

Molecular Materials, Colloids & Modeling (M₂CM)

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Design, synthesis, characterization, and modeling of supramolecular structures and of nanocrystalline inorganic colloids with applications ranging from energy to nanomedicine by way of catalysis and optics are at the core of our scientific activity. Innovative inorganic nanostructures are obtained in the former case through strategies of molecular self-assembly by exploiting non-covalent, selective and directional interactions, in the latter one by sustainable wet chemistry and colloidal routes. Furthermore, organic-inorganic hybrid materials are prepared starting from suitably functionalized inorganic building blocks. All the systems are studied and characterized with advanced experimental and computational techniques. Advanced synchrotron-assisted analytical methods (XAS, photoemission, SAXS) complement the chemico-physical and structural characterizations at Home.

- *Pursuing the Crystallization of Mono- and Polymetallic Nanosized Crystalline Inorganic Compounds by Low-Temperature Wet-Chemistry and Colloidal Routes*, Chem. Rev., **2015**, 115, 11449-11502.
- *Hampered Subcomponent Self-Assembly Leads to an Amino Ligand: Reactivity with Silver(I) and Copper(II)*, Eur. J. Inorg. Chem., **2017**, 30-34.
- *Energetics of CO oxidation on lanthanide-free perovskite systems: the case of Co-doped SrTiO₃*, Phys. Chem. Chem. Phys., **2016**, 18, 33282-33286.
- *Very high temperature tiling of tetraphenylporphyrin on rutile TiO₂(110)*, Nanoscale, **2017**, 9, 11694-11704.
- *Cu(I) and Ag(I) complex formation with the hydrophilic phosphine 1,3,5-triaza-7-phosphadamantane in different ionic media. How to estimate the effect of a complexing medium*, Dalton Trans., **2017**, 46, 1455–1466.