

EUROMAT 2021

EUROPEAN CONGRESS AND EXHIBITION
ON ADVANCED MATERIALS AND PROCESSES

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12. - 16. SEPTEMBER 2021

GRAZ, AUSTRIA

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METALLURGY AND MATERIALS

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Area C

Symposium C.7

Title: Green Polymer Processing		
Organizer	Institution	Contact email
Doros Theodorou	National Technical University of Athens (NTUA)	doros@chemeng.ntua.gr
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Abstract		
<p>The prominent role played by polymers in today's world is evidenced by their numerous and diverse applications, for example as packaging materials for foods, cosmetics, consumer goods and healthcare supplies; lightweight engineering plastics in the electronics, automotive and aerospace industries; damage-tolerant and insulating materials for modern buildings; high-strength fibers for textiles and composites in the construction, transport, aerospace and energy industries; printed circuit boards and photoresists for microelectronics; coatings for corrosion and wear protection; films for more efficient agriculture yields; adhesives; membranes for gas separations, water purification, and pollution abatement; and biomaterials for sutures, artificial organs, implants, drug delivery systems, and dental fillings. In the face of contemporary challenges presented by diminishing fossil fuel resources, increasing energy demand, environmental pollution, global warming, spreading pandemics, and social inequity, the need for sustainable polymer production and use becomes imperative. We must develop "green" polymer technologies, where the term green "implies meeting the needs of the present without compromising the ability of future generations to meet their own needs."</p> <p>This Symposium will highlight cutting-edge research and development in the field of green polymer products and processes. Targeted topics will include, but not be limited to:</p> <ul style="list-style-type: none">• Advances in recyclable packaging• Development of healthier polymers/composites for commodity and specialty applications• Environmentally friendly polymer products and processes• Ionic liquid and deep eutectic solvents for polymers.• Resource and energy- effective polymer manufacturing• Production of polymers from carbon dioxide or from bio-refinery products.• Use of natural products as monomers and fillers.• Using living cells as solar-powered polymerization reactors		

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High-quality, original research papers are invited that focus on all aspects of “green” polymer science and technology, including materials design at molecular and supramolecular levels; synthesis; characterisation; rheology and processing; measurement of thermal, mechanical, electrical, interfacial, and permeability properties; wear, degradation, and long-term performance; recycling and lifecycle analysis; and elucidation of structure-property-processing-performance relations via modelling and via machine learning methodologies.