Prof. Philipp Adelhelm



Faculty of Mathematics and Natural Sciences
Department of Chemistry
Physical Chemistry of Materials / Electrochemistry

Expertise

The working group, of which Professor Adelhelm is head of, is engaged with the field of applied materials research. Where the main research focus lies on materials, which are suited for power storage in batteries. Therefore especially lithium-ion- and sodium-ion batteries, as well as alternative cell designs (metal-, sulphur- and all-solit-batteries) are being explored. However, the working groups goal has always been explorative research and the complete clarification of physico-chemical correlations.

Scientific Services

- material synthesis: ball mills, wet chemistry laboratory, stoves, calcination (grams scale)
- techniques of characterization: Powder X-Ray Diffraction (P-XRD), Scanning electron microscopy (SEM) and energy dispersive X-ray spectroscopy (EDS), Raman Spectroscopy, Infrared Spectroscopy
- Electrochemistry: multiple glove-boxes (Ar, N2), preparation of battery cells, battery test station (cycling of a battery), Potentiostat/Galvanostat with 2 and 3 electrode arrangement, Electrochemical Impedance Spectroscopy, (in situ/operando) special analyses like Dilatometer, or Mass Spectrometry during cell performance

Testimonials

- various joint projects with the Federal Ministry of Education and Research (BMBF)
- direct cooperations with companies (measurement orders)

Topics / Trends

Batteries
Coatings / Surfaces
Hybrid Systems

Scientific Institution

Helmholtz Zentrum Berlin

Industries

Energy, Utilities & Raw Materials

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