

13th PTASchool of **Electrochemistry**

2nd to 5th December, 2018

Workshop: **Electrochemistry, from Sensing to Energy Conversion and Storage**

6th and 7th December, 2018



Instituto de Química, Universidade de São Paulo, São Paulo, Brazil

UNIVERSIDADE DE SÃO PAULO

INSTITUTO DE QUÍMICA



Instituto de Química, Universidade de São Paulo, São Paulo, Brazil

HISTÓRIA

A escola de eletroquímica foi uma idéia que começou a ser elaborada durante o XV SIBEE em Londrina pelos professores:

Francisco Carlos Nart

Paulo Teng-Na Sumodjo

Roberto M. Torresi

Romeu Cardozo Rocha-Filho



XV sibee

PARANÁ 2005 SIMPÓSIO BRASILEIRO DE
ELETROQUÍMICA E ELETROANALÍTICA



Precondições

Alunos de doutorado

Doutores

Alunos dos laboratórios envolvidos não
participam da escola



Instituto de Química, Universidade de São Paulo, São Paulo, Brazil

Apoio financeiro



<https://www.camisariafascynios.com.br>





Instituto de Química, Universidade de São Paulo, São Paulo, Brazil

Apoio em equipamentos e materiais

Grupo de pesquisa em Química Analítica Instrumental (Prof. Lúcio Angnes)

Grupo de Sensores Eletroquímicos e Métodos Eletroanalíticos (Prof. Mauro Bertotti)

Grupo de Materiais Eletroativos (Profs. Roberto e Susana Torresi)

Chemical Sensors Lab (Prof. Thiago Paixão)



Instituto de Química, Universidade de São Paulo, São Paulo, Brazil

80 alunos inscritos e 32 selecionados

Argentina:	3 participantes
Brasil:	25 participantes
Chile:	1 participante
Itália :	1 participante
Polônia:	2 participante



Instituto de Química, Universidade de São Paulo, São Paulo, Brazil

Selected Candidates

	Name	Institution	Country
1	Ana Matheus	Universidade Estadual do Centro Oeste	Brasil
2	Anabel Lourenço	Universidade Federal da Paraíba	Brasil
3	André Olean	Universidade de São Paulo	Brasil
4	Breno Souza	Universidade Fed. de Uberlândia	Brasil
5	Bruna M. Hryniewicz	Universidade Federal do Paraná	Brasil
6	Christian Candia Onfray	Universidad de Santiago de Chile	Chile
7	Deonildo Faggion	Univ. Fed. de Rio Grande do Sul	Brasil
8	Emanuel Farias	Universidade Federal do Piauí	Brasil
9	Evelin Florencia Cardozo	Universidad de la Plata	Argentina
10	Florymar Escalona Durán	Univ. Fed. do Rio Grande do Norte	Brasil
12	Gilberto Lima	Universidade de São Paulo	Brasil
13	Giulia Moro	Ca' Foscari University of Venice	Itália
14	Glenda Lacerda	Univ. Federal de Minas Gerais	Brasil
15	Isaac Macêdo	Universidade Federal de Goiás	Brasil
16	Jéssica Fonsaca	Universidade Federal do Paraná	Brasil
17	Josué Cremonuzzi	Univ. Presbiteriana Mackenzie	Brasil
18	Kaline Nascimento	Universidade Fed. de São Carlos	Brasil
19	Krystian Chudzik	Jagiellonian University	Poland
20	Lory Cantelli	Univ. Estadual de Campinas	Brasil
21	Lucia Saad	Universidad Nac. de Villa Maria	Argentina
22	Marcelina Lis	Jagiellonian University	Poland
23	Marco Rodrigues	Federal University of Pelotas	Brasil
24	María del Carmen Rojas	Universidad Nacional de Córdoba	Argentina
25	Marina Brito	Universidade Federal da Bahia	Brasil
26	Marina Leite	Universidade de São Paulo	Brasil
27	Murilo Gromboni	Universidade de São Paulo	Brasil
28	Pamyla Santos	Univ. Estadual de Campinas	Brasil
29	Patricia Santiago	Universidade Federal do ABC	Brasil
30	Rafael Bonifácio	Inst. de Pesquisas Energéticas e Nucleares	Brasil
31	Thiago Barros Ferraz	Univ. Estadual de Campinas	Brasil
32	Thiago Ferreira	Universidade de São Paulo	Brasil

Participantes



3^o ESECS Program

Thursday, December 6 th – Sensing, actuators and biomaterials		
<i>Chaired by: Susana I. C. Torresi</i>		
09:00 – 09:35 h <i>Keynote lecture</i>	Sarah Cartmell School of Materials, The University of Manchester, UK.	Electrical stimulating regimes to influence stem cell proliferation and differentiation
09:35 – 10:10 h <i>Keynote lecture</i>	Denise Petri Instituto de Química – Univ. of São Paulo, BR.	Polysaccharides hydrogels for biomedical and environmental applications
10:10 – 10:30 <i>Invited Lecture</i>	Luiz Henrique Catalani Instituto de Química – Univ. of São Paulo, BR.	Combining synthetic polymers and extracellular matrix for biomedical applications
10:30 – 10:50 h		Break
<i>Chaired by: Luiz Henrique Catalani</i>		
10:50 – 11:25 h <i>Keynote Lecture</i>	Bradley D. Olsen Massachusetts Institute of Technology, Dept. of Chemical Engineering, USA.	Self-Assembled Biomaterials for Catalysts, Affinity Sensors, and Electrocatalysts
11:25 – 11:40 h <i>Lecture</i>	Aruã C. da Silva, M. J. Higgins and S. I.C. de Torresi Instituto de Química – Univ. of São Paulo, BR / Univ. of Wollongong, AU.	Investigation of Protein Interactions with a Conducting and Biodegradable PEDOT-co-PDLLA by Atomic Force Microscopy
11:40 – 12:15 h <i>Keynote Lecture</i>	Parry Hashemi College of Arts and Sciences – Univ. of South Carolina, USA.	Expanding the Scope of In Vivo Electrochemical Neurotransmitter Detection
12:15 – 14:40 h		Lunch+ Poster section+Group Photograph
<i>Chaired by: Mauro Bertotti</i>		
14:45 – 15:20 h <i>Keynote lecture</i>	Wendell Coltro Instituto de Química – Univ. Federal of Goiás, BR	Development of portable and low cost electrochemical devices for clinical and forensic applications
15:20 – 15:55 h <i>Keynote lecture</i>	Thiago Paixão Instituto de Química – Univ. of São Paulo, BR	Inexpensive materials for electrochemical sensing
15:55 – 16:15 h		Break
<i>Chaired by: Thiago Paixão</i>		
16:15 – 16:35 h <i>Invited Lecture</i>	Vinicius Gonçalves The University of New South Wales, Australia	Addressing faradaic reactions on silicon with light: principle, challenges and opportunities in biosensing
16:35 – 16:50 h <i>Lecture</i>	Alex S. Lima, Carla S. Santos and Mauro Bertotti Instituto de Química – Univ. of São Paulo, BR.	Use of micro and nanosensors for the study of biological systems
16:50 – 17:05 h <i>Lecture</i>	Pamyla L. dos Santos, V. Katic, K. C. F. Toledo, J. A. Bonacin Instituto de Química – Univ. of Campinas, BR.	Photochemical synthesis of graphene/Prussian blue nanocomposites for simultaneous detection of ascorbic acid, uric acid and dopamine
17:05 – 17:40 h <i>Keynote lecture</i>	Susana C. I. Torresi Instituto de Química – Univ. of São Paulo, BR.	Different synthetic strategies for electroactive polymers towards biomaterials applications

Friday, December 7 th – Energy storage and conversion		
<i>Chaired by: Roberto M. Torresi</i>		
09:00 – 09:35 h <i>Keynote lecture</i>	Daniel Belanger Dep. Chimie, Fac. des Sciences Univ. Québec à Montréal, CA	Surface modification of electrochemical energy storage materials.
09:35 – 10:10 h <i>Keynote lecture</i>	Maria Valnice Boldrin Inst. of Chemistry, São Paulo State University, BR	Assessment of Ti/TiO ₂ Thin Film Electrode Modification Strategies to improve CO ₂ Reduction and Water Electrolysis
10:10 – 10:30 <i>Invited Lecture</i>	Fabio H. B. Lima Inst. of Chemistry of São Carlos, Univ. São Paulo, BR	Earth-abundant metal electrocatalysts for energy conversion and storage
10:30 – 10:50 h		Break
<i>Chaired by: Katharina Krischer</i>		
10:50 – 11:10 <i>Invited Lecture</i>	Sergio H. Domingues Mack Graphe, Presbyterian Univ. Mackenzie, BR.	High quality reduced graphene oxide and its application in nanocomposites for energy storage
11:10 – 11:25 h <i>Lecture</i>	Vitor L. Martins, A. J. R. Rennie, N. Sanchez-Ramirez, P. J. Hall, and R. M. Torresi Inst. of Chemistry, Univ. São Paulo, BR. / Chem. and Biol. Eng., Univ. of Sheffield, UK	In Search of High Energy Supercapacitors
11:25 – 11:40 h <i>Lecture</i>	Roberta A. Isidoro, T. Munir, F. C. Fonseca IPEN, São Paulo, BR.	PdNi/C materials as cathode electrocatalysts for alkaline fuel cell produced by different methods
11:40 – 12:15 h <i>Keynote lecture</i>	Hamilton Varela Inst. of Chemistry of São Carlos, Univ. São Paulo, BR	Structure Sensitivity of Oscillatory Electrocatalytic Reactions
12:15 – 13:45 h		Lunch
<i>Chaired by: Hamilton Varela</i>		
13:45 – 14:20 h <i>Keynote lecture</i>	Andrea Balducci Friedrich-Schiller University of Jena, DE.	Novel electrolytes for advanced supercapacitors
14:20 – 14:55 h <i>Keynote lecture</i>	Katharina Krischer Physics Dept., Technical University of Munich, DE.	Metal-Insulator-Semiconductor (MIS) Structures for the Photoelectrochemical Generation of Solar Fuels
14:55 – 15:30 h <i>Keynote lecture</i>	Fritz Huguenin Dept. Chemistry, FFCLRP, Univ. São Paulo, BR.	Photo-Assisted Acid-Base Machine: Battery Ensemble to Perform Work from Neutralization Reactions
15:30 – 15:50 h		Break
<i>Chaired by: Daniel Belanger</i>		
15:50 – 16:10 h <i>Invited Lecture</i>	Tânia Benedetti The University of New South Wales, Australia	Nanoparticle electrocatalysts that mimic the three dimensional geometric architecture of enzymes: Nanozymes
16:10 – 16:25 h <i>Lecture</i>	André H B Dourado, R. L. Munhos, N. A. da Silva Jr., V. Cole, H. Varela, S. I. Córdoba de Torresi Inst. of Chemistry/ Inst. of Chemistry of São Carlos, Univ. São Paulo, BR.	On the electrocatalytic oxidation of SO ₂
16:25 – 16:40 h <i>Lecture</i>	Gilberto Lima and Fritz Huguenin Dept. Chemistry, FFCLRP, Univ. São Paulo, BR.	Transference function for electro-insertion reactions in blue energy devices and acid-base machines
16:40 – 17:15 h <i>Keynote lecture</i>	Roberto M. Torresi Inst. of Chemistry, Univ. São Paulo, BR.	ionic liquids and energy storage
17:15 – 17:30 h		Closing Ceremony

13th PTASchool of Electrochemistry
2nd to 5th December, 2018

Workshop: **Electrochemistry, from Sensing to Energy Conversion and Storage**
6th and 7th December, 2018



Instituto de Química, Universidade de São Paulo, São Paulo, Brazil

