Master Thesis - “Innovative surface protection for composite materials for aero-engine components”

(30 credits/20 weeks – 1 student)

Project Background

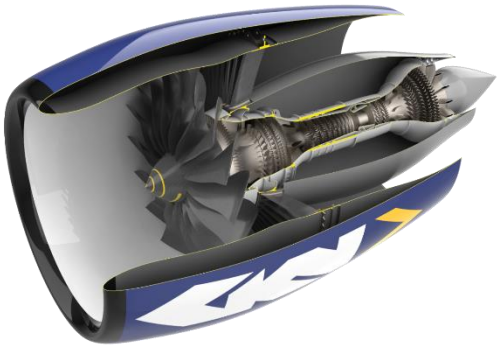
Composite material have been used in airframe applications for several decades while with regards to the aero-engine market, their applications are relatively newer, however it has been steadily increasing in the recent years. Despite the lightweight benefit of such materials for aero-engines applications, it also adds new challenges due to the inherent properties of composites compared to conventional aerospace metallic structure, such as low erosion resistance, poor electrical conductivity, etc.

Surface coatings are commonly used to tailor specific properties to match requirements of aero-engine components. This initiative aims to push the boundaries of these composite materials by identifying the best coating for the application as well as the challenges related to the coating application.

Assignment Description

The thesis work will focus on

- Investigation on available coating solution regarding conductive and heat requirements
- Investigation on cold spray and thermal spray technologies for composite materials
- Literature review of available technologies and patents
- Investigation and tests for surface treatment for composite material prior to coating application
- Bench-scale test of selected coating solutions



The thesis work will be supported by appropriate material and process engineers.

Qualifications

- Master in mechanical engineering, material engineering, industrial engineering or similar
- Some composite knowledge is recommended
- Some knowledge on coatings will be favorable (not mandatory)
- The student(s) should be capable of taking initiatives on their own, especially while gathering data from departments
- GKN would prefer if the student(s) can perform most of the work on site at the R&T organization in Trollhättan, Sweden

Apply by

Send your resume and cover letter to Adeline Kullerstedt, adeline.kullerstedt@gknaerospace.com.

Last date for application: 2020-11-30. Interviews will be held continuously and the position could be filled prior to the last application date.