Contribution ID: **40** Type: **Poster**

Nanostructured SnO2 Templated by Amphiphilic Block Copolymer for Lithium-Ion Battery Anodes

Tuesday, 25 June 2019 14:30 (20 minutes)

With the rapid development of wireless information communication products, electric vehicles, power tools and other fields, higher requirements are placed on the energy density, power density and lifetime of lithium-ion batteries. Compared with conventional graphite anodes, SnO2 offers a much higher theoretical specific capacity (1494 mAhg-1). However, the big volume change and the continuously generated SEI film during the cycling leads to a serious capacity recession, which therefore limits its practical application. In the present work, a novel mesoporous SnO2 anode has been was successfully synthesized by an amphiphilic block copolymer assisted sol-gel process, which is expected to facilitate the infiltration of the electrolyte and accommodate the volume expansion of the material during cycling, thereby improving the electrochemical performance of the electrode. The pore arrangement of the obtained SnO2 nanostructure is studied via scanning electron microscopy (SEM) and grazing-incidence small-angle X-ray scattering (GISAXS).

Primary authors: YIN, Shanshan; MÜLLER-BUSCHBAUM, Peter (TU München, Physik-Department, LS Funktionelle Materialien)

Presenter: YIN, Shanshan

Session Classification: E13 internal meeting 2