Master Thesis - “Study and Comparison of Non-Conventional Manufacturing Processes applied to Aerospace materials” (30 credits/20 weeks – 1 student)

About us

GKN Aerospace is the world’s leading multi-technology tier 1 aerospace supplier. With 33 manufacturing locations in 12 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

Forward-looking companies aim to include AM printed parts in their production. These components, after being printed and heat treated, will need to be post-processed in order to meet the requirements of the aerospace component. Thus, there is a need to study and compare the different non-conventional manufacturing processes in terms of production time & cost, as well as enhancement of surface roughness and fatigue life of the component.

This thesis idea aims to identify possible non-conventional manufacturing processes that can be applied to aerospace materials, study them and compare them with regards to processing time & cost, surface enhancement and fatigue life enhancement. This assignment offers a unique opportunity to work in a creative environment. The Research team from GKN Aerospace will support this thesis work.

Assignment Description

Description of the assignment content.

- Familiarize with the topic
- Literature study of the different non-conventional manufacturing processes
- Benchmarking of the different non-conventional manufacturing processes
- Practical work: Analysis of surface integrity including e.g. surface roughness and surface contamination of test pieces processed by non-conventional manufacturing processes, such as grinding, deburring, or blasting.
    - Use of white light profilometer, digital microscope and SEM
    - Comparison with a conventional manufactured test piece
- Document and present results

Qualifications

- Student in the final year of their M.Sc. studies in the field of Mechanical Engineering or similar with a strong interest in manufacturing.

Apply by

Send your resume and cover letter to Ana Bonilla. ana.bonilla@gknaerospace.com

Last date for application: 2026-11-20. Interviews will be held continuously and the position could be filled prior to the last application date.