# CALL for PAPERS

# MEEP 2023

Microbial/Enzymatic Electrochemistry Platform

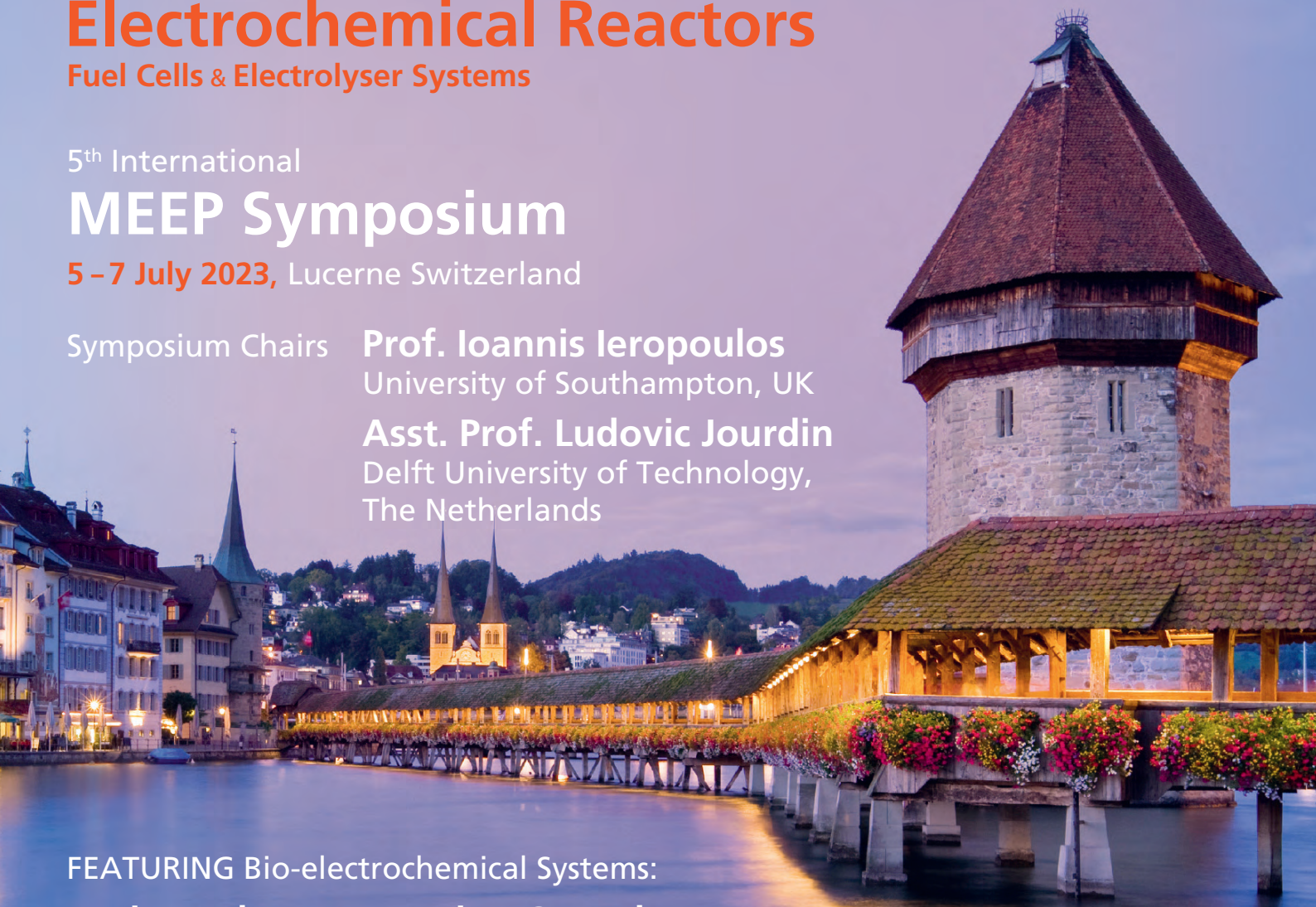
# Microbial, Enzymatic & Bio-Photovoltaic Electrochemical Reactors

## Fuel Cells & Electrolyser Systems

5th International

## MEEP Symposium

**5 – 7 July 2023,** Lucerne Switzerland



Symposium Chairs

**Prof. Ioannis Ieropoulos**
University of Southampton, UK

**Asst. Prof. Ludovic Jourdin**
Delft University of Technology,
The Netherlands

FEATURING Bio-electrochemical Systems:

- **Biocatalysts & Reaction Cascades**
- **New Materials, Biohybrids & Surfaces**
- **Reactors, Scale-up & Application**
- **Sustainability, Economics & Acceptance**

+PHOENIX-

cost
EUROPEAN COOPERATION IN SCIENCE & TECHNOLOGY

Funded by the European Union

Organised in conjunction with:
**PHOENIX** – Cost Action – **www.COST-Phoenix.eu**
**EFCF** – **European Electrolyser & Fuel Cell Forum**

**www.I-MEEP.com**

# CALL for PAPERS

# MEEP 2023

**Microbial/Enzymatic Electrochemistry Platform**

5th Symposium

Lucerne, Switzerland 5 - 7 July

# Microbial, Enzymatic & Bio-Photovoltaic Electrochemical Reactors

**Bio-Electrochemical Systems**
**Fuel Cells & Electrolysers**

Chaired by:

**Prof. Ioannis Ieropoulos** University of Southampton, UK

**Prof. Ludovic Jourdin** Delft University of Technology, The Netherlands

Featuring:

- Biocatalysts & Reaction Cascades
- New Materials, Biohybrids & Surfaces
- Reactors, Scale-up & Application
- Sustainability, Economics & Acceptance

## Scope of the Symposium

www.i-MEEP.com/**Scope**

The aim of the 5th International MEEP Symposium is to open up the discussion of emerging applications in the field of bio-electrochemistry and showcase the applicability of bio-electrochemical systems in the production of valuable chemicals, upcycling or detoxification of (biomass) waste streams, and development of novel sensor systems.

We welcome oral & poster contributions that describe applications, (electrode-) materials and reactors on different technology readiness levels, with the objective of paving the way for new international research collaborations, and boosting the momentum of applied bio-electrochemical research. Hence, we welcome researchers in the fields of natural sciences and engineering, but also specialists on economic feasibility and life cycle assessment, offering the opportunity to come together and share insights into these continuously expanding fields of technology.

A Scientific Advisory Board www.i-MEEP.com/SAB has been formed to evaluate & structure the technical program. This panel exercises full scientific independence in all technical matters. All presented papers (oral & poster) will be collated in electronic proceedings available to registered participants. If the authors wish, all contributions with an extended abstract are published with their own DOI in www.i-MEEP.com/Library. In addition, other scientific publication options are offered (see Publication Policy).

The MEEP 2023 symposium will take place again as a physical and virtual event (hybrid), offering participants from all continents, regardless of restrictions and origin, the opportunity to contribute and participate. However, being present in Lucerne in person is an unbeatable win-win situation for all. Therefore, it makes sense that only physically present participants will have the coveted opportunity to present orally.

## Technical Program

www.i-MEEP.com/**Conference**

The multi-day technical symposium will feature lectures of invited and contributed papers and posters. Care will be taken by the Scientific Advisory Board (SAB) to ensure that all presentations are of consistent high quality, yet understandable for participants with various backgrounds and expertise.

**TOPICS** of the MEEP 2023 symposium are set, but not limited to:

**1. Biocatalysts & Reaction Cascades**

1.1 Genetic/metabolic engineering of microbes or enzymes in bio-electrochemical systems
1.2 Characterisation and optimization of biofilms for BES
1.3 Integration of bio-electrochemical systems in multistep process cascades

**2. New materials, Biohybrids & Surfaces**

2.1 Advanced anode & cathode materials
2.2 Steered & tailored interaction of enzymes & organisms with electrode surfaces
2.3 Surfaces & surface catalysis
2.4 Biological hybrids for BES electrodes & membranes

**3. Reactors, Scale-up & Application**

3.1 Reactor architecture & geometries
3.2 Upscaling studies
3.3 Resilience & stability of reactor systems
3.4 Applications

**4. Sustainability, Economics & Acceptance**

4.1 Life cycle assessment & economic boundary conditions
4.2 Social perception/acceptability studies of BES
4.3 Others

## Publication Policy

www.i-MEEP.com/**PP**

All contributions, which deliver an **extended abstract**, have the opportunity to be **published with** their own **DOI** in the **EFCF community** of the **open-access repository** www.Zenodo.org. Since 2012 a limited number of contributions will be invited to be included in a **Special Issue** in the peer reviewed Journal "**Fuel Cells – From Fundamentals to Systems**" published by Wiley-VCH, e.g.: **EFCF 2013** – Volume 14, Issue 5, pg 671–774; **EFCF 2019** – Volume 20, Issue 4, pg 383-514 (see www.EFCF.com/SI). Authors who wish to **publish "elsewhere"**, can opt out. All copyrights remain with the authors.

Programme and event details are distributed in the **Final Announcement** by letter post, email and on www.i-MEEP.com/FA. All one-page abstracts of the oral & poster presentations are published in the **Book of Abstracts**. Together with all extended abstracts, they are made available in the electronic **Proceedings of the conference**. They are distributed to the MEEP participants only, as a temporary reference during the symposium and as ongoing internal reference in the MEEP MemberZone. The **final MEEP Proceedings** will be a synthesis of the Book of Abstracts and access information to the available, event related publications. It is freely accessible on www.i-MEEP.com/Library together with all other event details.

## Abstract Submission

www.i-MEEP.com/**AuthorCenter**

Members of academic institutions, R&D organizations, engineering firms and industry are invited to submit contributions for oral or poster presentation at the MEEP 2023 Symposium. Submission will take place via the Author Centre. **The submission procedure is:**

1. Download from www.i-MEEP.com/**Download** Abstract Template, Instructions & Samples
2. Upload your **1-page abstracts** at www.i-MEEP.com/**Upload** by **23 January 2023***
3. Receive notification about **acceptance** in February 2023. This requires you to submit a **paper** with ca. 5-10** pages by **31 May 2023**

* As the evaluation starts then, late abstracts will have difficulties to be considered for an oral presentation. Preserve your chances and upload on-time. You will have the opportunity to make improvements in the paper and presentation after the initial submission.

** This is a condition to be listed in the final program as oral or poster and to be eligible for publication with a DOI or consideration for a Special Issue. Shorter versions are acceptable for contributions from industry that are not intended for publication.

Presenting authors are required to register for the forum and to pay the appropriate registration fee. Please consult the list of fees below for details of privileges offered for early registration, discounts and support options e.g for Phoenix members. EFCF cannot provide direct financial support to authors of papers. For Frequently Asked Questions please visit www.i-MEEP.com/FAQ or email info@i-MEEP.com.

## Venue & Access

www.i-MEEP.com/**Lucerne**

MEEP events are traditionally held at the Culture and Convention Centre Lucerne (KKL) in conjunction with the European **E**lectrolyser and **F**uel **C**ell **F**orum www.EFCF.com. EFCF offers also a technology & supplier exhibition as well as the popular tutorials: FC&$H_2$ & EIS (each 0.5 ECTS credits). The KKL conference centre (www.i-MEEP.com/KKL) is a well-known location, on the stunning waterfront of the Lake Lucerne. It is easy to arrive by plane and train, and is located just a short walk from charming hotels and the historical town centre.

## Time Schedule & Events

www.i-MEEP.com/**Schedule**

| | | |
|---|---|---|
| **23 January 2023** | | Deadline for submission of **abstracts** via website – www.i-MEEP.com/Upload |
| 28 February 2023 | | Notification about **acceptance** in the MEEP programme |
| April 2023 | | Final Announcement with definitive oral **program**, poster and sponsor list www.i-MEEP.com/FA |
| **31 May 2023** | | Deadline for submission of **paper** – www.i-MEEP.com/Upload |
| 4 July 2023 | 10.00 – 17.00 | **Project meetings** & **Tutorials**: **1. FCH:** Fuel Cell, Electrolyser & Hydrogen (0.5 ECTS credits, Level: kick-start) |
| | | **2. EIS:** Electrochemical Impedance Spectroscopy (0.5 ECTS credits, Level: advanced) |
| | Early arrivals | are invited to visit the **EFCF exhibition** starting at 16:00 and attend the **EFCF Welcome Reception** at 18:00. |
| **MEEP symposium 2023** | | |
| **5 July 2023** | 10:00 – 18:00 | Welcome, Keynotes, Invited & Contributed Presentations in Oral and Poster Sessions, opportunity to visit EFCF exhibition and poster session |
| | 19:30 | Possibility to join Swiss Surprise Night |
| **6 July 2023** | 09:00 –18:00 | Oral & Poster Sessions – Plenary Keynotes, Exhibition, Award and Closing Ceremony |
| | 19:30 | "Dinner on the Lake": Unique pleasure boat tour with music & picturesque scenery, an unforgettable networking event |
| **7 July 2023** | 09:00 –16:00 | Reserve day for additional lectures, board & project meetings, as well as establishing partnerships |

## Services & Fees

www.i-MEEP.com/**Services**

| **Symposium Fees*** Registration Deadlines | **Physical** Early - 31 March | Regular from 1 April | Late from 15 May | **Virtual** Regular - 14 May | Late from 15 May |
|---|---|---|---|---|---|
| • Students, trainees and unemployed persons etc. with valid identification | **420** | +150 | +100 CHF | **270** | +50 CHF |
| • Government, universities, consultants etc., industry and commerce | **720** | +150 | +100 CHF | **470** | +50 CHF |
| • Phoenix member: Students, trainees and unemployed persons etc. with valid identification | **320** | +150 | +100 CHF | **170** | +50 CHF |
| • Phoenix member: Government, universities, consultants etc., industry and commerce | **620** | +150 | +100 CHF | **370** | +50 CHF |
| **Tutorials** | Day tickets on request. | | | | |
| • FC, EL & $H_2$ Tutorial - Fuel Cells, Electrolysers & Hydrogen (kick-start, www.EFCF.com/FCH): | **580** CHF | | | **400** | +50 CHF |
| • EIS Tutorial - Electrochemical Impedance Spectroscopy (advanced, www.EFCF.com/EIS) | **580** CHF | | | **400** | +50 CHF |

*The fees are for a 2-day event. If additional sessions and thus the reserve day are needed due to many contributions, the fees will be adjusted. All fees include the 7.7% VAT where applicable. Discounts are offered for group registrations of 3 or more. For further information please contact us at info@i-MEEP.com. One Swiss Franc CHF is valued at about 1.01 EURO, 1.00 US Dollar,147 YEN, 7.29 CNY (Nov 2022, www.finanzen.net/devisen).

**Physical fees include** access to the MEEP symposium and EFCF exhibition, plus all advantages of the virtual access as well as all business lunches, all refreshments, welcome reception. The exclusive **evening networking events** on Wednesday the "Swiss Surprise Night" and on Thursday the unique, very well-known and popular "Dinner on the Lake" are not included in the price, but can easily be booked during the online registration (each CHF 120 p.p.).

**Virtual access includes** virtual, live and on-demand access as well as access to the virtual community rooms during and to the member zone after the conference, proceedings of the MEEP 2023, rebate on EFCF conference fee, which includes on-demand access to previous years, MEEP membership with all additional services & discounts until the next conference (worth 470 CHF, 270 CHF for students) & post conference access to available presentations, book of abstracts & proceedings.

## Partners

**www.i-MEEP.com/Partners**

We are excited to offer a variety of partner- & sponsorship opportunities for those interested in supporting MEEP 2023. Sponsors will profit from direct contact with leading experts in these important emerging technologies. Sponsorship includes networking opportunities, a chance to showcase any products or services, and a great way to establish new partnerships within this diverse, international scientific community. Contact sponsor@i-meep.com to find out more.

5th International

# MEEP Symposium

**5 – 7 July 2023**, Lucerne Switzerland

MEEP 2023

Microbial/Enzymatic Electrochemistry Platform

## Symposium Chairs

### Prof. Ioannis Ieropoulos — University of Southampton, UK

is Professor and Chair of Environmental Engineering, in the Water & Environmental Engineering Group, Department of Civil, Maritime & Environmental Engineering at the University of Southampton, UK. He has an interest in waste utilisation and energy autonomy and produced the EcoBot family of robots, powered by microbial fuel cells (MFCs) fed on organic waste; the latest example is Row-bot. He leads a Gates Foundation funded program, developing MFCs for sanitation, looking also into biodegradable materials. He has published >90 peer reviewed journal papers, generated >£7M of research income in the last 8 years and is frequently invited at international conferences, such as ECS. He is a member of the EPSRC Peer Review College, a reviewer for the EU and numerous scientific Journals and the Editor in Chief for Sustainable Energy Technologies & Assessments (SETA).

### Assistant Prof. Ludovic Jourdin — Delft University of Technology, The Netherlands

leads the Microbial Electrochemistry and Technology group at the Delft University of Technology, where he also co-initiated the e-Refinery institute. His research predominantly focuses on investigating and developing microbial electrosynthesis processes for the production of chemicals, fuels, and materials from C-waste such as CO2. His group uses multiscale and multidisciplinary approaches that combines experiments, theory, and computer simulations, and integrates expertise in the fields of microbiology, physics, chemistry, (bio)process engineering, and multi-scale modelling.

Ludovic is an early-career independent PI, who has published more than 20 peer reviewed journal papers, presented at over 25 international conferences, generated in excess of €3M of research funding in the last 4 years, and is a reviewer for various research agencies and international journals.

## Scientific Advisory Board

www.I-MEEP.com/SAB

- Dr. Bruno Allard / Ecole de Lyon, France*
- Prof. Rachel Armstrong / KU Leuven, Belgium
- Dr. Claudio Avignone-Rossa / University of Surrey, UK*
- Dr. Alain Bergel / CNRS, France
- Prof. Haluk Beyenal / Washington State University, USA
- Ms. Pierangela Cristiani / Ricerca sul Sistema Energetico, Italy
- Dr. Mirella Di Lorenzo / University of Bath, UK
- Dr. Benjamin Erable / CNRS, France
- Prof. Fabian Fischer / HEVS, Switzerland
- Prof. Johannes Gescher / Technical University Hamburg, Germany
- **Prof. Ioannis Ieropoulos / University of Southampton, UK (Chair)***
- Prof. Sven Kerzenmacher / Bremen University, Germany*
- Dr. Carlo Santoro / University of Milan, Italy
- Prof. Orkun Soyer / University of Warwick, UK
- Dr. Eileen Yu / Loughborough University, UK
- Prof. Feng Zhao / Chinese Academy of Sciences, China

* **PHOENIX Management Committee**
Dr. Andrea Pietrelli / Uni Lyon, FR (Phoenix Chair)

Organised in conjunction with:

**EFCF AG** Switzerland
Obgardihalde 2, CH-6043 Lucerne
**info@i-meep.com · www.i-MEEP.com**

**www.COST-Phoenix.eu**
Cost Action: CA19123

Funded by the European Union

cost EUROPEAN COOPERATION IN SCIENCE & TECHNOLOGY

# Fuel Cell, Electrolyser & Hydrogen

**Kick-Starter, 0.5 ECTS**
for
→ Newcomers
→ Medium-experienced

**Live onsite 4 July 2023**
In Lucerne Switzerland
&
**Live virtual** or **on-demand**

# FCH Tutorial

- ✓ Basic understanding of chemical, physical & technical principles
- ✓ Application requirements & practical examples of current developments
- ✓ Strong base to exchange with your partners & clients

Tutors:

**Dr. Günther G. Scherer**
formerly PSI, Switzerland

**MER Dr. Jan Van Herle**
EPFL, Switzerland (right)

www.EFCF.com/FCH

Related with **EFCF 2023**, 4 - 7 July
**Low temperature FUEL CELLS, ELECTROLYSERS & $H_2$ Processing**
27th Int. Conference Series, Tutorials & Exhibition est. 1994

# Electrochemical Impedance Spectroscopy

**Advanced Know-how**
**Booster, 0.5 ECTS**
for
→ Medium - Top Experienced

**Live onsite 4 July 2023**
In Lucerne & Switzerland
**Live virtual** or **on-demand**

# EIS Tutorial

- ✓ Basic principles of EIS for analysing Electrochemical Reactor Technologies
- ✓ Advanced applications, sophisticated cases & practical details
- ✓ Discussions & exchange of experience with top-class experts

Tutors:


**Dr. André Weber**
KIT, Germany

**Dr. Dino Klotz**
Zurich Instruments AG, Zurich

**www.EFCF.com/EIS**

Related with **EFCF 2023**, 4 - 7 July
**Low temperature FUEL CELLS, ELECTROLYSERS & $H_2$ Processing**
27th Int. Conference Series, Tutorials & Exhibition est. 1994

CALL FOR PAPERS

# EFCF 2023

## Low-Temperature
# Fuel Cells, Electrolysers & $H_2$ Processing
## From fundamental science to accelerated integration

**International Conference Series est. 1994**
**with Exhibition & FCH/EIS Tutorials**

**4 – 7 July 2023**
Lucerne, Switzerland

**Chaired by**

**Prof. Michael H. Eikerling**
**Prof. Anna K. Mechler**
**Forschungszentrum Jülich, Germany**
**RWTH Aachen University**

**Featuring**

**Hydrogen** and **Direct Liquid Fuel Cells**
**Water Electrolysis** and **$CO_2$ Reduction**
**Electrochemical Engineering**
and **System Integration**

**www.EFCF.com**
EFCF – European Electrolyser & Fuel Cell Forum

SWISS Official Carrier

www.i-MEEP.com
MEEP SYMPOSIUM
Microbial Enzymatic Electrochem. Reactors