



virtual  vehicle

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.

## Bachelor-/Master Thesis

### “Energy- and Thermal-Management for Future (Fuel Cell) Electric Vehicles”

Ref.Nr. B\_070

Bachelor-/Master Thesis

The aim of this master's thesis is to design an energy or thermal management system. This includes the modelling of an electric car or a (fuel cell) truck. The component modelling of the **battery, fuel cell, power electronics or electric motor** can be a possible focus. In addition, the focus can also be placed on thermal components such as heat exchangers in order to optimise the **heat dissipation** of powertrain components. Another focus can be the implementation of **control strategies for powertrain energy management and thermal management**. With overarching and proactive control strategies, the vehicle energy system should be operated in an optimal range, i.e. efficiency levels are increased, and CO<sup>2</sup> is consequently saved.

### Your Tasks

- The focus of work can be chosen in coordination with the objectives of our research projects.
- Modelling in Matlab/Simulink and Simscape.
- 1D thermal management and energy management for novel future powertrain components.
- Development and validation of control strategies.
- Evaluation of energy and CO<sub>2</sub> reduction potentials for different scenarios.

### What we expect from you

- Degree in electrical/mechanical engineering or similar.
- Interest in alternative energy systems.
- Motivation to work in a team and to support the modelling of parts of a sim-platform.
- You need a supervisor from your university.

### 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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## **Data Protection Notice**

Virtual Vehicle Research GmbH processes your application to manage your application. For further information please see our [Data Protection Notice](#).

If you consent that your submitted data is also stored in our talent pool for up to 1 year after the last contact with you, please let us know by E-mail. You may withdraw your consent at any time.

## **APPLY NOW and JOIN OUR TEAM**

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