MATERIALS SCIENCE AND TECHNOLOGY

DISAT/CRT - Joining, coating and characterization of SiC based materials and SiC/SiC composite cladding materials for nuclear energy applications

Funded By	Dipartimento DISAT FONDAZIONE CRT CASSA DI RISPARMIO DI TORINO [P.iva/CF:06655250014]
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Context of the research activity	Safety of operating nuclear power plants and research reactors for advancing in low-carbon energy sources, requires actions on “innovative accident-tolerant fuels” and innovation in advanced nuclear materials. SiC/SiC composite ATF cladding material can find profitable application for ensure safer nuclear energy production.
Objectives	The research activity consists in the optimization of joining of SiC-based materials by localised heating and joining and coating SiC/SiC composite by a YAG-based solution. Microstructural and mechanical characterization of the integrity of SiC/SiC composite joints at RT and high temperatures will be performed by means of sophisticated laboratory equipment (ex CT-SCAN, thermography, …)
Skills and competencies for the development of the activity	Preferably, Master degree or equivalent in Materials Science and Technology, Energy and Nuclear Engineering, Materials Engineering Preferably, a thesis work or experiences with connection to experimental characterization of materials or materials development.