

Bachelor or master thesis

Topic: Influence of different heat treatments on the physical and mechanical properties of aluminum die casting alloys.

Start: Beginning 2024

Description: Aluminium die casting alloys can be used to produce dimensionally accurate components with low wall thicknesses in large quantities at low cost. Aluminum as a material is characterized by high electrical and thermal conductivity in combination with a favourable strength-to-density ratio, which makes the material ideal for use in lightweight structures. Heat treatments can be used to change or adjust the physical and mechanical properties of Al alloys in order to optimally adapt the alloys to the application and thus set a suitable property profile.

In this work, a more advanced understanding of the influence of different heat treatments on the electrical conductivity of die casting alloys and their interaction with mechanical properties will be investigated. For this purpose, die cast samples are casted and then heat treated in order to subsequently investigate the physical and mechanical properties of the produced parts.

Location: Erlangen

Supervision: **Felix Feyer** felix.feyer@fau.de

Group leader: Peter Randelzhofer

Responsible professor: Prof. Körner

The supervisor can also provide information on other topic opportunities in the areas of conductivity in aluminium die casting and alloy development if interested.

