

EUROMAT 2019 / Area D

SYMPOSIUM: D3

Title: Mechanical characterization and modelling of advanced materials		
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Abstract		
<p>Advanced materials are used in a broad spectrum of applications in Aerospace, Aviation, Automotive, Medicine and Energy sectors. Multifunctional, smart and composite materials concentrate an attractive combination of properties, i.e. light weight, high stiffness, high strength, and in some cases they are thermo-mechanically triggered to deliver actuation properties. Understanding the science and physics that impact on the mechanical properties of these materials requires a multidisciplinary approach involving advanced experimentation and modeling. The aim of this symposium is to foster the current trends in mechanical characterization and modelling of advanced materials.</p> <p>The topics to be covered by the symposium are:</p> <ul style="list-style-type: none">• Multifunctional materials• Shape memory alloys• Piezoelectric materials• Micro/nano composites• Porous materials• Smart materials• Mechanical and thermo-mechanical properties• Effective properties• Actuation fatigue• Constitutive laws• Modelling and homogenization methods• RVE, periodic mesh and boundary conditions		