



36th Topical Meeting of the International Society of Electrochemistry

Conference Schedule

SUNDAY 26 May

Keynote

S1a - Advances in analytical environmental electrochemistry

S1b - Electrochemistry in emerging pollutants analysis and monitoring in environmental matrices

S1c - Electrochemistry in biogeochemical cycling

S2a - Microbial electrochemical technologies

S2b - Electrochemistry in water treatment and soil remediation

S2c - Electrochemistry towards climate change resilience and adaptation

S2d - Corrosion in different environments: Resistance and control

14:30 - 19:00 | Public Library
Participant Registration
Registration desk will also be open throughout the conference

17:00 - 19:00 | from Public Library
Šibenik guided walking tour

19:00 - 21:00 | Restaurant "Gradska Vijećnica"
Opening Ceremony & Welcome Cocktail

08:40 - 09:00
09:00 - 09:20
09:20 - 09:40
09:40 - 10:00
10:00 - 10:20
10:20 - 10:40
10:40 - 11:00
11:00 - 11:20
11:20 - 11:40
11:40 - 12:00
12:00 - 12:20
12:20 - 12:40
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13:40 - 14:00
14:00 - 14:20
14:20 - 14:40
14:40 - 15:00
15:00 - 15:20
15:20 - 15:40
15:40 - 16:00
16:00 - 16:20
16:20 - 16:40
16:40 - 17:00
17:00 - 17:20
17:20 - 17:40
17:40 - 18:00
18:00 - 18:20
18:20 - 19:00

Evening

MONDAY 27 May

Public Library (1)

Civitas Sacra (2)

Keynote:
Deepak Pant

Invited Oral S2c

Oral S2c

Orals S2c

12:20 - 14:20 | Hotel Jadran
Lunch

Orals S2c

Invited Oral S1a

Orals S1a

16:30 - 19:30
Poster Session
+ finger food

Keynote:
Dario Omanović

Invited Oral S1a

Oral S1a

Orals S1a

Invited Oral S1a

Oral S1b

TUESDAY 28 May

Public Library (1)

Civitas Sacra (2)

Keynote:
Ignasi Sirés

Invited Oral S2b

Orals S2b

Orals S2b

12:20 - 14:20 | Hotel Jadran
Lunch

Orals S2b

Orals S1b

Invited Oral S1c

Orals S1c

Orals S2d

19:00 - 21:30 | Restaurant "Gradska Vijećnica"
Gala Dinner

WEDNESDAY 29 May

Public Library (1)

Civitas Sacra (2)

Keynote:
Tadeja Kosec

Orals S2d

Oral S2d

Invited Oral S2d

Orals S2d

13:30 - 15:30 | Hotel Jadran
Lunch

15:30 - 15:40 | **Closing Ceremony**

Keynote:
Eileen Yu

Orals S2a

Orals S2b

36th Topical Meeting

of the International Society of Electrochemistry

26 - 29 May 2024

Šibenik, Croatia

**Marine and environmental
electrochemistry in the era
of new technologies**



PROGRAM

<https://topical36.ise-online.org>

e-mail: events@ise-online.org

Exhibitors



HIDEN Analytical



IVIUM Technologies

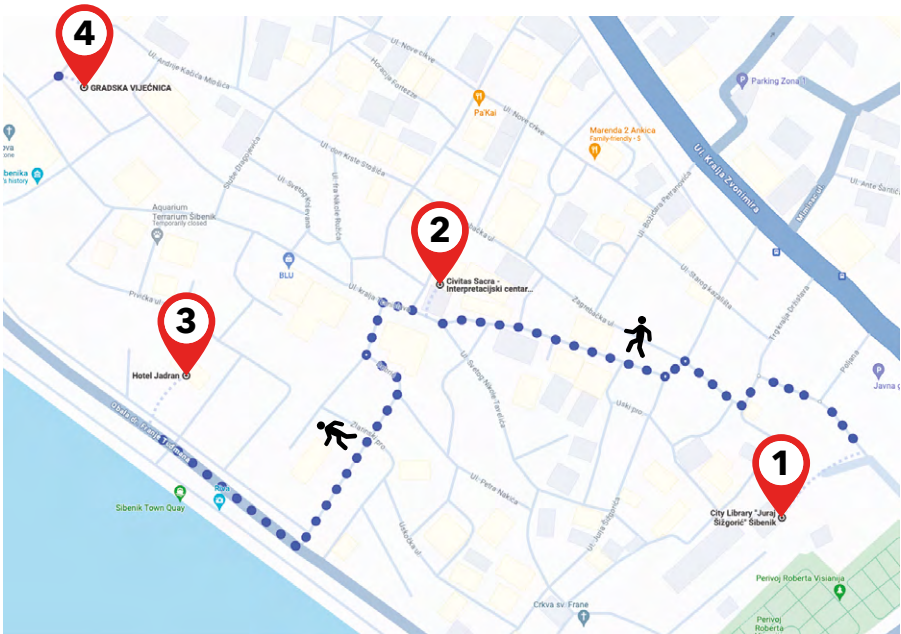


PRIMA lab

a member of the Metrohm group



Conference Map



Conference Venue (1)

Public Library "Juraj Šižgorić" Šibenik
Poljana 6, 22000 Šibenik

Conference Venue (2)

"Civitas Sacra" The Interpretation Center of the Cathedral of St. James
Ulica kralja Tomislava 10, 22000 Šibenik

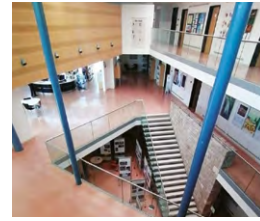
Lunch Venue (3)

Hotel "Jadran" Restaurant
Obala dr. Franje Tuđmana 52, 22000 Šibenik

Gala Dinner Venue (4)

Restaurant "Gradska Vijećnica"
Trg Republike Hrvatske 3, 22000 Šibenik

Conference Venue (1)

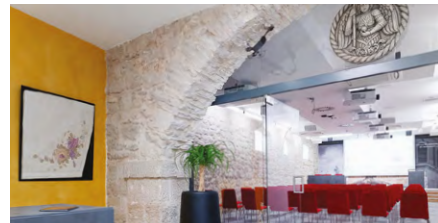


Public Library "Juraj Šižgorić" Šibenik

Poljana 6, 22000 Šibenik

www.knjznica-sibenik.hr • facebook.com/gradska.knjznica.sibenik

Conference Venue (2)



"Civitas Sacra"- The Interpretation Center of the Cathedral of St. James

Ulica kralja Tomislava 10, 22000 Šibenik

<https://civitassacra.hr/en>

Lunch Venue (3)



Hotel "Jadran" Restaurant

Obala dr. Franje Tuđmana 52, 22000 Šibenik

rivijera.eu/en/hotel-jadran • facebook.com/jadransibenik

Gala Dinner Venue (4)



Restaurant "Gradska Vijećnica"

Trg Republike Hrvatske 3, 22000 Šibenik

www.tripadvisor.com/Gradska_Vijecnica

International Society of Electrochemistry
Chemin du Closelet 2
1006 Lausanne
Switzerland

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Program of the
36th Topical Meeting
of the International Society of
Electrochemistry

Marine and environmental electrochemistry
in the era of new technologies

26 - 29 May 2024
Šibenik, Croatia

Organized by:

Division 1 - Analytical Electrochemistry

Division 2 - Bioelectrochemistry

ISE Region Croatia



Organizing Committee

Slađana Strmečki Kos, (*Croatia*) (*Chair*)

Marija Marguš, (*Croatia*)

Irena Ciglenečki-Jušić (*Croatia*)

Luigi Falciola, (*Italy*)

Alain Walcarius, (*France*)

Elena Ferapontova, (*Denmark*)

Carlo Santoro, (*Italy*)

Local Organizing Committee

Nadica Ivošević DeNardis, (*Ruder Bošković Institute*)

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Niki Simonović, (*Ruder Bošković Institute*)

Dora Crmarić, (*Ruder Bošković Institute*)

Marijana Kraljić Roković, (*University of Zagreb*,
Faculty of Chemical Engineering and Technology)

Helena Otmačić Ćurković, (*University of Zagreb*,
Faculty of Chemical Engineering and Technology)

Nives Vladislavić, (*University of Split, Faculty of Chemistry
and Technology*)

Ivana Škugor Rončević, (*University of Split, Faculty of Chemistry
and Technology*)

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Sunday 26 May

Participant Registration

Public Library "Juraj Šižgorić"

14:30 to 19:00 Registration desk will also be open throughout the conference

Šibenik guided walking tour

from Public Library "Juraj Šižgorić"

17:00 to 19:00

Opening Ceremony & Welcome Cocktail

Restaurant "Gradska Vijećnica"

19:00 to 21:00

Monday 27 May

Poster Session

Public Library "Juraj Šižgorić"

16:30 to 19:30 Poster session and finger food

Tuesday 28 May

Gala Dinner

Restaurant "Gradska Vijećnica"

19:00 to 21:30

Oral Presentations

Monday 27 May 2024 - Morning

S1a - Advances in analytical environmental electrochemistry

Room : Civitas Sacra

Chaired by Prof Dr Ritu Kataky, Prof Dr Priscilla Baker

09:00 to 09:40 **Keynote**

Dario Omanović (*Department for marine and environmental research, Ruđer Bošković Institute Institute, Zagreb, Croatia*)

[Analysis and Speciation of Trace Metals in Natural Waters Using Voltammetric Techniques](#)

09:40 to 10:00 **Invited**

Minjun Yang (*Department of Chemistry, University of Leicester, Leicester, United Kingdom*), Samuel Barton, Heather Bouman, Haotian Chen, Richard Compton, Rosalind Rickaby

[Fluoro-electrochemical Sensors for Marine Phytoplankton](#)

10:00 to 10:20

Grégoire Herzog (*LCPME, Université de Lorraine - CNRS, Villers les Nancy, France*), Mariela Brites Helú, Mathieu Etienne, Július Gajdár, Amira Mahmoud

[Electrochemical control of the pH of environmental samples for on-site detection of Pb²⁺ by anodic stripping voltammetry](#)

10:20 to 10:40

Coffee Break

10:40 to 11:00

Ji-Hyung Han (*Jeju Global Research Center, Korea Institute of Energy Research, Jeju, Korea*)

[Bipolar Membrane-based Direct Seawater Electrolysis: Seawater Acidification and Formation of Porous Mg\(OH\)₂ Film](#)

11:00 to 11:20

Alexander Zestos (*Chemistry, American University, Washington, USA*),
Cam Abdullaeva, Nadiah Alyamni, Huy Vuong

[Multiplexed measurement of biomolecules with carbon fiber-microelectrode and fast-scan cyclic voltammetry](#)

11:20 to 11:40 **Invited**

Daniel Rojas (*Department of Chemistry, KTH, Stockholm, Sweden*),
Chen Chen, Gaston Crespo, Maria Cuartero, Alexander Wiorek

[New Sensor-Actuator Electrochemical Concepts for Environmental Samples Analysis](#)

S1b - Electrochemistry in emerging pollutants analysis and monitoring in environmental matrices

Room : Civitas Sacra

11:40 to 12:00

Paolo Inaudi (*Drug Science & Technology, University of Torino, Torino, Italy*),
Ornella Abollino, Stefano Bertinetti, Laura Favilli, Agnese Giacomino,
Mery Malandrino

[A Voltammetric Approach for the evaluation of the presence of UV Filter in Water](#)

S2c - Electrochemistry towards climate change resilience and adaptation

Room : Public Library*Chaired by Prof Dr Bing Joe Hwang, Prof Dr Eileen Yu***09:00 to 09:40 Keynote**

Deepak Pant (*Electrochemistry Excellence Centre, Flemish Institute for Technological Research (VITO, MOL, Belgium)*), Yuvraj Birdja, Zhiyuan Chen, Asier Grijalvo, Ranjith Prasannachandran, Jing Shen, Chandani Singh, Jia Song, Jan Vaes

[Upscaling CO₂ electroreduction - Tackling the stability challenge](#)

09:40 to 10:00 Invited

Taek Dong Chung (*Chemistry, Seoul National University, Seoul, Korea*), Yunju Kim, Sanguk Park

[Reverse Electrodialysis for Aqueous Power Source](#)

10:00 to 10:20

Nadica Ivošević DeNardis (*Division for Marine and Environmental Research, Ruđer Bošković Institute, Zagreb, Croatia*), Irem Demir-Yilmaz, Cecile Formosa Dague, B Gasparovic, Marija Gligora Udovic, Lucija Horvat, Krunoslav Jurajic, Malgorzata Lekka, Maja Levak Zorinc, Tea Mistic Radic, Nives Novosel Vlastic, Ivna Vrana, Joanna Zemla, Petar Zutinic

[Microalgae's Behaviour and Surface Properties Reveal Changes in the Environment](#)

10:20 to 10:40

Coffee Break

10:40 to 11:00

Kai S Exner (*Theoretical Inorganic Chemistry, University of Duisberg-Essen, Essen, Germany*)

[What Governs the Electrocatalytic Activity of Oxygen-Evolution Reaction Catalysts? Beyond Scaling Relations](#)

11:00 to 11:20

Shanghai Wei (*Department of Chemical & Materials Engineering, the University of Auckland, Auckland, New Zealand*), Gina Leclercq, Jinzhi Wang, Jacqueline Wong

[Alloy Anodes for Magnesium-air Batteries with Natural Seawater as the Electrolyte](#)

11:20 to 11:40

Sara Drvaric Talian (*Department of Materials Chemistry, National Institute of Chemistry, Slovenia, Ljubljana, Slovenia*), Robert Dominko, Miran Gaberscek, Hafiz Ahmad Ishfaq, Urban Kosir, Joze Moskon

[Dynamic impedance spectroscopy applications in battery research](#)

Monday 27 May 2024 - Afternoon

S1a - Advances in analytical environmental electrochemistry

Room : Civitas Sacra

Chaired by Prof Dr M. Teresa Fernández-Abedul, Dr Nadica Ivošević DeNardis

14:20 to 14:40 **Invited**

Estefania Costa-Rama (*Department of Physical and Analytical Chemistry, University of Oviedo, Oviedo, Spain*), Maria Cerrato-Álvarez, Cristina Delerue-Matos, M. Teresa Fernández-Abedul, Henri P.A. Nouws, João G. Pacheco, Patrícia Rebelo, Pablo Rioboó-Legaspi

[Low-cost Electroanalytical Platforms for the Determination of Emerging Contaminants](#)

14:40 to 15:00

Richard Webster (*School of Chemistry, Chemical Engineering and Biotechnology, Nanyang Technological University, Singapore, Singapore*), Katherine Jalando-On Agpoon, Panyawut Tonanon

[The Determination of Praziquantel in Marine Environments via Square-Wave Voltammetry Coupled With Solid Phase Extraction](#)

15:00 to 15:20

Teodora Lupoi (*Rennes Institute of Chemical Sciences, University of Rennes, Rennes, France*), Cecilia Cristea, Bogdan Feier, Florence Geneste, Corinne Lagrost, Yann R Leroux

[Gold-based Electrochemical Aptasensor for Pharmaceutical Pollutants Detection](#)

15:20 to 15:40

Salma Hafed Khatiri (*Physical Chemistry, University of Alicante, Alicante, Spain*), Rayane-Ichrah Loughlani, Francisco Montilla, David Salinas Torres

[Exploring Electrochemical methods for Signal Transduction of Biosensors based on Acetylcholinesterase Inhibition](#)

15:40 to 16:00

Milica Zdravkovic (*Metallurgical engineering, University of Belgrade, Technical faculty in Bor, Bor, Serbia*), Ljubodrag Boskovic, Milan Gorgievski, Vesna Grekulovic, Miljan Markovic, Nada Strbac, Bojan Zdravkovic

[The experimental and modeling approaches toward the application of berry leaf plants as copper pipeline corrosion inhibitors](#)

S2c - Electrochemistry towards climate change resilience and adaptation

Room : Public Library

Chaired by Prof Dr Kai S. Exner

14:20 to 14:40

Onofrio Scialdone (*Dipartimento di Ingegneria, University of Palermo, Palermo, Italy*), Mario Contino, Alessandro Galia, Federica Proietto

[Electrochemical conversion of carbon dioxide in pressurized and microfluidic reactors](#)

14:40 to 15:00

Ivan Pivac (*Department of Mechanical Engineering and Naval Architecture, FESB, University of Split, Split, Croatia*), Frano Barbir, Ivan Pivac, Anamarija Stoilova Pavasović

[Capabilities of Electrochemical Hydrogen Compression Using an Adapted PEM Fuel Cell](#)

15:00 to 15:20

Younes Abghoui (*Engineering and natural sciences, University of Iceland, Reykjavik, Iceland*)

[Material discovery for green hydrogen production](#)

15:20 to 15:40

Alejandro López Chías (*Dept. of Inorganic Chemistry & Chemical Engineering, University of Córdoba, Córdoba, Spain*), Alvaro Caballero, Rafael Trócoli

[Advances in lithium recovery from spent Li-ion batteries using ion pumping technology](#)

Tuesday 28 May 2024 - Morning

S1b - Electrochemistry in emerging pollutants analysis and monitoring in environmental matrices

Room : Civitas Sacra

Chaired by Dr Gregorire Herzog, Dr Estefania Costa-Rama, Prof Dr Alexander Zestos

09:00 to 09:40 **Keynote**

Mary-Lou Tercier-Waeber (*Dept. of Inorganic and Analytical Chemistry, University of Geneva, Geneva 4, Switzerland*)

[In Situ Metal Bioavailability-Oriented Sensing Tools: Novel Approach to Study Metal Geochemical Cycles and Ecotoxicity](#)

09:40 to 10:00

Rosa Rego (*Chemistry, University of Trás-os-Montes e Alto Douro, Vila Real, Portugal*), Ana Queijo, Anabela Reis, K Styszko

[Emergent Pollutants: a problem to be solved](#)

10:00 to 10:20

Meghna Khadka (*Biomedical Engineering, Ben Gurion University, Beer Sheva, Israel*), Miriam Amiram, Hadar Ben-Yoav, Yuval Michal, Ortal Nativ, Avner Ronen, Alexander Snezhko

[Elastin Like Peptides-Modified Electrodes for Perfluorosulphonic Acid Electrochemical Detection](#)

10:20 to 10:40

Coffee Break

10:40 to 11:00 **Invited**

M. Teresa Fernández-Abedul (*Physical and Analytical Chemistry, University of Oviedo, Oviedo, Spain*), María Cerrato-Álvarez, Estefanía Costa-Rama, Javier Menéndez Menéndez, Pablo Rioboó-Legaspi

[Floating pencil lead-based electrochemical cells to monitor the presence of emerging contaminants in waters](#)

11:00 to 11:20

Maria Cerrato-Alvarez (*Department of Physical Chemistry and Analytical, University of Oviedo, Oviedo, Spain*), Maria Cerrato-Alvarez, Estefania Costa-Rama, Cristina Delerue-Matos, M. Teresa Fernández-Abedul, Henri P.A. Nouws, João G. Pacheco, Patrícia Rebelo

[Electropolymerized molecularly imprinted polymer sensor for the simple voltammetric detection of venlafaxine in water samples](#)

11:20 to 11:40

Juan Hidalgo (*Electrochemistry, University of Pannonia, Nagykanisza, Hungary*), Turdean Graziella Galambos Ildiko, Jankovics Hjana Hidalgo Luis, Falciola Luigi

[A Multiwalled Carbon Nanotubes-Nanoengineering Filaments composite biosensor for Diclofenac Sodium determination](#)

11:40 to 12:00

Sara Sariri (*Laboratory for Biological Effects of Metals, Ruđer Bošković Institute, Zagreb, Croatia*), Vlatka Filipović Marijić, Zorana Kljaković-Gašpić, Tomislav Kralj, Tatjana Mijošek, Zuzana Redžović, Damir Valić, Irena Vardić Smrzlić

[Application of electrochemistry in assessment of metal exposure: First study on parasites as bioindicators](#)

12:00 to 12:20

Ana Rapljenović (*Division for Marine and Environmental Research, Ruđer Bošković Institute, Zagreb, Croatia*), Vlado Cuculić.

[Voltammetry as a tool to study the interaction of trace metals and \(micro\)plastics from aquatic environments](#)

S2b - Electrochemistry in water treatment and soil remediation

Room : Public Library

Chaired by Prof. Erika Bustos, Prof. Marijana Kraljic Rokovic, Prof Juan Manríquez

08:40 to 09:20 **Keynote**

Ignasi Sirés (*Departament de Ciència de Materials i Química Física, Universitat de Barcelona, Barcelona, Spain*)

[An Integrated Approach to Electrochemical Advanced Water Treatment for Micropollutant Degradation](#)

09:20 to 09:40 **Invited**

Federica Proietto (*Department of Engineering, University of Palermo, Italy*), Maria Bonsignore, Fabio D'Agostino, Marianna Del Core, Alessandro Galia, Paola Meli, Claudia Prestigiacomo, Federica Proietto, Onofrio Scialdone, Mario Sprovieri

[Electrochemical Remediation of Marine Sediments under very Low Electric Fields](#)

09:40 to 10:00

Carlo Santoro (*Department of Materials Science, University of Milano Bicocca, MILANO, Italy*), Francesca Soavi

[Microbial fuel cells power output improved by using internal and external totally green supercapacitor](#)

10:00 to 10:20

Javier Llanos (*Department of Chemical Engineering, University of Castilla-La Mancha, Ciudad Real, Spain*), Erika Bustos, Adrián Castro-Fernández, Javier Llanos, Martin Muñoz-Morales, Alvaro Ramirez

[Synergetic Electrochemical Degradation of Amoxicillin with Sustainable Transition Metal Oxides-Anode and Waste-derived Carbon-Cathode System](#)

10:20 to 10:40

Coffee Break

10:40 to 11:00

Serena Randazzo (*Engineering, University of Palermo, Italy*),
Alessandro Galia, Federica Proietto, Serena Randazzo, Onofrio Scialdone
[Electrochemical Treatment of Phenol in Water in the presence of Active Chlorine](#)

11:00 to 11:20

Johanna Radomski (*Electrochemistry, VITO NV (Vlaamse Instituut voor Technoische Onderzoek NV), Mol, Belgium*), Yuvraj Birdja
[Electrochemical conversion of Nitrate from aqueous solutions to valuable N-products](#)

11:20 to 11:40

Viktor Colic (*Electrochemistry for Energy Conversion, Max-Planck-Institute for Chemical Energy Conversion, Mülheim an der Ruhr, Germany*),
Ulrich Hagemann, Nils Hartmann, Ricardo Martinez-Hincapié, Nikola Rankovic,
Mathias Ulbricht, Thaarmikaa Vigneswaran, Alexandra S.M. Wittmar
[Utilizing Carbon Materials Derived from Biowaste as Catalysts for Electrochemical Hydrogen Peroxide Generation](#)

11:40 to 12:00

Kara Hughes (*Chemical Engineering, McGill University, Montreal, Canada*), Sasha Omanovic, Viviane Yargeau
[Electrooxidative and Reductive Degradation of GenX](#)

12:00 to 12:20

Keyvan Mirehbar (*Electrochemical Processes Unit, IMDEA Energy, Madrid, Spain*), Julio Lado, Freddy Oropeza, Jesus Palma, Sergio Pinilla, Jaime Sanchez, Ignasi Sires, Victor de la Peña O'Shea
[Nickel-manganese-based Anodes for Electrochemical Oxidation of Organic Pollutants](#)

Tuesday 28 May 2024 - Afternoon

S1c - Electrochemistry in biogeochemical cycling

Room : Civitas Sacra

Chaired by Dr Minjun Yang

15:00 to 15:20 **Invited**

Priscilla Baker (*Chemistry, University of the Western Cape, Bellville, South Africa*), Tankiso Mashabane

[Spectroscopic and electrochemical reporting of nitrogen in seawater](#)

15:20 to 15:40

Irena Ciglenecki-Jusic (*Division for Marine and Environmental Research, Rudjer Boskovic Institute, Zagreb, Croatia*), Irena Ciglenecki, Jelena Dautovic, Iva Dominovic, Marija Marguš, Sarah Mateša, Niki Simonovic, Kristijan Vidovic

[Electroanalytical methods in the study of changes in the marine environment](#)

15:40 to 16:00

Syed Noman (*Department of chemistry and processes, Ecole Polytechnique, Palaiseau, France*)

[Electrochemical Study of Lignin Derivatives: Protection and Valorization of Biopolymers](#)

16:00 to 16:20

Coffee Break

S2b - Electrochemistry in water treatment and soil remediation

Room : Public Library

Chaired by Prof Dr Javier Llanos, Dr Rosa Rego

14:20 to 14:40

Wei-Nien Su (*Graduate Institute of Applied Science and Technology, National Taiwan University of Science and Technology, Taipei, Taiwan*),
Dessalew Berihun Adam, Bing Joe Hwang, Meng-Che Tsai

[Electrochemically Transforming Waste Solutions from Local Display Panel Industries into High-Value Products through Iodide Oxidation Reaction-Based Electrolysis](#)

14:40 to 15:00

Salman Abdalla (*Mechanical engineering, technion, Haifa, Israel*),
Shada Abu Khalla, Matthew E. Suss, Michael Patrascu

[Desalination fuel cell stacks: scaling up the co-production of electricity and clean water](#)

15:00 to 15:20

Julio José Lado Garrido (*Electrochemical Processes Unit, IMDEA Energy, Móstoles, Spain*), Ignacio Almonacid, Gonzalo Castro, Alba Fombona-Pascual, Guzmán García, Enrique García-Quismondo, Jesús Palma

[From Redox Flow Battery Design to Advanced Water Treatment for Irrigation](#)

15:20 to 15:40

Alba Fombona-Pascual (*Electrochemical Processes Unit, Imdea Energy Institute, Mostoles, Spain*), Julio J. Lado, Rebeca Marcilla, Jesús Palma, Nagaraj Patil

[Beyond Conventional Electrosorption: All-Polymer Rocking Chair FDI Advancements for Sustainable Water Desalination](#)

15:40 to 16:00

Alvaro Ramirez (*Chemical Engineering, Univ. of Castilla - La Mancha, Ciudad Real, Spain*), Javier Llanos, Ester López-Fernández, Martin Muñoz-Morales

[Exploring Natural Wetland Biomass Plants as Cathode Catalysts for Enhanced H₂O₂ Electrogeneration](#)

16:00 to 16:20 Coffee Break

S2d - Corrosion in different environments: resistance and control

Room : Public Libray*Chaired by Dr Caio Machado Fernandes**16:20 to 16:40***Zhoucheng Wang** (*College of Chemistry and Chemical Engineering, Xiamen University, Xiamen, China*)[Anti-corrosion Mechanisms of Bipolar Coatings in Marine Environment](#)*16:40 to 17:00***Helena Otmačić Čurković** (*Department of Electrochemistry, Faculty of Chemical Engineering and Technology, Zagreb, Croatia*), Lana Brkić, Luka Vučemilović Šimunović[Corrosion Protection of Bronze by Superhydrophobic Films of Phosphonic Acid](#)*17:00 to 17:20***Gloria Zlatić** (*Department of Chemistry, Faculty of Science and Education, University of Mostar, Bosnia & Herzegovina*), Ivana Martinović, Zora Pilić[Inhibition of Microbiologically Influenced Corrosion of 304 Stainless Steel by *Artemisia annua* L. in Simulated Seawater](#)

Wednesday 29 May 2024 - Morning

S2a - Microbial electrochemical technologies

Room : Civitas Sacra

Chaired by Dr Deepak Pant

09:00 to 09:40 **Keynote**

Eileen Yu (*Chemical Engineering, Loughborough University, Loughborough, United Kingdom*), Mohammad Danish Khan, Sizhe Qiu, Aidong Yang

[Convert CO₂ to high value organic products by Microbial Electrosynthesis](#)

09:40 to 10:00

Ritu Katakya (*Chemistry, Durham University, Durham, United Kingdom*), Niloofar Haghghian

[Biofilms Detection and Destruction](#)

10:00 to 10:20

Sanne de Smit (*Environmental Technology, Wageningen University & Research, Wageningen, Netherlands*), Johannes Bitter, David Strik, Yiduo Xie, Thomas van Mameren, Koen van Zwet

[Pushing microbial electrosynthesis to a score of -90 kA/m³ with hydrogen evolution catalyst developed from microbial growth medium](#)

10:40 to 11:00 Coffee Break

S2b - Electrochemistry in water treatment and soil remediation

Room : Civitas Sacra

Chaired by Dr Shanghai Wei, Prof Dr Onofrio Scialdone

11:00 to 11:20

Marijana Kraljic Rokovic (*Faculty of Chemical Engineering and Technology, University of Zagreb, Zagreb, Croatia*), Mihaela Coric, Dijana Jadresko, Hrvoje Kusic, Marija Lovric, Gabrijela Radic

[Influence of Various Oorganic Sacrificial Agents on Photoelectrochemical Hhydrogen Evolution](#)

11:20 to 11:40

Aline Barrios Trench (*Laboratoire Géomatériaux et Environnement, Université Gustave Eiffel, Marne-la-Vallée, France*), Mehmet A. Oturan, Mauro C. Santos, Nihal Oturan, Clément Trelu

[Effect of modifying carbon felt with Nb₂O₅ nanoparticles on methylparaben degradation during electrochemical advanced oxidation processes](#)

11:40 to 12:00

Juan Manríquez (*Department of Science, CIDETEQ, Sanfandila, Pedro Escobedo, Mexico*), Erika Bustos, Fabricio Espejel-Ayala, Juan Manríquez, Laura-Lupita Martínez-Rodríguez, Selene Sepulveda-Guzman, Gabriel Trejo, Jesús-Israel Valdez-Nava

[Magnetostriction in the grain boundaries of nanostructured TiO₂ films supported on stainless steel mesh electrodes as a novel tool for controlling the photogeneration of holes and hydroxyl radicals in advanced oxidation processes](#)

12:00 to 12:20

Caio Machado Fernandes (*Center for Natural and Human Sciences, Federal University of ABC, Santo André, Brazil*), Odivaldo Alves, Vanessa Antonin, João Paulo Moura, Mauro Santos, Júlio César Silva, Aline Trench, Yutao Xing

[Magnetic Field-Enhanced H₂O₂ Electrogeneration Using a Carbonaceous Gas Diffusion Electrode Modified with Ceria Nanocubes](#)

12:20 to 12:40

Irene Villarejo Avila (*Chemical and Environmental Technology Department, Rey Juan Carlos University, Móstoles, Spain*), Cintia Casado Merino, Javier Marugán Aguado

[Design and CFD Simulation of Photoelectrocatalytic Cells for Water-treatment](#)

12:40 to 13:00

Shilin Yang (*School of Environment, Harbin Institute of Technology, Harbin, China*), Fengxia Deng, Shan Qiu, Horatiu Szalad, Shilin Yang

[Air Cathode for Superior Green H₂O₂ Synthesis via O₂ Electroreduction: Insights into Oxygen Mass Transfer and Electrocatalysis](#)

S2d - Corrosion in different environments: resistance and control

Room : Public Library*Chaired by Dr Helena Otmačić Čurković, Dr Huseyin Zengin, Prof Pierangela Cristiani***09:00 to 09:40 Keynote**

Tadeja Kosec (*Laboratory for metals, corrosion and anticorrosion protection, Slovenian National Building and Civil Engineering Institute, Ljubljana, Slovenia*), Miha Hren, Andraž Legat

[Corrosion sensing beyond the use of conventional electrochemical techniques](#)

09:40 to 10:00

Pierangela Cristiani (*Sustainable Development and Energy Sources, RSE-Ricerca sul Sistema Energetico S.p.A, Milano, Italy*)

[The Different Microbial Fingerprints of Copper and Steel Corrosion in an Enriched Hydrogenotrophic Media](#)

10:00 to 10:20

Gregorio Vargas (*Ceramic Engineering, CINVESTAV-Salttillo, Ramos Arizpe, Mexico*), Francisco Martínez, Halima Suárez

[Use of NaCl-EG-H₂O Electrolytes in the Selective Electrodissolution of AISI 304 SS to Reduce its Deterioration in Simulated Seawater](#)

10:20 to 10:40

Francisco Martínez (*Sustainability of Natural Resources and Energy, CINVESTAV-Salttillo, Ramos Arizpe, Mexico*), Gregorio Vargas

[Effect of silver electrodeposition time on bacterial growth on the surface of a previously oxy-nitrocarburized AISI 304 SS](#)

10:40 to 11:00

Coffee Break

11:00 to 11:20

Bing Joe Hwang (*Department of Chemical Engineering, Taiwan Tech, 43, Sec. 4, Keelung Road, Taipei, Taiwan*), Bing Joe Hwang, Wei-Nien Su, Teshager Mekonnen Tekaligne

[A Novel Anticorrosion Additive with a Dual-secure Mechanism for Aluminum Corrosion Prevention](#)

11:20 to 11:40 **Invited**

Jelena Bajat (*Physical Chemistry and Electrochemistry, University of Belgrade, Belgrade, Serbia*)

[The influence of Ce source on the self-healing ability of Zn- and Zn-Co-Ce composite coatings](#)

11:40 to 12:00

Sachiko Ono (*Department of Applied Chemistry, Kogakuin University - Hachioji Campus, Tokyo, Japan*), Hidetaka Asoh

[Nanostructure and Corrosion Resistance of Anodic Porous Films after Different Sealing Treatment](#)

12:00 to 12:20

Louis Zadi (*Surface Treatment & Coatings, IRT-M2P, Metz, France*), Valérie Orain, Alexis Renaud, Vincent Vignal, Louis Zadi

[Comparative study of corrosion rate measurement methods in automotive industry](#)

12:20 to 12:40

Halina Krawiec (*Faculty of Foundry Engineering, AGH University of Krakow, Krakow, Poland*), Andrzej Fijolek, Vincent Vignal

[Corrosion mechanisms and rate of pure Mg and Zn in artificial sea water: thin-layer vs bulk solution conditions](#)

12:40 to 13:00

Vasil Karastoyanov (*Physical Chemistry, UCTM, Sofia 1756, Bulgaria*), Martin Bojinov

[Oxidation of 316L Stainless Steel and Alloy 690 in Simulated Nuclear Reactor Primary Coolant - Experiments and Modeling](#)

Poster Presentations

Public Library "Juraj Šižgorić" Šibenik

Monday 27 May

16:30 to 19:30

S1a - Advances in analytical environmental electrochemistry

S01A-001

Josipa Dugec (*Department of General & Inorganic Chemistry Head of Department, Faculty of Chemistry & Technology, University of Split, Split, Croatia*)

[Influence of the Pseudocapacitive Behavior and Diffusion Phenomena on the Heterogeneous Electrochemical Processes at Single Wall Carbon Nanotubes](#)

S01A-002

Joo Yul Lee (*Department of Electrochemistry, Korea Institute of Materials Science, Changwon, Korea*), Ispas Adriana, Andreas Bund, Baumer Christoph, Seil Kim, Soojin Lee

[Analysis of the Effects of Organic Additives on the Eco-friendly Silver Plating Solution](#)

S01A-003

Loreta Tamasauskaite-Tamasiunaite (*Department of Catalysis, Center for Physical Sciences and Technology (FTMC), Vilnius, Lithuania*), Eugenijus Norkus, Dmytro Shyshkin, Zita Sukackiene, Jurate Vaiciuniene

[Gold Nanoparticles Modified Nickel-Iron Coatings for Sodium Borohydride Electrooxidation](#)

S01A-004

Nives Vladislavic (*Department of General and Inorganic Chemistry, Faculty of Chemistry and Technology, University of Split, Split, Croatia*),

Marijo Buzuk, Josipa Dugec, Ivana Skugor Roncevic, Jure Vasilj

[Modification of carbon nanoparticles with bismuth or bismuth\(III\) oxide - Electrochemical behavior for electroanalytical applications](#)

S01A-005

Nives Vladislavic (*Department of General and Inorganic Chemistry, Faculty of Chemistry and Technology, University of Split, Split, Croatia*), Marijo Buzuk,

Josipa Dugec, Ana Marija Kondza, Ivana Skugor Roncevic

[Electrochemical and spectrophotometric characterization of antioxidant activity of Dalmatian plant extracts](#)

S01A-006

Ausrine Zabielaite (*Department of Catalysis, Center for Physical Sciences and Technology (FTMC), Vilnius, Lithuania*), Vitalija Jasulaitiene, Eugenijus Norkus, Birute Simkunaite-Stanyniene, Loreta Tamasauskaite-Tamasiunaite, Jurate Vaiciuniene

[Co₃O₄/Graphitic Carbon Nitride Supported on the Cobalt-Coated Polyimide Surface for Hydrogen Evolution](#)

S01A-007

Marko Zubak (*Department of General and Inorganic Chemistry, Faculty of Chemical Engineering and Technology, Zagreb, Croatia*), Željka Boček, Petar Kassal, Sara Krivačić

[Electrochemical Detection of Azithromycin on Inkjet Printed and Intense Pulsed Light Treated Flexible Graphene Electrodes](#)

S1b - Electrochemistry in emerging pollutants analysis and monitoring in environmental matrices

S01B-001

Saranda Bakija Alempijević (*Division for Marine and Environmental Research, Ruđer Bošković Institute, Zagreb, Croatia*), Sanja Frka, Ivan Mihaljević, Sladana Strmečki Kos

[Voltammetry of Copper-Nitrocatechol Interactions Explains Their Binary Toxic Effects to Microalgae](#)

S01B-002

George-Octavian Buica (*General Chemistry, National University of Science and Technology Politehnica Bu, Bucharest, Romania*), Cristina Dumitriu, Mariana Prodana

[Integrated Photoaccumulation and Detection of Metal Ions System Based on Ti/TiO₂ Nanotubes](#)

S01B-003

Maria Cerrato-Alvarez (*Department of Physical Chemistry and Analytical, University of Oviedo, Oviedo, Spain*), Maria Cerrato-Alvarez, Estefania Costa-Rama, M. Teresa Fernández-Abedul, Pablo Rioboó-Legaspi

[A home-made electrochemical cell for venlafaxine determination in wastewaters](#)

S01B-004

Ling-Yu Chang (*Chemical Engineering, National Taiwan University, Taipei, Taiwan*), Yu-Hsin Chang, Ling-Yu Chang, Kuo-Chuan Ho, Min-Hsin Yeh

[Enzyme-free triboelectric biosensor with glucose response molecularly imprinted polymer for self-powered biomedical monitoring](#)

S01B-005

Dora Crmarić (*Division for marine and environmental research, Ruđer Bošković Institute, Zagreb, Croatia*), Elvira Bura-Nakić, Nuša Cukrov, Marina Mlakar

[Investigation of bathocuproine disulfonate/Cu\(I\)/cysteine system by cathodic stripping voltammetry and spectrophotometry](#)

S01B-006

Salma Hafed Khatiri (*Physical Chemistry, University of Alicante, Alicante, Spain*), Francisco Montilla, Andrés Felipe Quintero Jaime, David Salinas Torres

[Electrofluorochromic-based sensor for the detection of Sunscreen molecules in Marine Environments](#)

S01B-007

Ranil Clément Tonleu Temgoua (*Department of Analytical Chemistry, Reference Materials, BAM Federal Institute for Materials Research and Testing, Berlin, Germany*), Matthias Koch

[Mimicking Environmental Degradation of Phenylurea Herbicides by Electrochemistry / Mass Spectrometry](#)

S01B-008

Haesik Yang (*Department of Chemistry, 30 Jangjeon-dong, Geumjeong-gu, Busan, Korea*), Jungwook Kwon

[Simple and Rapid Electrochemical Detection of *Alternaria alternata* Using an Excreted Redox-Active Species](#)

S01B-009

Min-Hsin Yeh (*Chemical Engineering, National Taiwan University of Science and Technology, Taipei, Taiwan*), Sofiannisa Aulia, Ling-Yu Chang, Yi-Ting Guo, Yu-Chi Lin, Mia Rinawati, Min-Hsin Yeh

[Favoring the Selective H₂O₂ Generation of a Self-Antibiofouling Dissolved Oxygen Sensor for Real-Time Online Monitoring via Surface-Engineered N-Doped Reduced Graphene Oxide](#)

S1c - Electrochemistry in biogeochemical cycling

S01C-001

Sarah Mateša (*Division for Marine and Environment, Ruđer Bošković Institute, Zagreb, Croatia*), Irena Ciglenečki, Iva Dominović, Marija Marguš
[Determination of polysulfides \(S_x²⁻\) in seawater euxinic conditions by electroanalytical methods](#)

S01C-002

Niki Simonović (*Division for Marine and Environmental Research, Ruđer Bošković Institute, Zagreb, Croatia*), Andrea Budiša, Irena Ciglenečki, Jelena Dautović, Marija Marguš, Paolo Paliaga
[DOC normalized surfactant activity as a practical tool for assessing organic carbon properties in the marine environment](#)

S01C-003

Sladana Strmečki Kos (*Division for Marine and Environmental Research, Ruđer Bošković Institute, Zagreb, Croatia*), Sanja Frka, Dario Hruševar, Martina Matanović, Božena Mitić, Valentina Poplašen
[The Effect of Surface-Active Organic Substances on Voltammetric Determination of Copper-Binding Organic Ligands in Seawater](#)

S01C-004

Minjun Yang (*Department of Chemistry, University of Leicester, Leicester, United Kingdom*), Samuel Barton, Christopher Batchelor-McAuley, Heather Bouman, Richard Compton, Rosalind Rickaby
[Opto-electrochemical Dissolution Reveals Biogenic CaCO₃ Sequestered by Marine Phytoplankton](#)

S2b - Electrochemistry in water treatment and soil remediation

S02B-001

Cintia Casado (*Chemical and Environmental Engineering, Universidad Rey Juan Carlos, Mostoles, Spain*), Miguel Martin Somer, Javier Marugan, Natalia Sanchez Puerto, Irene Villarejo Avila

[Disinfection optimization of real WWTP wastewater using an ELOX-type electrochemical cell](#)

S02B-002

Lara Einfalt (*Department for Nanostructured Materials, K7, Jožef Stefan Institute, Ljubljana, Slovenia*), Belisa Alcantara Marinho, Miran Ceh, Barbara Ljubec Božiček

[Anodic Oxidation: Synthesis Method for High-Entropy Oxide Nanotube Arrays](#)

S02B-003

Joono Huopalainen (*Department of Chemistry, University of Turku, Turku, Finland*), Pia Damlin, Carita Kvarnström

[MXene-Based Reactive Electrochemical Membranes \(REMs\) for Removing Pharmaceuticals from Wastewater](#)

S02B-004

Kyo Sik Hwang (*Distributed Energy Team, Korea Institute of Energy Research, Jeju, Korea*), Namjo Jeong, Jeong Keun Kim

[Ammonia Removal and Recovery from Anaerobic Digestate using Bipolar Membrane Electrodialysis with a Membrane Contactor](#)

S02B-005

Javier Llanos (*Department of Chemical Engineering, University of Castilla-La Mancha, Ciudad Real, Spain*), Javier Llanos, Ester López-Fernández, Fátima Martín, Martín Muñoz-Morales, Agustina Parodi, Alvaro Ramirez

[Sustainable Valorization of Digestates from Anaerobic Digestion Processes for the Production of Electroactive Materials](#)

S02B-006

Alvaro Ramirez (*Chemical Engineering, University of Castilla - La Mancha, Ciudad Real, Spain*), Javier Llanos, Ester López-Fernández, Martin Munoz-Morales

[Utilization of Polluted Lignocellulosic Waste for the Electrochemical Generation of Hydrogen Peroxide](#)

S02B-007

Panyu Ren (*Materials science, INM – Leibniz Institute for New Materials, Saarbrücken, Germany*), Choonsoo Kim, Volker Presser, Mohammad Torkamanzadeh, Marek Twardoch, Xiao Zhang

[Enhancing Capacitive Deionization for Water Desalination: The Role of Carbon Additives in Activated Carbon Electrodes](#)

S02B-008

Qian Ye (*School of Civil Engineering, University of Leeds, Leeds, United Kingdom*), David Harbottle, Timothy Hunter, Girish Kale, Martin Tillotson, Hao Xu

[Development of Novel Cathodes in Electrochemical Catalysis Systems for Water Treatment](#)

S02B-009

Shuchi Zhang (*Department of Environmental Engineering, Zhejiang University, Hangzhou, China*), Wenhua Leng, Donglei Wu

[Enhanced PPCP Electrooxidation in Pharmaceutical Wastewater via Interfacial Cocatalyst Modification](#)

S2c - Electrochemistry towards climate change resilience and adaptation

S02C-001

Lazar Bijelić (*Department of Materials Chemistry, National Institute of Chemistry, Hajdrihova 19, Ljubljana, Slovenia*), Marjan Bele, Tina Dukić, Matija Gatalo, Nejc Hodnik, Ante Matošin, Francisco Ruiz-Zepeda

[Structure-Stability Relationship of Pt-Co Nanoalloys as Fuel Cell Electrocatalysts for the Oxygen Reduction Reaction](#)

S02C-002

Tae Kyu Kim (*Chemistry, Korea Advanced Institute of Science and Technology, Daejeon, Korea*)

[Asymmetric Orbital Interactions of Hetero-Diatomic Sites for Photocatalytic C-C Coupling](#)

S02C-003

Cho Eun Kim (*Department of Mechanical and Information Engineering, University of Seoul, Seoul, Korea*), Youngseung Na

[Investigation of Hysteresis Phenomena in Polymer Electrolyte Fuel Cell Using Polarization Curve and Electrochemical Impedance Spectroscopy](#)

S02C-004

Alejandro López Chías (*Department of Inorganic Chemistry and Chemical Engineering, University of Córdoba, Córdoba, Spain*)

[Extraction of lithium from spent batteries using electrochemical methods.](#)

S02C-005

Ante Matosin (*Department of Materials Chemistry, National Institute of Chemistry, Ljubljana, Slovenia*), Marjan Bele, Lazar Bijelić, Tina Dukić, Matija Gatalo, Nejc Hodnik, Iva Klofutar

[Stability Analysis of Pt-Co Nanoalloy Fuel Cell Electrocatalysts Combining Accelerated Degradation Tests and Identical Location TEM](#)

S02C-006

Martina Medvidovic-Kosanovic (*Department of Chemistry, Josip Juraj Strossmayer University of Osijek, Osijek, Croatia*), Olivera Galovic, Dominik Goman, Jasminka Kontrec, Martina Medvidovic-Kosanovic, Branka Njagic Dzakula, Anamarija Stankovic

[Electrochemical, potentiometric, UV/VIS and precipitation study in the system containing calcium and gallic acid](#)

S02C-007

Paola Meli (*Department of Engineering, University of Palermo, Palermo, Italy*), Paola Meli, Chiara Miceli, Federica Proietto, Onofrio Scialdone

[Electrochemical Conversion of CO₂ to Formic Acid in Microfluidic Device](#)

S02C-008

Eugenijus Norkus (*Department of Catalysis, Center for Physical Sciences and Technology (FTMC), Vilnius, Lithuania, Lithuania*),

Dmytro Shyshkin, Birute Simkunaite-Stanyniene, Zita Sukackiene, Loreta Tamasauskaite-Tamasiunaite, Jurate Vaiciuniene

[Efficient Flexible Electrocatalysts for Hydrogen and Oxygen Evolution](#)

S02C-009

Seung-Wan Song (*Chemical Engineering & Applied Chemistry, Chungnam National University, Daejeon, Korea*), Kihun An, Yen Hai Thi Tran

[Design of Less flammable Liquid Electrolytes for Safe Li-ion Batteries](#)

S02C-010

Yongsug Tak (*Chemical Engineering, Inha University, Incheon, Korea*), Jisu Kim, Jungwoo Park

[TiO₂-based Inorganic Catalyst Support for Electrochemical Energy Conversion](#)

S2d - Corrosion in different environments: resistance and control

S02D-001

Ivana Skugor Ronč (*Department of General and Inorganic Chemistry, Faculty of Chemistry and Technology, University of Split, Split, Croatia*)

[Inhibitory effect of an extract obtained from cigarette waste on metal corrosion process](#)

S02D-002

Zhoucheng Wang (*College of Chemistry and Chemical Engineering, Xiamen University, Xiamen, China*)

[A comparative study on the corrosion behaviours of metallic coatings deposited on AZ91D magnesium alloys](#)

S02D-003

Hüseyin Zengin (*Institute of Chemical Technologies of Inorganic Materials, Johannes Kepler University, Linz, Austria*), Andreas Greul,

Achim Walter Hassel, Andrei Ionut Mardare, Muhammet Emre Turan

[Corrosion and passivation behaviour of AlCoCrFeNi high entropy alloys in artificial seawater](#)

Notes

A series of 20 horizontal dotted lines for writing notes.