



Bachelor Thesis Work

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Wärmeflussmessungen durch PPT-Zündung

Heat flux measurements from PPT ignition

Motivation:

Pulsed Plasma Thrusters (PPTs) have established themselves as a robust and reliable technology. Researchers worldwide are drawn to investigate them due to their low mechanical complexity and accessibility. While they may lack in efficiency, they make up for it with their use of solid fuel, eliminating the need for heavy tanks and complex flow control systems. To enhance current designs, precise measurement of thruster performance is essential. To confirm theoretical models and to increase our understanding of the physics underlining the PPTs we must develop pulsed heat flux probe to measure temperature of the exhaust.

In the field of ignition diagnostics, the student's task is to design a high-temperature thermo flux probe to measure PTFE exhaust temperature and create a testing procedure. You will also set up a high-speed camera to capture PPT ignitions and the axial spread of the current sheet for uniformity verification. From the drawing board into the testing stand you will be involved in all processes. It's a technical challenge, but an important one in advancing our understanding of plasma propulsion.



Task:

- Development of Calibration of pulsed heat flux probe and setting up high speed camera
- Design, calculations and proof of concept
- Implementation: Test and verification
- Documentation

Supervisor: Velin Yordanov

Starting date: [Click for date](#)

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Acknowledgement of receipt:

I hereby confirm that I read and understood the task of the bachelor thesis, the juridical regulations as well as the study- and exam regulations.

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(Responsible Professor)

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