask for early bird & group rebate) 500 CHF incl. 7.7% VAT where applicable
For EFCF 2020 participants 350 CHF incl. 7.7% VAT where applicable
- FC&H₂ Tutorial: Fuel Cells & Hydrogen: Regular (ask for early bird & group rebate) 500 CHF incl. 7.7% VAT where applicable

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 reception** on Tuesday 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

The ESSF offers support to 3 students **providing first class scientific contributions** in the form of **free registration** and a **contribution towards accommodation**.

Researcher Support & Sponsorship

www.EFCF.com/RSS

INDIVIDUALS with limited financial resources can get support in **finding a sponsor**. These **SPONSORS profit** from additional privileges and visibility.

Chairs of the Conference

DTU Technical University of Denmark



Prof. Dr. Dr. Anke Hagen is professor at the Department of Energy Conversion and Storage at the Technical University of Denmark. She holds a Dr. rer. nat. degree in the field of heterogeneous catalysis from the University of Leipzig 1994 and a Dr. tec. degree in the field of solid oxide fuel cells from the Technical University of Denmark 2018.

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.



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.

Scientific Advisory Committee

www.EFCF.com/SAC

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www.EFCF.com/SOC

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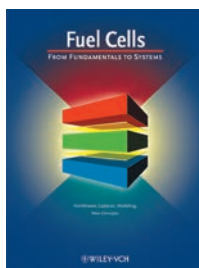
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14th European SOFC & SOE Forum

Lucerne, Switzerland, 30 June – 3 July

- This 24th high-level international event offers an unbiased presentation of the state-of-the-art technology in beautiful Switzerland
- Up-to 300 technical contributions with full length manuscripts, available to download as Proceedings
- Modern conference facilities with top services, excellent food and refreshments
- Unique networking events: "Welcome Reception", "Swiss Surprise", and "Dinner on the Lake"
- Pleasant walking from hotels to conference centre

International Exhibition of fuel cell, electrolyser and hydrogen products and components. See www.EFCF.com/IMPRESSIONS



www.EFCF.com/Library

Publication of Proceedings, Presentations,
Special issues



Official Carrier



Organised by the
EUROPEAN FUEL CELL FORUM

Olivier Bucheli & Michael Spirig
Obgardihalde 2, CH-6043 Luzern-Adligenswil, Switzerland
Tel: +41-44-586-5644

forum@efcf.com · www.EFCF.com