

Half cell electrochemical characterization and durability testing of Anion Exchange Membrane Water Electrolysis (AEMWE) Electrodes

Topic suitable for a paid Master Thesis

At CEET, you can become part of a team of experienced researchers, with expertise in materials preparation, electrochemistry and cell characterization. The research group has access to a fully equipped laboratory with the necessary infrastructure for the planned experimental work.

Anion Exchange Membrane Water Electrolysis (AEMWE) is a promising novel technology for hydrogen production, since unlike PEM water electrolysis, which dominates the field, it does not depend on precious metal catalysts. However, this advantage brings the challenge of the long term stability of the catalyst used. For that reason, substantial research efforts are being dedicated to the development of stable catalyst material.

Within this work, the durability of various catalyst material are tested in a half-cell set-up. **Workpackages are:**

- Design of the working electrode
- Operation and evaluation of the system
- Electrochemical characterization of the electrode durability and performance in a three electrode half-cell set-up

