

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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Area A

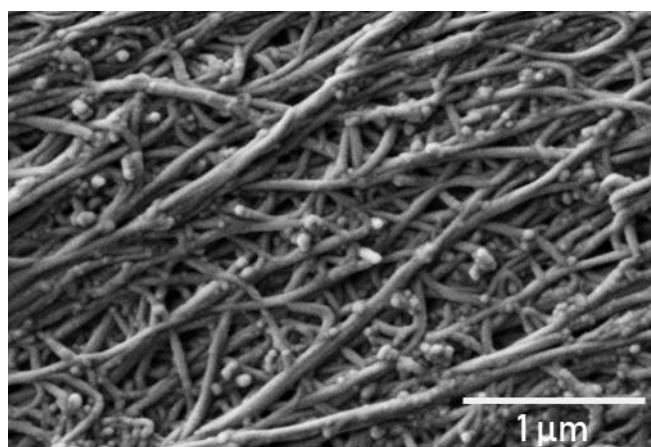
Symposium A7

Nanostructured network materials

<i>Organizer</i>	<i>Institution</i>	<i>Contact email</i>
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Abstract

Nanostructured network materials are macroscopic ensembles of nanoparticles whose bulk properties emerge from collective interaction between nanoparticles. As such, they often present a hierarchical structure and intricate relations between structure and properties. Examples range from porous solids, such as arrays of nanocellulose, yarns of carbon nanotubes, fabrics of 2D nanosheets, felts of electrospun nanofibres, to complex heterostructures such as nanostructured battery electrodes or engineering tissue scaffolds.



This symposium aims at bringing together scientists across different fields to identify a common ground to improve current understanding on the structure-property relations in nanostructured network materials, to identify methods to tailor their assembly at the point of fabrication to control bulk behaviour, and to consolidate future trends.

The symposium welcomes contributions from experimental and/or simulation work in the areas of:

- Particle synthesis and macroscopic assembly (wet-chemical methods, electrospinning, floating catalyst CVD)
- Structural characterisation methods during and after assembly (multi-scale studies, spectroscopic and diffraction techniques, etc)
- Mechanical properties and relation to macroscopic fibrous materials
- (damage tolerance, multi-scale testing)

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- Energy storage (stabilisation of LIB electrodes, strategies to increase cyclability, network electrode optimisation)
- Bioengineering applications (cell compatibility, growth and propagation)
- Multifunctional concepts and coupled properties (piezoresistive networks, stretchable conductors, bioactive materials, reinforced electrodes)