

# BA-Thesis: Experimental Characterization of Residual Stress Development during Shot Peening of Inconel 718

## ■ Project description

This thesis aims to experimentally investigate the material behavior of Inconel 718 under quasi-static loading and to characterize the residual stress distribution induced by shot peening.

The results will be used to validate an existing numerical simulation.

The ultimate goal is to enhance the understanding of stress evolution during the shot peening process and to provide experimental validation for the simulation model.

## ■ Work packages

- Literature research
- Specimen Preparation and Material Testing
- Shot Peening Experiments
- Residual Stress Measurement

**Prerequisites:** Knowledge in material science and mechanics

**Start:** As of now

**Contact:** M.Sc. Pierre Gast  
pierre.gast@kit.edu



Shot peening of turbine blades



Measurement of residual stresses with x-ray diffraction