

EUROMAT 2017/ Symposia Structure/Area A

A.7	Title: Functional Nanomaterials for Novel Applications		
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Summary			
<p>Functional materials have to be constantly developed and improved for many applications, e.g. energy related. 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. Resulting from their nanoscale dimensions, they exhibit a high surface to volume ratio, excellent transport properties, and confinement effects. The symposium intends to cover all these in a multidisciplinary way. The different approaches in the actual research to improve or design new nano and micromaterials of interest for a wide range of applications will be presented. The targeted topics include fundamental as well as applied aspects of material design, synthesis, theory and modelling, properties of interest and application of nanomaterials. The topics include, but are not limited to:</p> <ul style="list-style-type: none"> ➤ Nanoparticles, nanowires or nanotubes, two-dimensional or layered materials ➤ Nano and microstructures, heterostructures, novel geometries, and integration for improved electronic, optical, sensing and/or energy generation/storage performance. ➤ After-growth treatments to improve the physical properties ➤ Growth of self-arranged structures, self-assembly ➤ Materials grown by novel routes ➤ Obtaining novel morphologies with different functionalities ➤ High-yield growth procedures at nano- and microscale ➤ Influence of the growth method on the defect structure ➤ Doping processes at the nano- and microscale ➤ Electrical and Optical Properties (lasing, resonant cavities...) ➤ Sensing behaviour and other functional properties as piezoelectricity or magnetism ➤ Ferroelectric heterostructures ➤ Nanostructured thermoelectrics ➤ Advanced and in situ-characterization techniques of nano and micromaterials 			