

Announcement of a Bachelor Thesis, 15.04.2020

Implementation of a strain measurement system in a hot tensile test machine

Description

Hot tensile tests are currently done using a thermomechanical simulator that can heat the samples until the melting temperature in a vacuum atmosphere. The tensile test is then performed at high temperatures, still in vacuum, until the rupture of the specimen, which is afterwards immediately quenched. To plot the stress-strain curves, data on the forces and deformation during the test are necessary. The latter is currently measured only by the dislocation of the machine arms, but that does not precisely represent the deformation of the sample. Therefore, the goal of this thesis is to study and implement a new measurement system in the machine that allows the precise and instant measurement of the deformation during the hot tensile test. The challenge is to install the device considering the vacuum chamber that must remain sealed and the high temperatures.

The work shall be divided into the following tasks:

- Literature study about the test and currently used methods
- Selection of solutions based on effectiveness and costs
- Testing of the final chosen solution
- Documentation and thesis report

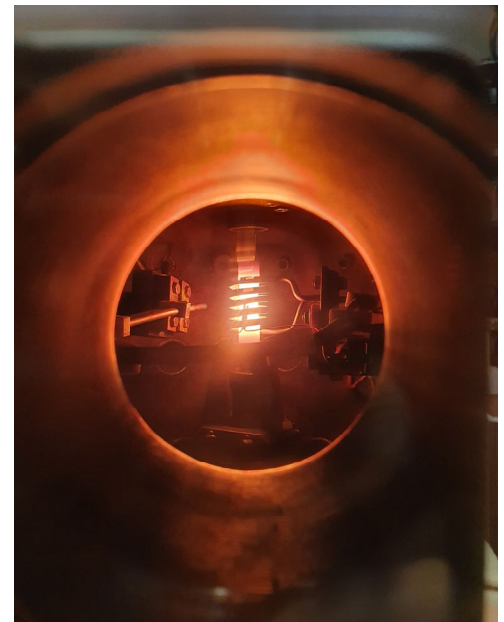


Figure 1: On-going hot tensile test in the BETA 250-5 machine.

Organisation

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Further information

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