



CARISSMA

Institute of Electric,
Connected and Secure Mobility



Technische Hochschule
Ingolstadt

June 2022

Abschlussarbeit

“Lithium-ion battery aging dataset based on electric vehicle real-driving profiles”

Beschreibung:

The present thesis aims to collect experimental data from lithium-ion battery cells subjected to different typical discharge profiles of electric vehicles and periodically characterized by means of diagnostic tests. Data will be collected in the Battery Laboratory at the Technische Hochschule Ingolstadt (THI). Battery cells of different chemistry will be tested over a period with the Urban Dynamometer Driving Schedule (UDDS) discharge driving profile and the Constant Current (CC)-Constant Voltage (CV) charging protocol designed at different charging rates - from C/4 to 3C. The cells will be tested in an environment with different controlled temperatures. A periodic assessment of battery degradation during lifetime testing is performed using benchmark performance tests (RPTs) that include capacity tests, Hybrid Pulse Power Characterization (HPPC), and Electrochemical Impedance Spectroscopy (EIS). The dataset will allow the characterization of battery aging in real driving scenarios, enabling the development of models and management strategies in electric vehicle applications.

Ihre Aufgaben:

- First Phase: Acquisition of battery cells. Experiment specification.
- Second Phase: Development of a data-driven model or semi-empiric model.
- Third Phase: Writing the text document of the thesis, representing/presenting the results.

Ihr Profil:

- MatLab or Python experience and knowledge are desirable but not required.
- Basic knowledge of battery systems is desirable.
- Confident use of MS Office.

Interesse? Fragen? – Kontaktieren Sie uns!

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