

Partner offer (competences/expertise)

Organization description

My group has an internationally recognized know-how in the fabrication and modification of supported inorganic nanoarchitectures by vapor phase routes. We can offer a long-standing know-how in plasma-assisted techniques for the preparation of a wide variety of metal+oxide materials (nanorods, nanoplatelets and nanocomposites ...), that can be grown on a huge variety of substrates even at moderate temperatures.

We can offer well developed competencies in the preparation of every kind of needed material and in their detailed characterization by XPS, XE-AES, EDXS, IR, SIMS, AFM, FE-SEM, XRD, UV-Vis-NIR.

In the framework of external cooperations, the fabricated materials are investigated as multi-functional platforms, ranging from the detection of flammable/toxic gases, to photocatalytic applications (pollutant decomposition, superhydrophilicity, light-triggered self-cleaning and anti-fogging systems, photo-assisted H₂ production) up to anodes for Li-ion batteries.

Expertise

The group is, or has been, recently involved in various national and international projects in the field of inorganic nanomaterial design, characterization and functional investigation, among which the following two European Consortia:

- NMP4-SL-2012-310333: Water Oxidation Nanocatalysts for Sustainable Solar Hydrogen Production through Visible-Light Activity; (SOLAROGENIX) (<http://www.solarogenix.eu/>)
- FP7-PEOPLE-ITN-2008-238409 - European Research Training Network of New Materials: Innovative Concepts for their Fabrication, Integration and Characterisation; (ENHANCE) (<http://www.enhance-itn.eu/>)

Despite being composed by only a few young scientists, the group has a first-class track record, corresponding to 101 publications on ISI International Journals, 20 other publications, 3 national and international patents and 110 conference communications (of which 17 invited lectures/seminars), only in the period 2010-2015.

Keywords

Nanomaterials, Oxides, Vapor-phase synthesis, Characterization, Morphology, Structure, Composition, Gas sensors, Photocatalysis, Energy-efficient buildings

....we are also open to cooperations in all fields regarding applications of advanced nanomaterials

Topics

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New knowledge and technologies

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Organisation: Research Organization