

Special Issue

Experimental and Numerical Analysis of Composite Contribution Structures

Message from the Guest Editor

The main aim of the Special Issue is to promote experimental and numerical research on steel structures reinforced with composite materials. Steel structures made of standard structural members (bars, beams, columns, plates) may be reinforced with materials that have higher strength properties. In this Special Issue, the application of fiber-reinforced polymers (FRP) to strengthening of steel profiles is discussed. The development of FRP and their application in the aviation industry have shown that these materials can withstand severe weather conditions and can carry high loads. Carbon fiber-reinforced polymers (CFRP) are a promising alternative to standard methods of reinforcing steel structures. They are corrosion resistant, have low density and high tensile strength. The gluing of composite elements is simple and easy to implement. The big advantage of steel profiles reinforced with FRP is their increased resistance to static, dynamic and fatigue loads. The most interesting articles present experimental investigations and numerical simulations that can be used to prepare and validate computational methods of analyzing of such structures.

Guest Editor

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Metallic materials play a vital role in the economic life of modern societies; contributions are sought on fresh developments that enhance our understanding of the fundamental aspects related to the relationships between processing, properties and microstructure – disciplines in the metallurgical field ranging from processing, mechanical behavior, phase transitions and microstructural evolution, nanostructures, as well as unique metallic properties – inspire general and scholarly interest among the scientific community.

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