



# 10th SYMPOSIUM ON ELECTROCHEMICAL METHODS IN CORROSION RESEARCH

"Corrosion Prevention: Minimizing Risks at New Energetic Challenges"

Sunday – 18th November	
15:00 – 19:00	Registration
19:00 - 19:30	Opening Section
19:30 – 20:30	<b>Opening Plenary Lecture</b> - From Traditional to Advanced Electrochemical Techniques for Understanding Corrosion Mechanisms a Comprehensive Survey <b>M. Keddam</b>
20:30 – 22:00	Welcome Reception

Monday – November 19 <sup>th</sup>	
8:00 – 9:00	<b>Plenary Lecture</b> - Localized Electrochemistry Applied to the Development of New Strategies for Corrosion Protection <b>M. F. Montemor</b>
9:00 – 9:30	<b>Keynote Lecture</b> - SVET and ECSM Measurements Under Simultaneous Strain on Hot-Dip Zn based coatings <u>L. F. P. Dick</u> , S. N. da Silva, S. M. Manhabosco
9:30 – 9:50	Corrosion Resistance Evaluation and Electrochemical Characterization of an Aluminium Brazing Sheet F. Norouzi Afshar, J.H.W. de Wit, H. Terryna, <u>J.M.C. Mol</u>
9:50 – 10:10	Initiation and Propagation of a single pit on stainless steel using SECM N. Aouina, F. Balbaud-Célérier, F. Huet, S. Joiret, H. Perrot, <u>F. Rouillard</u> , V. Vivier
10:10 – 10:30	Study of local electrochemical behaviour of Cu-containing minerals by means of electrochemical micro-cell <u>A.V. Benedetti</u> , F. Andreatta, L. Paussa, D. Bevilaqua, L. Fedrizzi
10:30 – 10:50	<b>Coffee Break</b>
10:50 – 11:20	<b>Keynote Lecture</b> - Electrochemical Studies of Weldable Thin Primers <u>A. M. Simões</u> , A. G. Marques
11:20 – 11:40	SVET and SIET Studies on 7081-T73511 Aluminium Alloy <u>J. C. S. Fernandes</u> , J. A. Moreto, M. Taryba, S. Eugénio, S. V. Lamaka, L. A. Rocha, W. W. Bose Filho
11:40 – 12:00	Combining Atomic Force Microscopy and Electrochemical Impedance Spectroscopy for local corrosion studies <u>T. Muselle</u> , I. De Graeve, Y. Van Ingelgem, H. Terryn, A. Hubin
12:00 – 12:20	Using LEIS to evaluate the local electrochemical activity of Al 7475 T761/Cu model electrodes <u>J. V. Ferrari</u> , H. G. de Melo, N. Pébère, B. Tribollet, V. Vivier
12:20 – 12:40	Self-assembly of phosphonic acid layers on the oxide of aluminium <u>T. Hauffman</u> , T. Breugelmanns, Y. Van Ingelgem, E. Tourwé, H. Terryn, A. Hubin
12:40 – 13:00	Exhibitor Technical Presentation – Metrohm
13:00 – 16:00	<b>Lunch Break</b>
16:00 – 16:30	<b>Keynote Lecture</b> - Optical microscopy coupled to electrochemical techniques to investigate pitting corrosion <u>E. C. Pereira</u>
16:30 – 16:50	On-line volumetric analysis of cathodic gas formation <u>K. Ogle</u> , S. Lebouil, P. Volovitch, F. Monti, P. Tabeling
16:50 – 17:10	Corrosion Protection of clad AA2024 Anodized in Sulphuric and Tartaric-Sulphuric Acid Sealed with Sol-Gel Hybrid Coatings V.R. Capelossi, M. Poelman, R. P. B. Hernandez, H. G de Melo, <u>M.-G. Olivier</u>
17:10 – 17:30	Corrosion Behavior of Alloy U2.5Zr7.5Nb in Relation to Phase Stability <u>C. A. Figueiredo</u> , F. A. Mansur, A. M. M. dos Santos, W. B. Ferraz
17:30 – 17:50	In-situ electrochemical characterization of "discharges initiation" during micro-arc oxidation of Mg alloys <u>D. Veys-Renaux</u> , E. Rocca
17:50 – 18:10	<b>Coffee Break</b>
18:10 – 18:30	Developments in the Electrochemical Noise Method to make it more practical for assessment of anti-corrosive coatings <u>L. Mularczyk</u> , D. Mills and P. Picton
18:30 – 18:50	Comparison of Micro- and Macroscopic Electrochemical Noise Measurements during SCC of Austenitic Stainless Steel <u>M. Breimesser</u> , S. Ritter, H.P. Seifert, T. Suter and S. Virtanen
18:50 – 19:10	Evaluation of Organic Acids as Corrosion Inhibitors in Chlorides Contaminated Alkaline Solutions by means of Cyclic Voltammetry M. Cabrini, S. Lorenzi, T. Pastore
19:10 – 19:30	Corrosion resistance of API X70 pipeline in glutaraldehyde, and sodium sulfite and hydroxide <u>V. F.C. Lins</u> , F. C. Lage, G. M. Rodrigues, R. Y. H. Wu, V. F. Oliveira, M. M. R. Castro
19:30 – 19:50	Electrochemical Impedance Evaluation of Uracil and Thymine Pyrimidine Derivatives and its Nucleosides Compounds as a Non-toxic Corrosion Inhibitors of Steels in 1M HCl A. Espinoza-Vazquez, G.E. Negrón-Silva, M.E. Palomar-Pardavé, M.A. Romero-Romo, H. Herrera-Hernández
<b>Dinner</b>	

Tuesday – November 20 <sup>th</sup>	
8:00 – 9:00	<b>Plenary Lecture</b> - The Use of the Electrochemical Micro-cell to Study the Corrosion Inhibition of Aluminium Alloys <b>L. Fedrizzi</b>
9:00 – 9:30	<b>Keynote Lecture</b> - Constant-Phase-Element Behavior Caused by Inhomogeneous Electrolyte Uptake in Anti-Corrosion Coatings <b>S. Amand, M. Musiani, M. E. Orazem, N. Pébère, B. Tribollet, V. Vivier</b>
9:30 – 9:50	Study of the Filiform Corrosion of 6016 Aluminium Alloy Covered by Cathaphoretic Coating: Application in Automotive Industry <b>A.-P. Romano, A. Nazarov, D. Thierry, M.-G. Olivier</b>
9:50 – 10:10	Corrosion of 2024 Aluminium Alloy in Restricted Volumes of Electrolyte: Use of a Thin Layer Cell <b>E. Sutter, S. Joma, M. Sancy, M. Tran, B. Tribollet</b>
10:10 – 10:30	Electrochemical behavior of intermetallic phases in sulfuric acid at high voltage – anodization of Al <sub>7</sub> Cu <sub>2</sub> Fe and MgZn <sub>2</sub> phase <b>J. Tardelli and E. Rocca</b>
10:30 – 10:50	<b>Coffee Break</b>
10:50 – 11:20	<b>Keynote Lecture</b> - A Critical Look at Interpretation of Impedance Spectra of Coated Aluminum Alloys <b>M. Zheludkevich, K. A. Yasakau, M. Starykevich, M. G.S. Ferreira</b>
11:20 – 11:40	Effect of mechanical stress onto water uptake in epoxy systems <b>S. Touzain, D. Nguyen Dang, S. Mallarino, S. Cohendoz, X. Feaugas</b>
11:40 – 12:00	A Comparative Investigation Between the Electrochemical Behavior of Hybrid Coatings Modified With Ce(III) or Ce(IV) Ions and Applied to AA 2024-T3 <b>B. M. Vasconcelos, R.P.B. Hernández, H.G. de Melo, V.R. Capelossi</b>
12:00 – 12:20	EIS Characterization of UV-Cured Hybrid Sol-Gel Coatings for Corrosion Protection of Aluminum Alloy 2024-T3 <b>S. Chanfreau, N. Moreau, L. Ni, A. Chemtob, C. Croutxe-Barghorn, N. Pébère</b>
12:20 – 12:40	MOCVD Nano-Structured TiO <sub>2</sub> Coatings for Corrosion Protection of Stainless Steels <b>J.A. Galaviz-Pérez, J.R. Vargas-García, J.G. Hernández-López, H. Herrera-Hernández</b>
12:40 – 13:00	Exhibitor Technical Presentation – Interprise
13:00 – 16:00	<b>Lunch Break</b>
16:00 – 16:30	<b>Keynote Lecture</b> - Effect of Curing Time and Temperature on the Corrosion Protection Properties of Hybrid Coatings <b>F. Deflorian, M. Fedel, M.-G. Olivier, M. Poelman</b>
16:30 – 16:50	Synthesis of Polypyrrole-Magnetite/Silane Coatings on Steel and Assessment of Anticorrosive Properties <b>P. Montoya, C. R. Martins, H. G. de Melo, I. V. Aoki, F. Jaramillo, J. A. Calderón</b>
16:50 – 17:10	Encapsulation of Dodecylamine Inhibitor on Silica Nanoparticles <b>J. M. Falcón, F. F. Batista and I. V. Aoki</b>
17:10 – 17:30	Evolution of Electrochemical Properties of Organic Coatings During UV-Condensation Weathering Test <b>F. E. Bedoya, L. M. Gallego, Á. Bermúdez, J. G. Castaño, F. Echeverría, J. A. Calderón</b>
17:30 – 17:50	Withdraw Study for Hybrid Coating on Tinplate <b>F. M. di L. da Cruz, L. Paussa, A. Lanzutti, F. Andreatta, L. Fedrizzi, P. H. Suegama, A. V. Benedetti</b>
17:50 – 18:10	Exhibitor Technical Presentation – IEC Gamry
18:10 – 20:10	<b>Coffee Break</b> <b>POSTER SECTION</b> <b>Local Electrochemical Techniques (3)</b> <b>Corrosion Inhibitors (4)</b> <b>Electrochemical Noise (3)</b> <b>Anticorrosion Protective Methods (21)</b>
20:10	<b>Special Beach Dinner</b>

Wednesday – November 21 <sup>st</sup>	
9:00 – 15:30	<b>BOAT TRIP and LUNCH BREAK</b>
15:30 – 16:30	<b>Plenary Lecture</b> - Developing Corrosion Prediction Models from X-ray Measurements <u>A.J. Davenport</u>
16:30 – 17:00	<b>Keynote Lecture</b> - Odd Random Phase Electrochemical Impedance Spectroscopy (ORP-EIS) as a powerful tool for corrosion studies C. Cordoli, A. Alvarez Pampliega, T. Muselle, T. Hauffman, T. Breugelmans, Y. Van Ingelgem, <u>A. Hubin</u>
17:00 – 17:20	Consequences of mobile and storage dislocations on the Hydrogen Evolution Reaction HER for strained (100) single crystal <u>X. Feugas</u> , C. Lekbir, J. Creus, R. Sabot, C. Savall
17:20 – 17:40	Correlation between stress corrosion and hydrogen permeation in low alloy steel using electrochemical techniques D. C. S. Garcia, <u>V. F. C. Lins</u> , M. M. Lima, L. S. Ribeiro
17:40 – 18:00	Electrochemical Techniques in Tribocorrosion. A New Mechano-Electrochemical Transfer Function. <u>M. Keddad</u> , D. Rose, V. Vivier, P. Ponthiaux, F. Wenger
18:00 – 18:20	<b>Coffee Break</b>
18:20 – 18:50	<b>Keynote Lecture</b> - Use of LEIS and the power-law model for the analysis of constant-phase-elements related to oxide layers <u>I. Frateur</u>
18:50 – 19:10	<u>Transpassive Oxide Films</u> <u>M. M. Lohrengel</u>
19:10 – 19:30	Anodization of Ta Nano Particles <u>K. P. Rataj</u> , M. M. Lohrengel, C. Schnitter
19:30 – 19:50	Study of Alloys CoCrWMo NiCrMo by EIS and XPS <u>K. S. Souza</u> , P. A.P. Nascete, S. M.L. Agostinho
19:50 – 20:10	Evaluation of Critical Pitting Temperature for Superduplex Stainless Steel <u>T. Sawczen</u> , B. B. Ferraro, L. G. N. Barbosa, C. A. Barbosa, É. Teixeira-Neto and S. M. L. Agostinho
20:10 – 21:00	<b>DINNER</b>
21:00 – 23:00	<b>SOCIAL PROGRAM – Tour to Maragogi (FREE – registration required)</b>

Thursday – November 22 <sup>nd</sup>	
8:00 – 9:00	<b>Plenary Lecture</b> - Pre-salt Challenger: Corrosion Laboratory Tests in Very High Pressures O.R. Mattos
9:00 – 9:30	<b>Keynote Lecture</b> - Macro and micro aspects of the transport of chlorides through cementitious membranes B. Díaz, X.R. Nóvoa, B. Puga, V. Vivier
9:30 – 9:50	Influence of Unsupported Concrete Media in Corrosion Assessment for Steel Reinforcing Concrete by EIS A. S. Castela, B. Sena da Fonseca, R.G. Duarte, Rui Neves, M. F. Montemor
9:50 – 10:10	Corrosion Behavior of Stainless Steel Rebars Embedded in Concrete by EIS R. G. Duarte, A. S. Castela, Rui Neves, L. Freire, M. F. Montemor
10:10 – 10:30	<b>Coffee Break</b>
10:30 – 10:50	Cathodic behaviour in presence of weak acid. Application to corrosion in presence of H <sub>2</sub> S and CO <sub>2</sub> B. Tribollet, E. Sutter, J. Kittel, F. Ropital, F. Grojean, E. Remita, Carol Taravel-Condut
10:50 – 11:10	Electrochemical impedance spectroscopy (EIS) studies in ethanol Z. Panossian, C. A. L. dos Santos, J. V. S. dos Santos, G. S. Pimenta
11:10 – 11:30	AC Impedance and Gravimetric Techniques Applied to Assess the Corrosion Behavior of Carbon Steel and Degradation Processes of Soybean Methyl Biodiesel and Biodiesel/Petrodiesel B5 Blend E. Cavalcanti, T. M. Fonseca, L. G. Lima and H. G. Jimenez
11:30 – 11:50	Using the Electrochemical Impedance Spectroscopy to Characterize Different Metallic Materials in Biodiesel B100 A. H. Akita, L. Paussa, F. Andreatta, L. Fedrizzi, C. S. Fugivara, A. V. Benedetti
11:50 – 12:10	Electrochemical study of carbon steel in pure ethanol: the influence of the distance between the working and quasi-reference electrodes and of the immersion time on the EIS measurements C. A. L. dos Santos, José V. S. dos Santos, M. L. Pereira Filho, Z. Panossian
12:10 – 12:30	Corrosion Evaluation of SAW Welded API 5L X-80 Joints in Environment Containing H <sub>2</sub> S A. F. Ballesteros, I. S. Bott
12:30 – 12:50	Exhibitor Technical Presentation – Labsolutions
12:50 – 16:00	<b>Lunch Break</b>
16:00 – 16:30	<b>Keynote Lecture</b> - On the Cathodic Corrosion of Aluminum and Aluminum Alloys K. Ogle, M. Serdechnova, P. Volovitch
16:30 – 16:50	Applicability and Limitations of the EPR-Test as a Substitute for ASTM G28 A Streicher-Test G. Mori, M. Prohaska, G. Tischler
16:50 – 17:10	Experimental Procedures and Diagnostics of Sensitization by DL-EPR F. V. V. de Sousa, P. Muri, K. S. de Assis, A. C. da Rocha, I. C. P. Margarit-Mattos, O. R. Mattos
17:10 – 17:30	Intergranular Corrosion in a Super-Martensitic Stainless Steel Containing 0.06N-0.025Nb-0.1V J. W. Calderón-Hernández, D. Hincapie-Ladino, M. P. Oliveira, N. Alonso-Falleiros
17:30 – 19:30	<b>Coffee Break + POSTER SECTION</b> <b>Corrosion in biofuels and in the oil and gas industry (4)</b> Corrosion in Concrete (1) Passivity and Local Corrosion (9) Corrosion Models and Mechanisms (2) Local Electrochemical Techniques (3) General Topics (5) <b>Coupling Between Electrochemical and Non-Electrochemical Methods (1)</b> <b>Corrosion in the Nuclear and Aeronautical Industries (5)</b>
20:30	<b>Symposium Dinner</b>

Friday – November 23 <sup>d</sup>	
9:00 – 10:00	<b>Plenary Lecture</b> - Use of Advanced Electrochemical and Surface Analysis for the Development of New Generations of Self Healing Organic Coatings H. Terryn
10:00 – 10:30	<b>Keynote Lecture</b> - Corrosion characterization of stainless steels for application as biomaterials by electrochemical methods R. A. Marques, A. Hincapie Ramirez, T. F. Fontes, E. F. Pieretti, C. Hincapie Ramirez, <u>J. Costa</u>
10:30 – 11:00	<b>Keynote Lecture</b> - Corrosion behaviour of a martensitic stainless steel in a thin-layer cell S. Marcelin, <u>N. Pébère</u> , S. Régnier
11:00 – 11:20	<b>Coffee Break</b>
11:20 – 11:40	Pit transition potential in the repassivation process of Al Alloys <u>M. Trueba</u> , I. Comotti, D. Cicolin, S.P. Trasatti
11:40 – 12:00	Methodology for determination of corrosion current density evolutions. Case of AISI 1020 steel in high content chloride ion solutions <u>G. A. de O. Brito</u> , C. V. D'Alkaine, M. B. J. G. de Freitas, C. L. G. Homem, J. G. Giori
12:00 – 12:20	Electrochemical Corrosion Study of a SA-516 GR 70 Carbon Steel, SA-240 TP 317 L Stainless Steel and Roll-Bonded Clad (SA-516 GR70 + SA-240 TP 317L) in H <sub>2</sub> SO <sub>4</sub> Araújo, C. R.; <u>Carneiro</u> , J. R. G.; Meireles, A. C. F.; França, G. D.; Silva, L. J. D.; Lins, V. F. C.
12:20 – 12:40	Practical Aspects of the Electrochemical Potentiodynamic Reactivation Technique Applied in Welded Joint of Superduplex Stainless Steel <u>O. R. Mattos</u> , K. S. de Assis, I. C. P. Margarit Mattos
12:40 – 13:00	<b>Final remarks</b>
13:00	<b>Lunch</b>