

# Telluride 2024

July 1-5, 2024 - Biarritz (France)

## ATTENDANCE LIST



### Benjamin Abecassis

Chemistry laboratory – ENS Lyon (France)

Title: ***“Ultrathin Colloidal Nanoplatelets as Soft Matter”***

B. Abecassis is a physical chemist working on at the interface between materials science, soft matter and nanotechnology.

His main current interest is ultrathin 2D colloidal nanoparticles: their synthesis, surface chemistry and conformation. I also study the self-assembly of nanocrystals from the perspective of the emergence of collective properties. This implies understanding colloidal forces between particles at the nanoscale. I am also interested in probing the formation mechanism of nanoparticles using in situ synchrotron-based X-ray techniques.

[Website](#)



### Tadafumi Adschiri

AIMR Tohoku University (Japan)

Title : ***“How to design the nanoparticle synthesis process by supercritical hydrothermal synthesis”***

Tadafumi Adschiri is the Inventor of "supercritical hydrothermal synthesis" process (nanoparticles, organic modification) and "supercritical chemical recycling process.

[Website](#)



### Cyril Aymonier

ICMCB, CNRS Bordeaux University, Pessac (France)

Title : ***“Synthesis, shaping and recycling of materials in sub- and supercritical fluids”***

Cyril Aymonier is CNRS senior researcher and director of the Institute of Condensed Matter Chemistry of Bordeaux (about 250 people). His current research interests are i) the study of the chemistry and nucleation & growth in supercritical fluids applied to the design of advanced nanostructured materials, ii) the investigation of material recycling using supercritical fluids and iii) the development of the associated supercritical fluids-based technologies.

[Website](#)



### Alexis Bordet

Max Planck Institute MPI CEC (Germany)

Title: ***“Transition Metal Phosphide Nanoparticles: Low-Temperature Synthesis, Characterization, and Application in Catalysis”***

Alexis Bordet's research activities focus on the preparation, characterization, and application of nanoparticles-based multifunctional catalytic systems to reactions involving the activation and transfer of molecular hydrogen (e.g. valorization of biomass, CO<sub>2</sub>, etc.).

[Website](#)



### Marius V. B. Brix

Aarhus University (Denmark)

Title: ***“Utilizing Supercritical Flow Reactors for Studying the Physical Properties of Advanced Nanomaterials”***

Marius V. B. Brix focuses on the physical properties of advanced inorganic nanomaterials prepared by hydro- and solvothermal methods.

### Bo Brummerstedt-Iversen

AARHUS University (Denmark)

Title: ***"Using in situ X-ray scattering to develop novel solvothermal nanoparticle synthesis routes"***



[Bo Brummerstedt Iversen](#) is Professor of chemistry at Aarhus University (AU). He is VILLUM Investigator and Director of the ESS Lighthouse SMART.

He is PI on the DanMAX and SINCRYS beamline projects at MAX4, and has had many institutional responsibilities including General Secretary and Treasurer of the International Union of Crystallography, member of the Scientific Advisory Council of ESS and Board member of MAX IV. He is a Fellow of the Royal Danish Academy of Science and Letters, and awards include the Queen Margrethe II Science Prize, the Danish Elite Researcher Award, the Grundfos Prize and the AU Science Prize. He was Knighted by Queen Margrethe II of Denmark in 2015. Prof. Iversen has been single responsible supervisor on 60 PhD degrees, 107 Master degrees and 98 bachelor degrees. He has published ~575 peer review papers (corresponding author on ~400, H~85, 27500 citations). Since 2000 he has been lecturer and course responsible for first year General Chemistry and second year Materials Chemistry.

### Maria-Letizia De Marco

IPCMS, Strasbourg University (France)

Title: ***"Electrochemical synthesis of shape-controlled multi-metallic nano-particles for energy conversion applications"***



Maria Letizia De Marco studied Physical and Inorganic Chemistry at "Sapienza" University of Rome. In 2019 she completed her PhD on the supercritical synthesis of Si nano-resonators at the Institut de Chimie de la Matière Condensée de Bordeaux (ICMCB), and subsequently worked as postdoctoral researcher at LCMCP (Paris) and the Fritz Haber Institut (Berlin). In 2023 she obtained a Junior Professor Chair at the Institut de Physique et Chimie des Matériaux de Strasbourg (IPCMS). Her current research focuses on the synthesis of multimetallic particles by chemical and electrochemical approaches, and the study of their formation and stability under catalytic conditions by in situ Transmission Electron Microscopy (TEM).

### Cara Doherty

CSIRO Materials Science & Engineering (Australia)

Title: ***"Fabrication of Metal-Organic Framework Based Sensors and Energy Devices"***



Cara Doherty is the Research Team Leader for the 'Applied Porous Materials' group at Australia's research organisation CSIRO. Cara's current research efforts are to develop porous materials used for the benefit of the environment including sensors, energy storage devices and membranes for key separation processes. She specialises in nano-pore analysis using positron annihilation lifetime spectroscopy (PALS) to elucidate the structure-property mechanisms of the porous materials

[Website](#)

### Glenna L. Drisko

ICMCB, CNRS Bordeaux University (France)

Title: ***"From the redox synthesis of silicon particles to the formation of optically resonant core-shell particles"***



Glenna L. Drisko focuses on the convective assembly of thin films and solution-based routes to synthesize silicon particles.

[Website](#)

### Jiye Fang

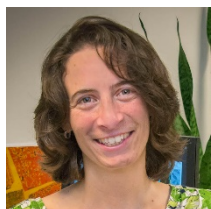
Materials Science and Engineering Program (MSE), State University of New York at Binghamton (USA)

Title: ***"Synthesis of Platinum-Based Nano-Octahedra and Their Electrocatalytic Performance in Oxygen Reduction"***



Jiye Fang earned his Ph.D. in Materials Science from the National University of Singapore in 1999. From 1999 to 2002, he served as a Postdoctoral Associate and later as a Research Specialist in the Advanced Materials Research Institute. Joining the Chemistry Department at the University of New Orleans as an Assistant Professor in 2002, he later transitioned to the State University of New York at Binghamton in 2006. Fang received the NSF CAREER award for his contributions. Currently, he holds the position of Professor of Chemistry and MSE at Binghamton. His research focuses on synthesizing shape-controlled nanocrystals, self-assembly and superstructure, pressure-induced phase transitions, lattice strain analysis of noble metal-based nanocrystals, and developing advanced catalysts for oxygen reduction reactions and small molecule oxidation in both acidic and alkaline environments. He has authored over 170 peer-reviewed journal articles.

[Website](#)



### Naomi S. Ginsberg

University of California, Berkeley (USA)

**Title : “Following and controlling formation and function of bottom-up assembled nanomaterials”**

My research group focuses on how emerging, often hierarchical, materials form, transform, and transport energy at the nanoscale. We elucidate electronic and molecular dynamics in a wide variety of (soft) electronic and biological materials by devising new electron, X-ray, and optical imaging modalities to characterize dynamic processes at the nanoscale, as a function of their heterogeneities and over a wide range of time scales. [Website](#)



### Lucy Gloag

Australian National University (Australia)

**Title : “Hierarchical nanostructures for high performance electrocatalysis”**

My research interests relate to the development of functional energy materials, specifically the synthesis and characterisation of nanomaterials for electrocatalytic application. The overarching scientific question I aim to answer with my research is ‘how can nanostructure be used to enhance the performance of electrocatalysts?’. To do this, I use solution-phase synthesis of nanoparticles with precise control of the crystal structure, dimensions and surface faceting and relate these structural features to the electrocatalytic properties using transmission electron microscopy and electrochemistry.

[Website](#)



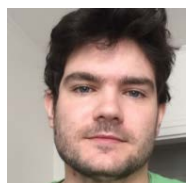
### David Grosso

Institut Matériaux Microélectronique Nanosciences de Provence, Toulon (France)

**Title : “Direct NIL patterning of sol-gel based metal oxides etasurfaces with controlled optical properties; applications in optics, photonics, and sensing”**

David Grosso (Prof. AMU and IUF / CTO Solnil) research activity concerns the development of methods to elaborate materials through the versatile and unique combination of sol-gel chemistry, liquid solution processing, self-assembly mechanisms, and micro-nano fabrication methods (i.e. nano-imprint, wet/dry etching, lithography, etc.). He also develops environmental ellipsometry characterization methods.

[Website](#)



### Cyrille Hamon

Laboratoire de Physique des Solides, Orsay (France)

**Title: Assembly of plasmonic nanoparticles into supercrystals with unusual symmetries**

Cyrille Hamon focuses on devising new plasmonic architectures through nanoparticle shape engineering and the implementation of strategies for controlling self-assembly processes.

[Website](#)



### Eric Hill

University of Hamburg (Germany)

**Title: Optically-directed approaches to colloidal assembly at interfaces**

Eric was raised in Houston, TX, receiving his bachelor's degree at Southern Oregon University and Ph.D. at the University of New Mexico, and carrying out postdocs in CIC-biomaGUNE (Spain) and UT Austin. In 2018 he started a research group in Hamburg, Germany, focusing on colloidal synthesis and assembly.

[Website](#)



### Dale Huber

CINT, Sandia National Laboratories (USA)

**Title: “Precisely Controlling Nanoparticle Syntheses: From Molten Metal Baths to Microfluidics and Artificial Intelligence”**

Dale L. Huber is a Distinguished Member of the Technical Staff at Sandia National Laboratories in the Center for Integrated Nanotechnology (CINT), at Sandia National Laboratories. His research interests include novel approaches to the synthesis of nanoparticles and nanocomposites with an emphasis on microfluidic approaches to increasing control and yield of materials.

[Website](#)



### Jaehoon Kim

Green Energy Material and Process Lab. (GEMP), Sungkyunkwan University (South Korea)

Title: ***Design of nanoparticles for direct CO<sub>2</sub> hydrogenation***

After working as a National Research Council Research Associate at U.S. Army Research Office (Raleigh, NC, USA), Jaehoon Kim had worked at Supercritical Fluid Research Lab. at Korea Institute of Science and Technology (KIST, Seoul, Korea) in 2007-2013. At 2013, he became a professor at School of Chemical Engineering, SKKU Advanced Institute of Nano Technology & School of Mechanical Engineering, Sungkyunkwan University (SKKU, Suwon, Korea). His field of study includes nanomaterial synthesis in supercritical fluids, biofuels, biochemicals, and direct CO<sub>2</sub> hydrogenation. He authored or co-authored more than 110 papers in international journals and more than 40 patents.

[Website](#)



### Lars Klemeyer

University of Hamburg (Germany)

Title: ***Watching the emergence of electronic- and atomic structure of colloidal ZnS nanostructures by X-ray spectroscopy and total scattering.***

Lars Klemeyer is developing solvothermal synthesis of transition metal sulfides and utilizing in situ X-ray spectroscopy (XAS/XES) and X-ray total scattering (SAXS/PDF) to resolve the reaction mechanism by monitoring the electronic and atomic structure of nanostructures during their formation.

[Website](#)



### Mariana Kober

Institute of Materials Science of Barcelona (Spain)

Title: ***"Highly stable and bright fluorescent nanovesicles for biomedical applications"***

Mariana holds a PhD in Physics from the Autonomous University of Madrid and is researcher of Nanomol-Bio group at the Institute of Materials Science of Barcelona and the Spanish Biomedical Research Network for Bioengineering, Biomaterials and Nanomedicine. Her expertise is in the field of Nanobiotechnology and Nanomedicine, and specifically in the design, development and physico-chemical characterization of lipid nanovesicles for different biomedical applications, in particular fluorescence-based imaging and sensing as well as nucleic acid delivery. Mariana is also scientific coordinator of the Biomaterials Processing and Nanostructuring Unit of the NANBIOSIS Scientific and Technical Infrastructure.

[Website](#)



### Brian Korgel

McKetta Department of Chemical Engineering, The University of Texas at Austin (USA)

Title: ***"Spanning the Color Gamut from the UV to the Far Infrared with Semiconductor Nanocrystal Quantum Dots"***

Brian A. Korgel works at the intersection of nano & mesoscopic materials chemistry and complex fluids, tackling problems in energy storage, chemical transformations, energy harvesting and conversion, and medicine.

[Website](#)



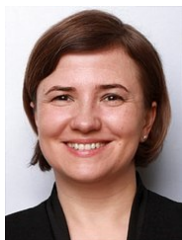
### Kirill Kovnir

Iowa State University (USA)

Title: ***"Intercalation, Oxidation, and Doping in Hybrid Chalcogenide Materials"***

Kirill Kovnir works on synthetic solid state chemistry including development of low-temperature synthetic routes towards metastable functional chalcogenides. He grew up in Ukraine. After receiving graduate studies and a couple of postdoctoral stints in Europe he moved to the US. Kirill started his independent career in 2011 at UC Davis and in 2017 relocated his group to Iowa State University. Kirill's research interests are in the broad field of solid-state and materials chemistry. Understanding the synthesis-structure-property relationship is a key to the rational design of such materials.

[Website](#)



### Dorota Koziej

Universität Hamburg - Nanostructure & solid state physics (Germany)

Title: ***"From nonaqueous synthesis of nanoparticles to photo- and photo-electro-chemically active thin films and 3D-printed aerogels"***

Dorota Koziej focuses on fabrication of complex, hierarchical materials. We learn how to control of the nonaqueous reactions at various length scales utilizing X-ray microscopy, scattering and spectroscopic techniques.

[Website](#)



### Lise-Marie Lacroix

LPCNO - UPS - Institut Universitaire de France (France)

Title : ***"From the organometallic synthesis of nanoparticles to integrated magnets"***

Lise-Marie Lacroix works on the synthesis of magnetic nanoparticles with tuneable properties and their controlled assembly into nanostructured materials.

[Website](#)



### Wiktor Lewandowski

Warszawski University - Laboratory of organic nanomaterials and biomolecules (Poland)

Title: ***"Engineering Chirality in Nanomaterials Using Liquid-Crystal"***

Wiktor Lewandowski focuses on the liquid crystal-driven assembly of achiral nanoparticles and the synthesis of nanoparticles showing chiral morphology, for chiral plasmonic and circularly polarized luminescence application

[Website](#)



### Nikolaos A. I. Nemet

Aarhus University (Denmark)

Title: ***"Commissioning Custom Built Flow Reactors to Meet the Demands of Advanced Nanomaterial Synthesis"***

Nikolaos focuses of the design, commissioning, and testing of flow reactors for the tailored synthesis of advanced nanomaterials.



### Gilles Philippot

ICMCB, Bordeaux University (France)

Title: ***"Mastering ZrO<sub>2</sub> nanocrystals polymorphism using an original continuous flow supercritical sol-gel like synthesis."***

Gilles Philippot focuses his research on the hydro- and solvothermal continuous flow synthesis of metal oxide nanocrystals with a special emphasis on the understanding of their formation mechanisms.

[Website](#)



### David Portehault

Laboratory of Condensed Matter of Paris (LCMCP), Sorbonne University, Paris (France)

Title: ***Reaction mechanisms in molten salts for the design of solid-state materials at the nanoscale***

David Portehault is research director at the French National Centre for Scientific Research (CNRS) and at the Laboratory of Condensed Matter of Paris (LCMCP) hosted by Sorbonne University. He was appointed by the CNRS in 2010. He received the 2019 EuChemS Lecture Award and was granted a European Research Council Consolidator Grant the same year. His main research topic is the exploration of new synthesis pathways at the edge of solid-state chemistry and solution chemistry, especially molten salts and aqueous chemistry, to discover original nanomaterials for energy-related properties, focused on electrocatalysis.

[Website](#)



### Emilie Pouget

Laboratory « Chimie et biologie des membranes et des nanoobjets » CBMN, Pessac (France)

Title: ***"Design of functional nanostructures via chirality induction"***

Emilie Pouget aims at developing new nanofabrication strategies based on the chirality induction principle in order to control the morphologies from the nanometric scale to the macroscopic level. Such chiral nano-objects are studied for their chiroptical, magnetochiral or catalytic properties.

[Website](#)



### Magali Putero

IM2NP, Aix-Marseille University (France)

Title: ***"Phase change materials: from emerging memories to switchable optics and metasurfaces"***

Magali Putero focuses on the study of Phase Change Materials (PCM) crystallization for emerging memories and photonics applications. More recently, she works on the use of solutions (inks) to develop PCM metasurfaces for switchable optics using nano-imprint lithography.

[Website](#)



### Lucian Roiban

MatéIS Laboratory, INSA Lyon (France)

Title: ***"2D and 3D Environmental Electron Microscopy in Gas, Liquid and Temperature"***

Lucian Roiban is tenure associate professor, expert in electron tomography for 15 years. He developed electron tomography in EFTEM mode during his PhD. He has been developing fast electron tomography in environmental conditions for the study of heterogeneous catalysts, plasmon nanoparticles and beam-sensitive objects, including soft matter.

[Website](#)



### Richard Tilley

UNSW Sydney (Australia)

Title: ***"Nanoparticles and Electron Microscopy"***

Professor Richard Tilley is the Director of Electron Microscope Unit at UNSW. His research is focused on the solution synthesis of nanoparticles for applications ranging from catalysis to biomedical imaging. He graduated with a Masters of Chemistry from Oxford University and did his PhD in the Department of Chemistry, University of Cambridge, UK, after which he was a Postdoctoral Fellow for two years at the Toshiba basic R&D Center, Japan. He spent 10 years in New Zealand in the School of Chemical and Physical Sciences at Victoria University of Wellington and became Deputy Head of School and an Associate Professor. He was also a Principle Investigator in the MacDiarmid Institute. In 2015 he joined the University of New South Wales as Director of the Electron Microscope Unit and a Professor in the School of Chemistry.

[Website](#)



### Jon G. C Veinot

University of Alberta, College of Natural and Applied Sciences - Edmonton (Canada)

Title: ***"Synthesis of high-entropy germanides and an investigation of their formation"***

Jonathan (Jon) Veinot and his research team study the synthesis, surface modification and applications of nanomaterials based upon Group 14 elements with a particular focus on silicon and germanium nanoparticles, as well as germane and most recently high entropy germanides.

[Website](#)



### Nora Ventosa

Institute of material science of Barcelona (ICMAB) CSIC (Spain)

Title: ***"CO<sub>2</sub>-based processing: key enabling technology to bring metal-free nanoparticles from the bench towards the bedside"***

Nora Ventosa is a Research professor of the Spanish National Research Council (CSIC). At the Institute of Materials Science of Barcelona (ICMAB) of CSIC she leads a laboratory for the development and application of green processes for metal-free nanoparticles and nanoformulations production. She is principal investigator of the Nanomol group at the Centro de Investigación Biomédica en Red (CIBER) in the subject area of Bioengineering, Biomaterials and Nanomedicine (CIBER-BBN). She is co-founder of the spin-off Nanomol Technologies SL. Member of the Catalan Council for Research and Innovation

[Website](#)



### Jim Watkins

University of Massachusetts Amherst - Department of Polymer Science and Engineering (USA)

Title: ***Additive Approaches to High Performance Metaoptics and Energy Devices***

Jim Watkins is Director of the Institute for Hierarchical Manufacturing and Founder of Myrias Optics, Inc. His research interests include the scalable fabrication of nanostructured devices using combinations of self-assembly, nanoimprint lithography and photothermal processing.

[Website](#)



### John Watt

Los Alamos National Laboratory – Center of Integrated Nanotechnologies (USA)

Title: ***“Controlling and Investigating Materials and their Interfaces with In-situ and Cryogenic Electron Microscopy”***

John Watt works on nanoparticle synthesis, assembly, and characterization using cryogenic and in-situ electron microscopy.

[Website](#)



### Akira Yoko

WPI-AIMR Tohoku University - T. Adschiri Laboratory (Japan)

Title: ***“Extraordinary Atomic Distortion in Ultrasmall Metal Oxide Nanoparticles: Advances in continuous flow hydrothermal synthesis”***

Akira Yoko has studied supercritical hydrothermal synthesis of metal oxide nanoparticles. Recently, he focuses on ultrasmall nanoparticle (> 1 nm) synthesis.

[Website](#)



### Cecilia Zito

University of Hamburg – Center for Hybrid Nanostructures (Germany)

Title: ***“Combining in situ X-ray methods to study the formation of nanoparticles in solution”***

Cecilia Zito focuses on novel solution-phase methods to synthesize nanomaterials, their characterization using synchrotron X-ray techniques, and their application as gas sensors.

[Website](#)