

## Special Issue

# Recent Advances in Welding and Joining Metallic Materials

### Message from the Guest Editor

Advanced welding and joining processes are essential for modern manufacturing, especially for monolithic metallic systems requiring long-term performance. This Special Issue of *Journal of Manufacturing and Materials Processing* invites contributions on innovative welding methods that integrate process, structure, property, performance, and recyclability. Topics include solid-state welding, laser and hybrid welding with in situ monitoring, additive repair with WAAM or DED, multi-scale modeling, digital twins, sustainable practices, and AI/ML-enhanced defect prediction and adaptive control. Research on microstructural evolution, residual stresses, phase transformations, and industry applications in aerospace, automotive, energy, and defense is encouraged. The issue aims to highlight advances combining materials science, manufacturing innovation, and digital tools for next-generation welding technologies. We look forward to your submissions.

### Guest Editor

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### Deadline for manuscript submissions

30 November 2025



## Journal of Manufacturing and Materials Processing

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## About the Journal

### Message from the Editor-in-Chief

*Journal of Manufacturing and Materials Processing (JMMP)* (ISSN 2504-4494) is a new MDPI peer-reviewed, open access venue with a focus on the scientific fundamentals and engineering methodologies of manufacturing and materials processing. We offer an online platform facilitating effective exchange of innovative scientific and engineering ideas and the dissemination of recent, original, and significant research and developmental findings. On behalf of the Editorial Board, I extend an invitation to our scientific and engineering colleagues to contribute high-quality, innovative, and ground-breaking research articles to *JMMP*.

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### Editor-in-Chief

Prof. Dr. Steven Y. Liang  
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