

EUROMAT 2021

EUROPEAN CONGRESS AND EXHIBITION
ON ADVANCED MATERIALS AND PROCESSES

WWW.EUROMAT2021.FEMS.EU

12. - 16. SEPTEMBER 2021

GRAZ, AUSTRIA

ASMET[®]
THE AUSTRIAN SOCIETY FOR
METALLURGY AND MATERIALS

FEMS
FEDERATION OF EUROPEAN
MATERIALS SOCIETIES
1987 - 2017
www.FEMS.org

Area A

Symposium A8

<i>Multi-purpose materials (electronic, magnetic, thermal, sensors/actuators)</i>		
<i>Organizer</i>	<i>Institution</i>	<i>Contact email</i>
Bruno Dlubak	CNRS/Thales, France	bruno.dlubak@cnrs-thales.fr
Pierre Seneor	CNRS/Thales, France	pierre.seneor@cnrs-thales.fr
Barbara Stadlober	Joanneum Research, Austria	barbara.stadlober@joanneum.at
Andreas Rudorfer	Joanneum Research, Austria	andreas.rudorfer@joanneum.at
Abstract		
<p>Multipurpose materials are being constantly revisited and improved due to new and disruptive applications arising every day. Materials that combine electronic, magnetic, thermal, sensing, actuating and energy harvesting functionalities pave the way for currently highly demanded novel applications that require multifunctional, low energy consuming and bio-compatible solutions. This is especially true for multipurpose materials that are applied by printing or additive manufacturing techniques on various substrates, be they rigid, flexible or stretchable. In addition, multipurpose materials that are top-down micro- and/or nanostructured are extensively studied for energy-related applications such as solar cells, catalysts, thermoelectrics, lithium ion batteries, supercapacitors, hydrogen storage systems, but also targeting functionalities for environmental, electronic, optic, magnetic, thermal, sensing and medical applications. This is caused by a high surface to volume ratio, which boosts the transport properties, whereas the nanoscale dimensions may induce confinement effects.</p> <p>The symposium is intended to cover in a multidisciplinary way the different approaches present in the actual research to improve or design new multipurpose, micro/nanostructured materials 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 applications. To mention a few topics, but not limited to:</p> <ol style="list-style-type: none">1. Multipurpose materials combining different functionalities like electronic, magnetic, thermal, sensing, actuating and/or energy generation/storage performance.2. Nano- and microstructured materials, heterostructures, novel geometries, and integration for improved electronic, magnetic, thermal, sensing, actuating and/or energy generation/storage performance.3. Doping processes at the nano- and microscale for improving the multifunctionality of materials.4. Sensing behavior and other functional properties like piezoelectricity, multiferroics, magnetism or photocatalysis.5. Organic and/or printed (opto)electronic materials for organic thin film transistors, organic light emitting diodes and organic photovoltaic devices.		

EUROMAT 2021

EUROPEAN CONGRESS AND EXHIBITION
ON ADVANCED MATERIALS AND PROCESSES

WWW.EUROMAT2021.FEMS.EU

12. - 16. SEPTEMBER 2021

GRAZ, AUSTRIA

ASMET[®]

THE AUSTRIAN SOCIETY FOR
METALLURGY AND MATERIALS

FEMS

FEDERATION OF EUROPEAN
MATERIALS SOCIETIES

30

1987 - 2017
www.FEMS.org

6. Micro/nanostructured and /or printed energy harvesting and energy storage devices.
7. Biocompatible and optionally micro/nanostructured multipurpose materials for biosensors, bioelectronics and implantable medical devices.