A Novel Approach on Battery Health Monitoring

In this paper, a novel approach for improving battery lifetime is proposed. To reach this goal, electric vehicle internal data is analysed, the battery health influence of driving and charging parameters is estimated and recommendations for battery health optimal charging are generated. The presented system collects data from the electric vehicle using the controller area network bus and stores it on a central server. The data is then transformed and analysed to determine the health influence of certain charging characteristics. Using this knowledge, recommendations can be generated and provided to the electric vehicle owner. This process of generating recommendations can be performed continuously. The proposed approach provides several benefits in electromobility. First, the acquisition of electric vehicle data is performed in a non-intrusive way. Solely an on-board diagnostics interface is required to read out the vehicle internal data. Thereby any electric vehicle can be equipped with the system presented in this paper. Second, the recommendations guide the vehicle user in specific behaviour without affecting availability and range for the next trips.

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