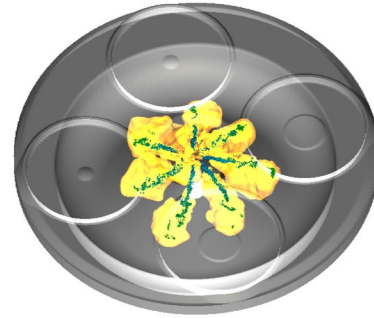


**Title:**

**Modeling of Combustion Processes with Sustainable Aviation Fuels**

**Task:**

In the future, the whole transport sector must be supplied by sustainable energy sources. For flight traffic, sustainable aviation fuels (SAFs) are discussed as a future source of propulsion. Due to the currently high costs of these fuels, a combustion process with the highest efficiency is mandatory.



Naturally, there are numerous challenges in the areas of injection, spray ignition and flame propagation that must be evaluated. Within this thesis, the CFD model of the combustion chamber is to be set up in a commercial CFD-code. The turbulent in-cylinder flow, the fuel jet, the fuel chemistry and the turbulent combustion are to be implemented and validated step by step for a given operating point. There will be validation against measurements, if available, and literature data. The results are to be analyzed with respect to ignition delay, lift-off length and combustion efficiency. The work is to be documented in a master thesis.

**We expect:**

Interest in numerical simulation  
Knowledge in the fields of internal combustion engines, thermodynamics and fluid mechanics  
Self-motivation, initiative

**Our offer:**

Work of high relevance for future powertrain concepts  
Industry-relevant simulation environment  
Success gratification

**Start/duration:**

Beginn: t.b.d  
Dauer: approx. 6 months

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