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| <input type="checkbox"/> Bachelor's thesis | <input checked="" type="checkbox"/> theoretical |
| <input checked="" type="checkbox"/> Master's thesis | <input checked="" type="checkbox"/> experimental |

Manufacturing of PTL Slurries for PEM Water Electrolysis

PEM water electrolysis is a technique to efficiently produce hydrogen gas through the electrochemical splitting of water into its constituent elements, hydrogen and oxygen. The porous transport layer (PTL) plays a crucial role as an essential component in the electrolysis cell. The topic of this thesis is to investigate novel materials and fabrication techniques to optimize the porosity, permeability, and conductivity of Titanium fibre PTLs.

The student's tasks include:

- **Literature research** on slurry composition, processing methods, materials...
- **Synthesis** and optimization of slurries in the laboratory
- **Comparison and optimization** of different material compositions
- **Material characterization** with various in-situ and ex-situ measurements, such as contact angle, SEM, EDX
- **Validation** of material in existing PEMWE test infrastructure

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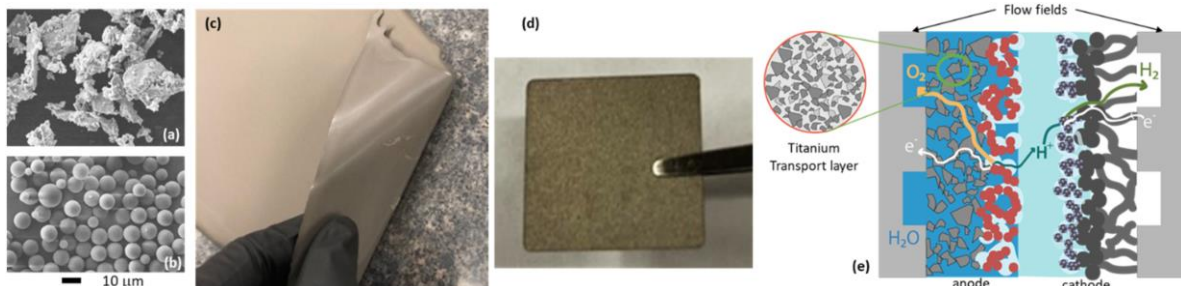


Figure 1. An overview of Ti PTL processing and integration into a PEMWE device.

This Master's thesis is paid with an expected duration of **6 months**.

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