Dokumenttyp: Konferenzbeitrag

Autor(en) des Beitrags: Adermann, Joern; Brecheisen, Daniel; Wacker, Philip; Lienkamp, Markus

Titel des Beitrags: Parameter Estimation of Traction Batteries by Energy and Charge Counting during Reference Cycles

Abstract: In order to guarantee a precise range estimation over the lifetime of battery electric vehicles (BEV), various circumstances have to be taken into account. Since the traction battery is, and will continue to be in future, the most costly component in BEVs, high effort has been invested in detecting its aging status. In this paper, a theoretical approach for detecting the battery’s state of health is devised. The algorithm uses information from repeating reference cycles completed under comparable thermal situations to derive the health status. This theory is validated by an experimental setup using a battery simulator as the power source and a prototype vehicle in combination with a roller bench as the power sink. Furthermore, the influence of the state of health on the actual driving range is investigated for a class of ultracompact vehicles. The results show that, in an environment with a dynamometer, the parameters can be estimated with a normalized error of less than one percent. Implementing this in a realistic environment in order to evaluate the exactness of the algorithm is the subject of further research.

Stichworte: FTM Komponenten von Elektrofahrzeugen