

Proposals for a Master's thesis, 25.10.2025

Investigation of brazed joints between copper and steel

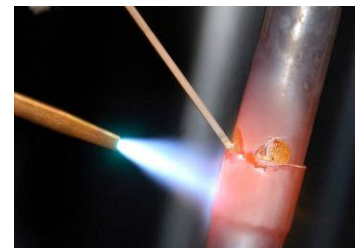
Description

In the field of connection technology for compressor components, a compressor discharge pipe made of copper-coated steel is currently used, which is soldered to a copper or steel pipe of the refrigerator evaporator.

In the future, the copper coating will be eliminated and the discharge tube will be made entirely out of steel. This will fundamentally change the material behaviour during brazing: Instead of the well-known copper-steel connections used to date, steel-steel or steel-copper connections will have to be produced in a reliable manner in the future. The selection of suitable solders and fluxes as well as the adjustment of process parameters play a decisive role.

The following points are to be addressed:

1. Literature research on brazing copper and steel
2. Evaluating the current situation
3. Planning of investigations
4. Conducting investigations (production of prototypes, light microscopy, documentation)
5. Summarizing the results
6. Writing the Master's thesis and a publication



Organisation

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Duration: immediately for at least 6 months, depending on assignment

Location: Working group Joining Technology, Kopernikusgasse 24, 8010 Graz

Compensation: € 3000,- (plus € 500,- success bonus)

Further Information

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

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