

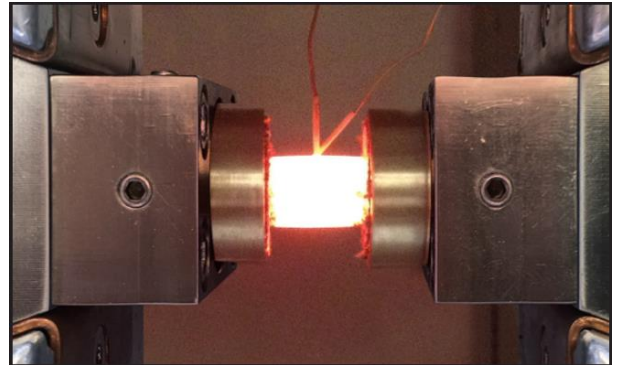
Announcement of a Master's Thesis, 08.06.2022

Thermomechanical treatment of Ti-64 alloy

Description

Titanium alloys are widely used as structural materials in the aerospace industry, due to their high specific strength and good corrosion resistance. To enhance the mechanical properties and reach the required standards, these alloys are often thermomechanically processed and its microstructure is, consequently, modified.

Therefore, it is of great interest to understand the influence of deformation parameters on the microstructure modifications during thermomechanical processing.



Hot compression test at the Gleeble 3800-GTC thermomechanical simulator

Objectives

- Investigate the influence of the thermomechanical history on the grain refinement of Ti-64.
- Evaluate the influence of the initial microstructure on the microstructure evolution during deformation at high temperatures.

Tasks

- Thermomechanical tests using the Gleeble ® 3800-GTC simulator.
- Microstructure investigation using light optical microscopy.

Organisation

Supervisor: Prof. M.C. Poletti cecilia.poletti@tugraz.at, Eng. Franz Ferraz franz.ferraz@tugraz.at

Prerequisites: Master student of Advanced Materials Science or Mechanical Engineering (MB, WIMB)

Duration: Starting from now for min. 6 months

Location: Modelling and Simulation group, Brockmanngasse 29, 8010 Graz

Reward: € 2.500 + € 500 performance bonus for an excellent success

Further information

This thesis will be carried out under the framework of the “**Christian Doppler Laboratory for design of high-performance alloys by thermomechanical processing**”, in which Böhler voestalpine is a project partner.

For further information please contact the secretariat of the institute or the supervisor.

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