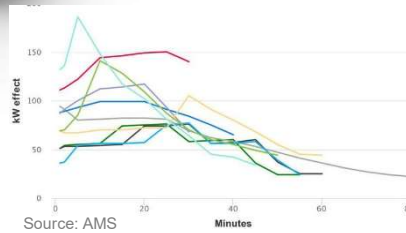


Master thesis



Optimization of charging technologies for electric vehicles

Convenient and efficient charging of electric vehicles represents an important factor for the implementation of electric mobility. The development of optimized charging control and management involves a number of factors, which are related to vehicles as well as to charging infrastructure. This master thesis project targets to a holistic investigation of electric charging, including a detailed study of modern charging technologies and influencing factors on charging processes. Findings of the research will support the development and implementation of optimized charging control and power management in a close integration with the vehicle's battery management. In this way, the project results will give a comprehensive overview of modern charging technologies, discuss influencing parameters and provide data for charging system optimization.

Working tasks

- Analysis of state-of-the-art charging technologies and charging standards
- Definition of requirements for electric vehicle charging (infrastructure & in-car systems)
- Identification of performance criteria and influencing parameters
- Creation of a simulation model for evaluation of charging control and power management
- Potential-evaluation and discussion of optimized charging considering pre-defined parameters, e.g. performance, losses and efficiency, thermal aspects
- Deviation of recommendations for optimized charging control
- Documentation and presentation of the work

Duration: ca. 6 months

Remuneration: € 3.000,-

Language: German and / or English

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