

EUROMAT 2019 / Area A

SYMPOSIUM: A3

Title: Organic and Inorganic Ion Conducting Materials		
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Abstract		
<p>Scope</p> <p>This symposium will cover fundamentals and applications of solid ion conductors. There are important challenges to be tackled regarding the relatively low ionic conductivity at reduced temperature of most solid electrolytes, which can be improved using e.g. nanostructuring, doping, the formation of composites or of hybrid organic-inorganic materials, or a better nanophase separation. A second challenge is the improvement of the electrode/solid electrolyte interface, related e.g. to an imperfect solid/solid contact, the existence of mechanical pressures (compressive or tensile) related to the ion transfer, or the ion depletion near interfaces due to space charge effects.</p> <p>Major advantages of solid electrolytes are the simpler device design and fabrication (no need for liquid containment, facile shaping, patterning and integration), the vast opportunities for miniaturization, using for example thin-film membranes, and the excellent thermal stability and safety (non-volatile and non-flammable). Experimental and theoretical studies of the functional properties of solid ion conductors, mechanisms of ion transport, and applications of these functional materials are targeted, including electrochemical, environmental, or biochemical fields.</p> <p>Targeted topics include, but are not limited to:</p> <ul style="list-style-type: none">- Crystalline solid ion conductors- Amorphous and glassy solid ion conductors- Composite solid electrolytes- Thin film solid electrolytes- Hybrid organic-inorganic materials- Ionomers- Mixed ionic-electronic conductors		

- Solid electrolytes for applications