

Project name:	Optimization of Ni-alloy cladding layer
Description:	Welding on WTE (waste incineration boilers; waste to energy boilers) is a complex technological process aimed at extending the service life of boiler components and increasing the usability of such plants. This results in the great interest of boiler manufacturers into issues of pressure components degradation of overlay welding of boilers. Overlay welding process will be performed by MAG-CMT welding technology. The MAG-CMT technology was used to optimize the cladding layer Ni-alloy (Ni625) and gas mixtures in order to achieve adequate corrosion resistance. In order to better optimization would be used modern equipment for monitoring processes MAG-CMT welding (equipment for recording the main parameters of welding, use of high speed cameras, 3D scanning quality roughness on surface layer). The quality of cladding Ni-alloy (Ni625) demonstrated by measuring the hardness, bending, macro, micro, while the corrosion resistance test confirmed the salt chamber. The whole project would be carried in collaboration with the Technical University in Slovakia and company Sigmat d.o.o.
Webpage:	
Source of finances:	UNIOS
Beneficiary:	Mechanical engineering faculty in0 Slavonski Brod
Partners:	SIGMAT d.o.o.
Project budget:	21000,00kn
Duration:	19.12.2018 – 31.12.2020
Location:	Slavonski Brod, Trnava (Slovakia)
Target groups:	Company, company employees, professors, scientists and students
Objectives:	The expected results of the research would make a direct contribution to the automation of the MAG-CMT welding process, the introduction of sensors (cameras to monitor the welding process). Determination of surfacing parameters (main surfacing parameters (voltage and current), gas flow, determination of optimal gas mixture for protection) while achieving optimal properties of welded Ni-alloy (hardness, mechanical properties, degree of mixing of base and additional material, iron content on the surface of the welded layer) and the elongation and establishment of better corrosion resistance of welded Ni-alloy. The test can be expected to reduce the overall price of the product while maintaining the same quality of the welded layer, which ultimately gives better / greater competitiveness of domestic companies compared to others.