

# **Thermodynamics of Lithium Batteries - The DFG Priority Programme “WeNDeLIB”**

Hans Seifert

Materials Science and Engineering, Karlsruhe Institute of Technology, Germany

In this talk selected results from a Priority Programme on Lithium batteries will be presented. The work started in 2010 and was funded by the German Research Foundation (DFG) for a period of six years. The research of the joined projects aimed at a better understanding of active materials behavior in combination with other battery components. The individual thermodynamic properties as well as the materials performances during operation of electrochemical cells were investigated. The main focus was on experimental and analytical research but also some ab-initio and CALPHAD projects were accomplished. The major topics of research were:

- (1) materials and cell thermodynamics and kinetics
- (2) heterogeneous equilibria and reactions
- (3) innovative methods of preparation and synthesis of active materials
- (4) electrochemical investigations combined with thermodynamics and constitution of cell materials.