

Chemical oxidation-induced degradation in gas diffusion layers for PEFC: mechanisms and performance implications

Topic suitable for Master Thesis

In the Fuel Cell & Hydrogen Working Group at CEET, you can become part of a team of experienced researchers, PhD students, and motivated master students with expertise in materials preparation, electrochemistry and cell characterization. The institute has a fully equipped laboratory with the necessary infrastructure for the planned experimental work.

Gas diffusion layers (GDL) are essential for fuel cell performance, but they can undergo chemical degradation that affects their structure and properties. The study aims to understand the mechanisms of chemical oxidation, its impact on GDL degradation and fuel cell performance. Through comprehensive analysis, this research seeks to provide insights into the factors influencing GDL degradation. The findings will be instrumental in developing strategies to mitigate chemical oxidation, improving the stability and lifespan of GDLs, and enhancing the overall efficiency and reliability of polymer electrolyte fuel cells.

Tasks :

- Literature review
- Durability testing
- Use chemical analysis techniques
- Characterization of GDL properties
- Performance evaluation
- Data analysis and interpretation

