



PROJECT ACRONYM AND TITLE: Assessment of 3D-Printed Material Corrosion Using Artificial Intelligence (3D-Corrtelligence)

FUNDING PROGRAMME: Call for funding of Institutional research projects of the University of Rijeka financed from source 581 – Recovery and Resilience Mechanism (University of Rijeka, Institutional Research Projects)

PERSON RESPONSIBLE: Goran Vukelić

Project total cost	34.902,09 EUR
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SUMMARY AND OBJECTIVE: Additive manufacturing is intensively searching for its place in the maritime industry, especially in the rapid production of marine spare parts in remote locations. To gain wider acceptance, additively manufactured materials must be tested in harsh marine environments, including corrosion resistance testing. Besides traditional methods of testing the effects of the corrosive environment on the materials, methods based on artificial intelligence have also been used lately.

This project aims to assess the marine environment's corrosive effects on the mechanical properties of the additively manufactured steel AISI 316L and compare it to traditionally manufactured steel AISI 316L. To achieve that, experimental testing of the effect of the natural marine environment on that steel will be performed over 36 months. Experimentally obtained results will be used to develop a numerical model using artificial intelligence tools like machine learning. The model will be capable of assessing the corrosion and its effect on the mechanical properties of the material. Results will be used to establish the recommendations for accepting additively manufactured steel AISI 316L in the maritime industry and provide guidelines for future research.

Start date	End date
1 October 2025	30 September 2029

PROJECT TEAM

No.	Member	Affiliation	Role
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2.	Goran Vizentin	University of Rijeka, Faculty of Maritime Studies	Researcher
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5.	Špiro Ivošević	University of Montenegro, Faculty of Maritime Studies Kotor	Researcher
6.	Geert Potters	University of Antwerp, Antwerp Maritime Academy	Researcher
7.	Darko Pastorčić	University of Zadar, Maritime Department	Researcher
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10.	Marko Kopic	University of Rijeka, Faculty of Maritime Studies	PhD student