

## ISE Division 6 : MOLECULAR ELECTROCHEMISTRY

### 2018 Annual Activity Report (November 2018)

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#### 1/ News

**Francesco Paolucci**, the present Past Chair of our Division, has been **elected Vice President** (Executive Committee) for term 2019-2021. Many congratulations!

**Patrizia Mussini**, will be our **new Chair** for the **2019-2020 term**. Good luck with the new job, Patrizia!

The elections of the new Chair Elect (for term 2019-2020) took place in October 2018. Candidatures for new Chair Elect were Carlos Frontana (Mexico) and Magdalena Hromadova (Czech Republic). **Magdalena Hromadova was elected** as the **new Chair Elect**. Congratulations Magdalena!

Division 6 would like also to thank **Carlos Frontana** for his strong involvement in the life of our community such as the 24<sup>th</sup> ISE Topical Meeting 2019 (Merida, Mexico) on “Electrochemical Assembling at the Meso, Nano and Molecular Scale” (see §4/).

Two Vice Chairs have been appointed to complete the board: **Guobao Xu** (agreed to continue his service as VC) and **José H. Zagal**.

#### 2/ Activities in 2018

##### a) Jaroslav Heyrovsky Prize for Molecular Electrochemistry

This is a new prize created in 2014. This prize, supported by Division 6, is awarded annually to a scientist who has made a significant contribution to the field of molecular electrochemistry in the last 5 years.

Previous winners: Flavio Maran (2014); R. Daniel Little (2015); Ismael Diez Perez (2016) and Armando Gennaro (University of Padova) who delivered a lecture at the 69<sup>th</sup> ISE AM in Bologna (title: “The why of fundamental research: the case of electrochemistry and atom transfer radical polymerization joint venture”).

In **2018**, the award committee (Marilia Goulart, Patrizia Mussini, Toshio Fuchigami, Francesco Paolucci and Olivier Buriez) decided to award the Jaroslav Heyrovsky Prize for Molecular Electrochemistry to **Siegfried Waldvogel** (Gutenberg-University Mainz, Germany) for his innovative

and outstanding contributions to the field of organic electrocatalysis and particularly for the development of valuable methods/approaches allowing the preparation of high added value molecules.

Prof. Siegfried Waldvogel will receive the Prize and will deliver his JHP lecture at the 2019 AM in Durban, South Africa.

All members of Division 6 are invited to **advance nominations for 2019** to this prestigious prize (nominations cannot be done by candidates themselves) as soon as possible and anyway by the deadline of **1 May, 2019** (instructions at: <http://www.ise-online.org/awards/heyrovsky.php>). Importantly, **re-nomination is possible** (except for winners of preceding editions of the prize); the procedure for re-nomination is straightforward!

### **b) 2018 Annual Meeting in Bologna (Italy 2 - 7 September) “Electrochemistry from Knowledge to Innovation”**

**Francesco Paolucci** (Past Chair of our Division) was Co-chair (with Marco Mussiani) of the Annual Meeting Organizing Committee in Bologna. Division 6 would like to thank him for his strong and efficient involvement in this successful meeting!

Our Division was involved in the organization and co-organization of the following 6 Symposia:

**Symposium 5:** Photobioelectrochemistry – from Basic Concepts and Materials to Devices (sponsored with Div. 2). Fred Lisdat (Coordinator), Wildau Technical University, Germany; Danilo Dini, University of Rome La Sapienza, Italy; Lars Jeuken, University of Leeds, UK; Frank Marken, University of Bath, UK; Riccardo Ruffo, University of Milan Bicocca, Italy.

**Symposium 9:** Photo-Electrochemical Energy Conversion: Symposium in Honor of Prof. Jan Augustynski (sponsored with Divs. 2, 3 and 5). Robert Kostecki (Coordinator), Lawrence Berkeley Laboratory, USA; Federico Bella, Politechnic of Torino, Italy; Stefano Caramori, University of Ferrara, Italy; Clara Santato, Polytechnic of Montreal, Canada; Renata Solarska, University of Warsaw, Poland; John Tutner, National Renewable Energy Laboratory Denver, USA.

**Symposium 10:** Materials *for* and *from* Electrochemistry: State of the Art and Future Trends (sponsored with Div. 4). Giovanni Zangari (Coordinator), University of Virginia, USA; Sandro Cattarin, ICMATE CNR Padova, Italy; Silvia Franz, Politechnic of Milan, Italy; Massimo Innocenti, University of Florence, Italy; Mikhail A. Vorotyntsev, Mendeleev University of Chemical Technology, Russia.

**Symposium 13:** Electrochemistry Applied to Cultural Heritage (sponsored with Divs. 1 & 4). Susana C. de Torresi (Coordinator), University of Sao Paulo, Brazil; Christopher Brett, University of Coimbra, Portugal; Cristina Chiavari, University of Bologna, Italy; Kurt Kalcher, University of Graz, Austria; Ligia Moretto, University of Venice, Italy.

**Symposium 15:** New Trends in (Bio)-Molecular Electrochemistry. **Olivier Buriez** (Coordinator), Ecole Normale Supérieure, France; Christian Durante, University of Padova, Italy; Jiri Ludvik, J. Heyrovsky Institute Prague, Czech Republic; **Patrizia Mussini**, University of Milan, Italy.

**Symposium 16:** Micro- and Nano-Scale Platforms to Study Electron Transport in (Bio)Molecular Systems: from Fundamentals to Molecular Devices (sponsored with Divs. 2 & 7) **Ismael Díez-Pérez** (Coordinator), University of Barcelona, Spain; Sabrina Antonello, University of Padova, Italy; Angel

Cuesta Ciscar, University of Aberdeen, UK; Nadim Darwish, Curtin University, Australia; Giovanni Valenti, University of Bologna, Italy.

Our division **awarded 1 PhD student poster prize in S15: Sebastian Sobottka** (Freie Universität Berlin, Germany).

### **c) Young Members**

The Division wishes to attract young members and make them more and more involved in the Division activity. Following the positive experience in Taipei (2015), also this year young colleagues have co-chaired some sessions (together with a "senior" colleague) at the AM in Bologna.

### **d) Travel grants for PhD students**

As in 2016 (The Hague) and as promised last year, Division 6 decided to support 4 travel grants for PhD students (250 euros each). Evaluation Committee consisted of Division 6 Chairs (Chair, Past Chair and Chair Elect). Winners for the 2018 edition were: Mark Buckingham (UK), Saber Alizadeh (Iran), Abolfazl Mirzapourarmaki (Iran), André Henrique Baraldi Dourado (Brazil) who received their prize directly in Bologna.

### **e) Sponsored Meetings**

Division 6 was involved in the sponsoring of 2 meetings in 2018:

#### **1- the 3rd International Conference on Proton-Coupled Electron Transfer (PCET 2018, June 10-14, Blowing Rock, NC, USA).**

Organizing Committee: Jillian Dempsey, James Mayer, Thomas Meyer, Alexander Miller (Organizing Committee) Ally Aukauloo, Christopher Chidsey, Cyrille Costentin, Leif Hammarstrom, Sharon Hammes-Schiffer and Marc Robert (International Committee).

Scope of the Conference: Sessions will highlight the role of PCET in energy catalysis, oxidation chemistry, N<sub>2</sub> chemistry, biology, organic transformations, material interfaces, fundamentals and model systems, and photochemistry.

Expected number of participants and their geographical origin; Estimate the fraction of ISE members among them: 125 participants; 60% North America, 25% Europe, 15% Asia (20% ISE)

Funds were expected to be used to support travel and registration for speakers

#### **2- PRINCIPLES OF MOLECULAR ELECTROCHEMISTRY AND ITS RESEARCH APPLICATIONS - 31/05/2018 to 01/06/2018 – AREQUIPA - PERU**

Organizing Committee: Dr. Luis Ortiz Frade, CIDETEQ México, ISE MEMBER; Fiorella Olivera Venturo, PRESIDENTE ACS PERU CHAPTER. ISE MEMBER; Dr. Juan Andres Lopa Bolivar, UNIVERSIDAD DE SAN AGUSTIN (AREQUIPA); Dr. Adolfo la Rosa Toro Gomez (PRESIDENTE SOCIEDAD PERUANA DE ELECTROQUÍMICA).

Advisory Board: Luis Ortiz Frade, CIDETEQ México. ISE MEMBER; Dr. Adolfo la Rosa Toro Gomez (PRESIDENTE SOCIEDAD PERUANA DE ELECTROQUÍMICA).

Scope of the Conference: This course aims to introduce the participant through the molecular structure of organic and inorganic compounds, the foundations of electrochemistry and to the use of

techniques of cyclic voltammetry, chronoamperometry and spectroelectrochemistry (UV-Vis, IR and EPR).

### 3/ Divisional budget

<b>Remaining 2017</b>	<b>1229.18 €</b>
Meeting surplus participation	358.93
Allocated for 2018	2578.25 €
<b>Total 2018</b>	<b>4166.36 €</b>
Jaroslav Heyrovsky Prize	1000
Meeting Sponsoring (PCET&PMERA)	2 x 500
Travel Grants (PhD students)	4 x 250
Poster Prize (+ gala dinner ticket)	200 + 105 (1 Poster (S15))
Remaining 2018	861,36 €

### 4/ Future activities

**a) 2019 Annual Meeting “Electrochemistry: Linking Resources to Sustainable Development” in Durban, South Africa (70th Annual Meeting - 4 - 9 August).**

Our Division will be involved in the organization and co-organization of the following 4 Symposia:

**Symposium 4:** *Renewable Energy & Photo-Electrochemistry* – Sponsored by Divisions 3, 4 and 6 (F. Rosei, B. Liu, C. Janaky, F. Marken, M. Maaza, M. Diale).

**Symposium 5:** *Gold and related noble metals in electroanalysis, electrocatalysis, and electrochemical devices.* Sponsored by Divisions 1 & 6. (P. Mussini, F. Paolucci, A. Walcarius, M. Muchindu, Jessie Pillay)

**Symposium 13:** *Electrografting of Materials: from Fundamentals to Applications* - Sponsored by Divisions 6 & 4 (O. Buriez, F. Podvorica, P. Hapiot, S. Chigome, P. Mashazi).

**Symposium 14:** *Molecular Electrochemistry: from Fundamentals to Applications* - Sponsored by Divisions 6. (M. Hromadova, G. Xu, J. Conradie, S. Radhakrishnan).

## **b) Topical Meetings**

Our division will be involved in the co-organization (with Div.4) of the 24<sup>th</sup> ISE Topical Meeting 2019: “Electrochemical Assembling at the Meso, Nano and Molecular Scale”, 7 - 10 April, 2019 Merida, Mexico. **Carlos Frontana** (Vice Chair of Div. 6 and Regional Representative), Linda Victoria and Ignacio Gonzalez Martinez are the persons who were involved in the proposal which was approved by the ISE Executive Committee.

### Organizing Committee:

- Carlos Frontana, CIDETEQ, Mexico (co-chair)
- Ignacio González, UAM, Mexico (co-chair)
- Olivier Buriez, Ecole Normale Supérieure de Paris, France
- Stanko R. Brankovic, University of Houston, USA
- Tom Breugelmans, University of Antwerp, Belgium
- Linda González-Gutiérrez, CIDETEQ, Mexico (co-chair)

This meeting is aimed at discussing and analyzing the scientific contributions that describe molecular/fundamental concepts regarding phase formation or electrode functionalization for specific purposes. Such assemblies could find application interests at the nano (for example people working with biosensors), molecular (e.g. people in corrosion research working with inhibitors or colleagues dealing with electrocatalysis) and meso scale (which could be related to functional coatings, either decorative or functional, for example, electrofinishing of surfaces).

Topics will include:

- Molecular Electron Transfer in Phase Formation: Mechanistic Aspects
- Surface engineering of electrode materials for electrochemical processes
- Electrochemical assemblies at the nano and microscales for immobilization of biomolecules
- Electrochemical methods for functional coatings