

Master Thesis - “Validation of Combustion Models using Sustainable Aviation Fuels”

(30 credits/20 weeks – 1 student)

About us

GKN Aerospace is the world’s leading multi-technology tier 1 aerospace supplier. With 55 manufacturing locations in 15 countries, we serve over 90% of the world’s aircraft and engine manufacturers. We design and manufacture innovative smart aerospace systems and components. Our technologies are used in aircraft ranging from the most used civil aircraft to the world’s advanced 5th generation fighter aircraft and the Ariane orbital rockets used by ESA.

Project Background

GKN Aerospace is committed to reach Net Zero emissions by 2050. One way to reach this target is to use Sustainable Aviation Fuels (SAF). SAFs are designed to be very close to the specification of conventional aviation fuel i.e. Jet-A, but there are some differences that need to be investigated and assessed. For instance, differences in the boiling curve, viscosity and surface tension can affect the fuel spray evaporation characteristics in the combustion chamber, and hence flame behaviour and emissions.

Assignment Description

- Literature survey
- Perform CFD validation studies using different fuels, combustion models and mesh resolutions on published validation cases.
- Perform CFD simulations of evaporating sprays using SAF and Jet-A.
- Report

Qualifications

Student in the final year of their M.Sc. studies in the field Mechanical or Aerospace engineering with an interest in fluid mechanics and combustion. It is meritorious to have previous experience using CFD software such as Star-CCM+ or Fluent/CFX, using mesh software such as ANSA or ICEM as well as programming experience using Matlab or Python.

Apply by

Send your resume and cover letter to

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Last date for application: 2023-12-31

