ECLectic
INTERNATIONAL DOCTORAL NETWORK
Light up the future

ECLectic Network Workshop.
BCMaterials. Basque Country-Spain

ECLectic Network Workshop.
BCMaterials. Basque Country-Spain

ECLectic
INTERNATIONAL DOCTORAL NETWORK
Light up the future

DAY 1. THURSDAY, 3 APRIL		
9:00-9:45	**Introduction to Electrochemistry** Topic: Electrochemistry general, diffusion and kinetics in ET, Spectroelectrochemistry	**Álvaro Colina** Universidad de Burgos (Spain)
9:45-10:30	**Luminophores** Topic: Coordination complexes and photophysical properties	**Paul S. Francis** Deakin University, Geelong (Australia) - ONLINE TALK
10:30-10:45	**COFFEE BREAK**	
10:45-11:30	**Introduction to ECL** Topic: ECL story from rubrene to IGEN, CV in dry condition, marcus, mechanism for annihilation, finally short description of coreactant	**Francesco Paolucci** Università di Bologna (Italy)
11:30-12:15	**How to use Python in data analysis**	**Eduardo Laborda** Universidad de Murcia (Spain)
12:15-13:00	**ECL microscopy** Topic: ECL microscopy instrumentation, mechanism involved, ECL from beads, cells, and other biological component	**Neso Sojic** Universitè de Bordeaux (France)
13:00-14:30	**LUNCH**	
14:30-15:00	**ECL coreactant** Topic: ECL coreactant, Mechanism not remote, alternative to TPA and other coreactant included in situ generation.	**Honglan Qi** Shaanxi Normal University (China) - ONLINE TALK
15:00-15:45	**ECL application & case study** Topic: Application and bipolar ECL.	**Robert Forster** Dublin City University (Ireland)
15:45-16:00	**COFFEE BREAK**	
16:00-16:30	**ECL and nanomaterials** Topic: ECL and nanomaterials, key role of doping, coreactant and design of nanomaterials.	**Luca Prodi** Università di Bologna (Italy)
16:30-17:00	**Focus on: single molecule-Droplet** Topic: Focus on single molecule ECL.	**Jeffrey E. Dick,** Purdue University (USA) - ONLINE TALK
17:00-17:20	**BREAK**	
17:20-19:00	**POSTER SESSION**	

DAY 2. FRIDAY, 4 APRIL		
9:00-9:30	**Focus on: Multiplexing** Topic: Focus on multiplexing ECL.	**Weiliang Guo** Nanjing Normal University (China) - ONLINE TALK
09:30-9:50	**Focus on: ECL in commercial application** Topic: commercial instrumentation.	**Kenta Imai** Hitachi High-Tech Corporation (Japan)
09:50-10:10	**Focus on: ECL in commercial application** Topic: cobas®e: Elecsys principles and applications	**Giuseppe Prencipe** Roche Diagnostics GmbH (Germany)
10:10-10:40	**Focus on: Electrode materials** Topic: electrode materials for ECL from disposable to Pt.	**Javier Del Campo** BCMaterials (Spain)
10:40-11:10	**Focus on: Single electrode ECL**	**Guobao Xu** Chang Chun Institute of Applied Chemistry (China) - ONLINE TALK
11:10-12:40	**Hands-on session on ECL** 20 mins intro: Tips and tricks on ECL (Giovanni Valenti, University of Bologna, Italy) Then, the students will divide in two groups (Experiments to be decided according to instruments present in the BCMaterials lab)	
12:40	**FAREWELL LUNCH**	

For all info and registration visit
https://eclectic-dn.eu/workshop/

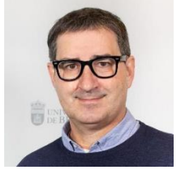
ECLectic project has received funding from the European Union's MSCA Doctoral network Horizon Europe programme Grant Agreement Number 101119951. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them.

ECLectic
INTERNATIONAL DOCTORAL NETWORK
Light up the future

ECLectic Network Workshop.
BCMaterials. Basque Country-Spain

ECLectic Network Workshop.
BCMaterials. Basque Country-Spain

ECLectic
INTERNATIONAL DOCTORAL NETWORK
Light up the future



Alvaro Colina / Universidad de Burgos, Spain
Professor Alvaro Colina develops his research work in the Chemistry department of the University of Burgos (Spain). His research is devoted to the development of time-resolved spectroelectrochemistry (SEC) techniques and devices. His group has developed different SEC solutions as bidimensional SEC, combination of simultaneous UV/Vis, photoluminiscence and Raman SEC, simultaneous SECM and SEC, SEC using screen-printed electrodes, etc. These techniques have been designed to study very different chemical problems in very different fields, from chemical analysis, study of chemical mechanisms, characterization of materials, nanotechnology, etc. In 2018, his group discovered the Electrochemical-Surface Oxidation Enhanced Raman Scattering phenomenon, opening new gates for chemical analysis

Paul S. Francis / Deakin University, Geelong, Australia
Professor Paul S. Francis's research, presented in over 200 publications, has primarily focussed on the fundamental chemistry and spectroscopy of light-driven and light-producing chemical reactions. Most notably, his work on electrochemiluminescence (ECL) has included: (1) the design of new luminophores with carefully tailored electrochemical and photophysical properties; (2) the elucidation of the reaction pathways through which different luminophores can be excited; (3) the development of multi-coloured and potential-resolved systems, in which species that emit different coloured light can be selectively 'switched-on' or 'switched-off', depending on the applied electrode potential; and (4) the introduction of 'redox mediators' to greatly increase the emission intensity of conventional and novel ECL systems.

Francesco Paolucci / Alma Mater Studiorum Università di Bologna, Italy
Francesco Paolucci is Professor of Chemistry at the University of Bologna where he has been leading the Electrochemistry Group (EMFM) at the Department of Chemistry since 2001. He spent sabbatical leaves at the University of Southampton, Ecole Normale Supérieure in Paris, University of Bordeaux and Keio University. His current research includes fundamental investigations in molecular and materials electrochemistry, electrocatalysis and the theory and applications of electrochemiluminescence.

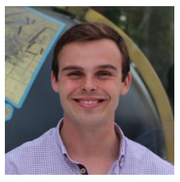
Eduardo Laborda / Universidad de Murcia, Spain
Ph.D. in Chemistry from the University of Murcia (UMU, 2010), postdoctoral researcher at Oxford University (2011-2013) and UMU (2013-2017), and currently Lecturer in Physical Chemistry at UMU and member of the Theoretical and Applied Electrochemistry Research Group. His research is dedicated to fundamental electrochemistry, mainly focusing on the development of mathematical models to improve the understanding and analysis of heterogeneous electron and ion transfer by different experimental methods. Specific contributions include mass transport, kinetic and mechanistic analysis of electrochemical systems using potential-pulsed techniques, UV-vis absorption spectroelectrochemistry and electrochemiluminescence (ECL), as well as the evaluation of microscopic models for heterogeneous electron transfer and the detection of single nanoparticles by impact experiments at liquid-liquid interfaces. The aim is to extend the capabilities of (spectro)electrochemical techniques towards deeper insights into heterogeneous charge transfer events

Neso Sojic / Université de Bordeaux, France
Neso Sojic is professor at the Institute of Molecular Sciences (Bordeaux INP, University of Bordeaux). He received his Ph.D. in electrochemistry from the Université Pierre et Marie Curie (Paris, France). After postdoctoral studies at the University of Texas at Dallas, he joined the faculty at the University of Bordeaux (France). His main research interests are in analytical electrochemistry, electrochemiluminescence, bioelectrochemistry, microscopy and fiber optic sensors.

Honglan Qi / Shaanxi Normal University, China
Honglan Qi received her PhD from Shaanxi Normal University in 2005 under the guidance of supervisor Prof. Chengxiao Zhang. She was a visiting scientist in 2011–2012 at the University of Texas at Austin in the laboratory of Prof. Allen J. Bard. Currently, she is a full professor at the School of Chemistry and Chemical Engineering, Shaanxi Normal University, China. Her research focuses on electrogenerated chemiluminescence and electroanalytical chemistry.

Robert Forster / Dublin City University, Ireland
Robert Forster holds a Personal Chair (Full Professor, Physical Chemistry) within the School of Chemical Sciences at Dublin City University and in 2020 he was elected to the Royal Irish Academy. He has served as DCU Dean of Research and Associate Dean of the Faculty of Science and Health with responsibility for research. He was co-author of the successful proposals to establish the National Centre for Sensor Research, the NanoBiophotonics and Imaging Centre, the Biomedical Diagnostics Institute, the NanoBioAnalytical Research Facility and the Future Neuro Centre that collectively received more than €75m in funding. He is the author/co-author of more than 250 manuscripts and reviews (H-Index 57, >11,500 citations) and has been a Visiting Scientist to Caltech and UC Berkeley. His interests include surface active transition metal complexes, metallo- and conducting polymers and plasmonic metal (nano)structures. His interests include electrochemiluminescence, ultrafast and wireless electrochemistry, leading to applications in molecule-based electronics and biomedical sensors with ultralow limits of detection.

Luca Prodi / Alma Mater Studiorum Università di Bologna, Italy
Luca Prodi is a Professor of General Chemistry at the University of Bologna. His research focuses on the synthesis and characterization of luminescent tracers and sensors, as well as the design of biosensors for the detection of pathogens. In this field, he coordinates the European project ECLIPSE under the Horizon Europe framework program. He is the inventor of several patents, both in the field of biosensors—including those for the detection of SARS-CoV-2—and in the synthesis of silica nanoparticles. His research activity is documented by more than 230 articles in international journals (h-index = 65). In 2003, he was among the founders of a company operating in the field of markers for genomics and proteomics, and in 2012, he co-founded Personal Genomics, a spin-off of the Universities of Bologna and Verona, active in the field of personalized genomics.



Jeffrey E. Dick / Purdue University, USA
Jeffrey E. Dick is a Professor of Chemistry whose research focuses on the application of electrochemistry to nanotechnology and complex biological and environmental systems. His work explores the fundamental and applied aspects of electrochemical processes, aiming to uncover new scientific insights and develop innovative technologies for the benefit of humankind. Passionate about education and knowledge dissemination, he is dedicated to mentoring researchers of all backgrounds and fostering a collaborative, multidisciplinary research environment. His research group actively seeks new talent to contribute to pioneering discoveries in the field. Through his work, Jeffrey E. Dick continues to push the boundaries of electrochemistry, advancing both fundamental science and its practical applications in various domains.

Weiliang Guo / School of Chemistry and Materials Science, Nanjing Normal University, China
Dr. Weiliang Guo is an associate professor at the Nanjing Normal University in China. He obtained his Ph.D. from Zhejiang University in 2018, and then spent two years there as a postdoctoral fellow. In 2021, he joined the School of Chemistry and Materials Science, Nanjing Normal University as an associate professor. His main research areas include electrochemiluminescence, electroanalytical chemistry and biosensing. He has published over 20 SCI papers in journals such as JACS, Angew. Chem, and Anal. Chem.

ECLectic project has received funding from the European Union's MSCA Doctoral network Horizon Europe programme Grant Agreement Number 101119951. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them.

Kenta Imai / Hitachi High-Tech Corporation, Japan
Kenta Imai is General Manager at Medical Systems Design 3rd Dept., Hitachi High-Tech Corporation, Japan. He holds an MSc in Applied Chemistry from Waseda University, Japan, and a PhD in Chemistry from the University of Bologna, Italy.

Giuseppe Prencipe / Roche Diagnostics GmbH, Germany
Giuseppe Prencipe earned his B.S. and M.S. degrees from Milan University and completed his Ph.D. at Milan University in collaboration with Stanford University. Following his doctorate, he spent 4.5 years in Paris as a post-doctoral researcher. He worked at UPMC Universités, focusing on synthesizing new glycosidase inhibiting compounds for SanFilippo disease, and later at Sanofi on antifungal drug. In 2014, he joined Roche Diagnostics, where he currently works as a Team Lead in R&D. His responsibilities include developing reagents for new Elecsys assays, and creating new metal complexes, linkers, and dye/label reagents.

F. Javier del Campo / BCMaterials, Basque Center for Materials, Applications and Nanostructures, Spain
Javier specializes in the development of new electrode materials for electrochemical (bio)sensing and electrochemiluminescence (ECL). As the principal investigator of a multidisciplinary research group, he focuses on integrating novel materials and microfabrication techniques to enhance the performance of biosensors and analytical devices. His work aims to improve sensitivity and selectivity in applications ranging from real-time drug monitoring to personalized diagnostics. With a strong background in electrochemical techniques and materials science, he collaborates with both academic and industrial partners to translate fundamental research into practical solutions. In addition to his scientific contributions, Javier is actively involved in mentoring young researchers and organizing workshops to foster innovation in the field of electrochemistry.

Guobao Xu / State Key Laboratory of Electroanalytical Chemistry, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, China
Prof. Guobao XU is Co-Chair of 40th ISE Topical Meeting (https://topical40.ise-online.org/) and Chairperson of the Organizing Committee of 20th International Symposium on Electroanalytical Chemistry which will be held from 12 to 17 August, 2025 at State Key Laboratory of Electroanalytical Chemistry (SKLEAC), Changchun Institute of Applied Chemistry, Chinese Academy of Sciences in Changchun, China. He is Deputy Director of SKLEAC, the Editor of J Electroanal Chem, Advisory Board Member of Curr. Opin. Electrochem., Sens. Actuator B-Chem., Bioelectrochemistry, Microchim. Acta and Anal. Bioanal. Chem. as well as a Guest or Managing Editor of more than 10 special issues.

Giovanni Valenti / Alma Mater Studiorum Università di Bologna, Italy
Giovanni Valenti is Professor at the University of Bologna, specializing in electrochemistry and its applications in biosensing and nanotechnology. He was appointed as an assistant professor in 2013 and he has been a visiting fellow at Dublin City University (Prof Forster), at the University of Texas (Prof Bard) and University of California (Prof Plaxco). In 2021, he became an associate professor at the Department of Chemistry "G. Ciamician" (University of Bologna). He is passionate about electrochemistry and the application of electrochemical tools for studying molecules and nanomaterials, for light generation (electrochemiluminescence), for early diagnosis (biosensors) and energy application (CO2RR, HER, OER). He collaborates with international research groups and coordinates European projects, including the MSCA Doctoral Network ECLectic and NanoImmunoERA. He is convinced of the fundamental role of science outreach and he is involved in different science festivals in his city.

ECLectic project has received funding from the European Union's MSCA Doctoral network Horizon Europe programme Grant Agreement Number 101119951. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them.