NOVEL SYNTHESIS OF METAL OXIDE NANOPARTICLES FROM TYPE IV DEEP EUTECTIC SOLVENTS

Lorenzo Gontrani,[1] Marilena Carbone,[1] Domenica Tommasa Donia,[2] Elvira Maria Bauer,[3] Pietro Tagliatesta[1]

[1] *Department of Chemical Sciences and Technologies, University of Rome "Tor Vergata", Via della Ricerca Scientifica 1, 00133 Rome, Italy*
[2] *Department of Surgical Science, University of Rome "Tor Vergata", Via Montpellier 1, 00133 Rome, Italy*
[3] *Institute of Structure of Matter, Italian National Research Council (ISM-CNR), Via Salaria km 29.3, 00015 Monterotondo, Italy*
lorenzo.gontrani@uniroma2.it

One of the fields where DES show remarkable added-values is the synthesis of inorganic materials, in particular nanoparticles. In this field, the inherent and highly-tunable nano-homogeneities of DES structure give origin to a marked templating effect, a precious role that has led to the recent bloom of a vast number of studies exploiting these new synthesis media to prepare nanomaterials and composite structures of various kinds. In this contribution, the most recent developments in the field will be reviewed and some exciting examples of novel metal oxide nanoparticles syntheses using non-toxic type-IV Deep Eutectic Solvents will be described. The prepared materials possess nanometric dimensions and show flower-like/thin-layered shapes. Use of the prepared nanoparticles as fluorescent materials for the detection of various contaminants is under development.

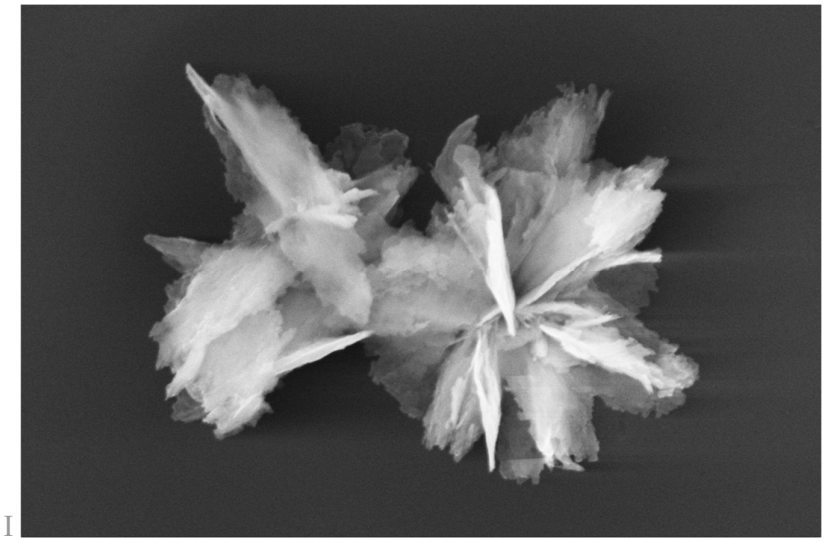

Figure 1*: Zinc oxychloride nanoparticle synthesized in Reline*