Title : Functionnal molecular materials for 3D printing

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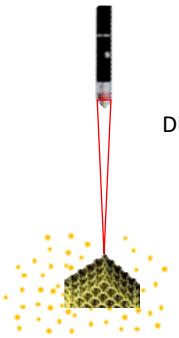
Research Area : Material Science

Methods: materials synthesis, physico-chemical & electrical characterization, luminescence, 3D printing

PhD track subject : The elaboration of 3D microstructures by Direct Laser Writing is of high interest in domains such as high-tech, biomedicine or electronics. These edifices are obtained by 2-photon polymerization (2PP) of molecular precursors with a femtosecond laser. The generation of functional architectures is ensured by a judicious chemical design of molecular precursors. The synthesis of these, their use in 2PP, and the properties of the microstructures are the backbone of the project which offers the possibility to acquire a large panel of skills in various areas from Chemistry to Physics and Electronics.



Direct Laser Writing of 3D microstructures from molecular precursors

References : *Gold metallization of hybrid organic-inorganic polymer microstructures 3D printed by two-photon polymerization*, G. Zucchi *et al*, *Surfaces and Interfaces* 39 (**2023**) 102895; *Ultra-Low Shrinkage Hybrid Photosensitive Material for Two-Photon Polymerization Microfabrication*, A. Ovsianikov *et al.*, *ACS Nano*, **2008**, 2 (11), 2257-2262 .