

VIRTUAL VEHICLE is a leading international R&D center for the automotive and rail industries. The center focuses on advanced virtualization of vehicle development. This linking of numerical simulations and hardware testing leads to a powerful HW-SW system design. About 300 people are now employed at our site in Graz - their expertise enables the efficient development of affordable, safe and environmentally friendly vehicles.

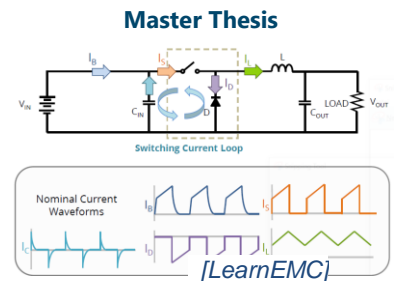
## Master Thesis

### “Modelling of Electromagnetic Emissions of Wide Band Gap Propulsion Inverters for Electric Vehicles”

Ref.Nr. E\_140

A key characteristic of today's switched mode power converters is their conducted electromagnetic emission (EME). To apply mitigation techniques with minimal weight, volume and costs, a converter's EME shall be identified by simulations and emission measurements as early as possible within a converter design process.

In this thesis, EME of a wide band gap propulsion inverter shall be modelled in the context of an electric power train. The thesis will be done in several stages with increasing complexity and embedded in a research project with a dynamic team and supported by an industry partner providing information and possibly validation of the models on their test beds.



### Your Tasks

- Research Literature and existing models.
- Familiarize with SIMetrix SPICE simulator.
- Design/implement the system in SIMetrix.
- Validate approach with the industry partner.

### What we expect from you

- Study:
  - Electrical Engineering,
  - Information & Computer Engineering,
  - Physics, or similar.
- Experience in LTSpice/SIMetrix, Matlab Simulink and/or Python.
- Initiative, independent work in subtasks.

### What we offer

- Collaboration and contribution in an engaged, dynamic team
- Interesting work in an international research center
- **Paid** Thesis
- Mentoring program for new employees'
- Diverse sports and health activities regularly
- Corporate Events

**For technical questions please contact:**

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**APPLY NOW and JOIN OUR TEAM**

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