

Announcement of a Master's Thesis, 25.09.2024

Susceptibility of Advanced Steels to Hydrogen Embrittlement

Description

This position offers an opportunity for a master student to engage in ongoing projects in Research Group of Lightweight and Forming Technologies (LFT), Institute of Materials Science, Joining and Forming (IMAT). You will be part of a dynamic team working in collaboration with industry partners. The focus will be on investigating the susceptibility of advanced steels to hydrogen embrittlement.

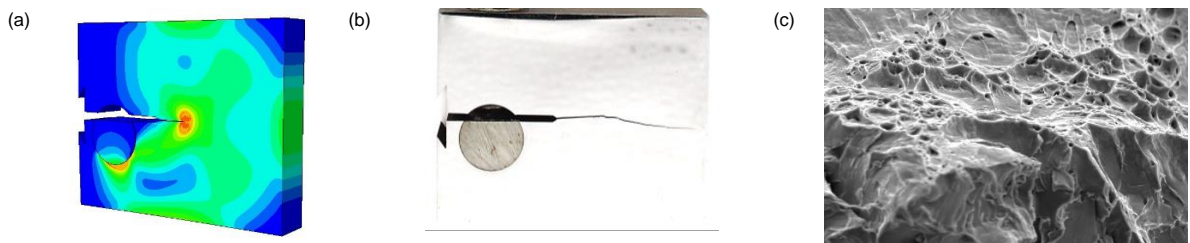


Figure 1: a) Simulation of a fracture mechanics test, b) hydrogen-assisted cracking, c) fracture surface

The main duties and responsibilities are as follows:

- Literature review on the subject.
- Sample preparation for microstructural evaluation, hydrogen concentration measurement and fracture mechanics tests.
- Microstructural evaluation of steels.
- Measuring the samples conditions before and after the fracture mechanics tests using optical devices.
- Implementing experimental tests related to hydrogen charging in gaseous hydrogen and electrolyte.
- Measuring the hydrogen concentration using thermal desorption analysis (TDA).
- Presenting the results during meetings.
- Writing a master's thesis.

Working knowledge of English is required for this position and German language would be beneficial. Moreover, a background in mechanical engineering and materials science would be extremely beneficial.

Organization

Duration: 6 months

Location: Research Group of Lightweight and Forming Technologies (LFT), Inffeldgasse 11/I, 8010 Graz

Reward: € 3.000 + € 500 performance bonus for an excellent success

Further information

For further information, please contact *Dr. Amirhossein Jabbari Mostahsan* (jabbarimostahsan@tugraz.at)