

Master Thesis: Enhancing Fast Inductive Charging for Electric Vehicles



Inductive electric vehicle charging has great potential to increase user comfort and charging processes. The offered master thesis addresses interoperability and thermal management challenges contributing to advancements of future charging infrastructure.

Development challenges:

- Interoperability issues: Lack of standardized protocols causing compatibility problems.
- Thermal management: High-speed charging generates significant heat, risking battery health.
- Infrastructure Costs: High investments and engineering complexity for dynamic systems.

Research topics of the master thesis:

- Conceptual development of a modular inductive charging system: Scalable design >200 kW
- The concept should enhance interoperability by OCPP (Open Charge Point Protocol) integration
- Development of an advanced thermal management model by model predictive control
- Simulation of the concept and derivation of results for creation of a prototype charging station

What we offer:

- Access to state-of-the-art charging technology
- Support from an experienced team in a dynamic research environment
- The chance to work on a forward-looking topic with real-world impact
- A remuneration of € 3.000,- after successful completion of the master thesis project

<http://ftg.tugraz.at>

Duration: 6 month
Start: As from now
Workplace: Institute of Automotive Engineering

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