Physical chemistry of nano and organometallic materials

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PHYNOM members investigate the synthesis, properties and applications of nano and organometallic materials. PHYNOM is organized in two units.
The research of the Physical Organometallic Chemistry unit is aimed at the spectroelectrochemical study of the optical and redox properties of *ad hoc* synthetized (multi)ferrocenyl systems in which the metal-to-metal charge transfer is mediated by different organic backbones, such as peptides, aromatic polycycles and photochromic molecules.
The Laser Assisted Synthesis and Plasmonics unit focuses on laser generation of colloids to produce plasmonic and other multifunctional nanoparticles for photonics, sensor science, nanomedicine, catalysis and related fields. Mechanistic aspects of laser synthesis in liquids, which include laser ablation, laser fragmentation and laser melting, are also investigated.

- *A quarter-century of nanoparticle generation by lasers in liquids: Where are we now, and what's next?,* J. Coll. Interf. Sci., **2017**, 489, 1-2.
- *Benzodithiophene and Benzotrithiophene as π-Cores for Two- and Three-Blade Propeller-Shaped Ferrocenyl-Based Conjugated Systems*, Eur. J. Org. Chem., **2017**, 5966-5974.
- *Hydrogen-Bond-Assisted, Concentration-Dependent Molecular Dimerization of Ferrocenyl Hydantoins*, Organometallics, **2017**, *36*, 2190-2197.
- *Surface plasmon resonance in gold nanoparticles: a review,* J. Phys.: Condens. Matter, **2017**, 29, 203002.
- *Enhanced Electrocatalytic Oxygen Evolution in Au–Fe Nanoalloys,* Angew. Chem. Int. Ed.*,* **2017**, 56, 6589-6593.