



ELECTROCHEMICAL MICRO & NANO SYSTEM TECHNOLOGIES

August 28-31 / September 1, 2018; Milano



www.emnt2018.cloud



emnt@emnt2018.cloud

EMNT2018 – PROGRAM

**Conference Venue: Politecnico di Milano
Piazza Leonardo da Vinci, 32 - Building 6, Room “Giulio Natta”**

Tuesday August 28th, 2018

18.00 - 20.00 Welcome reception & Registration (Room “Giulio Natta” – Politecnico di Milano)

Wednesday August 29th, 2018

8.30 - 9.15 Registration
9.15 - 12.15 Meeting symposium

12.15 - 14.30 Lunch
14.30 - 17.40 Meeting symposium

Thursday August 30th, 2018

9.00 - 12.25 Meeting symposium
12.25 - 14.30 Lunch

14.30 - 17.40 Meeting symposium
18.45 - 23.00 Conference dinner (Restaurant:
“Seven Casa Dei Ciliegi”, Via Luigi Bertelli 4, Milano)

Friday August 31st, 2018

9.00 - 12.25 Meeting symposium
12.25 - 14.30 Lunch

15.00 - 18.00 Cultural tour (Meeting Point: Room
“Giulio Natta, Politecnico di Milano)

Saturday September 1st, 2018

9.00 - 11.00 Committee Meeting

Wednesday August 29th, 2018

8.30 – 9.15	Registration
9.15 – 9.30	Opening and welcome by the Conference Chairman Luca Magagnin
9.30 – 10.10	<i>Plenary Lecture</i> R&D Trend on LIB Batteries and its BMS in Japan <u>Tetsuya Osaka</u> (Waseda University), Daikichi Mukoyama
10.10 – 10.30	Coffee break
10.30 – 11.00	<i>Keynote Lecture</i> Capacitive Field-Effect Devices for Label-Free Biosensing – Two Examples Towards DNA- and Penicillin Detection <u>Michael J. Schöning</u> (FH Aachen), Thomas S. Bronder, Melanie Jablonski, Denise Molinnus, Claudia Koch, Christina Wege, Michael Keusgen, Arshak Poghossian
11.00 – 11.25	Bio-FET based Molecular Communication Devices Muhammad Zulqurnain, <u>Lorenzo Pedrazzetti</u> (Politecnico di Milano), Ozgur B. Akan, Luca Magagnin, Antonio Lombardo
11.25 – 11.50	Impedance Mapping of a Defect in a Cell Layer Cultured Directly on a Chemical Imaging Sensor <u>Ko-ichiro Miyamoto</u> (Tohoku University), Daisuke Suzuki, Carl Frederik Werner, Tatsuo Yoshinobu
11.50 – 12.15	Assisting the Diagnosis of Adrenal Gland Tumors by Means of Electrochemical Biosensing <u>Denise Molinnus</u> (FH Aachen), Holger S. Willenberg, Arshak Poghossian, Michael Keusgen, Michael J. Schöning
12.15 – 14.30	Lunch and Poster Session
14.30 – 15.00	<i>Keynote Lecture</i> Scanning Droplet Cell Microscopy for Flexible Electronics and Basic Understanding of Anodisation <u>A. W. Hassel</u> (Johannes Kepler University)

Sponsored by



Media Partners





ELECTROCHEMICAL MICRO & NANO SYSTEM TECHNOLOGIES

August 28-31 / September 1, 2018; Milano



www.emnt2018.cloud



emnt@emnt2018.cloud

- 15.00 – 15.25 **Micro- and Nanoelectrodes: Fabrication, Characterization and Application. The Detection of Ag⁺ ions and ROS/RNS in Biological Buffer**
Prabhakar Sidambaram (*Dublin Institute of Technology*), John Colleran
- 15.25 – 15.50 **Evaluation of Light-addressable Electrodes for the Integration in Lab-on-Chip Systems**
Rene Welden (*FH AACHEN*), Michael J. Schöning, Patrick Wagner, Torsten Wagner
- 15.50 – 16.00 Break
- 16.00 – 16.25 **Plant Based Bio-electrochemical Functional Sensors**
Yosi Shacham-Diamand (*Tel Aviv University*)
- 16.25 – 16.50 **Identification of Optimum Probe Materials for Scanning Kelvin Probe Measurements in Materials Research**
Silvia Huber (*Johannes Kepler University*), Mariusz Wicinski, Achim Walter Hassel
- 16.50 – 17.15 **Graphene Growth on Electrodeposited Metals by AP-CVD**
Lorenzo Pedrazzetti, Fabio Bizzoni, Valeria Russo, Andrea Lucotti, Luca Nobili (*Politecnico di Milano*), Luca Magagnin
- 17.15 – 17.40 **Electrocatalytic and Photoelectrocatalytic Studies of Hydrogen Evolution Reaction (HER) on Ni | NiO and Ni | rGO|NiO Electrodes**
R.S. Schrebler (*Pontificia Universidad Católica de Valparaíso*), G. Sessarego, G. Brito, N. Cáceres, R.A. Schrebler, P. Grez
- 17.40 – 18.05 **Solid-state Electrochemical Analysis of Inka Pottery from Qotakalli Archaeological Site in the Area of Cusco (Perú)**
Lyda La Torre Riveros (*Cusco University*), Antonio Doménech-Carbó, Wilber Huanasoncco Condori, Dino Quispe Guzmán, María Teresa Doménech-Carbó, Carlos Raúl Cabrera Martínez, María del Carmen Gutiérrez Castillo, Katia Carmona Ochoa & Amelia Pérez Trujillo

End of the first day

Thursday August 30th, 2018

- 09.30 – 10.00 *Keynote Lecture*
Surface Treatment to Improve Localized Corrosion Resistance of Pure Titanium
D. Prando, M.V. Diamanti, M. Ormellese, MP. Pedferri (*Politecnico di Milano*)
- 10.00 – 10.25 **Roses Inspired Novel Coatings Prepared by Anodic Electrophoretic Deposition of Ti-Nanosheets Over Carbon Based Substrate: Characterization and Application**
S.Z.J. Zaidi (*University of Southampton*), C. Ponce de Leon, F.C Walsh
- 10.25 – 10.45 Coffee break
- 10.45 – 11.10 **Passive Film on Pearlite Phase Formed by Anodic Polarization in pH 8.4 Boric Acid-Borate Buffer**
Koji Fushimi (*Hokkaido University*), Ruogo Nakagawa, Yuichi Kitagawa, Yasuchika Hasegawa
- 11.10 – 11.35 **Microstructure Analysis of Anodic Alumina Films after Sealing**
Sachiko Ono (*Kogakuin University*), Hidetaka Asoh
- 11.35 – 12.00 **Combinatorial Screening of Electrooxidation on Cu-alloys**
Andrei Ionut Mardare (*CEST*), Cezarina Cela Mardare, Achim Walter Hassel
- 12.00 – 12.25 **Investigation of Corrosion Protection Mechanism of Epoxy-coating with pH Sensitive Microcapsules Encapsulated Cerium Nitrate**
Takeshi Matsuda (*JFE Steel Corporation*), Kiran. B. Kashi, Victoria. J. Gelling, Koji Fushimi
- 12.25 – 14.30 Lunch and **Poster Session**
- 14.30 – 15.00 *Keynote Lecture*
Polymorphism and Multifunctionality in Electrodeposited Bismuth selenide: Thermoelectricity and Photoelectrochemical Conversion
Rasin Ahmed, Yin Xu, Ricardo Faccio, Giovanni Zangari (*University of Virginia*)

Sponsored by



Media Partners





ELECTROCHEMICAL MICRO & NANO SYSTEM TECHNOLOGIES

August 28-31 / September 1, 2018; Milano



www.emnt2018.cloud



emnt@emnt2018.cloud

- 15.00 – 15.25 **Electrodeposition of Bismuth Metal Crystalline Nanostructures**
Walter Giurlani (*Università di Firenze*), Massimiliano Cavallini, Massimo Innocenti
- 15.25 – 15.50 **Electrochemical Lithography Technique for Localized Electrodeposition**
Guillaume Lamblin (*LIST*), Kevin Menguelti, Antoine Duhain, Damien Lenoble
- 15.50 – 16.00 Break
- 16.00 – 16.25 **Investigation of Electroless Copper Deposition of Fabrics using Different Catalysts**
Golnaz Taghavi Pourian Azar (*Coventry University*), Daryl Fox, Shakiela Begum, Andrew Cobley
- 16.25 – 16.50 **Magnetically Controlled Microdevices Combining Pollutants Photodegradation and Bacteria Killing for Water Quality Control**
R. Bernasconi (*Politecnico di Milano*), E. Carrara, M. Hoop, M. Fajer, G. Chatzipirpiridis, B. J. Nelson, S. Pané, C. Credi, M. Levi, L. Magagnin
- 16.50 – 17.15 **Metal-CNTs Composites for High Ampacity Materials: a New Fabrication Route**
Antoine Duhain (*LIST*), Guillaume Lamblin, Marc Michel, Damien Lenoble
- 17.15 – 17.40 **Template-assisted Synthesis of Platelet-type Carbon Nanofibers and their Application to Oxygen Reduction Reaction Electrodes**
Hiroki Habazaki (*Hokkaido University*), Naohito Yamada, Damian Kowalski, Chunyu Zhu, Yoshitaka Aoki

End of the second day

18.45 to 23.00 CONFERENCE DINNER

Friday August 31st, 2018

- 09.30 – 10.00 *Keynote Lecture*
Developing plasmonic sensors for surface enhanced Raman scattering microscopy for in situ analysis of electrochemical processes
T. Homma (*Waseda University*), M. Bertz, M. Kunimoto, M. Saito, M. Yanagisawa
- 10.00 – 10.30 *Keynote Lecture*
New Materials for Energy Applications with High EROEI values (Energy Returned On Energy Invested)
M. Innocenti (*Università di Firenze*), E. Salviotti, L. Fabbri, E. Piciollo, W. Giurlani, M. Passaponti, P. Marcantelli, A. Lavacchi, S. Caporali, F. Di Benedetto, A. Caneschi
- 10.30 – 10.45 Coffee break
- 10.45 – 11.10 **Electrochemistry of Particulate Electrodes Based on Magnetite Aggregates**
Alessandra Accogli (*Politecnico di Milano*), Luca Magagnin
- 11.10 – 11.35 **Additive Manufacturing and Wet Metallization for Uniaxial and Multi-axial Accelerometers**
Valentina Zega, Caterina Credi, Marta Invernizzi, Roberto Bernasconi, Giacomo Langfelder, Alfredo Cigada, Luca Magagnin, Marinella Levi & Alberto Corigliano (*Politecnico di Milano*)
- 11.35 – 12.00 **FeS₂ Nanostructures by Electrodeposition and Conversion Thermal Annealing for Rechargeable Li-ion Batteries**
Eugenio Gibertini (*Politecnico di Milano*), Gabriele Panzeri, Alessandra Accogli, Luca Magagnin
- 12.00 – 12.25 Closing
- 12.25 – 14.30 Lunch

End of the conference

15.00 to 18.00 CULTURAL TOUR

Sponsored by



Media Partners





POSTER PRESENTATIONS

- 1. Detection of Whole Influenza Viral Particle in High Ionic Strength Solution by Using Glycan-Immobilized Field Effect Transistor Biosensor**
Sho Hideshima (*Waseda University*), Hiroki Hayashi, Shigeki Kuroiwa, Tetsuya Osaka
- 2. Restriction of the Redox Shuttle Phenomenon of Lithium Iodide Using Freestanding Electropolymerized Polypyrrole Film in a Li-O₂ Cell**
Norihiro Togasaki (*Waseda University*), Ryuji Shibamura, Takuya Naruse, Toshiyuki Momma, Tetsuya Osaka
- 3. Analysis of Hydrogen Gas Evolution Phenomena on Micro-Patterned Ni Electrode During Alkaline Water Electrolysis**
Tatsuki Fujimura (*Waseda University*), Wakana Hikima, Yasuhiro Fukunaka, Takayuki Homma
- 4. Very Stable Cycling of Ni-Rich Cathodes with Practical Loading in the Cells with Lithium Metal Anodes in Fluoroethylene Carbonate-Based Organic Electrolyte Solutions**
Elena Markevich (*Bar-Ilan University*), Gregory Salitra, Doron Aurbach, Joern Kulish, Pascal Hartmann
- 5. Synthesis and Characterization of Structures Core/Shell Type ZnO/Cds with a View to the Fabrication of a Photo-Electrochemical Aptasensor for the Detection of Ochratoxin A in Samples of Chilean Wines**
Nicole Briones (*Pontificia Universidad Católica de Valparaíso*), C. Vásquez, H. Gómez & R. Henríquez
- 6. Sonoelectrochemical Synthesis of Nanostructured Electrodes of P-Cu₂O And N-Fe₂O₃ and its Application for Photoelectrochemical Splitting of Water**
Paula Grez (*Pontificia Universidad Católica de Valparaíso*), R. Henríquez, E. Muñoz, C. Rojas, S. Moreno, C. Heyser, C. Celedón & R. Schrebler
- 7. Development of an Acetoin Field-Effect Biosensor to Monitor Fermentation Processes**
Denise Molinnus (*FH Aachen*), Laura O. Gonzales, Lukas Muschallik, Melanie Jablonski, Johannes Bongaerts, Torsten Wagner, Thorsten Selmer, Petra Siegert, Michael Keusgen, Michael J. Schöning
- 8. Sensor-Based Monitoring of Gaseous Sterilization Processes**
Jan Oberländer, Julio Arreola, Farnoosh Vahidpour, Michael Keusgen, Michael J. Schöning (*FH Aachen*)
- 9. Effect of Ti Nano Particles on Electrochemical Behavior of Different Type of Nickel Oxide-Graphene Oxide Hybrid; Towards Electrochemical Super Capacitor Application**
Mohammad BinSabt (*Kuwait University*), Ahmed Galal, Mohamed Emirah
- 10. TiO₂ Films Obtained by Anodic Oxidation: Photocatalytic activity in Gas and Liquid Phase**
B.E. Sanabria Arenas (*Politecnico di Milano*), A. Strini, L. Schiavi, M.V. Diamanti, MP. Pedeferrì

Sponsored by



Media Partners

