Report on the organization of the Symposium

“MicroEchem 2016 / Energy Storage Discussions”

Amealco de Bonfil, Querétaro, México

November 7th – 9th, 2016
Summary

MicroEchem meeting was carried out for the fourth consecutive year in 2016; these meetings have been focused on disseminating knowledge in areas related with Molecular Electrochemistry and its study for the understanding of electrochemical processes. This year, MicroEchem meeting became partnered with the second Energy Storage Discussions, originally taking place in 2014, which has been a forum of analysis of different aspects of energy storage. This joint event highlighted topics related with electrochemical and other energy storage devices, preserving the emphasis of discussions from a molecular point of view, including modeling of processes along with material evaluation and design. The main topics covered in this meeting were: battery concepts, materials and their characterization, modelling of energy storage systems, and energy storage systems for automotive, mobile and stationary applications.

We thank both sincerely and deeply to the kind acceptance and disposition of all the keynote and invited lecturers: Prof. Jean-Michel Savéant, Prof. Marie-Liesse Doublet, Prof. Ezequiel Leiva, Prof. Mark Pritzker, Prof. Alejandro A. Franco, Dr. Johanna Nelson, Dr. Holger Schneider, and Dr. Issis C. Romero. As in previous occasions, the program included oral and poster presentations, as it has become clearly that this forum allows to participants for discussing their work and share it with the invitees. As intended by its original conception, MicroEchem meetings provide an alternative and specialized forum for the Mexican community working with Electrochemistry.

In addition, we would like to thank CIDETEQ-México, who helped with all the administrative affairs of this event, along with Luz María Pérez from Hotel Misión La Muralla, which provides us again with a beautiful venue where people can gain a huge glimpse of the Mexican atmosphere! We also thank our sponsors, which again have trusted in us for developing this event, including Metrohm-Mexico, SAIDE, SAIDESA, and to the Regional Section Mexico of the International Society of Electrochemistry, which again is instrumental in developing this event. Also, the kind consideration of providing a Special Issue of Electrochimica Acta devoted to the meeting by Prof. Sergio Trasatti, that will provide a fine selection of works for future reference.
As has also been a tradition for this event, the fabulous assistance of M. in Sc. Georgina Armendáriz has been decisive for having this event well-organized, complemented by the helpful contributions by José Luis Rivas Rodríguez, Eduardo Martínez González and Ana Itzel Zárate Guzmán, who provided their relentless young energy and dedication to the event.

We thank you all for assisting and supporting this event.

Sincerely

On behalf of the Organizing Committee
MicroEchem 2016 – Energy Storage Discussions

Dr. Carlos Eduardo Frontana Vázquez
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1. Organization of the meeting

The meeting was organized by Dr Carlos Frontana and Dr Linda González, and co-organized with Dr Enrique Quiroga (Institute of Physics-BUAP, México) and Dr Jorge Vazquez (Universidad Autónoma Metropolitana, México), from the Energy Storage Discussions group, and the assistance of MSc Georgina Armendariz, MSc Eduardo Martínez González, IQ Jose Luis Rivas and MSc Ana Itzel Zarate, from the “Centro de Investigación y Desarrollo Tecnológico en Electroquímica” (CIDETEQ), México.

As Co-Sponsors on the organization of MicroEchem 2016 along with the ISE, we had the participation of MetroOhm México, SAIDE and SAIDESA.

The cost of the event was full board and included access to the program, accommodation, coffee breaks, meals, and cultural event. The cost was of 5500 mexican pesos for professionals and 4500 for students; also, 12 reduced fees (2000 pesos) were given for the first students participants. The event had no cost for all the invited lecturers.

For the diffusion of the event, a Poster (Fig. 1) and brochure (Fig. 2) were spread. Also, we count with a webpage (disable for the moment): http://microechem2016.comli.com, and https://sites.google.com/site/microechem2016/ , because the page in the comli site that was in the brochure had operational problems. In order to keep contact with the assistants, the following emails were able: microechem2016@gmail.com and energysd@ifuap.buap.mx.
MicroEchem are meetings focused on disseminating knowledge in areas related with Molecular Electrochemistry and its study for the understanding of electrochemical processes; Energy Storage Discussions, has been a forum of analysis of different aspects of energy storage. This year, both meetings are coming together for a greater contribution, highlighting topics related with electrochemical and other energy devices. The event’s program includes keynote and invited talks of renowned scientists, and contributions from interested authors (oral & poster). Topics include but are not limited to:

- **Battery concepts** and materials and their characterization, along with emerging technologies.
- **Capacitor concepts** and materials and their characterization.
- **Modelling of energy storage systems**: Quantum mechanical modelling, multiscale modelling, modelling of molecular dynamics, etc.
- **Other energy storage concepts** (thermal, gas, etc.).
- **Energy storage systems** for automotive, mobile and stationary applications: Control system, cooling system, mechanical system, lifetime and security tests, and mass production.
- **Recycling**.

**Confirmed Keynote Lecturers**

- Prof. Marie-Liesse Doublet – Université Montpellier 2 (France)
- Prof. Alejandro A. Franco – Université de Picardie Jules Verne (France)
- Prof. Ezequiel Leiva – Universidad Nacional de Córdoba (Argentina)
- Johanna Nelson-Weirer – SLAC National Accelerator Laboratory (USA)
- Prof. Mark Pritzker – University of Waterloo (Canada)
- Prof. Jean-Michel Savéant – Université Paris 7 (France)

**Important dates**

- Abstract submission deadline: 5th October
- Notification of Acceptance: 20th October

**Fees (full board + accommodation)**

- Professionals: 5500 MXN
- Students: 4500 MXN

**More info**

http://microchem2016.com.mx/energy2016@fuap.buap.mx or microchem2016@gmail.com
Dr. Carlos Frontana (coordinator): cfrontana@cideetq.mx

Fig 1. Poster of MicroEchem 2016 / Energy Storage discussions announcement.

2. Participants

This year we had the participation of among 60 persons, which were 32 researchers and 28 students, from different universities and research institutions in México and foreigner.


MicroEchem 2016 count with 9 tutorial/invited lectures, 22 oral contributions and 20 poster contributions, focused on useful practical concepts in energy storage, materials, modelling and molecular Electrochemistry. Table 1 show the detail of the tutorial and invited lectures presented on the meeting.

Table 1. Tutorial and Invited lectures presented in MicroEchem 2016 / Energy Storage Discussions.

<table>
<thead>
<tr>
<th>Lecturer name</th>
<th>Lecture title</th>
<th>Institution</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prof. Jean Michel Savéant</td>
<td>1. Storing electrical energy in molecules. Molecular catalysis of the CO₂-to-</td>
<td>UMR CNRS - Université Paris Diderot - Paris</td>
<td>France</td>
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<tr>
<td></td>
<td>CO electrochemical conversion.</td>
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<td></td>
<td>“Pseudo”?</td>
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<tr>
<td>Dr. Johanna Nelson Weker</td>
<td>In situ Synchrotron-based X-ray Microscopy on Energy Storage Materials</td>
<td>SLAC Accelerator Laboratory, Standford University</td>
<td>USA</td>
</tr>
<tr>
<td>Prof. Marie-Liesse Doublet</td>
<td>Computational and Theoretical Chemistry: Powerful tools for a Rational</td>
<td>Université Montpellier 2</td>
<td>France</td>
</tr>
<tr>
<td></td>
<td>Design of Electrode</td>
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Table 1. Continuation.

<table>
<thead>
<tr>
<th>Lecturer name</th>
<th>Lecture title</th>
<th>Institution</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prof. Ezequiel Leyva</td>
<td>Atomistic and coarse-grained modeling of Li-ion batteries</td>
<td>Universidad Nacional de Córdoba</td>
<td>Argentina</td>
</tr>
<tr>
<td>Prof. Mark Pritzker</td>
<td>Overview of macroscopic modelling for Li-ion batteries on the basis of porous-electrode theory</td>
<td>University of Waterloo</td>
<td>Canada</td>
</tr>
<tr>
<td>Prof. Alejandro A. Franco</td>
<td>Mutiparadigm and multiscale computational modeling of rechargeable batteries: from theory to practice</td>
<td>Université de Picardie Jules Verne</td>
<td>France</td>
</tr>
<tr>
<td>Dr. Holger Schneider</td>
<td>Development of innovative battery materials and next generation battery systems at BASF</td>
<td>BASF</td>
<td>USA</td>
</tr>
<tr>
<td>Dr. Issis C. Romero</td>
<td>Materials Synthesis for energy storage devices and catalysis</td>
<td>Instituto Politécnico Nacional</td>
<td>México</td>
</tr>
</tbody>
</table>

The Program of MicroEchem 2016 / Energy Storage Discussions was organized as is shown in Fig. 3. A cultural event was included in the program; which consisted in a one-hour concert of arias and romantic music by Martha Juliana Ayech, a mexican soprano.
### MicroEchem 2016
Energy Storage Discussions

**Fig. 3.** General program of MicroEchem 2016/ Energy Storage Discussions, from November 7th to 9th, 2016.
4. Book of abstract

A book of abstracts was printed and distributed at the beginning of the meeting, available for all the participants. Fig 4 shows the cover of the book of abstracts.

5. Photogallery

Finally, we present some pictures of MicroEchem 2016 / Energy Storage Discussion meeting.

MicroEchem 2016 participants.
The audience

Opening of the meeting

Prof. Jean-Michel Savéant

Dr. Johana Nelson

Prof. Mark Pritzker

Prof. Marie-Liesse Doublet
MicroEchem 2016 / Energy Storage Discussions

Poster session

Poster session

Cultural event with the soprano Martha Juliana Ayech

Friends and collaborators