

## PhD Student (f/m/d)

with a background in Engineering, Physics, Material Science, Chemistry or similar

### Investigate performance and lifetime of PEM-Fuel Cells

#### Context

Fuel cells play a key role in reducing CO<sub>2</sub>-emissions in the transport sector by converting the chemical energy of hydrogen into electrical energy to power the vehicle. With respect to the utilization of fuel cells in heavy duty vehicles, the lifetime and efficiency of these systems has to be increased. This project aims to improve the current understanding of the correlation between power and lifetime to optimize both of these parameters.



#### Your task

The work thus includes the characterization of materials according to the current state-of-the-art, as well as the further development of the materials and the expansion of the existing measurement methods. The focus of the investigation is on the fuel cell membrane. Utilized measurement methods range from imaging methods (Raman, SEM, EDX) over ex-situ characterization (stress-strain testing) to electrochemical measurements (fuel cell tests, electrochemical impedance spectroscopy).

#### Your profile

- Excellent communication skills and team spirit
- You are interested in the development of novel materials for sustainable mobility
- You work target-oriented and structured
- You enjoy working in the laboratory

#### The position

- We offer excellent working conditions in the interdisciplinary “electrochemical energy systems” EES group with a friendly atmosphere
- Cutting edge equipment for fuel cells and material characterization
- The typical duration of a PhD is planned for three years (80% TV-L 13)
- The working language is English or German
- Earliest possible start: March 2021

For more information, feel free to contact us or visit

[www.imtek.de/laboratories/mems-applications/research/electrochemical-energy-systems](http://www.imtek.de/laboratories/mems-applications/research/electrochemical-energy-systems)

Please send your application via mail to

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