

Special Issue

Laser Surface Treatment in Smart Manufacturing Systems

Message from the Guest Editors

Laser surface treatment offers precise control of surface microstructures and residual stresses, improving wear, corrosion, and fatigue performance while preserving bulk properties. Its compatibility with automation makes it ideal for smart manufacturing, enabling real-time sensing, data analytics, and intelligent control. This Special Issue welcomes research articles and reviews in areas including: • Integration of laser processing with smart manufacturing systems

- Real-time sensing, in situ diagnostics, and advanced monitoring
 - Data-driven optimization, machine learning, and digital twins
 - Physics-based modeling and simulation of laser-material interactions
 - Robotic automation and collaborative robotic laser systems
 - Convergent manufacturing combining laser treatment with other processes
 - Non-destructive testing and quality assurance methods
 - Laser surface treatment of metals, alloys, composites, and novel materials
 - Laser texturing for functional micro/nano surface features
 - Sustainable and energy-efficient laser processing approaches
- We look forward to your contributions.

Guest Editors

Dr. AMM Nazmul Ahsan

Department of Manufacturing and Industrial Engineering, The University of Texas Rio Grande Valley, Edinburg, TX 78539, USA

Dr. Farid Ahmed

Department of Manufacturing and Industrial Engineering, The University of Texas Rio Grande Valley, Edinburg, TX 78539, USA

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Machines
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
machines@mdpi.com

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About the Journal

Message from the Editor-in-Chief

Machines is an international, peer reviewed journal on machinery and engineering. It publishes research articles, reviews and communications. Our aim is to encourage scientists to publish their experimental and theoretical results in as much detail as possible. There is no restriction on the length of the papers. Full experimental and/or methodical details must be provided. There are, in addition, unique features of this journal: Manuscripts regarding research proposals and research ideas will be particularly welcomed; Electronic files or software regarding the full details of the calculation and experimental procedure - if unable to be published in a normal way can be deposited as supplementary material.

Editor-in-Chief

Prof. Dr. Antonio J. Marques Cardoso
CISE—Electromechatronic Systems Research Centre, University of
Beira Interior, Calçada Fonte do Lameiro, P-6201-001 Covilhã, Portugal

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