PhD student (f/m/d)

with background in chemistry, material science or similar

Synthesis of stable anion exchange polymers for alkaline fuel cells

Context

Alkaline fuel cells offer the severe advantage – in contrast to common PEM fuel cells – that no platinum is required as a catalyst for the oxygen reduction reaction, thus enabling the use of less expensive materials. A current problem of alkaline fuel cells is the low chemical stability of the hydroxide conducting polymer membranes, especially under dry operating conditions. There is a need for novel polymers that exhibit intrinsic chemical stability.

Your task

You will work on the synthesis of novel anion exchange polymers and casting of membranes for alkaline fuel cells with the goal to improve the lifetime. You will characterize the membranes cast from the polymers both *ex situ*, e.g. by stress strain measurements or impedance spectroscopy, and *in situ* by electrochemical characterization of the fabricated membrane electrode assembly in a fuel cell.

Your profile

- You have experience in organic or even polymer synthesis
- Excellent communications skills and team spirit are absolutely necessary
- You are interested in the development of novel materials for a sustainable society
- You work target-oriented and structured

The position

- We offer excellent working conditions in the interdisciplinary "electrochemical energy systems" EES group with a nice atmosphere
- Typical duration of a PhD is planned for three years (80% TV-L 13).
- The working language is englisch oder german
- Earliest possible start: January 2023
- Familiy friendly, flexible working hours

Please send your application via e-mail to

Dr. Andreas Münchinger
Electrochemical Energy Systems
IMTEK, University of Freiburg
Georges-Koehler-Allee 103, 79110 Freiburg
e-mail: Andreas.Muenchinger@imtek.de

For more information feel free to contact us or visit our website:
www.imtek.de/laboratories/mems-applications/research/electrochemical-energy-systems