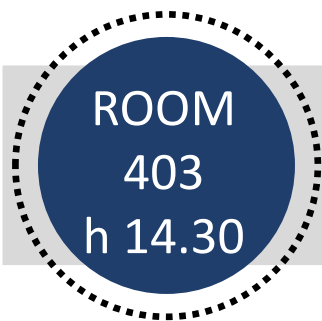


The Chemist's Interactions

Seminars @ the Chemistry Department



Thursday, 1st December 2022

Alain Walcarius

Lab. of Physical Chemistry and Microbiology for Materials and Environment – CNRS – Université de Lorraine, France



Electrogeneration of Sol-Gel Thin Films

Sol-gel electrochemistry has gained great popularity in the past decades, mostly because of the ease of formation of silica and organosilica films with tailor-made properties that can be advantageously exploited for several applications when coated on a suitable electrode surface. In particular, silica-based materials displaying a regular structure at the mesoporous level have been found to be very promising electrode modifiers because they ensure fast mass transport processes, which are often rate-determining in electrochemistry. In this context, an original electrochemical method has been developed to indirectly generate sol-gel-derived (organo)silica thin films, with promising applications in the field of bioelectrochemistry and sensors and beyond. After a brief introduction to the field, this lecture will present the concept the electrochemically-assisted generation of sol-gel films, its interest for bioencapsulation and elaboration of electrochemical bioreactors, its suitability to get nanostructured electrode surfaces with preferential pore orientation, including their modification with organo-functional groups and their permselective properties, and will end with promising applications in electroanalysis and sensors, electrocatalysis, energy storage or electrochromism.



The event will be streamed on zoom.us
for external participants!

For registrations: valentina.colombo@unimi.it



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