

Simulation Optimization toward More Effective Hydrogen Cooling of Hydrogen PEM Fuel Cells

Description

Innovative more effective cooling for hydrogen PEM fuel cells are always a hot topic due to the lower quality of the generated waste heat from the electrochemical reactions. Hereon, we have published an EU patent application and recently a simulation-experiment combined work as well. This work shows that there is still great room for making the novel cooling concept more effective, in many ways.

Your responsibilities

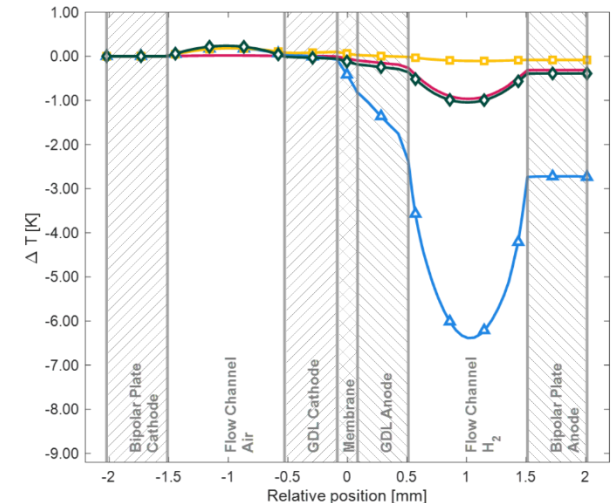
- Literature survey for an update of the state of the art on cooling technologies
- Redoing our existing CFD model for PEM fuel cell cooling, in Ansys / COMSOL
- Refining the model and cooling designs from both my inputs and literatures
- Documentation of the whole process, and result publishing is also encouraged
- Participation in regional workshops/seminars is also supported

Prerequisites

- Working independently with teamwork mindset
- Basic knowledge of fuel cells and CFD tools would be helpful
- Existing paper publishing experience is also a big gain
- Good knowledge of German or English, both written and spoken

Die TU Braunschweig strebt in allen Bereichen und Positionen an, eine Unterrepräsentanz im Sinne des NGG abzubauen. Daher sind Bewerbungen von Frauen besonders erwünscht und können nach Maßgabe des §11 NGG bevorzugt berücksichtigt werden. Schwerbehinderte werden bei gleicher Eignung bevorzugt. Ein Nachweis ist beizufügen. Zu Zwecken der Durchführung des Bewerbungsverfahrens werden personenbezogene Daten gespeichert.

- Bachelor Thesis
- Student Thesis
- Master Thesis
- theoretical
- simulative
- experimental



Source: Kösters, Schweinitz, Heere, Friedrichs, and Gao. Scientific Reports, 2023. DOI: 10.1038/s41598-023-49309-5.

Starting: Soon in 2024

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