The 68th Annual Meeting
of the International Society of Electrochemistry

Electrochemistry without Borders
27 August to 1 September, 2017, Providence, RI, USA

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Exhibitor booths

Exhibition Hours

Monday: 09:30-20:00
Tuesday: 09:30-18:30
Wednesday: 09:30-12:00
Thursday: 09:30-18:30
Friday: 09:30-12:00
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Welcome Address

On behalf of the Executive Committee of ISE, the Organizing Committee and Symposium Organizers, we welcome you to Providence and look forward to your participation in the 68th Annual Meeting of the International Society of Electrochemistry. The scientific theme of the meeting, Electrochemistry without Borders, is meant to emphasize the global character of the electrochemical community encompassed by the ISE. The international flavor of the conference is evident in the counties of origin of the 1176 abstracts to be presented. Only 26% of the abstracts come from North America. The rest come from Europe, Asia, South America, Australia, and Africa.

Providence is the capital of the state of Rhode Island and, founded in 1636, is one of the oldest cities in the United States. The city is situated at the mouth of the Providence River at the head of Narragansett Bay. Once an industrial city, it is now home to eight colleges and universities. The art museum at the Rhode Island School of Design is close to the convention center and offers a welcome respite from the rigors of conference presentations. Fans of supernatural horror fiction may like to know that Howard Phillips “H.P.” Lovecraft was born here and lived the majority of his life on the East Side of Providence. The city center features walkways and small parks along the intersection of three rivers that pass through the city. Self-guided walking tours allow you to learn about manufacturing activities in the late 19th century in downtown Providence, stories of innovators, industrialists, intellectuals and the irrepressible on the east side, and the history of immigration and activism on the west side. Nearby Newport, known as the sailing capital of the world, is home to 19th century mansions of America’s wealthiest families, now accessible to the public, and breathtaking views of the ocean and beaches.

We hope you will enjoy the conference and the unique camaraderie of the ISE. We express our sincere appreciation to our sponsors and exhibitors, to Thierry Lenzin and Kathleen Vionnet, who are the ISE Conference Organization, to the symposium organizers who assembled an exceptional program, to our student helpers, and to our plenary speakers. We thank each of you for your contribution to the meeting.

Welcome to Providence!

Mark E. Orazem, Sanjeev Mukerjee, and Plamen Atanassov

Co-Chairs, Organizing Committee, 2017 ISE Annual Meeting
Organizing Committee

Plamen Atanassov, Albuquerque, NM, USA (co-Chair)
Philip N. Bartlett, Southampton, UK
Gerardine Botte, Athens, OH, USA
Ignacio Gonzalez, Mexico, Mexico
E. Jennings Taylor, Englewood, OH, USA
Hasuck Kim, Daegu, South Korea
Daniel Little, Santa Barbara, CA, USA
Shelley MInteer, Salt Lake City, UT, USA
Sanjeev Mukerjee, Boston, MA, USA (co-Chair)
Mark E. Orazem, Gainesville, FL, USA (co-Chair)
Symposium Organizers

**Symposium 1:** New Experimental Trends in Analytical Electrochemistry  
Priscilla Baker (Coordinator), University of the Western Cape, South Africa  
Carol Korzeniewski, Texas Tech University, USA  
José M. Pingarrón, Complutense University of Madrid, Spain  
Philippe Buhlmann, University of Minnesota, USA

**Symposium 2:** Flow and Microfluidic Systems in Analytical Electrochemistry  
Vincent Vivier (Coordinator), LISE - CNRS UPR15, France  
Ingrid Fritsch, University of Arkansas, USA  
Lane Baker, University of Indiana, USA  
Daniel Mandler, The Hebrew University of Jerusalem, Israel

**Symposium 3:** Electrochemical Approaches to Clinical Diagnostics and Medical Devices  
James F. Rusling (Coordinator), University of Connecticut, USA  
Fethi Bedioui, Université Paris Descartes - Chimie ParisTech, France  
Woonsup Shin, Sogang University, South Korea  
Frédérique T. Deiss, Indiana University Purdue University Indianapolis, USA

**Symposium 4:** Bioelectrochemistry without Borders  
Elisabeth Lojou (Coordinator), CNRS Marseille, France  
Shelley Minteer, University of Utah, USA  
Lars Jeuken, University of Leeds, UK  
Scott Calabrese Barton, Michigan State University, USA

**Symposium 5:** Novel Materials and Devices for Energy Storage: Batteries for Tomorrow’s World  
Robert Kostecki (Coordinator), Lawrence Berkeley National Laboratory, USA  
Stefano Passerini, Karlsruhe Institute of Technology, Germany  
Daniel Abraham, Argonne National Laboratory, USA  
Vojtech Svoboda, Binergy Scientific, USA  
Brett Lucht, University of Rhode Island, USA

**Symposium 6:** Fuel Cells and Electrolyzers  
Hiroyuki Uchida (Coordinator), Clean Energy Center, University of Yamanashi, Japan  
Piotr Zeleny, Los Alamos National Lab, USA  
Deborah Jones, Université Montpellier 2, France  
Bryan Pivovar, NREL, USA

**Symposium 7:** Supercapacitors from Materials and Processes to Applications  
Francesca Soavi (Coordinator), University of Bologna, Italy  
John Miller, JME, USA  
Andrew Herring, Colorado School of Mines, USA  
Roseanne Warren, University of Utah, USA

**Symposium 8:** Dealloying: Fundamentals, Application, and Control  
Nikolay Dimitrov (Coordinator), SUNY at Binghamton, USA  
E. Jennings Taylor, Faraday Technologies, USA  
Natasa Vasiljevic, University of Bristol, UK  
Thomas Moffatt, NIST, USA

**Symposium 9:** Ionic liquids as Media for Electrochemical Synthesis  
Roberto Torresi (Coordinator), Univ. de Sao Paulo, Brazil  
Charles Hussey, University of Mississippi, USA  
Andreas Bund, Technische Universität Ilmenau, Germany
**Symposium 10:** Corrosion: Fundamentals, Passivity, and Prevention  
Scott Lillard (Coordinator), University of Akron, USA  
David Shifler, Naval Research Lab, USA  
Nick Birbilis, Monash University, Australia  
Homero Castaneda, Texas A&M University, USA

**Symposium 11:** Synthesis and Applications of Electrochemically Active Materials  
Francesco Paolucci (Coordinator), University of Bologna, Italy  
Mikhail A. Vorotyntsev, D. Mendeleev University of Chemical Technology, Russia  
Ross Milton, University of Utah, USA  
Giovanni Zangari, University of Virginia, USA

**Symposium 12:** Electrochemical Technology for solving 21st Century Challenges  
Gerardine Botte (Coordinator), Ohio University, USA  
Karel Bouzek, Institute of Chemical Technology Prague, Czech Republic  
Geoffrey H. Kelsall, Imperial College London, UK  
Joaquin Rodriguez Lopez, University of Illinois, USA

**Symposium 13:** The Green Potential of Molecular Electrochemistry  
Daniel Little (Coordinator), University of California, Santa Barbara, USA  
Marilia O. F. Goulart, Universidade Federal de Alagoas, Brazil  
Olivier Buriez, Ecole Normale Superieure, France  
Carlos Frontana, Centro de Investigacion y Desarrollo Tecnologico en Electroquimica S. C., Mexico

**Symposium 14:** Let there be Light in Electrochemistry: From Electrogenerated Chemiluminescence to Fluorescence  
Gary Blanchard (Coordinator), Michigan State, USA  
Zhifeng Ding, University of Western Ontario, Canada  
Pawel Krysinski, University of Warsaw, Poland  
Neso Sojic, University of Bordeaux, France  
Giovanni Valenti, University of Bologna, Italy

**Symposium 15:** Physical and Interfacial Electrochemistry: Structural, Spectroscopic, and Theoretical Studies of the Electrochemical Interface  
Jamie Noël (Coordinator), The University of Western Ontario, Canada  
Paweł J. Kulesza, University of Warsaw, Poland  
Daniel Scherson, Case Western University, USA

**Symposium 16:** Electrochemistry of Metal Clusters and Nanoparticles  
Flavio Maran (Coordinator), University of Padova, Italy  
Anne Co, Ohio State University, USA  
Dongil Lee, Yonsei University, South Korea  
Michael V. Mirkin, City University of New York Energy Institute, USA

**Symposium 17:** Advances in Theory and Modeling of Electrochemical Systems  
Michael Eikerling (Coordinator), Simon Fraser University, Canada  
Alejandro A. Franco, Université de Picardie Jules Verne, France  
Adam Weber, Lawrence Berkeley National Laboratory, USA  
Douglas P. Riemer, Hutchinson Technology, Inc., USA

**Symposium 18:** Education for Electrochemistry and Electrochemical Engineering  
Ignacio Gonzalez (Coordinator), Universidad Autonoma Metropolitana – Iztapalapa, Mexico  
Johna Leddy, University of Iowa, USA  
Jorge Ibanez, Universidad Iberoamericana, Mexico

**Symposium 19:** General Session  
John Stickney (Coordinator), University of Georgia, USA  
Gery R. Stafford, NIST, USA
Tutorial Lectures & Workshop

Sunday, 27 August 2017
Location: Rhode Island Convention Center (RICC)

Tutorial 1

Room : 550
13:30 to 17:00
Platinum Group Metal Free Catalysts
Frédéric Jaouen, Université Montpellier II, Montpellier, France

Tutorial 2

Room : 551A
13:30 to 17:00
Biomedical Applications of Electrochemical Systems
Shawn C. Kelley, Medtronic Incorporated, Minneapolis, MN, USA
Erik Scott, Medtronic Incorporated, Minneapolis, MN, USA

Wednesday, 30 August 2017
Location: RICC, 5th floor

Workshop

Room : Room 553
12:45 to 14:15
Electrochimica Acta / ISE author and reviewer workshop
Robert Hillman, Editor in Chief Electrochimica Acta, University of Leicester, United Kingdom
Plenary Lectures

Location: Ballroom A

Monday, 28 August 2017

08:15 to 09:15
Adam Heller
McKetta Department of Chemical Engineering, University of Texas, Austin, USA
Electrochemical Glucose Monitoring for Diabetes Management: Making the Monitoring Painless and Bloodless

Tuesday, 29 August 2017

08:15 to 09:15
Clare P. Grey
Department of Chemistry, University of Cambridge, Cambridge, United Kingdom
Recent Developments in the Application of In- and Ex-situ NMR Spectroscopy to Batteries and Supercapacitors

Wednesday, 30 August 2017

08:15 to 09:15
Krishnan Rajeshwar
The University of Texas at Arlington, Arlington, USA
Photoelectrochemistry, Solid-State Chemistry, and Solar Fuels: A Nexus?

Thursday, 31 August 2017

08:15 to 09:15
Hector Abreuña
Department of Chemistry & Chemical Biology, Cornell University, Ithaca, USA
Operando Methods for the Study of Energy Materials

Friday, 1 September 2017

08:15 to 09:15
Jose H. Zagal
Department of Chemistry of Materials, University of Santiago de Chile, Santiago, Chile
Reactivity Descriptors of MNx Catalysts for the Oxygen Reduction Reaction
ISE Prize Winners 2016

**Electrochimica Acta Gold Medal**

**Hector Abruña**, *Cornell University, Itacha, NY, USA*

Thursday 31 August 2017 from 08:15 to 09:15, Plenary Lecture, Ballroom A  

**Operando Methods for the Study of Energy Materials**

The Electrochimica Acta Gold Medal 2016 is awarded to Hector Abruña, for his sustained excellent multidisciplinary studies of electrochemical phenomena using innovative combinations of electrochemical, SECM, differential electrochemical mass spectrometry and X-ray techniques.

**Brian Conway Prize for Physical Electrochemistry**

**Marc Koper**, *Leiden University, Netherlands*

Monday 28 August 2017, from 16:40 to 17:20, Symposium 15, Room 552B  

**New views on the electrochemistry of platinum**

The Brian Conway Prize for Physical Electrochemistry is awarded to Marc Koper in recognition of his contributions to developments of the fundamental understanding of the reactivity of electrified interfaces, using a combination of theoretical and experimental approaches.

**Tajima Prize**

**Mikhail L. Zheludkevich**, *University of Kiel, German*

Tuesday 29 August 2017, from 09:30 to 09:50, Symposium 10, Room 552A  

**New Inhibition Approach for Active Protective Coatings on Mg Alloys**

The Tajima Prize is awarded to Mikhail L. Zheludkevich for his outstanding researches in corrosion science, especially on localized electrochemical techniques and innovative protective coatings.

**Jaroslav Heyrovsky Prize for Molecular Electrochemistry**

**Ismael Diez Perez**, *University of Barcelona, Spain*

Thursday 31 August 2017, from 14:00 to 14:40, Symposium 13, Room 556A  

**Probing Concepts in Single-Molecule Wires: Diodes, Electromechanics, FETs, Spinterface, Photo-switches and... Single-molecule Chemistry?**

The Jaroslav Heyrovsky Prize for Molecular Electrochemistry is awarded to Ismael Diez Perez for his outstanding contributions to the field of molecular electron transfer obtained through electrochemically controlled single-molecule approaches.

**ISE-Elsevier Prize for Green Electrochemistry**

**Javier Llanos**, *Chemical Engineering Department, University of Castilla-la Mancha, Spain*

Monday 28 August 2017, from 18:20 to 18:40, Symposium 12, Room 555B  

**Development of Concentration Strategies for the Improvement of the Efficiency of Electrochemical Degradation Technologies**

The ISE-Elsevier Prize for Green Electrochemistry is awarded to Javier Llanos in recognition of his significant contributions to developing electrochemical approaches for the reclamation of urban wastewater and treatment of industrial waste.
ISE Prize for Electrochemical Materials Science

Claire Villevieille, Paul Scherrer Institute, Villigen, Switzerland
Wednesday 30 August 2017, 10:10 to 10:30, Symposium 11, Room 553
Designing low cost Na-ion batteries

The ISE Prize for Electrochemical Materials Science is awarded to Claire Villevieille for her contributions to synthesis and characterization of electroactive materials for energy storage application.

ISE-Elsevier Prize for Experimental Electrochemistry

Nongjian Tao, Arizona State University, USA
Tuesday 29 August 2017, from 09:30 to 09:50, Symposium 1, Room 550
Imaging electrochemical current, reaction and surface stress optically

The ISE-Elsevier Prize for Experimental Electrochemistry is awarded to Nongjian Tao in recognition of his outstanding contribution to molecular electronics and particularly for the development of methods to measure conductivity of single molecules.

ISE-Elsevier Prize for Applied Electrochemistry

Shaojun Guo, Peking University, China
Thursday 31 August 2017, from 09:50 to 10:30, Symposium 6, Ballroom B
Tuning the Surface and Interface of Metal-based Nanocrystals for Energy Electrocatalysis

The ISE-Elsevier Prize for Applied Electrochemistry is awarded to Shaojun Guo for outstanding advances in the molecular design of electrocatalysts, battery materials, and electrochemical sensors.

Oronzio and Niccolò De Nora Young Author Prize

Lin Lu-Yin, National Taipei University of Technology, Taipei, Taiwan
Monday 28 August 2017, from 14:20 to 14:40, Symposium 7, Room 557
Material Category and Sequence Effects of Core-Shell Structures on Morphology and Electrocapacitive Performance of Energy Storage Electrodes


Bioelectrochemistry Prize of ISE Division 2

Jacek Lipkowski, University of Guelph, Canada
Tuesday 29 August 2017, 14:00 to 14:40 Symposium 4, Room 556B
Electrochemical, Spectroscopic and Surface Imaging Studies of Antimicrobial Peptides Incorporated into Biomimetic Membranes Supported at a Au Electrode

The Bioelectrochemistry Prize of ISE Division 2 is awarded to Jacek Lipkowski for his outstanding pioneering work on the structure of gold-supported biomimetic membranes incorporating channel-forming peptides.

Early Career Analytical Electrochemistry Prize of ISE Division 1

Kosuke Ino, Tohoku University, Sendai, Japan
Monday 28 August 2017, from 16:40 to 17:00, Symposium 1, Room 550
Integrated electrochemical devices based on micro/nano-chemistry for bioassays

The Early Career Analytical Electrochemistry Prize of ISE Division 1 is awarded to Kosuke Ino in recognition of his research on integrated electrochemical devices based on micro/nano-chemistry for bioassays.
Electrochimica Acta Travel Awards for Young Electrochemists 2017
Federico Bella, Torino, Italy
Nadim Darwish, Perth, Australia
Sergi Garcia-Segura, Tempe, USA

ISE Travel Awards for Young Electrochemists 2017
Dominic Bresser, Ulm, Germany
Veronica Celorrio, Bristol, UK
Ruud Kortlever, Pasadena, USA
Jilei Liu, Singapore, Singapore
Ross Milton, Salt Lake City, USA
Hwa Yoon, Berkeley, USA
Aleksandar Zeradjanin, Erlangen, Germany

Poster presentation session 1 - Monday

Symposia: s1, s2, s3, s4, s5, s8, s9
Poster set-up Monday: 08:30-10:30 See poster locations map on page 174
Poster Presentation: Monday, 28 August 2017: 10:45-12:45
(Ballroom D+E, 5th Floor)
Poster take-down Monday: 18:00-19:00

Poster presentation session 2 - Tuesday

Symposia: s7, s11, s12, s13, s14, s16, s18
Poster set-up Tuesday: 08:30-10:30 See poster locations map on page 174
Poster Presentation: Tuesday, 29 August 2017: 10:45-12:45
(Ballroom D+E, 5th Floor)
Poster take-down Tuesday: 18:00-19:00

Poster presentation session 3 - Wednesday

Symposia: s06, s10, s15, s17, s19
Poster set-up Wednesday: 08:30-10:30 See poster locations map on page 174
Poster Presentation: Wednesday, 30 August 2017: 10:45-12:45
(Ballroom D+E, 5th Floor)
Poster take-down Thursday: 12:00-14:00
ISE Society Meetings

Sunday, 27 August 2017
Opening Ceremony
17:00 to 18:00 › Ballroom A

Monday, 28 August 2017
Division Officers Luncheon Meeting
12:45 to 13:45 › Room 552 A
Regional Representatives Luncheon Meeting
12:45 to 13:45 › Room 552 B

Tuesday, 29 August 2017
Council Meeting
12:45 to 13:45 › Room 553

Thursday, 31 August 2017
General Assembly
11:00 to 12:00 › Ballroom A
Division Meetings
12:45 to 13:45
Division 1 Analytical Electrochemistry › Room 556 A
Division 2 Bioelectrochemistry › Room 556 B
Division 3 Electrochemical Energy Conversion and Storage › Room 555 A
Division 4 Electrochemical Materials Science › Room 555 B
Division 5 Electrochemical Process Engineering and Technology › Room 552 A
Division 6 Molecular Electrochemistry › Room 552 B
Division 7 Physical Electrochemistry › Room 551 A

Friday, 1 September 2017
Closing Ceremony
12:30 to 12:45 › Ballroom A

See room locations on back cover
General Information

Publications
A special issue of the Society’s journal, Electrochimica Acta, is planned based on selected original contributions made at the conference. Selection will be made by an international editorial Committee comprising the following Editors* and Guest Editors, one for each of the Symposia in which the meeting is articulated:
The Special Issues Editor, Sergio Trasatti, will co-ordinate the action of the editorial Committee and will be directly responsible for the review procedure. The Special Issue is planned to accommodate up to 170 papers.
Submission only on invitation of one of the Guest Editors.
Submission time span: 02 September 2017 - 17 December 2017.

Social Program

RECEPTIONS
Welcome Reception
Sunday, 27 August 2017, 18:00-20:00
After the Opening Ceremony on 5th floor of RICC

Monday Reception
Monday, 28 August 2017, 18:40-20:00 on 5th floor of RICC

Thursday Banquet
Thursday, 31 August 2017, 19:00
At Providence Biltmore Grand Ballroom - a stunning venue on the 17th floor, with its soaring ceilings and panoramic providence views.
Price per Person: US$87, places are limited

EXCURSIONS
Wednesday, 30 August
On Wednesday afternoon, 30 August 2017, excursions will be organized by Experience Rhode Island. All excursions must be pre-booked before 10 August 2017.

Newport: Rhode Island’s Spectacular City by the Sea
Come away with us to one of America’s most special places! You will love this journey to Rhode Island’s two largest islands! On the tour, you will visit Rhode Island’s most stunning state park, travel along breathtaking Ocean Drive, see and hear the stories behind the magnificent summer homes of the wealthiest Americans of the previous century, explore the cobblestone streets of colonial America, and much more! Filled with interesting stories and fantastic sights, you will love Rhode Island’s spectacular city by the sea!

Newport Harbor Cruise and Lighthouse Tour
Join us for a delightful cruise of Newport harbor and Narragansett Bay aboard a private yacht where you will enjoy a fantastic view of some of Newport’s most stunning estates, and get up close to some of Rhode Island’s most famous lighthouses. You will love this tour on Rhode Island’s spectacular Bay!

Boston: Capital of New England
Join us for a fantastic trip to Boston, the capital of New England! You will enjoy a land and water tour past all the famous sights, spend time on the Freedom Trail, and browse the world-famous Quincy Market. You will love this tour of one of America’s most famous and historic cities!
ORAL PRESENTATION
PROGRAM
Monday, 28 August 2017

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<td>16:40 - 17:00</td>
<td>V. Battaglia, G. Severs, J. Ibanez, K. Ino, S. Cattarin, S. Lunte, B. Dum, R. Forster, Y. Negishi, D. Clift, R. Kelly, M. Koper, G. G. Lang, K. Conforti, A. Ispas, K. Hasan</td>
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Monday 28 August 2017 - Morning

Plenary Lecture

Room : Ballroom A

Chaired by: Wolfgang Schuhmann

08:15 to 09:15

Adam Heller (McKetta Department of Chemical Engineering, University of Texas, Austin, USA)
Electrochemical Glucose Monitoring for Diabetes Management: Making the Monitoring Painless and Bloodless

S01  New Experimental Trends in Analytical Electrochemistry

Room : 550

Chaired by: Philippe Buhlmann

09:30 to 09:50 Invited

Carol Korzeniewski (Department of Chemistry and Biochemistry, Texas Tech University, Lubbock, USA)
Confocal Raman Microscope Measurements in the Study of Catalytic Membranes and Thin Film Materials

09:50 to 10:10

Omotayo Arotiba (Applied Chemistry, University of Johannesburg, Johannesburg, South Africa), Narshone Soda, Duduzile Nkosi, Nobanathi Maxakato, Nonhlangabezo Mabuba
A polyamidoamine dendrimer - streptavidin supramolecular architecture platform for DNA biosensing

10:10 to 10:30

James Rohan (Tyndall National Institute, University College Cork, Cork, Ireland), Amelie Wahl, Ian Seymour, Alan O’Riordan
Diffusion Profiles and Analyte Signal Amplification at Gold Interdigitated Nanowire Electrode Arrays

10:30 to 10:45

Coffee Break
S02 Flow and Microfluidic Systems in Analytical Electrochemistry

Room: 554

Chaired by: Ingrid Fritsch and Susan Lunte

09:30 to 09:50 Invited

Robbyn Anand (Department of Chemistry, Iowa State University, Ames, USA), Min Li

Integrated Electrochemical Analysis of Circulating Tumor Cells Isolated by Dielectrophoresis

09:50 to 10:10

Danny Pauwels (Faculty of Applied Engineering, University of Antwerp, Wilrijk, Belgium), Sander Neukermans, Annick Hubin, Sabine Van Doorslaer, Tom Breugelmans

Electrocatalytic flow systems combined with advanced EPR techniques to unravel reaction mechanisms and determine rate constants at different nano-structured electrodes

10:10 to 10:30

Lane Baker (Chemistry, Indiana University, Bloomington, USA)

Coupling Ion Channels to Mobile Nanofluidic Devices (Nanopipettes)

10:30 to 10:45 Coffee Break

S04 Bioelectrochemistry without Borders

Room: 556B

Chaired by: Scott Calabrese Barton and Ross Milton

09:30 to 09:50 Invited

Kenji Kano (Graduate School of Agriculture, Kyoto University, Kyoto, Japan)

Construction of Direct Electron Transfer-Type Bioelectrodes with High Performance

09:50 to 10:10

Scott Calabrese Barton (Dept. of Chemical Engineering & Materials Science, Michigan State University, East Lansing, USA), Yuanchao Liu

Kinetic Monte Carlo Study of Channeling in Synthetic Bioreaction Networks

10:10 to 10:30

Marisa Buzzeo (Chemistry, Barnard College, Columbia University, New York, USA), Elizabeth Wiita, Kelsey Lynch, Kathleen Frommer

Probing the Physiological Redox Role of Selenocysteine

10:30 to 10:45 Coffee Break
S05  Novel Materials and Devices for Energy Storage: Batteries for Tomorrow's World

Room: Ballroom A

Chaired by: Robert Kostecki and Daniel Abraham

09:30 to 09:50
Zhijia Du (Energy and Transportation Science Division, Oak Ridge National Laboratory, Oak Ridge, USA), Jianlin Li, Claus Daniel, David Wood
Si alloy/graphite coating design principles for Li-ion battery with high energy density

09:50 to 10:10
Dominic Bresser (Helmholtz Institute Ulm (HIU), Karlsruhe Institute of Technology (KIT), Ulm, Germany), Franziska Mueller, Stefano Passerini
Conversion/Alloying Materials – Impact of the Choice of Elements

10:10 to 10:30
Robert Kostecki (ESDR, LBNL, Berkeley, USA), Maurice Ayache, Hans Bechtel, Angelique Jarry, Michael Martin, Philip Ross, Lydia Terborg, Ategeteb Haregewoin, Ivana Hasa
X-ray and Optical Spectroscopy and Imaging of the SEI Layer on Intermetallic Anodes

10:30 to 10:45
Coffee Break

S06  Fuel Cells and Electrolyzers

Room: Ballroom B

Chaired by: Alexey Serov and Hiroyuki Uchida

09:30 to 09:50
Barr Zulevi (Pajarito Powder, Albuquerque, USA), Alexey Serov, Samuel McKinney, Geoffrey McCool, Henry Romero, Alia Lubers, Madeleine Odgaard, Huong Doan, Ryan Pavlicek, Sanjeev Mukerjee, Christopher Capuano, Katherine Ayers, Plamen Atanassov
PGM-free Hydrogen Evolution and Oxidation Electrocatalysts for AEM Electrodes

09:50 to 10:10
Guang Li (College of Material Science and Engineering, Donghua University, Shanghai, China), Yang Wang, Kang Fu, Linchang Mao, Junhong Jin
D-porous carbon nanofibers as promising support for platinum catalyst to enhance oxygen reduction reaction in fuel cells

10:10 to 10:30
Xinsheng Zhang (Chemical Engineering, East China University of Science and Technology, Shanghai, China), Wenjiao Huang, Paul A. Kohl
Catalysts Supported on Functionalized Carbon Nanotubes for Oxygen Reduction Reaction in PEM/AEM Hybrid Fuel Cells

10:30 to 10:45
Coffee Break
S07  Supercapacitors from Materials and Processes to Applications

**Room: 557**

*Chaired by: Tyler Mathis and John Miller*

09:30 to 10:10 Keynote

**Alexei Kornyshev** *(Chemistry, Imperial College London, London, United Kingdom)*

The Essential Physics of Direct and Reverse Electroactuation: from Energy Storage to Energy Harvesting and Robotics

10:10 to 10:30

**Carlo Santoro** *(Chemical and Biological Engineering, University of New Mexico, Albuquerque, USA)*, Francesca Soavi, Mounika Kodali, Alexey Serov, Plamen Atanassov

Self-charging Microbial Desalination Cells: New Class of Power Generating and Water Desalination Devices

10:30 to 10:45

Coffee Break

S09  Ionic Liquids as Media for Electrochemical Synthesis

**Room: 556A**

*Chaired by: Roberto M. Torresi*

09:30 to 10:10 Keynote

**Daniel Bélanger** *(Chimie, Université du Québec à Montréal, Montréal, Canada)*, Laura Coustan, Galyna Shul

Superconcentrated aqueous electrolytes

10:10 to 10:30

**Andrew Doherty** *(Chemistry and Chemical Engineering, The Queen’s University of Belfast, Belfast, United Kingdom)*, Eunan Marley

Mechanism and Kinetics of the Electrocarboxylation of Aromatic Carbonyls in Ionic Liquids

10:30 to 10:45

Coffee Break

S10  Corrosion: Fundamentals, Passivity, and Prevention

**Room: 552A**

*Chaired by: Bernard Tribollet*

09:30 to 10:10 Keynote

**Vincent Vivier** *(LISE, UPMC/CNRS, Paris, France)*, Michel Keddam, Mireille Turmine

The impedance response of a passive film revisited by a double modulation technique

10:10 to 10:30

**Monica Santamaria** *(Electrochemical Materials Science Laboratory, DICAM, Università di Palermo, Palermo, Italy)*, Giada Tranchida, Maria Clesi, Francesco Di Franco, Francesco Di Quarto

Electronic Properties and Corrosion Resistance of Passive Films on Austenitic and Duplex Stainless Steels

10:30 to 10:45

Coffee Break
S11 Synthesis and Applications of Electrochemically Active Materials

Room: 553

Chairied by: Francesco Paolucci

09:30 to 09:50 Invited

Alain Pailleret (Laboratoire Interfaces et Systèmes Electrochimiques, Sorbonne Universités, UPMC Univ. Paris VI, CNRS, Paris, France), Adrien Mocaer

Further Insight into the Electrochemo-Mechanical Behaviour of Electronically Conducting Polymers: Development of New Methodologies Involving Electrochemical Atomic Force Microscopy

09:50 to 10:10

Joanna Dolinska (Department of Electrode Processes, Institute of Physical Chemistry Polish Academy of Sciences, Warsaw, Poland), Marcin Holdynski, Marcin Opallo

Metal nanoparticles - polysaccharides hybrids for electrode modification

10:10 to 10:30

Hiroki Habazaki (Faculty of Engineering, Hokkaido University, Sapporo, Japan)

Photoelectrochemical Activity of Mesoporous TiO$_2$ Films Formed by Anodizing in Hot Phosphate/Glycerol Electrolyte

10:30 to 10:45

Coffee Break

S12 Electrochemical Technology for solving 21st Century Challenges

Room: 555B

Chairied by: Gerardine G. Botte and Geoff Kelsall

09:30 to 09:50

Qianqian Zhang (School of Chemistry and Environment, Beihang University, Beijing, China)

Alternating Current Output from a Photosynthesis-Inspired Photoelectrochemical Cell

09:50 to 10:10

Mario Rosales (Ingenieria Geomatica e Hidraulica, Universidad de Guanajuato, Guanajuato, Mexico), José Luis Nava

Simulations of two-phase flow during the cathodic H$_2$ evolution in a pre-pilot multi-electrode stack having 12 cells in continuous mode

10:10 to 10:30

Geoff Kelsall (Chemical Engineering, Imperial College London, London, United Kingdom), Franky Bedoya Lora, Anna Hankin, Isaac Gentle

Prediction of Photo-anode Current Densities for Modelling Scaled-up Water-Splitting Reactors

10:30 to 10:45

Coffee Break
S14  Let there be Light in Electrochemistry: 
From Electrogernated Chemiluminescence to Fluorescence

Room: 551A

Chaired by: Giovanni Valenti

09:30 to 09:50 Invited

Francesco Paolucci (Chemistry Giacomo Ciamician, Alma Mater Studiorum University of Bologna, Bologna, Italy), Giovanni Valenti, Massimo Marcaccio, Enrico Rampazzo, Luca Prodi

Electrochemiluminescence meets nanotechnology, theory and practice of the silica nanoparticles approach

09:50 to 10:10

Joohoon Kim (Department of Chemistry, Kyung Hee University, Seoul, Korea)

Facile Tailoring of Chemically Converted Graphenes Using a Water-soluble Pyrene Derivative for Sensitive Electrochemiluminescence-based Analyses

10:10 to 10:30

Vera Essmann (Chemistry and Biochemistry, Ruhr-Universitaet Bochum, Bochum, Germany), Wolfgang Schuhmann

Scanning Electrochemical Bipolar Microscopy (SECBM)

10:30 to 10:45

Coffee Break

S15  Physical and Interfacial Electrochemistry: Structural, Spectroscopic, and Theoretical Studies of the Electrochemical Interface

Room: 552B

Chaired by: Pawel J. Kulesza and James Noel

09:30 to 10:10 Keynote Invited

Thomas Moffat (Material Measurement Laboratory, NIST, Gaithersburg, USA), Yihua Liu, Sang Hyun Ahn, Nicole Ritzert, Rongyue Wang, Eleanor Gillette, Dincer Gokcen, Haiyan Tan, Carlos Hangarter, Leo Bendersky, Ugo Bertrocci, Hoydoo You

Electrochemical Atomic Layer Deposition: Self-terminated Electrodeposition Reactions and Pulse Plating

10:10 to 10:30

Burak Ulgut (Chemistry, Bilkent University, Ankara, Turkey), Pinar Aydogan Gokturk, Can Berk Uzundal, Merve Taner Camci, Coskun Kocabas, Sefik Suzer

In-situ X-Ray Photoelectron Spectroscopic Investigations during Electrochemical Experiments in Ionic Liquids

10:30 to 10:45

Coffee Break
S16  Electrochemistry of Metal Clusters and Nanoparticles

Room: 551B

Chaired by: Flavio Maran

09:30 to 10:10 Keynote

Shaowei Chen (Department of Chemistry and Biochemistry, University of California, Santa Cruz, USA)
Electron-Transfer Chemistry of Functional Nanoparticles: An Interfacial Perspective

10:10 to 10:30 Invited

Tatsuya Tsukuda (Department of Chemistry, The University of Tokyo, Tokyo, Japan)
Gold Superatoms and Superatomic Molecules Protected by Ligands

10:30 to 10:45
Coffee Break

S18  Education for Electrochemistry and Electrochemical Engineering

Room: Ballroom C

Chaired by: Ignacio Gonzalez and Jorge Ibanez and Johna Leddy

09:30 to 09:50 Invited

James Noel (Chemistry, The University of Western Ontario, London, Canada)
Teaching Electrochemistry to other Scientists - The Tricky Parts

09:50 to 10:10

Neil Spinner (Electroanalytical Sales, Pine Research Instrumentation, Durham, USA), Timothy Paschkewitz, Alex Peroff, Li Sun
What Your Students Ought to Know about Electrochemistry (But Ask Us Instead)

10:10 to 10:30

Christopher Brett (Department of Chemistry, University of Coimbra, Coimbra, Portugal)
Communicating Electrochemistry and the Language of Electrochemistry

10:30 to 10:45
Coffee Break
### S19 General Session

**Room: 555A**

*Chaired by: Gery Stafford*

**09:30 to 09:50**

**Kenji Sakamaki** *(Chemistry Course, Dept of Chemistry and Biochemistry, Fukushima College, National Institute of Technology, Iwaki, Fukushima, Japan)*, Honoka Matsuda, Sayuri Usui, Wakana Sakashita, Ryoko Kato, Haruka Endo, Masataka Sato

- Photoelectrochemical Visible Light Zero Bias Hydrogen Generation with Membrane-Based Cells Designed for Decreasing Overall Water Electrolysis Voltage and Water Dissociation *(16)*

**09:50 to 10:10**

**Juliana Ferreira de Brito** *(Analytical Chemistry, São Paulo State University, Araraquara, Brazil)*, Maria Valnice Zanoni, Juliano Cardoso, Simone Stulp, Juliana Brito, Jáder Flor, Regina Frem

- TiO$_2$ nanotubes modified with ZIF-8 *(Zeolites Imidazole Frameworks)* used for capturing and photoelectroreduction of CO$_2$

**10:10 to 10:30**

**Sajid Hussain** *(Institute of Chemistry, University of Tartu, Tartu, Estonia)*, Heiki Erikson, Nadezda Kongi, Maito Merisalu, Peeter Ritslaid, Väino Sammelselg, Kaido Tammeveski

- Heat-Treatment of Pt Nanoparticles Sputter Deposited on Multi-Walled Carbon Nanotubes for Oxygen Reduction Reaction

**10:30 to 10:45**

Coffee Break
Monday 28 August 2017 - Afternoon

S01 New Experimental Trends in Analytical Electrochemistry

Room: 550

Chair by: Carol Korzeniewski

14:00 to 14:40 Keynote

Jill Venton (Chemistry, University of Virginia, Charlottesville, USA), Cheng Yang
Carbon Nanomaterial Electrodes for Neuroscience Applications

14:40 to 15:00

Vitor Brasiliense (Chemistry Department, Paris Diderot University, Paris, France)
In Operando Monitoring of Unique Cobalt Oxide Nanoparticles: Electrodeposition and Electrocatalysis

15:00 to 15:20

En Ning Saw (Chemistry and Biochemistry, Ruhr-University Bochum, Bochum, Germany), Markus Kratz, Kristina Tschulik
Measuring Single Nanoparticle Reaction Kinetics by Time-Resolved Nano Impact Electrochemistry

15:20 to 15:40 Invited

Philippe Banet (Laboratoire de Physicochimie des Polymères et Interfaces, Université de Cergy Pontoise, Neufville sur Oise, France), Pradip Kar, Roland Geagea, Mathieu Durand, Janina Upan, Xolani Terrance Ngema, Nicolas Sanson, Kontad Ounnunkad, Jaron Jakmunee, Priscila Baker, Rachel Fanelwa Ajayi, Pierre-Henri Aubert
Silver Nanoparticles in Electrochemical Biosensors

15:40 to 16:00 Invited

Shigeru Amemiya (Chemistry, University of Pittsburgh, Pittsburgh, USA)
Nanogap Voltammetry of Clean Surface of Electron-Beam-Deposited Carbon

16:00 to 16:20

Nicole Ritzert (Material Measurement Laboratory, National Institute of Standards and Technology, Gaithersburg, USA), Thomas Moffat
Using Scanning Electrochemical Microscopy and Optical Microscopy to Study Diffusion Layer Chemistry during Metal Electrodeposition

16:20 to 16:40

Coffee Break

16:40 to 17:00 Early Career Analytical Electrochemistry Prize of ISE Division 1

Kosuke Ino (Graduate School of Engineering, Tohoku University, Sendai, Japan)
Integrated electrochemical devices based on micro/nano-chemistry for bioassays

17:00 to 17:20

Christopher Brett (Department of Chemistry, University of Coimbra, Coimbra, Portugal), Najib Ben Messaoud, Mariana Emilia Ghica, Chérif Dridi, Mounir Ben Ali
New Electrochemical Sensing Strategies for Bisphenol A

17:20 to 17:40

Eric Gil (Faculty of Pharmacy, Federal University of Goias, Goiânia, Brazil), Isaac Yves Lopes de Macêdo, Morgana Fernandes de Alercim, Luane Ferreira Garcia, Germán Sanz Lobón, Wallans dos Santos, Ricardo Menegatti, Freddy Fernandes Guimarães
Electrochemical Characterization of Darbufelone and Electro-Oxidation Pathway
17:40 to 18:00
Orlando Fatibello-Filho (Department of Chemistry, Federal University of São Carlos, São Carlos, Brazil), Juliana V. Maciel, Elson L. Fava, Tiago A. Silva, Daiane Dias
Combination of Voltammetry of Immobilized Microparticles and Nanostructured Carbon Black Films for the Determination of Organic Compounds

18:00 to 18:20
Marcelo de Oliveira (Departamento de Química - FFCLRP, Universidade de São Paulo, Ribeirão Preto - SP, Brazil), Erica Oiye, Maria Fernanda Ribeiro, Juliana Katayama
Analysis of MDMA by Square Wave Voltammetry with Carbon Paste Electrode

18:20 to 18:40
Dipankar Koley (Chemistry, Oregon State University, Corvallis, USA)
Carbon-based ion-selective electrodes: microsensors for scanning electrochemical microscopy

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S02 Flow and Microfluidic Systems in Analytical Electrochemistry

Room: 554

Chaired by: Daniel Mandler and Robbyn Anand

14:00 to 14:40 Keynote
Serge G. Lemay (MESA+ Institute for Nanotechnology, University of Twente, Enschede, Netherlands)
Mass Transport in Electrochemical Nanofluidic Devices

14:40 to 15:00 Invited
Charles Henry (Chemistry, Colorado State University, Fort Collins, USA)
Electrochemical Paper-Based Analytical Devices for Clinical and Environmental Diagnostics

15:00 to 15:20
Michael Heien (Chemistry and Biochemistry, University of Arizona, Tucson, USA), Drew Farrell
Portable Low-Cost Instrumentation for Trace Electrochemical Analysis of Heavy Metals in the Field

15:20 to 15:40 Invited
Martyn Boutelle (Department of Bioengineering, Imperial College London, London, United Kingdom), Isabelle Samper, Michelle Rogers, Chi Leng Leong, Sally Gowers
Development of a portable, microfluidic, multi-analyte electroanalytical device for monitoring dynamic changes in human tissue

15:40 to 16:00 Invited
R. Scott Martin (Dept. of Chemistry, Saint Louis University, St. Louis, USA)
New Approaches of Microchip-based Electrochemical Detection for Cellular Analysis

16:00 to 16:20
Ingrid Fritsch (Department of Chemistry and Biochemistry, University of Arkansas, Fayetteville, USA), Foysal Khan, Aaron Nicholson, Joshua Hutcheson, Courney Hunter, Amy Powless, Timothy Muldoon
Platforms for Chemical Analysis Interfaced with Redox Magneto hydrodynamic Microfluidics

16:20 to 16:40
Coffee Break

16:40 to 17:20 Keynote
Susan Lunte (Ralph N. Adams Institute for Bioanalytical Chemistry, University of Kansas, Lawrence, USA)
Electrochemical Detection Strategies for Microchip Electrophoresis
17:20 to 17:40 Invited

Laurent Thouin (Chemistry Department, Ecole Normale Superieure, Paris, France), Thomas Abadie, Catherine Sella, Christian Amatore

Electrochemical Detection of Droplet Contents in Microfluidic Devices: Chronoamperometric Analysis of Plugs

17:40 to 18:00

Fethi Bedioui (UTCBS, Chimie ParisTech/CNRS, Paris, France), Gerson Duarte Junior, Abdul Ghani Ismail, Anne Varenne, Sophie Griveau, Fanny d’Orlyé, Alberto Fracassi da Silva, Wendell Coltro

Development of an Electrophoresis Microchip Coupled to Amperometry for the Analysis of Nitrosothiols

18:00 to 18:20 Invited

Margitta Uhlemann (Chemistry of Functional Materials, IFW-Dresden, Dresden, Germany), Veronika Haehnel, Foysal Z. Kahn, Jörg König, Gerd Mutschke, Christoph Konczak, Heike Schlörb, Ingrid Fritsch

Combining magnetic forces for contactless manipulation of fluids and electrochemical detection in highly integrated microfluidic systems

18:20 to 18:40

Xuegeng Yang (Institute of Fluid Dynamics, Helmholtz-Zentrum Dresden-Rossendorf (HZDR), Dresden, Germany), Gerd Mutschke, Marek Wojnicki, Piotr Zabinski

Microfluidic Experiments on Enrichment of Paramagnetic Metal Ions in Aqueous Solutions by Applying Inhomogeneous Magnetic Fields

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**S04  Bioelectrochemistry without Borders**

**Room: 556B**

Chaired by: Sean Elliott and Kenji Kano

14:00 to 14:40 Keynote

Sean Elliott (Chemistry, Boston University, Boston, USA), Pierre Ceccaldi, Kai Schuchmann, Volker Müller

Probing the Electrocatalysis and Internal “Wiring” of the Hydrogen Dependent CO$_2$ Reductase

14:40 to 15:00

Nicolas Plumeré (Center for Electrochemical Sciences, Ruhr University Bochum, Bochum, Germany)

Redox Matrices for Redox Bio-Catalysts - Film Thickness and Film Thickness Distribution

15:00 to 15:20

Sidney Aquino Neto (Department of Chemistry, University of Sao Paulo, Ribeirao Preto, Brazil), Rodrigo Da Silva, Ross Milton, Adalgisa De Andrade, Shelley Minteer

Enhanced Bioelectrocatalytic Reduction of Oxygen Using Hybrid Biocathodes Containing Anthracene-modified MWCNTs Decorated with Ni$_{90}$Pd$_{10}$ Nanoparticles

15:20 to 15:40

Philip Bartlett (Chemistry, University of Southampton, Southampton, United Kingdom), Firas Al-Lolage, Marta Meneghello, Su Ma, Roland Ludwig

Direct and Mediated Electrochemistry of Immobilized Cellobiose Dehydrogenase

15:40 to 16:00

Filipa Gomes (Chemistry, REQUIMTE/LAQV/UCIBIO, Porto, Portugal), Luísa B. Maia, Maria João Ramalho, Maria Carmo Pereira, Isabel Moura, Cristina Delerue-Matos, José J.G. Moura, Simone Morais

Nitric Oxide Reductase Based-Biosensor Modified with Liposomes and Gold Nanoparticles for Nitric Oxide Detection
16:00 to 16:20

**Masaru Kato** (Faculty of Environmental Earth Science, Hokkaido University, Sapporo, Japan), Shogo Nakagawa, Takehiko Tosha, Kou Nakata, Ichizo Yagi

Mechanistic Insights into Nitric Oxide Reduction Catalyzed by Bacterial Nitric Oxide Reductase

16:20 to 16:40

Coffee Break

16:40 to 17:00

**Kamrul Hasan** (Department of Chemistry and Materials Science & Engineering, University of Utah, Salt Lake City, USA), Tao Wang, Matteo Grattieri, Ross Milton, Shelley Minteer

Enhanced Microbial Electrocatalysis with Naphthoquinone Redox Polymer Modified Electrodes

17:00 to 17:20

**Alanah Fitch** (Chemistry and Biochemistry, Loyola University of Chicago, Chicago, USA), Milomir Suvira, Aisha Alshahrani, Reem Alshehri

Real time monitoring of the flavin gate in the ETC of Shewanella MR-1 by planar waveguide experiments

17:20 to 17:40

**Reiho Yasujima** (Applied Chemistry, Tokyo University of Science, Tokyo, Japan), Kengo Yasueda, Tatsuo Horiba, Shinichi Komaba

Multi-Enzyme Modified Bioanode Utilizing Maltose as Fuel

17:40 to 18:00

**Ross Milton** (Chemistry, University of Utah, Salt Lake City, USA), Rong Cai, Sofiene Abdellaoui, Donal Leech, Antonio L. De Lacey, Marcos Pita, Shelley Minteer

Bioelectrochemical Haber-Bosch Process: Coupling Hydrogenase and Nitrogenase to Create an Ammonia-Producing H₂/N₂ Fuel Cell

18:00 to 18:20

**Lital Alfonta** (Life Sciences, Ben-Gurion University of the Negev, Beer-Sheva, Israel), Orr Schlesinger, Alon Szczupak, Lin Xia

Redox Enzymes Engineering Using Synthetic Biology and Synthetic Chemistry

18:20 to 18:40 Invited

**Petra Hellwig** (Chemistry, University of Strasbourg, Strasbourg, France), Frederic Melin, Sinan Sabuncu, Anton Nikolaev, Sylvia Choi, Thorsten Friedrich, Robert B. Gennis

The catalytic reaction of proteins from the respiratory chain immobilized on gold nanoparticles studied by bioelectrochemistry and vibrational spectroscopies
S05  Novel Materials and Devices for Energy Storage: Batteries for Tomorrow’s World

Room: Ballroom A

Chaired by: Brett Lucht

14:00 to 14:40 Keynote

Yongyao Xia (Department of Chemistry, Institute of New Energy, Fudan University, Shanghai, China)
Li₂TiSiO₅: A Low Potential and Large Capacity Ti-Based Anode Material for Li-Ion Batteries

14:40 to 15:00

Brett Lucht (Chemistry, University of Rhode Island, Kingston, USA), Taeho Yoon, Bharathy Parimalam
Generation and evolution of materials in the anode Solid Electrolyte Interphase (SEI) of lithium ion batteries

15:00 to 15:20

Petr Novak (Electrochemical Energy Storage Section, Paul Scherrer Institute, Villigen PSI, Switzerland), Hai-Jung Peng, Sigita Trabesinger, Claire Villevieille, Klaus Leitner, Hannes Wolf
Unraveling the Ageing Phenomena in NCM Based Cells

15:20 to 15:40

Minoru Inaba (Department of Molecular Chemistry and Biochemistry, Doshisha University, Kyotanabe, Japan), Yusuke Shimizu, Ryo Matsumoto, Ziyang Cao, Michihiko Hashinokuchi, Takayuki Doi
Dilution of Concentrated Electrolyte Solutions for High Voltage Cathode Materials

15:40 to 16:00

Christina Lampé-Onnerud (Cadenza Innovation, Inc., Wilton, USA), Jay Shi, Per Onnerud, Jason Street, Gary Gayman, Ahmad Pesaran
Novel Lithium-ion Cell Architecture

16:00 to 16:20

Masashi Ishikawa (Department of Chemistry and Materials Engineering, Kansai University, Suita, Japan), Yukiko Matsui, Satoshi Uchida, Masaki Yamagata
Sulfur-Microporous Carbon Composite Positive Electrode for Rechargeable Li/S Batteries

16:20 to 16:40

Coffee Break

16:40 to 17:00 Invited

Vincent Battaglia (Energy Storage and Distributed Resources, LBNL, Berkeley, USA), Yanbao Fu, Fuduo Ma, Ravi Prasher
Electrode Fabrication: Thick Electrodes from Slurry to Laminate

17:00 to 17:20

Christoph Bolli (Electrochemistry Laboratory, Paul Scherrer Institut, Villigen, Switzerland), Aurélie Guéguen, Manuel Mendez, Erik J. Berg
In Situ Monitoring of F- Formation in Lithium Ion Batteries by OEMS

17:20 to 17:40 Invited

Yo Kobayashi (Materials Science Research Laboratory, Central Research Institute of Electric Power Industry, Yokosuka, Japan)
Stability evaluation of Li-ion batteries by forced destruction system

17:40 to 18:00

Michael Lowe (Core R&D - Analytical Sciences, The Dow Chemical Company, Midland, USA), Joo Kang, Michael Behr, Wenjuan Liu, Koichi Numata
In-Operando Characterization of Structural and Chemical Changes in Layered Oxide Cathodes
18:00 to 18:20

**Jong-Sung Yu** (Energy Systems Engineering, DGIST, Daegu, Korea), Chunfei Zhang, Tong-Hyun Kang

Novel 3D nano-graphene-functionalized silicon anode for lithium ion battery with superior cycle stability and rate capability

18:20 to 18:40 Invited

**John Muldoon** (Materials Research Department, Toyota Research Institute of North America, Ann Arbor, USA)

Magnesium Battery: The Untold Story

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**S06  Fuel Cells and Electrolyzers**

*Room: Ballroom B*

*Chaired by: Katsuyoshi Kakinuma and Karen Swider-Lyons*

14:00 to 14:40 Keynote

**Karen Swider-Lyons** (Chemistry, U.S. Naval Research Laboratory, Washington, USA), Yannick Garsany

Challenges in the accurate measurement of oxygen reduction electrocatalyst activity by RDE and in CCMs

14:40 to 15:00

**Maria Daletou** (Institute of Chemical Engineering Sciences, FORTH-ICE/HT, Patras, Greece), Eirini Zagoraiou, Labrini Sygellou, Stylianos Neophytides

Highly and atomically dispersed Pt based catalysts – Tuning the electrocatalytic activity

15:00 to 15:20

**Isaac Martens** (Chemistry, University of British Columbia, Vancouver, Canada), Jakub Drnec, David Wilkinson, Dan Bizzotto

*In-situ* X-ray Diffraction of Hydrogen Fuel Cell Cathodes

15:20 to 15:40

**Fabien Labbe** (PERSEE, Centre Procedes, Energies Renouvelables et Systemes, MINES ParisTech, PSL Research University, Sophia Antipolis Cedex, France), Yasser Ahmad, Belen Molina-Concha, Katia Guerin, Marian Chatenet, Rudolf Metkemeijer, Sandrine Berthon-Fabry

Tin Dioxide Coated Carbon Materials for Extended Lifetime of Cathodic Electrocatalysts for PEMFC

15:40 to 16:00

**Katsuyoshi Kakinuma** (Fuel Cell Nanomaterials Center, University of Yamanashi, Kofu, Japan), Mizuki Hayashi, Akihiro Iiyama, Makoto Uchida

Pt and PtCo Alloy Catalysts Supported on SnO₂ Catalysts with Fused-Aggregate Network Structure for PEFC Cathodes

16:00 to 16:20

**Yanyan Wang** (Department of Chemistry, Georgetown University, Washington, USA), YuYe J. Tong

Iodine-stabilized PtCo/C as Highly Stable and Active Electrocatalyst for Oxygen Reduction Reaction

16:20 to 16:40

Coffee Break

16:40 to 17:00

**Gustav Sievers** (Department of Chemistry, University of Copenhagen, Copenhagen, Denmark), Anders W. Jensen, Jonathan Quinson, Alessandro Zana, Mehtap Oezaslan, Jacob J.K. Kirkensgaard, Jan Rossmeisl, Antje Quade, Volker Brueser, Matthias Arenz

Nanoporous Pt Networks merge High Specific Activity with High Dispersion
17:00 to 17:20

Laetitia Dubau (LEPMI, CNRS, Grenoble, France), Jaysen Nelayah, Raphael Chattot, Tristan Asset, Pierre Bordet, Jakub Drnec, Frederic Maillard

Implementing Structural Disorder as a Promising Direction to Improve the Stability of PtNi/C Nanoparticles

17:20 to 17:40

Raphael Chattot (LEPMI, University Grenoble Alpes, Grenoble, France), Olivier Lebacq, Tristan Asset, Pierre Bordet, Jakub Drnec, Alain Pasturel, Laetitia Dubau, Frederic Maillard

Beyond Alloying Effects: Microstrain-Induced Modification of Catalytic Sites Reactivity on Various PtNi/C Nanostructures: Application to the Oxygen Reduction and Alcohol Oxidation Reactions

17:40 to 18:00

Tristan Asset (LEPMI, University of Grenoble Alpes, Grenoble, France), Raphael Chattot, Laetitia Dubau, Nathalie Job, Frederic Maillard

Controlling the Morphology, Activity and Durability of PtNi Porous Hollow Nanoparticles through the Nature of their Carbon Support

18:00 to 18:20

Jessica Chamier (HySA Catalysis, Chemical Engineering, University of Cape Town, Cape Town, South Africa), Markus Kruger, Jonathan Itota, Shiro Tanaka

Electrospun ceramic nanofibers as catalyst support materials – let’s get practical

S07 Supercapacitors from Materials and Processes to Applications

Chaired by: Eider Goikolea and Francesca Soavi

14:00 to 14:20 Invited

Thierry Brousse (Institut des Materiaux Jean Rouxel (IMN), University of Nantes - CNRS, Nantes, France), Nicolas Goubard-Bretesché, Olivier Crosnier, Camille Douard, Antonella Iadecola, Stéphanie Belin, Christophe Payen, Frédéric Favier, Kazuaki Kisu, Katsuhiko Naoi

Evidence of pseudocapacitive behavior on FeWO₄ by ex-situ, in-situ and operando spectroscopies

14:20 to 14:40 Oronzio and Niccolò De Nora Young Author Prize

Lu-Yin Lin (Chemical Engineering and Biotechnology, National Taipei University of Technology, Taipei, Taiwan), Wei-Lung Hong

Material Category and Sequence Effects of Core-Shell Structures on Morphology and Electrocapacitive Performance of Energy Storage Electrodes

14:40 to 15:00 Invited

Tyler Mathis (Materials Science and Engineering, Drexel University, A. J. Drexel Nanomaterials Institute, Philadelphia, USA), Zifeng Lin, Pierre-Louie Taberna, Patrice Simon, Yury Gogotsi

Two-Dimensional (2D) Transition Metal Carbides, Nitrides, and Carbonitrides (MXenes) as Electrode Materials for High-Performance Supercapacitors
15:00 to 15:20
**Malaya Kumar Sahoo** *(Chemistry, IIT Madras, Chennai, India)*
Fabrication of nitrogen doped mesoporous carbon@NiCo$_2$S$_4$ arrays on nickel foam as an advanced charge storage material

15:20 to 15:40
**Teng Wang** *(Science and Engineering Faculty, Queensland University of Technology, Brisbane, Australia)*, Hongxia Wang, John Bell
2-methylimidazole-derived Ni-Co Layered Double Hydroxide Nanosheets for Hybrid Supercapacitors

15:40 to 16:00
**Qiang Gao** *(Center for Nanophase Materials Sciences, Oak Ridge National Laboratory, Oak Ridge, USA)*, Jeremy Come, Michael Naguib, Stephen Jesse, Yury Gogotsi, Nina Balke
Tracking ion intercalation into layered materials on the nanoscale

16:00 to 16:20
**Changlong Xiao** *(School of Chemistry, Monash University Clayton Campus, Melbourne, Australia)*, Xinyi Zhang, Douglas MacFarlane
Highly Ordered Mesoporous MnCo$_2$O$_4$ with Cubic $Ia3d$ Symmetry for Electrochemical Energy Storage

16:20 to 16:40
Coffee Break

16:40 to 17:20 Keynote
**Bruce Dunn** *(Materials Science and Engineering, University of California, Los Angeles, Los Angeles, USA)*
Novel Architectures for Future Hybrid Supercapacitors

17:20 to 17:40
**Bouchra Asbani** *(Chemistry, Institute of Materials Jean Rouxel, Nantes, France)*, Camille Douard, Etienne Eustache, Thierry Brousse, Christophe Lethien, Jean Le Bideau
All solid state on chip interdigitated micro-supercapacitors fabricated on 3D silicon wafer

17:40 to 18:00
**Baptiste Pibaleau** *(PCM2E, Université François Rabelais, Tours, France)*, Emeline Charon, Mathieu Pinault, Martine Mayne-L’Hermite, Fouad Ghamouss, François Tran-Van
MnO$_2$/VACNT nanostructured electrodes for supercapacitors

18:00 to 18:20
**Rinky Sha** *(Electrical Engineering, IIT, Hyderabad, Kandi, India)*, Sushmee Badhulika
Binder free platinum nanoparticles decorated graphene-polyaniline composite for high performance supercapacitor application

18:20 to 18:40
**Thomas Vignal** *(LPPI, University of Cergy-Pontoise/Nawatechnologies, Neuville sur Oise, France)*, Léa Darchy, Aurelien Boisset, Jérémie Descarpentries, Harald Hauf, Quentin Mestre, Mathieu Pinault, Martine Mayne-L’Hermite, Philippe Banet, Pierre-Henri Aubert
P3MT/VACNT/Al Nanocomposites Electrodes with High Capacitance for Supercapacitor
Program of the 68th Annual Meeting of the International Society of Electrochemistry

S09  Ionic Liquids as Media for Electrochemical Synthesis

Room: 556A

Chair: Gery Stafford and Mikito Ueda

14:00 to 14:20

Thomas Engemann (Electrochemistry and Electroplating Group, Technische Universitaet Ilmenau, Ilmenau, Germany), Anna Endrikat, Rene Boettcher, Adriana Ispas, Ralf Peipmann, Andreas Bund

Electrochemical deposition of reactive metals and their alloys from ionic liquids

14:20 to 14:40

Yongde Yan (Materials Science and Chemical Engineering, Harbin Engineering University, Harbin, China), Debin Ji, Milin Zhang, Yun Xue, Pu Wang, Taiqi Yin

Preparation of Al-RE Intermetallic Compound Whisker in LiCl-KCl Melts by Molten Salt Electrolysis

14:40 to 15:00

Cedric Lousteau (Departement de Chimie, Universite de Montreal, Montreal, Canada), Daniel Guay, Lionel Roue, Dominic Rochefort

Characterization of Gallium Electrodeposition in PP$_{13}$TFSI and N$_{1114}$TFSI Ionic Liquids

15:00 to 15:20

Carlos Pereira (Chemistry and Biochemistry, Faculty of Sciences Porto University, Porto, Portugal), Ana T.S.C. Brandao, Nuno M. Pereira, A. Fernando Silva

Tin and alloys electrodeposition in choline chloride-based ILs- nucleation studies and surface analysis

15:20 to 15:40

Andreas Bund (Fakultat fuer Elektrotechnik und Informationstechnik, Technische Universitaet Ilmenau, Ilmenau, Germany), Ludwig Asen, Adriana Ispas, Sladjana Martens, Lukas Seidl, Ralf Peipmann, Thomas Engemann, Anna Endrikat, Oliver Schneider

Ultrasound Supported Electrodeposition of Tantalum

15:40 to 16:20 Keynote

Gery Stafford (Materials Measurement Laboratory, NIST, Gaithersburg, USA)

The Structure of Aluminum Alloys Electrodeposited from Chloroaluminate Ionic Liquids

16:20 to 16:40

Coffee Break

16:40 to 17:00

Adriana Ispas (Chemistry, Technische Universitaet Ilmenau, Ilmenau, Germany), Elisabeth Wolff

On Electrodeposition of Ruthenium in Room Temperature Ionic Liquids

17:00 to 17:20

Veronika Zinovyeva (Chemistry Department, IPN-Orsay, University of Paris-Sud, Orsay, France), Celine Cannes, Gerardo Hernandez-Sanchez, Francois Brisset, Claire Le Naour, Raul Ortega-Borges

Simple Electrochemical Preparation of Rare Earth Nanostructured Thin Films in Room Temperature Ionic Liquids

17:20 to 17:40 Invited

Mikito Ueda (Faculty of Engineering, Hokkaido University, Sapporo, Japan), Shiori Honda, Hisayoshi Matsushima

Output Characteristics of Al-Cl$_2$ Cell in EMIC-AlCl$_3$ Ionic Liquid
17:40 to 18:00 Invited

Oldamur Holloczki (Mulliken Center for Theoretical Chemistry, University of Bonn, Bonn, Germany)
 Ion pairing in ionic liquids

18:00 to 18:20

Richard Kinch (Department of Chemistry, University of Puerto Rico, Rio Piedras Campus, San Juan, Puerto Rico), Carlos Cabrera
 Electrochemical studies of CO₂ reduction in 1-butyl-3-methylimidazolium chloride

18:20 to 18:40

Maxime Balva (Institut Jean Lamour, CEA Tech Lorraine, Universite de Lorraine, Metz, France), Sophie Legeai, Nathalie Leclerc, Emmanuel Billy, Eric Meux
 Coupling of electroleaching/electrodeposition of platinum in ionic liquid melts : application to the recycling of platinum from spent proton exchange membrane fuel cells

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S10 Corrosion: Fundamentals, Passivity, and Prevention
Room : 552A

Chaired by: Vincent Vivier

14:00 to 14:20

Benoit Gwinner (Den-SCCME, CEA, Université Paris-Saclay, Gif-sur-Yvette, France), Marie Benoit, Barbara Laurent, Christian Bataillon, Nathalie Larabi-Gruet, Frédéric Miserque, Kevin Ogle, Carlos Sanchez-Sanchez, Bernard Tribollet, Vincent Vivier
 Discussion on the Relationship between Passivity and Reactivity of Metals

14:20 to 14:40

Masatoshi Sakairi (Faculty of Engineering, Hokkaido University, Sapporo, Japan), Ryo Sasaki, Kyohei Otani, Akira Kaneko
 Effect of metal cations in model tap water on structure of passive film formed on aluminum alloys

14:40 to 15:00

Nadine Pebere (CIRIMAT, ENSIACET, Toulouse, France), Samuel Leleu, Bertrand Rives
 Investigation on the stability of oxide films formed on magnesium rare-earth alloys

15:00 to 15:20

Aneta Nemcova (School of Materials, The University of Manchester, Manchester, United Kingdom), Peter Skeldon, Aleksey Yerokhin
 Anodic Films on Mg Alloys Formed in Glycerol/Fluoride Electrolyte

15:20 to 15:40

Tse-Ming Chiu (Materials Science and Engineering, Texas A&M University, College Station, USA), Mohamad Mahmoudi, Alaa Elwany, Homero Castaneda
 Repassivation and Micro-phase Separation of Ti6Al4V Alloy Manufactured by Selected Laser Melting

15:40 to 16:00

Carlos Valero-Vidal (Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, USA), Marco Favaro, Yi Yu, Ethan J. Crumlin
 Corrosion Reaction Mechanism of the Ti/SBF in Presence of Fluorides Determined under Operando by Means of Ambient Pressure XPS
16:00 to 16:20

**Eliane Sutter** (*Laboratoire Interfaces et Systemes Electrochimiques, UPMC /CNRS, Paris, France*), Mai Tran, Bernard Tribollet

The Complex-Capacitance Representation: A Convenient Way to Follow *in situ* Modifications of the Thickness of an Oxide Layer during Electrochemical Polarization

16:20 to 16:40

Coffee Break

16:40 to 17:20 Keynote

**Robert Kelly** (*Materials Science and Engineering, University of Virginia, Charlottesville, USA*), Chao Liu, Jay Srinivasan, Marybeth Parker, Russell Repassky

Modeling of Localized Corrosion under Atmospheric Conditions: Cathodic Limitations

17:20 to 17:40 Invited

**Hongbo Cong** (*Chemical and Biomolecular Engineering, Dept., The University of Akron, Akron, USA*), Shengxi Li, Nick Birbilis

Insight into the Origin of Crevice Corrosion of Magnesium

17:40 to 18:00

**Emilie Lebon** (*CIRIMAT, ENSIACET-INP, Toulouse, France*), Lisa Rivière, Nicolas Caussé, Nadine Pebere

Investigation by local electrochemical impedance spectroscopy and Raman spectroscopy of the corrosion inhibition of 2024 aluminum alloy

18:00 to 18:20

**Benny Wouters** (*Electrochemical and Surface Engineering, Vrije Universiteit Brussel, Brussels, Belgium*), Lucia Fernandez Macia, Marc Raes, Herman Terryn

Efficient pitting and breakdown of passivity for the AC electrograining of aluminium

18:20 to 18:40

**Sergio Lorenzi** (*Engineering and Applied Science, University of Bergamo, Dalmine (BG), Italy*), Marina Cabrini, Tommaso Pastore, Cristian Testa, Flaviana Calignano, Diego Manfredi, Sara Biamino, Mariangela Lombardi, Paolo Fino

Electrochemical Study of the Corrosion Resistance of the AlSi10Mg Alloy Obtained by Means of LPBF

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**S11 Synthesis and Applications of Electrochemically Active Materials**

*Room: 553*

Chaired by: Sandro Cattarin and Joanna Dolinska

14:00 to 14:40 Keynote

**Yasuaki Einaga** (*Chemistry, Keio University, Yokohama, Japan*)

Recent Development on Electrochemical Application on Boron-doped Diamond Electrodes

14:40 to 15:00

**Marek Mooste** (*Institute of Chemistry, University of Tartu, Tartu, Estonia*), Elo Kibena-Põldsepp, Leonard Matisen, Kaido Tammeveski

Oxygen Reduction on Glassy Carbon Grafted with Anthraquinone-Modified Graphene and Multiwall Carbon Nanotubes

15:00 to 15:20 Invited

**Csaba Janáky** (*Department of Physical Chemistry and Materials Science, University of Szeged, Szeged, Hungary*), Andras Varga, Gergely Samu

Structural Engineering of Inorganic Oxide Semiconductor Photoelectrodes
15:20 to 15:40

Matthew Lawrence (School of Chemistry, University of Birmingham, Birmingham, United Kingdom), Matthew Kromer, Alex Yanson, Joaquin Rodriguez-Lopez, Rodriguez Paramaconi

Tuning the size and shape of novel nanoscale metal oxide photocatalysts using the cathodic corrosion method

15:40 to 16:00

Tomasz Rebis (Faculty of Chemical Technology, Poznan University of Technology, Poznan, Poland), Grzegorz Milczarek

Advanced Electrochemically Active Materials Based on Lignosulfonates

16:00 to 16:20

Ping Yu (Institute of Chemistry, Chinese Academy of Sciences, Beijing, China)

Electroactive Supramolecular Ionic Material for Biosensing and Electronic Device

16:20 to 16:40

Coffee Break

16:40 to 17:00 Invited

Sandro Cattarin (ICMATE, CNR, Padova, Italy), Luca Mattarozzi, Nicola Comisso, Rosalba Gerbasi, Paolo Guerriero, Marco Musiani, Lourdes Vázquez-Gómez, Enrico Verlato

Electrodeposition of High Porosity Cu Alloy Layers and their Use as Efficient Electrodes for Nitrate Reduction in Alkali

17:00 to 17:20

Soledad Bollo (Pharmacological Sciences, University of Chile, Santiago, Chile)

Synergic electrocatalysis based on Co2SnO4/graphene nanocomposite for hydrogen peroxide reduction

17:20 to 17:40

Fu-Ren Xiao (Department of Chemical Engineering, National Taiwan University, Taipei, Taiwan), Ying-Chih Liao

Optimization of Composite Sensing Material Properties for Simultaneous Temperature and Humidity Monitoring

17:40 to 18:00

Federico Tasca (Departamento de Quimica de los Materiales, Universidad de Santiago de Chile, Santiago, Chile), Karinna Neira, Jose H. Zagal, José Marco, Walter Orellana

Comparison of O2 Reduction in Acid Medium on Iron Phthalocyanines Axially Coordinated either to Pyridine or to Nitropyridine Anchored on Carbon Nanotubes

18:00 to 18:20

Kenneth Hernandez (Chemistry, University of Illinois at Urbana-Champaign, Urbana, USA), Mark Burgess, Etienne Chennard, Jeffrey Moore, Joaquin Rodriguez-Lopez

Enhancing Charge Transport in Redox Active Polymers Through Molecular Design

18:20 to 18:40

Keisuke Natsui (Department of Chemistry, Keio University, Yokohama, Japan), Norihito Ikemiya, Mai Tomisaki, Hitomi Iwakawa, Kazuya Nakata, Yasuaki Einaga

Electrochemical Conversion of CO2 into Formic Acid on Boron-Doped Diamond Electrodes
S12  Electrochemical Technology for solving 21st Century Challenges

Room: 555B

Chaired by: Karel Bouzek and Javier Llanos

14:00 to 14:20 Invited

Antoine Allanore (Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, USA)
Electrochemical Engineering of the Molten State: A Path toward Sustainability?

14:20 to 14:40

Céline Bonnaud (LEPMI, Grenoble Institute of Technology, Grenoble, France), Nicolas Papaiconomou, Eric Chaintet, Isabelle Billard
Recycling the Rare Earth Elements from Permanent Magnets by Electrochemistry in Ionic Liquid

14:40 to 15:00

Tsuyoshi Hoshino (Fusion Energy Research and Development Directorate, QST, Rokkasho-mura, Kamikita-gun, Japan)
Lithium-6 Enrichment using Innovative Electrodialysis Method with Lithium Ionic Superconductor

15:00 to 15:20

Erika Bustos (Science, Centro de Inv. y Des. Tecnológico en Electroquímica S.C., Pedro Escobedo, Mexico), Gustavo Acosta, Rosa Alhelí Herrada, Juan Manríquez
Stimulation by Electric Fields of the Germination and Growth of Different Species of Plants Using IrO₂-Ta₂O₅ / Ti Electrodes

15:20 to 15:40

Dongping Zhan (Department of Chemistry, Xiamen University, Xiamen, China), Lianhuan Han, Jie Zhang, Lin Zhang, Junhui Lai, Lan Geng
Electrochemical Micro/Nano-Machining

15:40 to 16:00

Ting He (Energy and Environment Science and Technology, Idaho National Laboratory, Idaho Falls, USA), Dong Ding, Yunya Zhang, Wei Wu
Electrochemical Activation of Natural Gas Liquids in Petrochemical Manufacturing

16:00 to 16:20

Alan Snedden (Electrochemistry, DFM A/S, Kongens Lyngby, Denmark), Carsten Thirstrup
Traceable High Precision Biofuel Conductivity Measurement

16:20 to 16:40

Coffee Break

16:40 to 17:00

Kameron Conforti (Chemical Engineering, Massachusetts Institute of Technology, Cambridge, USA), Sven Schlunberger, Martin Bazant
Shock Electrodialysis and Shock Electrodeposition for Sustainable Water Treatment

17:00 to 17:20

Luis Godínez (Electrochemistry, CIDETEQ, Queretaro, Mexico), Dennys Fernandez, Orlando García, Kalaumari Mayoral, Irma Robles
Hydroxyl Radical Effect on Helminth Ova

17:20 to 17:40

Hlamulo Makelane (Department of Chemistry, University of the Western Cape, Cape Town, South Africa), Emmanuel Iwuoha
AC Voltammetric Sensing of Wastewater Polyaromatic Hydrocarbons
**MONDAY PM**

17:40 to 18:00

**Miguel Sandoval** *(Departamento de Ingeniería Química, Universidad de Guanajuato, Guanajuato, Mexico)*, José Luis Nava, Rosalba Fuentes-Ramírez

Arsenic and Fluoride Removal from Groundwater by Electrocoagulation Process in a Continuous Filter-Press Multistack Reactor

18:00 to 18:20

**Kyle Smith** *(Mechanical Science and Engineering, University of Illinois at Urbana-Champaign, Urbana, USA)*, Maarten Biesheuvel, Slawomir Porada, Aniruddh Shrivastava

Increasing Salt Adsorption Capacity Using Prussian Blue Analogue Electrodes for Cation Intercalation Desalination

18:20 to 18:40 **ISE-Elsevier Prize for Green Electrochemistry**

**Javier Llanos** *(Department of Chemical Engineering, University of Castilla-la Mancha, Ciudad Real, Spain)*, Alexandra Raschitor, Martín Muñoz, Pablo Cañizares, Manuel Andres Rodrigo

Development of Concentration Strategies for the Improvement of the Efficiency of Electrochemical Degradation Technologies

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**S14 Let there be Light in Electrochemistry:**
From Electrogenerated Chemiluminescence to Fluorescence

**Room: 551A**

*Chaired by: Pawel Krysinski*

14:00 to 14:40 **Keynote**

**Guobao Xu** *(State Key Laboratory of Electroanalytical Chemistry, Changchun Institute of Applied Chemistry, CAS, Changchun, China)*, Liming Qi, Wenjing Qi, Ling Zhang, Lianzhe Hu, Xiaoqing Liu, Jianming Zhao, Zhongyuan Liu

New Materials, Detection Strategies and Devices for Electrochemiluminescent Analysis

14:40 to 15:00

**Federico Polo** *(Experimental and Clinical Pharmacology, National Cancer Institute - CRO, Aviano, Italy)*, Fabio Rizzo, Flavio Maran

Fine-Tuning of Electrochemiluminescence and Photoluminescence in Bifunctional Organic Dyes

15:00 to 15:20 **Invited**

**Shanlin Pan** *(Department of Chemistry, The University of Alabama, Tuscaloosa, USA)*

Observation of Local Redox Events at Individual Plasmonic Nanoparticles Using Dark Field and Electrogenerated Chemiluminescence Microscopy Methods

15:20 to 15:40

**Giovanni Valenti** *(Chemistry G. Ciamician, University of Bologna, Bologna, Italy)*, Alice Soldà, Adrian Ostric, Arturo Juzgado, Stefania Rapino, Alejandro Criado, Giulio Fracasso, Giamaica Conti, Maurizio Prato, Francesco Paolucci

Carbon nanomaterial for robust and highly sensitive electrochemiluminescent detection of prostate cancer biomarker

15:40 to 16:00 **Invited**

**Jun-Jie Zhu** *(School of Chemistry and Chemical Engineering, Nanjing University, Nanjing, China)*

Electrochemiluminescence Resonance Energy Transfer-Based Biosensors
16:00 to 16:20
Frederique Deiss (Department of Chemistry & Chemical Biology ; INDI, IUPUI, Indianapolis, USA), Henok Baye Habtamu
Detection of Bacteria by Electrochemiluminescence

16:20 to 16:40
Coffee Break

16:40 to 17:20 Keynote
Robert Forster (National Centre for Sensor Research, Dublin City University, Glasnevin, Ireland)
3D Electrodes for Wireless, Multiplexed Detection in ECL

17:20 to 17:40 Invited
Jing-Juan Xu (Department of Chemistry, Nanjing University, Nanjing, China)
Electrochemiluminescence Ratiometry for Bioanalysis

17:40 to 18:00
Neso Sojic (ISM-ENSCBP, University of Bordeaux, Pessac, France), Anne de Poupliquet, Beatriz Diez-Buitrago, Laurent Bouffier, Stéphane Arbault, Alexander Kuhn
From Light-Emitting Bioswimmers to 3D Electrogenerated Chemiluminescence

18:00 to 18:20
Jing Li (State Key Laboratory of Electroanalytical Chemistry, Changchun Institute of Applied Chemistry, Chinese Academy of Science, Changchun, China), Xiaowei Zhang, Erkang Wang
Conductivity Sensing Based on the Bipolar Electrode

18:20 to 18:40 Invited
Hua Cui (Department of Chemistry, University of Science and Technology of China, Hefei, China), Guixin Li, Xiu Xia Yu, Danqing Liu, Xiaoying Liu
Highly Electrochemiluminescent Graphene Bilayer Hybrids for 2,4,6-Trinitrotoluene Sensing

S15 Physical and Interfacial Electrochemistry: Structural, Spectroscopic, and Theoretical Studies of the Electrochemical Interface

Room: 552B

Chaired by: Pawel J. Kulesza and James Noel

14:00 to 14:20
Robert Hillman (Department of Chemistry, University of Leicester, Leicester, United Kingdom), Emma Palin, Karl Ryder, Rachel Sapstead, Emma Smith, Virginia Ferreira, Robert Dalgliesh, Nina-Juliene Steinke
Dynamic Structural and Compositional Characterisation of Thin Metal Films and Bilayers

14:20 to 14:40
Matteo Duca (EMT, Institut National de la Recherche Scientifique, Varennes, Canada), Nicolas Sacre, Gregor Hufnagel, Andrew Wang, Sebastien Garbarino, Andreas Ruediger, Daniel Guay
Shooting the Next Films: Focus on Preferentially-oriented Metal Alloy Electrocatalysts Prepared with Pulsed Laser Deposition

14:40 to 15:00
Robert Sacci (Materials Science and Technology Division, Oak Ridge Nat. Lab., Oak Ridge, USA), Katherine van Aken, Matthew Thompson, Peter Cummings, Yuri Gagotsi, Gernot Rother
Following ion content within charged micropores of bimodal carbide-derived carbons using in situ small angle neutron scattering
15:00 to 15:20
Evgeny Smirnov (SB ISIC LEPA, EPFL, Sion, Switzerland), Pekka Peljo, Hubert H. Girault
Marangoni Shutters and Electrovariable Nanoplasmonic

15:20 to 15:40
Leon Jacobse (Catalysis and Surface Chemistry, Leiden Institute of Chemistry - Leiden University, Leiden, Netherlands), Yi-Fan Huang, Marcel J. Rost, Marc Koper
Connecting adsorption site formation to nanoisland growth during the oxidative roughening of Pt(111)

15:40 to 16:00
Aleksandar Zeradjanin (Helmholtz-Institut Erlangen-Nürnberg, Forschungszentrum Jülich GmbH, Erlangen, Germany), Karl Mayrhofer
What is the Trigger for Hydrogen Evolution Reaction?

16:00 to 16:20
Jakub Drnec (Experimental Division, European Synchrotron Radiation Facility, Grenoble, France), Martin Ruge, Finn Reikowski, Björn Rahn, Francesco Carlia, Roberto Felici, Jochim Stettner, Olaf Magnussen, David A. Harrington
Oxidation and Surface Restructuring of Pt Electrodes Upon Potential Cycling and During Oxygen Reduction Reaction

16:20 to 16:40
Coffee Break

16:40 to 17:20 Keynote - Brian Conway Prize for Physical Electrochemistry
Marc Koper (Leiden Institute of Chemistry, Leiden University, Leiden, Netherlands)
New views on the electrochemistry of platinum

17:20 to 17:40
Xin Deng (Leiden Institute of Chemistry, Leiden University, Leiden, Netherlands), Marc Koper
In Situ Electrochemical AFM Investigation of Pt Surface during Potential Cycling

17:40 to 18:00
Federico Bella (Department of Applied Science and Technology, Politecnico di Torino, Turin, Italy), Simone Galliano, Marisa Falco, Fabrizio Giordano, Anders Hagfeldt, Michael Grätzel, Guido Viscardi, Claudia Barolo, Claudio Gerbaldi
At the Electrode/Electrolyte Interface of Aqueous Solar Cells: a Photoelectrochemical and Chemometric Investigation

18:00 to 18:20
Jian-Feng Li (Department of Chemistry, Xiamen University, Xiamen, China), Jin-Chao Dong, Yao-Hui Wang, Chao-Yu Li
In Situ Raman Study of Electrochemical Reaction at Single Crystal Electrode Surfaces

18:20 to 18:40
Manuela Rueda Rueda (Physical Chemistry, University of Seville, Seville, Spain), Julia Alvarez-Malmagro, Francisco Prieto
Cytosine Adsorption on Gold Electrodes as a Function of pH. An in situ Surface-Enhanced Infrared Absorption Spectroscopy and Electrochemistry Study
S16  Electrochemistry of Metal Clusters and Nanoparticles

Room : 551B

Chaired by: Dongil Lee and Gangli Wang

14:00 to 14:20

Flavio Maran (Chemistry, University of Padova, Padova, Italy), Sabrina Antonello, Tiziano Dainese

Electron Transfer Properties of Au25(SR)18 in Film and Solution

14:20 to 14:40

Dongil Lee (Department of Chemistry, Yonsei University, Seoul, Korea), Yongjin Lee, Ho Eun Seong, Sang Hyeok Im

Electrocatalytic Reduction of Carbon Dioxide on Metal Nanoclusters

14:40 to 15:00

Douglas Kauffman (Research and Innovation Center, National Energy Technology Laboratory, Pittsburgh, USA), Dominic Alfonso, De Nyago Tafen

Ligand-Protected, Au/Cu Nanoparticles for the Electrochemical CO2 Reduction Reaction

15:00 to 15:20

Wei Chen (State Key Laboratory of Electroanalytical Chemistry, Changchun Institute of Applied Chemistry, CAS, Changchun, China), Xiaohui Gao, Yizhong Lu, Minmin Liu, Jian Ju, Lei Li, Xiaokun Li

Metal Nanoclusters: Synthesis, Structures and Applications in Electroanalysis and Electrocatalysis

15:20 to 15:40

Jie He (Department of Chemistry, University of Connecticut, Storrs, USA)

Ultrasmall Au Nanocatalysts Supported on Nitrided Carbon Supports for CO2 Electrochemical Reduction

15:40 to 16:20 Keynote

Gangli Wang (Chemistry, Georgia State University, Atlanta, USA), Tanyu Wang, Jonathan Padelford, Hedi Ma

Electro- Chemi- Luminescence of Au NanoClusters: EDTA Enhancement, Metal Ions Modulation and Mechanistic Improvements

16:20 to 16:40 Coffee Break

16:40 to 17:00 Invited

Yuichi Negishi (Department of Applied Chemistry, Tokyo University of Science, Tokyo, Japan)

Ligand Exchange Reactions in Thiolate-Protected Au25 Nanoclusters with Selenolates or Tellurolates: Preferential Exchange Sites and Effects on Electronic Structure

17:00 to 17:20 Invited

David Cliffel (Chemistry, Vanderbilt University, Nashville, USA), David Crisostomo

Monolayer Protected Nanoparticles as SECM Mediators

17:20 to 17:40

Woojun Choi (Department of Chemistry, Yonsei University, Seoul, Korea), Kyuju Kwak, Minseok Kim, Yongjin Lee

Electrocatalytic Hydrogen Production Using Molecular-like Metal Nanoclusters

17:40 to 18:00

Nevena Ostojic (Chemistry, University of Texas at Austin, Austin, USA), Morgan Anderson, Richard Crooks

Electrocatalytic Reduction of Oxygen on Metal Nanoparticles in the Presence and Absence of Interactions with Metal-Oxide Supports

18:00 to 18:20

T. Jane Stockmann (ITODYS, Université Paris Diderot, Paris, France), Léo Angelé, Vitor Brasiliense, Catherine Combellas, Frédéric Kanoufi

Investigation of nanoparticle impacts at liquid|liquid, soft interfaces using ferrocene-assisted oxygen reduction reaction
S18  Education for Electrochemistry and Electrochemical Engineering
Room : Ballroom C

Chaired by: Lane Baker, Gerardine G. Botte, Robert Hillman and Roberto M. Torresi

14:00 to 14:20
Mark Orazem (Department of Chemical Engineering, University of Florida, Gainesville, USA), Bernard Tribollet
Teaching Electrochemical Impedance Spectroscopy, 2nd Edition

14:20 to 14:40
Johna Leddy (Chemistry, University of Iowa, Iowa City, USA)
Key Concepts in Electrochemical Education: Flux, Potential Axes, and Dimensionless Parameters

14:40 to 15:00
Joaquin Rodriguez-Lopez (Chemistry, University of Illinois at Urbana-Champaign, Urbana, USA)
Jumpstarting Young Scientists into Advanced Electrochemical Concepts for Emerging Energy Challenges

15:00 to 15:20 Invited
Gerardine G. Botte (Center for Electrochemical Engineering Research, Ohio University, Athens, USA)
Strategies for Sustainable Electrochemical Engineering Education

15:20 to 15:40 Invited
Roberto M. Torresi (Instituto de Química, Universidade de São Paulo, São Paulo, Brazil), Susana Cordoba de Torresi, Mauro Bertotti, Thiago Paixão
Electrochemistry Training Program in Sao Paulo: From a Local Experience to an International Program

15:40 to 16:00
Fernando Garzon (Chemical and Biological Engineering, CMEM, University of New Mexico, Albuquerque, USA), Vanessa Svihla, Abhaya Datye
Advancing Electrochemical Education Through FACETS

16:00 to 16:20
Philippe Buhlmann (Department of Chemistry, University of Minnesota, Minneapolis, USA), Maral Mousavi, Zahra Sohrabpour, Evan L. Anderson, Katherine Lust, David Golden, Gary Christenson
Beyond Talking about Stress and Mental Health

16:20 to 16:40
Coffee Break

16:40 to 17:00
Jorge Ibanez (Depto. Ing. y C. Quimicas, Universidad Iberoamericana, Mexico, Mexico)
Low Cost, Small Scale Environmental Electrochemistry Experiments

17:00 to 17:20
Robert Hillman (Department of Chemistry, University of Leicester, Leicester, United Kingdom), Rachel Sapstead, Ann Beresford-Laycock, Natalie Corden, Jodie Coulston
Raising Interest in Electrochemistry Through Forensic Science: Visualisation of Latent Fingerprints on Metal Surfaces

17:20 to 17:40
Pawel J. Kulesza (Faculty of Chemistry, University of Warsaw, Warsaw, Poland), Iwona A. Rutkowska
Charge Propagation in Electroactive Materials: Diagnosis with Microelectrodes

17:40 to 18:00
Gabriel Meloni (Departamento de Quimica, Universidade de São Paulo, São Paulo, Brazil)
Cheap and accessible electrochemistry: modern fabrication tools towards electrochemistry instrumentation
18:00 to 18:20
William Mustain (Chemical & Biomolecular Engineering, University of Connecticut, Storrs, USA)
Integrating Hands-on Battery Design into a Chemical Engineering Unit Operations Laboratory

18:20 to 18:40
Lane Baker (Chemistry, Indiana University, Bloomington, USA)
Teaching Instrument Design and Construction with 3D Printers

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S19 General Session

Room: 555A

Chaired by: John Stickney

14:00 to 14:20
Giovanni Zangari (Materials Science and Engineering, University of Virginia, Charlottesville, USA), Fu Zhao, Yin Xu
Electrodeposition of Cu-Ge Alloys from an Alkaline Electrolyte

14:20 to 14:40
Gabriela Kissling (Chemistry, University of Southampton, Southampton, United Kingdom), Ruomeng Huang, Wenjian Zhang, Mohsin Aziz, Mehrdad Alibouri, Reza Kashtiban, Philip Bartlett, Kees de Groot, Gill Reid, Andrew Hector, David Smith, Richard Beanland
Electrodeposition of Functional Nanomaterials

14:40 to 15:00
Shinji Yae (Department of Chemical Engineering and Materials Science, Graduate School of Engineering, University of Hyogo, Himeji, Japan), Ayano Yokoyama, Naoki Fukumuro
Influence of Adsorption of Hydrogen on Its Incorporation during Electrodeposition of Platinum

15:00 to 15:20
Salih Cihangir (Material Center, University of Leicester, Leicester, United Kingdom), Andrew P. Abbott, Karl Ryder
Super-Efficient Powder Pulse Electrodeposition for Possible Additive Manufacturing Applications

15:20 to 15:40
Michael Schneider (Electrochemistry, Fraunhofer IKTS, Dresden, Germany), Nora Schubert, Michal Manko, Manuel Lohrengel
Anodic Dissolution of Tungsten Carbide at High Current Densities

15:40 to 16:00
Taiqi Yin (College of Materials Science and Chemical Engineering, Harbin Engineering University, Harbin, China), Yongde Yan
Electrochemical Properties of Praseodymium and the Formation of Ni-Pr Intermetallics in LiCl-KCl Eutectic Melts

16:00 to 16:20
S. K. Ghosh (Materials Processing and Corrosion Engineering Division, Bhabha Atomic Research Centre, Mumbai, India), V. Pachchigar, V. Kain
Uniform Zn-layer Deposition during Double Zincating on Al: Role of Nitric Acid Dissolution Post Single Zincating

16:20 to 16:40
Coffee Break
16:40 to 17:00

Gyozo G. Lang (Department of Physical Chemistry, Eotvos Lorand University, Institute of Chemistry, Budapest, Hungary), Noemi Kovacs, Soma Vesztergom, Maria Ujvari

Application of Dual Dynamic Voltammetry for the Interpretation of Certain Features of the Interface Stress vs Electrode Potential Curves of Gold

17:00 to 17:20

Nadim Darwish (Chemistry, Curtin University, Perth, Australia), Albert Aragones, Simone Ciampi, Michelle Coote, Ismael Diaz-Perez


17:20 to 17:40

Eduardo Laborda (Department of Physical Chemistry, University of Murcia, Murcia, Spain), Angela Molina, Jose Maria Gomez-Gil, Jose Manuel Olmos

A General Theoretical Approach to the Voltammetry of Multi-electron Transfers at Microelectrodes

17:40 to 18:00

Anthony O’Mullane (School of Chemistry, Physics and Mechanical Engineering, Queensland University of Technology, Brisbane, Australia), Shi-Yang Tang, Khashayar Khoshmanesh, Faegheh Hoshyargar, Jessica Crawford, Arnan Mitchell, Kourosh Kalantar-Zadeh

Electrochemistry at Liquid Metals: Sensing and Actuation

18:00 to 18:20

William Araujo (Institute of Chemistry- Department of Fundamental Chemistry, University of São Paulo, São Paulo, Brazil), Carolina Frasson, Wilson Ameku, José Silva, Lucio Angnes, Thiago Paixão

Fabrication of Paper-based Electrochemical Devices in Flat Cardboard Using Laser Scribing Technique
Program of the 68th Annual Meeting of the International Society of Electrochemistry

TUESDAY AM
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<td>F. Zamborini, Zheludkevich, D. Bizzotto, M. A. Booth, K. Bouzek, S. Leggei,</td>
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<td>M. Ogunlesi</td>
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<td>D. Chen, W. Sugimoto, A. Suroviec, P. Buhlmann</td>
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<td>10:50 - 11:00</td>
<td>POSTER SESSION 2 (s7, s11, s12, s13, s14, s16, s18)</td>
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<td>POSTER SESSION 2 (s7, s11, s12, s13, s14, s16, s18)</td>
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<td>K. Edstrom, S. Hall, M. Buzzo, D. Han, Rodriguez-Lop, K. Kirsch, D. Rochefort,</td>
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<td>F.-M. Wang, K. Ayers, P. Atanasov, S. Campuszono, A. Zaffora, A. Cuesta, F. Molandra,Escalera Lopez, J. Duan, L. Daniel, B. J. Hwang, J. Liu, P. Schmitz, A. Blout</td>
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<td>18:40 - 20:00</td>
<td>Reception</td>
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Tuesday 29 August 2017 - Morning

Plenary Lecture
Room : Ballroom A

Chaired by: Sanjeev Mukerjee

08:15 to 09:15

Clare P. Grey (Department of Chemistry, University of Cambridge, Cambridge, United Kingdom)
Recent Developments in the Application of In- and Ex-situ NMR Spectroscopy to Batteries and Supercapacitors

S01  New Experimental Trends in Analytical Electrochemistry
Room : 550

Chaired by: José Manuel Pingarrón

09:30 to 09:50 Invited - ISE-Elsevier Prize for Experimental Electrochemistry

Nongjian Tao (Biodesign Center for Bioelectronics and Biosensors, Arizona State University, Tempe, USA)
Imaging electrochemical current, reaction and surface stress optically

09:50 to 10:10 Invited

Philippe Buhlmann (Department of Chemistry, University of Minnesota, Minneapolis, USA), Adam Dittmer
Biofouling of Ionophore-Doped Ion-Selective Electrode Membranes Revisited

10:10 to 10:30

Daniel Gruebl (Institute of Energy Systems Technology (INES), Offenburg University of Applied Sciences, Offenburg, Germany), Wolfgang G. Bessler
Electrochemical Pressure Impedance Spectroscopy (EPIS): A Promising Diagnostic Tool for Metal-air Batteries and Fuel Cells

10:30 to 10:45

Coffee Break
S02  Flow and Microfluidic Systems in Analytical Electrochemistry

Room : 554

Chaired by: Lane Baker and Serge G. Lemay

09:30 to 09:50

Daniel Mandler (Institute of Chemistry, Hebrew University of Jerusalem, Jerusalem, Israel), Andrea Buffa, Yigal Erel

Carbon Nanotube Based Flow-Through Electrode: Why and How?

09:50 to 10:10

Conan Mercer (School of Chemistry, National University of Ireland Galway, Galway, Ireland), Abby Jones, Mohamed Sharafeldin, Min Shen, James Rusling, Donal Leech

Automated Microcontrolled Microfluidics with Electrochemical Prostate Cancer Diagnostics

10:10 to 10:30

Raquel Oliveira (Unité de Technologies Chimiques et Biologiques pour la Santé, PSL Research University, Chimie ParisTech, Paris, France), Laura Gonzalez-Macia, Sophie Griveau, Fanny d’Orlyé, Anne Varenne, Catherine Sella, Laurent Thouin, Fethi Bedioui

Electrochemical Surface Functionalization of Microsystems: Towards a Selective and Sensitive Analytical Platform

10:30 to 10:45

Coffee Break

S04  Bioelectrochemistry without Borders

Room : 556B

Chaired by: Philip Bartlett and Nicolas Plumeré

09:30 to 09:50

Modupe Ogunlesi (Department of Chemistry, University of Lagos, Lagos, Nigeria), Wesley Okiei, Omolara Akerele, Sulaiman Akanmu, Edamisan Temiye

Studies on the Effects of 4-Hydroxy- and 4-Fluoro-benzoic Acid on the Voltammetric Properties of Haemoglobin S using Cyclic Voltammetry with Bare Glassy Carbon Electrode

09:50 to 10:10

Karel Lacina (CEITEC, Masaryk University, Brno, Czech Republic), Petr Skladal

Redox-Pair-Defined Electrochemistry: Simple Biamperometric Setup for Enzymatic and Immunochemical Biosensors (and Not Only)

10:10 to 10:30

Libuse Trnkova (Department of Chemistry, Faculty of Science, Masaryk University, Brno, Czech Republic), Mehdi Ravandeh, Jan Hrbac

Polymer Pencil Graphite Electrode in the Study of Electrochemical Processes of Guanine Analogues

10:30 to 10:45

Coffee Break
S05  Novel Materials and Devices for Energy Storage:
Batteries for Tomorrow's World

Room: Ballroom A

Chaired by: Daniel Abraham and Robert Kostecki

09:30 to 09:50 Invited
Yasuhiro Fukunaka (Nanotechnology Research Institute, Waseda University, Tokyo, Japan), Tetsuro Nishida, Kei Nishikawa, Takayuki Homma
Dendrite Growth Rate of Li Electrodeposited in PC and Ionic Liquid

09:50 to 10:10
Dejun Chen (Department of Chemistry, Georgetown University, Washington, USA), Hamed Ataee-Esfahani, Yu Ye J. Tong
In-situ Electrochemical ATR-SEIRAS Investigation of the Solid-Electrolyte Interphase in a Lithium-ion Battery Configuration

10:10 to 10:30
Daniel Abraham (Chemical Sciences and Engineering, Argonne National Laboratory, Argonne, USA), Kaushik Kalaga, Stephen Trask
Passivation of the Silicon-Graphite Negative Electrode during Aging of Lithium-ion Full Cells

10:30 to 10:45
Coffee Break

S06  Fuel Cells and Electrolyzers

Room: Ballroom B

Chaired by: Sebastian Henning and Wataru Sugimoto

09:30 to 09:50
Sebastian Henning (Electrochemistry Laboratory, Paul Scherrer Institut, Villigen PSI, Switzerland), Hiroshi Ishikawa, Laura Kühn, Juan Herranz, Alexander Eychmüller, Thomas Schmidt
Durability of Unsupported Pt-Ni Aerogel Cathodes in Polymer Electrolyte Fuel Cells

09:50 to 10:10
Wataru Sugimoto (Center for Energy and Environmental Science, Shinshu University, Ueda, Japan)
Model Electrode Study of Nanosheets with Ru@Pt Core-Shell Structure

10:10 to 10:30
Svein Sunde (Materials Science and Engineering, NTNU, Trondheim, Norway), Jørgen Svendby, José Gómez de la Fuente, Frode Seland
Interpretation of measurements of potential of zero total charge at electrocatalysts for low-temperature fuel cells

10:30 to 10:45
Coffee Break
S07  Supercapacitors from Materials and Processes to Applications

**Room : 557**

*Chaired by: Krzysztof Fic and Juhan Lee*

09:30 to 10:10 Keynote

**Krzysztof Fic** *(Institute of Chemistry and Technical Electrochemistry, Poznan University of Technology, Poznan, Poland), Elzbieta Frackowiak*

New Strategies for the Development of Aqueous Electrochemical Capacitors

10:10 to 10:30 Invited

**Juhan Lee** *(Energy Materials, INM - Leibniz Institute for New Materials, Saarbrücken, Germany), Volker Presser*

Charge balance of hybrid energy storage system via vanadium and tin redox activities in aqueous solution

10:30 to 10:45

Coffee Break

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S09  Ionic Liquids as Media for Electrochemical Synthesis

**Room : 556A**

*Chaired by: Charles Hussey*

09:30 to 09:50

**Sophie Legeai** *(Jean Lamour Institute, University of Lorraine, Metz, France), Laura Thiebaud, Jaafar Ghanbaja, Nicolas Stein*

Template-free electrodeposition of 1D Te nanostructures in ionic liquids

09:50 to 10:10

**Claudine Buess-Herman** *(Service de Chimie Analytique et Chimie des Interfaces, Université libre de Bruxelles, Bruxelles, Belgium), Roman Michez, Thomas Doneux*

Carbon Dioxide Conversion at the Metal-RTIL Interface

10:10 to 10:30

**Kiriti Bhardwaj** *(Department of Chemical Engineering & Materials Science, Michigan State University, East Lansing, USA), Romana Jarosova, Greg Swain*

Carbon Electrodes in Room Temperature Ionic Liquids - Effect of IL Type, Electrode Microstructure and Surface Chemistry on Capacitance and Electron-Transfer Kinetics

10:30 to 10:45

Coffee Break
S10  Corrosion: Fundamentals, Passivity, and Prevention

Room: 552A

Chaired by: Robert Kelly

09:30 to 09:50  Tajima Prize

Mikhail Zheludkevich (Department of Corrosion and Surface Technology, Helmholtz-Zentrum Geesthacht, Geesthacht, Germany), Sviatlana Lamaka, Daniel Hoeche, Yan Chen, Carsten Blawert

New Inhibition Approach for Active Protective Coatings on Mg Alloys

09:50 to 10:10

Samuel Leleu (IRT Saint-Exupéry, CS 44248, Toulouse, France), Nadine Pebere, Bertrand Rives

Corrosion behavior of Mg alloys in Na$_2$SO$_4$ solution: determination of the corrosion rate by EIS and ICP-AES

10:10 to 10:30  Invited

Jungsook Wren (Chemistry, University of Western Ontario, London, Canada), Dan Guo, Youn Gyeong Shin, Mi Li, Zhong Fang, Mojtaba Momeni, Jiju Joseph

Modelling the Effects of pH, Temperature, Radiation and Water Volume on the Evolution of Carbon Steel Corrosion

10:30 to 10:45

Coffee Break

S11  Synthesis and Applications of Electrochemically Active Materials

Room: 553

Chaired by: Andreas Lesch

09:30 to 10:10  Keynote

Yury Gogotsi (Department of Materials Science and Engineering, Drexel University, Philadelphia, USA), Xu Xiao, Patrick Urbankowski, Babak Anasori, Huimin Yu, Jun Zhou

Synthesis and Electrochemical Performance of Two-dimensional Transition Metal Nitrides

10:10 to 10:30  Invited

Luigi Falciola (Dipartimento di Chimica, Università degli Studi di Milano, Milano, Italy), Paolo Guffanti, Valentina Pifferi, Anna Testolin, Chiara Ingrosso, Francesca Petronella, Roberto Comparelli, Angela Agostiano, Marinella Striccoli, Maria Lucia Curri, Giuseppe Valerio Bianco, Giovanni Bruno, Ilaria Palchetti

(Photo)Electrochemically Active Functional Hybrids of Multilayer CVD Graphene Decorated with Colloidal TiO$_2$ Nanocrystals

10:30 to 10:45

Coffee Break
S12  Electrochemical Technology for solving 21st Century Challenges

Room: 555B

Chaired by: Gerardine G. Botte and Joaquin Rodriguez-Lopez

09:30 to 09:50

Karel Bouzek (Department of Inorganic Technology, University of Chemistry and Technology Prague, Prague, Czech Republic), Tomas Bystron, Jakub Malis

Nafion® as a Solid Polymer Electrolyte under Elevated Temperature and Pressure

09:50 to 10:10

Arthur Dizon (Department of Chemical Engineering, University of Florida, Gainesville, USA), Rui Kong, Mark Orazem

Electrokinetic Technologies for Dewatering Phosphatic Clay Suspensions

10:10 to 10:30

Stuart Licht (Chemistry, George Washington University, Washington, USA), Matthew Lefler, Marcus Johnson, Jiawen Ren, Juan Vicini

Carbon nanotubes electrosynthesized from CO2 for efficient, cost incentivized greenhouse gas removal

10:30 to 10:45

Coffee Break

S14  Let there be Light in Electrochemistry: From Electrogenerated Chemiluminescence to Fluorescence

Room: 551A

Chaired by: Gary Blanchard

09:30 to 09:50 Invited

David Waldeck (Chemistry, University of Pittsburgh, Pittsburgh, USA)

Photoinduced Charge Transfer in Quantum Dot Assemblies

09:50 to 10:10

Aleksandra Joniec (Department of Chemistry, University of Warsaw, Warsaw, Poland), Grzegorz Cichowicz, M. Cyranaki, M. Grden, Marek Pekala, Gary Blanchard, Pawel Krysinski

Synthesis and Properties of Luminescent Tb-doped Nanoferrites for Anticancer Therapies

10:10 to 10:30

Zhifeng Ding (Chemistry, The University of Western Ontario, London, Canada), Guiming Xiang, Xiang Wang, Kevin Lac, Suning Wang

White Electrochemiluminescence from a Single Pt Complex

10:30 to 10:45

Coffee Break
S15  Physical and Interfacial Electrochemistry: Structural, Spectroscopic, and Theoretical Studies of the Electrochemical Interface

Room: 552B

Chaired by: James Noel and Daniel Scherson

09:30 to 09:50 Invited

Dan Bizzotto (Chemistry, University of British Columbia, Vancouver, Canada), Qian V. Liu, Keng C. Chou

*In-Situ* Super-Resolution Fluorescence Characterization of DNA SAMs on Gold Surfaces While Under Electrochemical Control

09:50 to 10:10

Kaylyn Leung (Chemistry, University of British Columbia, Vancouver, Canada), Andrea Diaz Gaxiola, Hua-Zhong Yu, Dan Bizzotto

Using Potential to Control the Exchange of Mercaptohexanol Monolayers with Thiol-modified DNA

10:30 to 10:45

Coffee Break

S16  Electrochemistry of Metal Clusters and Nanoparticles

Room: 551B

Chaired by: Shaowei Chen

09:30 to 10:10 Keynote

Frank Zamborini (Chemistry, University of Louisville, Louisville, USA), Stacy Allen, Dhruba Pattadar

The Analysis of Single and Bimetallic Nanoparticle Electrode Assemblies by Stripping Voltammetry

10:10 to 10:30 Invited

James Rusling (Chemistry, University of Connecticut, Storrs, USA), Huiqin Yao, Itti Bist, Ben Liu, Islam Mosa, Jie He

Electrocatalytic Oxidation of Organic Molecules and DNA by Ligand-Free Gold Nanoclusters on Nitrided Carbon

10:30 to 10:45

Coffee Break
S18  Education for Electrochemistry and Electrochemical Engineering

Room : Ballroom C

Chaired by: Alice Suroviec and Jorge Ibanez

09:30 to 09:50  Invited

Judith Faye Rubinson (Department of Chemistry, Georgetown University, Washington, USA)
Electrochemistry in the Undergraduate Curriculum – Exciting the Next Generation of Electrochemists and Electrochemical Engineers

09:50 to 10:10  Invited

Alice Suroviec (Chemistry and Biochemistry, Berry College, Mt Berry, USA)
Electrochemistry Education for an Undergraduate Audience

10:10 to 10:30
Andrea Russell (Chemistry, University of Southampton, Southampton, United Kingdom)
Electrochemistry in the undergraduate curriculum in the UK

10:30 to 10:45
Coffee Break

S19  General Session

Room : 555A

Chaired by: Gery Stafford

09:30 to 09:50
Marsilea A. Booth (Department of Bioengineering, Imperial College London, London, United Kingdom), Lucia Massi, Conor Horgan, Molly Stevens, Martyn Boutelle
Real-time Electrochemical Monitoring of Controlled Cargo Release for in Vitro Delivery

09:50 to 10:10
Olga Swiech (Faculty of Chemistry, University of Warsaw, Warsaw, Poland), Maciej Majdecki, Aleksander Debinski, Agata Krzak, Tomasz Stepkowski, Grzegorz Wojciuk, Marcin Kruszewski, Renata Bilewicz
Application of New Conjugate of Cyclodextrin and Folic Acid in pH-Sensitive, Targeted Therapy with Anthracycline Drugs

10:10 to 10:30
Fabio La Mantia (Energiespeicher- und Energiewandlersysteme, Universität Bremen, Bremen, Germany), Dominique Koster, Collins Erinmwingbovo, Alberto Battistel
Measuring dynamic impedance spectra: a comparison between different filtering strategies

10:30 to 10:45
Coffee Break
Tuesday 29 August 2017 - Afternoon

S01  New Experimental Trends in Analytical Electrochemistry

Room: 550

Chaired by: Omotayo Arotiba

14:00 to 14:20 Invited

Donghoon Han (Chemical and Biomolecular Engineering, University of Notre Dame, Notre Dame, USA), Garrison Crouch, Kaiyu Fu, Paul Bohn
Spectroelectrochemical Cross-Correlation During Redox Cycling in Zero-Dimensional Nanopore Electrode Arrays

14:20 to 14:40

Seongkoo Cho (Department of Materials Science and Engineering, Texas A&M University, College Station, USA), Tse-Ming Chiu, Homero Castaneda
Electrochemical Behavior of a Diode-Like Material in a Zn-rich Epoxy with Carbon Nanotubes Coating System

14:40 to 15:00

Anne Co (Chemistry and Biochemistry, The Ohio State University, Columbus, USA), Danny Liu, Jose Lorie Lopez, Daniel Lyons, Lei Cao, Philip Grandinetti
Revealing Li-Ion Battery Processes Using Operando Neutron Depth Profiling and NMR Methods

15:00 to 15:20

Ritu Kataky (Department of Chemistry, Durham University, Durham, United Kingdom)
Resonance Enhanced Impedance Spectroscopy for real-time monitoring of nanoparticles in lipid layers

15:20 to 15:40

Fen Zhang (Chemistry and Biochemistry, The Ohio State University, Columbus, USA), Eric Coleman, Anne Co
Developing a Sensitive and Fast Method for CO₂ Electroreduction Product Detection

15:40 to 16:00

Aliaksei Boika (Chemistry, The University of Akron, KNCL, Akron, USA), Jason Bonezzi, Tulashi Luitel, Ariana Fronja-Kuczyn
Electrokinetic Manipulation of Ag and Pt Nanoparticles and Their Stochastic Electrochemical Detection

16:00 to 16:20

Johna Leddy (Chemistry, University of Iowa, Iowa City, USA), Krysti Knoche Gupta, Nadeesha Rathuwadu
Electrochemically Silent Films on Electrodes - Means and Methods in Electroanalysis

16:20 to 16:40

Coffee Break

16:40 to 17:00

Emma Brennan (Applied Electrochemical Group, Dublin Institute of Technology, Dublin, Ireland), John Cassidy, Benjamin Schazmann
Miniaturised Solid State Sensors Containing Ionic Liquids for Environmental Analysis

17:00 to 17:20

Susana Campuzano (Analytical Chemistry, Universidad Complutense de Madrid, Madrid, Spain), Víctor Ruiz-Valdepeñas Montiel, Rebeca M. Torrente-Rodríguez, A. Julio Reviejo, R. Linacero, F. Javier Gallego, José Manuel Pingarrón
Disposable amperometric biosensing platforms for food safety
17:20 to 17:40

Eugene Smotkin ([Department of Chemistry and Chemical Biology, Northeastern University, Boston, USA])
Exchange site local symmetry based normal mode assignments for analysis of ion-exchange membranes

17:40 to 18:00

Miikka Jokinen ([Department of Chemistry and Materials Science, Aalto University School of Chemical Engineering, Espoo, Finland], Jose Manzanares, Lasse Murtomäki)
Determination of the Soret Coefficient of a Trace Ion with Impedance Spectroscopy

18:00 to 18:20

Pablo Fanjul Bolado ([R&D Department, DropSens, S.L., Llanera, Spain], Daniel Martín Yerga, Alejandro Pérez Junquera, David Hernández Santos)
In Situ Electrochemical Surface-Enhanced Raman Spectroscopy (EC-SERS) at Screen-Printed Electrodes as Sensitive Analytical Platform

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**S04 Bioelectrochemistry without Borders**

**Room: 556B**

*Chaired by: Renata Bilewicz and Elisabeth Lojou*

14:00 to 14:40 Keynote - **Bioelectrochemistry Prize of ISE Division 2**

Jacek Lipkowski ([Chemistry, University of Guelph, Guelph, Canada])
Electrochemical, Spectroscopic and Surface Imaging Studies of Antimicrobial Peptides Incorporated into Biomimetic Membranes Supported at a Au Electrode

14:40 to 15:00

Joanna Juhaniewicz-Debinska ([Faculty of Chemistry, University of Warsaw, Warsaw, Poland], Slawomir Sek)
On the influence of antibiotic lipopeptides on model biological membranes – Langmuir-Blodgett, QCM-D and Electrochemical Studies

15:00 to 15:20

Slawomir Sek ([Faculty of Chemistry, Biological & Chemical Research Centre, University of Warsaw, Warsaw, Poland], Joanna Juhaniewicz-Debinska, Dorota Konarzewska)
Lipid Bilayers on Gold Electrodes: Mechanism of Formation and Interactions with Membranolytic Peptide-Based Compounds

15:20 to 15:40

Dorota Matyszewska ([Faculty of Chemistry, University of Warsaw, Warsaw, Poland], ZhangFei Su, J. Jay Leitch, Jacek Lipkowski, Richard A. Campbell, Renata Bilewicz)
Model phospholipid membranes mimicking healthy and cancer cells to study the interactions with anticancer drugs - electrochemical, spectroscopic and neutron reflectivity studies

15:40 to 16:00 Invited

Gintaras Valincius ([Life Science Center, Vilnius University, Vilnius, Lithuania], Tadas Penkauskas, Gintaras Dreizas, Tadas Meskauskas)
Electrochemical Impedance Spectroscopy of Tethered Bilayers: Effect of Random Distribution of Defects in Membrane

16:20 to 17:00

Ademola Adekunle ([Bioresource Engineering, McGill University, Montreal, Canada], Vijaya Raghavan, Boris Tartakovksy)
Bioelectrochemical Systems as Biosensors for Real-Time Environmental Monitoring
17:00 to 17:20

Achraf Blout (LRS-LISE, Université Pierre et Marie Curie (Paris 6), Paris, France), Shinsuke Mori, Alain Paillret, Hubert Perrot, Jerome Pulpytel, Farzaneh Arefi Khonsari, Claude Jolivalt

Development of novel cathode materials for the bioelectrocatalysis of oxygen reduction reaction by laccase from Trametes versicolor

17:20 to 17:40

Anju Joshi (Chemistry, Indian Institute of Technology Ropar, Ropar, India), Tharamani C. Nagaiah

Hierarchical OCNT- NiFe$_2$O$_4$ composites for sensitive non-enzymatic electrochemical sensing of cholesterol

17:40 to 18:00

Till Siepenkoetter (Department of Chemical Sciences, Bernal Institute, University of Limerick, Limerick, Ireland), Urszula Salaj-Kosla, Roland Ludwig, Edmond Magner

Entrapment of Biomolecules in Tunable Nanoporous Gold Networks: A Strategy for Improved Rates of Electron Transfer

18:00 to 18:20

Chun-Hao Su (Department of Chemical Engineering, National Taiwan University, Taipei, Taiwan), Chia-Liang Sun, Ying-Chih Liao

Printed Combinatorial Sensors with Graphene Oxide Nanoribbons and PEDOT:PSS for Detection of Ascorbic Acid, Dopamine, Uric Acid, and Nitrite

18:20 to 18:40

Xinxin Xiao (Department of Chemical Sciences, University of Limerick, Limerick, Ireland), Peter Ó Conghaile, Donal Leech, Roland Ludwig, Edmond Magner

An energy-harvesting device based on supercapacitive enzyme-modified nanoporous gold electrodes: an autonomous pulse generator

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**Room : Ballroom A**

Chaired by: Pradeep Gudur

14:00 to 14:40 Keynote

Kristina Edstrom (Department of Chemistry - Angstrom Laboratory, Uppsala University, Uppsala, Sweden), Julia Maibach, Bertrand Philippe, Maria Hahlin, Hakan Rensmo, Reza Younesi

Electrode/electrolyte interfaces in lithium and sodium batteries

14:40 to 15:00 Invited

Pradeep Guduru (School of Engineering, Brown University, Providence, USA), Liwei Liu, Shaghayegh Rezazadeh, Humphrey Maris

Real-Time Monitoring of Phase Boundary Propagation in Electrode Materials through Picosecond Ultrasonics

15:00 to 15:20

Claudio Gerbaldi (Department of Applied Science and Technology - DISAT, Politecnico di Torino, Torino, Italy), Marisa Falco, JiJeesh R. Nair, Rongying Lin, Giovanni B. Appetecchi, Francesca Colò, Giuseppina Meligrana, Stefano Passerini, Federico Bella

Safe and Highly Conducting Polymer Electrolytes for Ageing Resistant Li-ion Energy Storage

15:20 to 15:40 Invited

Rita Baddour-Hadjean (Institut de Chimie et des Matériaux Paris Est, Centre National de la Recherche Scientifique, Thiais, France), Marianne Safrany Renard, Nicolas Emery, Jean-Pierre Pereira-Ramos

The Richness of V$_2$O$_5$ Polymorphs as Superior Cathode Materials for Sodium Insertion
15:40 to 16:00

**Jesus Santos-Pena** (Department of Chemistry, Université de Tours, Tours, France), Mohammed Benchakar, Régine Naejus, Christine Damas

Electrolytes for sodium ion batteries: can ionic liquids be alternative additives?

16:00 to 16:20

**Francesca Soavi** (Department of Chemistry Giacomo Ciamiciian, Alma Mater Studiorum - Università di Bologna, Bologna, Italy), Irene Ruggeri, Catia Arbizzani

Strategies to improve performance of Li/O_2_ batteries

16:20 to 16:40

Coffee Break

16:40 to 17:00

**Emanuele Gucciardi** (Device Engineering, CIC energigune, Miñano, Spain), Frédéric Aguesse, Elixabet Sarasketa-Zabala, Emilie Bekaert

Aging Analysis in Cylindrical Graphite/LiFePO_4_ Batteries Cycled at High Current Densities

17:00 to 17:20

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

Poly ionic liquid solid electrolyte interphase (SEI) formation in an improvement of 5V class lithium ion batteries

17:20 to 17:40

**Giuseppina Meligrana** (Department of Applied Science and Technology, Politecnico di Torino, Torino, Italy), Federico Bella, Ana B. Muñoz-García, Andrea Lamberti, Matteo Destro, Michele Pavone, Claudio Gerbaldi

Addressing the Controversial Mechanism of Na^+ reversible Storage in TiO_2_ Nanotube Arrays: Amorphous versus Anatase TiO_2

17:40 to 18:00

**Leah Nation** (Engineering, Brown University, Providence, USA), Juchuan Li, Chirstine James, Yue Qi, Nancy Dudney, Brian Sheldon

Oxygen Loss and Stress Evolution During Electrochemical Cycling of Lithium-Rich Cathodes

18:00 to 18:20

**Yi-Chun Jin** (Division of Energy Storage Materials & Tech, Industrial Technology Research Institute, Hsinchu, Taiwan), Sheng-Hui Wu, Hsin-Jung Lin

A revolutionary green approach for recyclable lithium ion battery

18:20 to 18:40

**Lituo Zheng** (Chemistry, Dalhousie University, Halifax, Canada), Lingjun Li, Mark N. Obrovac

Effect of Controlled-atmosphere Storage and Ethanol Rinse on NaNi_{0.5}Mn_{0.5}O_2 for Sodium Ion Batteries
S05  Novel Materials and Devices for Energy Storage: Batteries for Tomorrow’s World

Room: 555A

Chaired by: Brett Lucht

14:00 to 14:20

Hyun-Kon Song (School of Energy and Chemical Engineering, UNIST, Ulsan, Korea), Dong-Gyu Lee, Yeongdae Lee, Taewon Kim, Sang-Ik Jeon

Polypyrrole-assistant Oxygen Electrocatalysis on Perovskite Oxides

14:20 to 14:40

Almagul Mentbayeva (National Laboratory Astana, Institute of Batteries, Nazarbayev University, Astana, Kazakhstan), Indira Kurmanbayeva, Zhalgas Kulametov, Aigerim Baimyrza, Zhumabay Bakenov

Solid Electrolytes for Thin Film Li-ion Batteries with Si and SiC Based Anodes

14:40 to 15:00

Nicky Bogolowski (Chemical Technology, DECHEMA-Forschungsinstitut, Frankfurt a.M., Germany), Jean-Francois Drillet

Test of AlCl₃-based electrolytes for the rechargeable Al-air battery

15:00 to 15:20 Invited

M. Rosa Palacin (Solid State Chemistry, ICMAB-CSIC, Bellaterra, Spain), Alexandre Ponrouch, Deyana Tchitchekova, Carles Frontera, Fanny Barde, Maria Elena Arroyo-de-Dompablo

The long and winding road towards Ca-based batteries

15:20 to 15:40 Invited

Diana Golodnitsky (School of Chemistry, Tel Aviv University, Tel Aviv, Israel), Elazar Cohen, Moran Lifshitz, Raymond Blanga, Gabor Kosa, Yossi Kamir

New 3D-Microbattery Designs on 3D-Printed Polymer Substrates

15:40 to 16:20 Keynote

Kohei Uosaki (Ctr for Green Res on Energy and Environmental Materials, National Institute for Materials Science, Tsukuba, Japan), Kentaro Tomita, Hidenori Noguchi

Effect of Impurities on Product Distribution at Li-O₂ Battery Cathode

16:20 to 16:40 Coffee Break

16:40 to 17:00 Invited

Hajime Arai (School of Materials and Chemical Technology, Tokyo Institute of Technology, Yokohama, Japan)

Advances in Aqueous Zinc Air Batteries

17:00 to 17:20 Invited

Bing Joe Hwang (Chemical Engineering, Taiwan Tech, Taipei, Taiwan), Ju-Hsiang Cheng, Addisu Alemayehu Assegie, Chen-Jui Huang, Ming-Hsien Lin, Wei-Nien Su

Visualization of Lithium Plating and Dissolution via in Operando Transmission X-ray and Optical Microscopy

17:20 to 17:40

Rinaldo Raccichini (Chemistry, University of Southampton, Southampton, United Kingdom), James Dibden, John Owen, Nuria Garcia-Araez

Conductivity, Viscosity and Ionic Dissociation of LiTFSI-1,3 Dioxolane Electrolyte Solutions: a Case Study for Li-S Battery Applications

17:40 to 18:00 Invited

Mahalingam Balasubramanian (Advanced Photon Source, Argonne National Laboratory, Argonne, USA), Quan Pang, Changwook Lee, Seungbum Ha, Lei Cheng, Sang-Don Han, Kevin Zavadil, Linda Nazar, Kevin Gallagher

Sulfur Electrochemistry in a Sparingly Soluble Electrolyte
18:00 to 18:20

**Gunther Wittstock** (School of Mathematics and Natural Sciences, Carl von Ossietzky University of Oldenburg, Oldenburg, Germany), Eduardo dos Santos Sardinha, Martin Sternad, Martin Wilkening
Formation of Solid Electrolyte Interphases on Silicon Electrodes

18:20 to 18:40

**Daniela Leanza** (Energy and Environment Research Division (ENE), Paul Scherrer Institut PSI, Villigen PSI, Switzerland), Carlos Vaz, Izabela Czekajc, Petr Novak, Mario El Kazzi
The Controversial Surface Reactivity of Li$_4$Ti$_5$O$_12$ in the Aprotic Electrolyte Disclosed with XPEEM

### S06 Fuel Cells and Electrolyzers

**Room: Ballroom B**

*Chaired by: Christophe Coutanceau and Makoto Uchida*

**14:00 to 14:20**

**Shoiji Hall** (Materials Science and Engineering, Johns Hopkins University, Baltimore, USA), Du Sun
Electrochemical Oxygen Reduction Reaction on Earth-abundant Rich Palladium Alloys

14:20 to 14:40

**James S. Walker** (School of Chemical Engineering, University of Birmingham, Birmingham, United Kingdom), Neil V. Rees, Paula M. Mendes
Ternary Alloy Nanoparticles for Polymer Electrolyte Fuel Cell Electrocatalysis

14:40 to 15:00 Invited

**Christophe Coutanceau** (IC2MP, University of Poitiers, Poitiers, France), Delphine Dru, Stève Baranton, Agathe Frelon, Pierrick Buvat, Janick Bigarré, Patrick Urchaga
Fluorine-Free Pt Nanocomposites for Three-Phase Interfaces in FuelCell Electrodes

**15:00 to 15:20**

**Dinesh C. Sabarirajan** (Mechanical Engineering, Tufts University, Medford, USA), Iryna V. Zenyuk
Analysis of proton transport in ionomer/carbon layers using hydrogen pump technique

15:20 to 15:40 Invited

**Makoto Uchida** (Fuel Cell Nanomaterials Research Center, University of Yamanashi, Kofu, Japan), Kento Takahashi, Katsuyoshi Kakinuma
Improvement of Cell Performance in Low-Pt-Loading PEFC Cathode Catalyst Layers with Pt/Ta-SnO$_2$ Prepared by the Electrospray Method

15:40 to 16:00

**Andrew Shum** (Mechanical Engineering, Tufts University, Medford, USA), Xianghui Xiao, Dilworth Parkinson, Adam Weber, Odne Burheim, Iryna V. Zenyuk
In-Situ Examination of Phase-Change-Induced Flow in Gas Diffusion Layers using Micro X-Ray Computed Tomography

16:00 to 16:20

**Yu Kakizawa** (Graduate School of Eng., University of Yamanashi, Kofu, Japan), Kazuhiro Takahashi, Adrien Lamibrac, Makoto Aoki, Felix Büchi, Akihiro Iiyama, Junji Inukai
Oscillations of cell voltage and oxygen partial pressures of PEFC analyzed by using optical probes

16:20 to 16:40

Coffee Break
16:40 to 17:00

Iryna V. Zenyuk (Mechanical Engineering, Tufts University, Medford, USA)
Characterizing PEM Water Electrolysis with X-ray Computed Tomography

17:00 to 17:40 Keynote

Katherine Ayers (Engineering, Proton OnSite, Wallingford, USA)
Low Temperature Electrolysis: Pathways to Large Scale Renewable Hydrogen

17:40 to 18:00

Pierre Millet (Chemistry Department, Paris-Sud University, Orsay, France), Baptiste Verdin, Hakim Bounoua
Distribution of Current Lines in Catalytic Layers of PEM Water Electrolyzers

18:00 to 18:20

Marc Ledendecker (Interface Chemistry and Surface Engineering, Max-Planck-Institut für Eisenforschung, Düsseldorf, Germany), Jared Mondschein, Olga Kasián, Simon Geiger, Max Schalenbach, Aleksandar Zeradjanin, Serhiy Cherevko, Raymond Schaal, Karl Mayrhofer
Stability of binary metallic ceramics in the HER reaction – feasible HER electrocatalysts in acidic medium?

18:20 to 18:40

Jaromír Hnat (Department of Inorganic Chemistry, University of Chemistry and Technology Prague, Prague, Czech Republic), Debabrata Chanda, Tomas Bystron, Martin Paidar, Karel Bouzek
Reduced Graphene Oxide Modified Ni Foam as an Efficient Hydrogen Evolution Electrode

S07 Supercapacitors from Materials and Processes to Applications

Room: 557

Chaired by: Francois Beguin and Alexei Kornyshev

14:00 to 14:20 Invited

Dominic Rochefort (Departement de Chimie, Universite de Montreal, Montreal, Canada), Valentyn Skrypnik, Han Jin Xie, Bruno Gelinas
Ferrocenated Ionic Liquids and their Polymers for Energy Storage

14:20 to 14:40 Invited

Francois Beguin (Institute of Chemistry and Technical Electrochemistry, Poznan University of Technology, Poznan, Poland), Qamar Abbas
High voltage carbon/carbon supercapacitors performing down to -40°C in neutral aqueous electrolytes

14:40 to 15:00 Invited

Eider Goikolea (Power Storage, Batteries and Supercapacitors, CIC Energigune, Miñano, Spain), Edurne Redondo, Roman Mysyk
Effect of Electrolyte Concentration on Aqueous Supercapacitor Performance

15:00 to 15:20

Jakub Menzel (Institute of Chemistry and Technical Electrochemistry, Poznan University of Technology, Poznan, Poland), Elżbieta Frackowiak, Krzysztof Fic
Low-temperature aqueous carbon/carbon electrochemical capacitor

15:20 to 15:40

Samia Amara (CEA, CEA Le Ripault, Monts, France), Laure Timperman,agnès Biller, Joel Toulc’Hoat, Matthieu Le Digabel, Hervé Galiano, Mériem Anouti
Comparative study of electrolytes based on lithium, sodium or potassium salts dedicated to symmetric or hybrid capacitors
15:40 to 16:00

Ghenima Oukali (Loiret, CNRS CEMHTI UPR3079, Universite d’Orleans, Orleans, France), Elodie Salager, Encarnacion Raymundo-Pinero, Michael Deschamps

*In situ* NMR Study of Ion Transfer during the Charge/Discharge of Supercapacitors

16:00 to 16:20

Fangyuan Su (CAS Key Laboratory of Carbon Materials, Institute of Coal Chemistry, Chinese Academy of Sciences, Taiyuan, China)

Tailoring the Electrode/Electrolyte Interface to Improve the Energy Density of Graphene Based Lithium-ion Capacitor

16:20 to 16:40

Coffee Break

16:40 to 17:20 Keynote

Keryn Lian (Materials Science and Engineering, University of Toronto, Toronto, Canada), Matthew Genovese, Alvin Virya, Jak Li, Haoran Wu, Han Gao

Biochar Activated Carbon Materials and their Applications in Solid Supercapacitors

17:20 to 17:40

Jeng-An Wang (Chemical Engineering, National Tsing Hua University, Hsinchu, Taiwan), Da-Je Hsu, Tien-Yu Yi, Yu-Chien Liu, Yan-Shi Chen, Gao-Shee Leu, Chi-Chang Hu

Electrochemical Activation of Carbons for High-Voltage Organic Electrical Double-Layer Capacitors

17:40 to 18:00

Cédric Desgranges (PCM2E, François Rabelais University, Tours, France), Fouad Ghamouss, Aurelien Boisset, Jérémie Descarpentries, Mathieu Pinault, Martine Mayne-L’Hermite, François Tran-Van, Harald Hauf, Pascal Boulanger

Vertically Aligned Carbon Nanotubes (VACNT) grown on Al Current Collector for High Performances EDLC

18:00 to 18:20

Rasa Pauliukaite (Department of Nanoengineering, Center for Physical Sciences and Technology, Vilnius, Lithuania), Aneta Radzevic, Lukas Laurinavicius, Justina Gaidukevic, Jurgis Barkauskas

Characterization of Graphene Synthesized with Various Reducing Agents Using Cyclic Voltammetry and Electrochemical Impedance Spectroscopy for Supercapacitor Application

18:20 to 18:40

Ying Yang (Department of Electrical Engineering, Tsinghua University, Beijing, China), TrungHieu Le, Yihong Qin, Zheng-Hong Huang, Feiyu Kang

Synthesis of High Specific Surface Area Mesoporous Carbon Nanospheres and Their Electrochemical Performance
S09 Ionic Liquids as Media for Electrochemical Synthesis

**Room: 556A**

*Chaired by: Andreas Bund and Tetsuya Tsuda*

**14:00 to 14:40 Keynote**

**Toshiyuki Nohira** *(Institute of Advanced Energy, Kyoto University, Uji, Japan)*, Rika Hagiwara, Kazuhiko Matsumoto, Changsheng Ding, Atsushi Fukunaga, Shoichiro Sakai, Koji Nitta

Sodium-Ion Batteries Using FSA-Based Ionic Liquids

**14:40 to 15:00**

**Max Schammer** *(Electrochemistry, Helmholtz Institute Ulm, University Ulm, Ulm, Germany)*, Birger Horstmann, Arnulf Latz

Modelling Zinc Batteries with Ionic Liquid Electrolyte

**15:00 to 15:20**

**Theresa Schoetz** *(Engineering and the Environment, University of Southampton, Southampton, United Kingdom)*, Chih-Yao Chen, Yoshifumi Oshima, Susumu Kuwabata

Preparation and Characterization of a Rechargeable Battery based on Conductive Polymers and Aluminum in an Ionic Liquid Electrolyte

**15:20 to 15:40 Invited**

**Tetsuya Tsuda** *(Department of Applied Chemistry, Osaka University, Suita, Japan)*, Chih-Yao Chen, Yoshifumi Oshima, Susumu Kuwabata

*In Situ* Electron Microscope Observation for High Capacity Anodes in Next-Generation IL-Based Li Batteries

**15:40 to 16:00**

**Roberto M. Torresi** *(Instituto de Química, Universidade de São Paulo, São Paulo, Brazil)*, Nedher Sanchez-Ramirez, Vitor L. Martins, Tânia Machado Benedetti

Ionic transport in ionic liquids and poly(ionic liquids) and its lithium mixtures

**16:00 to 16:20**

**Pierre-Alexandre Martin** *(IFM, Deakin, Geelong, Australia)*

Studies of molecular motions and interactions in ionic liquids electrolytes by Nuclear Magnetic Resonance

**16:20 to 16:40 Coffee Break**

**16:40 to 17:00 Invited**

**Cristina Pozo-Gonzalo** *(Institute for Frontier Materials, Deakin University, Burwood, Australia)*, Patrick C. Howlett, Douglas MacFarlane, Forsyth Maria

Oxygen Reduction Mechanism in a Highly Na⁺ Concentrated Pyrrolidinium-based Ionic Liquid

**17:00 to 17:20**

**Peter Schmitz** *(Institute of Physical Chemistry, Justus-Liebig-University Giessen, Giessen, Germany)*, Daniel Schröder, Marcus Rohnke, Jürgen Janek

Exploring the Oxygen Reduction Reaction in Ionic Liquids to Synthesize Silver Oxides with Unusual Oxidation State

**17:20 to 17:40**

**Miguel A. Montiel** *(Instituto de Electroquímica, Universidad de Alicante, Alicante, Spain)*, Carlos Sanchez-Sanchez, José Sollá-Gullón, Vicente Montiel

Electrocatalysis in Ionic Liquids: Defining Experimental Conditions

**17:40 to 18:00**

**Marcin Opallo** *(Department of Electrode Processes, Institute of Physical Chemistry PAS, Warszawa, Poland)*, Justyna Jedraszko, Wojciech Nogala, Wojciech Adamiak, Saustin Dongmo, Gunther Wittstock, Hubert H. Girault

Electrocatalytic H₂O₂ generation at Ionic Liquid/Water Interface
S10  Corrosion: Fundamentals, Passivity, and Prevention

Room : 552A

Chaired by: Douglas Hansen

14:00 to 14:20 Invited
Stephan Raiman (Corrosion Science and Technology, Oak Ridge National Laboratory, Oak Ridge, USA), Bruce Pint, Kurt Terrani, Yutai Katoh, Caen Ang, Peter Doyle
Corrosion of candidate materials for accident tolerant fuel cladding

14:20 to 14:40
José Duarte (Institute of Chemistry and Biotechnology, Federal University of Alagoas, Maceió, Brazil), Carmem Zanta, Josealdo Tonholo, Antônio Neto, Jesus Fortes
In vitro corrosion of titanium implants and prosthetic metal alloys (Ni-Cr) in different electrolytic solutions

14:40 to 15:00
Barbara Laurent (Den-Service de la Corrosion et du Comportement des Matériaux, Commissariat à l’Energie Atomique, Saclay, France), Nathalie Gruet, Benoit Gwinner, Frédéric Miserque, Michel Tabarant, Kevin Ogle
Influence of silicon on the transpassive behavior of austenitic stainless steel in acidic media investigated through innovative coupling of in-situ atomic emission spectroelectrochemistry and ex-situ analysis

15:00 to 15:20
Simerjeet Gill (Nuclear Science and Technology Department, Brookhaven National Lab, Upton, USA), Kotaro Sasaki, Zhixiu Liang, Hugh Isaacs, Mingyuan Ge, Kim Kisslinger, Yong Chu, Lynne Ecker
Quantitative imaging of intergranular corrosion of stainless steel using Hard X-Ray Nanoprobe

15:20 to 15:40 Invited
David Shoesmith (Department of Chemistry, University of Western Ontario, London, Canada)
The Development of Corrosion Models for Nuclear Waste Disposal Systems

15:40 to 16:20 Keynote
Kevin Ogle (IRCP, Chimie-Paristech, Paris, France), Peng Zhou
The electrochemistry & corrosion of Zn-Al-Mg alloys: Quantifying the contribution of elemental components and individual phases

16:20 to 16:40
Coffee Break

16:40 to 17:00 Invited
Douglas Hansen (Nonstructural Materials, University of Dayton Research Institute, Dayton, USA), Brooke Bennett
Inhibition of Flash Rusting by a Mussel Adhesive Protein: Characterizing the Interaction of MAP-5 on HY80, a High Strength Low Alloy Steel

17:00 to 17:20
Jizhou Duan (Key Lab of Marine Environmental Corrosion and Biofouling, Institute of Oceanology, Chinese Academy of Sciences, Qingdao, China)
Marine Microbial Corrosion: A Preliminary Interpretation Based on Electroactive Biofilm Corrosion Mechanisms

17:20 to 17:40
Luis Frederico Dick (Dept. Metalurgy, Federal Univ. of Rio Grande do Sul, Porto Alegre, Brazil), Gorge Matos, Silvia Guerrero, Deborah Dick
Influence of Humic Acid on the Corrosion of Zn and Galvanized Steel in Chloride Solutions
Program of the 68th Annual Meeting of the International Society of Electrochemistry

17:40 to 18:00
Yongsheng Hao (School of Materials Science and Engineering, Shenyang University of Chemical Technology, Shenyang, China)
The Self-healing Effect of Polyaniline in an Epoxy Coatings for Carbon Steel Protection

18:00 to 18:20
Aria Kahyarian (Chemical and Biomedical Engineering, Ohio University, Athens, USA), Srdjan Nesic
Advancements in Corrosion Rate Prediction of Mild Steel in the Presence of Acetic Acid

18:20 to 18:40
Juan Creus (University of La Rochelle, LaSIE UMR 7356, La Rochelle, France), Christelle Rebere, Philippe Steyer
Corrosion resistance of composition modulated multilayer Zn-Ni electrodeposited coatings, influence of the periodicity

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S11 Synthesis and Applications of Electrochemically Active Materials

Room : 553

Chaired by: Serena Arnaboldi and Joaquin Rodriguez-Lopez

14:00 to 14:40 Keynote
Joaquin Rodriguez-Lopez (Department of Chemistry, University of Illinois at Urbana-Champaign, Urbana, USA), Mark Burgess, Kenneth Hernandez-Burgos, Jingshu Hui, Elena Montoto, Zachary Gossage, Noah Schorr, Jeffrey Moore
Exploring the Reactive Modulation of Soluble Redox Active Polymers via Versatile Electrochemical Interrogation

14:40 to 15:00
Massimo Marcaccio (Chemistry, University of Bologna, Bologna, Italy), Giovanni Valenti, Lawrence T. Scott, Claudio Fontanesi, Francesco Paolucci
Curved Polyaromatic Hydrocarbons. An Electrochemical Route to Generate Graphen-like Structures

15:00 to 15:20
Irkham Irkham (Chemistry, Keio University, Yokohama, Japan), Takeshi Watanabe, Yasuaki Einaga
Hydroxide Ion Oxidation in Aqueous Solutions Using Boron-doped Diamond Electrodes

15:20 to 15:40
Vinicius Goncales (School of Chemistry, The University of New South Wales, Sydney, Australia), Leila Zarei, Mehran Kashi, Ying Yang, Yanfeng Wu, Simone Ciampi, Justin Gooding
Light activated electrochemistry on silicon electrodes: opportunities and challenges

15:40 to 16:00
Serena Arnaboldi (Chemistry, Università degli Studi di Milano, Milan, Italy), Tiziana Benincori, Simona Rizzo, Francesco Sannicolo, Patrizia Romana Mussini
Panoramic Overview on the Enantioselection Performance of Inherently Chiral Surfaces: a Comparison between Systems with Different Atropisomeric Cores and Stereogenic Elements

16:00 to 16:20 Invited
Andreas Lesch (Laboratory of Physical and Analytical Electrochemistry, EPFL Valais Wallis, Sion, Switzerland), Hubert H. Girault
Synthesizing Catalyst Nanoparticles on Large Electrodes by Combining Inkjet Printing and Flash Light Irradiation

16:20 to 16:40 Coffee Break
16:40 to 17:00

Seiji Kasahara *(Chemistry Department, Keio University, Yokohama, Japan)*, Keisuke Natsui, Yasuyuki Yokota, Yousoo Kim, Shota Iizuka, Yoshihata Tateyama, Yasuaki Einaga

The Electrochemical Activation of Boron-Doped Diamond Electrodes by Cathodic Reduction Treatments

17:00 to 17:20

Andrea Zaffora *(Electrochemical Materials Science Laboratory, DICAM, University of Palermo, Palermo, Italy)*, Francesco Di Quarto, Ilia Valov, Monica Santamaria

Electrochemically Prepared Oxides for Resistive Switching Devices

17:20 to 17:40

Noah Schorr *(Chemistry, University of Illinois at Urbana-Champaign, Urbana, USA)*, Zachary Gossage, Jingshu Hui, Kenneth Hernandez-Burgos, Joaquin Rodriguez-Lopez

Elucidating Next Generation Battery Materials with *in Situ* Raman Spectroscopy Coupled to Scanning Electrochemical Microscopy

17:40 to 18:00

Hao Yang *(Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan)*

The electrochemical studies of new substituted olivine LiMn$_{1-x}$VO$_x$PO$_4$ as a cathode material in LIBs

18:00 to 18:20

Bastian J.M. Etzold *(Chemistry, Technische Universität Darmstadt, Darmstadt, Germany)*, Teguh Ariyanto, Marco Zeiger, Guirong Zhang, Volker Presser

Core-shell carbide-derived carbons as platform for high performance electrochemical energy storage and electrocatalysis

18:20 to 18:40

Xiao Su *(Chemical Engineering, Massachusetts Institute of Technology, Cambridge, USA)*, Kai-Jher Tan, Johannes Elbert, Timothy Jamison, T. Alan Hatton

Asymmetric Metallopolymers Redox-Electrodes for Pseudocapacitive Deionization and Selective Ion Separations

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**S12 Electrochemical Technology for solving 21st Century Challenges**

**Room: 555B**

Chaired by: Antoine Allanore, Gerardine G. Botte and Joaquin Rodriguez-Lopez

14:00 to 14:40 Keynote

Robert Savinell *(Chemical and Biomolecular Engineering, Case Western Reserve University, Cleveland, USA)*, Xinyou Ke, Joe Murphy, Jesse Wainright

Slurry Electrodes for Flow Batteries and Other Electrochemical Technologies

14:40 to 15:00

Gerardine G. Botte *(Center for Electrochemical Engineering Research, Ohio University, Athens, USA)*, Ben Sheets

Electrochemical Production of Ammonia in Alkaline Media

15:00 to 15:20

José Sollá-Gullón *(Institute of Electrochemistry, University of Alicante, Alicante, Spain)*, Beatriz Avila, Leticia Garcia-Cruz, Vicente Montiel

Electrochemical Reduction of CO$_2$ to Formate on Nanostructured Bismuth Electrodes
15:20 to 15:40
**Elena Baranova** (Chemical and Biological Engineering, University of Ottawa, Ottawa, Canada), Mohamed Houache, Emily Cossar

The Role of Nickel-based Surfaces in Electrochemical Valorization of Glycerol: PM-IRRAS Insight

15:40 to 16:00
**Aicheng Chen** (Department of Chemistry, Lakehead University, Thunder Bay, Canada), Sapanbir Thind, Shuai Chen, Jordan Wentzell

Electrochemical and Photoelectrochemical Study of Tungsten Oxide Based Nanomaterials for Environmental and Energy Applications

16:00 to 16:20
**Aaron Marshall** (Department of Chemical and Process Engineering, University of Canterbury, Christchurch, New Zealand), Asadollah Kariman, Alfred Herritsch

Understanding the mechanism and kinetics of electrochemical wastewater treatment at oxygen evolving anodes

16:20 to 16:40
Coffee Break

16:40 to 17:00
**Thomas Turek** (Chemical and Electrochemical Process Engineering, Clausthal University of Technology, Clausthal-Zellerfeld, Germany), Marina Bockelmann, Ulrich Kunz

Rechargeable Zinc-Oxygen Flow Battery with High Power Density

17:00 to 17:20
**Jilei Liu** (Division of Physics & Applied Physics, Nanyang Technological University, Singapore, Singapore), Zexiang Shen

Unraveling the Potassium Storage Mechanism in Graphite Foam

17:20 to 17:40
**Remi Blanchard** (Electrochemistry, LEPMI, Saint Martin d’Heres, France), Marian Chatenet, Arnaud Mantoux

Homogeneous catalysis and redox shuttle for non-aqueous Li-O₂ cathode

17:40 to 18:00
**Woonsup Shin** (Department of Chemistry, Sogang University, Seoul, Korea), Mijung Park, Daehoon Yang, Jina Kim

Electrochemical CO₂ conversion system based on dental amalgam electrode

18:00 to 18:20
**Marc-Antoni Goulet** (School of Engineering and Applied Sciences, Harvard University, Cambridge, USA), Eugene Beh, Roy G. Gordon, Michael J. Aziz

Stability of Organic and Organometallic Flow Battery Reactants

18:20 to 18:40
**Ulli Kunz** (Institute of Chemical and Electrochemical Process Engineering, Clausthal University of Technology, Clausthal-Zellerfeld, Germany), Jens Christian Riede, Thomas Turek

Zinc Concentration as Critical Parameter for Dendritic Growth of Deposited Zinc in Rechargeable Zinc-Oxygen Batteries
S14  Let there be Light in Electrochemistry:  
From Electrogenerated Chemiluminescence to Fluorescence

Room : 551A

Chaired by: Zhifeng Ding

14:00 to 14:40 Keynote

Paul Bohn (Chemical and Biomolecular Engineering, University of Notre Dame, Notre Dame, USA), Donghoon Han, Kaiyu Fu, Garrison Crouch, Seung-Ryong Kwon
Bifunctional Nanophotonic-Nanoelectrochemical Arrays for Luminescence Studies of Single Molecule 
Electron Transfer Events

14:40 to 15:00

Louzhen Fan (Chemistry, Beijing Normal University, Beijing, China)
Bright Multicolor Bandgap Fluorescent Carbon Quantum Dots for Electroluminescent Light-Emitting Diodes

15:00 to 15:20

Camilo Garcia (Escuela de Ciencias Ambientales, Universidad Católica de Temuco, Temuco, Chile), Freddy Navarro, Domingo Ruiz, Maria Jesús Aguirre
ECL evaluation of CdTe quantum dots immobilized on screen printed electrodes, characterizations and potential applications

15:20 to 15:40

Paul Francis (Centre for Chemistry and Biotechnology, Deakin University, Waurn Ponds, Australia), Egan Doeven, Lifen Chen, Lachlan Soulsby, David Hayne, Emily Kerr, Conor Hogan, David Wilson
Advances in Electrogenerated Chemiluminescence with Iridium(III) Complexes

15:40 to 16:00

Conor Hogan (Department of Chemistry and Physics, La Trobe Institute for Molecular Science, Melbourne, Australia), Bradley Stringer, Linh Quan, Peter Barnard
Electrochemically Sensitized Luminescence from Lanthanides in d–f Heteronuclear Arrays

16:00 to 16:20

Olivier Buriez (Ecole Normale Superieure, CNRS, Paris, France), Ana Isabel Perez Jimenez, Lylian Challier, Eric Ait-Yahiatene, Jérôme Delacotte, Eric Labbe
Selective Electrochemical Bleaching of the Outer Leaflet of Fluorescently labeled Giant Liposomes

16:20 to 16:40

Coffee Break

16:40 to 17:00

Marilia Goulart (Instituto de Química e Biotecnologia, Universidade Federal de Alagoas, Maceio, Brazil), Thaissa Silva, Flavio Emery, Eufiriano da Silva Júnior
The First BODIPY-Based Fluorescent Naphthoquinone: Electrochemistry, Cell Studies and Cytotoxicity

17:00 to 17:20

Fabien Miomandre (Dept PPSM, Ecole Normale Superieure Paris-Saclay, Cachan, France), Manon Lafouresse, Philippe Allongue, Fouad Maroun, Jean-Frédéric Audibert, Pierre Audebert
Electrochemical Modulation of the Fluorescence of Tetrazine Grafted Monolayers on Au/ITO Electrodes

17:20 to 17:40

Zhong-Qun Tian (Chemistry Department, Xiamen University, Xiamen, China), Wei Lu, Chao Zhan, Yi-Fan Huang, Meng Zhang, Rang Pang, Xue-Jiao Chen, Jian-Feng Li, De-Yin Wu, Bing-Wei Mao, Zhong-Qun Tian
Plasmon-enhanced electrochemical reaction on nanostructured Ag and Au electrodes in ionic liquids and aqueous solutions
17:40 to 18:00

**Gary Blanchard** *Department of Chemistry, Michigan State University, East Lansing, USA*, Ke Ma, Romana Jarosova, Greg Swain

Long Range Organization in Room Temperature Ionic Liquids

18:00 to 18:20

**Lars J.C. Jeuken** *Faculty of Biological Sciences, University of Leeds, Leeds, United Kingdom*, Lukasz Krzeminski, Mengqiu Li, Ee Taek Hwang

Fluorescent bioelectrochemistry and hybrid biovoltaics

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**S15 Physical and Interfacial Electrochemistry: Structural, Spectroscopic, and Theoretical Studies of the Electrochemical Interface**

**Room: 552B**

*Chaired by: Richard McCreery and Christophe Renault*

14:00 to 14:20

**Cheng Zong** *Department of Chemistry, Xiamen University, Xiamen, China*, Kaichao Deng, Bin Ren

Electrochemical Surface-enhanced Raman Microscopy (EC-SERM)

14:20 to 14:40 Invited

**Petr Krtil** *Electrocatalysis, J. Heyrovsky Institute of Physical Chemistry, Prague, Czech Republic*, Jonathan Mueller, Hana Hoffmanna, Timo Jacob

Dynamics of Surface Phases - the Nuts and Bolts of Rational Design of Binary Alloy Catalysts

14:40 to 15:00

**Andrea Russell** *Chemistry, University of Southampton, Southampton, United Kingdom*, Stephen Thompson, Stephen Price, Abu Bakr Ahmed Amine Nasr, Huang Haoliang, Lucilla Mendez De Leo, Ernesto Julio Calvo, Vinod Kumar Puthiyapura, Christopher Hardacre, Daniel Brett, Laura Calvillo

Structural effects on the activity, selectivity, and stability of PtSn alcohol oxidation electrocatalysts

15:00 to 15:20

**Amanda Cristina Garcia** *Leiden Institute of Chemistry, Leiden University, Leiden, Netherlands*, Yuvraj Birdja, Germano Tremiliosi-Filho, Marc Koper

Promoting Role of Bismuth on Pt Single Crystals for the Selective Oxidation of Glycerol to Dihydroxyacetone

15:20 to 15:40 Invited

**Christophe Renault** *Chemistry, CNRS-Ecole Polytechnique, Palaiseau, France*, Cecilia Laborde, Franz Widdershoven, Serge G. Lemay

Electrochemistry at 50 MHz: Probing Beyond the Electrical Double Layer

15:40 to 16:00

**Richard McCreery** *Chemistry, University of Alberta, Edmonton, Canada*, David James, Mustafa Supur, Scott Smith

Redox reactions in < 20 nm thick electrochemical cells

16:00 to 16:20

**Richard Gondosiswanto** *School of Chemistry, University of New South Wales, Sydney, Australia*

Salt-on-a-chip: Microcontact Printing of Ionic Liquids for Electrochemical Gas Sensors

16:20 to 16:40

Coffee Break
16:40 to 17:00
Ove Oll (Institute of Chemistry, University of Tartu, Tartu, Estonia), Georg Gorbatovski, Erik Anderson, Enn Lust
Specific Adsorption of Anions from Ionic Liquids: an in situ STM and Impedance Study

17:00 to 17:20
Lise Daniel (DEHT, CEA-Liten, Grenoble, France), Sylvie Genies, Xavier Fleury, Jean-Frédéric Martin, David Brun-Buisson, Claude Chabrol
Role of electrode/electrolyte interface on charged Li-ion cell electrochemical behavior at high temperature

17:20 to 17:40
Youngmin Yoon (Chemistry, Massachusetts Institute of Technology, Cambridge, USA), Bing Yan
Utilizing Double Layer Capacitance as a General Benchmarking Probe of Electroactive Surface Area

17:40 to 18:00
Alexis Grimaud (College de France, CNRS, Paris, France), Chunzhen Yang, Jean-Marie Tarascon
Amorphous vs crystalline “redox” catalysts for the oxygen evolution reaction - A mechanistic study

18:00 to 18:20
Julia Kunze-Liebhaeuser (Institute of Physical Chemistry, University of Innsbruck, Innsbruck, Austria), Andrea Auer, Dominik Steiner, Engelbert Portenkirchner
Anatase and Amorphous TiO₂ Nanotube Anodes for Li-Ion Batteries: XPS and Impedance Study of Lithiation and Delithiation

S15  Physical and Interfacial Electrochemistry: Structural, Spectroscopic, and Theoretical Studies of the Electrochemical Interface
Room : 554
Chaired by: Daniel Scherson

14:00 to 14:20 Invited
Katharina Krischer (Physics Department, Technical University of Munich, Garching, Germany), Filippo Cosi, Antoine Bonnefont, Sebastien Bozdech, Elena Savinova
Constructive and Destructive Effects of Molecular Noise in Nanoscale Electrochemical Systems

14:20 to 14:40
Elena Pérez Gallent (Leiden Institute of Chemistry / CASC, Leiden University, Leiden, Netherlands)
Spectroscopic Observation of a Hydrogenated CO Dimer Intermediate During CO Reduction on Cu(100) Electrodes

14:40 to 15:00
Yujin Tong (Physical Chemistry, Fritz Haber Institute of the Max Planck Society, Berlin, Germany), Martin Wolf, R. Kramer Campen
Employing Surface Specific Vibrational Spectroscopy to Study Adsorbate Structure at Electrochemical Interfaces

15:00 to 15:20
Zhujie Li (Maison de la Simulation, CEA/Saclay, Gif-sur-Yvette, France), Guillaume Jeanmairet, Trinidad Méndez-Morales, Mario Burbano, Matthieu Haefele, Mathieu Salanne
Confinement Effects on an Electron Transfer Reaction in Nanoporous Carbon Electrodes
15:20 to 15:40

**Paramaconi Rodriguez** *(School of Chemistry, University of Birmingham, Birmingham, United Kingdom)*, Cecile Le Duff

Role of the adsorbed oxygen species in the selective electrochemical reduction of CO$_2$ to alcohols on copper single-crystal electrodes

15:40 to 16:00

**Enrique Herrero** *(Instituto de Electroquímica, Universidad de Alicante, Alicante, Spain)*, Adolfo Ferre-Vilaplana, Carlos Buso-Rogero, Juan M. Feliu

Insight in the Formic Acid Oxidation Mechanism on Platinum from Computational and Experimental Results

16:00 to 16:20

**Wen-Feng Lin** *(Department of Chemical Engineering, Loughborough University, Loughborough, United Kingdom)*, Ruirui Zhang, Xiao Lin, Tian Sheng, Shi-Gang Sun

Understanding Methanol Electro-Oxidation Mechanisms on RuO$_2$(100) Surface at Atomic and Molecular Level by Combined Studies of *in-situ* FTIR Spectroscopy and DFT Atomistic Modelling

16:20 to 16:40

Coffee Break

16:40 to 17:00

**Jorge Ferreira de Araújo** *(Chemistry, Technical University Berlin, Berlin, Germany)*, Mikaela Görlin, Thomas Merzdorf, Fabio Dionigi, Zarko Jovanov, Strasser Peter

DEMS studies using isotope-labeling for unraveling mechanistic details in CO$_2$/CO electroreduction and O$_2$ evolution reaction

17:00 to 17:20

**Angel Cuesta** *(Department of Chemistry, University of Aberdeen, Aberdeen, United Kingdom)*, Onagie Ayemoba

Spectroscopic Evidence of Cation-Dependent Potential-Induced pH Changes during CO$_2$ Electroreduction

17:20 to 17:40

**Marco Papasizza** *(Department of Chemistry, University of Aberdeen, Aberdeen, United Kingdom)*

ATR-SEIRAS study of CO$_2$ electroreduction on Ag and Pt in an imidazolium-based ionic liquid

17:40 to 18:00

**Marta Figueiredo** *(Leiden Institute of Chemistry, Leiden University, Leiden, Netherlands)*, Dennis Hiltrop, Marc Koper

Double layer effects on CO adsorption and oxidation on Pt(111)

18:00 to 18:20

**Anna Wuttig** *(Department of Chemistry, Massachusetts Institute of Technology, Cambridge, USA)*, Yogesh Surendranath

Cations at the Interface during CO$_2$-to-Fuels Catalysis: Spectators, Inhibitors, or Activators?

18:20 to 18:40

**Filippo Cavalca** *(Chemical Physics, Stockholm University, Stockholm, Sweden)*, Oscar Diaz Morales, Anders Nilsson, Rafael Ferragut, Eilert André, Stefano Aghion, Lars Petterson, Chang Liu

Nature, stability and distribution of subsurface oxygen in copper electrodes during the electrochemical CO$_2$ reduction
S16 Electrochemistry of Metal Clusters and Nanoparticles

Room: 551B

Chaired by: David Cliffel and Frank Zamborini

14:00 to 14:20

Bart Vanreentghem (Faculty of Applied Engineering, University of Antwerp, Wilrijk, Belgium), Nejc Hodnik, Sotiris Sotiropoulos, Tom Breugelmans
Stability of monometallic nanoparticles in organic solvents

14:20 to 14:40

Pekka Peljo (Laboratoire d’Electrochimie Physique et Analytique, École Polytechnique Fédérale de Lausanne, Sion, Switzerland), Jose Manzanares, Hubert H. Girault
Variation of the Fermi Level of the Nanoparticle: Effect of the Collision with an Electrode and the Contact Electrification

14:40 to 15:00

Jon Ustarroz (Electrochemical and Surface Engineering (SURF), Vrije Universiteit Brussel, Brussels, Belgium), Isabel M. Ornelas, Guohui Zhang, David Perry, Minkyung Kang, Marc Walker, Patrick Unwin
Directional Migration of Pt Size-Selected Nanoclusters During ORR Under High Mass Transport Conditions

15:00 to 15:20

Susana Cordoba de Torresi (Instituto de Quimica, Universidade de São Paulo, São Paulo, Brazil), Fabian Pastrian, Pedro Camargo
Does geometry matter in nanoparticle’s reactivity towards glucose sensing?

15:20 to 15:40

Colleen Jackson (Chemical Engineering, University of Cape Town, Cape Town, South Africa), Graham Smith, Matthew Markiewicz, Dave Inwood, Andrew Leach, Penny Whalley, Anthony Kucernak, Andrea Russell, Pieter Levecque, Denis Kramer
Metal-Support Interactions of Pt Nanoparticles supported on Boron Carbide Composites

15:40 to 16:00

Tsuyoshi Ochiai (Photocatalyst Group, Kanagawa Academy of Science and Technology, Kawasaki, Japan), Mio Hayashi, Shoko Tago, Akira Fujishima
Platinum-modified Titanium Electrode for Electrochemical Ozone Generation Prepared by the Multiple Electrostrike Method

16:00 to 16:20

Ahmed Galal (Chemistry, Faculty of Science, Cairo University, Giza, Egypt), Ekram El-Ads, Nada Atta
Electrochemical glucose sensor based on gold-doped nano-perovskite-clusters – New strategy for non-enzymatic sensing application

16:20 to 16:40

Coffee Break

16:40 to 17:00

John Stickney (Chemistry, The University of Georgia, Athens, USA)
Pulsed Potential Atomic Layer Deposition (PP-ALD)

17:00 to 17:20

Daniel Escalera López (School of Chemical Engineering, University of Birmingham, Birmingham, United Kingdom), Yubiao Niu, Sung Jin Park, Andrey Kaplan, Neil V. Rees
Insight in the electrochemistry of earth-abundant, magnetron sputtered molybdenum sulfide nanoclusters
17:20 to 17:40

**Siou-Ling Jian** *(Chemical Engineering, National Taiwan University, Taipei, Taiwan)*

Zeolitic Imidazolate Framework-Derived ZnSe/Porous Carbon/ PEDOT: PSS as the Counter Electrode for Dye-Sensitized Solar Cells

17:40 to 18:00

**Yuhui Liu** *(College of Materials Science and Chemical Engineering, Harbin Engineering University, Harbin, China)*, **Xiaoyan Jing**

Electrochemical Synthesis and Tribological Properties of Flower-like and Sheets MoS₂ in LiCl-KCl-(NH₄)₆Mo₇O₂₄-KSCN Melt

18:00 to 18:20

**Wei Wang** *(School of Chemistry and Chemical Engineering, Nanjing University, Nanjing, China)*

Optical Imaging of Phase Transition and Li-Ion Diffusion Kinetics of Single LiCoO₂ Nanoparticles during Electrochemical Cycling

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**S18  Education for Electrochemistry and Electrochemical Engineering**

**Room : Ballroom C**

*Chaired by: Plamen Atanassov, Katharina Krischer and Shelley Minteer*

14:00 to 14:20 Invited

**Marisa Buzzeo** *(Chemistry, Barnard College, Columbia University, New York, USA)*

Integrating Applied Electrochemistry into an Undergraduate Curriculum

14:20 to 14:40

**Ingrid Fritsch** *(Department of Chemistry and Biochemistry, University of Arkansas, Fayetteville, USA)*

Engaging Undergraduate Students in Learning Electrochemistry through Analytical Chemistry Courses

14:40 to 15:00

**Alanah Fitch** *(Chemistry and Biochemistry, Loyola University of Chicago, Chicago, USA)*

Teaching Electrochemistry Surreptitiously: Instrumental Analysis

15:00 to 15:20

**David Cliffel** *(Chemistry, Vanderbilt University, Nashville, USA)*

The Role of Independent Projects within a Graduate Electrochemistry Course

15:20 to 15:40

**Shelley Minteer** *(Chemistry, University of Utah, Salt Lake City, USA)*

Curriculum Development Focused on Experimental and Simulation Skills in Electrochemistry

15:40 to 16:00 Invited

**Julie Renner** *(Chemical & Biomolecular Engineering, Case Western Reserve University, Cleveland, USA)*, **Katherine Ayers**

Building a Research Career in Electrochemical Technology: The Benefits of a Postdoctoral Experience in Industry

16:00 to 16:20


Superconformal Film Growth: Challenges and Opportunities

16:20 to 16:40  Coffee Break
16:40 to 17:00
Katharina Krischer (Physics Department, Technical University of Munich, Garching, Germany)
Bridging the Gap between Disciplines in the Electrochemical Education of Scientists and Engineers

17:00 to 17:20
Plamen Atanassov (Chemical & Biological Engineering, University of New Mexico, Albuquerque, USA)
Teaching Electrochemistry and Electrochemical Engineering: Curriculum for a Technical Elective and a Graduate Course

17:20 to 17:40
Manuela Rueda Rueda (Physical Chemistry, University of Seville, Seville, Spain), Francisco Prieto
Teaching Electrochemistry for Chemistry and Material Sciences Degrees

17:40 to 18:00
Robert Kelly (Materials Science and Engineering, University of Virginia, Charlottesville, USA), Giovanni Zangari, Elizabeth Opila, James Burns, Gary Koenig
Graduate Education in Corrosion Science and Engineering at the University of Virginia

18:00 to 18:20
Dessi Koleva (Materials and Environment, Delft University of Technology, Delft, Netherlands)
The Importance of Fundamental Electrochemistry and Methods for Educational Corrosion Courses in the Field of Civil Engineering

18:20 to 18:40
Education Round Table
Chaired by: Johna Leddy, Jorge Ibanez and Ignacio Gonzalez
### Program of the 68th Annual Meeting of the International Society of Electrochemistry

**Wednesday, 30 August 2017**

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**POSTER SESSION 3 (s06, s10, s15, s17, s19)**
Wednesday 30 August - Morning

Plenary Lecture

Room: Ballroom A

Chaired by: Katharina Krischer

08:15 to 09:15

Krishnan Rajeshwar (The University of Texas at Arlington, Arlington, USA)

Photoelectrochemistry, Solid-State Chemistry, and Solar Fuels: A Nexus?

S03 Electrochemical Approaches to Clinical Diagnostics and Medical Devices

Room: 550

Chaired by: James Rusling

09:30 to 09:50 Invited

Lanqun Mao (Institute of Chemistry, Chinese Academy of Sciences, Beijing, China)

Enabling Bioelectrochemistry for in Vivo Analysis

09:50 to 10:10 Invited

Sabine Szunerits (IEMN, University of Lille, Villeneuve d’Ascq, France), Roxana Jijie, Samia Boulahneche, Santosh K. Singh, Mohamed Saleh Medjram, Sreekumar Kurungot, Rabah Boukherroub

On demand release of antibiotics from porous reduced graphene oxide modified flexible electrodes

10:10 to 10:30

Damir Janigro (FloTBI, Cleveland, USA)

A point-of-care device and a cell phone app in the diagnosis of neurological diseases

10:30 to 10:45

Coffee Break
S04 Bioelectrochemistry without Borders

Room: 556B

Chaired by: Shelley Minteer and Koji Sode

09:30 to 09:50
Koji Sode (Biotechnology and Life Science, Tokyo University of Agriculture and Technology, Koganei, Japan), Katsuhiro Kojima, Kazushige Mori, Junko Okuda-Shimazaki
Engineering of Redox Potential of Direct Electron Transfer Type Glucose Dehydrogenase

09:50 to 10:10
Fred Lisdat (Biosystems Technology, Institute of Appl. Life Science, Technical University Wildau, Wildau, Germany), David Sarauli, Gero Göbel, Burkhard Schulz, Silke Leimkühler, Dina Fattakova-Rohlfing
Polymer-supported enzyme – electrode contacts as basis for the construction of bioelectrocatalytic sensing electrodes

10:10 to 10:30
Ivana Matanovic (Chemical and Biological Engineering Department, University of New Mexico, Albuquerque, USA), Albert Perry III, Sadia Kabir, Madelaine Seow Chavez, Kateryna Artyushkova, Alexey Serov, Plamen Atanassov
Combining Experimental and Computational Approaches in the Design of Synthetic Catalytic Cascades

10:30 to 10:45
Coffee Break

S05 Novel Materials and Devices for Energy Storage: Batteries for Tomorrow’s World

Room: Ballroom A

Chaired by: Daniel Abraham

09:30 to 10:10 Keynote
Gleb Yushin (Materials Science and Engineering, Georgia Institute of Technology, Atlanta, USA)
Conversion-Type Cathodes for Rechargeable Lithium and Lithium-Ion Batteries

10:10 to 10:30
Emanuel Peled (Chemistry, Tel Aviv University, Tel - Aviv, Israel), Diana Golodnitsky, Meital Goor, Inna Schektman, Tzach Mukra
Lithium Sulfur Battery - Effects of Binders and Barrier Layers on the Performance and Fading of the Cell

10:30 to 10:45
Coffee Break
S05  Novel Materials and Devices for Energy Storage: Batteries for Tomorrow’s World

Room : 555A

Chair by: Remi Dedryvere and Nina Laszczynski

09:30 to 09:50 Invited

Remi Dedryvere (IPREM - UMR 5254, University of Pau - CNRS, Pau, France), Jeremie Auvergniot, Alice Cassel, Dominique Foix, Virginie Viallet, Vincent Seznec

Interface Stability and Redox Activity of Argyrodite Li₆PS₅Cl as Solid Electrolyte in Bulk All-Solid-State Batteries

09:50 to 10:10

Venkatasubramanian Viswanathan (Mechanical Engineering, Carnegie Mellon University, Pittsburgh, USA), Vikram Pande

Design principles for self-forming and self-healing stable SEI layer for Li metal anodes

10:30 to 10:45

Coffee Break

S06  Fuel Cells and Electrolyzers

Room : Ballroom B

Chair by: Frederic Jaouen

09:30 to 09:50

Katrine Elsøe (DTU Energy, Roskilde, Denmark), Laila Grahl-Madsen, Günther Scherer, Johan Hjelm, Mogens Bjerg Mogensen

Anode Catalyst Layer Contributing to the Overall Impedance of Polymer Electrolyte Membrane Electrolysis Cells during Water Electrolysis - A Hypothesis

09:50 to 10:10

Frederic Jaouen (ICGM UMR CNRS 5253, CNRS, Montpellier, France), Barbara Rodriguez-Garcia, Alvaro Reyes-Carmona, Ignacio Jimenez-Morales, Marta Blasco-Ahicart, Sara Cavaliere, Deborah Jones, Jose-Ramon Galan-Mascaros

Cobalt hexacyanoferrate supported on Sb-SnO₂ a promising non-noble anode catalyst for PEM water electrolyzers

10:10 to 10:30

Sanjeev Mukerjee (Chemistry, Northeastern University, Boston, USA), Nagappan Ramaswamy, Shraboni Ghoshal, Qingying Jia

Engendering Reversibility to Hydrogen Evolution and Oxidation Reaction at High PH Environments

10:30 to 10:45

Coffee Break
S07  Supercapacitors from Materials and Processes to Applications

Room : 557

Chaired by: Bruce Dunn

09:30 to 09:50

Jacob Ketter (Electrochemistry, Gamry Instruments, Warminster, USA), Dominic Moosbauer
Overcoming Challenges Associated With Obtaining Accurate Impedance of Large EDLCs

09:50 to 10:10

John Miller (JME, Inc and Case Western Reserve University, Beachwood, USA), S.M. Butler, M. Antloga, B. Segel, Robert Savinell
Drying of Non-aqueous-electrolyte Electric Double Layer Capacitors

10:30 to 10:45  Coffee Break

S08  Dealloying: Fundamentals, Application, and Control

Room : 551A

Chaired by: Nikolay Dimitrov

09:30 to 10:10 Keynote

Karl Sieradzki (SEMTE, Arizona State University, Tempe, USA), Ke Geng, Qing Chen
Morphology Evolution During Dealloying at High and Low Homologous Temperature

10:10 to 10:30 Invited

Roger Newman (Chemical Engineering and Applied Chemistry, University of Toronto, Toronto, Canada), Ayman El-Zoka, Brian Langelier, Gianluigi Botton
Advanced Characterization and Properties of Dealloyed Layers on AgAu(Pt) Alloys

10:30 to 10:45  Coffee Break

S09  Ionic Liquids as Media for Electrochemical Synthesis

Room : 556A

Chaired by: Toshiyuki Nohira

09:30 to 09:50

Charles Hussey (Chemistry and Biochemistry, University of Mississippi, University, USA), Li-Hsien Chou
Heterogeneous Electron Transfer Kinetics of the [CeCl₆][□☐]Redox Reaction in Ionic Liquids Based on the Bis(trifluoromethylsulfonyl)imide Anion

09:50 to 10:10

Atsushi Kitada (Materials Science and Engineering, Kyoto University, Kyoto, Japan), Shun Takeoka, Kohei Kintsu, Kazuhiro Fukami, Kuniaki Murase
An Equimolar Ternary Molten Mixture of Crownether–Water–Imide Superacid: A Hydronium Solvate Ionic Liquid with Strong Acidity

10:10 to 10:30

Hao-Wei Pang (Chemical Engineering, National Taiwan University, Taipei, Taiwan)
Nanofibers of Imino-Imidazolium Iodide Grafted Hexafluoropropylene as the Quasi-Solid-State Electrolyte for Dye-Sensitized Solar Cells

10:30 to 10:45  Coffee Break
S11 Synthesis and Applications of Electrochemically Active Materials

**Room : 553**

*Chaired by: Giovanni Zangari*

09:30 to 09:50 Invited

Marco Musiani (*ICMATE, CNR, Padova, Italy*), Sandro Cattarin, Nicola Comisso, Paolo Guerriero, Luca Mattarozzi, Lourdes Vázquez-Gómez, Enrico Verlato

An Electrochemical Study of the PbO$_2$/Mn$^{2+}$ Galvanic Displacement Reaction

09:50 to 10:10

Yin Xu (*Materials Science and Engineering, University of Virginia, Charlottesville, USA*)

Hydrogen/Nitrogen Doped Anatase TiO$_2$ for Photoelectrochemical Splitting of Water

10:10 to 10:30 Invited - **ISE Prize for Electrochemical Materials Science**

Claire Villevieille (*Electrochemistry Laboratory, Paul Scherrer Institute, Villigen PSI, Switzerland*), Cyril Marino

Designing low cost Na-ion batteries

10:30 to 10:45

Coffee Break

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S11 Synthesis and Applications of Electrochemically Active Materials

**Room : 551B**

*Chaired by: Ross Milton*

09:30 to 09:50

Xuan Zhang (*College of Chemistry, Chemical Engineering & Biotechnology, Donghua University, Shanghai, China*)

Self-Assembly of Fullerene-Graphene Supramolecular Hybrid and its Application as Pd Electrocatalyst Support for Direct Methanol Fuel Cells

09:50 to 10:10

Rafael Colombo (*Chemistry Institute, University of São Paulo, São Paulo, Brazil*), Gabrielle da Silva, Susana Cordoba de Torresi

Electrodeposition of Metals on Porous Polymeric Templates for Raman Spectroscopy and Sensing

10:10 to 10:30 Invited

Zbigniew Stojek (*Faculty of Chemistry, University of Warsaw, Warsaw, Poland*), Marcin Mackiewicz, Kamil Marcisz, Marcin Strawski

Modification of Gold Electrode with Monolayer of Environmentally Sensitive Microgels

10:30 to 10:45

Coffee Break
S12 Electrochemical Technology for solving 21st Century Challenges

**Room: 555B**

*Chaired by: Robert Savinell and Joaquin Rodriguez-Lopez*

09:30 to 09:50

**Beatriz Mingo** *(School of Materials, University of Manchester, Manchester, United Kingdom), Aleksey Yerokhin, Allan Matthews*

Active Functionalization of Plasma Electrolytic Oxidation Coatings

09:50 to 10:10

**Trevor Braun** *(Material Science and Engineering Division, National Institute of Standards and Technology, Gaithersburg, USA), Thomas Moffat*

Ultramicroelectrode Studies of the Additive Derived Critical Breakdown in S-NDR Copper Electrodeposition

10:10 to 10:30

**Nicolas Laugel** *(School of Materials, University of Manchester, Manchester, United Kingdom), Allan Matthews, Aleksey Yerokhin*

*In Situ* Characterization of Electrolytic Plasma Polishing Correlated with Effective Surface State Changes in Ti Anodes

10:30 to 10:45

Coffee Break

S15 Physical and Interfacial Electrochemistry: Structural, Spectroscopic, and Theoretical Studies of the Electrochemical Interface

**Room: 552B**

*Chaired by: Frederic Maillard and Mikhail Vorotyntsev*

09:30 to 09:50

**Kyoungmin Min** *(Platform Technology Lab, Samsung Advanced Institute of Technology, Suwon, Korea), Kwangjin Park, Seung-Woo Seo, Byungjin Choi, Eunseog Cho*

Improved electrochemical properties of LiNi_{0.91}Co_{0.09}Mn_{0.03}O_2 cathode material via Li-reactive coating with metal phosphates: First-principles based screening and experimental verification

09:50 to 10:10

**Javad Hashemi** *(Dept of Engineering, Unit 1, Providence, USA), Martha Gialampouki, Andrew Peterson*

Computational Modeling of Solid Electrolyte Interphase Formation in Lithium-Ion Batteries

10:10 to 10:30

**Frederic Maillard** *(LEPMI, CNRS, Saint Martin d’Heres, France), Raphael Chattot, Tristan Asset, Jakub Drnec, Pierre Bordet, Jaysen Nelayah, Laetitia Dubau*

Seeing Inside a Growing Catalyst

10:30 to 10:45

Coffee Break
S15  Physical and Interfacial Electrochemistry: Structural, Spectroscopic, and Theoretical Studies of the Electrochemical Interface

**Room: 554**

*Chaired by: Petr Krtil and Dan Bizzotto*

09:30 to 09:50

**Ludwig Kibler** *(Institute of Electrochemistry, University of Ulm, Ulm, Germany)*, Johannes Hermann

Formate Oxidation on Au(111) Electrodes

09:50 to 10:10

**Erlend Bertheussen** *(Department of Physics, Technical University of Denmark, Kgs. Lyngby, Denmark)*, Thomas Vagn Hogg, Younes Abghoui, Joseph H. Montoya, Jens K. Nørskov, Ib Chorkendorff, Ifan E.L. Stephens

Elucidation of pathways towards multi-carbon products during CO reduction on Cu electrodes

10:10 to 10:30

**YuYe J. Tong** *(Department of Chemistry, Georgetown University, Washington, USA)*, Dejun Chen, Thomas C. Allison

New Mechanistic Insights into Solution CO Electro-oxidation on Au Surface in Acidic vs Alkaline Electrolyte by Surface-Enhanced IR Spectroscopy

10:30 to 10:45

Coffee Break

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S17  Advances in Theory and Modeling of Electrochemical Systems

**Room: 552A**

*Chaired by: Peter Notten*

09:30 to 09:50

**Eckhard Spohr** *(Department of Chemistry, University Duisburg-Essen, Essen, Germany)*

Local and Global Electric Driving Forces for Proton Discharge from Aqueous Solutions on Charged Electrodes. MD Trajectory Simulations

09:50 to 10:10

**Elshad Allahyarov** *(Theoretical Physics II, Soft Matter, Heinrich-Heine University, Dusseldorf, Germany)*, Hartmut Lowen

Simulation Study of Ion Diffusion in Charged Nanopores with Anchored Terminal Groups

10:10 to 10:30

**Charles W. Monroe** *(Department of Engineering Science, University of Oxford, Oxford, United Kingdom)*

Consistent Models for Electrochemical/Mechanical Coupling in Solid Ion Conductors

10:30 to 10:45

Coffee Break
S18  Education for Electrochemistry and Electrochemical Engineering

Room: Ballroom C

Chair: Alejandro A. Franco and Johna Leddy

09:30 to 09:50 Invited

Alejandro A. Franco (Laboratoire de Réactivité et Chimie de Solides (LRCS), Université de Picardie Jules Verne & CNRS (UMR 7314), Amiens, France), Ruijie Zhao, Yinghui Yin, Romain Lelong, Jan Ciger, Indira Thouvenin

Combining Multiscale Computational Modeling and Interactive Virtual Reality for Teaching Electrochemical Energy Storage

09:50 to 10:10

Scott Calabrese Barton (Dept. of Chemical Engineering & Materials Science, Michigan State University, East Lansing, USA)

Computational Electrochemical Engineering

10:10 to 10:30

Shigeru Amemiya (Chemistry, University of Pittsburgh, Pittsburgh, USA)

COMSOL Finite Element Simulation for Electrochemistry Education and Research

10:30 to 10:45

Coffee Break
### Thursday, 31 August 2017

**ROOMS:** Ballroom A  Ballroom B  Ballroom C  Room 550  Room 553  Room 554  Room 557  Room 551A  Room 551B  Room 552A  Room 552B  Room 555A  Room 555B  Room 556A  Room 556B

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>08:15 - 09:15</td>
<td>Plenary Lecture: Hector Abruna (Ballroom A)</td>
<td>Ballroom A</td>
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<tr>
<td>10:10 - 10:30</td>
<td>Coffee Break</td>
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<tr>
<td>10:30 - 10:45</td>
<td>General Assembly</td>
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<td>10:50 - 11:10</td>
<td>Lunch</td>
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<td>11:00 - 11:30</td>
<td>Division Officers Meeting</td>
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<tr>
<td>11:30 - 11:50</td>
<td>Regional Rep. Meeting</td>
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<tr>
<td>12:10 - 12:30</td>
<td>Lunch</td>
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<tr>
<td>12:30 - 12:45</td>
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<tr>
<td>12:40 - 13:40</td>
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<tr>
<td>13:40 - 14:00</td>
<td>Lunch</td>
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<tr>
<td>14:20 - 14:40</td>
<td>C. Gayya  H. Yang  W. Schulmann  Y.-J. Huang  T. Resthenko  M. Chisaka</td>
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<td>16:00 - 16:20</td>
<td>C.-C. Chen  F. Dongui  S. Andreescu  M. Turmine  A. Hering  M. Haensch  E. Lopou  J. Song  V. Tihpickovic  R. Esmaiher  C. Lam  S. Krishnan</td>
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<tr>
<td>16:20 - 16:40</td>
<td>Coffee Break</td>
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<tr>
<td>17:00 - 17:20</td>
<td>B. Horschmann  J. Masa  Manuel Ping  D. Chinh  A.K. Engelfeld  J.-S. Hu  M. Graf  M. Oyama  T. Barres  M. Jackson  E. Lee  M. Hayashi</td>
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<tr>
<td>17:40 - 18:00</td>
<td>N. Wagner  S. Rapino  L. Jones  L. Gibson  Y. Nabaie  Q. Li  M. Mirzadeh  X. Yang  H. Teng  X. Xu  C. Guetz  G.-U. Fleischig</td>
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<tr>
<td>18:00 - 18:20</td>
<td>A. Oleinick  W. Wen  E. Lee  M. El Khatib</td>
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<tr>
<td>18:20 - 18:40</td>
<td>Reception</td>
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<tr>
<td>18:40 - 20:00</td>
<td>Reception</td>
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</tbody>
</table>
Thursday 31 August 2017 - Morning

Plenary Lecture

Room: Ballroom A

Chaired by: Philip Bartlett

08:15 to 09:15

Hector Abruna (Department of Chemistry & Chemical Biology, Cornell University, Ithaca, USA)
Operando Methods for the Study of Energy Materials

S03 Electrochemical Approaches to Clinical Diagnostics and Medical Devices

Room: 550

Chaired by: Woonsup Shin

09:30 to 10:10 Keynote

Mark Schoenfisch (Department of Chemistry, University of North Carolina, Chapel Hill, USA), Micah Brown, Wesley Storm, Jonathan McDunn
Microfluidic Electrochemical Nitric Oxide Sensors for Sepsis Risk Assessment

10:10 to 10:30

Alex Lima (Department of Fundamental Chemistry, Institute of Chemistry, University of São Paulo, São Paulo, Brazil), Gabriel Meloni, Aline Barbosa, Simone Motta, Newton Canteras, Mauro Bertotti
Use of an electrochemical sensor in the detection of nitric oxide in periaqueductal gray during optogenetic stimulation

10:30 to 10:45

Coffee Break
S04  Bioelectrochemistry without Borders

Room: 556B

Chaired by: Jacek Lipkowski and Ana Maria Oliveira-Brett

09:30 to 09:50 Invited
  Taek Dong Chung (Chemistry, Seoul National University, Seoul, Korea)
  Artificial Synapse between Surface Modified Electrode and Neuron

09:50 to 10:10
  Mei Shen (Department of Chemistry, University of Illinois at Urbana-Champaign, Urbana, USA)
  Detection of Ionic Neurotransmitters from Single Neuronal Structures via Versatile Nanosensor Probes

10:10 to 10:30
  Ana Maria Oliveira-Brett (Department of Chemistry, University of Coimbra, Coimbra, Portugal), Ana-Maria Chiorcea-Paquim, Teodor Adrian Enache
  Electrochemistry of Alzheimer Disease Amyloid Beta Peptides

10:30 to 10:45
  Coffee Break

S05  Novel Materials and Devices for Energy Storage:
     Batteries for Tomorrow’s World

Room: Ballroom A

Chaired by: Yoon Hwa and Manik Mayur

09:30 to 09:50
  Manik Mayur (Mechanical Engineering, Offenburg University of Applied Sciences, Offenburg, Germany), Daniel Gruebl, Wolfgang G. Bessler
  Two-dimensional modeling and analysis of mass transfer losses in a Li-air button cell for different electrolytes

09:50 to 10:10
  Yoon Hwa (Energy Storage and Distributed Resources Division, Lawrence Berkeley National Laboratory, Berkeley, USA), Elton Cairns
  Li/S Cells with Cetyltrimethylammonium Bromide Modified Sulfur-Graphene Oxide-Carbon Nanotube Electrodes

10:30 to 10:45
  Coffee Break
### S05 Novel Materials and Devices for Energy Storage: Batteries for Tomorrow’s World

**Room: 555A**

*Chaired by: Daniel Brandell and Patrick Cappillino*

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker(s)</th>
<th>Title</th>
<th>Institution(s)</th>
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</thead>
<tbody>
<tr>
<td>09:30 to 09:50</td>
<td>Daniel Brandell (Department of Chemistry - Ångström Laboratory, Uppsala University, Uppsala, Sweden), Fabian Jeschull</td>
<td>Tailoring the Surface Chemistry of Li-Ion Battery Anodes through the Use of Water-Soluble Functional Binders</td>
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<tr>
<td>09:50 to 10:10</td>
<td>Patrick Cappillino (Chemistry and Biochemistry, University of Massachusetts Dartmouth, North Dartmouth, USA), Haobo Huang, Rachael Howland, Ertan Agar, Mahnaz Nourani</td>
<td>Bio-Inspired Active Materials for High-Stability Nonaqueous Redox Flow Batteries</td>
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<tr>
<td>10:10 to 10:30</td>
<td>Tibebu Alemu (Graduate Institute of Applied Science and Technology, National Taiwan University of Science and Technology, Taipei New City, Taiwan), Fu-Ming Wang</td>
<td>The Kinetic Study of Self-terminated Oligomer Branched Architecture (STOBA) in Lithium Ion Battery</td>
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</tbody>
</table>

10:30 to 10:45 **Coffee Break**

### S06 Fuel Cells and Electrolyzers

**Room: Ballroom B**

*Chaired by: Shaojun Guo*

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker(s)</th>
<th>Title</th>
<th>Institution(s)</th>
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</thead>
<tbody>
<tr>
<td>09:30 to 09:50</td>
<td>Zhaoxiong Xie (Department of Chemistry, Xiamen University, Xiamen, China), Zhenming Cao, Yaqi Jiang, Gang Fu</td>
<td>Hexagonal Close-Packed Platinum-Nickel Alloy Nanostructures and their Superior Activity towards Hydrogen Evolution Reaction</td>
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<tr>
<td>09:50 to 10:30</td>
<td>Shaojun Guo (Department of Materials Science and Engineering, Peking University, Beijing, China)</td>
<td>Tuning the Surface and Interface of Metal-based Nanocrystals for Energy Electrocatalysis</td>
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</tbody>
</table>

10:30 to 10:45 **Coffee Break**
S06  Fuel Cells and Electrolyzers

Room : 557

Chaired by: Akimitsu Ishihara

09:30 to 10:10 Keynote

Jan Rossmeisl (Department of Chemistry, University of Copenhagen, København Ø, Denmark)
Electro-Catalysis for Electro-Chemicals

10:10 to 10:30

Maria Perez-Page (School of Chemical Engineering and Analytical Science, The University of Manchester, Manchester, United Kingdom), Stuart Holmes
Graphene and graphene oxide in low temperature fuel cells for enhanced performance

10:30 to 10:45
Coffee Break

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S06  Fuel Cells and Electrolyzers

Room : 554

Chaired by: YuYe J. Tong

09:30 to 09:50

Safia Jilani (Chemistry, Georgetown University, Washington D.C., USA), Daniel Zager, Esther Iyanobor, Yu Ye J. Tong
Synthesis and Mechanistic Study of Pt-based Tri-metal Catalysts for the Ethanol Oxidation Reaction

09:50 to 10:10

Kenneth Ikechukwu Ozoemen (School of Chemistry, University of the Witwatersrand, Johannesburg, South Africa), Paul Ejikeme, Katlego Makgopa, Kumar Raju
Insights into the Promotional Effects of Carbon Nano-Onion Support Towards Glycerol Oxidation Reaction at Pd@MnO2 Electrocatalyst

10:10 to 10:30

Marian Chatenet (LEPMI, Grenoble Institute of Technology (Grenoble-INP), Saint Martin d’Heres, France), Pierre-Yves Olu, Guillaume Braesch, Antoine Bonnefont, Elena Savinova
NaBH4 concentration effects on the borohydride oxidation reaction (BOR) efficiency and mechanism at gold and platinum electrodes

10:30 to 10:45
Coffee Break
S08  Dealloying: Fundamentals, Application, and Control

Room: 551A

Chaired by: Thomas Moffat

09:30 to 10:10 Keynote

Jonah Erlebacher (Materials Science and Engineering, Johns Hopkins University, Baltimore, USA), Ellen Benn

Transport and Activity in Dealloyed Nanoporous Electrocatalysts

10:10 to 10:30 Invited

Juergen Biener (Nanoscale Synthesis and Characterization Laboratory, Lawrence Livermore National Laboratory, Livermore, USA)

Nanoporous Metals for Energy Applications

10:30 to 10:45

Coffee Break

S11  Synthesis and Applications of Electrochemically Active Materials

Room: 553

Chaired by: Massimo Marcaccio

09:30 to 09:50

Pei Meng Woi (Department of Chemistry, University of Malaya, Lembah Pantai, Malaysia), Zohreh Shahnaz, Yatimah Alias

Electrochemical sensing of glucose by reduced graphene oxide-zinc ferrospinsels

09:50 to 10:10

Hussein Kanso (BAE-LBBM, Universite de Perpignan, Perpignan, France), Nicolas Inguimbert, Amani Ben Jrad, Thierry Noguer, Carole Calas-Blanchard

New Organometallic Tracers for the Development of Electrochemical Affinity Biosensors

10:10 to 10:30

Murilo Santhiago (Brazilian Nanotechnology National Laboratory, Brazilian Center for Research in Energy and Materials, Campinas, Brazil), Mathias Strauss, Mariane P. Pereira, Andréia S. Chagas, Carlos C.B. Bufon

Dry Transfer Method of Graphite onto Paper for High Performance Flexible Electrochemical Sensors

10:30 to 10:45

Coffee Break
S11  Synthesis and Applications of Electrochemically Active Materials

**Room: 551B**

*Chaired by: Ross Milton*

09:30 to 09:50

Dominika Ziolkowska *(Conn Center for Renewable Energy Research, University of Louisville, Louisville, USA)*, John Dilip Jangam, Gamini Sumanasekera, Jacek Jasinski

Modification of Carbon Nanocages Synthesis for Electrochemical Applications

09:50 to 10:10

Atif Koca *(Chemical Engineering Department, Marmara University, Istanbul, Turkey)*

Solid State Electropolimerization of Manganese Phthalocyanine coated with Langmuir-Blodgett and Click Electrochemistry

10:10 to 10:30

Nianxing Wang *(Department of Chemistry, University of Turku, Turku, Finland)*, Pia Damlin, Carita Kvarnström

Viologen Based Redox Composite Films: Electrochemical Synthesis and Characterization

10:30 to 10:45

Coffee Break

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S12  Electrochemical Technology for solving 21st Century Challenges

**Room: 555B**

*Chaired by: Karel Bouzek and Manuel Andres Rodrigo*

09:30 to 09:50

Przemyslaw Los *(Electrochemistry, Industrial Chemistry Research Institute, Warsaw, Poland)*, Aneta Lukomska

Potential Controlled Electrolysis as a New Industrial Scale Electrochemical Process of Metals Recovery and Manufacturing

09:50 to 10:10

Olivier Lefebvre *(Department of Civil and Environmental Engineering, National University of Singapore, Singapore, Singapore)*, Orlando Garcia-Rodriguez, Yi Yang Lee

Enhancement of hydrogen peroxide generation through a graphene-based gas diffusion cathode and its application for the mineralization of real electronic wastewater by electro-Fenton

10:10 to 10:30

Fengxia Deng *(Department of Civil and Environmental Engineering, National University of Singapore, Singapore, Singapore)*, Hugo Olvera Vargas, Si Rong Geh, Olivier Lefebvre

Exploring a novel tetrapolyphosphate/electro-Fenton system at near-neutral pH with a Ni-Fe-Foam cathode for the treatment of electronics wastewater

10:30 to 10:45

Coffee Break
S13  The Green Potential of Molecular Electrochemistry

Room : 556A

Chaired by: Daniel Little

09:30 to 10:10 Keynote

Kevin Moeller (Chemistry, Washington University in St. Louis, St. Louis, USA)
From Complex Molecules to Controlling Molecular Surfaces: Electrochemistry as a Tool for Synthesis

10:10 to 10:30 Invited

Chengchu Zeng (College of Life Science & Bioengineering, Beijing University of Technology, Beijing, China), Sen Liang, Yangye Jiang
Electrochemically oxidative formation of new chemical bonds mediated by halide ion

10:30 to 10:45
Coffee Break

S15  Physical and Interfacial Electrochemistry: Structural, Spectroscopic, and Theoretical Studies of the Electrochemical Interface

Room : 552B

Chaired by: Dan Bizzotto

09:30 to 10:10 Keynote

Elena Savinova (ECPM, University of Strasbourg, Strasbourg, France)
Understanding Electrocatalysis on Transition Metal Oxides using Near-Ambient Pressure XPS and Soft X-Ray Spectroscopy

10:10 to 10:30

Iwona A. Rutkowska (Faculty of Chemistry, University of Warsaw, Warsaw, Poland), Anna Wadas, Pawel J. Kulesza
Structure and Reactivity of Metal-Oxide-Supported Noble Metal Nanoparticles: Electrooxidation of Simple Organic Molecules

10:30 to 10:45
Coffee Break
S17  Advances in Theory and Modeling of Electrochemical Systems

**Room : 552A**

*Chaired by: Martin Bazant*

09:30 to 10:10 Keynote

**Peter Notten** (*Chemical Engineering and Chemistry, Eindhoven University of Technology, Eindhoven, Netherlands*), Dongjiang Li, Dmitri Danilov, Lu Gao, Yong Yang

Modeling and experimental validation of Li-ion (LFP) degradation

10:10 to 10:30 Invited

**Arnulf Latz** (*Computational Electrochemistry, German Aerospace Center and Helmholtz Institute Ulm, Ulm, Germany*), Fabian Single, Birger Horstmann

Predicting SEI Morphology from Transport and Reaction Kinetics

10:30 to 10:45

Coffee Break

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S18  Education for Electrochemistry and Electrochemical Engineering

**Room : Ballroom C**

*Chaired by: Ignacio Gonzalez, Jorge Ibanez and Mark Orazem*

09:30 to 09:50

**Daniel Scherson** (*Chemistry, Case Western Reserve University, Cleveland, USA*), Nicholas Georgescu

Theoretical Analysis of Microelectrode Arrays under Forced Convection

09:50 to 10:10

**Jonathon Howell** (*R&D, Emergent Instruments Inc., West Lafayette, USA*), Irina Svir, Oleksiy Klymenko, Christian Amatore

Use of KISSA-1D© Electrochemical Reaction Mechanisms Simulation Software for Teaching

10:10 to 10:30

**Hector Abruna** (*Department of Chemistry & Chemical Biology, Cornell University, Ithaca, USA*)

Overpotentials Always Reflect Kinetics: The Need for Rigorous Teaching of Electrochemical Phenomena

10:30 to 10:45

Coffee Break
Thursday 31 August 2017 - Afternoon

S03  Electrochemical Approaches to Clinical Diagnostics and Medical Devices

Room : 550

Chaired by: Fethi Bedioui, Langun Mao and Mark Schoenfisch

14:00 to 14:20 Invited

Anthony Killard (Department of Applied Sciences, University of the West of England, Bristol, United Kingdom)
Electrochemical diagnostic devices based on organic and printed electronic integration

14:20 to 14:40

Wolfgang Schuhmann (Analytical Chemistry - Center for Electrochemical Sciences, Ruhr-Universität Bochum, Bochum, Germany), Daliborka Jambrec, Ugur Kayran, Nergis Cinar, Felipe Conzuelo, Tsvetan Tarnev
Understanding electrified interfaces as a prerequisite for improved DNA hybridization detection

14:40 to 15:00 Invited

Yu Lei (Department of Chemical and Biomolecular Engineering, University of Connecticut, Storrs, USA)
Glucose Monitoring: Enzymatic vs Non-enzymatic

15:00 to 15:20

Ming Gao (Department of Chemical Engineering, University of Florida, Gainesville, USA), Morgan Harding, Rui Kong, Mark Orazem
The Development of a Mathematical Model for Electrochemical Impedance Response of Continuous Glucose Monitor

15:20 to 15:40

Enhua Zhu (Chemistry, Sogang University, Seoul, Korea), Yunhye Kwon, Semi Son, Woonsup Shin
Development of Miniaturized Non-gassing Electroosmotic Pump for Drug Delivery

15:40 to 16:00

Pawel Krysinski (Faculty of Chemistry, University of Warsaw, Warsaw, Poland), Dorota Nieciecka, Aleksandra Joniec, Anna Nieszczoruk, Anna Puszko, Monika Szlezak, Aleksandra Misicka-Kesik, Renata Bilewicz, Aleksandra Szuplewska, Michal Chudy
Surface- and Core-Modified Nanoferrites as Tools for Magnetic Field-Assisted Targeted Drug Delivery. Electrochemical and Spectroscopic Studies

16:00 to 16:20

Silvana Andreescu (Chemistry and Biomolecular Science, Clarkson University, Potsdam, USA), Eduard Dumitrescu, Xiaobo Liu, Kenneth Wallace
Electrochemical Quantification of Neurotransmitters in Live Embryonic Zebrafish

16:20 to 16:40

Coffee Break

16:40 to 17:00 Invited

Eli Hvastkovs (Chemistry, East Carolina University, Greenville, USA), Christian Melander, Eric Anderson, Meghan Blackledge, Alex Robb, Victoria Preston, Sergey Vinogradov
Electrochemical Detection of Biofilm Dispersion

17:00 to 17:20

José Manuel Pingarrón (Analytical Chemistry, Complutense University of Madrid, Madrid, Spain), Susana Campuzano, Rebeca M. Torrente-Rodríguez, Víctor Ruiz-Valdepeñas Montiel, Eva Vargas, Rodrigo Barderas
Reliable and Non-invasive Electroanalytical Biosensing of Cancer Biomarkers for Early Diagnosis
17:20 to 17:40
Carlos Cabrera (Department of Chemistry, University of Puerto Rico, Rio Piedras Campus, San Juan, Puerto Rico), Lisandro Cunci, Diana Coral Diaz, Griselle Hernandez, Vilynnette Santiago, Carlos Gonzalez
Telomerase Activity Sensing from Cancer Cells using Label-Free Electrochemical Impedimetric Microchip

17:40 to 18:00
Stefania Rapino (Chemistry Department Giacomo Ciamician, University of Bologna, Bologna, Italy), Luca Bartolini, Alice Soldà, Giovanni Valenti, Francesco Valle, Pier Giuseppe Pelicci, Cristiano Albonetti, Francesco Zerbetto, Francesco Paolucci
Micro and Nano-structured Materials Shape Living Cells: a Scanning ElectroChemical Microscopy Study

S04  Bioelectrochemistry without Borders
Room : 556B

Chaired by: Lars J.C. Jeuken and Sadagopan Krishnan

14:00 to 14:40 Keynote
Xing-Hua Xia (School of Chemistry and Chemical Engineering, Nanjing, China), Chen Wang, Yue Zhou, Yi Shi
Strategies for accelerating electrochemical reactions

14:40 to 15:00
Corina Andronescu (Analytical Chemistry – Center for Electrochemical Sciences, Ruhr-Universität Bochum, Bochum, Germany), Thomas Quast, Wolfgang Schuhmann
Electrolyte Gated Reduced Graphene Oxide-Based Field-Effect Transistor Sensors

15:00 to 15:20
Alexandra Tibaldi (Chemistry Department, University Paris Diderot, Paris, France), Vincent Noel, Benoit Piro, Giorgio Mattana, Marion Woytasik
Immunoadsorbent Read-Out System Based on Electrolyte-Gated Organic Field-Effect Transistors

15:20 to 15:40
Wlodzimierz Kutner (Department of Physical Chemistry of Supramolecular Complexes, Institute of Physical Chemistry, Polish Academy of Sciences, Warsaw, Poland), Marcin Dabrowski, Piyush Sharma, Zofia Iskierko, Krzysztof Noworyta, Maciej Cieplak, Wojciech Lisowski, Sylvia Oborska, Alexander Kuhn, Agnieszka Wojnarowicz, Marta Sosnowska, Tan-Phat Huynh, Maria Pszona, Pawel Borowicz, Tiziana Benincori, Francis D’Souza
Electrochemical Molecular Imprinting for Selective Determination of Chosen Biomarkers

15:40 to 16:00
Renata Bilewicz (Chemistry, University of Warsaw, Warsaw, Poland), Ewa Nazaruk, Martina Zatloukalova, Ehud Landau
Electrochemical behavior of membrane proteins reconstituted in lipidic liquid crystalline cubic phases

16:00 to 16:20 Invited
Sadagopan Krishnan (Chemistry, Oklahoma State University, Stillwater, USA), Charuksha Walgama, Gayan Premaratne, Rajasekhar Nerimetla, Asantha Dharmaratne, Jinesh Niroula
Bio-electrocatalysis using magnetic nanoparticles and carbon nanostructures

16:20 to 16:40
Coffee Break
16:40 to 17:20 Keynote

**Kevin Plaxco** *(Chemistry and Biochemistry, University of California, Santa Barbara, Santa Barbara, USA)*

Counting Molecules, Dodging Blood Cells: Real-time Molecular Measurements Directly in the Living Body

17:20 to 17:40

**Maryam Salari** *(Department of Chemistry, Boston University, Boston, USA)*, Allison Dennis, Catherine Klapperich, James Galagan, Mark W. Grinstaff

Towards Continuous Self-empowered Glucose Detection

17:40 to 18:00

**Gerd-Uwe Flechsig** *(Dept. of Chemistry, University at Albany - SUNY, Albany, USA)*, Sarasi Galagedera, Jörg Peter

Effect of Heavy Water on Redox-switching of DNA Self-Assembled Monolayers observed by EQCM and Cyclic Voltammetry

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**S05 Novel Materials and Devices for Energy Storage: Batteries for Tomorrow's World**

*Room: Ballroom A*

*Chaired by: Mickdy Milien and Bharathy Subramanian Parimalam*

14:00 to 14:20

**Zhangquan Peng** *(Changchun Institute of Applied Chemistry, Chinese Academy of Science, Changchun, China)*, Xinmin Zhang, Limin Guo, Linfeng Gan, Yantao Zhang, Jin Wang, Lee Johnson, Peter Bruce

Chemical Reactivity of Reduced Oxygen Species in Alkali-Oxygen Batteries

14:20 to 14:40

**Caroline Gaya** *(More Electrical Aircraft, IRT Saint Exupery, Toulouse, France)*, Amangeldi Torayev, Yinghui Yin, Christine Surcin, Dominique Larcher, Benoit Fleutot, Mathieu Morcrette, Alejandro A. Franco

Impacts of the Electrode Fabrication Process on the Performances of Lithium-Oxygen Batteries

14:40 to 15:00

**Satoshi Otsuka** *(Materials Science and Technology, Nagaoka University of Technology, Nagaoka, Japan)*, Koutaro Konakawa, Yoshitsugu Sone, Minoru Umeda

Reversible Capacity Deterioration of 18650-type Lithium-ion Secondary Cell Investigated by dQ/dV-V Curve at 5-25 degree C

15:00 to 15:20

**Ruoheng Sun** *(Institute of Energy and Climate Research (IEK-9), Forschungszentrum Juelich GmbH, Juelich, Germany)*, Peter Jakes, Svitlana Eurch, Hans Kungl, Rüdiger-A. Eichel

Quantification on Traces of Li$_2$MnO$_3$ in Li-rich Manganese Spinel by Electron Paramagnetic Resonance (EPR) and its Consequence on the Stoichiometry of Li$_{1+x}$Mn$_{2-x}$O$_{4-d}$

15:20 to 15:40

**Moran Balaish** *(GTEP and Materials Science and Engineering, Technion- Israel Institute of Technology, Haifa, Israel)*, Yair Ein-Eli

Advanced Li-O$_2$ Battery Utilizing Free-Standing Meso-pores Carbon Nano-tubes (CNTs) Tissues-Perfluorocarbons (PFCs) Hybrid Air-electrodes

15:40 to 16:00

**Peng Bai** *(Chemical Engineering, MIT, Cambridge, USA)*, Miao Wang, Liang Su, Akihiro Kushima, Ju Li, Fikile Brushett, Martin Bazant

Growth Mechanisms and Safety Boundaries of Lithium Metal Anodes in Liquid Electrolytes
16:00 to 16:20

**Chia-Chin Chen** (*Physical Chemistry of Solids, Max Planck Institute for Solid State Research, Stuttgart, Germany*), Lijun Fu, Joachim Maier

Job-Sharing Storage in Composite Electrodes

16:20 to 16:40

Coffee Break

16:40 to 17:00

**Tomohiro Otani** (*Department of Advanced Science and Engineering, Waseda University, Shinjuku, Japan*), Yuta Masuda, Yasuhiro Fukunaka, Takayuki Homma

Analysis on Growth Process of Irregular Shaped Zn Electrodeposits and Roles of Metal Additives

17:00 to 17:20

**Birger Horstmann** (*Helmholtz Institute Ulm, German Aerospace Center, Ulm, Germany*), Tobias Schmitt, Max Schammer, Simon Clark, Arnulf Latz

Zinc Batteries with Novel Electrolytes

17:20 to 17:40

**Helmut Baltruschat** (*Electrochemistry, Bonn University, Bonn, Germany*), Abdelaziz Abd-El-Latif, Philipp Hegemann, Da Xing, Lingxing Zan, Martina Hegemann

Insertion / De-insertion of Magnesium into the Sb, Bi and Sn Modified Au Electrode

17:40 to 18:00

**Norbert Wagner** (*German Aerospace Center (DLR), Institute for Engineering Thermodynamics, Stuttgart, Germany*), Brigitta Sievert, Joachim Häcker, Kaspar Andreas Friedrich

Magnesium Sulfur Batteries

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**Room : 555A**

**S05  Novel Materials and Devices for Energy Storage:**

**Batteries for Tomorrow's World**

14:20 to 14:40

**Cyril Marino** (*Electrochemistry Laboratory, Paul Scherrer Institut, Villigen, Switzerland*), Mario El Kazzi, Erik J. Berg, Minglong He, Claire Villevieille

Interface and safety properties of phosphorus-based negative electrodes for Li-ion batteries

14:40 to 15:00

**Nina Laszczynski** (*Department of Chemistry, University of Rhode Island, Kingston, USA*), Bo Zhang, Brett Lucht

Understanding Electrolyte Decomposition of High Ni-NCM at Elevated Operating Voltage

15:00 to 15:20

**Seh-Yoon Lim** (*School of Advanced Materials Science and Engineering, Sungkyunkwan University - Suwon Campus, Suwon, Korea*)

Silicon Nanowire Cocooned in Graphene like Carbon with One-Dimensional Si Anode for Lithium-ion Battery

15:20 to 15:40

**Gaind P. Pandey** (*Department of Chemistry, Xavier University of Louisiana, New Orleans, USA*), Jun Li

A Highly Stable Solid-State Battery-Supercapacitor Hybrid Device based on Three-Dimensional Nanostructured Array Electrodes and a Gel Polymer Electrolyte
15:40 to 16:00
Tomás Clancy (*Tyndall National Institute, University College Cork, Cork, Ireland*), Louise McGrath, James Rohan
High power thin film LiCoO₂ for wireless sensor applications

16:20 to 16:40
Coffee Break

16:40 to 17:00
Cheng Yu Wu (*Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan*), Jenq-Gong Duh
A New Ionic Network for Aqueous Polymer Binder for Enhancing the Electrochemical Performance of Li-Ion Batteries

17:00 to 17:20
Eungje Lee (*Chemical Science and Engineering Division, Argonne National Laboratory, Lemont, USA*), Joong Sun Park, Hacksung Kim, Qianqian Li, Fernando Castro, Jinsong Wu, Vinayak Dravid, Soo Kim, Christopher Wolverton, Pengfei Yan, Chongmin Wang, Roy Benedek, Jason Croy, Michael Thackeray
Coherently Integrated Layered-Spinel Cathodes for Lithium-Ion Batteries

17:20 to 17:40
Rakel Wreland Lindström (*Chemical Engineering, KTH Royal Institute of Technology, Stockholm, Sweden*), Abdilbari S. Mussa, Matilda Klett, Göran Lindbergh
Effect of stack pressure on the performance and ageing of lithium-ion batteries

17:40 to 18:00
Hsisheng Teng (*Chemical Engineering, National Cheng Kung University, Tainan, Taiwan*), Yong-Yi Lin, Yen-Ming Chen
Gel Polymer-Ceramic Composites with an Asymmetric Configuration as Functional Electrolyte for Full-Cell Lithium Ion Batteries

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**S06  Fuel Cells and Electrolyzers**

**Room : Ballroom B**

*Chaired by: Justus Masa and Ioannis Spanos*

14:00 to 14:20
Zhenhua Zeng (*School of Chemical Engineering, Purdue University, West Lafayette, USA*), Jeff Greeley
Stabilization of Ultrathin (Hydroxy)oxide Films on Transition Metal Substrates for Electrocatalysis

14:20 to 14:40
Hongzhou Yang (*Dioxide Materials, Boca Raton, USA*), Zengcai Liu, Syed Sajjad, Richard I. Masel
Alkaline Water Electrolyzers with Base Metal Catalysts Showing 1 A/cm² At 1.75 V

14:40 to 15:00
Gerda Seiffarth (*Technical Chemistry, Martin Luther University Halle-Wittenberg, Halle, Germany*), Michael Bron
Incorporation of active impurities in nickel oxide leading to an improved activity for oxygen evolution reaction
15:00 to 15:20

Ioannis Spanos (Heterogeneous Reactions, Max Planck Institute for Chemical Energy Conversion, Muelheim an der Ruhr, Germany), Anna K. Mechler, Alexander A. Auer, Robert Schlögl

Electrochemical Flow Cell/ICP-OES Setup for Investigations of the Oxygen Evolution Reaction

15:20 to 15:40

Claudie Roy (Physics, Technical University of Denmark, Kgs. Lyngby, Denmark), Bela Sebok, Elisabetta Maria Fiordaliso, Anders Bodin, Christian Damsgaard, Jakob Kibsgaard, Ifan E.L. Stephens, Ib Chorkendorff

Mass-Selected NiFe(OOH) Nanoparticles for Oxygen Evolution

15:40 to 16:00

Stefan Barwe (Analytical Chemistry - Center for Electrochemical Sciences, Ruhr-Universität Bochum, Bochum, Germany), Justus Masa, Corina Andronescu, Bastian Mei, Wolfgang Schuhmann, Edgar Ventosa

Overcoming the instability of nanoparticle based catalyst films in alkaline electrolyzers by self-assembling and self-healing films

16:00 to 16:20

Fabio Dionigi (Institut fuer Chemie, Technische Universitaet Berlin, Berlin, Germany), Thomas Merzendorf, Hannes Sarodnik, Arno Bergmann, Jakub Drnec, Peter Strasser

In Operando X-ray Based Structural Investigation of NiFe and CoFe Layered Double Hydroxide during the Oxygen Evolution Reaction

16:20 to 16:40

Coffee Break

16:40 to 17:00

Soeren Dresp (Department of Chemistry, Technical University Berlin, Berlin, Germany), Fabio Dionigi, Peter Strasser

Selective Oxygen Evolution Reaction in Seawater Electrolysers by using NiFe-LDH as Highly Efficient Catalyst Material

17:00 to 17:20

Justus Masa (Analytical Chemistry & Center for Electrochemical Sciences, Ruhr-University Bochum, Bochum, Germany), Ilya Sinev, Beatriz Roldan Cuenya, Wolfgang Schuhmann

Metal-metalloid alloys in electrocatalysis: Nature of the catalysts under reaction conditions and promotional role of the metalloid elements

17:20 to 17:40

Michael Busch (Department of Physics, Chalmers University of Technology, Gothenburg, Sweden), Baochang Wang, Anders Hellman, Henrik Grönbeck

Tuning Electrocatalysts through Doping

17:40 to 18:00

Tom Breugelmans (Faculty of Applied Engineering, University of Antwerp, Wilrijk, Belgium), Bart Geboes, Annick Hubin

Evaluating several activity enhancement strategies in Pt based nanoparticle catalysts for the oxygen reduction reaction in fuel cells
S06  Fuel Cells and Electrolyzers

Room: 557

Chaired by: Plamen Atanassov and Yuta Nabae

14:00 to 14:20 Invited

Akimitsu Ishihara (Institute of Advanced Sciences, Yokohama National University, Yokohama, Japan), Satoshi Tominaka, Takaaki Nagai, Yoshiyuki Kuroda, Koichi Matsuzawa, Teko Napporn, Shigenori Mitsushima

Development of Group 4 and 5 Oxide-Based Cathodes for PEFCs

14:20 to 14:40

Mitsuharu Chisaka (Department of Sustainable Energy, Hirosaki University, Hirosaki, Japan), Yusuke Yamamoto, Yuhei Hattori, Noriaki Itagaki

A Carbon-Support-free Titanium Oxynitride Catalyst with Improved Activity for Oxygen Reduction Reaction in Acidic Media

14:40 to 15:00

Carlota Dominguez (School of Chemistry, Trinity College Dublin, Dublin, Ireland), Serban Stamatin, James A. Behan, Md. Khairul Hoque, Joana M. Vasconcelos, Tatiana S. Perova, Paula E. Colavita

Graphitic nitrogen-doped electrodes as model catalysts for oxygen reduction reaction

15:00 to 15:20

Tao Wang (Chemistry Department, Xiamen University, Xiamen, China), Xiao-Dong Yang, Zhi-You Zhou, Shi-Gang Sun

Active Site of Nitrogen Doped Carbon Graphene Identified by Selectively Chemical Modification

15:20 to 15:40

Plamen Atanassov (Chemical & Biological Engineering, University of New Mexico, Albuquerque, USA), Ivana Matanovic, Kateryna Artushkova

Structure-to-Property Relationships in PGM-free Catalysts: Integrating DFT and Spectroscopic Approaches

15:40 to 16:00

Zhi-You Zhou (College of Chemistry and Chemical Engineering, Xiamen University, Xiamen, China), Yu-Cheng Wang, Shi-Gang Sun

Insight into the instability of pyrolyzed Fe/N/C catalyst for oxygen reduction reaction

16:00 to 16:20

Andrew Herring (Chemical and Biological Engineering, Colorado School of Mines, Golden, USA), Andrew Motz, Mei-Chen Kuo, Tara Pandey

A Practical Fuel Cell Membrane based on an Heteropoly Acid Functionalized Perfluorinated Polymer for Hotter and Drier Operation

16:20 to 16:40

Coffee Break

16:40 to 17:00

Sang Hoon Joo (School of Energy and Chemical Engineering, Ulsan National Institute of Science and Technology (UNIST), Ulsan, Korea), Young Jin Sa, Kim Jae Hyung, Woo Jinwoo

Synthetic Strategies toward M-N/C Electro catalysts with Abundant Active Sites for Efficient Oxygen Reduction Reaction

17:00 to 17:20

Jin-Song Hu (CAS Key Lab of Molecular Nanostructure and Nanotechnology, Institute of Chemistry, Chinese Academy of Sciences, Beijing, China)

Designing Non-Precious Metal Nanocatalysts for Fuel Cells
17:20 to 17:40

Andrew Gewirth (Chemistry, University of Illinois, Urbana, USA), Jason Varnell, Angela Diascro
Carbon-encapsulated iron nanoparticles as active species in non-precious metal oxygen reduction catalysts

17:40 to 18:00

Yuta Nabae (Department of Materials Science and Engineering, Tokyo Institute of Technology, Tokyo, Japan), Azhagumuthu Muthukrishnan
A Novel RRDE Theory to Correct Quasi-Four Electron Oxygen Reduction over Fe/N/C Cathode Catalysts

S06 Fuel Cells and Electrolyzers
Room: 554

Chaired by: Jakub Malis and Stylianos G. Neophytides

14:00 to 14:20

Dilip Ramani (Mechatronic Systems Engineering, SFU Fuel Cell Research Laboratory (FCReL), Surrey, Canada), Yadivender Singh, Robin White, Marina Najm, Alex Boswell, Francesco Orfino, Monica Dutta, Erik Kjeang
Novel insights into mechanical degradation of reinforced fuel cell membranes using 3D in situ structural characterization

14:20 to 14:40

Tatyana Reshetenko (Hawaii Natural Energy Institute, University of Hawaii, Honolulu, USA), Vincent Laue, Ulrike Krewer, Kateryna Artyushkova
Effect of Reduced Pt Loading on Spatial PEMFC Performance under SO₂ Poisoning

14:40 to 15:00

Jakub Malis (Department of Inorganic Technology, University of Chemistry and Technology Prague, Prague, Czech Republic), Martin Paidar, Karel Bouzek
Design and comparison different power management systems for mobile APU based on PEM fuel cell

15:00 to 15:20

Stylianos G. Neophytides (Chemical Engineering Department, FORTH-ICEHT, University of Patras, Patras, Greece), Panagiotis Giotakos
Relaxation Impedance and Identification of Oxygen Reduction Reaction Mechanism in HT-PEMFCs by Simulating AC Impedance Spectra

15:20 to 15:40

Min Lu (Institute of Advanced Materials, Nanjing Tech University, Nanjing, China), Sam Fong Yau Li, Xiaoji Xie, How Yong Ng, Wei Huang
Electrode optimization and practical application of microbial fuel cells

15:40 to 16:00

Victor Costa Bassetto (EPFL SB ISIC LEPA, Ecole Polytechnique Fédérale de Lausanne, Sion, Switzerland), Hubert H. Girault, Andreas Lesch
Inkjet printing of catalyst gradients for bi-functional catalyst layers for the ORR and OER

16:20 to 16:40

Coffee Break

16:40 to 17:00

Dilip Krishnamurthy (Mechanical Engineering, Carnegie Mellon University, Pittsburgh, USA), Venkatasubramanian Viswanathan
Structure-Activity Descriptors for Transition Metal Sulfides Reactivity for Oxygen Reduction Reaction
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<tr>
<th>Time</th>
<th>Speaker and Affiliation</th>
<th>Presentation Title</th>
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<tbody>
<tr>
<td>17:00 to 17:20</td>
<td>Albert K. Engstfeld (Department of Physics, Technical University of Denmark, Lyngby, Denmark), Erlend Bertheussen, Thomas Vagn Hogg, Thomas Maagaard, Sebastian Horch, Ifan E.L. Stephens, Ib Chorkendorff</td>
<td>Structure sensitivity of Cu electrodes in an alkaline environment?</td>
</tr>
<tr>
<td>17:20 to 17:40</td>
<td>Ruud Kortlever (Joint Center for Artificial Photosynthesis, California Institute of Technology, Pasadena, USA), Hao Xie, John M. Eiler, Jonas C. Peters, Theodor Agapie</td>
<td>Isotope Effects on the Electrochemical Reduction of CO₂ on a Polycrystalline Copper Electrode</td>
</tr>
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<td>17:40 to 18:00</td>
<td>Laura Gilson (Mechanical Engineering, Massachusetts Institute of Technology, Cambridge, USA), Martin Bazant, Cullen Buie</td>
<td>Effects of Geometry on Cyclable Membraneless Flow Battery Design</td>
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**S08  Dealloying: Fundamentals, Application, and Control**

**Room: 551A**

*Chaired by: Roger Newman and Jörg Weissmueller*

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<th>Time</th>
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<tr>
<td>14:00 to 14:40</td>
<td>Jörg Weissmueller (IWW Inst für Werkstoffphysik und Werkstofftechnologie, Technische Universität Hamburg-Harburg, Hamburg, Germany)</td>
<td>Microstructure Evolution during and after Dealloying - Highlighting the Link to Materials Behavior</td>
</tr>
<tr>
<td>14:40 to 15:00</td>
<td>Tony Spassov (Faculty of Chemistry and Pharmacy, Sofia University, Sofia, Bulgaria), Luben Mihaylov, Akihisa Inoue</td>
<td>Selective dissolution of metallic glasses and nanocrystalline alloys</td>
</tr>
<tr>
<td>15:00 to 15:20</td>
<td>Fouad Maroun (Laboratoire de Physique de la Matiere Condensee, CNRS, Ecole Polytechnique, Palaiseau, France), Alexis Damian, Florian Lecadre, Philippe Allongue</td>
<td>In Situ STM Studies of Electrochemical Alloying/Dealloying of a Single Atomic Layer</td>
</tr>
<tr>
<td>15:20 to 15:40</td>
<td>Frank Uwe Renner (Institute for Materials Research and IMEC, Hasselt University, Diepenbeek, Belgium), Patricia Losada-Pérez, Shova Neupane</td>
<td>Thiols and Crystallographic Cracking of Au Nanomaterials</td>
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<tr>
<td>15:40 to 16:00</td>
<td>Hoydoo You (Materials Science Division, Argonne National Laboratory, Argonne, USA), Yihua Liu, Andrew Ulvestad, Wonsuk Cha, Michael Pierce, Vladimir Komanicky</td>
<td>Nanoscale Imaging and Dynamics of Dissolution and Dealloying using Coherent X-rays</td>
</tr>
<tr>
<td>16:00 to 16:20</td>
<td>Mareike Haensch (Department of Chemistry, Carl von Ossietzky University of Oldenburg, Oldenburg, Germany), Julian Behnken, Luis Balboa, Gunther Wittstock</td>
<td>Surface oxides at nanoporous gold investigated by surface interrogation mode of scanning electrochemical microscopy</td>
</tr>
<tr>
<td>16:20 to 16:40</td>
<td>Coffee Break</td>
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</tbody>
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16:40 to 17:00

Innocent Achari (Chemistry, Binghamton University, SUNY, Binghamton, USA), Jiaxin Xia, Stephen Ambrozik
Development of Active Nanoporous Catalysts based on De-alloyed of Cu$_x$Au$_{(1-x)}$ Alloys

17:00 to 17:20

Matthias Graf (Materials Physics and Technology, Technische Universität Hamburg, Hamburg, Germany), Mareike Haensch, Gunther Wittstock, Jörg Weissmüller
Dealloying Routes and the Role of Adsorbates on the Structure of Nanoporous Gold

17:20 to 17:40

Shan Shi (Hybrid Materials Systems, Materials Mechanics, Institute of Materials Research, Helmholtz-Zentrum Geesthacht, Geesthacht, Germany), Jürgen Markmann, Jörg Weissmüller
Uniform hierarchical nanoporous Pd by dealloying - synthesis and hydrogen driven actuation performance

S11 Synthesis and Applications of Electrochemically Active Materials

Room: 553

Chaired by: Hayato Takada and Mireille Turmine

14:00 to 14:20

Dorottya Hursán (Department of Physical Chemistry and Materials Science, University of Szeged, Szeged, Hungary), Attila Kormányos, Róbert Ondok, Tamás Kiss, Csaba Janáky
Solar fuel generation using organic semiconducting polymer photoelectrodes

14:20 to 14:40

Yi-June Huang (Department of Chemical Engineering, National Taiwan University, Taipei, Taiwan)
Pencil-Urchin-Like CoSe$_2$ Catalytic Film as the Electrodes for Dye-Sensitized Solar Cell and Hydrogen Evolution Reaction

14:40 to 15:00

Wei-Ting Chen (Institute of Polymer Science and Engineering, National Taiwan University, Taipei, Taiwan)
Tube-Array of S-P3MEET/PEDOT-MeOH as Electro-catalytic Counter Electrode for Dye-Sensitized Solar Cells

15:00 to 15:20

Hayato Takada (Industrial Chemistry, Tokyo University of Science, Tokyo, Japan), Morio Nagata, Tuyoshi Ochiai
Color changeable gold luster polymer apply for energy storage smart window

15:20 to 15:40

Fábio Simões (Institute of Marine Sciences, Federal University of São Paulo, Santos, Brazil), Luis Antonio Polaci, Vinícius Soares
Synthesis and Characterization of Modified Electrodes Based on Poly(o-ethoxyaniline) and Functionalized Carbon Nanotubes Composites

15:40 to 16:00

Yahya Ismail (Chemistry Division, Department of Basic Science, A’Sharqiyah University, Ibra, Oman)
Polymeric Sensing Electrochemical Motors. One Device with Two Tools Working Simultaneously: Mimicking Proprioception

16:00 to 16:20

Mireille Turmine (LISE UMR-CNRS 8235, UPMC - University Paris 6, Paris, France), Larbi Oularbi, Mamia El Rhazi
Electrochemical detection of trace heavy metals using bismuth particles/polypyrrole film/ionic liquid modified carbon paste electrode

16:20 to 16:40 Coffee Break
16:40 to 17:00

**Minghui Cao** *(Electronic Materials Research Laboratory, Xi’an Jiaotong University, Xi’an, China)*, Le Li

Optimize the conductivity of PEDOT:PSS flexible transparent electrode with graphene

17:00 to 17:20

**Danny Chhin** *(NanoQAM, Department of Chemistry, University of Quebec at Montreal, Montreal, Canada)*

Performance of capacity enhanced conducting polymer based cathodes for lithium ion battery

17:20 to 17:40

**Andrea Auer** *(Physical Chemistry, University of Innsbruck, Innsbruck, Austria)*, Engelbert Portenkirchner, Thomas Götsch, Carlos Valero-Vidal, Simon Penner, Julia Kunze-Liebhaeuser

Preferentially Oriented TiO2 Nanotubes as Anode Material for Li-Ion Batteries: Insight into Li-Ion Storage and Lithiation Kinetics

17:40 to 18:00

**Lathe Jones** *(School of Science, RMIT University, Melbourne, Australia)*, Baiyu Ren, Suresh Bhargava, Daniel Oppedisano, Miao Chen, Frank Antolasic, Ahmad Kandjani

Electrochemical and Physical Properties of Prussian Blue (PB) Composites: Stable Electrocatalytic Materials

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**S11 Synthesis and Applications of Electrochemically Active Materials**

**Room : 551B**

*Chaired by: Agustin Bolzan and Mariangela Longhi*

14:00 to 14:20 Invited

**Laurent Ruhlmann** *(Chemistry Department, Université de Strasbourg, Strasbourg, France)*, Antoine Bonnefont, Zhaohui Hum, Moussa Boudiaf, Dejin Zang, Yanping Qian

Photoelectrochemical properties of original hybrid organic – inorganic porphyrin – polyoxometalate thin film: from flat to mesoporous ITO electrodes

14:20 to 14:40

**Bing Yan** *(Chemistry, Massachusetts Institute of Technology, Cambridge, USA)*, Yogesh Surendranath

Oxygen Reduction Catalyst Ni₃S₂ Oxidative Surface Restructuring and Application in Membrane-free Fuel Cells

14:40 to 15:00

**Agustin Bolzan** *(Electrochemistry, Instituto Invest. Fisicoquimicas Teoricas y Aplicadas, La Plata, Argentina)*, Leticia Azpeitia, Claudio Gervasi

Initial Stages of Sn Electrodeposition on Glassy Carbon. Effects of Temperature and Thiourea Addition

15:00 to 15:20

**Zhen He** *(Chemistry and Chemical Engineering, Central South University, Changsha, China)*, Shan Han, Rui Wang

One-Step Electrodeposition of Nanocrystalline ZnₓCo₃₋ₓO₄ Films with High Activity and Stability for Electrocatalytic Oxygen Evolution

15:20 to 15:40

**Wei-Nien Su** *(Graduate Institute of Applied Science and Technology, National Taiwan University of Science and Technology, Taipei, Taiwan)*, Andebet Gedamu Tamirat, Amare Aregahegn Dubale, Hung-Ming Chen, Bing Joe Hwang

Achieving low turn-on voltage of hematite photoanode through sequential surface treatment for photoelectrochemical water splitting
15:40 to 16:00

**Javier Recio** *(Inorganic Chemistry, Pontifical Catholic University of Chile, Chile)*, Ricardo Venegas, Jose H. Zagal, Karina Muñoz, César Zúñiga

Metal precursor influence in the catalytic activity of pyrolyzed non precious metal catalyst

16:00 to 16:20 Invited

**Elisabeth Lojou** *(Bioenergetic and Protein Engineering, Aix Marseille Univ - CNRS, Marseille, France)*, Ievgen Mazurenko, Karen Monsalve, Cristina Gutierrez-Sanchez, Pascale Infossi, Marie Thérèse Giudici-Orticoni, Nicolas Mano, Oliver Lenz

Enzymatic catalysis for H₂/O₂ biofuel cells: from self-assembled-monolayers to mesoporous carbon materials

16:20 to 16:40

Coffee Break

16:40 to 17:00 Invited

**Sahr Khan** *(Chemistry, Massachusetts Institute of Technology, Cambridge, USA)*, Yogesh Surendranath

Poison-Tolerant Catalyst for Electrocatalytic Production of Formate from CO₂

17:00 to 17:20

**Munetaka Oyama** *(Department of Material Chemistry, Kyoto University, Kyoto, Japan)*, Yuki Umeya, Toshiyuki Kawashimo

Modification of Gold Nanoparticles on Nickel Electrodes by a Galvanic Replacement Reaction

17:20 to 17:40

**Mariangela Longhi** *(Dipartimento di Chimica, Università degli Studi di Milano, Milano, Italy)*

Catalyst aging. Effects on the morphology and electrocatalytical activity of nitrogen-doped carbon nanotubes

17:40 to 18:00

**Qing Li** *(School of Materials Science and Engineering, Huazhong University of Science and Technology, Wuhan, China)*, Tanyuan Wang

Cu Nanoparticle-Based Catalysts for Selective Electrochemical CO₂ Reduction

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**S12  Electrochemical Technology for solving 21st Century Challenges**

*Room : 555B*

Chaired by: Gerardine G. Botte and Joaquin Rodriguez-Lopez

14:00 to 14:20

**Sergi Garcia-Segura** *(Institute of Physical and Theoretical Chemistry, Bonn Universität, Bonn, Germany)*, Ehab Mostafa, Helmut Baltruschat

Are N-volatile Species Released During Mineralization of Organic Pollutants by Hydroxyl Radical on Boron-Doped Diamond Anodes?

14:20 to 14:40

**Orlando Garcia Rodriguez** *(Civil and Environmental Engineering, National University of Singapore, Singapore, Singapore)*, Chern Yi Toh, Olivier Lefebvre

Wastewater treatment using nano-structured activated carbon and its *in-situ* electrochemical regeneration in a novel reactor configuration

14:40 to 15:00

**Karine Groenen Serrano** *(Laboratoire de Génie Chimique, Université Paul Sabatier, Toulouse, France)*, Yandi Lan, Clemence Coetsier, Christel Causerand

Experimental study and modelling of electrochemical oxidation of pharmaceuticals using a boron-doped diamond anode
15:00 to 15:20
Carlos Alberto Martínez-Huitle (Institute of Chemistry, Federal University of Rio Grande do Norte, Natal, Brazil), Alexsandro J. dos Santos, Amison R. Lopes da Silva, Djalma Ribeiro da Silva
Effect of water hardness during the BDD-anodic oxidation of wastewater containing with an azo dye

15:20 to 15:40
Hugo Olvera Vargas (Civil and Environmental Engineering, National University of Singapore, Singapore, Singapore), Xiamei Zheng, Olivier Lefebvre
Electrochemical Peroxidation – Electro-Fenton Integrated Process for Sludge Treatment: a Real Case Study

15:40 to 16:00
Manuel Andres Rodrigo (Chemical Engineering, Universidad de Castilla-la-Mancha, Ciudad Real, Spain), Martin Muñoz, Cristina Sáez, Pablo Cañizares
Remediation of soils polluted with organochlorinated compounds using surfactant-aided soil washing and electrochemical oxidation

16:00 to 16:20
Roseline Esmilaire (Institut Européen des Membranes, Universite de Toulouse, CNRS, INPT, UPSUMR 5635 (CNRS-ENSCM-, Montpellier, France), Clemente Coetsier, Jean-Christophe Rouch, Stéphane Raffy, Marc Cretin, Christel Casserand, Clement Trellu
Anodic Oxidation of Organic Compounds Using TiO₂ Membrane as Porous Anode Material

16:20 to 16:40
Coffee Break

16:40 to 17:00
Ana S. Fajardo (Department of Chemical Engineering, University of Coimbra, Coimbra, Portugal), Helga F. Seca, Rui C. Martins, Vanessa N. Corceiro, Inês F. Freitas, João P. Vieira, Maria E. Quinta-Ferreira, Rosa M. Quinta-Ferreira
Comparison between the effect of Ti/RuO₂ and Ti/IrO₂ anodes on the purification of phenolic wastewaters

17:00 to 17:20
Mio Hayashi (Photocatalyst Group, Kanagawa Academy of Science and Technology, Kawasaki, Japan), Tsuyoshi Ochiai, Shoko Tago, Hiromasa Tawarayama, Toshifumi Hosoya, Akira Fujishima
Influence of Dissolved Ions on the Water Purification Performance of TiO₂-Impregnated Porous Silica Tubes

17:20 to 17:40
Abdoulaye Thiam (Programa Institucional de Fomento a la I+D+i, Universidad Tecnológica Metropolitana, Santiago, Chile), Ricardo Salazar, Ignacio Sirés, Birame Boye, Enric Brillas
Degradation of carbofuran in aqueous solutions by electrochemical advanced oxidation processes: Study of parameters and by-products

17:40 to 18:00
Xiaotang Xu (Urban Construction and Environmental Engineering, Chongqing University, Chongqing, China)
Synergetic Effects of Electrochemical Precipitation and Cathodic Oxidation on Removal of Ammonia in Wastewater
Program of the 68th Annual Meeting of the International Society of Electrochemistry

S13 The Green Potential of Molecular Electrochemistry

Room: 556A

Chaired by: Ismael Diez-Pérez and Francesco Paolucci

14:00 to 14:40 Keynote - Jaroslav Heyrovsky Prize for Molecular Electrochemistry

Ismael Diez-Pérez (Physical Chemistry Department, Barcelona, Spain)

Probing Concepts in Single-Molecule Wires: Diodes, Electromechanics, FETs, Spinterface, Photo-switches and... Single-molecule Chemistry?

14:40 to 15:00 Invited

Kazuhiko Chiba (Applied Biological Science, Tokyo University of Agriculture and Technology, Tokyo, Japan), Takao Shoji, Yohei Okada

Synthesis of Azanucleosides by Anodic Oxidation in a Lithium Perchlorate-Nitroalkane Electrolyte Solution

15:00 to 15:20

Benjamin Schille (Institute of Chemistry, Rostock University, Rostock, Germany), Niels Ole Giltzau, Robert Francke

Novel Polyelectrolyte Mediators for Indirect Electroorganic Synthesis

15:20 to 15:40 Invited

Patrizia Romana Mussini (Dipartimento di Chimica, Università degli Studi di Milano, Milano, Italy), Serena Arnaboldi, Tiziana Benincori, Silvia Cauteruccio, Emanuela Licandro, Mariangela Longhi, Rocco Martinazzo, Simona Rizzo, Francesco Sannicolo

“Inherently Chiral” Electrode Surfaces and Media: Alternative Approaches to Enantioselective Electrochemistry

15:40 to 16:00

Yuvraj Birdja (Catalysis and Surface Chemistry, Leiden Institute of Chemistry, Leiden, Netherlands), Rafaël E. Vos, Olha Nahorna, Marc Koper

Optimizing Electrosynthesis of Formic Acid from Carbon Dioxide by Immobilized Indium-Protoporphyrins

16:00 to 16:20

Chiu Lam (Chemistry and Biochemistry, University of California, Santa Barbara, Santa Barbara, USA), R. Daniel Little

Photoredox Catalyst Based on an Arylimidazole Oxidative Electrochemical Mediator

16:20 to 16:40

Coffee Break

16:40 to 17:20 Keynote

Dennis Peters (Chemistry, Indiana University, Bloomington, USA)

Electrochemical Reduction of Atrazine at Carbon and Silver Cathodes

17:20 to 17:40 Invited

Florence Geneste (Institut des Sciences Chimiques de Rennes, University of Rennes 1, Rennes, France), Wenyan He, Imen Saidi, Melika Zaghoudi, Jean-Marie Fontmorin, Isabelle Sourel, Didier Floner, Florence Fourcade, Abdeltif Amrane

Indirect Electrocatalysis on Catalyst-Modified Electrodes as Pretreatment to Enhance Biodegradability

17:40 to 18:00

Christoph Guetz (Institute of Organic Chemistry, Johannes Gutenberg University Mainz, Mainz, Germany), Siegfried Waldvogel

Electrochemistry in Continuous Flow - Electroorganic Process Development on Lab and Industrial Scale
18:00 to 18:20 Invited

Timo Broese (Institut of Chemistry, University of Rostock, Rostock, Germany), Robert Francke
Electrosynthesis Using a Recyclable Mediator-Electrolyte System Based on the I(I)/I(III) Redox Couple

S15 Physical and Interfacial Electrochemistry: Structural, Spectroscopic, and Theoretical Studies of the Electrochemical Interface

Room: 552B

Chaired by: Vito Di Noto and Juan M. Feliu

14:00 to 14:20

Wen-Bin Cai (Department of Chemistry, Fudan University, Shanghai, China), Han Wang, Bei Jiang, Ting-Ting Zhao, Kun Jiang

In Situ Infrared Spectroscopic Study on Electrocatalysis of Ethylene Glycol Oxidation on Bare and Bi-Modified Pd Concave Nanocubes in Alkaline Solution

14:20 to 14:40 Invited

Vito Di Noto (Dept. of Industrial Engineering, Chemistry for Technology, University of Padova, Padova, Italy)
Hierarchical “Core-Shell” Electrocatalysts for the Oxygen Reduction Reaction (ORR) based on Graphene “Cores” and Metal Alloy Carbon Nitride “Shells”

14:40 to 15:00

Adrian Fortuin (HySA/Catalysis, Catalysis Institute, Dept. Chemical Engineering, University of Cape Town, Cape Town, South Africa), Emanuela Carleschi, Bryan Doyle, Dave G. Billing, Rudolph Erasmus, Adam Shnier, Daniel Wamwangi, Cobus Kriek, Günther Scherer, Pieter Levecque

Model Electrocatalyst to Study the Anchoring of Pt on Carbon for PEFCs

15:00 to 15:20

Zengwei Zhu (College of Mechanical and Electrical Engineering, Nanjing University of Aeronautics and Astronautics, Nanjing, China), Chunjian Shen

Morphological Structure of Cathode for Enhancing Electrodeposit Adhesion Strength

15:20 to 15:40

Ulrich Biedermann (Interface Chemistry and Surface Engineering, Max-Planck-Institut fuer Eisenforschung GmbH, Duesseldorf, Germany), Simantini Nayak, Andreas Erbe

Electrochemical Oxygen Reduction on Zinc Oxide: A Combined DFT and ATR-IR Study of the Detailed Mechanism

15:40 to 16:00

Philippe Hapiot (Institut des Sciences Chimiques de Rennes, CNRS - Université de Rennes 1, Rennes, France), Yara Aceta, Jin-Chao Dong, Jian-Feng Li, Yann R. Leroux, Corinne Lagrost

Production of Reactive Oxygen Species during ORR. SECM and Spectroscopic Investigations

16:00 to 16:20

Vladimir Tripkovic (Energy Conversion and Storage, Technical University of Denmark, Lyngby, Denmark), Heine Anton Hansen, Juan Maria Garcia Lastra, Tejs Vegge

Understanding and Tailoring the Performance of Transition Metal Oxides for the Oxygen Evolution Reaction

16:20 to 16:40

Coffee Break
16:40 to 17:00

Juan M. Feliu (Instituto de Electroquimica, Universidad de Alicante, Alicante, Spain), Valentín Briega-Martos, Enrique Herrero

Effect of Selective Adatom Decoration at Steps of Pt Model Surfaces on the Oxygen Reduction Reaction

17:00 to 17:20

Megan Jackson (Chemistry, Massachusetts Institute of Technology, Cambridge, USA), Seokjoon Oh, Sterling Chu, Corey Kaminsky, Jeffrey Miller, Yogesh Surendranath

Molecular control of interfacial inner-sphere electron transfer via graphite conjugation

17:20 to 17:40

Zenonas Jusys (Institute of Surface Chemistry and Catalysis, Ulm University, Ulm, Germany), Linh Nguyen, Johannes Schmaidt, Rolf Juergen Behm

O₂ Reduction on Glassy Carbon and Au Electrodes in BMP-TFSI with Mg⁺ Ions: DEMS and ATR-FTIRS Model Study in a Flow Cell

17:40 to 18:00

Xiaohui Yang (Chemistry, University of Aberdeen, Aberdeen, United Kingdom), Angel Cuesta

Computational Ag/AgCl reference electrode from density functional theory-based molecular dynamics

18:00 to 18:20

Wen Wen (Life Sciences, SSRF, SINAP, CAS, Shanghai, China), Mei Gao, Yueliang Gu, Xingmin Zhang, Daming Zhu, Zheng Jiang, Xingyu Gao

In Operando Structure-property Studies of Bismuth Based Oxygen Ionic Conductors for Lithium Batteries Cathode Applications

S17 Advances in Theory and Modeling of Electrochemical Systems

Room : 552A

Chaired by: Arnulf Latz and Charles W. Monroe

14:00 to 14:20

Ulrike Krewer (Institute of Energy and Process Systems Engineering, TU Braunschweig, Braunschweig, Germany), Fridolin Röder, Richard D. Braatz

Multi-Scale Simulation of Surface Film Growth Mechanisms in Lithium-Ion Batteries

14:20 to 14:40

Vincent Laue (Institute of Energy and Process Systems Engineering, Technische Universität Braunschweig, Braunschweig, Germany), Oke Schmidt, Xiangzhong Xie, Fridolin Röder, René Schenkendorf, Ulrike Krewer

Model-based Uncertainty Quantification for the Product Properties of Lithium-Ion Batteries

14:40 to 15:00

Mariem Maiza (Matériaux, Transport et Stockage d’Energie, Laboratoire de Réactivité et Chimie des Solides, Amiens, France), Dinh An Nguyen, Nathalie Legrand, Philippe Desprez, Alejandro A. Franco

Beyond Newman’s Model: Microstructurally-Resolved Simulations of the Dynamic Responses of Lithium Ion Batteries upon Cycling

15:00 to 15:20

Lalit M. Pant (Energy Technologies Area, Lawrence Berkeley National laboratory, Berkeley, USA), Mike L. Perry, Adam Weber

Use of Modeling for Diagnostics of Polymer Electrolyte Fuel Cells
15:20 to 15:40
**Thomas Kadyk** *(Institute for Energy and Process Systems Engineering, Braunschweig University of Technology, Braunschweig, Germany)*, Ulrike Krewer
Flight Path Fuel Cell: Theory and Modeling Setting the Course for Future Aviation

15:40 to 16:00
**Annick Hubin** *(Materials and Chemistry, Vrije Universiteit Brussel, Brussel, Belgium)*, Dries Van Laethem, Lucia Fernandez Macia, Johan Deconinck
Modelling of the Electrochemical Impedance of Acceptor Doped Cerium Oxide

16:00 to 16:20
**Juhyun Song** *(Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, USA)*, Martin Bazant
Generalized Diffusion Impedance and its Inversion to Diagnose Microstructure of Electrodes

16:20 to 16:40
Coffee Break

16:40 to 17:00
**Martin Bazant** *(Departments of Chemical Engineering and Mathematics, Massachusetts Institute of Technology, Cambridge, USA)*
Control of Phase Separation by Electro-autocatalysis

17:00 to 17:20
**Thomas Barrès** *(Surface du Verre et Interfaces UMR 125, Saint-Gobain Recherche, Aubervilliers, France)*, Hervé Montigaud, Odile Stephan, Bernard Tribollet, Yann Cohin, Mickael Boinet
Characterization of the Nano-Porosity of Silicon Nitride Thin Layers: Impedance Modeling of Nanopores

17:20 to 17:40
**Angela Molina** *(Department of Physical Chemistry, University of Murcia, Murcia, Spain)*, Joaquín González, Eduardo Laborda, Jose Manuel Olmos, Jose Maria Gomez-Gil
Analytical Theoretical Treatment of Interfacial Charge-Transfer Mechanisms at Microinterfaces

17:40 to 18:00
**Mohammad Mirzadeh** *(Chemical Engineering, Massachusetts Institute of Technology, Cambridge, USA)*, Martin Bazant
Electrokinetic Fingering: A Problem in Vector Laplacian Growth

18:00 to 18:20
**Alexander Oleinick** *(Departement de Chimie, CNRS-ENS-UPMC UMR 8640 PASTEUR, Paris, France)*, Oleksii Sliusarenko, Irina Svir, Christian Amatore
Importance of Stochastic Limitations in Electrochemistry at Arrays of Nanoelectrodes Functionalized by Redox Self-Assembled Monolayers

18:20 to 18:40
**Muammar El Khatib** *(School of Engineering, Brown University, Providence, USA)*, Alireza Khorshidi, Andrew Peterson
Acceleration of Saddle-Point Searches Assisted by Machine Learning
**Friday, 1 September 2017**

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<td>R. Bango</td>
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<td>D. Nieciecka</td>
<td>Hernández-V.</td>
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Friday 1 September 2017 - Morning

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**Plenary Lecture**

**Room: Ballroom A**

*Chaired by: Plamen Atanassov*

08:15 to 09:15

**Jose H. Zagal** *(Chemistry of Materials, University of Santiago de Chile, Santiago, Chile)*

Reactivity Descriptors of MNx Catalysts for the Oxygen Reduction Reaction

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**S03 Electrochemical Approaches to Clinical Diagnostics and Medical Devices**

**Room: 550**

*Chaired by: Frederique Deiss and José Manuel Pingarrón*

09:30 to 09:50

**Juan Manríquez** *(Department of Science, Centro de Inv. y Des. Tecnológico en Electroquímica SC, Pedro Escobedo, Mexico)*, Jorge Alberto Banda-Alemán, Viridiana Sotomayor-Villezcas, Guadalupe Zaldivar-Lelo de Larrea, Erika Bustos, Selene Sepúlveda, León Sánchez-Fernández, Carlos Francisco Sosa-Ferreya

Electrochemical detection of uric acid in human serum using glassy carbon electrodes modified by gold nanoparticles and poly(amidoamine) dendrimers and its application to the clinical diagnosis of hypertensive disorders of pregnancy

09:50 to 10:10

**Noora Isoaho** *(Department of Electrical Engineering and Automation, Aalto University, School of Electrical Engineering, Espoo, Finland)*, Sami Sainio, Niklas Wester, Leena-Sisko Johansson, Jari Koskinen, Tomi Laurila

Pt-Grown Carbon Nanofibers for Enzymatic Detection of Glutamate

10:10 to 10:30

**Abby Jones** *(Chemistry, University of Connecticut, Storrs, USA)*, Mohamed Sharafeldin, Min Shen, Conan Mercer, Donal Leech

Prostate Cancer Biomarker Detection Using a 16-Sensor Electrochemical Microfluidic Immunoarray

10:30 to 10:50

Coffee Break

10:50 to 11:10

**Isaac Taylor** *(Chemistry & Chemical Biology, Indiana University - Purdue University Indianapolis, Indianapolis, USA)*, David Wilkins, Frederique Deiss

Voltammetric Ion-Selective Electrode for Potassium Ions
11:10 to 11:30

Dorota Nieciecka (Department of Chemistry, University of Warsaw, Warsaw, Poland), Krystyna Kijewska, Agata Krolikowska, Gary Blanchard, Pawel Krysinski

Interaction of nanoparticles with biomembranes

11:30 to 11:50

Gayatri Phadke (Department of Chemistry, University of Connecticut, Storrs, USA), Jennifer Satterwhite-Warden, Dharaminder Choudhary, John Taylor, James Rusling

Assessing CD62L Protein as a Biomarker in Bladder Cancer Patients

11:50 to 12:10

Mamié Sancy (Escuela de Construcción Civil, Pontificia Universidad Católica de Chile, Santiago, Chile), Carolina Guerra, Daniela Silva, Claudia Aguilar

Characterization of Ti-30Nb-13Ta-2Mn Alloy for biomaterials applications

12:10 to 12:30

Paulina Glowala (Department of Chemistry, University of Warsaw, Warsaw, Poland), Krystyna Kijewska, Gary Blanchard, Maciej Mazur

PLGA microspheres modified with gold-198 radioisotope - polymer carriers of anticancer drug doxorubicin

S05  Novel Materials and Devices for Energy Storage:
Batteries for Tomorrow’s World

Room : Ballroom A

Chaired by: Zachary Brown and Mickdy Milien

09:30 to 09:50

Ravi Kumar (School of Engineering, Brown University, Providence, USA), Jung Hwi Cho, Anton Tokranov, Xingcheng Xiao, Brian Sheldon

Mechanical Degradation and Optimization of Solid Electrolyte Interphases in Li-Ion Batteries

09:50 to 10:10

Sebastian Feihl (R&D, Zahner Scientific Instruments, Kronach, Germany), Mark Sholin, Carl Albrecht Schiller, Steffen Fröba, Michael Multerer, Werner Strunz

Method to Increase the Speed of EIS Series Measurements on Battery Stacks During Cycling while Avoiding Dramatic Loss of Measurement Accuracy

10:10 to 10:30

Ernesto Julio Calvo (INQUIMAE, Universidad de Buenos Aires, Buenos Aires, Argentina), Florencia Marchini, Valeria Romero, Victoria Flexer, Federico Williams

Study of a LiMn₂O₄/Polypyrrole hybride battery-selective capacitor system for the extraction of lithium chloride from natural brine

10:30 to 10:50

Coffee Break

10:50 to 11:10

Zachary Brown (Chemistry, University of Rhode Island, Kingston, USA), Sunhyung Jurng, Brett Lucht

Investigation of SEI Formation on Lithium Metal Anodes
11:10 to 11:30

**Rakesh Elango** *(Laboratoire de Réactivité et Chimie des Solides, Université De Picardie Jules Verne, Amiens, France)*, Arnaud Demortiere, Vincent De Andrade, Mathieu Morcrette, Vincent Seznec
Optimization of electrode pore size for 1mm thick binder-free electrodes fabricated by Spark Plasma Sintering (SPS)

11:30 to 11:50

**Yan Yu** *(Department of Materials Science and Engineering, University of Science and Technology of China, Hefei, China)*
Advanced Sodium-ion Batteries Based on NASICON-type Materials

11:50 to 12:10

**Kei Kubota** *(Department of Applied Chemistry, Tokyo University of Science, Tokyo, Japan)*, Koichi Hashimoto, Shinichi Komaba
Designing Performance of O3-type Na_x[Ni,Mn,Fe,Ti]O_2 for Practical Na-Ion Batteries

12:10 to 12:30

**Vincent Cadiou** *(IMN, CNRS, Nantes, France)*, Elise Deunf, Eric Quarez, Dominique Guyomard, Thibaut Gutel, Philippe Poizot
Development of New Anion-Inserting Organic Electrode Materials for Rechargeable Lithium Batteries

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**S05  Novel Materials and Devices for Energy Storage:**
**Batteries for Tomorrow’s World**

**Room: 555A**

*Chaired by: Satu Kristiina Heiskanen and Bharathy Subramanian Parimalam*

09:30 to 09:50

**Ulderico Ulissi** *(Karlsruhe Institute of Technology, Helmholtz Institute Ulm, Ulm, Germany)*, Alberto Varzi, Seitaro Ito, Aihara Yuichi, Passerini Stefano
Glass-type Li_2S-P_2S_5 based electrolytes for next generation lithium sulfur batteries using novel composite cathodes

09:50 to 10:10

**Mirko Ante** *(Electrochemistry, Forschungsinstitut Edelmetalle + Metallchemie, Schwaebisch Gmuend, Germany)*, Seniz Soergel, Renate Freudenberger, Andreas Bund
Electrocatalysts for Lithium-Sulfur Energy Storage Systems

10:10 to 10:30

**Sunny Maye** *(Laboratory of Physical and Analytical Electrochemistry, Ecole Polytechnique Federale de Lausanne, Sion, Switzerland)*, Pekka Peljo
Non-Aqueous Copper Battery for Heat-to-Power Conversion and Storage

10:30 to 10:50

Coffee Break

10:50 to 11:10

**Sara Drvaric Talian** *(Department of Materials Chemistry, National Institute of Chemistry, Ljubljana, Slovenia)*, Alen Vizintin, Tina Paljk, Iztok Arcon, Giuliana Aquilanti, Robert Dominko
Li-S battery mechanism in sparingly soluble electrolytes
11:10 to 11:30
Tomoyuki Tsujimura *(AR-3, Samsung R&D Institute Japan, Minoh, Japan)*, Heidy Visbal, Seitaro Ito, Taku Watanabe, Yuichi Aihara
Oxide Double-Coating Layers on the Surface of LiNi0.8Co0.15Al0.05O2 Cathode Material of All-solid-state Lithium Ion Battery

11:30 to 11:50
Ertan Agar *(Department of Mechanical Engineering, University of Massachusetts Lowell, Lowell, USA)*, Patrick Cappillino, Mahnaz Nourani, Haobo Huang, Rachael Howland
High-Stability Mushroom-Based Electrolytes for Non-Aqueous Redox Flow Batteries

11:50 to 12:10
Hiroo Onuma *(Applied Chemistry, Tokyo University of Science, Tsukuba, Japan)*, Mouad Dahbi, Shotaro Muratsubaki, Kei Kubota, Satoshi Yasuno, Shinichi Komaba
Potassium Intercalation into Graphite: Electrochemical Properties and Phase Transition

12:10 to 12:30
Qingli Hao *(School of Chemical and Engineering, Nanjing University of Science and Technology, Nanjing, China)*, Xinyan Jiao
Synthesis of TmNb2O5/N, S-Codoped Graphene for Lithium-Ion Hybrid Supercapacitors

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**S06 Fuel Cells and Electrolyzers**

**Room : Ballroom B**

*Chaired by: Byung-Kook Kim and Guenter Schiller*

09:30 to 09:50
Jacek Jasinski *(Conn Center for Renewable Energy Research, University of Louisville, Louisville, USA)*, Babajide Patrick Ajayi, K. Ramachandra Rao, Sudesh Kumari, Dominika Ziołkowska, Dmitri Zakharov, Madhu Menon, Eric Stach, Mahendra Sunkara
Fundamental Study of OER Electrocatalytic Activity of La1-xCax(TM)O3 Prepared by Atmospheric Plasma Method

09:50 to 10:10
Veronica Celorrio *(School of Chemistry, University of Bristol, Bristol, United Kingdom)*, Denis Kramer, Ainara Aguadero, Andrea Russell, David Fermin
R2MnRuO7 (R = Dy, Ho, and Er) Pyrochlore Oxides as Bifunctional Oxygen Electro catalysts

11:10 to 10:30
Byung-Kook Kim *(High-Temperature Energy Materials Research Center, Korea Institute of Science and Technology, Seoul, Korea)*, Si-Won Kim, Sungjun Choi, Jongsup Hong, Hyoungchul Kim, Kyung Joong Yoon, Ji-Won Son, Jong-Ho Lee, Hae-Weon Lee
Enhanced Catalytic Conversion of CO2 and Steam on High-Temperature Co-Electrolysis in Solid Oxide Cells

10:30 to 10:50
Coffee Break

10:50 to 11:10
Nick Farandos *(Chemical Engineering, Imperial College London, London, United Kingdom)*, Geoff Kelsall
3D Printed Solid Oxide Electrolysers
11:10 to 11:30

Guenter Schiller (Institute of Engineering Thermodynamics, German Aerospace Center (DLR), Stuttgart, Germany), Remi Costa, Feng Han, Michael Hoerlein, Aziz Nechache, Robert Semerad

Study on Degradation of Solid Oxide Cells during Electrolysis and Co-Electrolysis Operation

11:30 to 11:50

Chusheng Chen (Department of Materials Science and Engineering, University of Science and Technology, Hefei, China), Jie Lin

Tailoring the pore structure of cathodes for improving the steam electrolysis performance of solid oxide electrolysis cells

11:50 to 12:10

Charalampos Neofytidis (FORTH/ICE-HT, Patras, Greece), Dimitrios Niakolas

Modified NiO/GDC cerments as possible cathode electrocatalysts for H₂O electrolysis & H₂O/CO₂ co-electrolysis processes in SOECs

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S06 Fuel Cells and Electrolyzers

Room: 554

Chaired by: William Mustain and Yushan Yan

09:30 to 09:50 Invited

Yushan Yan (Chemical and Biomolecular Engineering, University of Delaware, Newark, USA)

Hydroxide Exchange Membrane Fuel Cells and Electrolyzers: From Materials to Devices

09:50 to 10:10

William Mustain (Department of Chemical & Biomolecular Engineering, University of Connecticut, Storrs, USA), Travis Omasta, Xiong Peng

Approaching 2W/cm² AEMFCs through Electrode Engineering and Controlling the Cell Water Content and Balance

10:10 to 10:30

Heiki Erikson (Institute of Chemistry, University of Tartu, Tartu, Estonia), Jonas Mart Linge, Ave Sarapuu, Maido Merisalu, Mihkel Rähn, Leonard Matisen, Väino Sammelselg, Kaido Tammeveski

Oxygen Reduction Reaction on Nitrogen-Doped Graphene Supported Ag Nanoparticles

10:30 to 10:50

Coffee Break

10:50 to 11:10

Aarti Tiwari (Department of Chemistry, Indian Institute of Technology Ropar, Rupnagar, India), Vikram Singh, Debaprasad Mandal, Tharamani Chikka Nagaiah

Mechanistic Insight into Alkaline Oxygen Reduction Reaction over Nitrogen bearing Carbon Spheres
11:10 to 11:30

Alexey Serov (NA, Pajarito Powder, LLC, Albuquerque, USA), Geoffrey McCool, Samuel McKinney, Henry Romero, Thomas Stephenson, Barr Halevi

Engineered Carbons Supports (ECSs) for Cathode Oxygen Reduction Reaction Electrocatalysts

11:30 to 11:50

Jose Maya-Cornejo (Nanotecnología, Universidad Nacional Autónoma de México, Querétaro, Mexico), J. Ledesma-García, N. Arjona, L.G. Arriaga

Cu@Pd/C and Cu@Pt/C electrocatalysts used as anode for the electrooxidation of crude glycerol as waste from biodiesel in a nanofluidic fuel cell

11:50 to 12:10

Kaido Tammeveski (Institute of Chemistry, University of Tartu, Tartu, Estonia), Sander Ratso, Ivar Kruusenberg, Maike Käärik, Mati Kook, Rando Saar, Petri Kanninen, Tanja Kallio, Jaan Leis

Transition Metal and Nitrogen Codoped Carbide-Derived Carbon Catalysts for Oxygen Reduction Reaction in Alkaline DMFC

S06 Fuel Cells and Electrolyzers

Room: 557

Chaired by: Umit Ozkan and Mehmet Suha Yazici

09:30 to 09:50

Andrea Zitolo (SAMBA Beamline, Synchrotron SOLEIL, Saint-Aubin, France), Nastaran Ranjbar-Sahraie, Tzonka Mineva, Qingying Jia, Jingkun Li, Serban Stamatin, Petr Krtíl, Vanessa Armel, Vincent Goellner, Moulay-Tahar Sougrati, Lorenzo Stievano, Sanjeev Mukerjee, Emiliano Fonda, Frederic Jaouen

An X-Ray Absorption Look into the Structure of Iron and Cobalt Based Electro Catalysts for PEM Fuel Cells

09:50 to 10:10

Christian Durante (Chemical Sciences, University of Padova, Padova, Italy), Giorgia Daniel, Enrico Foltran, Giorgio Mattiacci, Gian Andrea Rizzi, Armando Gennaro

PGM Free Electrocatalyst based on Fe-Nx Modified Mesoporous Carbon prepared from Biosources for ORR

10:10 to 10:30

Anna K. Mechler (Heterogeneous Reactions, Max Planck Institute for Chemical Energy Conversion, Muelheim a.d. Ruhr, Germany), Nastaran Ranjbar-Sahraie, Moulay Tahar Sougrati, Andrea Zitolo, Jan Schwämmlein, Hubert A. Gasteiger, Deborah Jones, Frederic Jaouen

Stabilization of Iron-Based Electro Catalysts for the Oxygen Reduction Reaction by Ultra-Low Amounts of Platinum

10:30 to 10:50

Coffee Break

10:50 to 11:10

Umit Ozkan (Chemical and Biomolecular Engineering, The Ohio State University, Columbus, USA), Kuldeep Mamani, Deeksha Jain, Anne Co

Insights into Oxygen Reduction Reaction (ORR) and Oxygen Evolution Reaction (OER) for Nitrogen-doped Carbon Nanostructures (CN$_x$) in Acidic Electrolyte
11:10 to 11:30
Kasper Holst-Olesen (Chemistry, University of Copenhagen, Copenhagen, Denmark), Alexander Bagger, Jan Rossmoest, Matthias Arenz
On the Influence of Anion Adsorption on the Oxygen Reduction Activity of Non-Precious Metal Catalysts

11:30 to 11:50
Mehmet Suha Yazici (Energy Institute, Gebze, Turkey), Mehmet Akif Azder, Omer Salihoglu
Developing Porous Graphene Foam Catalyst for PEM Fuel Cell

S08  Dealloying: Fundamentals, Application, and Control

Room: 551A

Chaired by: Nikolay Dimitrov and Yi Ding

09:30 to 09:50 Invited
Yi Ding (School of Materials Science and Engineering, Tianjin University of Technology, Tianjin, China)
Nanoporous Metal Electrodes for Fuel Cell Technologies

09:50 to 10:10 Invited
Anusorn Kongkanand (Fuel Cell Activities, General Motors, Pontiac, USA), Srikanth Arisetty, Shaun Alia, Jason Zack, Joseph M. Ziegelbauer, Nancy N. Kariuki, Venkata R. Yarlagadda, Deborah J. Myers, K.C. Neyerlin
Dealloying of Binary Catalysts in Hydrogen Fuel Cell

10:10 to 10:30 Invited
Stanko Brankovic (ECE, University of Houston, Houston, USA), Dongjun Wu, Dhaivat Solanki, Aniruddha Joi, Yezdi Dordi
Electroless Pb Monolayer Deposition - A Prelude for Highly Selective Electroless Atomic Layer Deposition Process

10:30 to 10:50 Coffee Break

10:50 to 11:10 Invited
Jingyi Chen (Chemistry and Biochemistry, University of Arkansas, Fayetteville, USA)
Synthesis of Electrocatalytically Active Copper-Containing Multimetallic Nanostructures

11:10 to 11:30 Invited
Miomir Vukmirovic (Chemistry Department, Brookhaven National Laboratory, Upton, USA), Jue Hu, Kurian Kuttiyiel, Guangyu Chen, Kotaro Sasaki, Radoslav Adzic
Re-evaluation of Au as a core for Pt monolayer oxygen reduction reaction catalyst

11:30 to 11:50 Invited
Hui Wang (Department of Chemistry and Biochemistry, University of South Carolina, Columbia, USA)
Dealloying of Alloy Nanoparticles toward Optimization of Electrocatalysis

11:50 to 12:10
Marco Altomare (Department of Materials Science and Engineering WW4-LKO, University of Erlangen-Nuremberg, Erlangen, Germany), Nhat Truong Nguyen, Patrik Schmuki
Templated Dewetting-Dealloying of Metals: Designing Photocatalytic Platforms

12:10 to 12:30
Pengchao Si (School of Materials Science and Engineering, Shandong University, Jinan, China), Bing Luo, Fangyuan Diao
Fabrication of nanoporous nickel and its electrochemical application for hydrazine decomposition
S11  Synthesis and Applications of Electrochemically Active Materials

Room: 553

Chair: Seokjoon Oh and Adeline Loh

09:30 to 09:50

Tian Ouyang (Materials and Chemical Engineering Institute, Harbin Engineering University, Harbin, China), Kui Cheng, Dianxue Cao

Molten salt synthesis of nitrogen doped porous graphitic carbon: A new preparation methodology for high-volumetric capacitance electrodes materials

09:50 to 10:10

Cuijuan Xuan (School of Chemistry and Chemical Engineering, Huazhong University of Science and Technology, Wuhan, China), Mingxing Gong, Jie Wang, Huolin L. Xin

Binary Nickel and Iron based Porous Nanocubes as High-efficient Electrocatalysts for OER

10:10 to 10:30

Adeline Loh (Renewable Energy, University of Exeter, Penryn, United Kingdom), Xiaohong Li

Nano-structuring Nickel-based Catalysts for Oxygen Evolution

10:30 to 10:50

Coffee Break

10:50 to 11:10

Yan-Xia Jiang (Department of Chemistry, Xiamen University, Fujian, China), Zong-Cheng Zhang, Chun-Hua Zhen, Shi-Gang Sun

Tuning surface composition of Pt3Co electrocatalysts and performance for enhancing CO tolerance

11:10 to 11:30

Salvador Guadalupe Hernández-Vargas (Química Analítica, Universidad Nacional Autónoma de México, México, Mexico), Julio César Aguilar-Cordero

Electrocatalytic Properties of Modified Carbon Paste Electrodes with Nanostructured Carbon Materials and Ionic Liquids

11:30 to 11:50

Seokjoon Oh (Chemistry, Massachusetts Institute of Technology, Cambridge, USA), Yogesh Surendranath

Molecularly Tunable Graphite-Conjugated Catalysts

11:50 to 12:10

Na Tian (Chemistry Department, Xiamen University, Xiamen, China), Fengyang Zhang, Shi-Gang Sun

Cu Modified Tetrahexahedral Pd Nanocrystals for Electroreduction of Carbon Dioxide to Ethanol

12:10 to 12:30

Kai-Jher Tan (Chemical Engineering, Massachusetts Institute of Technology, Cambridge, USA), Xiao Su, Johannes Elbert, T. Alan Hatton

Copper Hexacyanoferrate Hydrogel Electrodes for Cation Separations
S11 Synthesis and Applications of Electrochemically Active Materials

Room: 551B

Chaired by: Kaiyu Fu and Nathan Swami

09:30 to 09:50 Invited

Tania Rodenas Torralba (*Carbon Synthesis and Applications, Max Planck Institute for Chemical Energy Conversion, Muelheim an der Ruhr, Germany*), Norbert Pfander, Frank Girgsdies, Saskia Buller, Robert Schlögl

Ultrathin Co-based Metal-Organic Framework Nanolamella on Graphitic Carbon as OER Electrocatalyst Precursors

09:50 to 10:10

Kaiyu Fu (*Chemistry and Biochemistry, University of Notre Dame, Notre Dame, USA*), Paul Bohn

Nanochannel Arrays for Molecular Sieving and Electrochemical Analysis by Nanosphere Lithography Templated Graphoepitaxy of Block Copolymers

10:10 to 10:30 Invited

Damian Kowalski (*Department of Engineering, Hokkaido University, Sapporo, Japan*)

1D core-shell nanostructures formed by electrodeposition of metals and metalloids in anodic TiO₂ nanotubes

10:30 to 10:50 Coffee Break

10:50 to 11:10 Invited

Nathan Swami (*Electrical & Computer Engineering, University of Virginia, Charlottesville, USA*), Bankim Sanghavi, Ali Rohani, Renny Fernandez

Patterned graphene gold nanocomposites for electrochemical detection of microfluidic enriched biomarkers

11:10 to 11:30

Zhiyang Li (*Chemical Engineering Department, University of Massachusetts Lowell, Lowell, USA*), Fan Gao, Zhiyong Gu

An Enhanced Electrochemical Biosensor Based on 3D Pt Nanowire Array/Au Nanoparticle Hybrid Structure

11:30 to 11:50

Mathies Evers (*Faculty of Chemistry and Biochemistry, Ruhr-University Bochum, Bochum, Germany*), Beatriz Roldan Cuenya, Kristina Tschulik

Constructive Impact Experiments of Single H Au Cl₄ Micelles

11:50 to 12:10

Mauro Santos (*Centro de Ciências Naturais e Humanas, Universidade Federal do ABC, Santo André, Brazil*)

Ceria Nanorods Supported on Vulcan XC72 Carbon as Electrocatalyst for Oxygen Reaction Reduction in Alkaline Medium

12:10 to 12:30

Hongxu Dong (*Chemical Engineering, University of Virginia, Charlottesville, USA*), Gary Koenig

Composition Control for Multicomponent Electroactive Materials
S12  Electrochemical Technology for solving 21st Century Challenges

Room: 555B

Chair: Karel Bouzek and Manuel Andres Rodrigo

09:30 to 09:50

Vincent Caldeira (Electrochemistry, CNRS / LEPMI / Universite Grenoble Alpes, Grenoble, France), Julien Thiel, Francois Lacoste, Marian Chatenet, Laetitia Dubau

Improving Negative Electrodes in Secondary Alkaline Zn/Ni Batteries

09:50 to 10:10

Eseoghene Umukoro (Department of Applied Chemistry, University of Johannesburg, Johannesburg, South Africa)

Fabrication of an Expanded Graphite Supported p-n MoS2-SnO2 Heterojunction Composite Photo-Electrode for Enhanced Photo-Electrocatalytic Degradation of Pharmaceutical Pollutants

10:10 to 10:30

Yun Xue (College of Nuclear Science and Technology, Harbin Engineering University, Harbin, China)

Electrochemical Extraction of Rare Earth Elements by Codeposition and Cathodic Alloying with Zn in LiCl-KCl Melts

10:30 to 10:50

Coffee Break

S13  The Green Potential of Molecular Electrochemistry

Room: 556A

Chair: Marilia Goulart and Carlos Frontana

09:30 to 10:10 Keynote

Siegfried Waldvogel (Institute of Organic Chemistry, Johannes Gutenberg University Mainz, Mainz, Germany)

Control of Selectivity in the Electrochemical Synthesis of Biaryls by a Solvent Effect

10:10 to 10:30

Christoph Bondue (Leiden Institute of Chemistry, Universiteit Leiden, Leiden, Netherlands), Marta Costa Figueiredo, Marc Koper

Electrochemical Acetone Reduction – A Model Reaction for the Electrochemical Refinery of Biological Feedstock

10:30 to 10:50

Coffee Break

10:50 to 11:30 Keynote

Jun-ichi Yoshida (Department of Synthetic Chemistry and Biological Chemistry, Kyoto University, Kyoto, Japan)

Recent Advances in Electrochemical C-H Functionalization

11:30 to 11:50 Invited

Robert Francke (Institute of Chemistry, Rostock University, Rostock, Germany), Alonso Rosas-Hernández, Henrik Junge, Matthias Beller, Michael Roemelt

Electrocatalytic Reduction of Carbon Dioxide Using Cyclopentadienone Iron Complexes - New Mechanistic Insights
11:50 to 12:10

Tile Gieshoff (Institute of Organic Chemistry, Johannes Gutenberg University, Mainz, Germany), Anton Kehl, Kevin Moeller, Siegfried Waldvogel

Amidyl Radicals as Intermediates for the Electrochemical Synthesis of Heterocycles

12:10 to 12:30

Hai-Chao Xu (Chemistry, Xiamen University, Xiamen, China)

Electrochemical Dehydrogenative Cyclization Reactions

S15  Physical and Interfacial Electrochemistry: Structural, Spectroscopic, and Theoretical Studies of the Electrochemical Interface

Room: 552B

Chaired by: Aleksey Yerokhin and Serge G. Lemay

09:30 to 09:50 Invited

Mikhail Vorotyntsev (Electroactive Materials and Electrochemical Energetics, Dmitry Mendeleev University of Chemical Technology of Russia, Moscow, Russia), Anatoly Antipov, Dmitry Konev, Alexander Modestov

Bromate reduction at rotating disk electrode via autocatalytic redox-cycle mechanism: predictions vs experimental data

09:50 to 10:10

Anatoly Antipov (Electroactive Materials and Electrochemical Energetics, Dmitry Mendeleev University of Chemical Technology of Russia, Moscow, Russia), Dmitry Konev, Mikhail Vorotyntsev

Bromate reduction at rotating disk electrode via autocatalytic redox-cycle mechanism

10:10 to 10:30

Jelena Popovic (Physical Chemistry of Solids, Max Planck Institute for Solid State Research, Stuttgart, Germany), Maryam Nojabaee, Hsui-Wei Cheng, Markus Valtiner, Joachim Maier

Surface force versus carrier concentration measurements of glyme lithium electrolytes

10:30 to 10:50

Coffee Break

10:50 to 11:10

Jun Cheng (College of Chemistry and Chemical Engineering, Xiamen University, Xiamen, China)

Interplay between electrons and protons at electrochemical interfaces

11:10 to 11:30

Aleksey Yerokhin (School of Materials, University of Manchester, Manchester, United Kingdom), Veta Mukaeva, Evgeny Parfenov, Allan Matthews

On the Mechanisms Underlying Electrolytic Plasma Processes with Vapour Gaseous Envelope

11:30 to 11:50

Bing-Wei Mao (Chemistry Department, Xiamen University, Xiamen, China), Mian-Gang Li, Li Chen, Wei Lu, Jing Peng, Shuai Liu, Jia-Wei Yan, Corinne Lagrost, Philippe Hapiot

Chromocene Redox Reaction at Ag(111)-Ionic Liquid Interfaces

11:50 to 12:10

Chunzhen Yang (Chimie du Solide et de l’Energie, Collège de France, Paris, France), Jean-Marie Tarascon, Alexis Grimaud

Chemical recognition of deprotonated states on the surface of oxygen evolution reaction electrocatalysts
S17  Advances in Theory and Modeling of Electrochemical Systems

Room: 552A

Chaired by: Angel Cuesta and Jan Rossmeisl

09:30 to 09:50 Invited

Alexander Tkalych (Department of Chemistry, Princeton University, Princeton, USA), Kuang Yu, Houlong Zhuang, Emily Carter

Structural, Electronic, and Chemical Properties of $\beta$-NiOOH from First Principles

09:50 to 10:10

Georg Kastlunger (School of Engineering, Brown University, Providence, USA), Per Lindgren, Muammar El Khatib, Andrew Peterson

Towards a first-principles simulation of constant-potential reactions in electrochemistry

10:10 to 10:30

Jiabo Le (Department of Chemistry, University of Aberdeen, Aberdeen, United Kingdom), Marcella Iannuzzi, Angel Cuesta, Jun Cheng

Modelling metal electrolyte interfaces from density functional theory based molecular dynamics

10:30 to 10:50

Coffee Break

10:50 to 11:10

Ludovic Briquet (Johnson Matthey Technology Centre, Sonning Common, United Kingdom), Misbah Sarwar, Jane Mugo, Glenn Jones, Federico Calle-Vallejo

How Accurate are OER Activity Predictions from DFT?

11:10 to 11:30 Invited

Adrien Göttle (Catalysis and Surface Chemistry, Leiden University, Leiden, Netherlands), Yuvraj Birdja, Marc Koper

Understanding Selectivities during CO$_2$ Reduction on Metalloporphyrin Catalysts

11:30 to 11:50 Invited

Charlotte Kirk (Photon Science, SLAC National Accelerator Laboratory, Menlo Park, USA), Karen Chan

Ab initio modelling of the electrochemical interface: applications to CO$_2$ reduction

11:50 to 12:10

Xueqing Dennis Zhang (Solar Fuel, Dutch Institute For Fundamental Energy Research, Eindhoven, Netherlands)

Computational Design of Efficient Photoelectrode for Water Oxidation

12:10 to 12:30

Mohammad Javad Eslamibidgoli (Department of Chemistry, Simon Fraser University, Burnaby, Canada), Michael Eikerling, Axel Groß

First-Principles Studies of the Structural Properties of Nickel (Oxy)hydroxide as Oxygen Evolution Reaction Electrocatalysts
POSTER PRESENTATIONS
S01 New Experimental Trends in Analytical Electrochemistry

**Advanced techniques**

S01-001  
Jason Bonezzi (Chemistry, The University of Akron, Akron, USA), Aliaksei Boika  
Electrokinetic Preconcentration and Electrochemical Detection of Silver Nanoparticles

S01-002  
Sonivette Colón-Rodríguez (Chemistry, University at Albany- SUNY, Albany, USA), Gerd-Uwe Flechsig  
Accurate Automatic Temperature Calibration of Directly Heated Electrodes

S01-003  
Johnsi Mathivanan (Department of Chemistry, University at Albany, SUNY, Albany, USA), Zhihua Chang, Sarasi Galagedera, Gerd-Uwe Flechsig  
Consecutive Reaction Kinetics of Paracetamol – Studied at Directly Heated Electrodes

S01-004  
Seonhwa Park (Department of Chemistry, Pusan National University, Busan, Korea), Gamwoo Kim, Jeongwook Seo, Haesik Yang  
Ultrasensitive Washing Free Protease Sensors Using Selective Affinity Binding, Selective Proteolytic Reaction, and Proximity-Dependent Electrochemical Reaction

S01-005  
Jeonghwa Shin (Department of Chemistry, Pusan National University, Busan, Korea), Seonhwa Park, Jeongwook Seo, Haesik Yang  
A Highly Sensitive and Simply Operated Botulinum Toxin Sensor Toward Point-of-Care Testing

S01-006  
Jingjing Zhang (School Chemistry and Chemical Engineering, Nanjing University, Nanjing, China)  
Electrochemical Visualization of Intracellular Hydrogen Peroxide at Single Cells

S01-007  
Wei Zhao (Department of Chemistry, Nanjing University, Nanjing, China), Yin-Zhu Wang, Jing-Juan Xu, Hong-Yuan Chen  
Bipolar Electrode based Multi-Color Electrochemiluminescence

S01-008  
Junyu Zhou (School of Chemistry and Chemical Engineering, Nanjing University, Nanjing, China)  
Electrochemiluminescence Imaging for Parallel Single-Cell Analysis of Active Membrane Cholesterol

**Advances in instrumentation**

S01-009  
Christian Candia (Departamento de Química de Los Materiales, Universidad de Santiago de Chile, Santiago, Chile), Ricardo Salazar, Natalia Hassan  
Modification of Electrodes with Nanostructured Materials for the Detection of Hydroquinone

S01-010  
Pablo Fanjul Bolado (R&D Department, DropSens, S.L., Llanera, Spain), Carla Navarro Hernández, David Hernández Santos  
Boron doped diamond screen printed electrodes: morphological and electrochemical characterization

S01-011  
Jifu Liang (Electrical Engineering and Computer Science, Case Western Reserve University, Cleveland, USA), David Ariando, Yingying Wang, Jonathan Strobl, Daniel Scherson, Kenneth Loparo, Soumyajit Mandal  
A Wireless, Portable, and Inexpensive Open-Source Potentiostat

S01-012  
Ricardo Salazar (Chemistry of Materials, University of Santiago of Chile, Santiago, Chile)  
Voltammetric determination of anti-hypertensive drug hydrochlorothiazide using screen-printed carbon electrodes modified with L- glutamic acid
Analytical electrochemistry

S01-013  
**Kuniaki Murase** *(Department of Materials Science and Engineering, Kyoto University, Kyoto, Japan)*, Tianyu Chen, Atsushi Kitada, Kazuhiro Fukami, Dilshadbek T. Usmanov, Lee Chuin Chen, Kenzo Hiraoka  
Identification of Copper(II)-Lactate Complexes in Alkaline Aqueous Solutions for Cu$_2$O Electrodeposition

Coupled-electrochemical techniques

S01-014  
**Chi-Han Lu** *(Bio-Industrial Mechatronics Engineering, National Taiwan University, Taipei, Taiwan)*, Lin-Chi Chen, Sheng-Feng Huang  
Differential-Pulse Voltammetric Electrolyte Fingerprinting Using Chemically Modified Electrode Arrays

Improved data analysis methodologies

S01-015  
**Cheng-Hui Chen** *(Mechanical Engineering, National Cheng Kung University, Tainan City, Taiwan)*, Chia-Chern Chen  
Thermodynamic Analysis on the Formation of Anodic Aluminum Oxide Using Averaged Moving Approximate Entropy

S01-016  
**Eric Gil** *(Lafam, Faculty of Pharmacy, Federal University of Goias, Goiânia, Brazil)*, Isaac Yves Lopes de Macêdo, Ricardo Menegatti, Karla Carneiro de Siqueira Leite, Murilo Ferreira de Carvalho, Flávio Silva de Carvalho, Luciano Morais Lião, Freddy Fernandes Guimarães  
Spectro and electroanalytical determination of antioxidant power of “BHT like” derivatives

S01-017  
**Daikichi Mukoyama** *(Research Organization for Nano & Life Innovation, Waseda University, Shinjuku, Japan)*, Hiroki Nara, Tokihiko Yokoshima, Toshiyuki Momma, Tetsuya Osaka  
EIS Analysis of Commercial Lithium-ion Battery for Long-term Charge-discharge Cycling under Various Temperature Conditions

S01-018  
**En Ning Saw** *(Analytical Chemistry, Micro-/Nano-Electrochemistry, Ruhr Universität Bochum, Bochum, Germany)*, Kristina Tschulik  
Time-Resolved Nano-Impact Electrochemistry as a Sensitive Tool to Determine Diffusion Coefficients of Halides
**S02 Flow and Microfluidic Systems in Analytical Electrochemistry**

**Advances in instrumentation**

**S02-001**

Seok Hee Han (Chemistry, Seoul National University, Seoul, Korea), Seung-Ryong Kwon, Seol Baek, Taek Dong Chung

Microfluidic Ionic Circuits Powered by RED (Reverse Electrodialysis) as a Full Iontronic System

**Coupled detection and separation**

**S02-002**

Nalin Andersen (Nanoscience and Microsystems Engineering, University of New Mexico, Albuquerque, USA), Kateryna Artyushkova, Ivana Matanovic, Plamen Atanassov

Spectro-electrochemical Platform for in Situ Dynamic Chemical Analysis of Catalytic Cascade Systems

**Flow detectors**

**S02-003**

Dmytro Bavol (Department of Analytical Chemistry, Charles University in Prague, Prague, Czech Republic), Anastasios Economou, Hana Dejmkova, Jiri Zima, Jiri Barek

Simultaneous Determination of Synthetic Antioxidants by Flow-Injection Analysis with Multiple-Pulse Amperometric Detection

**S02-004**

Mateusz Gocyla (Department of Electrode Process, Institute of Physical Chemistry Polish Academy of Sciences, Warsaw, Poland), Marcin Holdynski, Marcin Opallo

Electrochemical detection of graphene oxide in flow

**S02-005**

Wallans dos Santos (Farmácia, Universidade Federal dos Vales do Jequitinhonha e Mucuri, Diamantina, Brazil), Morgana Alecrim, Fernando Oliveira, Tiago Guedes, Eric Gil, Rodrigo Verly

Electrochemical Behavior of the Cotinine at a Boron-Doped Diamond Electrode and its Determination in Saliva by Multiple-pulse Amperometry in an FIA System

**S02-006**

Wallans dos Santos (Farmácia, Universidade Federal dos Vales do Jequitinhonha e Mucuri, Diamantina, Brazil), Amanda Lima, Fernando Oliveira, Tiago Guedes, Rodrigo Munoz

Determination of Oxcarbazepine in Pharmaceutical Formulations and Urine by Pulsed Amperometry in FIA System using Boron-Doped Diamond Electrode

**Microsystems**

**S02-007**


Evaluation of the redox status of the human placenta using electrochemical microdevices

**Miniaturized devices and techniques**

**S02-008**

Aaron Marshall (Department of Chemical and Process Engineering, University of Canterbury, Christchurch, New Zealand), Tobias Baldhoff, Volker Nock

Aluminium Micromachining via Mass-Transfer Limited, Electrochemical Dissolution in Phosphoric Acid

**S02-009**

Dusty Miller (Chemistry, Vanderbilt University, Nashville, USA), David Cliffl

Organotypic Culture Models for Predictive Toxicology

**S02-010**

Guirong Zhang (Department of Chemistry, Technical University of Darmstadt, Darmstadt, Germany), Liuliu Shen, Bastian J.M. Etzold

Modifier-Free Microfluidic Electrochemical Sensor for Heavy Metal Detection
S03 Electrochemical Approaches to Clinical Diagnostics and Medical Devices

Cancer

S03-001
Rupali Gupta (Department of Chemistry, Institute of Science, Banaras Hindu University, Varanasi, India)
Palladium Nanoparticles Immobilized Mesoporous Silica Spheres: An Electrochemical Sensor for Real Time Detection of Cancerous Cells via Hydrogen Peroxide sensing

S03-002
Ewa Nazaruk (Chemistry Department, University of Warsaw, Warsaw, Poland), Agnieszka Majkowska-Pilip, Renata Bilewicz
Lipidic Cubic Phase Nanoparticles – Cubosomes for Improved Efficiency of Drug Delivery to Cancer Cells

S03-003
Manuela Rueda Rueda (Physical Chemistry, University of Seville, Seville, Spain), Francisco Prieto, María Luisa González Rodríguez, Antonio M. Rabasco, Nabila Naitjho, Marcos Vázquez
Phospholipid Surface Films for Doxorubicin Delivery: A Combined Electrochemical, Thermodynamic and Pharmaceutical Study

Cell signaling

S03-004
Aicheng Chen (Department of Chemistry, Lakehead University, Thunder Bay, Canada), Zhonggang Liu, Maduraiveeran Govindhan, Heidi Forsyth, Neelam Khaper
Electrochemical Detection of Nitric Oxide Release from Normal and Stressed cells

S03-005
Shoko Tago (Photocatalyst group, Kanagawa Academy of Science and Technology, Kawasaki, Japan), Tsuyoshi Ochiai, Seitaro Suzuki, Mio Hayashi, Akira Fujishima
Flexible Boron-Doped Diamond (BDD) Electrodes for Plant Monitoring

Disease diagnostics

S03-006
A.C. Anithaa (Bioelectronics and Biosensors, Alagappa University, Karaikudi, India), K. Asokan, C. Sekar
Non-enzymatic Acetylcholine Sensor Based on the Low Energy Nitrogen Ion Beam Irradiation on Tungsten Trioxide Thin Films

Medical devices

S03-007
Kosuke Ino (Graduate School of Engineering, Tohoku University, Sendai, Japan), Mayuko Terauchi, Atsushi Suda, Ryota Kunikata, Tomokazu Matsue, Hitoshi Shiku
Hydrogel fabrication based on electrodeposition using electrochemical devices

S03-008
Suk-Joon Kim (Chemistry, Sogang University, Seoul, Korea), Enhua Zhu, Sangseob Lee, Woonsun Shin
Continuous Extraction of Interstitial Fluid for Diagnostic Applications by Electroosmotic Pump

S03-009
Judith Faye Rubinson (Department of Chemistry, Georgetown University, Washington, USA), Y. Kayinamura, A. Kammerich, H. Mandal, H. Charkhar, D. McHail, J. Kastee, T. Dumas, N. Peixoto, J. Pancrazio
Superior Conducting Polymer Materials for Passive and Active Measurements of Neural Activity

S03-010
Yi-Min Wu (Bio-Industrial Mechatronics Engineering, Taipei, Taiwan), Chih-Hao Chen, Ching-Jung Yen, Lin-Chi Chen
Solid-contact Ion-selective Electrode Array with Anti-fouling Property for Multiplex Ion Sensing in Protein-rich Samples
Molecular biomarkers

S03-011
Rui Barbosa (Center for Neuroscience and Cell Biology, Faculty of Pharmacy, University of Coimbra, Coimbra, Portugal), Catia Lourenco, Greg Gerhardt, Joao Laranjinha, Ana Ledo
Monitoring Neurometabolic Markers in Vivo with Electrochemical Microsensor Arrays

Oxidative stress

S03-012
Eduard Dumitrescu (Department of Chemistry & Biomolecular Science, Clarkson University, Potsdam, USA), Xiaobo Liu, Kenneth Wallace, Silvana Andreescu
Electrochemical Detection of Nitric Oxide in Zebrafish Embryos

Protein biomarkers

S03-013
Sadagopan Krishnan (Chemistry, Oklahoma State University, Stillwater, USA), Vini Singh, Jinesh Niroula, Gayan Premaratne
Electrochemical Diabetes Immunosensors: Looking at Non-glucose Markers

S03-014
José Manuel Pingarrón (Analytical Chemistry, University Complutense of Madrid, Madrid, Spain), Esther Sánchez-Tirado, Araceli González-Cortés, Paloma Yáñez-Sedeño
Single and Multiplexed Detection of Cytokines in Urine, Saliva and Serum using Disposable Electrochemical Immunosensors

S03-015
Laurent Thouin (Chemistry Department, Ecole Normale Superieure, Paris, France), Wided Bellagha-Chenchah, Catherine Sella, Christian Amatore, Elisa Peroni, Anna Maria Papini
Electrochemical Detection of Autoantibodies of Multiple Sclerosis in a Microfluidic Device

Biofuel

S04-001
Sidney Aquino Neto (Department of Chemistry, University of Sao Paulo, Ribeirao Preto, Brazil), Shelley Minteer, Adalgisa De Andrade
Bioelectrocatalytic Ethanol Oxidation through the Immobilization of Dehydrogenase Enzymes in Cascade on a C8-LPEI Matrix

S04-002
Shuji Ishii (Graduate School of Pure and Applied Sciences, University of Tsukuba, Tsukuba, Japan), Hiroto Funabashi, Seiya Tsujimura
Bilirubin oxidase-catalyzed oxygen reduction cathode using MgO-templated carbons

S04-003
Sophie Lecomte (CBMN, CNRS-Universite de Bordeaux, Pessac, France), Alexandre Ciaccafava, Cristina Gutierrez-Sanchez, Elisabeth Lojou
Structure and Orientation of Enzymes used in Fuel Cell Probe by Polarized Modulated – Infra Red Reflexion Absorption Spectroscopy and Electrochemistry

S04-004
Yukiya Morigayama (Department of Pure and Applied Chemistry, Faculty of Science, Tokyo University of Science, Noda, Japan), Tatsuo Aikawa, Yoshinao Hoshi, Isao Shitanda, Masayuki Itagaki
Preparation of Biofuel Cell Anode coated by Poly-(ethylene glycol) Diacrylate Gel
S04-005  
Isao Shitanda (Department of Pure and Applied Chemistry, Tokyo University of Science, Noda-shi, Japan), Misaki Momiyama, Seiya Tsujimura, Yoshinao Hoshi, Masayuki Itagaki  
Paper-based Biofuel Cell Array Loading Fuel- and Buffer Salt-containing Paper Sheet

S04-006  
Shodai Sunami (Department of Mechanophysics, Kyoto Institute of Technology, Kyoto, Japan), Kosuke Nishida  
Improvement of Enzyme Immobilization and Porous Structure for Bioanode of Lactate Biofuel Cell

S04-007  
Nozomi Terai (Department of Pure and Applied Chemistry, Faculty of Science, Tokyo University of Science, Noda, Japan), Yusuke Asano, Isao Shitanda, Yoshinao Hoshi, Masayuki Itagaki  
Fabrication of Enzyme-immobilized Janus Micromotor based on Amino group-functionalized Polystyrene Particles

S04-008  
Seiya Tsujimura (Faculty of Pure and Applied Sciences, University of Tsukuba, Tsukuba, Japan), Kazunori Sugihara, Tsubasa Adachi, Kazuki Murata  
Stabilization of redox enzymes by kosmotropic anions with ammonium ion for applications to bioelectrochemical devices

Biomolecule

S04-009  
Ming Wang (Institute of Chemistry, Chinese Academy of Sciences, Chinese Academy of Sciences, Beijing, China), Fei Wu, Lanqun Mao  
Role of Organic Solvents in Immobilizing Fungus Laccase on Single-Walled Carbon Nanotubes for Improved Current Response in Direct Bioelectrocatalysis

Biosensor

S04-010  
Sarasi Galagedera (Chemistry, University at Albany - SUNY, Albany, USA), Gerd-Uwe Flechsig  
Effect of Heavy Water on the Interactions of Hexammine Ruthenium(III) and Hexammine Cobalt(III) with Self-Assembled Monolayers of DNA

S04-012  
Kaylyn Leung (Chemistry, University of British Columbia, Vancouver, Canada), Hua-Zhong Yu, Dan Bizzotto  
Evidence of Alteration to DNA Monolayers via Ruthenium Hexaammine Measurements

S04-013  
Fred Lisdat (Biosystems Technology, Institute of Appl. Life Science, Technical University Wildau, Wildau, Germany), Artur Fandrich, Erik Wischerhoff, André Laschewsky, Burkhard Schulz  
Thermally responsive polymer films on electrodes – verification of the switching process and influence of peptide coupling

S04-014  
Carlo Santoro (Chemical and Biological Engineering, University of New Mexico, Albuquerque, USA), Cristina Flores-Cadengo, Francesca Soavi, Mounika Kodali, Alexey Serov, Irene Merino-Jimenez, Ioannis Ieropoulos, Plamen Atanassov  
Liquid/Liquid Interfacial Electrode for Programmable Stimulation of Single Living PC12 Cells

Cells

S04-015  
Ren Hu (Department of Chemistry, Xiamen University, Xiamen, China), Ren Hu, Jacques Nsabimana, Dongping Zhan, Bin Ren, Christian Amatore, Zhong-Qun Tian  
Liquid/Liquid Interfacial Electrode for Programmable Stimulation of Single Living PC12 Cells
Electron transfer

S04-016

Marcela Méndez-Tovar (Química, Universidad Autónoma Metropolitana Iztapalapa, CDMX, Mexico), J. Viridiana García-Meza, Ignacio González

EIS monitoring of Acidithiobacillus thiooxidans biofilm formation on graphite surface

Nanobiotechnology

S04-017

Mounika Kodali (Chemical and Biological Engineering, University of New Mexico, Albuquerque, USA), Carlo Santoro, Santiago Rojas-Carbonell, Alexey Serov, Kateryna Artyushkova, Plamen Atanassov

PGM-free catalysts for improved performances in microbial fuel cell

S04-018

Albert Perry III (Department of Chemical and Biological Engineering, University of New Mexico, Albuquerque, USA), Madelaine Seow Chavez, Sadia Kabir, Ivana Matanovic, Alexey Serov, Kateryna Artyushkova, Plamen Atanassov

Integrating Inorganic Catalysts into Biotic Synthetic Catalytic Cascades

Nucleic acid

S04-019

Alexandra Verhaven (Chimie Analytique et Chimie des Interfaces, Université Libre de Bruxelles, Bruxelles, Belgium), Dan Bizzotto, Thomas Doneux

Investigation of DNA Single Nucleotide Polymorphism by Electrochemical In Situ Fluorescence Microscopy

S05 Novel Materials and Devices for Energy Storage: Batteries for Tomorrow’s World

Capacitive/pseudocapacitive electrodes

S05-001

Shanyi Guang (College of Chemical Engineering and Biology Technology, Donghua University, Shanghai, China), Mebrahtu Melake Mezgebe, Fayin Zhang

A Novel 3D Graphene-Fe₃O₄-Polyaniline Nano-Composite for Supercapacitor Electrodes

ILs for energy storage and conversion

S05-002

Chih-Yao Chen (Department of Applied Chemistry, Osaka University, Osaka, Japan), Yuya Uemura, Yu Hashimoto, Tetsuya Tsuda, Susumu Kuwabata

Potential Cathode Materials for Rechargeable Al Batteries

Li-ion

S05-003

Woosuk Cho (Advanced Batteries Research Center, Korea Electronics Technology Institute, Seongnam, Korea), Sun-Mi Lee, Ko-Woon Lee, Yong Nam Jo, Jun-Ho Song, Min-Sik Park, Ji-Sang Yu

Mn surface doping for improved thermal properties of Ni-rich layered LiNi₀.₈₂Co₀.₁₂Mn₀.₀₆O₂ cathode for lithium ion battery

S05-004

Zhijia Du (Energy and Transportation Science Division, Oak Ridge National Laboratory, Oak Ridge, USA), Jianlin Li, Marrisa Wood, Claus Daniel, David Wood

Carbon nanotubes as conductive additives in aqueous processing of NMC532 electrode
S05-005  
**Sebastian Feihl** *(R&D, Zahner Scientific Instruments, Kronach, Germany)*, Mark Sholin, Carl Albrecht Schiller, Steffen Fröba, Michael Multerer, Werner Strunz  
A Novel Multi-Sine Excitation Procedure for Impedance Spectroscopy Supports Automatic Drift Correction and Online Error Determination

S05-006  
**Claudio Gerbaldi** *(Department of Applied Science and Technology - DISAT, Politecnico di Torino, Torino, Italy)*, Luca Porcarelli, Alexander S. Shaplov, M. Ali Aboudzadeh, Federico Bella, Jijeesh R. Nair, David Mecerreyes  
New Families of Single-Ion Block Copolymer Electrolytes based on Poly(Ethylene Oxide) and Methacrylic Sulfonamide for Lithium Batteries

S05-007  
**Thomas Guarr** *(Chemistry, Michigan State University Bioeconomy Institute, Holland, USA)*, Nicholas Mortimer, Amber Prins, Adina Dumitrascu, Daniel Henton  
Tuning Redox Potentials via Steric Crowding: Design of Stable Redox Shuttles to Prevent Overcharging in Lithium Ion Batteries

S05-008  
**Ling Huang** *(College of Chemistry and Chemical Engineering,, Xiamen University, Xiamen, China)*  
New insights into the structure changes and interface properties of Li$_3$VO$_4$ anode during the initial cycle by in-situ XRD and EIS

S05-009  
**Carlos Juarez-Yescas** *(Departamento de Química, Universidad Autónoma Metropolitana Iztapalapa, Ciudad de México, Mexico)*, Gregorio Guzmán, Guadalupe Ramos-Sánchez, Noé Aguilar-Eseiza, Daniel Ramírez-Rosales, Ignacio González  
Analysis of the Synergic Effects in LiFePO$_4$/Li$_2$CuO$_2$ Cathode Blends for Li Ion Batteries via Electrochemical and EPR Experiments

S05-010  
**Hun-Gi Jung** *(Center for Energy Convergence Research, Korea Institute of Science and Technology (KIST), Seoul, Korea)*, Min-Gi Jeong, Du Hoang Long  
Self-rearrangement of silicon embedded micro carbon sphere as anode materials for high-energy and long-life lithium-ion batteries

S05-011  
**Kaushik Kalaga** *(Chemical Sciences and Engineering, Argonne National Laboratory, Lemont, USA)*, Cameron Peebles, James A. Gilbert, Daniel Abraham  
High Voltage Performance of Lithium Ion Cells with EC-Based and EC-Free Electrolytes

S05-012  
**Kwok-ho Lam** *(Electrical Engineering, The Hong Kong Polytechnic University, Hong Kong, China)*, Lina Qu, Xianhua Hou  
Superior Electrochemical Performance in Flake NiFe$_2$O$_4$ Anode Materials for Lithium-ion Batteries

S05-013  
**Mickdy Milien** *(Chemistry, University of Rhode Island, Kingston, USA)*, Jennifer Hoffmann, Jing Li, Martin Payne, Scott Stephenson, John Sans, Brett Lucht  
The Effects of Electrolyte Additives on Li$_4$Ti$_5$O$_12$ and How They Impact Gassing

S05-014  
**Jelena Popovic** *(Physical Chemistry of Solids, Max Planck Institute for Solid State Research, Stuttgart, Germany)*, George Hasegawa, Igor Moudrakovski, Joachim Maier  
Infiltrated porous oxide monoliths as high lithium transference number electrolytes

S05-015  
**Frank Uwe Renner** *(Institute for Materials Research and IMEC, Hasselt University, Diepenbeek, Belgium)*, Boaz Moeremans, Yueming Zheng  
Combining Complementary Techniques to Control and Understand the SEI Formation on Silicon Alloys
S05-016  
**Daichi Sakuma** (Materials Science and Technology, Nagaoka University of Technology, Nagaoka, Japan), Shuichi Taniguchi, Koutaro Konakawa, Satoshi Otsuka, Minoru Umeda

Entropy Evaluation of Commercial 18650 Type Lithium Ion Cell

S05-017  
**Morimasa Takata** (Mechanical Engineering, Nagaoka University of Technology, Nagaoka, Japan), Minoru Umeda, Nobuhiko Azuma

Evaluation of cell performance at -5 to -80°C: NiMH and Li-ion cells

S05-018  
**Wan-Ting Tsou** (Department of Materials Science and Engineering, National Tsing Hua University, Taipei, Taiwan)

Enhanced Electrochemical Properties of Nb-TiO$_2$/Sulfur Dual Layered Structure Applied to Lithium-Sulfur Batteries

S05-019  
**Jing Zhao** (College of Materials Science and Chemical Engineering, Harbin Engineering University, Harbin, China), Yue Pan, Guiling Wang

One-step Preparation of Carbon and Fe$_3$O$_4$ Nanospheres Coated Fe$_3$O$_4$ for Lithium Ion Batteries

**Metal-Sulfur**

S05-020  
**Irina Belenkaya** (Chemistry, Tel-Aviv University, Tel-Aviv, Israel), Inna Schektman, Tzach Mukra, Meital Goor, Emanuel Peled, Diana Golodnitsky

New Approaches to the Design of Cathodes and Barriers for Enhanced Performance of Li/S Batteries

S05-021  
**Hiroki Nara** (Research Organization for Nano & Life Innovation, Waseda University, Tokyo, Japan), Takeru Hara, Tokihiko Yokoshima, Toshiyuki Momma, Tetsuya Osaka

Synthesis of Manganese Dioxides as Redox Mediator and Support for Sulfur Cathode in Lithium Secondary Battery

**Na-ion**

S05-022  
**Kyung Yoon Chung** (Center for Energy Convergence Research, Korea Institute of Science and Technology, Seoul, Korea), Dieky Susanto

Degradation mechanism of NaFeO$_2$ as cathode materials for Na-ion batteries at high voltage region

S05-023  
**Kyung Yoon Chung** (Center for Energy Convergence Research, Korea Institute of Science and Technology (KIST), Seoul, Korea), Dieky Susanto

Utilization strategy of iron based layered oxides as cathode materials for Sodium ion batteries

S05-024  
**Kei Kubota** (Department of Applied Chemistry, Tokyo University of Science, Tokyo, Japan), Yuya Hironaka, Koji Nitta, Atsushi Fukunaga, Shinichi Komaba

P2-Type Na$_x$(Li,Ni,Mn,Fe)O$_2$ for Advanced Na-Ion Batteries

S05-025  
**Laureline Lecarme** (LITEN, CEA, Grenoble, France), Virginie Simone, Loic Simonin, Sebastien Martinet

Electrolyte in Na-ion batteries systems: towards an improvement of safety and lifetime

S05-026  
**Giuseppina Meligrana** (Department of Applied Science and Technology, Politecnico di Torino, Torino, Italy), Francesca Colò, Federico Bella, Jijeesh R. Nair, Claudio Gerbaldi

Cheap and Easily Processable Polymer Electrolytes for Sodium Batteries

S05-027  
**Oliver Schneider** (Institute for Informatics VI, Technical University of Munich, Garching, Germany), Lukas Seidl, Nicolas Bucher, Eileen Chu, Steffen Hartung, Sladjana Martens, Ulrich Stimming

Intercalation of Solvated Na-Ions into Graphite
S05-028
Masahiro Shimizu (*Materials Chemistry, Shinshu University, Nagano, Japan*), Yuji Tsushima, Susumu Arai
Electrochemical Na-insertion/extraction property of Ni-coated phosphorus prepared by an electroless deposition method

S05-029
Cristina Tealdi (*Department of Chemistry, University of Pavia, Pavia, Italy*), Chiara Ferrara, Piercarlo Mustarelli
Structural and Transport Properties of Na0.44MnO2 Cathode Material for Rechargeable Na-ion Batteries

**Post Li-ion technologies**

S05-030
**Hyungho Go** (*Department of Chemical Engineering, Inha University, Incheon, Korea*), Youngho Oh, Danbi Lee, Gibaek Lee, Yongsug Tak
Electrochemical Investigation of Modified Aluminum Anode Surface for Rechargeable Aluminum-ion Battery

S05-031
**Hyung Sun Kim** (*Small & Medium Enterprise Support Center, Korea Institute of Science and Technology, Seoul, Korea*)
Carbon composite bipolar plate for redox flow battery

S05-032
**Aliya Mukanova** (*School of Engineering, National Laboratory Astana, Nazarbayev University, Astana, Kazakhstan*), Almagul Menthayeva, Arailym Nurpeissova, Arshat Urazbayev, Zhumabay Bakenov
N-type Amorphous Silicon Thin Film on 3D Current Collector as Negative Electrode for Li-ion Batteries

S05-033
**Joe Murphy** (*Chemical Engineering, Case Western Reserve University, Cleveland, USA*), Nicholas Sinclair, Robert Savinell, Jesse Wainwright
Evaluation of Carbon Felt for High Potential Redox Couples

S05-034
**Kyle Smith** (*Mechanical Science and Engineering, University of Illinois at Urbana-Champaign, Urbana, USA*), Vinay Iyer, Pavan Nemani, Elena Montoto, Shaoyi Qian, Gavvalapalli Nagarjuna, Yu Cao, Jonathon Schuh, Randy Ewoldt, Jeffrey Moore, Joaquin Lopez-Rodriguez
Characterization of Electrolyte Transport Properties and Techno-Economic Analysis of Redox-Active Polymer Flow Batteries

S05-035
**Carlos Valero-Vidal** (*Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, USA*), Yi Yu, Artem Baskin, Nathan T. Hahn, Kevin Zavadil, Bryan W. Eichhorn, David Prendergast, Ethan J. Crumlin
Characterization of the Electrode/Electrolyte Interface in the Next Generation of Batteries using Ambient Pressure XPS

S05-036
**Norbert Wagner** (*German Aerospace Center (DLR), Institute for Engineering Thermodynamics, Stuttgart, Germany*), Dennis Wittmaier, Natalia Andrea Canas, Indro Biswas, Alexander Kube, Kaspar Andreas Friedrich
Highly Stable Carbon-Free Cathodes for Li-Air Batteries with Aqueous Alkaline Electrolyte: Electrochemical and Structural Investigations

**Solid electrolytes**

S05-037
**Hae-Won Cheong** (*4th R&D Institute - 4, Agency for Defense Development, Daejeon, Korea*), Chae-Nam Im, Ji-Youn Kim, Seung Ho Kang, Jang-Hyeon Cho
Molten Lithium-Sulfur Cell with Solid Electrolyte

S05-038
**Kai Guo** (*School of Engineering, Brown University, Providence, USA*), Mok Yun Jin, Teng Ma, Prabhakar A. Tamirisa, Xianghui Xiao, Huajian Gao, Brian Sheldon
Electrochemically Driven Deformation and Fracture in Solid State Batteries
S05-039

Seung Ho Kang (The 4th R&D Institute-4, Agency for Defence Development, Daejeon, Korea), Hae-Won Cheong, Dang-Hyok Yoon, Junsin Yi

Molten Salt Infiltrated Ceramic Felt Separators for Li/FeS$_2$ Thermal Batteries

S05-040

Can Berk Uzundal (Chemistry, Bilkent University, Ankara, Turkey), Fadime Mert Balci, Burak Ulgut, Omer Dag

Lyotropic Liquid Crystalline Mesophases of Sulfuric Acid-Non-Ionic Surfactant Stabilizes Lead (II) Oxide in Sulfuric Acid Concentrations Relevant to Lead Acid Batteries

S05-041

Jun Zhang (Chemical Engineering and Pharmaceutics School, Henan University of Science and Technology, Luoyang, China), Yiming Zhu, Yang Wang, Yonghua Duan

Preliminary Study on Electrochemical Reduction of Ammonium Metaborate to Indirectly Generate Ammonia Borane

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S06  Fuel Cells and Electrolyzers

Electrocatalysis

S06-001

Jinuk Byun (School of Chemical and Biological Engineering, Seoul National University, Seoul, Korea), Sang Hyun Ahn, Jae Jeong Kim

Self-terminating electrodeposition of atomic scale platinum film on titanium nitride as an electrochemical catalyst

S06-002

Marian Chatenet (LEPMI, Grenoble Institute of Technology (Grenoble-INP), Saint Martin d’Heres, France), Clemence Lafforgue, Laetitia Dubau, Frederic Maillard

Influence of the nature of the alkaline electrolyte on the durability of platinum-based carbon-supported electrocatalysts for direct liquid alkaline fuel cells

S06-003

Carlota Dominguez (School of Chemistry, Trinity College Dublin, Dublin, Ireland), Md. Khairul Hoque, Michelle P. Browne, Leticia Esteban-Tejeda, Corbin K. Livingston, Kevin M. Metz, Paula E. Colavita

Flow synthesis of methanol-tolerant Pt nanoparticles within carbon microspheres as durable oxygen reduction reaction electrocatalysts

S06-004

Daniel Escalera López (School of Chemical Engineering, University of Birmingham, Birmingham, United Kingdom), Neil V. Rees

Inherent electrochemical activity and stability of amorphous MoS$_x$ films for the hydrogen evolution in the 0.6-13 pH range

S06-005

Jorge Ferreira de Araújo (Chemistry, Technical University Berlin, Berlin, Germany), Mikaela Görlin, Thomas Merzdorf, Fabio Dionigi, Peter Strasser

In-situ corrosion of Nickel-based catalysts during OER studied via DEMS

S06-006

Kang Fu (College of Materials Science and Engineering, Donghua University, Shanghai, China), Yang Wang, Linchang Mao, Junhong Jin, Shenglin Yang, Guang Li

Facile Morphology Controllable Synthesis of PtPd Dendritic Nanorods on Graphene-Multiwalled Carbon Nanotube Hybrid Support as Efficient Electrocatalyst for Oxygen Reduction Reaction

S06-007

Jaromír Hnát (Department of Inorganic Chemistry, University of Chemistry and Technology Prague, Prague, Czech Republic), Christian Immanuel Muller, Martin Durovic, Thomas Rauscher, Lars Rontsch, Monika Drakselová, Martin Paidar, Karel Bouzek

FeCoSiB Alloy as an Efficient Electrocatalyst for Hydrogen Evolution Reaction in Alkaline Environment
S06-008  
**Kenta Kakitani** (School of Engineering, The University of Tokyo, Tokyo, Japan), Tetsuya Kimata, Tetsuya Yamaki, Shunya Yamamoto, Wei Mao, Takayuki Terai, Iwao Shimoyama, Daiju Matsumura, Tomitsugu Taguchi, Akihiro Iwase, Tomohiro Kobayashi  
Activity Enhancement of Platinum Nanoparticle Catalysts by Ion-Beam-Induced Defects

S06-009  
**Yeongdae Lee** (School of Energy and Chemical Engineering, Ulsan National Institute of Science and Technology, Ulsan, Korea)  
Size dependency of electrocatalyst-support interaction of Pt supported by two-dimensional Ti₃C₂ in oxygen electrocatalysis

S06-010  
**Chuqing Liu** (Chemical Engineering, University of Massachusetts Lowell, Lowell, USA), Zhiyang Li, Ethan Adams, Zhiyong Gu  
High Performance and High CO Tolerance Nanowire Arrays as Electrocatalysts for Direct Alcohol Fuel Cells

S06-011  
**Jianguo Liu** (College of Engineering and Applied Sciences, Nanjing University, Nanjing, China), Congping Wu, Zhigang Zou  
The promotion on the durability of carbon supported PtNi alloy catalyst by carbon coating and Au addition for oxygen reduction reaction

S06-012  
**Mariangela Longhi** (Dipartimento di Chimica, Università degli Studi di Milano, Milano, Italy)  
ORR Activity of Mesoporous N-Modified Carbon Doped with Non-Noble Metals. Effects of metal and nitrogen precursors

S06-013  
**Linchang Mao** (College of Materials Science and Engineering, Donghua University, Shanghai, China), Yang Wang, Kang Fu, Junhong Jin, Shenglin Yang, Guang Li  
PtFe Alloy Catalyst Supported on Porous Carbon Nanofiber with High Activity and Durability for Oxygen Reduction Reaction

S06-014  
**Sanjeev Mukerjee** (Chemistry and Chemical Biology, Northeastern University, Boston, USA), Shraboni Ghoshal, Jingkun Li, Wentao Liang, Chunchuan Xu, Kerrie Gath, Jun Yang, James Waldecker, Guannan Meng, Haiying Che, Shiming Zhang, Zi-Feng Ma, Qingying Jia  
Metal and Metal Oxide Interactions and Their Catalytic Consequences

S06-015  
**Kazuya Ogura** (Graduate School of Environmental Materials Science, Hokkaido University, Sapporo, Japan), Shoichi Tokuda, Masaru Kato, Ichizo Yagi  
Electrocatalytic Oxygen Reduction Activity and Durability of Pt-Ni Alloy Nanostructures Supported on Nitrogen-Doped Carbon

S06-016  
**Aaron Roy** (Chemical and Biological Engineering, University of New Mexico, Albuquerque, USA), Ivana Matanovic, Kateryna Artyushkova, Alexey Serov, Plamen Atanassov  
Refractory Metal Doped TiO₂ as Corrosion-Resistant Electrocatalyst Supports for Proton Exchange Membrane Fuel Cells

S06-017  
**Mauro Santos** (Centro de Ciências Naturais e Humanas, Universidade Federal do ABC, Santo André, Brazil)  
Niobium and Palladium as Electrocatalysts for Ethanol Electrooxidation Reaction

S06-018  
**Congying Song** (College of Materials Science and Chemical Engineering, Harbin Engineering University, Harbin, China), Guiling Wang  
In-situ reduced petal-shaped Co/Co₃O₄ supported on Ni foam: a new catalyst for H₂O₂ electroreduction
S06-019

Matheus Souza (Physical Chemistry, Institute of Chemistry - UNICAMP, Campinas, Brazil), Matheus Guide, Cléo Pires, Pablo Fernández

The electrooxidation of glycerol on polycrystalline gold modified by Cu

S06-020

Naoto Todoroki (Graduate School of Environmental Studies, Tohoku University, Sendai, Japan), Hirofumi Watanabe, Soma Kaneko, Masatsugu Hosoda, Yohe Bando, Toshimasa Wadayama

Oxygen Reduction Reaction Activity for Vacuum-Deposited Pt-Monolayers on Metal Single Crystal Substrates

S06-021

Qunjie Xu (College of Environmental and Chemical Engineering, Shanghai University of Electric Power, Shanghai, China)

Composite Films of Two-dimensional Black Phosphorus Nanoflakes and Graphene Supported Pd Nanoparticles for Ethanol Electrooxidation Enhancement

S06-022

Hui-Juan Yang (Chemistry Department, Xiamen University, Xiamen, China), Yu-Hao Hong, Zhi-You Zhou, Shi-Gang Sun

High Selectivity Reduction of CO₂ to CO on Fe/N/C Catalyst with Excellent Tolerance to Metal Impurities

S06-023

Ting-Hsuan You (Chemical Engineering, National Tsing Hua University, Hsinchu, Taiwan), Chi-Chang Hu

Engineering Binary Ru-Sn Oxides as Bi-functional Catalysts for the Air Electrode of Rechargeable Zinc-Air Batteries

Electrolyser

S06-024

Kensaku Nagasawa (Green Hydrogen Research Center, Yokohama National University, Yokohama, Japan), Yuki Sawaguchi, Naoto Morita, Akihiro Kato, Yoshinori Nishiki, Shigenori Mitsushima

Development of Toluene Direct Hydrogenation Electrolyzer for Energy Carrier Technology

Fuel Cells

S06-025

Gyeong Sook Bang (School Electrical Engineering, Graphene/2D Materials Research, KAIST, Daejeon, Korea)

Defect-engineered N-doped graphene for efficient oxygen reduction

S06-026

Canyan Che (Science and Technology, Linköping University, Linköping University, Sweden)

High performance conducting polymer electrodes for hydroquinone benzoquinone redox

S06-027

Hyeonji Choi (Department of Chemical Engineering, Inha University, Incheon, Korea)

Durability of Nb-doped TiO₂ Catalyst Support of Polymer Electrolyte Membrane Fuel Cell

S06-028

Fabio Dionigi (Institut fuer Chemie, Technische Universitaet Berlin, Berlin, Germany), Carl Cesar Weber, Stefanie Kühl, Peter Strasser

Improving the Durability of Shape-controlled Octahedral Pt Alloy Nanoparticle Catalysts for Use in Fuel Cell Cathodes

S06-029

Su Jeong Heo (Department of Materials Science and Engineering, University of Connecticut, Storrs, USA), Boxun Hu, Abdellkader Hilmi, Chao-Yi Yuh, Prabhakar Singh

Solubility and Coarsening of LiAlO₂ in MCFC Matrix

S06-030

Jietao Jiang (Materials and Chemical Engineering Institute, Harbin Engineering University, Harbin, China), Kui Cheng, Dianxue Cao

Pd nanoparticles support on rGO-C@TiC coaxial nanowires as a novel 3D electrode for NaBH₄ electrooxidation
**S06-031**

Jakub Malis *(Department of Inorganic Technology, University of Chemistry and Technology Prague, Prague, Czech Republic)*, Martin Paidar, Karel Bouzek

Design of modular filter for treatment of air used as an oxidant in the mobile APU based on PEM fuel cell

**S06-032**

Eugene Smotkin *(Department of Chemistry and Chemical Biology, Northeastern University, Boston, USA)*

Operando IR and Raman micro-spectroscopy of fuel cells

**S06-033**

Jian Wang *(Materials and Chemical Engineering Institute, Harbin Engineering University, Harbin, China)*, Kui Cheng, Dianxue Cao

Facile synthesis of morphology-controlled Co₃O₄ nanostructures and its application for H₂O₂ electroreduction

**S06-034**

Jun Yano *(Fundamental Science, National Institute of Technology, Niigama College, Niigama, Japan)*, Kenta Suzuki, Chikara Tsutsumi, Michiaki Mabuchi, Nobuki Hayase

Photogalvanic Cell Consisted of Photo-activated Flavin Mediated Oxidation of NADH and Reduction of Hydronium Ion

**S06-035**

Andrea Zitolo *(SAMBA beamline, Synchrotron SOLEIL, Saint Aubin, France)*, Gautier Landrot, Guillaume Alizon, Emiliano Fonda

Synchrotron Radiation Based X-Ray Absorption for Electrochemistry: New Opportunities at the SAMBA Beamline

**Oxide- and proton-conducting electrolytes**

**S06-036**

Huazhen Cao *(College of Materials Science and Engineering, Zhejiang University of Technology, Hangzhou, China)*, Kailu Huang, Liankui Wu, Guangya Hou, Yiping Tang, Guoqu Zheng

Electrochemical studies of methanol electro-oxidation on Pt/RuO₂/TNTs nanocomposite thin film electrodes

**PEFC (PEMFc & AEMFC)**

**S06-037**

Hikaru Igarashi *(Green Hydrogen Research Center, Yokohama National University, Yokohama, Japan)*, Akimitsu Ishihara, Takaaki Nagai, Satoshi Tominaka, Yoshiyuki Kuroda, Koichi Matsuzawa, Teko Napporn, Shigenori Mitsushima, Ken-ichiro Ota

Development of Conductive Oxides as Support of Precious-Metal- and Carbon-Free Oxide-based Cathodes for PEFCs

**S06-038**

Kosuke Nishida *(Faculty of Mechanical Engineering, Kyoto Institute of Technology, Kyoto, Japan)*, Ryoga Nakauchi, Yuya Maeda, Toyofumi Umekawa, Masahiro Kawasaki

Fiber-Optic Laser Absorption Spectroscopy Techniques for Measuring Water and Oxygen Transports in PEM Fuel Cells

**S06-039**

Dennis Sun *(Research and Development, Automotive Fuel Cell Cooperation, Burnaby, Canada)*, Max Cimenti, Dorina Manolescu, Wendy Lee, Jasna Jankovic, Viatcheslav Berejnov, Darjia Susac

Characterization of Anodes during Extended Reversal Test

**Proton- & anion-exchange membranes**

**S06-040**

Keisuke Tanimoto *(Green Hydrogen Research Center, Yokohama National University, Yokohama, Japan)*, Kahoru Ikegami, Kensaku Nagasawa, Koichi Matsuzawa, Shigenori Mitsushima

Factors of Toluene Permeation in Proton Exchange Membrane
S07  Supercapacitors from Materials and Processes to Applications

Asymmetric and hybrid devices

S07-001
Sheng Chi Lin (Chemical Engineering, National Tsing-Hua University, Hsin-Chu, Taiwan), Chen-Chi M. Ma, Chi-Chang Hu
Asymmetric supercapacitors consisting of functional electrospun carbon nanofiber/manganese oxide electrodes with high power and energy densities

Capacitive/pseudocapacitive electrodes

S07-002
Thomas Guarr (Chemistry, Michigan State University Bioeconomy Institute, Holland, USA), Kevin Klunder, Yarranton Jonathan
Polymeric Metal Phthalocyanines as Versatile Active Materials in Supercapacitors

S07-003
Tyler Mathis (Materials Science and Engineering, Drexel University, A. J. Drexel Nanomaterials Institute, Philadelphia, USA), Katherine van Aken, Kathleen Maleski, James Breslin
Effects of Processing on the Capacitive Performance of Onion-like Carbon

Electrolytes and interfaces

S07-004
Krzysztof Fic (Institute of Chemistry and Technical Electrochemistry, Poznan University of Technology, Poznan, Poland), Mikolaj Meller, Elzbieta Frackowiak
Redox Activity of Sulphur-based Electrolytes in Supercapacitor Application

S07-005
Jeng-An Wang (Chemical Engineering Science, National Tsing Hua University, Hsinchu, Taiwan), Chen-Chi M. Ma, Chi-Chang Hu
Novel Alkaline Bifunctional Polymer Electrolytes for Supercapacitors

Supercapacitor

S07-006
Hong Bi (School of Chemistry and Chemical Engineering, Anhui University, Hefei, China), Xiang Zhang, Dong Wang, Zhenbin Fang
Nitrogen-doped porous carbon derived from residuary peanut shell: an excellent electrode material for supercapacitors

S07-007
Le Li (Electronic Materials Research Laboratory, Xi’an Jiaotong University, Xi’an, China)
Improved electrochemical exfoliation of graphite into high-quality graphene for supercapacitor

S07-008
Jakub Menzel (Institute of Chemistry and Technical Electrochemistry, Poznan University of Technology, Poznan, Poland), Elzbieta Frackowiak, Krzysztof Fic
Determination of the stability limits for carbon-based electrochemical capacitors

S07-009
Xu Zhang (College of Materials Science and Chemical Engineering, Harbin Engineering University, Harbin, China), Ye Chen, Kui Cheng
Preparation of novel polyporous graphene roll electrode for high performance supercapacitors
**System integration and application**

**S07-010**

**Chi-Feng Hsieh (Chemical Engineering, National Tsing Hua University, Hsinchu, Taiwan)**, Chi-Chang Hu

Determination of the Working Potential Windows of Electrode Materials for Capacitance Deionization and Invert Capacitance Deionization

**S07-011**

**Francesca Soavi (Department of Chemistry Giacomo Ciamician, Alma Mater Studiorum - University of Bologna, Bologna, Italy)**, Stefania Intermite, Catia Arbizzani, Somayeh Gholipour, Silver Hamill Turren Cruz, Juan Pablo Correa-Baena, Michael Saliba, Nick Vlachopoulos, Abdollah Morteza Ali, Anders Hagfeldt, Michael Grätzel

Boosting up Perovskite Solar Cell Power Performance by Electrochemical Double Layer Capacitors

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**S08 Dealloying: Fundamentals, Application, and Control**

**Dealloying**

**S08-001**

**Kevin Ogle (IRCP, Chimie-Paristech, Paris, France)**, Peng Zhou

In situ kinetics of the dezincification of Cu-Zn alloys: Uncovering the effect of phase structure and composition

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**S09 Ionic Liquids as Media for Electrochemical Synthesis**

**Electrodeposition of reactive metals**

**S09-001**

**Oliver Schneider (Institute for Informatics I6, Technical University of Munich, Garching, Germany)**, Sladjana Martens, Lukas Seidl, Ludwig Asen

Electrochemical Deposition of Niobium from Ionic Liquids

**ILs for energy storage and conversion**

**S09-002**

**Brian Chmielowiec (Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, USA)**, Tatsuki Fujimura, Tomohiro Otani, Kiego Aoyama, Toshiyuki Nohira, Takayuki Homma, Antoine Allanore

Connecting Anodic Gas Evolution in Aqueous and High Temperature Molten Electrolyte Systems Via the Current Interrupt Technique

**S09-003**

**Pekka Peljo (Laboratoire d’Electrochimie Physique et Analytique, École Polytechnique Fédérale de Lausanne, Sion, Switzerland)**, Sunny Maye

Copper Based Ionic Liquids for Heat-to-Power Conversion and Storage

**S09-004**

**Carlos Pereira (Chemistry and Biochemistry, Faculty of Sciences University of Porto, Porto, Portugal)**, Renata Costa, Iuliiia V. Voroshlylova, M. Natália D.S. Cordeiro, A. Fernando Silva

Boosting Energy Storage Efficiency by using Ionic Liquids Mixtures – Experimental and Theoretical Insight

**Room temperature molten salts**

**S09-005**

**Claudine Buess-Herman (Service de Chimie Analytique et Chimie des Interfaces, Université libre de Bruxelles, Bruxelles, Belgium)**, Liis Siinor, Anne Meunier, Magdalena Osial, Thomas Doneux

The Electrochemical RTIL-Metal Interface in the Presence of Additives
S10 Corrosion: Fundamentals, Passivity, and Prevention

Corrosion

S10-001
Mohammad Bin Sabt (Chemistry, Kuwait University, Kuwait, Kuwait), Faizah Al-Kharafi, Maryam Abditon, Ahmed Galal
Effect of nanoparticle incorporation in silane-polymer composite coating on corrosion protection of Mg-Zn-Al alloy in aggressive media

S10-002
Md. Zaved Hossain Khan (Chemical Engineering, Jessore University, Jessore, Bangladesh), Md Abdul Aziz
Anticorrosion Behavior of Bio-drug on Mild Steel Surface: AFM and SEM Characterization

S10-003
Ching-Fang Liu (Department of Chemical Engineering, National Tsing-Hua University, Hsinchu, Taiwan), Chi-Chang Hu
Effects of pH and electrolytes on the stability of the ZnO nanorods photoanode for the photoelectrochemical water splitting

S10-004
Piotr Ozga (Institute of Metallurgy and Material Science, Polish Academy of Sciences, Cracow, Poland), Agnieszka Hara, Zbigniew Swiatek, Janusz Pstrus, Monika Slupska
The Barrier and Electrochemical Properties of CVD Graphene on Copper Substrate

S10-005
Fabiola Pineda (Department of Mechanical and Metallurgical Engineering, Pontificia Universidad Católica de Chile, Santiago, Chile)
Evaluation of electrochemical impedance spectroscopy as a method for monitoring corrosion of stainless steel in molten nitrate salt

S10-006
Kang Shi (Department of Chemistry, Xiamen University, Xiamen, China), Zhigang Dong, Yahui Wang, Liwei Ou, Xuan Zheng
Morphologic Evolution of Gallium Nitride Wafer during Photoelectrochemical Etching

S10-007
Shruthi Tiruchirapalli Kumar Raj (Department of Chemistry, Michigan State University, East Lansing, USA), Greg Swain
Effects of Rinse Water pH on the Anti-Corrosion Properties of Trivalent Chromium Process (TCP) Conversion Coatings on AA2024-T3 Alloy

S10-008
Can Berk Uzundal (Chemistry, Bilkent University, Ankara, Turkey), Zulal Beyza Demirkaya, Gozde Karaoglu, Burak Ulgut
Detection of Localized Under-Paint Corrosion Using Acid-Base Indicators and H₂ Permeation

S10-009
Qunjie Xu (College of Environmental and Chemical Engineering, Shanghai University of Electric Power, Shanghai, China)
The research on preparation of superhydrophobic surfaces of pure copper by hydrothermal method and its corrosion resistance

Galvanic corrosion

S10-010
Chao Liu (Materials Science and Engineering, University of Virginia, Charlottesville, USA), Robert Kelly
Investigation of the Influence of Electrolyte Thickness and Geometric Parameters on the Galvanic Corrosion between Zinc Plate and Stainless Steel Rods
Passivity
S10-011
Jeffrey Henderson (Chemistry, Western University, London, Canada), Nafiseh Ebrahimi, Samantha Anderson, David Shoesmith, James Noël
The Role of Internal Cathodic Reactions during the Crevice Corrosion of Ni-Cr-Mo Alloys

Stress corrosion cracking
S10-012
Juan Creus (University of La Rochelle, LaSIE UMR 7356, La Rochelle, France), Abdelali Oudriss, Remy Milet, Cyril Berziou, Stephane Cohendoz, Xavier Feaugas, Helene Morillot, Jean-Michel Sobrino
Hydrogen embrittlement of martensitic high strength steels: relationship between microstructure and hydrogen diffusion and segregation

S11 Synthesis and Applications of Electrochemically Active Materials

Conducting polymers
S11-001
Susana Cordoba de Torresi (Instituto de Quimica, Universidade de São Paulo, São Paulo, Brazil), Arua da Silva, Ana Semeano, Alexander Ulrich
Novel Conducting, Biocompatible and Biodegradable Copolymer PEDOT-co-PLLA for cell growth and differentiation

Electroactive composites
S11-002
Tsung-Hung Chen (Chemical Engineering, Ming Chi University of Technology, New Taipei City, Taiwan), Chun-Chen Yang
Comparison different preparation methods for FeF₃/C composite cathode material and its performance investigation

S11-003
Hae-Won Cheong (4th R&D Institute - 4, Agency for Defense Development, Daejeon, Korea), Byung June Park, Seung-Ho Kagn, Tae-Uk Hur
Electrochemical Properties of FeS₂ Thin Film Cathode for Thermal Batteries

S11-004
Yu-Lun Chuang (Chemical Engineering, Ming Chi University of Technology, New Taipei City, Taiwan), Chun-Chen Yang
Preparation of graphene oxide coated Li₁₂Ni₀₂Mn₀₆O₂ by self-assembly process and its electrochemical properties study

S11-005
Rupali Gupta (Department of Chemistry, Institute of Science, Banaras Hindu University, Varanasi, India)
Metal Nanoparticles Encapsulated Mesoporous Silica Materials: Novel 3D Hybrid Material for Electroanalytical Applications

S11-006
Ho-Sung Kim (Seonam Regional Division, Korea Institute of Industrial Technology (KITECH), Gwangju, Korea), Seung-Hoon Yang, Min-Young Kim, Da-Hye Kim, Ha-Young Jung, Hee-Jung Ban, Hye-Min Ryu, Moo-Sung Lee
Fabrication and electrochemical studies of solid electrolyte and cathode composite for all solid lithium secondary battery
**S11-007**

Wei Li (College of Chemical Engineering and Materials Science, Zhejiang University of Technology, Hangzhou, China), Ya-Zhi Zhu, Jintao Yang, Ping Fan, Ming-Qiang Zhong

Light-Motivated pH/Thermal Multi-Sensitive ITO Glass/Polyelectrolyte Composite Electrode

**S11-008**

Yuhua Shen (School of Chemistry and Chemical Engineering, Anhui University, Hefei, China), Xing Zhang, Anjian Xie

Facile Synthesis and Electrochemical Performance of Porous N-C/Co₃O₄ Nanocomposite

**S11-009**

Chao-Nan Wei (Chemical Engineering, Ming Chi University of Technology, New Taipei City, Taiwan), Chun-Chen Yang

Li-O₂ battery based on electrospinning PVDF/PET/PVDF nanofiber non-woven membrane and perovskite La₀.₅Ce₀.₅Fe₀.₅Mn₀.₅O₃ bi-functional catalyst

**S11-010**

Chun-Chen Yang (Chemical Engineering, Ming Chi University of Technology, New Taipei City, Taiwan), Cheng-En You

Improved electrochemical performance of Li₁₂Ni₀.₁₆Mn₀.₅₆Co₀.₀₈O₂ cathode materials by ruthenium oxide surface modification

**Electroactive materials**

**S11-011**

Junfeng Han (College of Materials Science and Chemical Engineering, Harbin Engineering University, Harbin, China), Guiling Wang, Yongde Yan, Yiju Li

A Sensitive Amperometric Sensor for Determination of Ascorbic Acid Based on Network-like Carbon Nanosheets Modified Glassy Carbon Electrode

**S11-012**

Semi Han (Green Materials and Process R&D Group, Korea Institute of Industrial Technology (KITECH), Cheonan, Korea)

Effect of imidazole and amine mixture on corrosion inhibition

**S11-013**

Semi Han (Green Materials and Process R&D Group, Korea Institute of Industrial Technology (KITECH), Cheonan, Korea)

Effect of imidazole and their derivatives on corrosion inhibition

**S11-014**

Seunghae Hwang (Department of Chemical and Biological Engineering, Seoul National University, Seoul, Korea)

Ni(II)-chelated Thio-crown Complex as Single Redox Couple for Non-aqueous Flow Batteries

**S11-015**

Hyejeong Jeong (Department of Chemical and Biological Engineering, Seoul National University, Seoul, Korea), Jongjun Kim, Seunghae Hwang, Seulki Chae, Jiyong Soon, Taejin Lee, Ji Heon Ryu, Seung M. Oh

Thermal Degradation of Li/LiCoO₂ Half-Cell at Moderately Elevated Temperature

**S11-016**

Matthew Lawrence (School of Chemistry, University of Birmingham, Birmingham, United Kingdom), Nick Adkins, Joaquin Rodriguez-Lopez, Paramaconi Rodriguez

Synthesis of mixed metal oxides nanomaterials with enhanced photocatalytical activity by combination of direct laser fabricated-alloys and cathodic corrosion

**S11-017**

Nonhlangabezo Mabuba (Applied Chemistry, University of Johannesburg, Johannesburg, South Africa), Olayiwola Azeez Idris, Omotayo Arotiba

Electrochemical Detection of Selenium in Water using Glassy Carbon Electrode Modified with Reduced Graphene Oxide
S11-018
Cecilia Manzur (Quimica, Pontificia Universidad Catolica de Valparaiso, Valparaiso, Chile), J.P. Soto, G. Ahumada, D. Carrillo, M. Angelica del Valle, J.-R. Hamon
Synthesis and Characterization of Metal Complexes Containing Thiophene Units Toward Metallopolymers to Modify Electrodes

S11-019
Tomasz Rebis (Faculty of Chemical Technology, Poznan University of Technology, Poznan, Poland), Grzegorz Milczarek
Synthesis and Electrochemical Characterization of Lignosulfonate-Stabilized Prussian Blue Nanoparticles

S11-020
Dominic Rochefort (Departement de Chimie, Universite de Montreal, Montreal, Canada), Han Jin Xie, Bruno Gelinas
Functionalised Ionic Liquids as Novel Electroactive Materials

S11-021
Jirui Wang (Department of Chemical Engineering, University of Massachusetts Lowell, Lowell, USA), Junwei Su, Fan Gao, Hongwei Sun, Zhiyong Gu
Electrodeposition of Multi-segment Metallic Nanowires and their Self-Assembling Applications

S11-022
Long Yang (Harbin Engineering University, University, Harbin, China)
TePbPt@PbPt core shell nanowires as highly active and durable electrocatalysts for methanol oxidation reaction

S11-023
Andrea Zaffora (Electrochemical Materials Science Laboratory, DICAM, University of Palermo, Palermo, Italy), Hiroki Habazaki, Francesco Di Franco, Francesco Di Quarto, Monica Santamaria
Growth kinetics and physicochemical characterization of Hf-Nb anodic mixed oxides

Electrocatalysis

S11-024
Hamed Ataee-Esfahani (Chemistry, Georgetown University, Washington, USA), Dejun Chen, YuYe J. Tong
Electrocatalysis of Direct Methane Oxidation on Transition Metal Catalysts

S11-025
Wei Chen (State Key Laboratory of Electroanalytical Chemistry, Changchun Institute of Applied Chemistry, CAS, Changchun, China), Ruizhong Zhang, Yizhong Lu, Minmin Liu, Xiaokun Li
2- and 3-Dimensional Nanocomposites for Electrocatalysis

S11-026
Sun Juanjuan (College of Chemistry and Chemical Engineering, Xiamen University, Xiamen, China), Hu Shu, Su Haisheng
In-situ monitoring the electrodeposition of silver nanoplates and its catalytic applications

S11-027
Masaru Kato (Faculty of Environmental Earth Science, Hokkaido University, Sapporo, Japan), Marika Muto, Naohiro Matsubara, Ichizo Yagi
Copper- and Nitrogen-Incorporated Carbon Electrocatalyst with Bio-Inspired Multinuclear Active Sites for Oxygen Reduction Reaction

S11-028
Pierre Millet (ICMMO, Paris-Sud University, Orsay, France), Angel Villagra, Alireza Ranjbari, Loïc Assaud, Akihiko Kudo
Photo-electrochemical Water Dissociation using Rh-doped SrTiO3 Surface-modified by Nickel N,N-dimethylaminoethyl amine

S11-029
Marcos Teixeira (School of Science and Technology, Sao Paulo State University (UNESP), Brazil), Fernanda Anastacio, Diego N. David-Parra, Patrícia Seraphim, Eduardo Gonzalez
Electrochemical Reduction Aqueous of CO2 on Electrode Coated with Redox Active Nano-Metallopolymers of Nickel(II)-Salen
Gunther Wittstock (Chemistry, Carl von Ossietzky University of Oldenburg, Oldenburg, Germany), Shokoufeh Rastgar

Visible-Light-Driven Water Oxidation at Polarized Liquid-Liquid Interfaces

Qing Yan (College of Materials Science and Chemical Engineering, Harbin Engineering University, Harbin, China), Tong Wei, Guiling Wang

Converting FeNi hydroxides into Fe-Ni phosphides as bifunctional electrodes for efficient overall water splitting

Nanostructured electrodes

Marco Altomare (Department of Materials Science and Engineering WW4-LKO, University of Erlangen-Nuremberg, Erlangen, Germany), Nhat Truong Nguyen, Seyed Sina Hejazi, Patrik Schmuki

Anodic TiO₂ Nanocavity Arrays for the Fabrication of Au-WO₃-TiO₂ Photocatalysts

Carlos Cevallos-Morillo (Química Analítica, Universidad Autónoma de México, Ciudad de México, Mexico), Julio César Aguilar-Cordero

Copper(II) Determination with Modified Carbon Nanotubes Electrodes using Dyes as Ligands

Luigi Falciola (Dipartimento di Chimica, Università degli Studi di Milano, Milano, Italy), Valentina Pifferi, Luca Rimoldi, Francesco Segrado, Guido Soliveri, Daniela Meroni, Silvia Ardizzone

Controlled Mesostructures of Solid-Templated Silica: Preparation and Electrochemical Characterization

Guang-Ya Hou (College of Materials Science and Engineering, Zhejiang University of Technology, Hangzhou, China), Yu Chen, Huazhen Cao, Yiping Tang, Lian-Kui Wu, Guoqu Zheng

Microstructure and Electrochemical Properties of Ni-Ti-O Nanosheets Supported on Ni Foam

Egon Kecsenovity (Department of Physical Chemistry and Materials Science, University of Szeged, Szeged, Hungary), Balázs Endrodi, Csaba Janáky

Enhanced Photoelectrochemical Performance of Cuprous Oxide/Graphene Nanohybrids

Duduzile Nkosi (Applied Chemistry, University of Johannesburg, Johannesburg, South Africa), F.O. Grace Olorundare, Omotayo Arotiba

Voltammetric determination of nitrophenols at a Ni(II) dimethylglyoxime complex – gold nanoparticles modified electrode

Guoqu Zheng (College of Materials Science and Engineering, Zhejiang University of Technology, Hangzhou, China), Wei Ning, Dagan Chai, Liqiang Zhang, Hao Wu, Zhenyu Tai, Huazhen Cao

Highly Active and Stable CuO Catalyst Embedded in TNTs for the Photoelectrochemical Reduction of Carbon Dioxide

M. Angelica del Valle (Facultad de Química, Pontificia Universidad Catolica de Chile, Santiago, Chile), Andres Ramirez, Francisco Armijo, Fernando Diaz, Andres Ramirez, Eduardo Ortega

Electrodes Electrochemically Modified with PEDOT Nano-wires. Assay in Photovoltaic Cells Based on Conducting Polymers
S12  Electrochemical Technology for solving 21st Century Challenges

**Electrochemical cell design and optimization**

S12-001  
**Trevor Braun** *(Materials Science and Engineering Division, National Institute of Standards and Technology, Gaithersburg, USA)*, Daniel Schwartz  
Remote Control Electrodeposition: Patterning on Substrates without Direct Electrical Connections

**Electrochemistry for sustainable processes**

S12-002  
**Christian E. Alvarez-Pugliese** *(School of Chemical Engineering, Universidad del Valle, Cali, Colombia)*, Jovannis A. Comas-Cabralde, Jorge I. Londoño-Escobar, Nilson Marriaga-Cabralde, Fiderman Machuca-Martínez, Juan Manuel Barraza Burgos  
Electro-elution of Aurodicyanide Adsorbed on Granular Activated Carbon

S12-003  
**Annick Hubin** *(Electrochemical and Surface Engineering, Vrije Universiteit Brussel, Brussels, Belgium)*, Benny Wouters, Jonas Hereijgers, Wim De Malsche, Tom Breugelmans  
Operation of a microfluidic reactor designed for cogeneration of valuable chemicals and electricity

S12-004  
**Yuriy Tolmachev** *(Ftorion, Mendeleev University, Moscow, Russia)*  
Hydrogen-Hypobromite Flow Battery

S12-005  
**Mary-Elizabeth Wagner** *(Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, USA)*  
Refining Precious Metals in Molten Sulfide Electrolytes

**Electrode materials and electrocatalysis**

S12-006  
**Michael George** *(Ernst-Berl Institute, Technical University Darmstadt, Darmstadt, Germany)*, Guirong Zhang, Bastian J.M. Etzold, Macarena Munoz  
Boosting the performance of Pt/C catalysts for the oxygen reduction reaction through modification with hydrophobic ionic liquids

S12-007  
**Ren-Hau Guo** *(Chemical Engineering, National Tsing Hua University, Hsinchu, Taiwan)*, Chi-Chang Hu  
Dependence of adsorbed CO on electrode potentials and electrolytes for electrocatalytic reduction of CO₂ on Pd nanoparticles

**Electroplating and another surface modification and protection technologies**

S12-008  
**Yunny Meas** *(Electrochemistry, CIDETEQ, Pedro Escobedo, Mexico)*, Adrián Sosa Domínguez, José de Jesús Pérez Bueno  
Corrosion behavior of thermally treated black Ni-P coatings

**Energy conversion systems**

S12-009  
**Karel Bouzek** *(Department of Inorganic Technology, University of Chemistry and Technology Prague, Prague, Czech Republic)*, Tomas Bystron, Martin Paidar, Martin Vesely  
Anode Catalyst Contact Resistance as a Limiting Aspect of the PEM Water Electrolysis Performance and Durability
S12-010

Juan Manríquez (Department of Science, Centro de Inv. y Des. Tecnológico en Electroquímica SC, Pedro Escobedo, Mexico), Karina Herrera-Aguilar, Erika Bustos, Rosalba Fuentes-Ramírez

Using of binary mixtures of propylene carbonate and 3-methoxypropionitrile for preparing the electrolytes of black dye-sensitized solar cells: Effect of molar fractions on fill factor and global conversion efficiency

S12-011

Bharathy Subramanian Parimalam (Chemistry, University of Rhode Island, Kingston, USA), Brett Lucht

Insights into the Stability of Lithium-Ion Battery SEI Components in LiPF₆ Containing Electrolytes

Environmental protection and remediation

S12-012

Erika Bustos (Science, Centro de Inv. y Des. Tecnológico en Electroquímica S.C., Pedro Escobedo, Mexico), Rosa Alhelí Herrada, Gustavo Acosta, Juan Manríquez

Application of IrO₂-Ta₂O₅ | Ti Electrodes to Environment Electrochemistry

S12-013

Locksley Castaneda Ulloa (Departamento de Ingeniería Geomática e Hidráulica, Universidad de Guanajuato, Guanajuato, Mexico), Jose Luis Nava Montes de Oca

Electrochemical generation of ozone using Ir-Sn-Sb oxide anodes

S12-014

Dan Chen (School of Environmental and Biological Engineering, Nanjing University of Science and Technology, Nanjing, China), Jinyou Shen, Lianjun Wang

N-doped Graphene/α-Fe₂O₃ Modified Photoanode for Enhanced Pyridine Degradation in Integrated Bioelectro-photocatalytic System

S12-015

José Duarte (Institute of Chemistry and Biotechnology, Federal University of Alagoas, Maceió, Brazil), Carmem Zanta, Anyelle Santos, Jéssica Melo, Alice Ferro, Edirlan Monteiro

Fenton and electrochemical reactions in the treatment of effluent from the orange soft drinks industry

S12-016

Lidia Carolina Espinoza Cisternas (Química de los Materiales, Universidad de Santiago de Chile, Chile), Ricardo Salazar

sp³/sp³ ratio in BDD electrodes: effect on the degradation of Aniline and the generation of oxidant species

S12-017

Sergi Garcia-Segura (Departament de Química Física, Universitat de Barcelona, Barcelona, Spain), Sergi Dosta, Marco Robotti, Irene García Cano, Josep Maria Guilemany, Enric Brillas

Influence of Photoanodes Structural Characteristics on the Solar Photoelectrocatalytic Properties of TiO₂ Coatings

S12-018

Karine Groenen Serrano (Laboratoire de Genie Chimique, Universite Paul Sabatier, Toulouse, France), Jingju Cai, Minghua Zhou, Andre Savall

Electrochemical oxidation of 2,4 Dichlorophenoxyacetic acid with sulfate radical generated by electrosynthesis of peroxodisulfate

S12-019

Mariana Lanzarini-Lopes (Environmental Engineering, Arizona State University, Tempe, USA), Sergi Garcia-Segura, Paul Westerhoff

Degradation Mechanisms and Kinetics of Electrochemical Oxidation of Chlorinated Pollutant p-Chlorobenzoic Acid

S12-020

Javier Llanos (Department of Chemical Engineering, University of Castilla-la Mancha, Ciudad Real, Spain), José Fernando Pérez, Inmaculada Moraleda, Cristina Sáez, Pablo Cañizares, Manuel Andres Rodrigo

Coupling Anodic Processes with Cathodic H₂O₂ Generation for Environmental Remediation Processes
S12-021

Weiwei Lu (School of Chemical Engineering & Pharmaceutics, Henan University of Science and Technology, Luoyang, China)

Photoelectrochemical Reduction of Carbon Dioxides

S12-022

Carlos Alberto Martínez-Huitl (Institute of Chemistry, Federal University of Rio Grande do Norte, Natal, Brazil), Karla Caroline de Freitas Araújo, Jéssica P. de Paiva Barreto, Danyelle Medeiros de Araújo, Aline Maria Sales Solano

Investigation of persulfate production on BDD anode by understanding the impact of water concentration

S12-023

Yummy Meas (Electrochemistry, CIDETEQ, Pedro Escobedo, Mexico), Florencio Garcia-Lugo, Alejandro Medel, José Luis Jurado Baizaval, Petia Mijaylova Nacheva, Alfonso Durán Moreno, Modesto Javier Cruz Gómez, Luis Godínez

Electrochemical Oxidation of effluents from desalting crude oil

S12-024

José Luis Nava (Department of Geomatic and Hydraulic Engineering, University of Guanajuato, Guanajuato, Mexico), Zaira Aguilar, Enric Brillas, Mercedes Salazar, Ignasi Sirés

Electrocatalytic Oxidation of Acid Yellow 36 Azo Dye via Fenton-Like Reaction with Active Chlorine and Iron Ion

S12-025

Ali Othman (Chemistry and Biomolecular Science, Clarkson University, Potsdam, USA), Silvana Andreescu

Electrochemical Sensor for the Real-Time Monitoring of Nitrogen and Phosphorous Containing Species in the Environment

S12-026

Tzayam Pérez (Chemical Engineering, Universidad de Guanajuato, Guanajuato, Mexico), Rosa Luz López, José Luis Nava, Isabel Lázaro, Guillermo Velasco, Roel Cruz, Israel Rodríguez

Electrochemical oxidation of cyanide on 3D Ti-RuO₂ anode using a filter-press electrolyzer

S12-027

Manuel Andres Rodrigo (Chemical Engineering, Universidad de Castilla-la-Mancha, Ciudad Real, Spain), Silvia Barba, Ruben Lopez-Vizcaino, Cristina Sáez, Jose Villaseñor, Pablo Cañizares, Vicente Navarro

Scale up of the electrokinetic treatment assisted with a biological permeable reactive barrier of an herbicide-polluted soil

S12-028

Elisama Santos (School of Science and Technology, University Federal of Rio Grande do Norte, Natal, Brazil), Suely S.M. Paiva, Rijkkaard R. F. Cantarele, Juliana B. Barros, Carlos Alberto Martínez-Huitl, Djalma R. Silva

Remediation of petroleum from contaminated soil by electrokinetic, Fenton and phytoremediation technology

S12-029

Jorge Vidal (Departamento Química de los Materiales, Universidad de Santiago de Chile, Santiago, Chile), Ricardo Salazar, Cesar Hulilin

Combination of anaerobic digestion and solar photo electro-Fenton processes to remove organic matter from a synthetic slaughterhouse wastewater

S12-030

Sarai Vivas Galarza (School of Chemical Engineering, Universidad del Valle, Cali, Colombia), Luz Andrea Prado Arce, Jawer David Acuña-Bedoya, Nilson Marriaga-Cabrales, Christian E. Alvarez-Pugliese

Electrolytic Regeneration of Granular Activated Carbon Saturated with Diocfenac

S12-031

Yonghao Zhang (School of Environmental and Biological Engineering, Nanjing University of Science and Technology, Nanjing, China), Weiqing Han, Xiuyun Sun, Jiansheng Li, Jinyou Shen, Lianjun Wang

Low cost of tubular porous electrode reactor for electrochemical treatment of anticancer drugs wastewater
Mathematical modelling of electrochemical systems

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Fan He (Chemical Engineering, Massachusetts Institute of Technology, Cambridge, USA), Xiao Su, Martin Bazant, T. Alan Hatton

Simulation of electrochemical adsorption system for water treatment

Safe water

S12-033

Yinying Ren (Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, USA), Xianwen Mao, Wenda Tian, De Xin Chen, Sarah Curtis, Marjorie Buss, Gregory Rutledge, T. Alan Hatton

Electrochemically Tunable Affinity Separation with High Energetic Efficiencies for the Removal of Organic Pollutants from Water

S13 The Green Potential of Molecular Electrochemistry

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S13-001

Christophe Coutanceau (IC2MP, University of Poitiers, Poitiers, France), Jesus Gonzalez-Cobos, Stève Baranton

Development of Bismuth-Modified Pt Nanocatalysts for the Electrochemical Reforming of Polyols into Hydrogen and Low Oxidized C3 Species

Electrosynthesis

S13-002

Roel Bisselink (Functional Ingredients, TNO, Zeist, Netherlands)

Electrosynthesis of valeric acid

S13-003

Roman Latsuzbaia (Sustainable Process and Energy Systems, TNO, Delft, Netherlands), Roel Bisselink, Marc Crockatt, Mark Roelands, Earl Goetheer

Electrochemical synthesis of furandicarboxylic acid

S13-004

Maximilian Selt (Institute of Organic Chemistry, Johannes Gutenberg University, Mainz, Germany), Stamo Mentizi, Siegfried Waldvogel

New Methods for the Electrochemical Synthesis of 3,3,5,5-Tetramethyl-2,2-biphenol

Green catalysts

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Binbin Huang (Environmental Science and Engineering, Hunan University, Changsha, China)

Effective and simultaneous removal of humic acids and Cr(VI) by electro-Fenton with H2O2 in-situ electro-generated on Pd loaded Fe3O4 nanoparticles

Green solvents and electrolytes

S13-006

Patrizia Romana Mussini (Dipartimento di Chimica, Università degli Studi di Milano, Milano, Italy), Serena Arnaboldi, Simona Rizzo, Voichita Mihali, Armando Gennaro, Abdirisak Ahmed Isse, Sannicolo Francesco

“Inherently Chiral” Ionic Liquid Media: Enantioselective Voltammetry on Achiral Electrodes
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S13-007

**Maria Soledad Ureta-Zañartu** (Ciencias del Ambiente, Facultad de Química y Biología, Universidad de Santiago de Chile, Santiago, Chile), Jorge Castro, Francisco Fernández

Degradation of Chlorophenols on electrodes based on Graphite M-exchanged Zeolite with M= Mo and/or Co

S13-008

**Maria Soledad Ureta-Zañartu** (Ciencias del Ambiente, Facultad de Química y Biología, Universidad de Santiago de Chile, Santiago, Chile), Marco Vega, Francisco Fernández

Preparation and characterization of ITO/TiO₂ electrodes doped with Ni or Co and its use in the Picloram degradation

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**S14 Let there be Light in Electrochemistry:**

*From Electrogenated Chemiluminescence to Fluorescence*

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**Analytical and bioanalytical applications**

S14-001

**Yujin Tong** (Physical Chemistry, Fritz Haber Institute of the Max Planck Society, Berlin, Germany), Francois Lapointe, R. Kramer Campen

Probing ultrafast processes at electrode-electrolyte interfaces with photovoltage measurements

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**Electrogenated chemiluminescence**

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**Chen Cui** (School of Chemistry and Chemical Engineering, Nanjing University, Nanjing, China), Jun-Jie Zhu, Dechen Jiang

Attomole Antigen Detection Using Self-Electrochemiluminous Graphene Oxide-Capped Au@L012 Nanocomposite

S14-003

**Lingling Li** (School of Chemistry and Chemical Engineering, Nanjing University, Nanjing, China)

Electrochemiluminescence Immunosensor Based on Resonance Energy Transfer

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**In situ spectroscopies (infrared, Raman, X-ray, UV)**

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**Liang Chen** (Chemistry, Xiamen University, Xiamen, China), Li-Qiang Xie, Yong Hui, Yan-Yan Tan, Jian-Zhang Zhou, Jia-Wei Yan, Bing-Wei Mao, Zhong-Qun Tian

Critical Roles of Electron Transporting Layer in Perovskite Solar Cells

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**Yu Gu** (Department of Chemistry, Xiamen University, Xiamen, China), Shuai Tang, Zhi-Cong Zeng, Wei Zhang, Jia-Wei Yan, Bin Ren, Bing-Wei Mao, Zhong-Qun Tian

In Situ Raman Spectroscopic Studies on Lithium Electrode/Electrolyte Interfaces Based on Different Plasmon-Enhancement Strategies
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Dilni Kaveendi Koggala Wellalage (Chemistry, University of Rhode Island, Kingston, USA), Cao Cuong Nguyen, Brett Lucht, Yuzi Zhang, Bharathy Subramanian Parimalam  
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Chao-Yu Li (Chemistry Department, Xiamen University, Xiamen, China), Jian-Feng Li, Zhong-Qun Tian  
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Elizabeth Stricker (Department of Chemical and Biomolecular Engineering, Case Western Reserve University, Cleveland, USA), Jesse Wainright, Robert Savinell, Raymond Unocic  
Utilizing in Situ ec-S/TEM to Study Electrochemical Nucleation of Copper

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Li-Qiang Xie (Department of Chemistry, Xiamen, China), Ding Ding, Meng Zhang, Ming-Shu Chen, Bing-Wei Mao, Zhong-Qun Tian  
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Yuvraj Birdja (Catalysis and Surface Chemistry, Leiden Institute of Chemistry, Leiden, Netherlands), Marc Koper  
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Helmut Baltruschat (Electrochemistry, Bonn University, Bonn, Germany), Ahmed Shatla, Abdelaziz Abd-El-Latif, Sevda Ayata, Dilek Coban  
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Dan Bizzotto (Chemistry, University of British Columbia, Vancouver, Canada), Elizabeth Fisher, Kaylyn Leung, Jannu Casanova-Moreno  
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Thomas Vagn Hogg (Physics, Technical University of Denmark, Kgs Lyngby, Denmark), Erlend Bertheussen, Anders Bodin, Jakob Kibsgaard, Ifan E.L. Stephens, Ib Chorkendorff  
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Fouad Maroun (Laboratoire de Physique de la Matiere Condensee, CNRS, Ecole Polytechnique, Palaiseau, France)  
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*Anatoly Antipov (Electroactive Materials and Electrochemical Energetics, Dmitry Mendeleev University of Chemical Technology of Russia, Moscow, Russia), Natalia Sherstneva, Vladimir Andreev, Mikhail Vorotyntsev*

Very strong current regime for bromate reduction

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*Maofeng Dou (GREEN, National Institute of Materials Science, Tsukuba, Japan), Shota Iizuka, Yasuaki Einaga, Yoshitaka Tateyama*

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*Yuriy Tolmachev (Ftorion Inc., Mendeleev University, Moscow, Russia), Anatoly Antipov, Olga Sereda, Mikhail Vorotyntsev*

Effects of proton transport limitations in bromate reduction process

**S15-017**

*Mikhail Vorotyntsev (Electroactive Materials and Electrochemical Energetics, Dmitry Mendeleev University of Chemical Technology of Russia, Moscow, Russia), Anatoly Antipov, Olga Istakova*

Generalized Nernst Layer model for ion transport. Bromate reduction

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**S16  Electrochemistry of Metal Clusters and Nanoparticles**

**Electron transfer**

**S16-001**

*Christophe Renault (Chemistry, Palaiseau, France), Fouad Maroun, Philippe Allongue*

Electron Transfer at Tunneling Nanoelectrodes

**Nanoparticles**

**S16-002**

*Je Hyun Bae (Department of Chemistry and Biochemistry, Queens College-CUNY, Flushing, USA), Ricardo F. Brocenschi, Michael V. Mirkin*

Dissolution of Pt during Oxygen Reduction Reaction Produces Pt Nanoparticles

**S16-003**

*Taehoon Cho (Department of Chemistry, Kyung Hee University, Seoul, Korea), Jooho Kim*

Galvanic Exchange Synthesis of Pt Nanoparticles Encapsulated inside Dendrimers and Their Size-dependent Catalytic Activity to Dehydrogenation of Ammonia Borane

**S16-004**

*Anne Co (Chemistry and Biochemistry, The Ohio State University, Columbus, USA), Eric Coleman, Joshua Billy, Heewon Choi*

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*Christian Durante (Chemical Sciences, University of Padova, Padova, Italy), Riccardo Brandiele, Giorgio Mattiacci, Mirco Zerbetto, Gian Andrea Rizzi, Armando Gennaro*

A combined DFT and Experimental Approach for Probing Metal-Support Interaction in Pt nanoparticle supported on Nitrogen Functionalized Mesoporous Carbon

**S16-006**

*Minseok Kim (Chemistry, Yonsei University, Seoul, Korea), Kyuju Kwak, Alam Venugopal Narendra Kumar, Dongil Lee*

Effect of metal doping on the electronic structure of M$_2$Au$_{36}$(SC$_6$H$_{13}$)$_{24}$ (M=Pt, Pd)
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Kevin Kirk (Chemistry and Biomolecular Science, Clarkson University, Potsdam, USA), Anahita Karimi, Silvana Andreescu  
Electrochemical Investigation of pH-Dependent Properties of Polymer-Capped Nanoparticles

S16-008  
Leatham Landon-Lane (Chemical and Process Engineering, University of Canterbury, Christchurch, New Zealand), Anna Farquhar, Alison Downard, Aaron Marshall  
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S16-009  
Marcin Opallo (Department of Electrode Processes, Institute of Physical Chemistry PAS, Warsaw, Poland), Marcin Holdynski, Joanna Dolinska  
Stirring nanoparticles: electrochemical behaviour of suspended Prussian Blue nanoparticles

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Rukshan Perera (School of Engineering, Brown University, Providence, USA), Jacob Rosenstein  
In-Situ Generation of Metal Nanoparticles from Quasi Reference Electrodes Used in Confined Electrochemical Devices

S16-011  
Chi Xiao (College of Chemistry and Chemical engineering, Xiamen University, Xiamen, China), Na Tian, Shi-Gang Sun  
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Laurent Ruhlmann (Chemistry, Université de Strasbourg, Strasbourg, France), Shu Yang, Antoine Bonnefont  
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S17  Advances in Theory and Modeling of Electrochemical Systems

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Jiangjin Liu (Mechanical Engineering, Tufts University, Medford, USA), Iryna V. Zenyuk  
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Manik Mayur (Institute of Energy Systems Technology (INES), Offenburg University of Applied Sciences, Offenburg, Germany), Bjoern Weisshar, Wolfgang G. Bessler  
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Irina Svir (Chemistry, CNRS UMR 8640, Paris, France), Alexander Oleinick, Yun Yu, Michael V. Mirkin, Christian Amatore  
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Hongbo Zhao (Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, USA), Martin Bazant  
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Michael McEldrew (Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, USA), Martin Bazant
The Electrical Double Layer in ‘Water-in-Salt’ Electrolytes: Theory and Molecular Dynamics Simulations

S17-006

Masahiro Yamamoto (Department of Chemistry, Konan University, Kobe, Japan)
First-principles calculation of the surface interaction of Li with graphite and oxide

S17-007

Zhenhua Zeng (School of Chemical Engineering, Purdue University, West Lafayette, USA), Zhenhua Zeng, Jeff Greeley
Modeling the solvent effects at the water/Pt interfaces

S18 Education for Electrochemistry and Electrochemical Engineering

Education for electrochemistry

S18-001

Julie Renner (Chemical & Biomolecular Engineering, Case Western Reserve University, Cleveland, USA), Uziel Landau, Robert Savinell, C.C. Liu, Jesse Wainright, Rohan Akolkar, Heidi Martin, Burcu Gurkan
The Electrochemical Engineering Program at Case Western Reserve University

S19 General Session

Analytical electrochemistry

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Diego N. David-Parra (Dept. of Chemistry and Molecular Physics, Institute of Chemistry, University of Sao Paulo (USP), Sao Carlos, Brazil), Eder T. G. Cavalheiro, Marcos Teixeira
η-Metallopolymer (Poly[Ni(Salpn)] for Electrocatalytic Detection of the Dissolved Oxygen by Electroanalytical Method

S19-002

Orlando Fatibello-Filho (Department of Chemistry, Federal University of São Carlos, São Carlos, Brazil), Tiago Almeida Silva, Ademar Wong
Electrochemical sensor based on an ionic liquid and carbon black for the determination of nanomolar levels of the Allura Red colorant

S19-003

Omolola Fayemi (Chemistry, North-West University, Mafikeng, South Africa), Abolanle Saheed Adekunle, Eno Ebenso
Metal Oxide Nanoparticles / Pani Nanocomposite Modified Glassy Carbon Electrode for the Detection of Dopamine

S19-004

Fabio La Mantia (Energiespeicher- und Energiewandlersysteme, Universität Bremen, Bremen, Germany), Dominique Koster, Maximilian Patzauer, Alberto Battistel, Katharina Krischer
Dynamic Multi-Frequency Analysis of the Oscillatory Electro Dissolution of p-type Silicon
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Thiago Selva (Fundamental Chemistry, Institute of Chemistry, University of São Paulo, Sao Paulo, Brazil), Thiago Paixão
Electroanalytical Method for Isoprocarb Pesticide Using a Boron-Doped Diamond Electrode

S19-006
José Silva (Institute of Chemistry, University of Sao Paulo, Sao Paulo, Brazil), William Araujo, Thiago Paixão
Low-Cost Paper-Based Electrochemical Device for Metal Analysis in Urine

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Claudia Yañez (Facultad de Ciencias Químicas y Farmacéuticas, Universidad de Chile, Santiago, Chile), Ana María Mendez
Amino-Cyclodextrins Modified Gold Electrodes for Detection of Bentazone

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Shogo Nakagawa (Graduate School of Environmental Science, Hokkaido University, Sapporo, Japan), Masaru Kato, Takehiko Tosha, Ichizo Yagi
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Electrochemical energy conversion and storage

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Federico Bella (Department of Applied Science and Technology, Politecnico di Torino, Torino, Italy), Gianmarco Griffini, Juan Pablo Correa-Baena, Guido Saracco, Michael Grätzel, Anders Hagfeldt, Stefano Turri, Claudio Gerbaldi
Light-Induced Design of Fluoropolymers as Efficiency and Stability Booster for Perovskite Solar Cells

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Joo-Yul Lee (Electrochemistry Department, Changwon, Korea), Yongsoo Jeong
Adhesion Control Mediated by Organic Molecules at Metal/Non-metal Interface

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Milua Masikini (Chemistry, University of The Western Cape, Cape Town, South Africa), Moleko Samuel Mkehlane, Emmanuel Iwuoha
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Stanley Normile (Mechanical Engineering, Tufts University, Medford, USA), Alexy Serov, Dinesh C. Sabarirajan, Osvaldo Calzada, Xianghui Xiao, Pratiti Mandal, Dilworth Parkinson, Plamen Atanassov, Iryna V. Zenyuk
Visualization of water formation in polymer electrolyte fuel cells using in-operando X-ray computed tomography

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Burak Ulgut (Chemistry, Bilkent University, Ankara, Turkey), Elif Ozdemir, Can Berk Uzundal
Impedance-Based, Zero-Free-Parameter Modeling of Energy Storage Systems

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Bao Kou Xiong (PCM2E, Université François Rabelais, Tours, France)
Measurement of gas generation in electrolytes for lithium-ion batteries

Electrochemical materials science

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Vinicius Del Colle (Núcleo de Ciências Exatas, Universidade Federal de Alagoas, Arapiraca, Brazil), Jannice Soares Lima França, Amaury Franklin Benvindo Barbosa, Germano Tremiliosi-Filho, Enrique Herrero, Juan M. Feliu
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Mikolaj Donten (Faculty of Chemistry, University of Warsaw, Warsaw, Poland)
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Omolola Fayemi (Chemistry, North-West University, Mafikeng, South Africa), Ramaganthan Baskar, Lukmon Olasunkanmi, Oluwemi Alo, Abolanle Saheed Adekunle, Eno Ebenso
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Wei Han (College of Material Science and Chemical Engineering, Harbin Engineering University, Harbin, China), Zhuyao Li, Wenlong Li, Mei Li, Xiaoguang Yang
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Satu Kristiina Heiskanen (Department of Chemistry, The University of Rhode Island, Kingston, USA), Brett Lucht
Investigation of CO₂ Reduction Products in Lithium Ion Batteries

S19-020
Atif Koca (Chemical Engineering Department, Marmara University, Istanbul, Turkey)
Electrochemical Pesticide Sensors Based on Electropolymerized Metallophthalocyanines

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Ali Riza Ozkaya (Chemistry Department, Marmara University, Faculty of Science and Letters, Istanbul, Turkey), Efe Baturhan Orman, Zafer Odabas, Atif Koca
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Ali Riza Ozkaya (Chemistry Department, Marmara University, Faculty of Science and Letters, Istanbul, Turkey), Duygu Akyuz, Turgut Keles, Zekeriya Biyiklioglu, Fatma K. Albayrak, Atif Koca
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Jianglong Yi (Center of Weld Equipment and Technology, Guangdong Welding Institute, Guangzhou, China)
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Tae Young Kim (School of Chemical and Biological Engineering, Seoul National University, Seoul, Korea), Seunghoe Choe, Hoe Chul Kim, Yu Seok Ham
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Myung Hyun Lee (Chemical and Biological Engineering, Seoul National University, Seoul, Korea), Yu Seok Ham, Sung Ki Cho, Jae Jeong Kim
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Kang Shi (Department of Chemistry, Xiamen University, Xiamen, China), Zhong-Qun Tian, Xuan Zheng, Ping Zhou, Hui-Qing Hu, Liang-Liang Zhang, Cheng Wang, Jing-Fu Zhang, Dan Wu, Zhao-Wu Tian
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Umran Un (Environmental Engineering, Anadolu University, Eskisehir, Turkey), Emre Oduncu
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Fethi Bediou (UTCBS, Chimie ParisTech/CNRS, Paris, France), Vincent Ching, Xia Wang, Menglan He, Noemi Perujo Holland, Régis Guillot, Cyrine Slim, Sophie Griveau, Helene Bertrand, Clotilde Policar, Marc Fontecave  
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Petr Krtíl (Electrocatalysis, J. Heyrovsky Institute of Physical Chemistry, Prague, Czech Republic), Roman Nebel, Katerina Minhová Macounová, Jan Rossmeisl, Ladislav Kavan  
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The International Society of Electrochemistry

The International Society of Electrochemistry (ISE) was founded in 1949 by leading European and American electrochemists to serve the growing needs of electrochemistry. At that time only a handful of scientists were members of the society – known as CITCE (Comité International de Thermodynamique et Cinétique Electrochimiques). Since then ISE has evolved and comprises now more than 3500 individual members, from 75 countries, and is organized in 44 Regional Sections. Both industrialised and developing countries from all five continents are represented. ISE is, therefore, a truly world-wide organisation. ISE is a non-profit-making organisation with its seat in Lausanne, Switzerland.

The International Society of Electrochemistry (ISE) is devoted to the advancement of electrochemical science and technology through the promotion of international contacts and the dissemination of scientific knowledge. For this ISE organises Annual and Topical Meetings which are held in different countries each year and which cover a wide range of current topics in fundamental and applied electrochemistry. The activities of ISE include the sponsoring of regional meetings, and of special meetings of limited participation devoted to particular subjects. A scientific journal, Electrochimica Acta, is edited by ISE and supplied to its members at a special rate. Individuals, non-profit organisations, industrial companies and learned societies may become members of ISE. The administration of ISE is done by an Executive Committee, periodically elected by all members. The Regional Representatives together with the Division Officers form the ISE Council which advises the Executive Committee. The scientific activities of ISE are grouped into Scientific Divisions. They are organised and co-ordinated by the Committee of Division Officers headed by the President Elect. Upon joining ISE each member indicates his/her divisional interests.


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- Individual members can get reduced subscription rates for the following journals:
  - Electrochimica Acta,
  - Journal of Electroanalytical Chemistry,
  - Electrochemistry Communications,
  - Bioelectrochemistry,
  - Journal of Power Sources,
  - Journal of Applied Electrochemistry,
  - Electrocatalysis,
  There is also a **Discounted Package** available consisting of the Journal of Electroanalytical Chemistry, Electrochemistry Communications, and Bioelectrochemistry (online).
- Reduced registration fees at ISE Meetings
- Access to the "members restricted area" of the ISE website
- Access to the full membership directory with all members addresses

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ISE Organization

Executive Committee
The Executive Committee is entrusted with the management of the Society.

ISE Office
The ISE Office performs all administrative tasks related to the operation of the Society. It is located in Switzerland, and managed by an Executive Secretary. The ISE Office serves as the primary contact for members and non-members.

Division Officers
The scientific activities of ISE are grouped into seven Scientific Divisions and a New Topics Committee. The divisions are headed by a Chairperson assisted by a Past Chair, a Chair Elect and two Vice Chairs. Their role is to promote and represent the scientific interests of the division and its members, for example through contributing to the organization of Annual, Topical and other Society meetings.

Regional Representatives
In each country or group of countries having fifteen members or more, a national or regional section of ISE may be formed. Each section has a Regional Representative.

Council
The ISE Council is an Advisory Body. The voting members of the Council consist of three Officers from each Division and all the Regional Representatives. All persons constituting the Council are elected by the members of the Society.

Scientific Meetings Committee
The Scientific Meetings Committee plans and oversees the organization and sponsorship of scientific meetings within the broad field of electrochemistry.

Fellows Nominating Committee
The Fellows Nominating Committee is a standing committee which proposes names to the Executive Committee for the title of ISE Fellow. It is also responsible for identifying candidates for honorary membership.

Publications Committee
The Publication Committee, a standing committee of ISE, acts as an advisory board to the Executive Committee on publication matters.
ISE Executive Committee

President
Philip N. Bartlett, Southampton, UK (2017-2018)
Representation of ISE. Chairperson of Executive Committee, Council and General Assembly

President Elect
Zhong-Qun Tian, Xiamen, China (2017-2018)
Chairperson of Committee of Division Officers. Coordination of scientific program of future Annual Meetings, supervision of Division Officers’ activities

Immediate Past President
Christian Amatore, Paris, France (2017-2018)
Chairperson of Executive Committee in the absence of the President

Vice Presidents
Plamen Atanassov, Albuquerque, NM, USA (2015-2017)
Responsible for Corporate and Corporate Sustaining Members
Katharina Krischer, München, Germany (2015-2017)
Responsible for Educational Activities in ISE
Tomokazu Matsue, Sendai, Japan (2016-2018)
Responsible for relations with other Societies
Marilia Goulart, Maceio, Brazil (2017-2019)
Responsible for Regional Sections

Secretary General
Manuela Rueda (2015-2017)
General tasks
Ensuring continuity and efficiency of scientific policy. Coordination of tasks of Vice Presidents. Identification of new developments in electrochemistry and possible new scientific and nonscientific activities. Scientific matters not handled by the President or President Elect.
Tasks in collaboration with ISE Office
Ensuring that constitution, bylaws, guidelines, schedules etc. are observed. Preparation of Annual Reports. Collection of information for newsletters and coordination of actions.
Annual and Topical ISE Meetings
Coordination of Meetings (location, time, topics). Representative of Executive Committee and advisor to Local Organising Committees for nonscientific matters (location, facilities, control of financial planning, schedule, publicity).

Treasurer
Gunther Wittstock, Oldenburg, Germany (2017-2019)
Responsible for the administration and the management of the assets and property of the Society, preparation of budgets and financial reports, financial planning, investment policy, supervision of financial matters of Annual and Topical ISE Meetings.

Executive Secretary
Marco Musiani, Padova, Italy (2014-2018)
Responsible for maintaining the ISE calendar, assisting with organizing the business and financial arrangements for Annual and Topical Meetings, organising committee appointments, assisting the Secretary General with Society elections, recruiting new members, and co-ordinating Executive Committee meetings. Drafts ISE documents, acts as web page editor, maintains ISE archives and records, and serves as the contact person for members (particularly at ISE meetings).
Scientific Divisions of ISE

Division 1 – ANALYTICAL ELECTROCHEMISTRY
Experimental and theoretical aspects of the analytical process in which electrochemistry has a role, including sample collection / processing, separation, and species identification and quantitation.
Chair: D. Mandler, Past Chair: F. Bedioui, Chair Elect: Alain Walcarius, Vice-Chairs: R. Kataky and C. Hogan

Division 2 – BIOELECTROCHEMISTRY
Aspects of electrochemistry and electroanalysis characterizing biological processes at the molecular level and relevant to the mechanisms of biological regulation of cells.
Chair: F. Lisdat, Past Chair: R. Bilewicz, Chair Elect: Elena Ferapontova, Vice-Chairs: E. Lojou and Taek Dong Chung

Division 3 – ELECTROCHEMICAL ENERGY CONVERSION AND STORAGE
Experimental and theoretical aspects of electrochemistry in which the goal is the interconversion of energy between different forms or the storage of energy, including the processes themselves and materials used for these purposes.
Chair: R. Kostecki, Past Chair: S. Passerini, Chair Elect: Francesca Soavi, Vice-Chairs: H. Uchida and Kiyoshi Kanamura

Division 4 – ELECTROCHEMICAL MATERIALS SCIENCE
Aspects of materials science in which electrochemistry is part of the synthesis, processing, surface treatment, corrosion, characterization or modeling of new or existing materials, or in which electrochemistry is the user of such materials.
Chair: G. Zangari, Past Chair: S. Brankovic, Chair Elect: Monica Santamaria, Vice-Chairs: M. Vorotyntsev and Chi-Chang Hu

Division 5 – ELECTROCHEMICAL PROCESS ENGINEERING AND TECHNOLOGY
Experimental and theoretical aspects and applications of electrochemistry in which engineering issues play a significant role, including scale-up and reactor design.
Chair: K. Bouzek, Past Chair: J. Peralta-Hernandez, Chair Elect: Gerardine Botte, Vice-Chairs: G. Kelsall and H. Bergmann

Division 6 – MOLECULAR ELECTROCHEMISTRY
Structural and mechanistic aspects of electrode processes of inorganic, metallorganic and organic substances; synthetic applications.
Chair: O. Buriez, Past Chair: F. Paolucci, Chair Elect: Patrizia Mussini, Vice-Chairs: C. Frontana, G. Xu and M. Hromadova

Division 7 – PHYSICAL ELECTROCHEMISTRY
Experimental, theoretical and computational aspects of electrochemistry, alone or in conjunction with other methods, relevant to interfaces and conductive media; this shall include physicochemical nature, structure and dynamics from the molecular to the macroscopic level.
Chair: A. Gewirth, Past Chair: A. Russell, Chair Elect: Angel Cuesta Ciscar, Vice-Chairs: L. Zhuang and A. O’Mullane

New Topics Committee
The New Topics Committee identifies interesting and relevant scientific and technological subjects not covered by the ISE Divisions. It has tasks similar to those of a Division, except that it may have several and changing technical priorities.
Chair: , Past Chair: P. Unwin, Chair-Elect: N.J. Tao
Regional Representatives

Australia-NZ: C. Hogan 2015-2017  Italy: S. Cattarin 2016-2018
Chile: R. Salazar 2016-2018  Poland: M. Opallo 2016-2018
Czech Republic: M. Fojta 2016-2018  Russia: M. Vorotyntsev 2016-2018
Hungary: T. Pajkosy 2017-2019  Turkey: M.S. Yazici 2017-2019

Co-operation with other Societies

ISE is an Associated Organization of IUPAC and has co-operation agreements with:

- Bioelectrochemical Society (The)
- Chinese Society of Electrochemistry
- Deutsche Gesellschaft für Galvano- und Oberflächentechnik (DGÖ)
- Electrochemical Division of the Italian Chemical Society
- Electrochemical Society (The)
- Electrochemical Society of Japan
- Electrochemistry and Electroanalytical Division of the Brazilian Chemical Society
- Electrochemistry Group of the French Society of Chemistry
- European Federation of Corrosion
- Fachgruppe Angewandte Elektrochemie der Gesellschaft Deutscher Chemiker (Section Applied Electrochemistry of the Society of German Chemists)
- Korean Electrochemical Society
- Mexican Electrochemical Society
- Royal Society of Chemistry (The)
- Sociedad Iberoamericana de Electroquimica
- Society for Electroanalytical Chemistry (The)
Corporate Sustaining Members

Corporate Sustaining Members are industrial and commercial (profit-making) organizations. As a Corporate Sustaining Member you can nominate one or two person(s) as your representative(s).

Corporate Sustaining representatives have the following advantages:

- One representative receives an online access to the ISE journal Electrochimica Acta without further charge.
- They can participate in Annual ISE Meetings at reduced registration fees.
- They are invited to co-operate with the divisions, to give proposals and advice on division symposia.
- They are informed about the activities of ISE and about Annual, Topical and Special ISE Meetings and division symposia on new developments in science and technology.
- They can be elected as Society officers

Advertising

- A list of the Corporate Sustaining Members is published regularly in Electrochimica Acta and on the ISE web pages.

Annual Meeting

- Special sessions will be organised for electrochemical and electroanalytical instrumentation.
- You can contact regional groups via Regional Representatives.
- Business meeting places will be offered during Annual ISE Meetings for contacts between people from science and industry to discuss issues such as job recruiting, co-operation in applied research, announcement of research frameworks, negotiation of research contracts etc.

For further information please contact the ISE Office.
Corporate Sustaining Membership fee: 500 EURO

Corporate Members

Corporate Members are teaching institutions, non-profit-making research organizations and learned societies. As a Corporate Member you can nominate a person as your representative.

Corporate representatives have the following advantages:

- One representative receives an online access to the ISE journal Electrochimica Acta without further charge.
- They can participate in Annual ISE Meetings at reduced registration fees.
- They are invited to co-operate with the divisions, to give proposals and advice for division symposia.
- They are informed about the activities of ISE and about Annual and Special ISE Meetings and division symposia on new developments in science and technology.
- They can be elected as Society officers.

Corporate Membership fee: 300 EURO

Corporate and Corporate Sustaining Members of ISE

Ametek-AMT  
Central Electrochemical Research Institute  
Ionode Pty Ltd  
Metrohm Autolab BV  
PalmSens BV  
Paul Scherer Institute 
Scribner Associates, Inc  
Sensolytics GmbH  
Tanaka Kikinzoku Kogyo K.K.
ISE Honorary Members

Honorary Members are appointed by the Executive Committee, after consultation with the Council, primarily in recognition of their contribution to ISE. The total number at any time is limited to ten.

The first Honorary Member of ISE, appointed in the year 2003, was Otmar Dossenbach, Treasurer of the Society for 21 years (1980-2000) and Executive Secretary for 2 years (2001-2002).
Two new Honorary Members were appointed in the year 2004: Roger Parsons and Sergio Trasatti, former Presidents of the Society.
Three Honorary Members were appointed in the year 2005: Ron Armstrong, former Editor-in-Chief of Electrochimica Acta for 18 years, Elton Cairns and Dieter Landolt, former Presidents of the Society,
One Honorary Members was appointed in the year 2011: Sharon Roscoe, former Secretary General of the Society.

ISE Fellows

In recognition of their scientific or technical contributions to electrochemistry, the Society may confer on individual members the distinction of ISE Fellowship. Such ISE Fellows are appointed by the Executive Committee after consultation with the Council. The appointment does not carry with it automatic life-time ISE membership.

The present Fellows of ISE are:

H. Abruña                      G. Inzelt                      E. Savinova
R. Adzic                       K. Itaya                       D. Schiffrin
R. Alkire                      Y. Ito                         W. Schmickler
Ph. Allongue                   H. Ju                           P. Schmuki
C. Amatore                    A. Jutand                      F. Scholz
D. Aubach                     T. Kakiuchi                    W. Schuhmann
P. Bartlett                   A. Karyakin                    B. Scrosati
R. J. Behm                    H. Kim                          A. Shukla
A. Bond                       M. Koper                       P. Simon
E. Cairns                     A. Koryshev                    U. Stimming
A. Chen                       C. Lamy                         S. Sun
C. Comninellis                O. Lev                          Z. Tian
R. Compton                    J. Lipkowski                   J. Ulstrup
S. Cosnier                     D. Macdonald                   P. Unwin
C. Fan                        D. Mandler                     K. Usaki
W.R. Fawcett                  P. Marcus                       C. Vayenas
J. Feliu                       R.A. Marcus                    A. Walcarius
C. Gabrielli                  N. Markovic                     Li-Jun Wan
E. Gileadi                    J. McBreen                      M. Watanabe
H. Girault                    R. McCreery                     A. Wiekowski
J. Gooding                     R. Nichols                     G. Wilson
L. Gorton                     P. Novak                        M. Winter
R. Guidelli                   T. Osaka                         J. Zagal
P. Hapiot                     M. Osawa                        J. Zhang
J. Heinze                     S. Passerini                   B.J. Hwang
R. Hillman                    Z. Samec
B.J. Hwang                    R. Savinell
Society Awards

**Electrochimica Acta Gold Medal**
The Electrochimica Acta Gold Medal may be awarded every two years to the person judged to have made the most significant contribution to electrochemistry in recent years.

**Frumkin Memorial Medal**
The Frumkin Memorial Medal may be given once every two years. It recognises the outstanding contribution of a living individual over his/her life in the field of fundamental electrochemistry.

**Katsumi Niki Prize for Bioelectrochemistry**
The Katsumi Niki Prize for Bioelectrochemistry may be awarded every two years to a scientist who has made an important contribution to the field of bioelectrochemistry.

**Bioelectrochemistry Prize of ISE Division 2**
The Bioelectrochemistry Prize of ISE Division 2 may be awarded every two years to a scientist who has made an important contribution to the field of bioelectrochemistry.

**Brian Conway Prize for Physical Electrochemistry**
The Brian Conway Prize for Physical Electrochemistry may be awarded every two years, in recognition of the most successful achievements in Physical Electrochemistry in recent years.

**Alexander Kuznetsov Prize for Theoretical Electrochemistry**
The Kuznetsov Prize is awarded every two years to a living individual who has made groundbreaking contribution to the theory of electrochemical phenomena.

**Jaroslav Heyrovsky Prize for Molecular Electrochemistry**
The Jaroslav Heyrovsky Prize for Molecular Electrochemistry, supported by ISE Division 6, may be awarded annually to a scientist who has made an important contribution to the field of molecular electrochemistry in the last 5 years.

**Tajima Prize**
The Tajima Prize recognises the contributions made by younger electrochemists. Candidates must be less than 40 years old. An award may be made every year. The decision of the Award Committee will be based on published work.

**Zhaowu Tian Prize for Energy Electrochemistry**
The Zhaowu Tian Prize for Energy Electrochemistry may be awarded annually to a scientist of less than 40 years of age on January 1st of the year of the award, in recognition of her/his recent achievements in the field of electrochemistry for energy.

**ISE-Prize for Electrochemical Materials Science**
The ISE-Prize for Electrochemical Materials Science is awarded annually to a young person for contributions in the field of electrochemical material science, including corrosion, electrodeposition and surface treatment.

**Oronzio and Niccolò De Nora Foundation Young Author Prize**
The Oronzio and Niccolò De Nora Foundation Young Author Prize may be awarded annually to a scientist of less than 30 years for the best paper published in the ISE society journal in the calendar year preceding the award.

**ISE-Elsevier Prize for Experimental Electrochemistry**
The ISE-Elsevier Prize for Experimental Electrochemistry may be awarded annually to a person who has made an important contribution to experimental electrochemistry.

**ISE-Elsevier Prize for Green Electrochemistry**
The ISE-Elsevier Prize for Green Electrochemistry may be awarded annually to a scientist of less than 35 years of age on January 1st of the year of the award, for recent application-oriented achievements in the field of environmental electrochemistry.

**ISE-Elsevier Prize for Applied Electrochemistry**
The ISE-Elsevier Prize for Applied Electrochemistry may be awarded annually to a scientist of less than 35 years of age on January 1st of the year of the award, for recent achievements in the field of applied electrochemistry.

**Early Career Analytical Electrochemistry Prize of Division 1**
The Early Career Analytical Electrochemistry Prize of ISE Division 1, sponsored by OrigaLys, may be awarded annually to a scientist of less than 35 years of age on January 1st of the year of the award in recognition of her/his recent achievements in Analytical Electrochemistry.

**Electrochimica Acta and ISE Travel Award for Young Electrochemists**
The Electrochimica Acta Travel Awards for Young Electrochemists are aimed at favouring the participation of young electrochemists in the ISE Annual Meetings. The applicants must be ISE members. They must have obtained their Ph.D. not earlier than 6 years before the deadline for applications.
ISE Sponsored Meeting Information

What is an ISE sponsored meeting?
You may have noticed that scientific meetings in the field of electrochemistry are often labelled “ISE sponsored Meeting”. What does this mean? In addition to organizing its own meetings, such as the Annual and Topical Meetings, ISE may sponsor other international scientific meetings in the area of electrochemistry. ISE sponsorship is intended to be a sign of quality for the meeting.

What are the requirements for ISE sponsorship?
ISE requires that the scientific quality of the meeting reaches the standard of its own meetings. It is desirable that the advisory board consists of ISE members, as far as possible. The meeting must be open to all ISE members.

Who decides?
The decision is normally taken by the officers of the ISE Division in whose field of interest the topic of the meeting lies. ISE Division Officers should be involved in the organisation of the meeting. The ISE Executive Committee decides on the sponsorship for meetings of general interest.

What are the obligations of the organizers?
The organizers have to publicise the ISE sponsorship in all the official documents related to the meeting (announcements, program, website etc.). At the meeting, a representative of ISE must be allowed to say a few words on behalf of the Society, and ISE must have the opportunity to advertise. After the meeting, the organizers should submit a short report to ISE to be published on the ISE website.

What do the organizers receive from ISE?
ISE publishes announcements and reports of ISE sponsored meetings on its website. The ISE Office can organize, free of charge, mailings to all, or a group of ISE members. In appropriate cases, there may be a special issue of Electrochimica Acta associated with these meetings. Decisions about special issues are made by the Editor-in-Chief.

What about money?
ISE sponsorship of a meeting does not necessarily include a financial contribution from ISE. The sponsoring Division(s) may use its funds to support such a meeting. The level of financial contribution will be determined by the Division(s), but a typical sum may be 500 Euros.

How to apply for ISE sponsorship?
If you would like to have the scientific meeting you are organizing sponsored by ISE, please send an e-mail to the ISE Office, at least one year in advance of the time of the meeting, and attach a completely filled in sponsor request form. This form can be found on the ISE website at: http://ise-online.org/sponsmeet/info.php. The decision will be taken by the Officers of the sponsoring Division(s), or by the Executive Committee, and the ISE Office will inform the applicant.

ISE Regional Student Meetings

Graduate Students who are members of ISE and intend to organize a Regional Student Meeting can apply for ISE financial support. Applications submitted by Graduate Students jointly with their supervisors or with other senior members of the staff of their university are also acceptable, but it is expected that the students will be engaged in the organizational aspects of the meeting as much as possible. Regional Student Meetings are typically one-day meetings involving graduate students active in the geographic area where the meeting takes place. The format of the meeting (oral presentations, posters, discussion sessions, other) is autonomously decided by the organizers who will be responsible for securing a venue and collecting registrations. No registration fee should be requested, if financially possible. When the Regional Student Meeting is associated to a larger ISE-sponsored meeting taking place in the same venue, the application must provide clear indication on the connections between the two events and must clearly describe the independent activities reserved to student participants. No later than one month after the meeting, the organizer(s) will send to the ISE Office a report on the event, including the names and the e-mail addresses of the participants. The student participants will be invited to apply for ISE membership. A report giving an overview of the meeting, accompanied by suitable pictures if available, will be posted on the ISE website under Student Activities. Applications for ISE support must be sent by e-mail to the ISE Office, with a copy to the Regional Representative of the country where the meeting is organized, 3-12 months before the meeting date, using the application form. The local ISE Regional Representative, if requested, will assist the potential meeting organizer in the preparation of the application. Applications will be analyzed by a committee consisting of (i) ISE Immediate Past President (ii) ISE Secretary General, (iii) ISE Treasurer, (iv) ISE Vice President responsible for Educational Activity and (v) ISE Vice President responsible for Regional Sections. The response will be communicated to the applicant and to the relevant Regional Representative no later than 1 month after the application submission. The maximum financial support will be 600 €; the expected use of the funds must be specified in the application. Co-sponsoring by other Societies and/or institutions is possible.
### Poster Session 1
**Monday 28 August 2017**

- s01-018
- s01-017
- s01-016
- s01-015
- s01-014
- s01-012
- s01-011
- s01-010
- s01-009
- s01-008
- s01-007
- s01-006
- s01-005
- s01-004
- s01-003
- s01-002
- s01-001

### Poster Session 2
**Tuesday 29 August 2017**

- s11-006
- s11-005
- s11-004
- s11-003
- s11-002
- s11-001
- s07-011
- s07-010
- s07-009

### Poster Session 3
**Wednesday 30 August 2017**

- s11-016
- s11-015
- s11-014
- s11-013
- s11-012
- s11-011
- s07-011
- s07-010
- s07-009

### Symposia:
- s3, s4, s5, s8, s9
- s7, s11, s12, s13, s14, s16, s18
- s6, s10, s15, s17, s19
Poster plan of poster presentation session 1 - Monday

Symposia:
Symposium 01: New Experimental Trends in Analytical Electrochemistry
Symposium 02: Flow and Microfluidic Systems in Analytical Electrochemistry
Symposium 03: Electrochemical Approaches to Clinical Diagnostics and Medical Devices
Symposium 04: Bioelectrochemistry without Borders
Symposium 05: Novel Materials and Devices for Energy Storage: Batteries for Tomorrow’s World
Symposium 08: Dealloying: Fundamentals, Application, and Control
Symposium 09: Ionic Liquids as Media for Electrochemical Synthesis

Poster set-up Monday: 08:00-10:30
Poster Presentation: Monday, 28 August 2017: 10:45-12:45
Poster take-down Monday: 18:00-19:00

Poster plan of poster presentation session 2 - Tuesday

Symposia:
Symposium 07: Supercapacitors from Materials and Processes to Applications
Symposium 11: Synthesis and Applications of Electrochemically Active Materials
Symposium 12: Electrochemical Technology for solving 21st Century Challenges
Symposium 13: The Green Potential of Molecular Electrochemistry
Symposium 14: Let there be Light in Electrochemistry: From Electrogenerated Chemiluminescence to Fluorescence
Symposium 16: Electrochemistry of Metal Clusters and Nanoparticles
Symposium 18: Education for Electrochemistry and Electrochemical Engineering

Poster set-up Tuesday: 08:00-10:30
Poster Presentation: Tuesday, 29 August 2017: 10:45-12:45
Poster take-down Tuesday: 18:00-19:00

Poster plan of poster presentation session 3 - Wednesday

Symposia:
Symposium 06: Fuel Cells and Electrolyzers
Symposium 10: Corrosion: Fundamentals, Passivity, and Prevention
Symposium 15: Physical and Interfacial Electrochemistry: Structural, Spectroscopic, and Theoretical Studies of the Electrochemical Interface
Symposium 17: Advances in Theory and Modeling of Electrochemical Systems
Symposium 19: General Session

Poster set-up Wednesday: 08:00-10:30
Poster Presentation: Wednesday, 30 August 2017: 10:45-12:45
Poster take-down Thursday: 12:00-14:00
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*Posters Session: Sunday, Monday, Tuesday, Wednesday, Thursday*  
*Excursions: Sunday, Monday, Tuesday, Wednesday, Thursday*  
*Closing: Friday*