



Cycle of webinars on: Electroanalytical and related Electrical Techniques for Environmental Monitoring

Main goal: Speakers will share with the audience some of their expertise on electroanalytical or related electrical techniques applied to environmental monitoring.

Attendee's profile: Students or professionals having a profile in chemistry, biology, engineering, or related formation interested in improving their comprehension of electroanalytical and related electrical techniques applied to environmental monitoring.

Date: From June 28th to July 2nd, 2021.

Organizing committee: Prof. Dr. Juan Manríquez, jmanriquez@cideteq.mx; Prof. Dr. Erika Bustos, ebustos@cideteq.mx Water and Environment Research Coordination, Department of Science, CIDETE Q

Topics' roster (1.5 hour/speaker/day):

No.	Topic	Speaker	Institution	Date
1	Electrochemical sensors for environmental analysis	Prof. Dr. Ligia Maria Moretto	Università Ca' Foscari Venezia, Venezia, Italy	June 28th, 10AM CDMX (5PM CEST)
2	Geoelectric methods in environmental site characterization	Prof. Dr. Zsuzsanna Plank	John Wesley Theological College, Budapest, Hungary	June 29th, 10AM CDMX (5PM CEST)
3	Contribution of molecular design and electrocatalysis to improve the selectivity and the sensitivity of electrochemical Sensors	Prof. Dr. Fethi Bedioui	Chimie ParisTech-PSL Université Paris/CNRS 2027, France	June 30th, 10AM CDMX (5PM CEST)
4	Catalytic micromotors: a smart tool for environmental and food safety monitoring	Prof. Dr. Alberto Escarpa	Universidad de Alcalá, Alcalá de Henares, Spain	July 1st, 10AM CDMX (5PM CEST)
5	Electrochemical sensing and biosensing strategies using modified electrodes: a materials approach	Prof. Dr. Christopher Brett	Universidade de Coimbra, Coimbra, Portugal	July 2nd, 11AM CDMX (5PM WEST)

Speakers' short Resumes:

Prof. Dr. Ligia Maria Moretto (Università Ca' Foscari Venezia)



Ligia Maria Moretto graduated in Chemical Engineering and M.Sc in Engineering in Brazil and a PhD in Chemical Sciences at the University of Venice in 1994. She is associated professor at University Ca'Foscari of Venice, Dept. of Molecular Sciences and Nanosystems. The main research interests are in the field of electroanalytical chemistry, with particular focus on the development of sensors and biosensors for biomedical and environmental applications. The research is focused in: (i) new electrode materials: Preparation and characterization of ensembles of gold nanoelectrodes (NEE) by electroless deposition with polycarbonate nanoporous membranes as template; study and electrochemical characterization of arrays of gold nanoelectrodes produced by e-beam lithography; development and characterization of carbon electrodes produced by pyrolysis of photoresist, nemed pyrolyzed photoresist carbon electrodes (PPCE); development of copper nanostructured electrodes by template electrodeposition inside nanoporous membranes; (ii) Electrochemical biosensors: study and developments of biosensors at NEEs; application of self-assembled monolayers of thiols on NEE for electrode surface protection against protein unspecific adsorption; (iii) Materials for cultural heritage studies: electrochemical sensors and biosensors for analysis of protein binders; study of archaeological glass by LA-ICP-MS; nanomaterials applied to Cultural Heritage. The research activity was developed with International collaborations including researchers from France, Belgium, Brasil, Austria, and others. She has directed 55 theses distributed as: 6 PhD theses, 15 MSc theses and 34 BSc theses. Professor Moretto is autor/co-author of 86 scientific papers, 8 book chapters, with h index 26.

Prof. Dr. Zsuzsanna Plank (John Wesley Theological College, Budapest)



Zsuzsanna Plank geophysicist, head of department at the Department of Environmental Safety of the John Wesley Theological College in Budapest, Hungary. She graduated in Geophysics at the Faculty of Mining Engineering at the University of Miskolc, Hungary. She completed her PhD thesis geoelectric cavity detection and inversion in 2001. She started her professional career as an associate researcher at the Department of Engineering Geophysics of the Eötvös Lorand Geophysical Institute of Hungary. Her main research topic was the development of geoelectric survey methodology. She planned and carried out the first 3D geoelectric survey with multi-electrode technique in Hungary. Furthermore, she participated in various domestic and international research projects dealing with engineering- and environmental geophysical problems. In 2012 she started to work for the Geological and Geophysical Institute of Hungary as chief researcher consultant dealing with the problems of protection of subsurface freshwater resources and non-invasive delineation of subsurface contamination. In 2017-2018 she worked for the newly established Mining and Geological Survey of Hungary as head of the Department of Geophysical Research. She participated in international research projects in the topics of sustainable raw material supply and secondary raw material resources founded by the European Union. She is an active researcher, author or co-author of scientific publications and conference presentations over 140. She is a dedicated university lecturer and tutor of under- and post graduate students. She is the member of the European Association of Geoscientists and Engineers (EAGE), the Women in Geoscience and Engineering Special Interest Community (WGE SIC), the Public Body of the Hungarian Academy of Sciences and the Association of Hungarian Geophysicists (MGE).





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Prof. Dr. Fethi Bedioui (Chimie ParisTech-PSL /CNRS 8060, Institute of Chemistry for Health and Lifes Sciences, Paris, France)

Fethi Bedioui works in research and investigations in the Higher Education sector for over 35 years. He received his Chemistry diploma in 1981 from “Chimie ParisTech”, Paris (France). He was awarded his PhD in Physical Chemistry in 1986 from “Université Pierre et Marie Curie”, Paris (France). He is currently a senior researcher in the CNRS, and his current research interests revolve around the development and the implementation of advanced molecular materials for electrocatalysis and electrochemical sensing and diagnosis. More specifically, he is currently working on

- Electroanalytical sensors and devices for biological applications: detection of nitric oxide, superoxide, thiols and other biologically relevant molecules
- Electrochemical Microscopy: Material imagery and micro engineering of (bio) functionalized surfaces.
- Design of electrode materials from electropolymerized organometallic biomimetic complexes.
- Electrochemistry of metallo-porphyrins, phthalocyanines and Schiff bases.
- Analytical microfluidic devices and systems and implementation of coupled techniques

His scientific work is reflected in over 280 publications including books and book chapters (H index = 52). He is currently Head of the International Affairs at Chimie ParisTech

Prof. Dr. Alberto Escarpa (Universidad de Alcalá, Spain)

Alberto Escarpa is Full Professor of Analytical Chemistry at the University of Alcalá. He has received several highly prestigious awards such the NATO Fellowship to perform postdoctoral research at the New Mexico State University (USA) in 2001, the “Young Investigator Award” by the University of Alcalá in 2003 and the International Dropsens Award “Best research work in applied electroanalytical chemistry” (finalist) in 2015. He served as guest professor in international Universities and research centers such as University of California San Diego (EEUU), International Center for Young Scientists in National Institute for Materials Science (Tsukuba, Japan) or CIDETEQ (Querétaro, Mexico). He has also been Visiting Professor in the Buenos Aires University and currently he is Visiting Professor in Universidad Nacional Agraria La Molina (Peru). Prof. Escarpa is also member of the Collegium of the PhD in Food Science at Teramo University (Italy).

He is the leader and founder of the research group “Analytical Miniaturization and Nanotechnology” since 2003. His main research interests are analytical miniaturization and nanotechnologies, new nanomaterials for optical and electrochemical (bio)-sensing, electrochemical microfluidics, lab-on-a-chip technology and self-propelled micromotors.

He has co-authored more than 170 peer-reviewed articles in leading international peer-review journals, 3 international patents and several book chapters, yielding an h-index of 47. He has recently been included in the top-1% of most cited chemists in the world, and in the top-145-ranked (#76) chemistry researchers in Spain. His works have been featured and highlighted in several occasions as cover in top journals (Angewandte Chemie International Edition, Chemical Science, Chemistry: A European Journal, Lab on a Chip, Analytical Chemistry, Analyst) and social scientific media (Chemical World from RSC), Separations Now from Wiley and C&EN news from ACS, Nanowerk). He has also supervised 14 PhD students and several postdoctoral researchers.

He has edited and authored several books including Miniaturization of analytical systems: principles, designs and applications (Wiley, 2009), Food Electroanalysis (2015, Wiley) and Carbon-based Nanomaterials in Analytical Chemistry (RSC, 2019). He has given more than 40 invited talks in highly international meetings about microfluidics and miniaturization of analytical chemistry.

He has given more than 45 invited lectures in the most prestigious conferences of micro and analytical nanotechnologies. He has also organized several international congresses such as I Workshop on Analytical Miniaturization and Lab on a Chip (WAM, 2008), VI Workshop Analytical Nanoscience and Nanotechnology (NyNA, 2013) or the 25th Latin American Capillary Electrophoresis and Microchip Technology (LACE, 2019). He is member of the Editorial board of Analysis & Sensing, Electrophoresis, Applied Materials Today, Sensors and Journal of Nanobiotechnology. He has been Associate Editor for RSC Advances (2015-2019) and Associate Editor (2018-2019) for Microchimica Acta.

He is currently Editor in Chief for Microchimica Acta.



Prof. Dr. Christopher Brett (Universidade de Coimbra, Portugal)

Christopher Brett is a professor of chemistry in the University of Coimbra, Portugal and is President of the International Union of Pure and Applied Chemistry (IUPAC) 2020-21.

After his MA and DPhil in electrochemistry at the University of Oxford, he spent a year at British Petroleum, London before moving to Coimbra in 1981. His research interests have focused on the development of new materials in electrochemistry and their application in different areas, particularly in sensing. This has included new nanostructured electrode materials and nanomaterials on modified electrodes, the use of electroactive and redox polymers, corrosion and its inhibition, electrochemical aspects of green chemistry, electrochemical sensors and biosensors. Most recently, he has been exploring deep eutectic solvents for the preparation of nanostructured materials with different properties than those made in aqueous media and room temperature ionic liquids for electrochemical sensors and biosensors. Applications have been in the environmental, food and pharmaceutical areas, the subject of over 320 publications (Web of Science h-index 54).

He is Director of the Electroanalysis and Corrosion Laboratory, Instituto Pedro Nunes, Coimbra, the technological innovation link between the University of Coimbra and the industrial sector and which provides services in analytical electrochemistry, environmental chemistry and evaluation of corrosion.

Besides various positions in IUPAC during more than 2 decades, he was President of the International Society of Electrochemistry (ISE) from 2007-8, is President of the Iberoamerican Society of Electrochemistry 2020-22 and was President of the Analytical Chemistry Division of the Portuguese Chemical Society 2018-20.

Webpage: <http://www1.ci.uc.pt/pessoal/chrisbrett/>

