

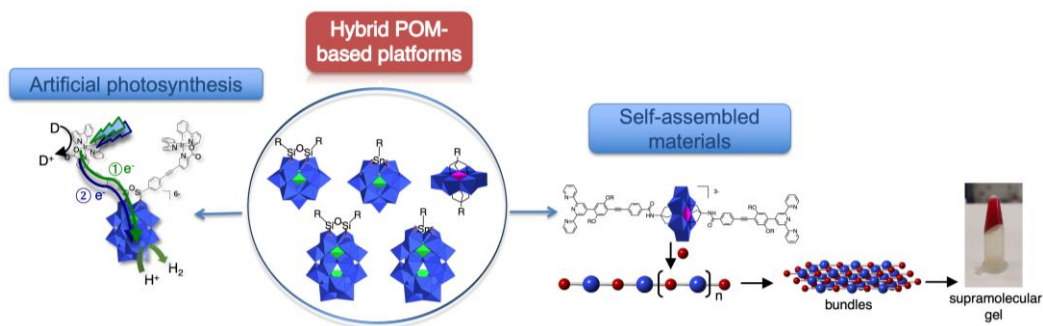
Covalent hybrid polyoxometalates, versatile platforms for the elaboration of self-assembled nano-architectures

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Tuesday 25 November 2025 | 14:00 | CNR ISOF12, Lecture Room 1st Fl.

Polyoxometalates (POMs) are molecular oxides with a wide range of applications in catalysis, medicine, and materials science. The modularity of their structural and electronic properties, their ability to accept electrons, and the diversity of their functionalization pathways make them remarkable building blocks for the design of multifunctional molecular materials. The developed approach is based on the functionalization of organic/inorganic hybrids derived from POMs through the formation of a covalent bond between the polyanion and the organic moieties.^{1,2} This covalent approach strengthens the interaction between the organic and inorganic components and facilitates their integration into complex molecular architectures or even molecular materials. Through several examples, I will present different routes for POM functionalization and the application of the resulting hybrid derivatives in artificial photosynthesis³⁻⁵ and self-assembled materials.⁶⁻⁹



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Guillaume Izzet graduated from the Ecole Nationale Supérieure de Chimie de Paris and obtained his PhD in 2004 under the supervision of Prof. O. Reinaud at Université Paris-Sud. He then pursued postdoctoral research with Prof. A. Harriman at Newcastle University and later with Prof. J. Michl at the Academy of Sciences of the Czech Republic. Appointed CNRS researcher in 2008 at IPCM, he is now research director at Sorbonne Université. He leads the e-POM team and is vice-director of IPCM since beginning of 2025.

His research focuses on inorganic supramolecular chemistry, polyoxometalate functionalization, artificial photosynthesis, and molecular electronics and photonics..



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