

Dr Christophe Aucher

Energy Storage Team Leader, LEITAT R&D Department

Critical raw material free battery technology for automotive and stationary applications

The growth of energy needs and the depletion of the fossil resources demand the development of sustainable energy alternatives including both energy harvesting and storage. For the latter, new battery technologies are emerging to respond to this challenge, to reach higher performances, with respect to products already on the market and reaching their limit, and to decrease our dependency on suppliers out of Europe. Thus, CRM-free batteries such as lithium-air (Li-air), lithium-sulfur (Li-S) and aluminum-ion (Al-ion) batteries are receiving great attention.

Three European projects, namely ALION ("High specific energy aluminum-ion rechargeable decentralized electricity generation sources"), POROUS4APP ("Pilot plant production of controlled doped nanoporous carbonaceous materials for energy and catalysis applications") and ALISE ("Advanced Lithium Sulfur battery for xEV") aim for the development of new active materials, adapted to the issues proper to each battery technology.

The projects include also component manufacturers, battery assemblers and final users for the technology validation. Al-ion technology has been assessed for isolated microgrid application whereas Li-S technology has been assessed for PHEV and BEV.