

## Working Student (m/f/d)/ Internship/Thesis - New Energy Management Concepts for Fuel-Cell EVs | SmartRecruiters

**Duration:** (min. 6 months, ideally longer)

### Background:

As a global automotive supplier, for the automotive industry, DENSO has developed several components and systems for fuel-cell electric vehicles (FCEVs). The future mobility will strive for zero emission. In order to achieve that necessary & challenging goal, hydrogen-based fuel-cells are a key enabler especially for applications that require flexibility, long driving range and high payloads.

To facilitate the Hydrogen society and decarbonization of the automotive sector, our R&D team is working on “New Energy Management Concepts” to overcome current challenges. Key target is to maximize the driving range & system efficiency, optimize the Total Cost of Ownership (TCO) and mastering the thermal management requirements for both fuel-cell system, cabin and e-powertrain, even under tough ambient conditions.

### Purpose:

Development of simulation platforms to quantify the benefits of new holistic system interactions on vehicle level with newly enabled functionalities for different FCEVs.

### Project Targets:

#### Trend research:

- Support of future powertrain mix creation
- Identification of most important fuel-cell applications & topologies
- Screening of novel concepts for FCEVs (Hardware & Functionality)

#### Simulation work:

- Upgrade of existing simulation models to different FCEV platforms
- Modelling of all crucial systems in a FCEV (based on public data)
- Develop own new “game changing” technology that helps meet the targets
- Create tangible use-case based simulation scenarios
- Quantify their benefits and the impact of newly enabled functionalities

### Requirements:

- Currently enrolled in an engineering study with a focus on automotive engineering (master course preferred)
- Good English skills both written and spoken
- Fundamental knowledge of fuel-cell system, further know-how of electric powertrains and thermal systems appreciated
- Experienced in vehicle simulation activities mandatory (model creation, calibration, validation, and data analytics), ideally using Siemens AMESim
- Good knowledge of MathWorks MATLAB and Simulink is be appreciated
- Good MS-Office visualization skills are required (especially Excel & PowerPoint)
- Independent problem solving and own task management
- Creative and open-minded team-player attitude

