FCCat 4
2025
May 19th-23rd, 2025 - Ronce-les-Bains (France)

Plenary speakers

Leonarda Francesca Liotta - "Catalysis by gold for CO and VOCs oxidation reactions : structure-activity relationship"

Leonarda Francesca Liotta is Director of Research and Deputy Director of the Palermo branch of the Institute for the Study of Nanostructured Materials (ISMN)-CNR. She is also a member of the Scientific Board of the CNR Department of Chemical Sciences and Materials Technologies, DSCTM-CNR.

She is the co-author of 250 articles in peer-reviewed international journals, 8 book chapters, 1 PCT Int. Appl. WO patent, and she contributed to more the 400 international and national conferences and informative works. H index: 53 (Scopus 2024). She was mentioned in a list of the top 2% most cited scientists in the world, published by Stanford University.

Member of the International Association of Catalysis Societies (IACS), member of the MC of COST Action 17136 “Indoor Air Pollution network” and of the MC of COST Action 18224 “Green Chemical Engineering Network towards upscaling sustainable processes. Member of the Italian Chemical Society, in the Industrial Chemistry Group and Interdivisional Catalysis Group. She belongs to the scientific board of the Italian ENERCHEM “Interdivisional Group of Chemistry for Renewable Energy” (2022-2024) and she was a member of the scientific board of the Interdivisional Catalysis Group (2015-2017) (2018-2020).
Visiting researcher at the University of Lyon, Lille, Dunkerque, Sorbonne (Paris), Valencia, Sevilla, Budapest, Sofia, Tomsk, Magurele.
Her main interests are in the field of heterogeneous catalysis based on supported noble metals, especially Au, transition metal oxides and inorganic perovskites, and on materials science applied to environmental remediation (NO SCR, VOCs and soot oxidation) and clean energy production/storage (dry/steam reforming, CO_2 methanation, SOFCs, SOECs, batteries).

Hilde Poelman - "How X-ray spectroscopies help to understand the dry reforming reaction"

Hilde Poelman obtained a PhD in Sciences, namely Solid State Physics, at Ghent University, Belgium, in 1991. She continued working on several projects in the laboratory of Solid State Sciences until 2009, when she moved to the Laboratory for Chemical Technology (LCT) of the Engineering faculty of the same university. Throughout her scientific career, she acquired broad experience in:

- analysis techniques for solid materials, surfaces and interfaces
- thin film deposition techniques
- physicochemical characterization, in situ and operando research, synchrotron research
- catalysis and photocatalysis

Currently, she is senior scientist at LCT and as such responsible for coordinating and facilitating experimental campaigns along the needs of the LCT researchers. The latter not only includes lab-scale characterization and experiments, but also campaigns at synchrotron facilities such as SOLEIL and ESRF in view of specific operando research using XAS, XRS and ME-QXAS. Her work has resulted in over 150 publications in WOS, a h-index of 40, and organization of/participation in more than 50 synchrotron campaigns.

Andreas Rudi - "From catalyst to product: multi-dimensional assessment of chemical processes"

Andreas Rudi is a senior scientist at the Karlsruhe Institute of Technology (KIT), and head of the Sustainable Value Chains research group at the Institute for Industrial Production (IIP). As a business engineer, he focuses on integrating technical, economic, environmental, and social dimensions into industrial strategies to enhance sustainability. His research interests include the circular and bio-based economy, power-to-X technologies, and green supply chain management. By combining expertise in environmental engineering, business administration, and related fields, he develops decision support systems to assist policymakers, industry, and NGOs in making informed, sustainable decisions.

Nicolas Bion - "Toward NH_3 synthesis in mild conditions"

Nicolas Bion was recruited as a CNRS junior researcher in 2004. He is currently Research Director at the Poitiers Institute of Chemistry (IC2MP). His research activities focus on the characterization of heterogeneous catalysts and the evaluation of their catalytic performance in the fields of catalysis for energy (hydrogen and syngas production, NH3 synthesis), and environmental catalysis (removal of pollutants in the gas phase). The originality of his research involves the use of isotopic markers to investigate surface mechanisms and characterize the transport of active species on/in catalytic materials. More recently, he has been developing innovative projects at the interface between heterogeneous catalysis and solid-state electrochemistry. The aim is to gain a better understanding of the phenomena involved at the gas/electrode and gas/electrode/electrolyte interfaces (Triple Phase Boundary) of solid oxide electrochemical systems used as electrolyzers or fuel cells operating at high temperatures (SOEC, SOFC).

Claire Courson - "Over the hydrogen rainbow: the uses of catalysis for the production of H_2"

Claire Courson is associate professor at the University of Strasbourg where she teaches chemical engineering and processes. She carries out her research in heterogeneous catalysis at the Institute of Chemistry and Processes for Energy, Environment and Health (ICPEES), in the Team “Energy and Fuels for a Sustainable Environment”. She focuses on the thermochemical valorization of biomass and natural gas, catalytic reforming of methane and tars from the gasification of biomass, and hydrogen production associated to CO_2 capture. More recently, she has extended her research into the valorization of biochar.

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Keynote speakers

Mercedes Boronat - "New developments in the molecular modelling of zeolites for heterogeneous catalysis"

Mercedes Boronat is Scientific Researcher at Institute of Chemical Technology, ITQ, UPV-CSIC, Valencia (Spain). She is specialized in computational chemistry applied to heterogeneous catalysis. Her work focuses on the theoretical study of reaction mechanisms on solid catalysts such as acid zeolites, metal oxides, metal clusters and nanoparticles, MOFs, etc., aiming to identify the specific active and selective centers and use this information to guide the design of improved materials. She is the co-author of 130 articles in prestigious international journals, two book chapters and four patents, and she has supervised seven doctoral theses, two of them in progress.

Agnieszka Ruppert – "Catalytic conversion of gamma valerolactone"

Prof. Agnieszka Ruppert leads a group at the Institute of General and Ecological Chemistry at the Łódź University of Technology (LUT), Poland, where she is conducting research on the design of heterogeneous catalysts for the sustainable valorization and upgrading of wastes (*eg.* biomass) towards oxygenates as chemicals and fuels. After a PhD degree in catalysis at the LUT in collaboration with the University of Strasbourg, France, followed by several postdoctoral research positions at the Utrecht University (The Netherlands) with Prof. Bert Weckhuysen and at the Max-Planck-Institut für Kohlenforschung in Mülheim an-der-Ruhr (Germany) with Prof. Ferdi Schüth, she established her research line in her home institution where she now holds a professor position. In recent years, she has been a visiting scientist in several catalysis research institutes in France (ENS Lyon ; Institut Charles Gerhardt, Montpellier ; ICPEES, Strasbourg), with which she developed tight collaborations on experimental and computational aspects of catalysis for biomass upgrading into fuels and chemicals. She has established further collaborations with Shibaura Institute of Technology in Tokyo, and RWTH Aachen University in Germany.

Clément Camp - "Catalysis by heterobimetallic molecular systems"

Clément Camp is a CNRS researcher in the Laboratory of Catalysis, Polymerization, Processes and Materials (CP2M) in Villeurbanne. He graduated in 2010 from the École Normale Supérieure de Lyon and in 2013 he received his Ph.D. degree, performed under the supervision of Dr. Marinella Mazzanti (University of Grenoble) for his work on the chemistry of f-element compounds. He then joined Prof. John Arnold's group at the University of California - Berkeley for postdoctoral training, where he studied the activation of small molecules by transition metal complexes. His current research interests deal with surface organometallic chemistry and cooperative effects in catalysis. Clément Camp has authored 60 scientific articles, tackling problems in organometallic chemistry and catalysis with elements from across the periodic table. He has been a laureate of an ERC Starting Grant in 2021. He was the recipient of the CNRS bronze medal in 2022, and of the "Young Chemist prize" of the Coordination Chemistry Division (DCC) of the French Chemical Society in 2023. He is currently a member of the DCC board.

Kilian Kobl - "Modelling bioprocesses in chemical engineering"

Kilian Kobl is a chemist by training who graduated with a PhD in heterogeneous catalysis from Université de Strasbourg (France), where he performed kinetic and spectroscopic studies related to reaction mechanisms. In 2015, he joined Ypso-Facto and has worked on several customer projects involving the change of fine chemical and pharmaceutical production processes from batch to continuous. He has also been involved in a variety of projects on peptide manufacturing and oligonucleotide purification processes. Lately, he has worked as a Product Manager for Ypso-Facto process simulation software.

Vitaly Ordomsky - "Liquid metals in catalysis"

Vitaly V. Ordomsky received his MSc (2006) and PhD (2009) degrees from Moscow State University in the field of zeolite catalysis. He was a postdoctoral researcher in the Department of Chemical Engineering at the Eindhoven University in the Netherlands, working on biomass conversion. In 2013, he received a permanent position as a CNRS researcher in the Energy group of UCCS (Unité de Catalyse et Chimie du Solide) in Lille, focusing on Fischer–Tropsch synthesis. From 2016 to 2019, he was a CNRS researcher in E2P2L laboratory in Shanghai. His main research field is the development of new nano-materials and processes for C1 chemistry by conversion of CO_2, CH_4, CO etc.