

# Experimental Investigation of Thermochemical Data for Li-Based Systems Relevant for Battery Applications

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## ABSTRACT

Li-Ion batteries are well recognized as a possible and efficient way to store electric energy. For use in mobile applications, however, these batteries have to meet several design criteria, such as the number of charge/ discharge cycles, energy density and safety.

In order to be able to understand the behavior of the interplay of different materials and the corresponding material interactions, it is important to understand the thermochemical functionality of the whole assembly.

The research on electrode-materials for Li-ion batteries is currently a hot topic. A systematic development and design of such materials applying modeling using software packages like FactSage requires basic thermodynamic data in terms of stability and phase relations along with additional information.

The creation of a suitable thermodynamic data base for relevant alloy systems is thus a crucial issue. Beside this technological aspect the thermodynamic investigation of such alloy systems will significantly broaden and improve the basic knowledge of their phase relations and thermochemistry.

Furthermore valuable contributions to the theory of alloying processes in the solid and liquid state can be expected.