# Solid-state batteries vienna

Solid-state batteries vienna

The research area"Solid State Batteries"deals with a highly promising technology. Solid state batteries do not contain liquid electrolytes (which are flammable) and are thus safer and more durable. A number of suitable materials are already known - such as polymers, ceramics and glasses, or sulfide-based substances - each of which has specific advantages and disadvantages. Corresponding manufacturing methods for solid-state batteries are now being developed in a new solid-state battery lab at AIT.

HomepageResearch TopicsSolid State BatteriesProjekteHELENA

All-solid-state lithium-metal batteries (ASSLMBs) are attracting huge attention because of their high theoretical energy density and much-improved safety. In the development of this technology, a solid-state electrolyte is an indispensable component to replace conventional organic separators and flammable organic liquid electrolytes. Solid-state halide electrolytes have gained revived research interests owing to their high ionic conductivity and high-voltage compatibility.

The transport sector contributes significantly to CO2 emissions with a share of about 30 per cent, with road and air transport being the biggest polluters. In order to achieve the climate targets, there is therefore an urgent need for action in these areas. Electric vehicles play a decisive role in this, as they use energy much more efficiently than conventional vehicles with combustion engines.

However, sustainable electrification is not only about efficiency during operation, but also about environmentally friendly production. This is a key feature of batteries made in Europe: they should be produced with a low carbon footprint and be integrated into the circular economy along the entire value chain. The production of environmentally friendly batteries is therefore an important aspect of fully exploiting the potential of electromobility and paving the way for a sustainable transport transition.

Within the HELENA project AIT supports the lab scale preparation of battery components and cell assembly with the development of catholyte formulation and processing, electrochemical characterization of individual battery components, assembly and testing of prototype pouch cells. Furthermore, the HELENA cell behaviour in realistic use cases from automotive and aeronautic applications will be evaluated with numerical system simulation.

Helmut K?hnelt, Senior Scientist and AIT project coordinator, adds: "After road vehicles, aircraft are now to be electrified and need safe, high energy and power dense batteries. HELENA"s halide-based solid-state cell technology will enable zero-emission air mobility from electric air taxis to 20 seat miniliners and is in line with the needs of future hybrid-electric regional and rotary-wing aircraft."

This project has received funding from the European Union"s Horizon Europe research and innovation

programme under grant agreement No. 10106968 (HELENA).

Contact us for free full report

Web: https://www.hollanddutchtours.nl/contact-us/
Email: energystorage2000@gmail.com
WhatsApp: 8613816583346