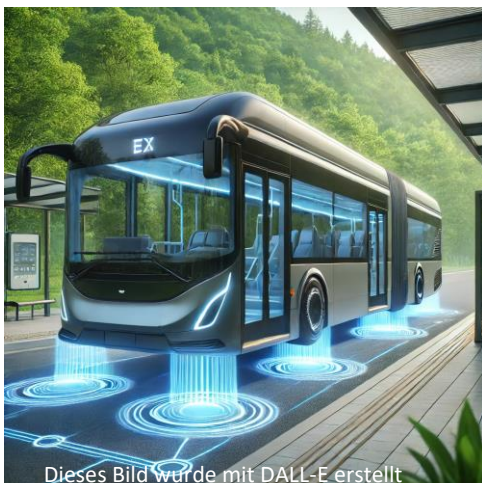


Development of an Opportunity Charging Concept for Public Buses

The electrification of public transport buses enables locally emission-free driving. Current charging systems require either long standing times with CCS plugs or visually conspicuous assemblies such as pantographs for higher charging capacities.

High-power wireless power charging systems (HPWPT) offer the possibility of contactless short-term charging (opportunity charging) with higher power classes (~200kW) at bus stops. This can help to reduce the required battery capacities in the buses compared to conventional approaches.

In this work, the energy demand of buses is to be analysed on the basis of the local SSB network in order to identify suitable charging points along individual bus routes. To this end, journey and standstill times are analysed and different charging concepts (number of charging points and charging power) are compared. Optionally, a sensitivity analysis can be carried out for consumption requirements. The results of the work should help to derive requirements for opportunity charging systems.



Dieses Bild wurde mit DALL-E erstellt

Student Profile:

- Independent, structured way of working
- Knowledge of the energy requirements of vehicles and charging strategies
- Interest in WPT charging classes and topologies
- Interest in holistic consumption analyses / data analysis
- Interest in / experience in MatLab programming, optional optimization

Tasks:

- Research on opportunity charging and energy demand of buses
- Selection of representative bus routes in the SSB network
- Modelling and calculation of energy consumption and data analysis in MatLab
- Development of opportunity charging concepts along the bus routes (optimization possible)
- Evaluation of the results and derivation of requirements for HPWPT systems