



# **71st Annual Meeting**

of the  
International Society of Electrochemistry

Belgrade, Wednesday 31 August to Friday 4 September 2020

**Symposium 18**  
**Oral presentation program**

# Wednesday 2 September 2020

## Symposium 18

### Nanoelectrochemistry and electrocatalysis - from fundamentals to applications

Chairman : *Symeon Bebelis; Marcel Risch; Zhichuan Xu*

#### 09:40 to 10:00

Start of video platform ahead of program to allow everyone to check their connection and socialize if desired. This time may also be used to make announcements, explain the rules of video conferences and show pictures.

#### 10:00 to 10:05

Welcome speech

#### 10:05 to 10:45 *Keynote Invited*

**Zhichuan Xu** (School of Materials Science and Engineering, Nanyang Technological University, Singapore, Singapore)

[Spin-dependent Oxygen Evolution Reaction by Magnetic Oxides](#)

#### 10:45 to 10:55

**Stephan den Hartog** (Materials & Chemistry, Vrije Universiteit Brussel, Brussels, Belgium), Mohammad Samanipour, H.Y. Vincent Ching, Sabine Van Doorslaer, Tom Breugelmans, Annick Hubin, Jon Ustaroz

[Reactive oxygen species formation at Pt nanoparticles revisited by electron paramagnetic resonance and electrochemical analysis](#)

#### 10:55 to 11:05

**Xin Wang** (College of chemistry, Zhengzhou University, Zhengzhou, China), Chong Huang, Dong Wang, Wei Zhao, Kejun Bu, Jijian Xu, Xieyi Huang, Qingyuan Bi, Jian Huang

[Atomic Pillar Effect in PdxNbS<sub>2</sub> To Boost Basal Plane Activity for Stable Hydrogen Evolution](#)

#### 11:05 to 11:15

Pre-recorded poster talks (3 x 2 min) and discussion

#### 11:15 to 11:25

Break. Can be used to get coffee, socialize and is important for others joining from other symposia and as buffer to stay on time

#### 11:25 to 12:05 *Invited*

**Takayuki Homma** (Applied Chemistry, Waseda University, Tokyo, Japan), Masahiro Kunimoto, Morten Bertz, Masahiro Yanagisawa

[Molecular-level Analysis of Catalytic Activities of Electrode Surface for Electrochemical Deposition Reactions using Theoretical Calculations and Surface Enhanced Raman Microscopy with Plasmonic Sensors](#)

**12:05 to 12:15**

**Albert C. Aragonès** (Molecular Spectroscopy, Max Planck Institute for Polymer Research, Mainz, Germany), Ismael Díez-Pérez, Katrin F. Domke  
[New spectroscopic tools for single-molecule junctions](#)

**12:15 to 12:35 Invited**

**Wolfgang Schmickler** (Theoretical Chemistry, Ulm University, Ulm, Germany), Elizabeth Santos, Fernanda Juarez, Fabiola Dominguez-Flores, Paola Quaino  
[The Electric Double Layer in Carbon Nanotubes and -slits](#)

**12:35 to 12:55 Invited**

**Aliaksandr Bandarenka** (Physics, Technical University of Munich, Garching, Germany), Pascal Hauenstein, Yunchang Liang, Song Xue, Johannes Fichtner, Batyr Garlyyev, Daniel Scieszka, Fabien Claudel, Frederic Maillard, Aliaksandr Bandarenka  
[Quick Determination of Electroactive Surface Area of Some Oxide Electrocatalysts](#)

**13:25 to 13:45**

Roundup day 3

# Thursday 3 September 2020

## Symposium 18

### Nanoelectrochemistry and electrocatalysis - from fundamentals to applications

Chairman : Alexis Grimaud; Kristina Tschulik

#### 18:40 to 19:00

Start of video platform ahead of program to allow everyone to check their connection and socialize if desired. This time may also be used to make announcements, explain the rules of video conferences and show pictures.

#### 19:00 to 19:40 Keynote Invited

**Aleksandra Vojvodic** (Chemical and Biomolecular Engineering, University of Pennsylvania, Philadelphia, USA)

[Faceted Nanochemistry of Compounds for Catalysis &#38; Energy](#)

#### 19:40 to 20:00 Invited

**Alexis Grimaud** (Solid-State Chemistry Laboratory, College de France - CNRS, Paris, France)

[Studying Water Reactivity at Electrochemical Interfaces by Nanoconfinement Strategies](#)

#### 20:00 to 20:25

Pre-recorded poster talks (8 x 2 min) and discussion

#### 20:25 to 20:35

Coffee Break

#### 20:35 to 21:15 Keynote Invited

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

[Electrocatalysis and Bio-electrocatalysis at Nanoscale: The Case for Heterogeneous Catalytic Cascades](#)

#### 21:15 to 21:35 Invited

**Martin Edwards** (Department of Chemistry & Biochemistry, University of Arkansas, Fayetteville, USA), Sean German, Hang Ren, Henry White

[Electrochemical Characterization of Stochasticity in Nanobubble Nucleation](#)

#### 21:35 to 21:55 Invited

**Frederic Kanoufi** (ITODYS lab UMR7086, Universite de Paris - CNRS, Paris, France), Jean-Francois Lemineur, Jean-Marc Noel, Catherine Combellas

[Does the most active nanocatalyst evolve the largest nanobubble?](#)

#### 21:55 to 22:00

Roundup day 2

# Friday 4 September 2020

## Symposium 18

### Nanoelectrochemistry and electrocatalysis - from fundamentals to applications

Chairman : *Helmut Baltruschat ; Nicolas Plumeré*

#### 09:40 to 10:00

Start of video platform ahead of program to allow everyone to check their connection and socialize if desired. This time may also be used to make announcements, explain the rules of video conferences and show pictures.

#### 10:00 to 10:40 Keynote Invited

**Christopher Brett** (Department of Chemistry, CEMMPRE, University of Coimbra, Coimbra, Portugal), Wanderson da Silva

[Electrocatalysis in Nanomaterial Modified Electrodes and Application to Electrochemical Sensors](#)

#### 10:40 to 11:00 Invited

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

[Diverting Electrons for Protecting Fragile Catalysts for Energy Conversion](#)

#### 11:00 to 11:10

**Sorour Darvishi** (Chemistry and chemical engineering, École polytechnique fédérale de Lausanne (EPFL), Sion, Switzerland), Sorour Darvishi, Horst Pick, Emad Oveisi, Andreas Lesch, Hubert Girault

[Electrochemical Imaging of E.coli Biofilms Using Soft-Probe-Scanning Electrochemical Microscopy](#)

#### 11:10 to 11:25

Pre-recorded poster talks (5 x 2 min) and discussion

#### 11:25 to 11:35

Coffee Break

#### 11:35 to 11:55 Invited

**Elena Savinova** (ICPEES, University of Strasbourg, Strasbourg, France)

[Borohydride Electrooxidation on Nickel: Towards Understanding of the Reaction Mechanism](#)

#### 11:55 to 12:15

**Reshma Rao** (Department of Chemistry, Imperial College London, London, United Kingdom), Sacha Corby, Alberto Bucci, Miguel García-Tecedor, Sixto Gimenez, Julio Lloret-Fillol, James Durrant

[Spectroelectrochemical study of water oxidation on nickel-based electrocatalysts in alkaline solution](#)

#### 12:15 to 12:35

**Christoph Baeumer** (Institute of Electronic Materials, RWTH Aachen University, Aachen, Germany)

Tuning surface composition and transformation pathways in atomically-flat LaNiO<sub>3</sub> thin films for enhanced water electrolysis

**12:35 to 12:50 Invited**

**Christoph Bondue** (Leiden Institute of Chemistry, University Leiden, Leiden, Netherlands),  
Federico Calle-Vallejo

Electrochemical Hydrogenation of Carbonyl Compounds: The Interaction Between Secondary Functional Group and Electrode and Its Influence on Catalytic Activity

**13:00 to 13:20**

Pre-recorded poster talks (5 x 2 min) and discussion

**12:50 to 13:00**

Announcement of poster prizes (if any), roundup day 3, roundup symposium