

in situ SANS - a new method to non-destructively investigate lithiation processes in pouchbag type batteries

Tuesday, 16 June 2015 12:00 (20 minutes)

We report on our measurements with the SANS-1 instrument at Heinz Maier-Leibnitz Zentrum (MLZ), Garching. In-operando small-angle neutron scattering data of NMC||Separator||Graphite cells was collected during a complete charging and discharging cycle. In addition single battery components were measured separately to distinguish the various component signals.

The in-operando data shows a variation of the integrated total scattering intensity in dependence of the transferred charge. The curve features are directly associated with the lithiation process of the cathode or anode materials. Work on modelling these lithiation kinetics as observed by SANS and correlating them with other techniques is in progress.

Primary author: SEIDLMEYER, Stefan

Co-authors: Prof. GASTEIGER, Hubert A. (TU München, Chair of Technical Electrochemistry, Lichtenberg-Str. 4, 85748 Garching, Germany); BUCHBERGER, Irmgard (TU München, Chair of Technical Electrochemistry, Lichtenberg-Str. 4, 85748 Garching, Germany); HATTENDORFF, Johannes (TU München, Chair of Technical Electrochemistry, Lichtenberg-Str. 4, 85748 Garching, Germany); KARGE, Lukas; GILLES, Ralph

Presenter: SEIDLMEYER, Stefan

Session Classification: Material Science

Track Classification: Material Science