

University of Ioannina (UIOAN)

<http://www.uoi.gr/gr/schools/sciences-technologies/materials.php>

General

The Layered and Nanoporous Materials Group, participating in NANOMAG, is part of the Ceramics and Composites Lab, at the Department of Materials Science and Engineering of University of Ioannina (Greece). The group is an internationally recognized group in the area of phyllosilicates, in particular clays, pillared clays, organo-clays, carbon layered structures and hybrid organic-inorganic nanocomposites, consisting of 4 faculty members, 1 technician, 3 postdoctoral fellows, 11 postgraduate (5 PhD and 6 MSc) students. The group has extensive experience on intercalation reactions of various organic molecules, metals, complexes and nanoparticles in the interlayer space of layered materials that can be utilized for the synthesis of highly-ordered two dimensional magnetic systems. Members of the group have been involved as coordinators/partners in 4 EU and other international research projects.

Infrastructure

The facilities available include chemical synthetic lab, Langmuir-Blodgett system, XRD, DTA/TG, AFM, FTIR & micro-Raman.

The role of the Uoi group in the consortium will be to train people in the use of the above growth techniques (prominently Langmuir-Blodgett, chemical synthesis and intercalation) and to exchange expertise and contribute to the (i) Synthesis and functionalization of molecule/organic-based-magnets and (ii) Fabrication and testing of prototype spintronic devices.

Key scientists

Prof. D. Gournis (Head of UIOAN Group) chemistry of layered and nanoporous materials: clay-based materials, hybrid organic-inorganic nanocomposites, *Prof. M. A. Karakassides* Glasses, glass-ceramics and bioceramics, Raman and Infrared spectroscopy, *Dr. K. Dimos* nanocomposite mesoporous materials, biodegradable scaffolds by hydrogels for biomedical applications, *Dr. M. Baikousi* novel hybrid materials consisting of inorganic host matrices and metallic, metal oxide or organic-inorganic nanoparticles, *1PhD student*