Scientific Congress' Abstracts

Monday 15th January 2024
At 13h30, amphitheatre Bernard (Hall of UFR Sciences & Techniques)

« Steps Towards Complex Matter: Chemistry »

Pr Jean-Marie LEHN (NOBEL PRIZE 1987)
ISIS, University of Strasbourg Institute for Advanced Study, France

« The evolution of the universe has generated more and more complex forms of matter through self-organization, from particles up to living and thinking matter. Mankind has created science to unravel the ways and means by which matter has become organized up to a thinking organism in particular on our planet earth. Self-organization is the process by which steps towards life and thought have emerged. Animate as well as inanimate matter, living organisms as well as materials, are formed of molecules and of the organized entities resulting from the interaction of molecules with each other. Chemistry provides the bridge and unravels the steps from the molecules of inanimate matter and the highly complex molecular architectures and systems which make up living and thinking organisms. Molecular chemistry has developed very powerful methods for constructing ever more complex molecules from atoms. Supramolecular chemistry seeks to understand and control the formation and behaviour of complex molecular assemblies. The field of chemistry is the universe of all possible structures and transformations of molecular matter, of which those actually realized in nature represent just one world among all the worlds that await to be created. Conceptual considerations on science in general will be presented. Science shapes the future of humanity ! »

« The quest for the ideal organic reaction »

Dr Victor GONCALVES
ICMUB, University of Burgundy, France

« The 2022 Nobel Prize in Chemistry has been awarded to Carolyn R. Bertozzi, Morten Meldal and K. Barry Sharpless for "the development of click chemistry and bioorthogonal chemistry". We'll look at how this family of reactions, which has grown over the course of the 21st century, now enables researchers to engineer complex biological molecules such as proteins or DNA, and even living organisms directly. We'll also explore the future clinical applications of these reactions, and see how the human body may be used as a reaction vessel ! »

« The Nobel Prize in Chemistry 2023 »

Dr Lucien SAVIOT
ICB, University of Burgundy, France

« Moungi G. Bawendi, Louis E. Brus and Aleksey Yekimov have received the 2023 Nobel Prize in Chemistry for “the discovery and synthesis of quantum dots”. We’ll navigate through the contemporary landscape of quantum dots (QDs), shedding light on their diverse applications followed by overview of the colloidal synthesis, initially conceptualized by Brus and refined by Bawendi, sets the stage for an in-depth exploration. The journey will end with a focus on Ekimov's work in quantum confinement within colored glasses, offering a glimpse into the extraordinary properties of QDs. »