



WELDING AND ALLIED TECHNOLOGIES

We support industrial partners in the complex investigation of production and operational problems related to welding processes, in the development of welding technology, and in special training.

COMPETENCIES

- Welding technology development in fusion and pressure welding processes
- Elaboration of welding technology and its assessment by materials testing methods
- Construction analysis from the point of view of welding technology, examination of the suitability of welding processes, investigation of automation and robotisation possibilities
- Numerical modelling and physical simulation of welding processes



SERVICES

- Theoretical and experimental-based elaboration of welding technology (processes, parameters, filler materials), destructive testing of welded joints
- Investigation of welding problems in virtual environment (SYSWELD)
- Plasma cutting
- International and European Welding Engineer (EWE/IWE) training, European Welding Practitioner (EWP-RW) and Specialist (EWP-RS) for Resistance Welding training, and company-specific short courses in the field of fusion and resistance welding



TOOLS

- Advanced pulsed gas metal arc welding equipment (MIG/MAG), gas tungsten arc welding with a cold wire-feeding unit (TIG)
- HKS measurement system for the registration and analysis of welding parameters
- TECNA 8007 resistance spot and projection welding equipment
- MIG/MAG welding robot laboratory in HEICC
- Combined CNC plasma and flame cutting workstation
- SYSWELD FEM software for the numerical modelling of welding processes
- GLEEBLE 3500 thermo-mechanical physical simulator



REFERENCES

- Welding technology developments and failure analysis of welded products and structures (MOL Group, FGSZ Co., Joyson Safety Systems Ltd., Dometic Co., Fortaco Co.)
- Resistance and fusion welding short training courses (Audi, Bosch)
- AUTOTECH project, Development of automotive materials technologies, TÁMOP-4.2.2.A-11/1/KONV-2012-0029, 2015; <http://autotech.uni-miskolc.hu/>
- RMWF, Implementation of International Guidelines for Risk Management in Welding Fabrication, 2016-1-RO01-KA202-024450, Erasmus+ project
- LoCoMaTech H2020 project, Low Cost Materials Processing Technologies for Mass Production of Lightweight Vehicles; www.locomatech.net/ProjectArea1/