

# SCCER Summer School - Energy Storage in Batteries: Materials, Systems, and Manufacturing

Energy Storage in Batteries: Materials, Systems, and Manufacturing  
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## Physicochemical Modeling and Simulation

*Tuesday, 12 July 2016 13:30 (1h 45m)*

Physicochemical models are being widely used to understand the properties of lithium-ion batteries, to support electrode and cell design, and to reduce development cost. This class includes a first overview of modeling approaches (Newman-type models, micro-structure-resolved models, multi-scale models). Then governing processes and model equations, simulation software and implementation as well as challenge model parameterization will be discussed. The lecture closes with application examples: Lithium-ion battery lifetime prediction; Metal-air battery chemistry.

**Presenter:** Prof. BESSLER, Wolfgang (Electrical Energy Storage EES - Offenburg University of Applied Sciences)