## Conference Schedule

### 9 - 12 June 2024

**Stresa, Italy**

**Electrochemical energy for a greener and more sustainable future society**

### Opening Ceremony
- **14:30 - 14:45**
  - S1 / S3 - Invited

### Keynote
- **08:30 - 09:20**
  - S1 / S3 - Invited

### Session 1
- **09:30 - 10:00**
  - S1 / S3 - Invited

### Coffee Break
- **10:00 - 10:45**
  - S1 / S3 - Invited

### Session 2
- **10:45 - 11:15**
  - S1 / S3 - Invited
  - S1 / S4 - Invited

### Lunch
- **11:30 - 13:00**
  - S1 / S4 - Invited

### Session 3
- **13:00 - 13:30**
  - S1 / S4 - Invited

### Session 4
- **13:45 - 14:00**
  - S1 / S4 - Invited

### Closing Ceremony
- **14:30 - 15:00**
  - S1 - Pitch

### Poster Sessions
- **15:00 - 16:00**
  - S1 / S2 - Pitch

### Coffee Break
- **16:00 - 16:15**
  - S1 / S2 - Pitch

### Session 5
- **16:15 - 17:00**
  - S1 / S2 - Pitch

### Session 6
- **17:00 - 17:15**
  - S1 / S2 - Pitch

### Session 7
- **17:15 - 18:00**
  - S1 / S2 - Pitch

### Gala Dinner
- **18:30 - 19:00**
  - S1 / S2 - Pitch

### Special Sessions
- **19:00 - 20:00**
  - S1 / S2 - Pitch

### Welcome Reception
- **20:00 - 21:00**
  - S1 / S2 - Pitch

### Poster Sessions
- **21:00 - 22:00**
  - S1 / S2 - Pitch

### Registration & Welcome Reception
- **08:30 - 10:00**
  - S1 / S2 - Pitch

### Keynote 
- **14:45 - 15:00**
  - Yi Cui

### Panel Discussion
- **15:00 - 15:15**
  - S1 / S2 - Pitch

### Coffee Break
- **15:15 - 15:30**
  - S1 / S2 - Pitch

### Panel Discussion
- **15:30 - 15:45**
  - S1 / S2 - Pitch

### Coffee Break
- **15:45 - 16:00**
  - S1 / S2 - Pitch

### Poster Sessions
- **16:00 - 16:15**
  - S1 / S2 - Pitch

### Program
- **16:15 - 17:00**
  - S1 / S2 - Pitch

### Special Sessions
- **17:00 - 17:15**
  - S1 / S2 - Pitch

### Poster Sessions
- **17:15 - 18:00**
  - S1 / S2 - Pitch

### Closing Ceremony
- **18:00 - 18:15**
  - S1 / S2 - Pitch

### Gala Dinner
- **18:30 - 19:00**
  - S1 / S2 - Pitch

**SCHEDULE**

- **08:30 - 10:00**
  - Breakfast

- **10:00 - 11:00**
  - Keynote

- **11:00 - 11:15**
  - Coffee Break

- **11:15 - 12:00**
  - Session 1

- **12:00 - 13:00**
  - Lunch

- **13:00 - 14:00**
  - Session 2

- **14:00 - 15:00**
  - Coffee Break

- **15:00 - 16:00**
  - Session 3

- **16:00 - 17:00**
  - Coffee Break

- **17:00 - 18:00**
  - Poster Sessions

- **18:00 - 19:00**
  - Gala Dinner

**PROGRAM**

- **https://topical37.ise-online.org**

- e-mail: events@ise-online.org
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Conference Venue

Stresa Convention Centre (Palazzo des Congressi)
28838 Stresa VB, Italy.

International Society of Electrochemistry
Chemin du Closelet 2
1006 Lausanne
Switzerland

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Program of the

37th Topical Meeting
of the International Society of Electrochemistry

Electrochemical energy for a greener and more sustainable future society

9 - 12 June 2024
Stresa, Italy

Organized by:
Division 3 - Electrochemical Energy Conversion and Storage
Division 4 - Electrochemical Materials Science
ISE Region Italy
Basement

1 – Cafeteria
2 – Aperitif and Coffee Break
3 – Poster Exhibition (S2 –S4)
4 – Stairs to the Ground Floor

Ground Floor (main conference area)

1 – Reception and Registration
2 – Conference hall, Exhibitors
3 – Aperitif and Coffee Break
4 – “Isola Bella” Theatre (Plenary & S1)
5 – Escalators to the First Floor - Balcony
6 – Stairs to the Basement
7 – Elevator to the Second Floor
8 – Stairs to Second Floor
First Floor - Balcony

1 – Poster Exhibition (S1 –S3) & Coffee Break
2 – Escalators to the First Floor
3 – Aperitif and coffee break

Second Floor

1 – Lunches & gala dinner
2 – Room “Isola dei Pescatori” (S2)
3 – Room “Isola Madre” (S3)
4 – Room “Mottarone” (S4)
5 – Elevator to the ground floor
6 – Stairs to Ground Floor
Organizing Committee

**Riccardo Ruffo** (Chair), Università di Milano Bicocca,
Claudio Gerbaldi, Politecnico di Torino,
Chiara Ferrara, Università di Milano Bicocca,
Nuria García Aráez, Southampton University,
Mikhail Zheludkevich, Helmholtz-Zentrum Geesthacht,
Thierry Brousse, University of Nantes,
Andrea Balducci, Friedrich Schiller University Jena

Local Organizing Committee

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Matteo Gastaldi, Politecnico di Torino
Francesco Gambino, Politecnico di Torino
Alessandro Piovano, Politecnico di Torino
Giuseppe Antonio Elia, Politecnico di Torino

Symposium Organizers

**Symposium 1 - Lithium-based technologies: Fundamental understanding and application aspects**

Catia Arbizzani, University of Bologna
Francesco Nobili, University of Camerino
Giovanni Battista Appeteccchi, ENEA Research Center “Casaccia” Rome
Julia Amici, Polytechnic University of Torino

**Symposium 2 - Beyond lithium: New chemistries and approaches**

Sergio Bruttii, University of Rome “La Sapienza”
Francesca Soavi, University of Bologna
Michele Pavone, University of Napoli “Federico II”
Maria Assunta Navarra, University of Rome “La Sapienza”

**Symposium 3 - Hydrogen production technologies: Novelties and advances**

Andrea Baricci, Polytechnic University of Milano
Irene Vassalini, University of Brescia
Vincenzo Baglio, CNR-ITAE Messina
Alessandra d’Epifanio, University of Rome “Tor Vergata”

**Symposium 4 - Hydrogen conversion technologies: Fundamentals, materials, applications**

Christian Durante, University of Padova
Patrizia Bocchetta, University of Salento
Massimo Innocenti, University of Florence
Antonio Barbucci, University of Genova
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Sunday 9 June

Participant Registration

Ground Floor (main conference area) - Stresa Convention Centre

13:00 to 14:30  Registration desk will also be open throughout the conference

S1 / S3 Posters & Welcome reception

First Floor - Balcony - Stresa Convention Centre

18:45 to 20:30

Monday 10 June

S2 / S4 Posters & Aperitif

Second Floor - Stresa Convention Centre

18:30 to 20:30

Tuesday 11 June

Gala Dinner

Second Floor - Stresa Convention Centre

20:00
Oral Presentations
Sunday 9 June 2024

Keynote

Room : R1 - Isola Bella Theatre

14:45 to 15:35 Chaired by Ricardo Ruffo

Yi Cui (Materials Science and Engineering, Stanford University, Stanford, USA)

Materials and Electrolyte Design for Lithium-Based Batteries

S1 - Lithium-based technologies

Room : R1 - Isola Bella Theatre

Chaired by Jakub Reiter, Marilena Mancini & Akiko Tsurumaki

15:45 to 16:00

Marilena Mancini (Accumulator Materials Research (ECM), ZSW, Ulm, Germany), Peter Axmann, Marius F. Hoffmann, Jan Martin

Electrochemical performance of recycled anode and cathode active materials

16:00 to 16:15

Saeed Mardi (Department of Chemistry, Uppsala University, Uppsala, Sweden)

The Influence of Fluorine-Free Electrolytes on the Thermal and Electrochemical Performance of Li-ion Battery

16:15 to 16:30

Yitao He (Department of Thin Films and Nanostructures, Institute of Physics of the Czech Academy of Sciences, Prague, Czech Republic)

Why Lithium Dendrites Become Thinner During Cycling in Li Metal Batteries?

16:30 to 17:00

Coffee Break
17:00 to 17:30 Invited

Jakub Reiter (R&D, Inobat Auto, Voderady, Slovakia)
Inobat – Advanced Li-ion Cell Manufacturer

17:30 to 17:45

Akiko Tsurumaki (Department of Chemistry, Sapienza University of Rome, Rome, Italy), Chiara Dal Bosco, Tecla Gasperi, Alessandra Gentili, Valentina Liberti, Maria Assunta Navarra, Corrado Zamparelli
Naturally Derived Battery Components for Safe, Stable, and Sustainable Li-ion Batteries

17:45 to 18:00

Nerea Casado (POLYMAT, University of the Basque Country, San Sebastian, Spain), Maria Forsyth, Antonela Gallastegui, David Mecerreyes
Functional Polymer Binders for More Sustainable Batteries

18:00 to 18:05

Corentin Renais (Material Science, Electrochemistry, Université Grenoble Alpes, LEPMI, Grenoble, France), Fannie Alloin, Céline Barchasz, Marta Mirolo, Maxime Servajon, Claire Villevieille
Power limitations in graphite electrodes - Electrode engineering study

18:05 to 18:10

Anthony De Simone (LITEN, CEA Grenoble, Grenoble, France), Sophie Chazelle, Hervé Manzanarez, Sébastien Martinet, Dane Sotta
Optimization of Extrusion-Lamination Process to Cast Solid Polymer Electrolyte

18:10 to 18:15

Mattia Longo (DISAT, Politecnico di Torino, Torino, Italy), Julia Amici, Silvia Bodoardo, Daniela Fontana, Matteo Gandolfo
Thiol-ene polymerization towards easily up-scalable gel polymer electrolyte
18:15 to 18:20

Matteo Gandolfo (DISAT, Politecnico di Torino, Torino, Italy), Julia Amici, Silvia Bodoardo, Dominic Bresser, Mattia Longo

Crosslinked ionogels containing active fillers for lithium-metal batteries

18:20 to 18:25

Hanxin Mei (Department of Chemistry and Industrial Chemistry, via Dodecaneso 31, DCCI, genoa, Italy), Alessandro Cingolani, Paolo Piccardo, Roberto Spotorno

Thin-Film Li$_3$InCl$_6$ Composite Solid-State Electrolyte Prepared by Solution Casting Method

18:25 to 18:30

Fabio Ferrario (Chimica, Materiali ed Ingegneria Chimica “Giulio Natta, Politecnico di Milano, Milan, Italy), Valentina Busini, Stephan Hildebrand, Mircea Lazareanu, Natalia Lebedeva, Ricardo da Costa Barata

Li-ion Battery Electrolyte Vapour Cloud Dispersion: an Experimental and Computational Fluid Dynamics approach

18:30 to 18:35

Sergio Ferrer-Nicomedes (Chemical Engineering Department, Universitat Jaume I, Castellón de la Plana, Spain), Antonio Barba-Juan, Andrés Mormeneo-Segarra, Nuria Vicente-Agut

On The Composition And Microstructural Dependance Of Environmentally Friendly LATP Composite Solid Electrolytes

18:35 to 18:40

Andrés Mormeneo-Segarra (Chemical Engineering, Jaume I University, Castellón de la Plana, Spain), Antonio Barba-Juan, Sergio Ferrer-Nicomedes, Nuria Vicente-Agut

Assessing the Influence of LATP Microstructure in the Cold Sintering Process by pioneering EIS in operando technique

18:40 to 18:45

Victoria Greussing (Department of Physical Chemistry, University of Innsbruck, Innsbruck, Austria), Engelbert Portenkirchner, Teja Stüwe

Deciphering Silicon Carbide: Insulator or Optimal Anode Material?
S2 - Beyond lithium: New chemistries and approaches

Room: R2 - Isola dei Pescatori

Chaired by Sergio Brutti, Matteo Bonomo & Giorgia Zampardi

15:45 to 16:00

Matteo Bonomo (Chemistry, Università Degli Studi di Torino, Turin, Italy), Claudia Barolo, Alessandro Damin, Giuseppe Antonio Elia, Simone Galliano, Claudio Gerbaldi, Gabriele Lingua, Daniele Motta, Stefano Nejrotti, Federica Piccirilli, Elisabeth Pires

Engineering Glycerol-derived Molecules as Hydrogen Bond Donor in NaCl and ZnCl2-based Deep Eutectic Electrolytes for Electrochemical Energy Storage Devices

16:00 to 16:15

Giorgia Zampardi (Production Engineering, University of Bremen, Bremen, Germany), Fabio La Mantia, Michele Tribbia

Electrodeposited Metallic Substrates as Highly Efficient Anodes for Aqueous Zn-Ion Batteries

16:15 to 16:30

Luis Fernando Arenas (Institute of Chemical & Electrochemical Process Engineering, Clausthal University of Technology, Clausthal-Zellerfeld, Germany), Maik Becker, Sascha Genthe, Ulrich Kunz, Thomas Turek

Measuring potential distribution within the porous foam electrodes of improved zinc-silver/air hybrid flow batteries

16:30 to 17:00

Coffee Break

17:00 to 17:30 Invited

Nagore Ortiz-Vitoriano (Electrochemical Energy Storage, CIC energiGUNE, Miñano, Spain), Estíbaliz García-Gaitán

Naturally derived Biopolymer-based Electrolytes for Zn-air Batteries
17:30 to 17:45

**Eugenio Gibertini** *(Dipartimento di Chimica, Materiali e Ingegneria Chimica, Politecnico di Milano, Milano, Italy)*, Gianlorenzo Bussetti, Luca Magagnin, Prisca Viviani

*Zn-Ion Storage In Inkjet Printed Ti$_2$C$_2$T$_2$ Mxene Electrodes*

17:45 to 18:00

**Felix Schwab** *(Institute of Engineering Thermodynamics, German Aerospace Center (DLR), Ulm, Germany)*, Britta Doppl, Niklas Herrmann, Birger Horstmann

*D Continuum Modelling and Simulations of Ni/Zn Batteries*

18:00 to 18:05

**Théo Vallier** *(ICGM, Université de Montpellier, Montpellier, France)*, Bruno Ameduri, Jean-Louis Ferrandis, Sébastien Issa, Vincent Lapinte, Laure Monconduct, Rafael Nuernberg, Lorenzo Stievano

*Understanding Na+ diffusion, physico-chemical behavior and electrochemical performance of a Gel Polymer Electrolyte*

18:05 to 18:10

**Thiago Bertaglia** *(Department of Physical Chemistry, São Carlos Institute of Chemistry, São Carlos, Brazil)*, Michael Aziz, Rafael Colombo, Frank Crespilho, Luana Faria, Roy Gordon, Rodrigo Iost, Emily Kerr, Luciano Macedo, Cristiano Oliveira, Graziela Sedenho, Gabriel Teobaldo, Andrew Wong

*Quinone-Based Hydrogel for Wearable Battery*

18:10 to 18:15

**Léa Flores** *(Battery materials laboratory, CEA, Grenoble, France)*, Jean-Frédéric Martin, Sébastien Martinet

*Exploration of aqueous electrolytes with large operating voltage window for low cost M-ion cells*

18:15 to 18:20

**Coumba Fall** *(Hérault, Institut Charles Gerhardt de Montpellier (ICGM), Montpellier, France)*, Frederic Favier, Steven Le Vot, Patrice Simon, Pierre Louis Taberna

*Investigating the Influence of Aryl Diazonium Modification on Graphite Felt for the Improvement of Redox Flow Batteries*
18:20 to 18:25

**Karim Boutamine** *(D4 ICGM, Montpellier University, Montpellier, France)*, Patricia Bassil, Frédéric Favier, Steven Le Vot, Olivier Ouari

*Improving the performance of organic posolytes for aqueous redox flow batteries*

18:25 to 18:30

**Maria Alhajji** *(Physics, University of Limerick, Limerick, Ireland)*, Andrea Bourke, Noel Buckley, Robert Lynch

*Vanadium Flow Batteries: Possible Reasons Why There is Lack of Consensus Regarding Which Electrode has Faster Kinetics*

18:30 to 18:35

**Luca Minnetti** *(School of Sciences and Technologies, University of Camerino, Camerino, Italy)*, Jusef Hassoun, Vittorio Marangon, Francesco Nobili, Leonardo Sbrascini, Antunes Staffolani

*Transport and Interphase Features of a Converted Mixed Olivine Cathode for Sodium-Ion Batteries*

18:35 to 18:40

**Shubham Kumar** *(Energy Science and Engineering, Indian Institute of Technology Bombay, Mumbai, India)*, Sandeep Kumar, S Parida

*Subabul sawdust-derived activated carbon for supercapacitor application*

18:40 to 18:45

**Antonio De Marco** *(Chemistry "Giacomo Ciamician", Università di Bologna, Bologna, Italy)*, Catia Arbizzani, Marco Giorgetti, Mariam Maisuradze

*Alginate-based separators for green battery technology*
S3 - Hydrogen production technologies

Room: R3 - Isola Madre

Chaired by Dario Dekel, Vincenzo Baglio & Andrea Zaffora

15:45 to 16:00

Vincenzo Baglio (Istituto di Tecnologie Avanzate per l’Energia (ITAE), CNR, Messina, Italy), Irene Gatto, Carmelo Lo Vecchio, Isabella Nicotera, Cataldo Simari, M.H. Ur Rehman

- Anion Exchange Membranes Based on Polysulfone Grafted with Tetramethyl Ammonium Functionalities for Fuel Cells and Electrolysers

16:00 to 16:15

Nicholas Carboni (Chemistry Department, Sapienza University of Rome, Rome, Italy), Vincenzo Baglio, Angela Caprì, Alessandra Carbone, Irene Gatto, Lucia Mazzapipeda, Maria Assunta Navarra

- Composite Anion Exchange Membranes based on Graphene Oxide for Water Electrolyzer Applications

16:15 to 16:30

Susanne Koch (Electrochemical Energy Systems, University of Freiburg, Freiburg, Germany), Joey Disch, Mohamed Elshamy, Sophia Kilian, Lukas Metzler, Severin Vierrath

- Catalyst Layer Engineering for Improved Water Management in Anion-Exchange Membrane Water Electrolyzers

16:30 to 17:00

Coffee Break

17:00 to 17:30 Invited

Dario Dekel (Chemical Engineering, Technion - Israel Institute of Technology, Haifa, Italy)

- Current Challenges in Anion-Exchange Membranes for Water Electrolysers
17:30 to 17:45

Andrea Zaffora (Engineering Department, University of Palermo, Palermo, Italy), Sabrina Grassini, Leonardo Iannucci, Monica Santamaria, Valentina Maria Volanti

Performance of Electrochemically Functionalized MOF-based Anodic Porous Transport Layers for Alkaline Water Electrolysis

17:45 to 18:00

Patrizia Bocchetta (Innovation Engineering, Università del Salento, Lecce, Italy), Antonio Picarella, Meenal Gupta, Filippo Selleri

In-situ electrochemical production of hydrogen for sustainable fuel cell feeding.

18:00 to 18:05

Farid Attar (School of Engineering, The Australian National University, Canberra, Australia), Bikesh Gupta, Siva Karuturi, Parvathala Reddy Narangari, Asim Riaz, Astha Sharma, Joshua Soo

Advanced Statistical Models for Optimising the Operating and Synthesis Parameters of Electrochemical Water Splitting

18:05 to 18:10

Sarah Zerressen (IEK-14: Institute of Energy and Climate Research, Forschungszentrum Jülich GmbH, Jülich, Germany), Ulf-Peter Apfel, Klaus Bender, Andreas Glüsen, Martin Müller, Ralf Peters, Tim Sievert, Robert Vaßen

Stainless steel based Porous Transport Layers for Polymer Electrolyte Water Electrolysis

18:10 to 18:15

Delphine Clauss (LEPMI, Univ. Grenoble Alpes, CNRS, Grenoble, France), Raphaël Chattot, Jakub Drnec, Laetitia Dubau, Frédéric Maillard, Vincent Martin, Marta Mirolo

Achieving Small IrOx Nanoparticles with Dual OER Activity and Stability via Thermal Annnealing
18:15 to 18:20

**Linghui Li** (Laboratoire de Chimie Moleculaire (LCM), Ecole polytechnique, Palaiseau, France), Clément Marchat, Cédric Tard, Sandrine Tusseau-Nenez

Efficient Electrocatalysts for Alkaline Oxygen Evolution Reaction from Wolframite Derived Heteroatom Materials

18:20 to 18:25

**Sharon-Virginia Pape** (IEK-14, Forschungszentrum Jülich, Jülich, Germany), Felix Lohmann-Richters, Anna K. Mechler, Martin Müller, Florian Seidler

Navigating the Dynamics of Alkaline Water Electrolysis: Methodological Approaches to Aging Characterization

18:25 to 18:30

**Ramūnas Levinas** (Department of Catalysis, Center for Physical Sciences and Technology, Vilnius, Lithuania), Eugenijus Norkus, Vidas Pakštas, Loreta Tamašauskaitė-Tamašiūnaitė, Roman Viter

White Light Sensitivity and p-n Photocurrent Switching in TiO$_2$/CuO Heterostructures: Optimization and Mechanistic Insights

18:30 to 18:35

**Christian Marcks** (Electrochemical Reaction Engineering, RWTH Aachen University - Aachener Verfahrenstechnik, Aachen, Germany), Mohit Chatwani, Adarsh Jain, Doris Segets

Characterization of Powder-Based Catalysts for the Oxygen Evolution Reaction Beyond Rotating Disc Electrodes

18:35 to 18:40

**Theo Faverge** (LEPMI, Université Grenoble Alpes, Grenoble, France), Antoine Bonnefont, Marian Chatenet, Christophe Coutanceau

Electrocatalytic Oxidation of Glucose into Hydrogen and Value Added Compounds on Gold: Experiments and Microkinetic Model

18:40 to 18:45

**Elisabetta Campedelli** (Chemical Science, University of Padua, Padova, Italy), Christian Durante, Marco Mazzucato

Advancing AEMWE Cathode with a Novel PGM-Free MoS$_2$-Composite Catalyst Synthesized via a Green Fast Method
S4 - Hydrogen conversion technologies
Room: R4 - Mottarone

Chaired by Plamen Atanassov, Enrico Negro & Marco Mazzucato

15:45 to 16:00

Zubair Ahmed (Chemistry, University of Tartu, Tartu, Estonia), Zubair Ahmed, Srinu Akula, Jaan Aruväli, Arvo Kikas, Vambola Kisand, Jekaterina Kozlova, Kaupo Kukli, Maike Käärik, Jaan Leis, Helle-Mai Piirsoo, Kaido Tammeveski, Alexey Treshchalov

Hybrid High-Performance Oxygen Reduction Reaction Fe-N-C Electrocatalyst for Anion Exchange Membrane Fuel Cells

16:00 to 16:15

Milena Setka (Department of Chemical Engineering, University of Chemistry and Technology, Prague, Czech Republic), Marjan Bele, José M. Catalá-Civera, Nejc Hodnik, Miroslav Soos

Microwave-assisted synthesis of nitrogen-doped carbon-based catalysts for electrochemical hydrogen peroxide production

16:15 to 16:30

Enrico Negro (Department of Industrial Engineering, University of Padova, Padova, Italy), Soufiane Boudjelida, Vito Di Noto, Angeloclaudio Nale, Gioele Pagot, Keti Vezzù

Interplay between the Precursor Features and the Physicochemical Properties of “Core-Shell” Hierarchical Carbon Nitride Electrocatalysts for the Oxygen Reduction Reaction

16:30 to 17:00

Coffee Break

17:00 to 17:30 Invited

Plamen Atanassov (Chemical & Biomolecular Engineering, University of California Irvine, Irvine, USA)

Hybrid Platinum and Metal-Nitrogen-Carbon Catalyst Library for the Oxygen Reduction Reaction
17:30 to 17:45

**Diana Constanza Orozco-Gallo** (CIDEMAT, Universidad de Antioquia, Medellin, Colombia), Jorge Andrés Calderón-Gutierrez, Verónica Muñoz-Montes, Catalina Orozco-Silva, Ricardo Ossa-Gallego

Beyond Purity Precursors: Towards Oxygen Reduction Reaction Activity Enhancement for PEM Fuel Cells

17:45 to 18:00

**Marco Mazzucato** (Chemical Science, University of Padova, PADOVA, Italy), Christian Durante

NO-Stripping in Gas Diffusion Electrode Setup: Toward More Practical Site Density Determination in Fe-N-C Catalysts for Oxygen Reduction Reaction

18:00 to 18:05

**Silvia Nasarre Artigas** (Freudenberg e-Power Systems GmbH, Bayerwaldstraße 3, München, Germany), Florian Mack, Hong Xu

Use of Distribution of Relaxation Times Analysis as an in-situ Diagnostic Tool for Water Management in PEM Fuel cell applications

18:05 to 18:10

**Jun Huang** (IEK-13, Forschungszentrum Jülich GmbH, Jülich, Germany), Lulu Zhang

Cdl of Pt(111)

18:10 to 18:15

**Michael Eppler** (CR/ATC2, Robert Bosch GmbH, Renningen, Germany), Ulrich Berner, Michael Eikerling, Matthias Hanauer, Thomas Kadyk

Understanding Mass Transport in PEMFCs through Modeling and Advanced Limiting Current Techniques

18:15 to 18:20

**Tina Đukić** (Department of Materials Chemistry, National Institute of Chemistry, Ljubljana, Slovenia), Matija Gatalo, Nejc Hodnik, Iva Klofutar, Leonard Jean Moriau, Martin Šala

Towards Long Durability of Pt-nanoalloy-based ORR Electrocatalysts: Adjustment of Potential Limits
18:20 to 18:25
Mattia Parnigotto (Chemical Sciences, University of Padova, Padova, Italy), Stephane Cotte, Gregorio Dal Sasso, Maria Chiara Dalconi, Christian Durante, Marco Mazzucato

Optimizing Pt/C Catalyst Performance in PEMFC Cathode Compartment via Metal Oxide Addition

18:25 to 18:30
Quentin Labarde (EIP, LEPMI, Grenoble, France), Marian Chatenet, Laetitia Dubau, Thomas Gaumont, Fabrice Micoud

Carbon-capped PtNi-alloy Cathodic Electrocatalysts for PEMFC

18:30 to 18:35
Sunil Kumar Sethy (Hydro and Renewable Energy, IIT Roorkee, Haridwar, India), Amit C. Bhosale

Optimization of contact resistance of a cylindrical PEMFC using gaskets

18:35 to 18:40
Patrick Sarkezi-Selsky (Institute of Engineering Thermodynamics, German Aerospace Center (DLR), Stuttgart, Germany), Thomas Jahnke

Multiscale modeling of water management in a Polymer Electrolyte Membrane Fuel Cell (PEMFC) using novel multiphase transport relations derived from Lattice Boltzmann simulations

18:40 to 18:45
Matthieu Tempelaere (LEPMI, Univ. Grenoble Alpes, CNRS, Grenoble INP, Grenoble, France), Marian Chatenet, Marc Zimmermann

Monday 10 June 2024 - Morning

Keynote

Room: R1 - Isola Bella Theatre

08:30 to 09:20  Chaired by Carlo Santoro

**Radenka Maric** (Office of the President, The University of Connecticut, Storrs Mansfield, USA), Zhiqiao Zeng, Stoyan Bliznakov, Leonard Bonville

Innovative Low-loaded MEAs for PEM Water Electrolysers: Design, Fabrication, Performance, and Durability Assessment

S1 - Lithium-based technologies

Room: R1 - Isola Bella Theatre

Chaired by Francesca Soavi & Riccardo Ruffo

09:30 to 10:00 Invited

**Laurence Hardwick** (Department of Chemistry, University of Liverpool, Liverpool, United Kingdom), Jacqui Everitt, Julia Fernandez-Vidal, Alex Neale, Igor Sazanovich

What have the Ramans ever done for us?

10:00 to 10:15

**Kamran Amin** (National Center for Nanoscience and Technology, Chinese Academy of Sciences, Beijing, China)

Combining High Redox Potential and High-Capacity in Organic Cathodes Paving the Way for Commercial Organic Lithium-ion Batteries

10:15 to 10:30

**Junichi Inamoto** (Department of Applied Chemistry, Graduate School of Engineering, University of Hyogo, Hyogo, Japan), Akane Inoo, Yoshiaki Matsuo

Graphene-like graphite, a novel cathode material for dual-carbon batteries with large capacity
10:30 to 10:45

Öykü Simsek (Laboratory of Organic and Macromolecular Chemistry (IOMC), Friedrich Schiller University/CEEC Jena, Jena, Germany), Alessandro Innocenti, Simon Muench, Stefano Passerini, Ulrich S. Schubert

UV-Initiated Composite Ionogels for Li-Organic Batteries

10:45 to 11:15

Coffee Break

11:15 to 11:45 Invited

Fabio La Mantia (Electrical Energy Storage, Fraunhofer IFAM, Bremen, Germany), Hermann Pleteit, Federico Scarpioni

Insights from dynamic impedance spectroscopy on the aging of lithium batteries

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S2 - Beyond lithium: New chemistries and approaches

Room: R2 - Isola dei Pescatori

Chaired by Ivana Hasa & Vito Di Noto

09:30 to 10:00 Invited

Lorenzo Stievano (ICGM, Univ. Montpellier, Montpellier, France), Laure Monconduit

Electronic Structure and Electrochemical Mechanisms in Electrode Materials for Potassium Batteries

10:00 to 10:15

Aniello Langella (Department of Chemical Sciences, University of Napoli Federico II, Napoli, Italy), Arianna Massaro, Ana B. Muñoz-García, Michele Pavone

First-principles insights on solid-state transitions in Mn-based layered oxides as high-energy cathodes for Na-ion batteries
10:15 to 10:30

**Noha Sabi** *(The High Throughput Multidisciplinary Research Laboratory, Mohammed VI Polytechnic University, Benguerir, Maroc)*

*Effect of Titanium Substitution in $\text{P}_2\text{-Na}_{2/3}\text{Co}_{1-x}\text{Ti}_x\text{O}_2$ Cathode Material: Understanding of the sodiation desodiation mechanism upon electrochemical cycling.*

10:30 to 10:45

**Koji Yazawa** *(NM Business Unit, JEOL ltd., Akishima, Japan)*, **Seung-Taek Myung**, **Natalia Voronina**

*Direct observation of lithium-ion migration in sodium ion battery cathodes by nuclear magnetic resonance.*

10:45 to 11:15

Coffee Break

11:15 to 11:45 Invited

**Ivana Hasa** *(WMG, The University of Warwick, Coventry, United Kingdom)*, **Jacob Compton**, **Faduma Maddar**

*Elucidating Dehydration of Prussian White Cathodes: A Journey from Lab to Upscaled Sodium-ion Cell Prototypes.*

11:45 to 12:00

**Leonardo Sbrascini** *(School of Science and Technology - Chemistry Division, University of Camerino, Camerino, Italy)*, **Luca Bottoni**, **Hamideh Darjazi**, **Francesco Nobili**

*Bio-based Hard Carbons and Binders for Sodium-ion Batteries Derived from Forestry Waste.*

12:00 to 12:15

**Metin Taha Orbay** *(Institute for Technical Chemistry, Friedrich-Schiller-University Jena, Jena, Germany)*, **Andrea Balducci**, **Thierry Brousse**, **Olivier Crosnier**, **Abbas Khan**, **Etienne Le calvez**

*AgNbO$_3$ as Anodic Material for Lithium, Sodium and Potassium-Batteries.*
12:15 to 12:30

**Antonio Gentile** (*TGM - Generation Technologies and Materials, RSE SpA - Ricerca Sistema Energetico, Milan, Italy*), Chiara Ferrara, Stefano Marchionna, Irene Ostroman, Riccardo Ruffo, Nicholas Vallana

*Nano-Structured Ti/Sn Oxides Derived by Ti$_2$Al$_{(1-x)}$Sn$_x$C$_2$ MAX Phase as Highly Stable Anode for Sodium Ion Batteries*

12:30 to 12:45

**Darío Alvira** (*Chemical Engineering and Environmental Technologies, University of Zaragoza, Zaragoza, Spain*), Daniel Antorán, Hamideh Darjazi, Claudio Gerbaldi, Joan J. Manyà, Víctor Sebastián

*Acid-Mediated Hydrothermal Carbonization of Vine Shoots as a Pathway to High-Performance Hard Carbons for SIBs*

12:45 to 13:00

**Kie Hankins** (*Institute For Advanced Materials Electrochemical Technology, Karlsruhe Institute of Technology, Karlsruhe, Germany*)

*Insights on SEI Growth and Behavior in Na-ion Batteries via Physically-Driven Kinetic Monte Carlo Model*

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**S3** - Hydrogen production technologies

*Room: R3 - Isola Madre*

_Chaired by Patrizia Bocchetta & Elena Colombo_

09:30 to 10:00 Invited

**Ulrike Krewer** (*Institute for Applied Materials - Electrochem. Technologies, Karlsruhe Institute of Technology, Karlsruhe, Germany*), Inga Dorner, Niklas Oppel, Philipp Roese

*Water and CO$_2$ Electrolysis – Insight into Kinetic Limitations*

10:00 to 10:15

**Florian Hausen** (*IEK-9, Forschungszentrum Jülich, Jülich, Germany*), Felix Gunkel, Anton Kaus, Karin Kleiner, Muzaffar Maksumov, Zhenjie Teng

*Insights on the Evolution of Functional Layers in Electrolyzers by Friction Force Microscopy*
10:15 to 10:30

Toni Moser (Physical Chemistry, University of Innsbruck, Innsbruck, Austria), Andrea Auer, Christoph Griesser, Julia Kunze-Liebhäuser

Exploring Au(111) Oxidation Dynamics in Oxygen-Free Alkaline Environments using Electrochemical Scanning Tunneling Microscopy

10:30 to 10:45

Jan Niklas Hausmann (Chemistry, Helmholtz Zentrum Berlin, Berlin, Germany), Prashanth W. Menezes

Reproducibility in Electrochemistry

10:45 to 11:15

Coffee Break

11:15 to 11:45 Invited

Antonino Arico' (CNR-ITAE Istituto di Tecnologie Avanzate per l'Energia, Consiglio Nazionale delle Ricerche, Messina, Italy)

Anion Exchange Membrane Water Electrolysis: from Materials to Stack Development

S4 - Hydrogen conversion technologies

Room : R4 - Mottarone

Chaired by Michele Piana & Lior Elbaz

09:30 to 10:00 Invited

Lior Elbaz (Chemistry, 1 Max and Anna Webb St., Ramat-Gan, Israel), Rifael Snitkoff-Sol

Quantifying the Active Site Density in MNC ORR catalysts

10:00 to 10:15

Luiza Zudina (AVTERT - Elektrochemische Reaktionstechnik, RWTH Aachen University, Aachen, Germany), Anna K. Mechler, Georgii Sokolsky

MnO₂-based Electro catalysts For Oxygen Reduction Reaction in Low-temperature Ammonia Fuel Cells
10:15 to 10:30

**Walter Orellana** *(Department of Physical Science, Universidad Andres Bello, Santiago, Chile)*

Catalytic activity of organometallic phthalocyanine sheets for oxygen reduction and oxygen evolution reactions: A theoretical study

10:30 to 10:45

**Williane da Silva Freitas** *(Department of Chemical Science and Technologies, University of Rome Tor Vergata, Rome, Italy)*, Alessandra D’Epifanio, Barbara Mecheri, Manuela Montalto, Beatrice Ricciardi

Development of PGM-free Catalysts for Oxygen Electrocatalysis in Polymer Electrolyte Fuel Cells, Electrolyzers, and Metal-Air Batteries

10:45 to 11:15

Coffee Break

11:15 to 11:45 Invited

**Michele Piana** *(Dept. of Chemistry and Catalysis Research Center, Technical University of Munich, Garching, Germany)*, Ana Marija Damjanović, Tim-Patrick Fellinger, Anna T. S. Freiberg, Hubert A. Gasteiger, Burak Koyutürk, Yan-Sheng Li, Pankaj Madkikar, Davide Menga, Olivier Proux, Armin Siebel

Ex Situ/In Situ/Operando X-ray Absorption Spectroscopy on Fe-based Oxygen Reduction Reaction Catalysts in PEMFCs

11:45 to 12:00

**Thomas Gaumont** *(LEPMI, Grenoble Institute of Technology, Grenoble, France)*, Marian Chatenet, Laetitia Dubau, Frédéric Maillard, Camille Roiron, Arnaud Viola

Carbon-supported PtNi Sponges Nano-architecture as a Cathode Catalyst for ORR in PEMFC

12:00 to 12:15

**Christian Durante** *(Chemical Sciences, Università degli studi di Padova, Padova, Italy)*, Stefane Cotte, Marco Mazzucato, Mattia Parnigotto

Pt supported ZrO$_2$/C catalyst: one-pot solid-state synthesis and activity/stability performance in PEMFC
12:15 to 12:30

François Guillet (LEPMI, Grenoble INP, Gières, France), Laetitia Dubau, Lenka Svecova

Resurrecting PEMFC nanocatalysts – Electrochemical approaches for platinum recycling

12:30 to 12:45

Jens Mitzel (Institute of Engineering Thermodynamics, German Aerospace Center (DLR), Stuttgart, Germany), Pawel Gazdzicki, Hanno Kaess, Tobias Morawietz

Impact of Ionomer Mobility on Transport and Structural Properties of the Cathodic Catalyst Layer in a PEMFC Durability Test

12:45 to 13:00

Antonela Gallastegui (Innovative Polymers Group, POLYMAT, San Sebastián-Donostia, Spain), Ilaria Abdel Aziz, Nerea Casado, Antonela Gallastegui, David Mecerreyes, Yuliana Pairetti

Fluorine-Free Protonic Poly(ionic liquid)s Membranes for Fuel Cells
Monday 10 June 2024 - Afternoon

S1 - Lithium based technologies
Room : R1 - Isola Bella Theatre

Chaired by Yong Yang, Patrik Johansson & Alessandro Piovano

14:30 to 15:00 Invited

Patrik Johansson (Departement of Physics, Chalmers University of Technology, Gothenburg, Sweden)
Practical Modelling of Lithium Battery Electrolytes

15:00 to 15:15

Mervyn Soans (Helmholtz Institute Ulm (HIU), Karlsruhe Institute of Technology (KIT), Ulm, Germany), Argjend Blakaj, Dominic Bresser, Timo Böhler, Dominik Steinle, Alberto Varzi
Versatile Chemically Delithiated Reference Electrode for Solid-State Lithium-Ion/Lithium Metal Battery Applications

15:15 to 15:30

Wei-Fan Kuan (Department of Chemical and Materials Engineering, Chang Gung University, Taoyuan, Taiwan), Hsiang-Chih Chuang, Jen-Wei Teng
Supercritical CO₂-Assisted Coating Technique on Lithium Iron Phosphate Cathode for High-Performance Lithium-Ion Batteries

15:30 to 15:45

Célia Doublet (LEPMI MIEL, UGA, Grenoble, France), Lauréline Lecarme, Claire Villevieille
Monitoring failure mechanisms in water-in-salt Li-ion full cell LiFePO₄/TiS₂

15:45 to 16:00

Tanveerkhan Pathan (WMG, University of Warwick, Coventry, United Kingdom), M. Chelladurai Asirvatham, Maria Balart, Melanie Loveridge, Iain Masters, James McLaggan, Thomas Moore, Puritut Nakhanivej, Vincent Perry-French, Louis Piper, Geoff West
Forensic Evaluation of High-Capacity Prismatic Cells
16:00 to 16:05

**Camilla Rosa** (Physical Chemistry - University of Pavia, IUSS Pavia, Pavia, Italy), Daniele Callegari, Eliana Quartarone

*Enhancing the Electrochemical Performances of Multi-Doped Spinel Oxide Cathodes for Lithium-Ion Batteries through Fluorine Anion Doping*

16:05 to 16:10

**Mingyang Zhang** (High-Performance Polymer Nanocomposites Group, IMDEA Materials Institute, Madrid, Spain), Arnab Gosh, Wei Tang, De-Yi Wang, Junchen Xiao

*Self-extinguishing efficiency: A new concept to discriminate incomparability in electrolyte fire safety evaluation*

16:10 to 16:15

**Abbas Khan** (Institut des Matériaux de Nantes Jean Rouxel, IMN, CNRS, Nantes Université, Nantes, France), Andrea Balducci, Thierry Brousse, Olivier Crosnier

*Effect of A-site deficiency on Li⁺ storage in K_{1-3x}La_{2-2x}NbO₃ (x ≤ 0.15) negative electrode material*

16:15 to 16:20

**Svenja Both** (Institute of Engineering Thermodynamics, German Aerospace Center (DLR), Stuttgart, Germany), Timo Danner, Estefane Delz, Simon Hein, Volker Knoblauch, Arnulf Latz, Adrian Lindner, Christian Weisenberger

*Modelling performance and degradation of Ni-rich cathodes*

16:20 to 16:25

**Teja Stüwe** (Department of Physical Chemistry, University of Innsbruck, Innsbruck, Austria)

*Synthesis and electrochemical characterization of n- and p-type doped SiC*

16:25 to 16:30

**Ruonan Zhu** (Department Of Chemistry Materials And Chemical Engineering, Politecnico di Milano, Milano, Italy)

*Facilitating the Formation of Effective Solid-electrolyte-interphase on Li₄Ti₂O₁₂ Anode via ZnO Modification in Aqueous Lithium-ion Batteries*
16:30 to 17:00
Coffee Break

17:00 to 17:30 Invited

Yong Yang (Chemistry, Xiamen University, Xiamen, China)
Interfacial Issues in Sulfide-Based All-Solid-State Li Batteries

17:30 to 17:45

Nuria Garcia-Araez (Chemistry, University of Southampton, Southampton, United Kingdom), Sacha Fop, Andrew Hector, Denis Kramer, Nina Meddings, J. Padmanabhan Vivek, Min Zhang
Safer batteries with ‘shut-down’ ceramics and hybrid electrolytes

17:45 to 18:00

Randy Jalem (Research Center for Energy and Environmental Materials, National Institute for Materials Science, Tsukuba, Japan)
Multi-Objective Design of Antiperovskite-Type Solid Electrolytes for All-Solid-State Batteries by High-Throughput First-Principles Calculations and Machine Learning Methods

18:00 to 18:15

Sven Uhlenbruck (Institute of Energy and Climate Research, IEK-1, Forschungszentrum Jülich GmbH, 52425 Jülich, Germany, Jülich, Germany), Dina Fattakhova-Rohlfing, Martin Finsterbusch, Olivier Guillon, Christoph Roitzheim, Walter Sebastian Scheld, Doris Sebold, Yoo Jung Sohn
Manufacturing of Solid-State Batteries meets Thermodynamics – Uncovering of Novel Phases, and their Impact on Future Experimental and Theoretical Work

18:15 to 18:30

Alessandro Innocenti (ECM, Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-W, Ulm, Germany), Simon Beringer, Stefano Passerini
Cost and Performance Analysis as a Valuable Tool for Battery Material Research
**S2 - Beyond lithium: New chemistries and approaches**

**Room : R2 - Isola dei Pescatori**

Chaired by Gianni Appetecchi, Magdalena Titirici & Gioele Pagot

14:30 to 15:00 Invited

**Magda Titirici** (Chemical Engineering, Imperial College London, London, United Kingdom)

Beyond Li: Na, K and Al based batteries-progress, challenges and perspectives.

15:00 to 15:15

**Vittorio Marangon** (Helmholtz Institute Ulm (HIU), Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany), Aislim Aracil Regalado, Katharina Bischof, Dominic Bresser, Thomas Waldmann

Commercial sodium-ion batteries: Insights into the cell design and electrode chemistry

15:15 to 15:30

**Ashley Willow** (Department of Materials Engineering, Swansea University, Swansea, United Kingdom), Sajad Kiani, Serena Margadonna, Olutimilehin Omisore, Marcin Orzech, Nathan Reynolds

Design and Assembly of a Sodium-Ion Anode-Free Battery Based on a Prussian White Cathode

15:30 to 15:45

**Antunes Staffolani** (Department of Chemistry "Giacomo Ciamician", Alma Mater Studiorum - University of Bologna, Bologna, Italy), Edoardo Finaurini, Luca Minnetti, Francesco Nobili, Leonardo Sbrascini

Electrochemical Characterization of a Na-ion Cell based on Sn anode and Recycled NaFePO$_4$ cathode

15:45 to 16:00

**Evelina Wikner** (Electrical Engineering, Chalmers University of Technology, Gothenburg, Sweden), Yonas Tesfamhret

Estimating the electrode kinetics from ICI for Sodium-Ion Batteries
16:00 to 16:05

Md. Abdul Aziz (Interdisciplinary Research Center for Hydrogen Technologies, King Fahd University of Petroleum & Minerals (KFUPM), Dhahran, Saudi Arabia), Muhammad Ali, Abbas Saeed Hakeem, Syed Shaheen Shah, Zain H. Yamani

High-Energy-Density All-Solid-State Supercapacitors via Nickel-Cobalt Double Hydroxide Nanoflowers on Jute Sticks-Derived Activated Carbon Nanosheets

16:05 to 16:10

Yeasmin Lamyea (Department of Industrial Chemistry, University of Bologna, Bologna, Italy)

PVA_H2SO4 Hydrogel for wearable devices

16:10 to 16:15

Sebastian Liebl (Physical Chemistry, University Innsbruck, Innsbruck, Austria), Engelbert Portenkirchner, Daniel Werner

Small Organic Molecules as Electrode Materials for Aqueous Sodium-Ion Batteries

16:15 to 16:20

Carla Albenga (WMG, University of Warwick, Coventry, United Kingdom), James A. Gott, Ivana Hasa, Faduma Maddar

Understanding bulk degradation of Sn-based anodes for sodium-ion batteries

16:20 to 16:25

Thukshan Samarakoon (Stephenson Institute for Renewable Energy, Chemistry, The University of Liverpool, Liverpool, United Kingdom), Elliot Coulbeck, Laurence J. Hardwick, Alex R. Neale, Tyler Petek, Dan Saccomando

Online pressure cells enable multicycle operando monitoring of redox-mediated metal-oxygen battery chemistries
16:25 to 16:30

Fabio Biffoli (Department of Chemistry "Ugo Schiff", University of Florence, Firenze, Italy), Marco Bonechi, Antonio De Luca, Claudio Fontanesi, Massimo Innocenti, Marco Pagliai

Chiral and Achiral Polycyclic Aromatic Hydrocarbon Conductors: A Theoretical Study on Vibrational Polaron Signature and Conceptualization of the Chiral Polaron Signature

16:30 to 17:00

Coffee Break

17:00 to 17:15

Engelbert Portenkirchner (Physical Chemistry, University of Innsbruck, Innsbruck, Austria), Josef Gallmetzer, Thomas Hofer, Mihai Irimia-Vladu, Stefanie Kröll, Niyazi Serdar Sariciftci, Daniel Werner, Dominik Wieland

Anthraquinone and its Derivatives as Sustainable Materials for Organic Sodium Ion Batteries – a joint Experimental and Theoretical Investigation

17:15 to 17:30

Gioele Pagot (Department of Industrial Engineering, University of Padova, Padova, Italy), Federico Brombin, Vito Di Noto, Enrico Negro, Keti Vezzù

Conductivity Mechanisms in Solid State Hybrid Inorganic Organic Polymer Electrolytes for Sodium Secondary Batteries

17:30 to 17:45

Margaux Guiraud (IFM (institute for frontier materials), Deakin University, Melbourne, Australia), Maria Forsyth, Mega Kar, Faezeh Makhlooghi Azad

Borate-Based Polymer Electrolytes for Sodium Batteries.

17:45 to 18:00

Giovanni Battista Appetecechi (SSPT, ENEA, S. Maria di Galeria (Rome), Italy), Sergio Brutti, Giovanna Maresca, Michela Ottaviani, Angelica Petrongari, Kevin M Ryan

Can Ionic Liquid Electrolytes Improve the Interfacial Compatibility towards Sodium Battery Electrodes?
18:00 to 18:15

**Franziska Jach** *(Department Energy Materials and Test Devices, Fraunhofer IISB, Erlangen, Germany)*, Max Bamberg, Martin Eckert, Gero Frisch, Felix Fuhrmann, Franziska Jach, Ulrike Wunderwald

**Reducing Self-Discharge Processes in Aluminum-Graphite Batteries**

18:15 to 18:30

**Paloma Almodovar** *(R&D, Zelestium Technologies, Soria, Spain)*, Ana Arenillas, Ignacio Camean, Joaquin Chacón, Samanta Flores-López, Ana Beatriz García, Maria Luisa López, Julio Ramírez-Castellanos, Natalia Rey-Raap, Lara Santos, Belen Sotillo, Miguel Tinoco, Inmaculada Álvarez-Serrano

**Carbon Xerogels: Breaking Capacity Carriers in Aluminium-ion Batteries**

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**S3 - Hydrogen production technologies**

**Room : R3 - Isola Madre**

Chaired by Elena Saminova, Evelina Slavcheva & Irene Vassalini

14:30 to 15:00 Invited

**Evelina Slavcheva** *(Institute of Electrochemistry and Energy Systems, Bulgarian Academy of Sciences, Sofia, Bulgaria)*, Galin Borisov, Iveta Boshnakova, Mariela Dimitrova, Borislava Mladenova

**Investigation of montmorillonite as carrier for OER catalysts**

15:00 to 15:15

**Garance Cossard** *(LEPMI, Université Grenoble Alpes, Grenoble, France)*, Marian Chatenet, Gwénaëlle Kérangueven, Elena Savinova, Eric Sibert

**Oxygen evolution reaction in alkaline media using Co-spinels and stainless steel based electrodes**

15:15 to 15:30

**Irene Vassalini** *(Department of Information Engineering, University of Brescia, Brescia, Italy)*, Ivano Alessandri, Luca Ciambrìello, Luca Gavioli

**Electrocatalytic Performance and Stability of Nanogranular NiFe Thin Film for Oxygen Evolution Reaction in Alkaline Media**
15:30 to 15:45

**Vladislav Mints** *(DCBP, University of Bern, Bern, Switzerland)*, Matthias Arenz, Jan Rossmeisl, Katrine Svane

_Exploring the high entropy oxide composition space: insights through comparing experimental with theoretical models for the oxygen evolution reaction._

15:45 to 16:00

**Etienne Berner** *(Department of Chemistry, Biochemistry and Pharmaceutical Sc., University of Bern, Bern, Switzerland)*, Matthias Arenz, Gustav K.H. Wiberg

_Achieving enhanced Oxygen Evolution Reaction Rates on Ni-based Foam Catalysts in a Gas Diffusion Electrode Setup._

16:00 to 16:05

**Pierrick Merlin** *(CEA, Université Paris Saclay, Gif-sur-Yvette, France)*, Jean-Marc Borgard, Romain Chanson, Alexis Fallet, Benoit Gwinner, Fabien Rouillard, Nathanaelle Schneider

_Elaboration of High-Efficient Coatings for Bipolar Plate of Proton Exchange Membrane Water Electrolyzers._

16:05 to 16:10

**Quinten Van Laere** *(Applied Electrochemistry and Catalysis (ELCAT), University of Antwerp, Wilrijk, Belgium)*, Tom Breugelmans, Jonas Hereijgers, Kevin Van Daele

_Enhancing Electrolyser Efficiency by Studying Porous Transport Layers and Flow Field Designs for Alkaline Water Electrolysis._

16:10 to 16:15

**Claudio Maria Pecoraro** *(Engineering department, University of Palermo, Palermo, Italy)*, Marianna Bellardita, Francesco Di Franco, Vittorio Loddo, Monica Santamaria

_Enhancing H₂ production rate by addition of biomasses in PGM-free batch and continuous photoelectrochemical cells._
16:15 to 16:20

**Fanny Reichmayr** *(Chair of Electrochemistry, Technische Universität Dresden, Dresden, Germany)*, Renhao Dong, Xinliang Feng, Axel Lubk, Inez Weidinger, Daniel Wolf, Geping Zhang

*Spectroscopic and Spectro-Electrochemical Characterisations of a Bimetallic Layered Metal-Organic Framework Catalyst: Revealing Structural Dynamics and Catalytic Behaviour*

16:20 to 16:25

**Moritz Karl Rosenthal** *(School of Chemical Engineering, Aalto University, Espoo, Finland)*, Tanja Kallio, Lilian Moumaneix, Eeva-Leena Rautama

*Fluorine-doped CuMn$_2$O$_4$ as PGM-free electrocatalyst for oxygen evolution reaction in acidic media: investigating reaction mechanism and deactivation*

16:25 to 16:30

**Arthur Bukowski** *(LEPMI, UGA-Grenoble INP, Grenoble, France)*, Antoine Bonnefont, Marian Chatenet, Jean-François Vanhumbeeck

*Iron Contamination and Electrodeposition on Nickel Cathodes in Alkaline Water Electrolysers*

16:30 to 17:00

Coffee Break

17:00 to 17:30 Invited

**Elena Savinova** *(ICPEES, University of Strasbourg - CNRS, Strasbourg, France)*, Tristan Asset, Antoine Bonnefont, Fabrice Bournel, Jean-Jacques Gallet, Iryna Makarchuk, Benoit P. Pichon, Benjamin Rottonelli

*Core-Shell Fe$_3$O$_4$@CoFe$_2$O$_4$ Spinel Nanoparticles as Promising Materials for the Oxygen Evolution Reaction in Alkaline Media*

17:30 to 17:45

**Hongyuan Yang** *(Department of Chemistry, Technical University of Berlin, Berlin, Germany)*, Matthias Driess, Prashanth Menezes

*Novel Iron-based Compounds Mediated by s-, p-, and f-block Metals for Alkaline Oxygen Evolution Electrocatalysis*
17:45 to 18:00

Sebastian Tigges (Department of Heterogeneous Catalysis, Max-Planck-Institute for Chemical Energy Conversion, Mülheim an der Ruhr, Germany), Serena DeBeer, Ulrich Hagemann, Walid Hetaba, Saskia Heumann, Liqun Kang, Milen Nachev, Michael Poschmann, Daniela Ramermann, Robert Schlögl, Bernd Sures

Ultra-Low Loading Transition Metal’s Impact on the Alkaline OER Performance of N-Doped, Hydrothermal Carbon

18:00 to 18:15

Elod Gyenge (Chemical and Biological Engineering, University of British Columbia, Vancouver, Canada), Yu Pei, David Wilkinson, Wendie Wu

High-Performance Reversible Oxygen Reduction/Evolution Gas Diffusion Electrodes with Core-Shell Mn/Mn$_3$O$_4$ Catalysts

18:15 to 18:30

Ladislav Kavan (Electrochemical Materials, J. Heyrovsky Institute of Physical Chemistry, Praha 8, Czech Republic), Zdenek Hubicka, Ladislav Kavan, Hana Krysova, Vera Mansfeldova, Hana Tarabkova, Marketa Zukalova

Photoelectrolysis of Water on SnO$_2$ and ZnO: Effects of Electrode Morphology and Interface Properties

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S4 - Hydrogen conversion technologies

Room: R4 - Mottarone

Chaired by Andrea Casalegno, Irena Zenyuk & Mohsin Muhyuddin

14:30 to 15:00 Invited

Iryna Zenyuk (Chemical and Biomolecular Engineering, University of California Irvine, Irvine, USA)

Comparison of Various Accelerated Stress Tests to Understand Degradation of PtCo/C Catalysts in Polymer Electrolyte Fuel Cell

15:00 to 15:15

Hadi Heidary (Chemical Engineering, University of Birmingham, Birmingham, United Kingdom), Hadi Heidary, Robert Steinberger-Wilckens

Development of Polymer Electrolyte Fuel Cells with Porous Foam Distributor
15:15 to 15:30
Ivan Pivac (Department of Mechanical Engineering and Naval Architecture, FESB, University of Split, Split, Croatia), Frano Barbir, Quentin Meyer, Ivan Pivac, Chuan Zhao
Localized Operando Diagnostics of PEM Fuel Cells – Internal Performance Insights

15:30 to 15:45
Yoed Tsur (Chemical Engineering, Technion - Israel Institute of Technology, Haifa, Israel), Gal Avioz Cohen, Wisal Khalaily
Degradation studies on PEMFC Cathodes using Distribution Functions of Relaxation Times

15:45 to 16:00
Fabrice Micoud (CEA LITEN, Université Grenoble Alpes, Grenoble, France), Laure Guétaz, Benoit Morin, Jean-Philippe Poirot-Crouvezier, Magali Reytier, Guillaume Soubeyran
Analyzing innovative operating strategies for the optimization of PEMFC stack performance recovery

S2 - Beyond lithium: New chemistries and approaches
Room : R4 - Mottarone

16:00 to 16:05
Radhika Krishna Hema (Helmholtz Institute Ulm (HIU), Karlsruhe Institute of Technology (KIT), Ulm, Germany)
Interphase Tuning in Acetate-based Water-in-Salt Electrolytes (WiSEs) for Sodium-ion Batteries Using Halogenated Additives

16:05 to 16:10
Jithin Antony (Energy Storage & Conversion, DECHEMA Forschungsinstitut, Frankfurt am Main, Germany), Jean Francois Drillet, Willi Peters
Development of a Rechargeable Jelly Roll Zinc/Manganese Battery
16:10 to 16:15

Muath Radi (Physico-chemistry of surfaces and polymer materials, IPREM, University of Pau & Pays Adour, CNRS, Pau, France, Pau, France), Rémi Dedryvère, Alexandre Ponrouch, Taniya Purkait

**Evaluation of Additives in Mg(TFSI)$_2$ Electrolyte for Mg Plating/Stripping Process in Rechargeable Mg Batteries**

16:15 to 16:20

Faduma Maddar (WMG, University of Warwick, Coventry, United Kingdom), Aidan Cheung, Ivana Hasa, Maider Zarrabeitia

**Investigating the Impact of 0 V Storage on Prussian White Cathode-Based Sodium-ion Battery Cells**

16:20 to 16:25

Emanuele Maria Groiss (Centre for Sustainable Energy - Industrial Engineering Dept., Fondazione Bruno Kessler - Università degli Studi di Trento, Trento, Italy), Mattia Duranti, Michele Fedel, William Gomes de Morais, Edoardo Gino Macchi

**Iron hydrolysis suppression with Glycine addition in a concentrated Iron electrolyte for aqueous Redox Flow Batteries**

16:25 to 16:30

Nathan Reynolds (Chemical Engineering, Swansea University, Swansea, United Kingdom), Serena Margadonna

**Zero-Excess Sodium-Organic Battery Through in-situ Metal Plating**

16:30 to 17:00

Coffee Break

17:00 to 17:30 Invited

Andrea Casalegno (Dipartimento di Energia, Politecnico di Milano, Milano, Italy), Andrea Baricci, Elena Colombo, Amedeo Grimaldi

**PEMFC performance decay during real-world light and heavy duty vehicle operation: degradation mechanisms and their impact**
17:30 to 17:45


*Corrosion resistance of coated Al for bipolar plates in PEM fuel cells*

17:45 to 18:00

**Elena Colombo** (*Department of Energy, Politecnico di Milano, Milano, Italy*), Andrea Baricci, Andrea Casalegno, Amedeo Grimaldi, Yu Morimoto, Magnolia Pak, Iryna V. Zenyuk

*Correlating the PEM Fuel Cell Air-Inlet Degraded Performance to the Heterogeneous Cerium Distribution Caused by Automotive Operations*

18:00 to 18:15

**Alexandr Oshchepkov** (*ICPEES, University of Strasbourg, Strasbourg, France*), Tristan Asset, Elena Savinova

*Enhancing the CO tolerance of Pt/C anodes of the proton exchange membrane fuel cells through optimization of the ionomer concentration in the catalyst layer*

18:15 to 18:30

**Sylvain Brimaud** (*Fuel Cell Fundamentals, Zentrum für Sonnenenergie- und Wasserstoff-Forschung (ZSW), Ulm, Germany*), Alessandro Brega, Ludwig Jörissen, Masuma Sultana Ripa, Oliver Thimm

*Applied electrochemistry for the maturation of hydrogen fuel cell technology*
Tuesday 11 June 2024 - Morning

Keynote

Room: R1 - Isola Bella Theatre

08:30 to 09:20 Chaired by Piercarlo Mustarelli

Marian Chatenet (LEPMI, Grenoble Institute of Technology, Saint Martin d'Hères, France), Huong Doan, Ricardo Sgarbi

Carbon-capped metal-based nanoparticles; towards fast and durable hydrogen reactions catalysis in alkaline electrolytes

S1 - Lithium based technologies

Room: R1 - Isola Bella Theatre

Chaired by Mauro Pasta & Claire Villevielle

09:30 to 10:00 Invited

Claire Villevielle (LEPMI, CNRS, Saint Martin d'Hères, France)

Microstructure Evolution in Solid-State Batteries During Cycling

10:00 to 10:15

Anna Windmüller (Institute of Energy and Climate Research (IEK-9), Forschungszentrum Jülich GmbH, Jülich, Germany), Anna Domgans, Rüdiger-A. Eichel, Bing-Joe Hwang, Felix Hüning, Hans Kungl, Kristian Schaps, Roland Schierholz, Bereket Woldegbreal Taklu, Hermann Tempel, Chih-Long Tsai, Shicheng Yu, Frederik Zantis

The role of LiGaO₂ in Li-metal batteries using Ga-doped garnet solid-electrolytes

10:15 to 10:30

Lorena García (Electrochemical Energy Storage, CIC energiGUNE, Vitoria, Spain), Itziar Aldalur, Michel Armand, Mikel Arrese-Igor, Julen Etxabe, Maria Martinez-Ibañez, Leire Meabe, Izaskun Serna

Towards novel CF₃-free lithium salt for solid polymer electrolytes
10:30 to 10:45

Daniele Callegari (Physical Chemistry, University of Pavia, Pavia, Italy), Stefania Davino, Eliana Quartarone

Quasi-Solid Electrolyte with Autonomous Self-Healing Capabilities for Li-Ion Batteries

10:45 to 11:15

Coffee Break

11:15 to 11:45 Invited

Mauro Pasta (Department of Materials, University of Oxford, Oxford, United Kingdom)

Lithium-Alloy Anodes in Solid-State Batteries

11:45 to 12:00

Jiří Červenka (Department of Thin Films and Nanostructures, FZU - Institute of Physics of the Czech Academy of Sciences, Prague, Czech Republic)

Engineering of Nanostructured High-Capacity Anode Materials for Lithium-Ion Batteries

12:00 to 12:15

Damian Kowalski (Faculty of Chemistry, University of Warsaw, Warsaw, Poland), Sandra Sajeev, Mewin Vincent

In-Situ Raman Spectroscopy of Li+ and Na+ Storage in Anodic Nanotubes

12:15 to 12:30

Saveria Santangelo (Department of Civil, Energy, Environmental and Materials Eng, Mediterranean University, DJCEAM, Reggio Calabria, Italy), Vito Di Noto, Marco Giorgetti, Min Li, Yanchen Liu, Mariam Maisuradze, Gioele Pagot, Nicola Pinna, Alessandro Ponti, Saveria Santangelo, Claudia Triolo

Li-Storage Performance of (Mn\textsuperscript{1/5}Fe\textsubscript{1/5}Co\textsubscript{1/5}Ni\textsubscript{1/5}Zn\textsubscript{1/5})_2O_4 Nanofibers: Role of the Microstructure
12:30 to 12:45

**Mario Marinaro** *(ECM, ZSW - Zentrum für Sonnenenergie-und Wasserstoff- Forschung, Ulm, Germany)*

*The Role of Silicon in High-Energy Li-ion Batteries*

12:45 to 13:00

**Afshin Pendashteh** *(Multifunctional Nanocomposites Group, IMDEA Materials Institute, Getafe, Spain), Rafael Tomey, Juan J. Vilatela*

*Silicon nanowire paper anodes in gen. 3b Li-ion batteries exceeding 400Wh/Kg*

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**S2 - Beyond lithium: New chemistries and approaches**

**Room : R2 - Isola dei Pescatori**

*Chaired by Julia Amici*

09:30 to 10:00 Invited

**Shinichi Komaba** *(Department of Applied Chemistry, Tokyo University of Science, Tokyo, Japan), Tomooki Hosaka, Masayoshi Matsuzaki, Kosuke Nakamoto, Nobuhiro Okada, Masayoshi Shimizu, Ryoichi Tatara, Kazuteru Umetsu*

*Sacrificial Electrode Additive in Na-ion Batteries to Compensate for the Sodium Deficiency in P2-Type Layered Oxides*

10:00 to 10:15

**Maider Zarrabeitia** *(Helmholtz Institute Ulm, Karlsruhe Institute of Technology, Ulm, Germany), Elizabeth Castillo-Martínez, Jinyu Chen, Sohelia Ebrahimi, Boyan Iliev, Thomas J. S. Schubert*

*Ternary Polymer Electrolytes for Potassium-based Solid-State Batteries*

10:15 to 10:30

**Ana López Cudero** *(HEMPOL, ICTP-CSIC, Madrid, Spain), Ángela Campo, Nuria García, Víctor Gregorio, Aránzazu Martínez-Gómez, Pilar Tiemblo*

*Functional Separators for Semi-solid Electrolytes in Beyond-Li Batteries*
10:30 to 10:45

**Hagar K. Hassan** *(Echem II and Theory I, Helmholtz Institute Ulm (HIU), Ulm, Germany)*, Muhammed B. Arian, Paul Hoffmann, Kana Inshigami, Timo Jacob, Aya Mohamed

Unraveling Electrolyte Challenges in Post-Lithium Ion Batteries: From Metal-Organic Frameworks to Metal-Rich Antiperovskites

10:45 to 11:15  Coffee Break

11:15 to 11:30

**Vito Di Noto** *(Department of Industrial Engineering, University of Padua, Padua, Italy)*, Enrico Negro, Gioele Pagot, Keti Vezzù

Beyond Lithium Batteries: Conductivity mechanisms of New functional electrolytes

11:30 to 11:45

**Simone Dagostino** *(Department of Chemistry, University of Bologna, Bologna, Italy)*, Samet Ocak, Francesca Soavi

Effects of Supramolecular Complexations of Solid-Acids with Crown Ethers: a Route to Access Novel Solid-State Electrolytes

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**S3 - Hydrogen production technologies**

*Room: R3 - Isola Madre*

*Chaired by Tobias Binninger & Svitlana Pylypenko*

09:30 to 10:00  Invited

**Svitlana Pylypenko** *(Chemistry, Colorado School of Mines, Golden, USA)*

Characterization of Surfaces and Interfaces in Polymer Electrolyte Membrane Electrolyzers

10:00 to 10:15

**Tomas Bystron** *(Department of Inorganic Technology, University of Chemistry and Technology Prague, Prague, Czech Republic)*, Tereza Bautkinova, Karel Bouzek, Johannes Häusler, Meital Shviro, Nikolai Utsch

Investigation of Ti Hydrides for Proton Exchange Membrane Water Electrolysis Application
10:15 to 10:30

**Bas van Dijk (STIP, TNO, Petten, Netherlands)**, Johan Buurma, Oscar Diaz Morales, Simone Dussi, Gopalan Jayashankar, Marcelle Potgieter, Davide Ripepi, Jie Shen, Rick de Waard, Coen van Aken, Emma van Zanten

*Next Generation Components and Manufacturing for PEM Water Electrolysis*

10:30 to 10:45

**Pascal Sous (Electrolysis, The hydrogen and fuel cell center GmbH, Duisburg, Germany)**, Sebastian Hirt, Harry Hoster, Natalia Levin-Rojas

*Enhancing PEM water electrolysis performance by optimizing Ir-catalyst ink*

10:45 to 11:15

Coffee Break

11:15 to 11:45 Invited

**Aliaksandr Bandarenka (Physics, Technical University of Munich, Garching, Germany)**

*Identification of Active Electrocatalytic Sites for the Hydrogen Evolution Reaction*

11:45 to 12:00

**Dzevad Kozlica (Department of Materials Chemistry, National Institute of Chemistry, Ljubljana, Slovenia)**, Marjan Bele, Pedro Farinazzo Bergamo Dias Martins, Matjaz Finsgar, Maris M. Mathew, Dusan Strmčnik

*Key Parameters Controlling the Hydrogen Evolution Reaction on Nickel*

12:00 to 12:15

**Arnaud Viola (LEPMI, Grenoble INP, Grenoble, France)**, Raphaël Chattot, Jakub Drnec, Frédéric Maillard, Vincent Martin, Jaysen Nelayah, Galina Tsirlina

*Hydrogen Trapping in Palladium Nanoparticles, and its Influence on the Rate of Hydrogen Evolution/Oxidation Reaction*
12:15 to 12:30

Elena L. Gubanova (Department of Physics, Technische Universität München, Garching bei München, Germany), Aliaksandr S. Bandarenka, Johannes A. Fischer, Batyr Garlyyev, Elena L. Gubanova, Jan M. Macak, Frédéric Maillard, Jan Michalička, Kais Sadraoui, Peter M. Schneider, Christian M. Schott, Anatoliy Senyshyn, Arnaud Viola, Sebastian A. Watzele

Pd-Based Catalyst Synthesized via Electrochemical Erosion for Hydrogen Evolution Reaction

12:30 to 12:45

Kangwoo Cho (Division of Environmental Science and Engineering, Pohang University of Science and Technology, Pohang, Korea), Jiseon Kim

Electrolytic Hydrogen Generation Efficiency Coupled with Urea and Ammonia Oxidation Reactions

12:45 to 13:00

Iryna Antonyshyn (Inorganic Chemistry, Fritz-Haber-Institut der Max-Planck-Gesellschaft, Berlin, Germany), Ulrich Burkhardt, Yuri Grin, Peter Höhn, Marcus Schmidt, Büsra Sevdaroglu

Heterophase boronization as a flexible method for electrocatalyst preparation

13:00 to 13:15

Salvo Mirabella (Physics and Astronomy, University of Catania, Catania, Italy), Sergio Battiato, Luca Bruno, Antonio Terrasi, Mario Urso

Ni-based Microflowers for Water Splitting
S4 - Hydrogen conversion technologies

Room: R4 - Mottarone

Chairied by Christian Durante

09:30 to 10:00 Invited

**Frederic Jaouen** *(ICGM, CNRS, Montpellier, France)*, Simon Amigues, Nicolas Bibent, Laetitia Dubau, Frédéric Maillard, Eliot Petitdemange

**MOF-derived Nickel Catalysts for Anion Exchange Membrane Fuel Cell Anode**

10:00 to 10:15

**Hsiharng Yang** *(Graduate Institute of Precision Engineering, National Chung Hsing University, Taichung, Taiwan)*, Guan-Yu Chu

**Silver Nano-particles Modification Used as Cathode Catalysts to Enhance Anion Exchange Membrane Fuel Cells**

10:15 to 10:30

**Giovanni Di Liberto** *(Materials Science, Università degli Studi di Milano-Bicocca, Milano, Italy)*, Livia Giordano, Gianfranco Pacchioni

**Modeling Single Atom Catalysts**

10:30 to 10:45

**Fabio Coral Fonseca** *(CECCO, IPEN, Sao Paulo, Brazil)*, Tamara Moraes

**Solid-solution Driven Metallic Active Sites in Perovskite Anodic Layer for Direct Ethanol Solid Oxide Fuel Cell**

10:45 to 11:15

Coffee Break

11:15 to 11:45 Invited

**Ulrike I. Kramm** *(Chemistry, TU Darmstadt, Darmstadt, Germany)*, Vladislav Gridin, Hendrik Haak, Ulrike I. Kramm, Lingmei Ni, Anna Ostroverkh, Nicole Segura-Salas, Pascal Theis, Xiaohua Yang

**How do nanoparticles affect FeNC catalysts and their catalytic performance for the ORR and CO₂ conversion?**
Tuesday 11 June 2024 - Afternoon

S1 - Lithium-based technologies
Room: R1 - Isola Bella Theatre

Chaired by Giuseppe Antonio Elia & Daniele Callegari

14:30 to 14:35

Johannes Hörmann (Institute of Engineering Thermodynamics, German Aerospace Center (DLR), Stuttgart, Germany), Ashutosh Agrawal, Timo Danner, K. Andreas Friedrich, Simon Hein, Birger Horstmann, Dennis Kopljär, Yannick Kuhn, Arnulf Latz
Combining Single-Particle Measurements and Simulations for Advanced Electrochemical Characterization of Lithium-Ion Battery Materials

14:35 to 14:40

Jean-Baptiste Guy (Electric Mobility, CEA LITEN, Grenoble, France), Frédéric Bossard, Benoît Chavillon, Sophie Chazelle, Jean-Baptiste Guy, Sébastien Martinet, Eric Mayousse, Willy Porcher
Influence of the Electrolyte and Temperature on the Tortuosity Measurement by Electrochemical Impedance Spectroscopy

14:40 to 14:45

Chenkun Li (Wilhelm-Johnen Str.1, Forschungszentrum Jülich GmbH, Jülich, Germany), Jun Huang
Deciphering impedance response of the solid-electrolyte interphase at lithium metal anodes

14:45 to 14:50

Bhavya Nidhi Vats (Centre for Automotive Research and Tribology, Indian Institute of Technology Delhi, New Delhi, India), S Fatima, Raghvendra Gupta, Amit Gupta, Deepak Kumar
Electrochemical performance and post-operational characteristics of composite anode: Graphite-x(Si@TiO2) nanoparticles (x=5,10,15%)
14:50 to 14:55

**Philipp Müller** *(IEK-9, Forschungszentrum Jülich GmbH, Jülich, Germany)*, Dominic Bresser, Hans Kungl, Eichel Rüdiger, Sandro Schöner, Dominik Steinle, Conrad Szczuka, Hermann Tempel, Chih-Long Tsai, Anna Windmüller, Shicheng Yu

*Decoding low coulombic efficiencies in PEO based zero excess lithium metal solid-state batteries*

Panel Discussion

15:00 to 16:30

**Symposia 1 & 2**

16:30 to 17:00

Coffee Break

17:00 to 17:15

**Liang-Yin Kuo** *(Chemical Engineering, Ming Chi University of Technology, New Taipei City, Taiwan)*, Yola Bertilsya Hendri, Chun-Chen Yang

*Taylor–Couette reactor synthesis method and density functional theory study for investigating structure, morphology, and diffusion mechanism in Ta-modified Ni-rich cathode material*

17:15 to 17:30

**Jean-Francois Colin** *(DEHT/ Materials Laboratory, Univ. Grenoble Alpes, CEA-LITEN, Grenoble, France)*, Marion Chandesris, Thibaut Jourseaume, Sandrine Lyonnard, Samuel Tardif

*Significance of the Strain-Lithium Content Relationship in Ni-Rich Cathodes: An Operando Study*

17:30 to 17:45

**Marc Nel-lo** *(Energy Storage, Harvesting and Catalysis, IREC, Barcelona, Spain)*, Jordi Jacas, Elias Martínez, Leif Olav

*Investigating the Influence of Synthesis-Generated Carbonates on NMC811*
17:45 to 18:00

Valerie Siller (Electrochemistry Laboratory, Paul Scherrer Institute, Villigen, Switzerland), Mario El Kazzi, Carlos Antonio Fernandes Vaz, Christian Jordy, Barthélémy Lelotte, Vincent Pelé, Robin Wullich

Probing the instable interface between solid electrolytes and high voltage cathodes with operando X-ray spectroscopy

18:00 to 18:15

Francesca Soavi (Department of Chemistry "Giacomo Ciamician", Alma Mater Studiorum Università di Bologna, Bologna, Italy), José Ramón Herrera Garza, Clara Santato

In Operando Characterization of the Electronic Properties of Li-ion Intercalation Materials

18:15 to 18:30

Laura Silvestri (Department of Energy Technologies and Renewable Sources, ENEA, Rome, Italy), Giovanni Battista Appetecchi, Sergio Brutti, Arcangelo Celeste, Eleonora De Santis, Valeria Lombardi

Co-free Li-rich Layered Oxide Materials as Positive Electrodes in Li-ion Batteries

S2 - Beyond lithium: New chemistries and approaches

Room : R2 - Isola dei Pescatori

Chaired by Shinichi Komaba & Hamideh Darjazi

14:30 to 14:35

Meenal Gupta (Department of Innovation Engineering, University of Salento, Lecce, Italy), Patrizia Bocchetta, Yogesh Kumar, Ashwani Kumar

Modified Carbonaceous Electrode Materials for Energy Storage and Conversion Devices

14:35 to 14:40

Khai Shin Teoh (Research Group Prof. Andrea Balducci, Friedrich-Schiller-University Jena, Jena, Germany), Andrea Balducci, Sandesh Darlami Magar, Juan Luis Gómez Urbano, Massimo Melchiorre, Francesco Ruffo

Bio-based Solvent Gamma-valerolactone for Energy Storage Devices
14:40 to 14:45

**Prisca Viviani** *(Dipartimento di Chimica, Materiali e Ingegneria Chimica, Politecnico di Milano, Milano, Italy)*

*Ti$_3$C$_2$T$_x$ MXene flakes size effect on zinc crystal growth in anode-free Zn batteries*

14:45 to 14:50

**Mirabella Salvo** *(Dipartimento di Fisica e Astronomia, Università di Catania, catania, Italy)*, Elena Bruno, Giacometta Mineo, Antonio Terrasi, Federico Ursino

*Improved specific capacitance of WO$_3$ and MoO$_3$ nanostructures obtained by hydrothermal synthesis for energy storage applications.*

14:50 to 14:55

**Massimo Melchiorre** *(Dipartimento di Scienze Chimiche, Università degli Studi di Napoli Federico II, Napoli, Italy)*, Balducci Andrea, Ruffo Francesco, Juan Luis Gómez Urbano, Khai Shin Teoh

*Lactic Acid Dioxolanes as Bio-based Solvents for Supercapacitors and Li-ion Batteries*

14:55 to 15:00

**Bashir Ahmed Johan** *(Materials Science and Engineering, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia)*, Atif Saeed Alzahrani, Md Abdul Aziz

*Electrodeposited Zinc-ion Batteries: High-Performance and Low-Cost Aqueous Systems for Flexible Electronics.*

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**Panel Discussion**

Room: R1 - Isola Bella Theatre

15:00 to 16:30

**Symposia 1 & 2**

16:30 to 17:00

Coffee Break
17:00 to 17:15

Omar Elkhafif (Institute of Electrochemistry, Ulm University, Ulm, Germany), Hagar K. Hassan, Timo Jacob

**Boosting Mg Deposition/Dissolution from Ionic liquids; The role of different Additives for Applications in Mg-ion Batteries**

17:15 to 17:30

Shanghai Wei (Department of Chemical and Materials Engineering, The University of Auckland, Auckland, New Zealand)

**Alloy anodes for Magnesium Rechargeable Batteries**

17:30 to 17:45

Fabio Maroni (Accumulator Materials Research Team, Zentrum für Sonnenenergie- und Wasserstoff-Forschung (ZSW), Ulm, Germany), Mario Marinaro

**Tracking Nucleation of Electrodeposited Divalent Cations**

17:45 to 18:00

Malaurie Paillot (DRF/IRAMIS/NIMBE, CEA Saclay, Gif-sur-Yvette, France), Magali Gauthier, Sophie Le Caër, Bénédicte Montigny, Alan Wong

**Fundamental understanding of concentrated aqueous electrolytes for Mg batteries**

18:00 to 18:15

Patrick Gerlach (IMN, Institut des Matériaux de Nantes Jean Rouxel, Nantes Université, Nantes, France), Thierry Brousse, Camille Douard, Fabrice Leroux, Julien Sarmet, Philippe Stevens, Christine Tavoit-Gueho, Gwenaëlle Toussaint

**Understanding the Electrochemical Behavior of Layered Double Hydroxides with Intercalated Ferrocene Anions for Energy Storage Application**

18:15 to 18:30

Megan Daw (School of Chemistry, University of Southampton, Southampton, United Kingdom), Megan Daw, Andrew Hector, Gillian Reid

**Novel Electrolyte Materials for Rechargeable Magnesium Metal Batteries**
**S3 - Hydrogen production technologies**

**Room: R3 - Isola Madre**

*Chaired by Carlo Santoro, Aliaksandr Bandarenka & Giovanni Di Liberto*

**14:30 to 14:35**

**Yi-Hsuan Wu** *(Department of Mechanical and Process Engineering, ETH Zurich, Zurich, Switzerland)*, Denis A. Kuznetsov, Christoph R. Müller

Probing Surface Transformations of Lanthanum Nickelate Electrocatalysts During Oxygen Evolution Reaction

**14:35 to 14:40**

**Polina Kalachikova** *(Department of Chemistry and Materials Science, Aalto University, Espoo, Finland)*, Tanja Kallio, Lilian Moumaneix

Low-cost PGM-free bimetallic Nickel-Iron MOF-derived catalysts for electrocatalytic hydrogen oxidation reaction in alkaline electrolyte

**14:40 to 14:45**

**Niklas Thissen** *(Electrochemical Reaction Engineering, RWTH Aachen ERT, Aachen, Germany)*, Anna K. Mechler, Alina Tran

The Role of Fe in Stability Investigations of Ni Catalysts in Alkaline Water Electrolysis under Fluctuating Loads

**14:45 to 14:50**

**Katerina Hradecna** *(Department of Inorganic Technology, University of Chemistry and Technology, Prague, Czech Republic)*, Karel Bouzek, Karel Denk, Jaromir Hnat, Roman Kodym, Michaela Plevova

The effect of catalytic layer composition and properties on alkaline membrane water electrolysis

**14:50 to 14:55**

**Clara Schare** *(Electrochemical Energy Systems, Hahn-Schickard, Freiburg, Germany)*, Carolin Klose, Andreas Münchinger, Giorgi Titvinidze, Severin Vierrath, Marco Viviani

µm crosslinked hydrocarbon membrane reaching stable performance of 5 A/cm² at 1.8V
15:00 to 15:30 Invited

**Tobias Binninger** (Institute of Energy and Climate Research, Forschungszentrum Jülich GmbH, Jülich, Germany), Adrian Heinritz, Juan Herranz, Paramaconi Rodriguez, Thomas J. Schmidt

**Alkaline Hydrogen Evolution and Oxidation Reaction on Platinum: Potential Scale and the Effects of H₂ Concentration and Electrolyte pH**

15:30 to 15:45

**Agnieszka Brzózka** (Department of Physical Chemistry and Electrochemistry, Jagiellonian University, Krakow, Poland), Mikolaj Kozak, Lifeng Liu, Mateusz Marzec, Renata Palowska, Daniel Piecha, Grzegorz Sulka, Mateusz Szczerba, Joanna Waksmundzka

**Electrodeposition of binary compounds from deep eutectic solvents for electrochemical water splitting**

15:45 to 16:00

**Mir F. Mousavi** (Tarbiat Modares University, Tehran, Iran), Abolhassan Noori

**Advanced Emerging Materials for Sustainable Hydrogen Production**

16:00 to 16:15

**Kassa Belay Ibrahim** (Department of Molecular Science and Nano-systems, Ca’Foscari University of Venice, Venice, Italy), Mohammadhossein Hamrang, Elisa Moretti, Tofik Ahmed Shifa, Alberto Vomiero

**Synergistic effect of Ru-doped Fe₂TiO₅: An innovative catalyst advancing Urea-Assisted water splitting efficiency**

16:15 to 16:30

**Magdalena Warczak** (Faculty of Chemical Technology & Engineering, Bydgoszcz University of Science and Technology, Bydgoszcz, Poland), Magdalena Bonarowska, Agnieszka Dabrowska, Roman Minikayev, Marcin Opallo, Magdalena Osial, Marcin Pisarek, Natalia Slawkowska, Weronika Urbanska

**Insights into high catalytic activity of Li-ion battery waste toward ORR to H₂O₂ – batteries in a circular economy**

16:30 to 17:00 Coffee Break

Panel Discussion

17:00 to 18:30 Symposia 3 & 4
S1 - Lithium-based technologies

Room : R4 - Mottarone

Chaired by Shahid Khalid

14:30 to 14:35

**Federico Scarpioni** *(Energy storage and converter, Fraunhofer IFAM, Bremen, Germany)*, Fabio La Mantia, Federico Scarpioni

*Dynamic Electrochemical Impedance Spectroscopy for the Investigation of Materials for Energy Storage in Three-Electrode Cells*

14:35 to 14:40

**Christoph P. Schmidt** *(Institute for Computational Mechanics, Technical University of Munich, Garching bei Muenchen, Germany)*, Gil Robalo Rei, Wolfgang A. Wall

*Method Driven Optimization of the Composite Electrode Composition of Solid-State Batteries*

14:40 to 14:45

**Christian Leibing** *(Institute for Technical and Environmental Chemistry, Friedrich Schiller University Jena, Jena, Germany)*, Andrea Balducci

*Electrode-Electrolyte-Interphase Composition Effects Introduced by Glyoxylic-Acetal-based Electrolytes in Lithium-Ion Batteries*

14:45 to 14:50

**Nathan Reydet** *(LEPMI, LEPMI/Grenoble-INP, Grenoble, France)*, Renaud Bouchet, Marc Deschamps, Eric Maire, Sofia Perticarari

*Electrochemical study coupled with X-ray tomography on Lithium Metal anode impurities*
Wednesday 12 June 2024 - Morning

Keynote

Room: R1 - Isola Bella Theatre

08:30 to 09:20 Chaired by Claudio Gerbadi

M. Rosa Palacin (Solid State Chemistry, ICMAB-CSIC, Barcelona, Spain)
Post-Li battery chemistries: Back to the Future?

S1 - Lithium based technologies

Room: R1 - Isola Bella Theatre

Chaired by Renaud Bouchet & Dominic Bresser

09:30 to 10:00 Invited

Dominic Bresser (Helmholtz Institute Ulm (HIU), Karlsruhe Institute of Technology (KIT), Ulm, Germany)
Step-by-Step Development of Single-Ion Conducting Polymer Electrolytes for Lithium-Metal Batteries

10:00 to 10:15

Sergio Granados-Focil (Chemistry and Biochemistry, Clark University, Worcester, USA), Valeria Gutierrez-Venegas, Luis Smith, Yuxin Yang
Rational design of sulfonated oligomer/polymer structures to understand the structural underpinnings of Li²⁺ transport through non-volatile electrolytes.

10:15 to 10:30

Jiajia Wan (Me: Department of Chemistry Materials and Chemical Engineering, Milano, Italy)
Artificial SEI Combined with Polymer Electrolytes to Prevent Dendrite Growth in Lithium Metal Batteries
10:30 to 10:45

**Pietro Zaccagnini** *(Applied Science and Technologies, Turin, Italy)*, Serena Amenta, Luisa Baudino, Marco Carofílgi, Valentina Cauda, Marzia Conte, Andrea Lamberti, Marco Reina, Mara Serrapede

*Fe-Doped ZnO Nanoparticle Recycling: Second Life Valorization in Energy Storage*

10:45 to 11:15

Coffee Break

11:15 to 11:45 Invited

**Renaud Bouchet** *(LEPMI (UMR5279), Université Grenoble Alpes, Phelma Grenoble INP, Grenoble, France)*

*Governing parameters of the ionic transport through ceramic/organic electrolyte interface.*

11:45 to 12:00

**Ismael Saadoune** *(Applied Chemistry & Engineering Research, Mohammed VI Polytechnic University, Benguerir, Maroc)*, Ismail Assengar, Stefan Mangold, Björn Schwarz, Indris Sylvio, Vanessa Trouillet

*High-Voltage and Superior Performance Fluorophosphate-Based Cathode Material for Li-ion Batteries*

12:00 to 12:15

**Hasna Aziam** *(HTMR Lab, UM6P, BEN GUERIR, Maroc)*

*Li$_{3.27}$Fe$_{0.19}$Fe$_{0.81}$V(PO$_4$)$_3$ NaSiCon-type cathode material for Lithium-ion Batteries*

12:15 to 12:30

**Fu-Ming Wang** *(Graduate Institute of Applied Science and Technology, National Taiwan University of Science and Technology, Taipei, Taiwan)*

*Low-Temperature Recovery of Deteriorated Ni-Rich Cathode Material Surfaces: LiNiO$_2$ and LiNi$_{0.8}$Mn$_{0.1}$Co$_{0.1}$O$_2$ Examples*
12:30 to 12:45

**Marc Fleury** (Earth Sciences and Environmental Technologies, IFP Energies nouvelles, Rueil-Malmaison, France), Ludivine Afonso De Araujo, Thibaud Chevalier, Quentin Denoyelle, Rachel Jorand, Benjamin Nicot, Bernard Simon

*Tortuosity and pore size distribution on LFP electrodes using low field NMR techniques.*

12:45 to 13:00

**Keyvan Malaie** (Institute of Biochemistry, Universität Greifswald, Greifswald, Germany), Uwe Schröder

*Understanding Electrochemical Phase Transition Reactions in Batteries through Examples from Cathode Materials in Aqueous Solution*

13:00 to 13:15

**Ziyauddin Khan** (Department of Science and Technology, Linköping University, Norrköping, Sweden), Reverant Crispin, Divyaratan Kumar

*Water in Polymer Salt Electrolyte for Lignin based Batteries*

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**S2 - Beyond lithium: New chemistries and approaches**

**Room : R2 - Isola dei Pescatori**

**Chaired by** Francesco Nobili & Matteo Zago

09:30 to 10:00 Invited

**Rebeca Marcilla** (Electrochemical Processes Unit, imdea energy, Mostoles, Spain)

*Membrane-free Flow Batteries based on Immiscible Electrolytes*

10:00 to 10:15

**Mirko D'Adamo** (Smart Energy Unit, NVISION Systems and Technologies, S.L., Barcelona, Spain), Wouter Badenhorst, Hector Marañon, Lasse Murtomäki, Jose Saez, Lluís Trilla

*Leveraging Machine Learning for Enhanced Health Predictions in Copper Redox Flow Batteries*
10:15 to 10:30

**Matteo Zago** *(Department of Energy, Politecnico di Milano, Milan, Italy)*, Andrea Casalegno, Marco Cecchetti, Luca Perlini, Francesco Toja

*Reduced Capacity Decay Through Imbalanced Electrolyte Composition and State of Charge in Vanadium Redox Flow Batteries*

10:30 to 10:45

**Francesco Toja** *(Energy, Politecnico di Milano, Milano, Italy)*, Andrea Casalegno, Luca Perlini, Matteo Zago

*Improved Mass Transfer and Electrolyte Utilization in Large Scale Flow Batteries*

10:45 to 11:15

Coffee Break

11:15 to 11:30

**Carla Santana Santos** *(Analytical Chemistry- Center for Electrochemical Sciences, Ruhr-University Bochum, Bochum, Germany)*, Igor Echevarria Poza, Maria Ibáñez, Nomnotho Jiyane, Mario Palacios Corella, Thomas Quast, Carla Santana Santos, Wolfgang Schuhmann, Edgar Ventosa

*Evaluating the Intrinsic Electrochemical Performance of Solid Materials for Mediated-Redox Flow Battery*

11:30 to 11:45

**Rossella Petruzzelli** *(Chemistry 'Giacomo Ciamician', University of Bologna, Bologna, Italy)*, Catia Arbizzani, Giampaolo Lacarbonara

*Evaluation of kinetic parameters of redox flow battery reactions by rotating disk electrode as a function of the state of charge*

11:45 to 12:00

**Eduardo Martínez González** *(Department of Mechanical and Materials Engineering, University of Turku, Turku, Finland)*, Pekka Peljo, Rosa Tirronen

*Improving the volumetric capacity of air-stable aqueous organic flow battery electrolytes by using additives and solid boosters*
12:00 to 12:15

**Jonas Hereijgers** *(Applied Electrochemistry & Catalysis, University of Antwerp, Wilrijk, Belgium)*, Luis Fernando Arenas, Renée De Wolf, Kavin Teenakul

*Improved Redox Flow Battery Performance through Flow Engineering*

12:15 to 12:30

**Rosa Maria Gonzalez-Gil** *(NEO-Energy, Institut Català de Nanociència i Nanotecnologia, Barcelona, Spain)*, Leandro Nicolas Bengoa, Verónica Fabián Puerta, Pedro Gómez -Romero, Daniel Rueda García

*Improving Zn-ion supercapacitors performance using hybrid organic/water-in-salt electrolytes*

12:30 to 12:45

**Patricia Bassil** *(Hérault, Institut Charles Gerhardt Montpellier, Montpellier, France)*, Frédéric Favier, Steven Le Vot

*Hybrid Composites from Controlled Re-Stacking of 2D-Electroactive Materials for Supercapacitors*

12:45 to 13:00

**Maria Arnaiz** *(Electrochemical Energy Storage, CIC energeGUNE, Vitoria-Gasteiz, Spain)*, Jon Ajuria, Paulo Luis, Maria C. Morant-Miñana, Aitor Villaverde

*Towards sustainable and high-performance electrode fabrication for EDLC and sodium ion capacitors*

13:00 to 13:15

**Emerson Sarmento Goncalves** *(Materials Division, Institute of Aeronautics and Space, São José dos Campos, Brazil)*, Meriene Gandara, Bianca Fortes Palley, Biljana Sljukic

*Nb-Mxene: Electrochemical Performance Of Microsupercapacitor Electrodes*
S1 - Lithium based technologies

Room: R4 - Mottarone

Chaired by Jusef Hassoun & Stefan Freunberger

09:30 to 10:00 Invited

Stefan Freunberger (Institute of Science and Technology Austria, Klosterneuburg, Austria)

New tools for understanding sulfur electrochemistry

10:00 to 10:15

Ezequiel Leiva (Departamento de Química Teórica y Computacional, UNC, INFIQ-CONICET, Córdoba, Argentina), Daniel Barraco, Victoria Bracamonte, Andrea Calderón, Fernando Cometto, Melina Cozzarin, L García Tsuruoka, Guillermín Luque, Luciana Morel, Sofia Raviolo, Fabio Saccone, Guillermín Tammone, Martin Zoloff Michoff

Molecular dynamic simulations of polysulfides in Li-S batteries

10:15 to 10:30

Markéta Zukalová (Electrochemical Materials, J. Heyrovsky Institute of Physical Chemistry, CAS, Prague, Czech Republic), Martin Fabián, Ladislav Kavan, Barbora Pitna Lásková, Olena Porodko, Monika Vinarcíková

Inorganic Additives Improving the Performance of Li-S Batteries

10:30 to 10:45

Saeed Yari (IMO-IMOMEC, Hasselt University, Hasselt, Belgium)

Synergistic Approach to Lithium-Sulfur Battery Optimization: Porous Electrode Formulation for Effective Polysulfide Regulation

10:45 to 11:15

Coffee Break

11:15 to 11:45 Invited

Jusef Hassoun (Chemical, Pharmaceutical, and Agricultural Sciences, University of Ferrara, Ferrara, Italy)

Graphene Substates in Lithium-Sulfur and Lithium-Oxygen batteries
11:45 to 12:00

**Toshihiro Kondo** (Chemistry, Ochanomizu University, Bunkyo-ku, Japan), Makoto Aoki, Dilinigeer Dilixiati, Kazuno Maeda

*Detailed Cathode Reaction Analyses in Li-O$_2$ Battery Based on Operando XRD Measurements*

12:00 to 12:15

**Julia Amici** (Department of Applied Science and Technology, Politecnico di Torino, Turin, Italy), Silvia Bodoardo, Matteo Gandolfo, Mattia Longo, Marco Sangermano

*Bio-renewable organogels, towards more sustainable Li-O$_2$ batteries*

12:15 to 12:30

**Soumyadip Mondal** (Institute of Science and Technology Austria (ISTA), Klosterneuburg, Austria), Stefan A Freunberger

*Surface electrochemistry with redox active insulator in non-aqueous oxygen redox and its impact on singlet oxygen*

12:30 to 12:45

**Mewin Vincent** (Faculty of Chemistry, Center for Biological and Chemical Sciences, Warsaw, Poland), Damian Kowalski, Sandra Sajeev

*Perovskite type Co$_{0.7}$Fe$_{0.3}$Mn$_{1-x}$Ni$_x$O$_{3-y}$ electrocatalyst for the nonaqueous Lithium-O$_2$ batteries*

12:45 to 13:00

**Rakesh Kumar Pandey** (Chemistry, Mahatma Gandhi Central University, Motihari, Motihari, India), Anshu Andola, Yashvant Kashyap, Ravi Ranjan Pandey, Himani Pandey

*Unlocking the Potential of Depleted Dry Batteries: A Dual-Purpose Approach for Waste Mitigation and Sustainable Energy Production*
Poster Presentations

Symposium 1 .......................................... page 60
Symposium 2 .......................................... page 70
Symposium 3 .......................................... page 79
Symposium 4 .......................................... page 87
S1 - Lithium-based technologies

S1-001

Julia Amici (Department of Applied Science and Technology, Politecnico di Torino, Turin, Italy), Silvia Bodoardo, Davide Dessantis, Piera Di Prima, Domenico Ferrero, Massimo Santarelli, Daniele Versaci

Modelling of lithium-ion battery with sulfide-based solid-state electrolyte

S1-002

Hagyeong Baek (Karlsruhe Institute of Technology, Karlsruhe, Germany), Jakob Asenbauer, Dominic Bresser, Thomas Diemant, Tobias Eisenmann, Xilai Xue

Interphase formation on (Carbon-coated) Fe-doped CeO₂ Li-Ion Anodes

S1-003

Edoardo Barcaro (Chemical, Pharmaceutical and Agricultural Sciences, University of Ferrara, Ferrara, Italy), Jusef Hassoun, Vittorio Marangon, Marco Mutarelli

A lithium-ion battery with cycling stability promoted by the progressive activation of a silicon oxide anode in a graphene-amorphous carbon matrix

S1-004

Lioba Boveleth (Institute of Engineering Thermodynamics - CEC BMA, German Aerospace Center (DLR @ HIU), Stuttgart, Germany), Timo Danner, Arnulf Latz, Adrian Lindner

Material Parameters Affecting Li Plating in Si/Graphite Composite Electrodes

S1-005

Daniele Callegari (Physical Chemistry, University of Pavia, Pavia, Italy), Umberto Anselmi Tamburini, Mauro Coduri, Eliana Quartarone

Spray Drying Synthesis of Single Crystal LiNi₀.₅Mn₁.₅O₄ with Enhanced Electrochemical Performance

S1-006

Mattia Canini (Department of Chemistry, Università degli Studi di Pavia, Pavia, Italy), Umberto Anselmi-Tamburini, Daniele Callegari, Mauro Coduri, Martina Fracchia, Eliana Quartarone

On the stabilizing effect of Trace Zr doping in LiMn₁₅Fe₀.₅O₄ spinel cathodes for Lithium Ion-Batteries
S1-007

**Joaquin Chacon** *(R and D, Zelestium Technologies, Olvega, Spain)*, Paloma Almodóvar, Enrique Fatás, Pilar Herrasti

*Advancing Rapid Charging in Lithium-Ion Batteries: Strategies to Mitigate Degradation for Enhanced Performance and Reliability*

S1-008

**Tom Chamberlain** *(Warwick Manufacturing Group, University of Warwick, Coventry, United Kingdom)*, Ivana Hasa, Tomáš Syrový

*The Salamander Project: Smart Sensors and Self-Healing Functionalities for Increased Li-ion Battery Longevity*

S1-009

**Qi Chen** *(Structures, Foundations and Materials, iMDEA, Universidad Politecnica de Madrid, GETAFE, Spain)*, Arnab Ghosh, Deyi Wang, Guangzhong Yin

*Flame-retardant biobased solid electrolyte for lithium-ion battery*

S1-010

**Hamideh Darjazi** *(Department of Applied Science and Technology, Politecnico di Torino, Turin, Italy)*, Begoña Acebedo, Elena Gonzalo, Iñaki Madinabeitia, Miguel Ángel Muñoz-Márquez, Francesco Nobili, Maider Zarrabeitia

*The Influence of Nitridation on High-Voltage Cathode Materials: LiNi_{0.5}Mn_{1.5}O_{4} Sputtered Thin Films for High-Power Li-ion Batteries.*

S1-011

**Martino Fortunati** *(Energy, Politecnico di Milano, Milano, Italy)*, Andrea Casalegno, Davide Ottolina, Claudio Rabissi

*Non-Invasive Characterization of Real-Life Heterogeneous Aging within Lithium-Ion Battery Modules through Thermal Measurements and a Lumped 0-D Model*

S1-012

**Antonela Gallastegui** *(Innovative Polymers Group, POLYMAT, San Sebastian-Donostia, Spain)*, Miryam Criado-Gonzalez, Rafael Del Olmo, Maria Forsyth, Jose Ramon Leiza, David Mecerreyes

*Printable Single-ion Polymer Nanoparticle Electrolytes for Lithium Batteries*
S1-013
Siri Gani (Materials Science, TU Darmstadt, Darmstadt, Germany), Magdalena Graczyk-Zajac, Ralf Riedel, Axel Schönecker, Marco Spreafico
Stabilization of highly porous silicon for application as anode in a high capacity lithium-ion batteries.

S1-014
Nuria Garcia-Araez (Chemistry, University of Southampton, Southampton, United Kingdom), Philip Bartlett, Nikolay Zhelev
Correlative SEM, EDX and Raman for battery characterization

S1-015
Matteo Gastaldi (DISAT, Politecnico di Torino, Torino, Italy), Giuseppe Antonio Elia, Marisa Falco, Francesco Gambino, Claudio Gerbaldi, Giuseppina Meligrana
Solvent-free extrusion process of PEO-polycarbonate blends as electrolytes for Li-ion batteries

S1-016
Antonio Gentile (Materials and Generation Technologies, Ricerca sul Sistema Energetico - RSE S.p.A., Milano, Italy), Stefano Marchionna, Nicholas Vallana
Enhancing Battery Performance through Evaluation of Electrode Materials in Full Pouch Cells

S1-017
Arnab Ghosh (High-Performance Polymer Nanocomposites Group, IMDEA Materials Institute, Getafe, Spain), De-Yi Wang, Abdulmalik Yusuf
Structure, chemistry, and formation mechanism of an in-situ phosphazene flame retardant-derived interphase layer in LiFePO4 cathode

S1-018
Alessandro Gregucci (Chemistry, University of Bologna, Bologna, Italy), Vanessa Pennazzi, Michele Rizzotti, Congcong Shang, Francesca Soavi, Antunes Staffolani
Influence of Surface Area Calculation Methods on the Interpretation of Lithium-ion Diffusion Coefficient in Graphite Electrodes.
S1-019
Hamid Hamed (Industrial engineering, Uhasselt, Hasselt, Belgium)
Unveiling Aging Dynamics in Large Lithium-Ion Pouch Cells through Comprehensive Material and Electrochemical Characterizations

S1-020
Florian Hausen (IEK-9, Forschungszentrum Jülich, Jülich, Germany), Karin Kleiner, Niklas Scheer, Bixian Ying
Electronic Structure, Li-ion Mobility and Mechanical Properties in Individual NCM Particles – a Correlative Study

S1-021
Guillaume Henderson (CMET, Ghent University, Ghent, Belgium)
Membrane characterization for the electrochemical production of LiOH from Li₂SO₄ and byproduct valorization of H₂SO₄.

S1-022
BeomSu Jo (Engineering Chemistry, Chungbuk National University, Cheongju-si, Chungchungbuk-do, Korea), Jung Sang Cho
Synthesis of Conductive Carbon/Si Composite Microspheres for Anodes of Li-ion Batteries and Optimization of Pitch-Derived Carbon Coating Process

S1-023
Doohun Kim (Next Generation Battery Research Center, Korea Electrotechnology Research Institute, Changwon-Si, Korea), Hae-Young Choi, Suriyakumar Dasarathan, Se Won Han, You-Jin Lee, Geon-Woong Lee, Jun-Woo Park, Junghwan Sung
Modified interlayer as a polysulfide inhibitor for Li-S batteries

S1-024
Do Kyung Kim (Materials Science & Engineering, KAIST, Daejeon, Korea), Yoon Jae Cho, Dong Gyu Kim, Dong Jun Kim, Do Kyung Kim, Jay Kruzic
Electrochemical and Mechanical Performance of Reaction-Sintered Li₁.₃Al₀.₃Ti₁.₇(PO₄)₂ Solid Electrolytes
S1-025

**Do Kyung Kim** (Dept. of Materials Science & Engineering, KAIST, Daejeon, Korea), Yoon Jae Cho, Dong Gyu Kim, Dong Jun Kim, Do Kyung Kim, Rubha Ponraj

**Enhanced Interfacial Stability of Sulfide Solid Electrolyte/Li Metal Anode by N-GQD Coating**

S1-026

**Urban Košir** (Department of Materials Chemistry (D10), National Institute of Chemistry, Ljubljana, Slovenia), Robert Dominko, Sara Drvarić Talian, Matteo Gastaldi, Claudio Gerbaldi, Gregor Kapun

**Improving Transport and Interfacial Properties of Polymer Coatings for Anodes in Solid-State Lithium Metal Batteries with PEO-based Electrolytes**

S1-027

**Ezequiel Leiva** (Departamento de Química Teórica y Computacional, UNC, INFIQC-CÓNICET, Córdoba, Argentina), Daniel Barraco, Victoria Bracamonte, Andrea Calderón, Giorgio De Luca, Robert Dominko, Guillermina Luque, Javier Luque Di Salvo, Santiago Maldonado-Ochoa, Fabián Vaca Chávez, Alen Vizintin

**Application of biocarbons as electrodes in lithium Batteries**

S1-028

**Chenkun Li** (Wilhelm-Johnen Str. 1, Forschungszentrum Jülich GmbH, Jülich, Germany), Jun Huang

**Modelling the Electric Double Layer of Nanoscale Lithium Dendrite using Hybrid Density-Potential Functional Theory**

S1-029

**Maryam Maryam** (Materials Science, University of Milano Bicocca, Milan, Italy), Maryam Maryam

**Synthesis and surface coating of single crystal NMC-811 for improving the performance of lithium-ion batteries.**

S1-030

**Kirstie McCombie** (WMG, University of Warwick, Coventry, United Kingdom), Ivana Hasa, Reuben Walcott

**Direct Recycling of Li-ion Battery Cathode Active Materials from Production Scraps**
S1-031

Hanxin Mei (Department of Chemistry and Industrial Chemistry, University of Genoa, Genoa, Italy), Alessandro Cingolani, Paolo Piccardo, Roberto Spotorno

Application of Li$_2$InCl$_6$-PEO Composite Electrolyte in All-Solid-State Battery

S1-032

Almagul Mentbayeva (Center for Energy and Advanced Materials Science, National Laboratory Astana, Nazarbayev University, Astana, Kazakhstan)

Free-standing of NMC Cathode Materials for the Lithium-Ion Battery

S1-033

Shoayb Mojtahedi (Department of Chemistry “Giacomo Ciamician”, University of Bologna, Bologna, Italy), Elisa Maruccia, Fulvio Pastore, Mauro Serafin, Francesca Soavi, Antunes Staffolani

Sustainable Approach for Lithium-Ion Battery Cathode Manufacturing: Alternative Binder Compositions and Semi-Solventless Coating Process

S1-034

Pranaya Keshari Nahak (Energy Science and Engineering, Indian Institute of Technology Bombay, Mumbai, India), Venkatasailanathan Ramadesigan

Mechano-Electrochemical Coupled Model-Based Study of Anode-free Solid-State Battery

S1-059

Tú Nguyen (Sustainable Materials and Chemistry, Flemish Institute of Technological Research (VITO), Mol, Belgium), Yoran De Vos, Hamid Hamed, An Hardy, Jasper Lefevere, Mohammad Hosein Safari

Carbon Additives for 3D-printed LFP Electrodes in High Energy Density Li-ion Batteries

S1-035

Irene Ostroman (Materials Science, Università degli studi di Milano-Bicocca, Milano, Italy), Lorenzo Mezzomo, Riccardo Ruffo

Optimizing Anodeless Lithium Metal Batteries: strategies for enhanced performance and stability
S1-036
**Matteo Palluzzi** *(Department of Chemistry, Sapienza University of Rome, Rome, Italy)*, Paola D’Angelo, Aleksandar Matic, Maria Assunta Navarra, Akiko Tsurumaki

*Ionic liquids, synthesized by greener methods, as cathode additives*

S1-037
**Jun-Woo Park** *(Next Generation Battery Research Center, Korea Electrotechnology Research Institute, Changwon-si, Korea)*, Se Won Han, Geon-Woong Lee

*Size-Controlled Wet-Chemical Direct Synthesis of Argyrodite Sulfide Electrolyte for All-Solid-State Batteries*

S1-038
**Tamara Patranika** *(Chemistry Ångström, Uppsala University, Uppsala, Sweden)*, Kristina Edström, Guiomar Hernández, Andrew J. Naylor

*Investigation of the Solid Electrolyte Interphase on Silicon Wafers using a Fluorine-free Electrolyte*

S1-039
**Ivan Claudio Pellini** *(Department of Material Science, University of Milano-Bicocca, Milano, Italy)*, Shahid Khalid, Elena Polato, Riccardo Ruffo

*Saturated Water/DMSO hybrid electrolytes for lithium-ion batteries*

S1-040
**Matteo Prati** *(Department of Materials Engineering, Politecnico di Milano, Milano 20133, Italy)*, Roberto Biancardi, Séguolène Brusseau, Alice Cattaneo, Michele Fiore, Marie Raffin, Andrea Vittorio Oriani

*Impact of the inorganics and their interaction with fluorinated binders on the cathode properties for Gen.3 Lithium Ion Batteries*

S1-041
**Elisa Ravesio** *(DISAT - Department of Applied Science and Technology, Politecnico di Torino, Torino, Italy)*, Silvia Bodoardo, Giorgio Montinaro, Valentina Sumini, Daniele Versaci

*Towards scaling up in the production of Silicon-rich anodes with water-based binders*
S1-042  
**Sofia Raviolo** (Department of Applied Science and Technology, Politecnico di Torino, Torino, Italy), Federico Bella, Silvia Bodoardo, Carlotta Francia, Sabrina Trano  
**NEXTCELL Project: Development of new-generation Lithium-Ion Batteries**

S1-043  
**Manuel Reiter** (Department of Mechanical and Process Engineering, ETH Zürich, Zürich, Switzerland), Dario Gomez Vazquez, Chulgi Nathan Hong, Maria R. Lukatskaya  
**Controlled Halogenation of the Solid Electrolyte Interphase in Li-metal Batteries**

S1-044  
**Clara Roggerone** (Faculty 1, Technical Chemistry, University of Applied Sciences (HTW) Berlin, Berlin, Germany), Julia Kowal, Fabio La Mantia, Asnakech Lass-Seyoum  
**Design of High Mass Loading LiMn$_2$O$_4$ Electrodes for Lithium Extraction from Brines**

S1-045  
**AmirReza Rouhani Esfahani** (Materials Engineering, McGill University, Montreal, Canada), Eric McCalla, Philippe Ouzilleau, Nooshin Zeinali Galabi  
**Investigation of the Green Aqueous Binders on LiCoPO$_4$ Cathodes in Lithium-Ion Batteries**

S1-046  
**Ritwik Roy** (Energy Science and Engineering, Indian Institute of Technology Bombay, Mumbai, India), Venkatasailanathan Ramadesigan  
**Mathematical modelling of ion-ion interaction and solvation effects in lithium-sulfur batteries**

S1-047  
**Sofia Saffirio** (Department of Applied Science and Technology - DISAT, Politecnico di Torino, Torino, Italy), Sonia Lucia Fiorilli, Claudio Gerbaldi, Antonio Gianfranco Sabato, Federico Smeacetto, Albert Tarancón  
**NASICON-type glass-ceramic electrolytes: the effect of boron oxide and ultra-fast high-temperature sintering (UHS) on their functional properties**
S1-048
**Sandra Sajeev** *(Chemistry, CNBCH, Warsaw, Poland)*
Electrochemical Performance of $\text{La}_{0.7}\text{Sr}_{0.3}\text{Mn}_{1-x}\text{Ni}_x\text{O}_{3-\delta}$ Electrocatalyst in Nonaqueous Li-O$_2$ Battery

S1-049
**Saveria Santangelo** *(Department of Civil, Energy, Environmental and Materials Eng, Mediterranean University, DICEAM, Reggio Calabria, Italy)*, Miguel Ángel Muñoz-Márquez, Francesco Nobili, Asia Patriarchi, Saveria Santangelo, Claudia Triolo
Evaluation of Spinel-Structured High-Entropy (Cr, Mn, Fe, Co, Ni)-Oxides as Inorganic Fillers for Solid Polymer Electrolytes

S1-050
**Antunes Staffolani** *(Department of Chemistry “Giacomo Ciamician”, Alma Mater Studiorum - University of Bologna, Bologna, Italy)*, Aishabibi Ashir, Marco Giorgetti, Monica Giovannucci, Nicholu Manyala, Federico Mascetti, Elisabetta Petri, Alessandro Girolamo Rombolà, Chiara Samorì, Francesca Soavi, Andrea Trebbi
Designing Sustainable Processes for Lithium-ion Battery Recycling

S1-051
**Junghwan Sung** *(Next Generation Battery Research Center, Korea Electrotechnology Research Institute, Changwon-si, Korea)*, Jun-Woo Park
Infiltration-driven performance enhancement of poly-crystalline cathodes in all-solid-state batteries

S1-052
**Manaswee Suttipong** *(Department of Chemical Technology, Faculty of Science, Chulalongkorn University, Pathumwan, Thailand)*, Jitti Kasemchainan, Siriporn Teeraburanapong
Advancing Lithium-Ion Battery Safety and Performance through Co-Solvent Optimization: A Molecular Dynamics Study

S1-053
**Nicholas Vallana** *(Department of Material Science, University of Milano-Bicocca, Milano, Italy)*, Chiara Ferrara, Antonio Gentile, Stefano Marchionna, Irene Östroman, Riccardo Ruffo
Nanocomposite Sn/Ti Oxide from $\text{Ti}_3\text{Al}_{(1-x)}\text{Sn}_x\text{C}_2$ MAX Phases as Promising Negative Electrode for Lithium-Ion Batteries
S1-054  
Irene Vassalini (Department of Information Engineering, University of Brescia, Brescia, Italy), Ivano Alessandri, Alessandro Bonometti, Elza Bontempi, Antonella Cornelio, Elisa Galli, Matteo Scaglia, Alessandra Zanoletti  
Recycling Critical Raw Materials from Lithium-Ion Battery Black Mass: The Critical Role of Carbothermic Reactions

S1-055  
Yasuaki Yamamoto (EP Application Department, JEOL Ltd., Akishima, Japan), Kazuhiro Hikima, Tatsuhito Kimura, Reiko Matsuda, Atsunori Matsuda, Yoshikazu Sasaki, Kota Yanagihara  
In-situ charge-discharge observation and analysis for Si anode of all solid-state batteries by using the SEM-EDS-SXES method

S1-056  
Zengming Zhang (IEK-13, FZJ-Jülich, Jülich, Deutschland, Germany)  
Physical Modelling of Impedance Response of Solid Electrolyte Interphase in Lithium-Ion Batteries

S1-057  
Mingjie Zhang (Material science and engineering, Politecnico di Torino, Torino, Italy)  
Effective Optimization of Poly(ethylene oxide)-based Polymer-in-High Concentrated Ionic Liquid Electrolyte for all-solid-state Lithium Metal Batteries

S1-058  
Dongni Zhao (Chemistry Department, Lancaster University, Lancaster, United Kingdom), Stijn F. L. Mertens  
Understanding Mn dissolution from LiMn$_2$O$_4$ cathodes
S2 - Beyond lithium: New chemistries and approaches

S2-001  
**Younes Abghoui** (Engineering and natural sciences, University of Iceland, Reykjavik, Iceland), Naveed Ashraf  
*Unlocking the Potential for Next-Generation Batteries*

S2-002  
**Marco Ambrosetti** (Tecnologie di Generazione e Materiali, RSE S.p.A. - Ricerca sul Sistema Energetico, Milan, Italy), Marcella Bini, Chiara Milanese, Irene Quinzeni  
*Effect of Mn Substitution on GeFe₂O₄ as an Anode for Sodium-Ion Batteries*

S2-003  
**Daniel Antoran** (Thermochemical Processes Group (GPT), Univerity of Zaragoza, Zaragoza, Spain), Dario Alvira, Joan J. Manyà  
*Enhancing the performance of Waste Hemp Hurd-Based Carbons in SIBs through H₂SO₄-assisted hydrothermal Pretreatment*

S2-004  
**Luis Fernando Arenas** (Research Group Applied Electrochemistry & Catalysis (ELCAT), University of Antwerp, Antwerp, Belgium), Tom Breugelmans, Michiel De Rop, Jonas Hereijgers  
*Mass Transport and Pressure Drop at Pillar Electrodes in Electrochemical Flow Reactors: Experiments and Simulations*

S2-005  
**Claudia Carbone** (Chemistry, Università degli Studi di Milano, Milan, Italy), Manuel Minardi, Alessandro Minguzzi, Aaron Stoeckle, Fulvio Uggeri, Alberto Vertova  
*Electrochemical Synthesis of “MIB”-Inspired Gadolinium-Based Contrast Agents*

S2-006  
**Marco Cecchetti** (Energy, Politecnico di Milano, Milano, Italy), Andrea Casalegno, Martino Fortunati, Matteo Zago  
*Development of an Innovative Selective Layer for Vanadium Redox Flow Battery via Ultrasonic Spray Coating: Investigation of Deposition Process Parameters and Scale-Up*
S2-007

**Jacob Compton** *(WMG, University of Warwick, Coventry, United Kingdom)*, Ivana Hasa, Faduma Maddar

**Prussian White/Hard Carbon Sodium-ion Cells: From Lab to Upscaled Cell Prototypes**

S2-009

**Petra Demjan** *(Chemistry, University of Southampton, Southampton, United Kingdom)*, Petra Demjan, Nuria Garcia-Araez, Andrew Hector

**Tin nitride and hard carbon blends as a novel material for sodium ion battery anodes.**

S2-010

**Domenico Florenzano** *(Scienza dei Materiali, Università di Milano Bicocca, Milano, Italy)*

**Coffee waste-derived hard carbon as a promising negative electrode for sodium-ion batteries**

S2-011

**Andrea Gentile** *(Department of Chemistry, Sapienza University of Rome and ENEA (Italian company), Rome, Italy)*, Sergio Brutti, Nicholas Carboni, Margherita Moreno, Maria Lucia Pace, Antonio Santagata

**Anode-less Electrodes for Lithium Metal Batteries**

S2-012

**Asia Grattagliano** *(Department of Chemical Science and Technologies, University of Rome Tor Vergata, Rome, Italy)*, Alessandra D’Epifanio, Pierluca Galloni, Barbara Mecheri, Silvia Pezzola, Federica Sabuzi

**M-tetra-(4-sulfonatophenyl) porphyrin-based redox couples for Aqueous Organic Redox Flow Battery (AORFB) application.**

S2-052

**Giorgia Greco** *(Chemistry, University La Sapienza, Rome, Italy)*, Philipp Adelhelm, Burkhard Beckhoff, Sergio Brutti, Katja Frenzel

**REALSEI: opeRando chEmical spAce- and time-resoLved quantification of Solid Electrolyte Interphase in hard carbon anode for sustainable sodium-ion batteries**
S2-013  
**Meenal Gupta** *(Department of Engineering for Innovation, University of Salento, Lecce, Italy)*, Namrata Agrawal, Patrizia Bocchetta, Pallavi Gupta, Yogesh Kumar, Pushpa Singh, Neha Taneja  
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**Shahid Khalid** *(Department of Materials Science, University of Milano-Bicocca, Milan, Italy)*, Piercarlo Mustarelli, Ivan Pellini Claudio, Riccardo Ruffo, Alessandro Tos

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**Jae Seob Lee** *(Department of Materials Science and Engineering, Korea University, Seongbuk-Gu, Seoul, Korea)*, Jung Sang Cho

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**Stanislav Levchenko** *(Department of Chemical, Pharmaceutical and Agri. Sciences, University of Ferrara, Ferrara, Italy)*, Sebastiano Bellani, Francesco Bonaccorso, Jusef Hassoun, Vittorio Marangon, Lea Pasquale, Vittorio Pellegrini

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**Federico Lissandrello** *(Dipartimento di Chimica, Materiali e Ingegneria Chimica, Politecnico di Milano, Milano, Italy)*, Eugenio Gibertini, Federico Lissandrello, Luca Magagnin, Eleonora Natale

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**Mahin Maleki** *(Institute for Frontier Materials, Deakin University, Melbourne, Australia)*, Maria Forsyth, Patrick Howlett, Minkyung Kang

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**Luca Mesina** *(Chemistry, La Sapienza, Rome, Italy)*

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**Matteo Milanesi** *(DISAT, Polytechnic of Torino, Turin, Italy)*, Hamideh Darjazi, Giuseppe A. Elia, Claudio Gerbaldi, Giuseppina Meligrana, Valeria Sperati

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**Mostafa Mohamed** *(Physics, King Fahd University of Petroleum and Minerals (KFUPM), Dhahran, Saudi Arabia)*, Md. Abdul Aziz, Arshad Hussain, Zain Yamani

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**Mahsa Mohammad** *(Faculty of Industrial Engineering Sciences, Hasselt University, Diepenbeek, Belgium)*, Hamid Hamed, An Hardy, Mohammadhosein Safari, Saeed Yari

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**Jorge Montero** (Department of Chemistry, Sapienza University of Rome, Rome, Italy), Graziano Di Donato, Maria Assunta Navarra, Stefano Passerini, Akiko Tsurumaki

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**Meiser Valencia** *(Chemical Technology, DECHEMA-Forschungsinstitut, Frankfurt, Germany)*, Jean-Francois Drillet, Zahra Karimi, Charan Mukundan, Hao Shi

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**Jenn Fang Su** (Department of Chemical and Materials Engineering, Chang Gung University, Taoyuan, Taiwan)

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**Geetanksha Gupta** (Department of Energy Science and Engineering, Indian Institute of Technology Bombay, Mumbai, India), Manoj Neergat

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**Miroslav Hala** (Department of Inorganic Technology, University of Chemistry and Technology in Prague, Prague, Czech Republic), Karel Bouzek, Kathleen Heindrich, Tomáš Jedlička, Martin Paidar, Martin Prokop, Andreas Willert, Ralf Zichner, Tatiana Zubkova

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**Qi Li** *(School of Physical and Chemical Sciences, Queen Mary University of London, United Kingdom)*, Jingyu Feng, Christopher Jones, Hui Luo, Angus Pedersen, Maria-Magdalena Titirici, Mengnan Wang, Yue Xu, Mi Zhang

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CFD Modeling of PEMFCs for Aviation: Thermal and Performance Optimization*

S4-022
**Ante Matošin** *(Department of Materials Chemistry, National Institute of Chemistry, Ljubljana, Slovenia), Marjan Bele, Lazar Bijelić, Tina Dukic, Matija Gatalo, Nejc Hodnik, Iva Klofutar
Stability Analysis of Pt-Co Nanoalloy Fuel Cell Electrocatalysts Combining Accelerated Degradation Tests and Identical Location TEM*

S4-023
**Fabrice Micoud** *(CEA LITEN, Université Grenoble Alpes, Grenoble, France), Thomas Cavoué, Clémence Marty, Joël Pauchet, Jean-Philippe Poirot-Crouveziez, Patrick Redon, Sepehr Saadat, Michaël Slusarek, Benjamin Wiedemann, Florian Wilhelm
The DOLPHIN Project – Towards Next-Generation Fuel Cell Stacks Featuring Outstanding Performance*

S4-024
**Jens Mitzel** *(Institute of Engineering Thermodynamics, German Aerospace Center (DLR), Stuttgart, Germany), Pawel Gazdzicki
PEMTASTIC - Robust PEMFC-MEA Derived from Model-Based Understanding of Durability Limitations for Heavy Duty Applications*
S4-025

**Daniele Mora** *(Department of Energy, Politecnico di Milano, Milano, Italy)*, Andrea Baricci, Andrea Casalegno, Élena Colombo, Marta Galli, Andrea Ronci

**Investigating PEMFC heterogeneity of ageing through accelerated stress tests under local operating conditions with a focus on low relative humidity operation**

S4-026

**Marcel Müller** *(Applied Electrochemistry, Fraunhofer ICT, Pfinztal, Germany)*, Birgit Kintzel, Julia Melke

**Functionalization and Characterization of Supports for Catalysts in Fuel Cells**

S4-027

**Mohsin Muhyuddin** *(Department of Materials Science, Milan, Italy)*, Hilah C. Honig, Massimiliano D’Arienzo, Lior Elbaz, Silvia Mostoni, Mohsin Muhyuddin, Carlo Santoro, Roberto Scotti, Paolo Valagussa

**Engineering Atomically Dispersed and Accessible Active Moieties in Fe-N-Cs**

S4-028

**Mohsin Muhyuddin** *(Department of Materials Science, University of Milan Bicocca, Milan, Italy)*, Andrea Franzetti, Niccolò Lamanna, Alessandro Lavacchi, Mohsin Muhyuddin, Carlo Santoro, Davide Testa, Luca Zoia, Giovanni Zuccante

**Waste to Electrocatalysts via Pyrolysis: Upcycling the Discarding Cigarette Butts into Oxygen Reduction Reaction Electro catalysts**

S4-029

**Andre Olean-Oliveira** *(NETZ – NanoEnergieTechnikZentrum, Max-Planck Institute for Chemical Energy Conversion, Mülheim an der Ruhr, Germany)*, Viktor Čolić

**Electrochemical oxygen reduction reaction toward hydrogen peroxide generation in edge- and basal-terminated pyrolytic graphite on acidic condition**
S4-030

**Amaria Wafaa Oudjdi** (ICPEES - Electrochemistry and Energy Conversion, University of Strasbourg, Strasbourg, France), Tristan Asset, Panagiotis Bexis, Marjorie Cavarroc, Christos Chochos, Cuong Diong-Viet, Kirill Dosaev, Benoit Gouze, Laure Guétaz, Arnaud Morin, Jean-Mario Nhut, Cuong Pham-Huu, Manon Prioux, Sergey Pronkin, Lai Truong-Phuoc

Degradation-resistant Carbon Supports for Catalytic Layer of HT-PEMFCs

S4-031

**Madhuparna Ray** (Polymer and Process Engineering, IIT Roorkee, Saharanpur, India), Sujay Chattopadhyay, Subrata Maiti, Sunil Shetty, Amit Suhag

Studies on the Encapsulation of ionic liquids and antioxidants in metal-organic frameworks to achieve high proton conductivity and chemical durability of proton exchange membranes

S4-032

**Stefan Röher** (Electrochemistry, TU Dresden, Dresden, Germany), Julia Grothe, Lairana Lima Duarte, Inez Weidinger

Operando Electrochemical Raman Spectroscopy of Self-Adsorbed Fe-Phthalocyanine on Nitrogen-Doped Templated Carbon (DUT-108) for Enhanced Oxygen Reduction Reaction Activity

S4-033

**Sofia Saffirio** (Department of Applied Science and Technology - DISAT, Politecnico di Torino, Torino, Italy), Simone Anelli, Silvia Fiore, Sonia Lucia Fiorilli, Claudio Gerbaldi, Manasa Kumar Rath, Massimo Santarelli, Federico Smeacetto

Scalable strategies for the recovery and reuse of ceramic materials from Solid Oxide Cells (SOCs)

S4-034

**Aleksandr Samarin** (LEPMI, University Grenoble Alpes, Grenoble INP, Saint-Martin-d’Hères, France), Antoine Bonnefont, Marian Chatenet, Eric Sibert

Study of Single Crystal Pt/Ionomer Interfaces
S4-035

**Hendrik Sannemüller** *(Department of Microsystems Engineering, Hahn-Schickard-Gesellschaft für angewandte forschung e.V., Freiburg, Germany)*, Hannes Liepold, Andreas Muenchinger, Hien Nguyen, Severin Vierrath

Gas mass transport resistance of Hydrocarbon-Based Catalyst Layers in Proton-Exchange Membrane Fuel Cells

S4-036

**Mohammad Reza Shirzad Kebria** *(Materials science, University of Milano-Bicocca, Milan, Italy)*, Saeed Asadi, Piercarlo Mustarelli

Reinforced Conductive Membrane Integration: Enhancing Performance and Durability of PEM Fuel Cells

S4-037

**Diego Stucchi** *(Materials Science, Università degli Studi di Milano Bicocca, Milano, Italy)*, Tommaso Caielli, Antonio Di Tolla, Alessandro Ferrari, Piercarlo Mustarelli, Giulia Stucchi

Cerium oxide nanoparticles decorated with different perfluoroalkyl silanes as radical scavengers in Aquivion®-based composite PEMFC

S4-038

**Francesco Verducci** *(Energy Department, MRT Fuel Cell & Battery Lab, Politecnico di Milano, Milan, Italy)*, Andrea Baricci, Andrea Casalegno, Elena Colombo, Amedeo Grimaldi, Giorgio Orsenigo

Modeling Analysis of the Impact of Platinum Oxides on PEMFC Performance and Degradation Under a Realistic Driving Cycle

S4-039

**Lulu Zhang** *(Institute of Energy and Climate Research, Forschungszentrum Jülich GmbH, Jülich, Germany)*, Yanxia Chen, Jun Huang, Weiqiang Tang, Dongchen Zhao

Anion-Dependent Non-Nernstian Behaviors in Oxygen Reduction at Pt(111)
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Rooted in Chinese civilization and embracing global culture, striving to be a world-class technology innovator, delivering superior contributions to green energy for the world, and providing a platform of pursuing spiritual and material well-being for employees!

• BUSINESS SCOPE

CATL is mainly engaged in researching, developing, producing, and selling batteries for transport and stationary storage applications and promoting innovative market applications through electrification and intelligentization. Our products aim to accelerate the energy transition towards electrification and renewable energy sources.

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According to SNE Research, CATL’s EV battery consumption volume has ranked first in the world for seven consecutive years, holding 36.8% of global EV battery market share in 2022. CATL also ranked first globally for the third consecutive year in terms of energy storage battery shipments, with a market share of 48% in 2022.

• RESEARCH AND DEVELOPMENT CAPABILITY

CATL emphasizes research and development, covering various fields including material research, product development, engineering design, testing and analysis, intelligent manufacturing, information systems, and project management. CATL has 20,000 staff members engaged in R&D, so far and its SIC Lab has developed into a global leader in the R&D of energy storage and conversion frontier technologies. CATL’s issued and pending patents have reached 22,039 worldwide, and it has contributed to the drafting or amending of over 110 industry standards at home and abroad.

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For any further questions, please email us at catl-campus@catl.com
# Conference Schedule

## SUNDAY 9 June
- **08:30 - 09:20**
  - Registration
  - Opening Ceremony
- **09:30 - 10:00**
  - Keynote - Radenkta Maric
- **10:00 - 10:45**
  - S1 - Invited
  - S2 - Invited
  - S3 - Invited
  - S4 - Invited
- **10:45 - 11:15**
  - Coffee break
- **11:15 - 12:15**
  - S1 - Invited
  - S2 - Invited
  - S3 - Invited
  - S4 - Invited
- **12:15 - 13:00**
  - Lunch

## MONDAY 10 June
- **08:30 - 09:20**
  - Keynote - Marian Chatenet
- **09:30 - 10:00**
  - S1 - Invited
  - S2 - Invited
  - S3 - Invited
  - S4 - Invited
- **10:00 - 10:45**
  - S1 - Orals
  - S2 - Orals
  - S3 - Orals
  - S4 - Orals
- **10:45 - 11:15**
  - Coffee break
- **11:15 - 12:15**
  - S1 - Invited
  - S2 - Invited
  - S3 - Invited
  - S4 - Invited
- **12:15 - 13:00**
  - Lunch

## TUESDAY 11 June
- **08:30 - 09:20**
  - Keynote - M. Rosa Palacin
- **09:30 - 10:00**
  - S1 - Invited
  - S2 - Invited
  - S3 - Invited
  - S4 - Invited
- **10:00 - 10:45**
  - S1 - Orals
  - S2 - Orals
  - S3 - Orals
  - S4 - Orals
- **10:45 - 11:15**
  - Coffee break
- **11:15 - 12:15**
  - S1 - Invited
  - S2 - Invited
  - S3 - Invited
  - S4 - Invited
- **12:15 - 13:00**
  - Lunch

## WEDNESDAY 12 June
- **08:30 - 09:20**
  - S1 - Invited
  - S2 - Invited
  - S3 - Invited
  - S4 - Invited
- **09:30 - 10:00**
  - S1 - Invited
  - S2 - Invited
  - S3 - Invited
  - S4 - Invited
- **10:00 - 10:45**
  - S1 - Orals
  - S2 - Orals
  - S3 - Orals
  - S4 - Orals
- **10:45 - 11:15**
  - Coffee break
- **11:15 - 12:15**
  - S1 - Invited
  - S2 - Invited
  - S3 - Invited
  - S4 - Invited
- **12:15 - 13:00**
  - Lunch

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### Conference Areas
- **Room 1**: Sessions and Keynote Presentations
- **Room 2**: Orals and Invited Talks
- **Room 3**: Posters and Panels
- **Room 4**: Breaks and Social Events

### Conference Highlights
- **Lithium-based technologies**
- **Beyond lithium: New chemistries and approaches**
- **Hydrogen production technologies**
- **Hydrogen conversion technologies**

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### Evening Events
- **S1 & S3 Posters & Welcome Reception**
- **S2 & S4 Posters & Aperitif**
- **Gala Dinner 20:00**