







Special Issue Reprint

# **Welding and Joining Processes of Metallic Materials**

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The aim of this reprint is to immerse the reader in the advanced processes employed in material welding, joining, and additive manufacturing aspects. From the high-efficiency fusion of automated arc welding and laser welding to the precision layer-by-layer formation in additive manufacturing, welding technologies are continuously transcending traditional boundaries. In this reprint, leading experts in the field share their insights, research findings, and visions for the future. Together, we embark on a journey to unlock the full potential of the integration of intelligent sensors and real-time monitoring systems, seeking sustainable solutions that balance our insatiable need for enhanced process control and quality consistency with our responsibility to preserve the harmony of our planet's ecosystems. We pave the way towards a greener, more sustainable future, where these cutting-edge advancements drive high-performance structural welding manufacturing for industrial innovation and development.





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