



Diffusion Bonding of Metals

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Message from the Guest Editor

Diffusion bonding is an amazing technology for producing holohedral joints. The main process parameters are bonding temperature, dwell time, and bearing pressure. The aspect ratio and the number of layers to be bonded also affect deformation during the diffusion bonding process.

Materials science aspects resulting from the heat treatment, such as grain growth and its impact on mechanical or corrosive properties of the materials, must be considered.

Interlayers like thin amorphous foils or additional metals deposited by PVD-processes may facilitate bonding by formation of a temporary liquid phase due to high interfacial energy or forming eutectic compositions. The occurrence of liquid phases at considerably lower temperature helps to limit grain growth of the matrix material.

For this Special Issue in *Metals*, we welcome research articles and reviews addressing theoretical aspects, specific designs for diffusion bonding, equipment, surface preparation, bonding experiments of metallic materials, including use of different inter- and multilayers, preparation and characterization of diffusion-bonded parts, as well as applications of diffusion bonding.





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Message from the Editor-in-Chief

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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