EUROMAT 2019 / Area A

SYMPOSIUM: A2

Title: Multifunctional Materials for Novel Applications

Organizer	Institution	Contact email
Paloma Fernández	University Complutense, Madrid, Spain	arana@ucm.es
Ana Urbieta	University Complutense, Madrid, Spain	anaur@ucm.es

Abstract

Functional materials are being constantly revisited due to the new applications arising every day. Due to a high surface to volume ratio, significant transport properties, and confinement effects resulting from the nanoscale dimensions, nanostructured materials are extensively studied for energy-related applications such as solar cells, catalysts, thermoelectrics, lithium ion batteries, super-capacitors, and hydrogen storage systems, environmental, electronic, optic, sensing and medical applications to mention a few. The symposium is intended to cover in a multidisciplinary way the different approaches present in the actual research to improve or design new nano and micromaterials of interest for a wide range of applications. The targeted topics include fundamental as well as applied aspects on material design, synthesis, theory and modelling, properties of interest and application of nanomaterials. To mention a few topics, but not limited to:

Nanoparticles, Nanowires or nanotubes, Bidimensional or layered materials, composite materials

Nano and microstructures, heterostructures, novel geometries, and integration for improved electronic, optical, sensing and/or energy generation/storage performance.

Materials grown by novel routes

After growth treatments to improve the physical properties

Growth of self-arranged structures

Obtaining of novel morphologies with different functionalities

Doping processes at the nano- and microscale

High yield growth procedures at nano- and microscale

Influence of the growth method on the defect structure

Electrical and Optical Properties (lasing, resonant cavities…)

Sensing behaviour and other functional properties as piezoelectricity, magnetism or photocatalysys

Advanced and in situ-characterization techniques of nano and micromaterials