

Master Thesis - “Optimizing laser beam weld geometry” (30 credits/20 weeks – 1 or 2 students)

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

Laser Beam Welding (LBW) is a high intensity welding process used for welding of thicker weld joints.

The LBW process consists of many parameters which affects the quality and the geometry of the weld.

Examples of common weld defects that has to be reduced is porosity, solidification cracks and underfill.

The aim of the thesis is to determine the effects of the welding parameters on the geometry of the weld.

Assignment Description

The main objective of this thesis is to investigate the effects of the welding parameters on the weld geometry and the weld quality.

The materials which should be welded is either nickel- or titanium alloy.

The work is tentatively divided into five parts:

- Extensive literature review regarding the LBW process, the material which should be welded and relevant welding standards.
- Plan and execute welding trials.
- Evaluate the results from the weld trials.
- Determine the key parameters and their influence on the weld geometry and on the quality of the weld.
- Compile the work in a report.
- Presentation of the work performed.

Qualifications

- Master’s educational level. The scope of the thesis can be adjusted.

Apply by

Send your resume and cover letter to Björn Lindeberg Nilsson, bjorn.lindebergnilsson@gknaerospace.com.

Last date for application: 2025-01-15.

