

EUROMAT 2017/ Symposia Structure/Area A

E.2	Title: Batteries and Supercapacitors		
	Organizer	Institution	Contact email
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Summary			
<p>Scope</p> <p>Rechargeable batteries and supercapacitors are in the center of interest all over the world for the development of electrochemical energy storage systems from the macroscale to the microscale. At the macroscale, redox flow batteries are credible power storage systems for the intelligent grid and various chemistries are currently developed, including and beyond all-vanadium redox flow batteries. Electrical transportation, including electric or hybrid electric vehicles, is another major topic of interest, which relies on sufficiently powerful and durable power sources. On the microscale, the development of autonomous systems for microelectronics and the internet of things relies on independent rechargeable micropower sources, such as 3D microbatteries.</p> <p>This symposium invites contributions covering the various chemistries developed in the domain of rechargeable batteries and supercapacitors.</p> <p>The topics include advances in redox flow batteries, Li-ion and Li-metal batteries, including Li-air and Li-S, Na-ion batteries and new chemistries studied in recent years, such as Mg and Ca batteries.</p> <p>Improved high voltage cathode and high insertion capacity anode materials are continuously increasing the battery performances. Another highly investigated field, fundamental for a further size reduction and safety improvement of power systems, is that of solid electrolytes, including inorganic ceramics and glasses as well as organic polymers.</p> <p>High performance microbatteries are fundamental for the development of autonomous microsystems, including micro-sensors, micro-actuators and micro-electromechanical systems (MEMS).</p> <p>In the field of supercapacitors, carbon-based double-layer capacitors are studied as well as oxide-based pseudocapacitors and hybrid systems.</p> <p>Leading experts in the field will present ground-breaking advances reached in the last years in the battery and supercapacitor field. Oral and poster communications are invited to present the very last innovations and advances on the following topics.</p>			

Targeted topics

Rechargeable Li-ion and Li metal batteries

Li-sulfur and Li-air batteries

Na-ion batteries

New chemistries (including Mg and Ca batteries)

Redox flow batteries, including all-vanadium and other chemistries

High voltage cathode materials

High insertion anode materials

Inorganic solid electrolytes

Solid polymer electrolytes

Microbatteries (2D and 3D)

Supercapacitors

Carbon-based double-layer capacitors

Oxide pseudocapacitors

List of confirmed invited speakers

Peter Bruce (Univ. Oxford, UK)

Thierry Djenizian (Ecole des Mines St Etienne, France)

Stefano Passerini (Helmholtz Institute Ulm, Germany)

Tom Zawodzinski (Univ. Tennessee, USA)