

ISE Division 6 : MOLECULAR ELECTROCHEMISTRY

2017 Annual Activity Report

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1/ News

Francesco Paolucci, is now Past Chair of our Division (for term 2017-2019); Division 6 would like to thank him sincerely for the great job he did so far for our community.

Election of the New Division Officer. The elections of the new Chair Elect (for term 2017-2019) took place from October 4 to October 18, 2016. We received three candidatures: Carlos Frontana (Mexico), Magdalena Hromadova (Czech Republic) and Patrizia Mussini (Italy). **Patrizia Mussini** was elected. Note the great participation of our Division to this election (nearly 40% of members voted, ranking second our Division among all Divisions).

Following this election, **Carlos Frontana**, **Magdalena Hromadova** and **Guobao Xu** were willing to continue their active participation in our Division life. Since the ISE by-laws do not state that 2 vice-chairs is not a limiting value, but is only the “usual choice”, it was decided to propose 3 Vice-Chairs for completing the Division 6 board. Our proposition was positively voted by all EC members. Accordingly, here is the **present composition of the board**: Olivier Buriez (Chair); Francesco Paolucci (Past Chair); Patrizia Mussini (Chair Elect); Carlos Frontana, Magdalena Hromadova, Guobao Xu (Vice Chairs).

2/ Activities in 2017

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 (Univ. of Barcelona, Spain – 2016) who will deliver a lecture at the ISE AM in Providence

In 2017, 6 nominations (all eligible) were received by the ISE office. The award committee (Marilia Goulart, Dan Little, Patrizia Mussini, Francesco Paolucci and Olivier Buriez) decided to award the Jaroslav Heyrovsky Prize for Molecular Electrochemistry to **Armando Gennaro** (University of Padova,

Italy) for his outstanding contributions to molecular electrochemistry ranging from the very fundamentals of electron transfer mechanisms to the development of electrosynthetic processes.

Prof. Armando Gennaro will receive the Prize and will deliver his JHP lecture at the 2018 AM in Bologna.

All members of Division 6 are invited to **advance nominations for 2018** to this prestigious prize (nominations cannot be done by candidates themselves) as soon as possible and anyway by the deadline of **1 May, 2018** (instructions at: <http://www.ise-online.org/awards/heyrovsky.php>).

b) 2017 Annual Meeting in Providence (USA 24 August – 1 September) “Electrochemistry without Borders”

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

Symposium 11: Synthesis and Applications of Electrochemically Active Materials (sponsored with Div. 4). **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 13: The Green Potential of Molecular Electrochemistry. **Daniel Little** (Coordinator), University of California, Santa Barbara, **Marilia O. F. Goulart**, Universidade Federal de Alagoas, Brazil **Olivier Buriez**, Ecole Normale Supérieure, France; **Carlos Frontana**, Centro de Investigación y Desarrollo Tecnológico en Electroquímica S. C., Mexico.

Symposium 14: Let there be Light in Electrochemistry: from Electrogenenerated Chemiluminescence to Fluorescence (sponsored with Divs. 1 & 2). 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 16: Electrochemistry of Metal Clusters and Nanoparticles (sponsored with Div. 7). **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.

Our division planned to **award 3 PhD students poster prizes in S11, S13 and S16.**

c) Sponsored Meetings

Division 6 was involved in the organization and the sponsoring of 3 meetings in 2017:

1- The 21st Topical Meeting of the International Society of Electrochemistry (23-26 April 2017, Szeged, Hungary): “Photoelectrochemistry of semiconductors at the nanoscale: from fundamental aspects to practical applications”. This Topical Meeting was organized by Division 6 and Division 7 (Physical Electrochemistry) and the ISE Region Hungary.

Organizing Committee: Csaba Janaky, Szeged, Hungary (*Secretary*); Bunsho Ohtani, Hokkaido, Japan; **Francesco Paolucci**, Bologna, Italy; Laszlo Peter, Budapest, Hungary (*Co-chair*); Krishnan Rajeshwar, Arlington, USA (*Co-chair*); Andrea E. Russel, Southampton, UK

The aim of the meeting was to provide a common platform for researchers with interests in surface science, electroanalysis, bioelectrochemistry, photocatalysis, solar energy conversion and storage, and electrochemical materials science in general; thus making accelerated progress on understanding and exploiting light induced interactions at semiconductor interfaces.

The conference hosted 4 keynotes, 7 invited, and 51 contributed talks, as well as 68 posters (with approximately 150 participants in total).

2- The XII ECHEMS Meeting which took place from June 6th to June 9th 2017 in Milano Marittima, Italy, with the theme: "Electrochemistry in... ingenious molecules, surfaces and devices". **Patrizia Mussini** was the Chair of the Organizing Committee.

The Meeting focused on electroactive molecules, materials, thin films, surfaces/modified surfaces of new/advanced design and with new/advanced functions (for example: electrical, optical, magnetic, catalytic, electrochromic, chiral, biological, coordination...) for innovative applications and devices, or enabling improved performances in current ones, (for example: sensors, modified/catalytic electrodes, optoelectronic devices, energy storage and/or conversion devices, electrochromic devices, actuators, spin-selective electrochemistry, molecular assemblies, nanoobjects...) dealing with issues like design, preparation, characterization, implementation in applications and devices, testing and interpretation.

3- The 50th Heyrovsky Discussion (June 18-22, 2017 Castle Trest, Czech Republic) devoted to "Molecular Electrochemistry in Organic and Organometallic Research". This meeting was organized by **Jiří Ludvík** (from the J. Heyrovsky Institute) a former Chair of Division 6.

The general philosophy of the Discussions is to invite experienced scientists specialized in a certain field together with students or young research workers, and to let them to present in an informal way their most recent electrochemical achievements and interpretations with a special stress on broad and friendly scientific discussion. (The total number of participants is limited to about 50-60 by the capacity of the Castle).

This year, the jubilee Heyrovský Discussion was divided into the following topics: Organic electrochemistry; organometallics and complexes; chirality and stereochemistry; surfaces; redox catalysis; electron and charge transfer.

About 50 colleagues and friends from 14 countries gathered in the castle of Trest. The meeting hosted 39 oral presentations as well as 20 posters.

3/ Divisional budget

Remaining 2016	227.04 €
Allocated for 2017	2850.14 €
Total 2017 (January)	3077.18 €
Jaroslav Heyrovsky Prize	1000
Meeting Sponsoring (50th Heyrovsky Discussion)	600
Poster Prizes (+ gala dinner tickets)	3 x (265 + 77) = 1026
Remaining (July 2017)	451.18 €

4/ Future activities

a) 2018 Annual Meeting “Electrochemistry from knowledge to innovation” in Bologna, Italy (2 - 7 September 2018).

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

Symposium 5: Photobioelectrochemistry - from basic concepts and materials to devices. Sponsored by Division 2 and 6.

Symposium 9: Photo-electrochemical energy conversion: Symposium in honour of Prof. Jan Augustynski. Sponsored by Divisions 3, 2, 5 and 6.

Symposium 10: Materials for and from electrochemistry: state of the art and future trends. Sponsored by Division 4 and 6.

Symposium 13: Electrochemistry applied to cultural heritage.

Sponsored with Divisions 4, 1 and 6.

Symposium 15: New trends in (Bio)-Molecular Electrochemistry

Sponsored by Division 6, Molecular Electrochemistry.

Symposium 16: Micro- and Nano-scale electrochemical platforms to study electron transfer in organic and biological matter: from fundamentals to molecular devices. Sponsored by Divisions 6, 2 and 7.

b) Topical Meetings

Our division will be involved in the co-organization (with Div.4) of the 24th 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.

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
- Nano-or micro-materials for immobilization of biomolecules
- Electrofinishing and electrochemical coatings for high temperature corrosion inhibition