

№	Project Name	Head of Project	Project start and end years	Volume (Amount)	Status Finished/Current	Grant Code
1	Optical Emission Spectrometer (Metalloanalyser)	Giorgi Kobakhidze	2021	88000.00	Ongoing	RIM-3-21-179
2.	Mechanical Manipulator of the robot with the program controller	Giorgi Kobakhidze	2023	85000.00	Ongoing	RIM-3-22-144
3	High Temperature Protective Diffusion Coatings by Slurry on Iron Based Substrates for the Future Power Generating Systems	Olga Tsurtsunia	2022-2025	240 000 €	Ongoing	<a href="#">SRNSF #</a> FR-21-869

Abstraqt:

Advancement of high temperature oxidation properties of Austempered Ductile Iron (ADI) and its Deformable version (DADI) will be carried out with the application of high performance diffusion coatings obtained by slurry method. The deposition of single component Al and double component Al+Cr coatings will be applied onto the substrates of ADI/DADI undergone various thermal pre-treatment. High temperature oxidation screening as well as the long term tests will be performed on the novel coating-substrate systems and the results will be comparatively studied. As an outcome of the extensive experimental work the best thermal pre-treatment and coating parameters will be revealed for the studied materials potentially applicable at the environments with the elevated temperatures in such strategic fields as: power generation systems (working on fossil or renewable energy sources), chemical and petrochemical industry or many others. The success of the proposed project lies within the well planned experimental work, realistic objectives and the multi- and inter-disciplinary approach of the technology development performed by the highly skilled project participants.

The implementation of the project will heavily contribute and facilitate a generation of a new knowledge, experience, understanding and scientifically substantiated technological procedure for the successfully reproducible, uniform and high performance diffusion intermetallic Al and AlCr rich coatings on the iron based ADI/DADI materials, with the deep awareness on the oxide scale development mechanisms while under the impact of high temperatures;

GTU team has an adequate research qualification in high temperature functional materials field counting many years of experience confirmed by the publications, conference papers, presentations, (inter)national large scale successfully accomplished or ongoing projects.

The research project has international advisors and all of them will actively be involved in its implementation, with different degrees of involvement depending on the task. They all are highly skilled and adequately trained professionals from academic institutions and research centers. GTU group has already a proven track of the successful collaboration with project's foreign advisors and within this particular one they are going to keep up with the closer and more active cooperation through exchanging the new results obtained, reviewing the reports, conducting the frequent communication on the experiments, joint seminars and meetings through the electronic media or in person;