

EUROMAT 2017/ Symposia Structure/Area A (Functional Materials)

	Title: Materials by Design		
	Organizer	Institution	Contact email
	Julien Varignon	Unité Mixte De Physique CNRS Thales, France	Julien.varignon@gmail.com
	Nicholas C. Bristowe	Imperial College London, UK	n.bristowe@imperial.ac.uk
A.8	Summary		
	<p>ABO₃ oxide perovskites, and related materials, have attracted widespread interest over the last several decades with much thanks owed to the original discoveries of colossal magnetoresistance and high-temperature superconductivity in these systems. However, the physical behavior of perovskites is not limited to these phenomena, which also display ferroelectricity, (anti)-ferromagnetism, structural distortions, orbital and charge orderings, metal-insulator transitions or thermoelectricity to name a few. This diverse range of properties is usually ascribed to the subtle interplay between the structural, electronic and magnetic degrees of freedom, yielding promising multifunctional behavior. Therefore, oxide perovskites appear as building blocks to engineer novel exotic phenomena through the combination of appropriate strategies, most notably using strain and/or interface engineering. The search of novel materials with multifunctional character is not restricted to fundamental academic interest, but these systems show huge potential for device applications, and indeed some have already entered into industry.</p> <p>Researchers are welcome to present their recent discoveries and developments, both at the experimental and theoretical level, on both bulk perovskites and related materials, as well as thin films and heterostructures. The symposium aims to cover these potential topics:</p> <ul style="list-style-type: none"> – Interfacial properties and 2 dimensional electron gas; – Ferroics, multiferroics and magnetoelectric materials; – Metal-insulator phase transition phenomena; – Flexoelectricity; – Electro/Magneto/Elasto-caloric effects; – Advances in ab initio calculations and experimental methods; – Domain boundary phenomena; – Light-induced phenomena. <p>Invited speakers</p> <p>Prof. Guus Rijnders, University of Twente, The Netherlands Dr. Jorge Íñiguez, Luxembourg Institute of Research and Technology, Luxembourg.</p>		