

Special Issue

Advanced Manufacturing of Composite Materials: Experimental Techniques and Numerical Modelling

Message from the Guest Editors

Recent advances in physics-based simulations, data-driven models, in situ monitoring, and robotics have accelerated composite manufacturing, reducing defects, optimizing processing, and enhancing performance for aerospace, automotive, and renewable energy applications. This Special Issue, "Advanced Manufacturing of Composite Materials: Experimental Techniques and Numerical Modelling", invites cutting-edge research and reviews on experimental, theoretical, and numerical approaches. Topics include: Multiscale characterization of fibrous porous media (permeability, porosity); Resin impregnation dynamics and flow in preforms; Rheology and cure kinetics of polymer matrices; Multiphysics modelling of processes (LCM, RTM, autoclave, AFP); Functional composites for transport, energy, and smart applications; AI/ML-driven process optimization. We seek studies bridging fundamental research with industrial applications, emphasizing reproducibility, sustainability, and scalability.

Guest Editors

Dr. Masoud Jabbari

School of Mechanical Engineering, University of Leeds, Leeds LS2 9JT, UK

Dr. Dianyun Zhang

School of Aeronautics and Astronautics, Purdue University, West Lafayette, IN 47907, USA

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Journal of Composites Science
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
jcs@mdpi.com

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Editor-in-Chief

Dr. Francesco Tornabene
Department of Innovation Engineering, University of Salento, 73100
Lecce, Italy

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