



Diffusion Bonding of Metals

Guest Editor:

Dr. Thomas Gietzelt

Institute for Micro Process
Engineering, Karlsruhe Institute
of Technology, PoBox 3640,
76021 Karlsruhe, Germany

Deadline for manuscript
submissions:

closed (29 February 2020)

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.





an Open Access Journal by MDPI

Editors-in-Chief

Prof. Dr. Hugo F. Lopez

Department of Materials Science and Engineering, College of Engineering & Applied Science, University of Wisconsin-Milwaukee, 3200 N. Cramer Street, Milwaukee, WI 53211, USA

Prof. Dr. Yong Zhang

Beijing Advanced Innovation Center of Materials Genome Engineering, State Key Laboratory for Advanced Metals and Materials, University of Science and Technology Beijing, 30 Xueyuan Road, Beijing 100083, China

Message from the Editorial Board

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.

Author Benefits

Open Access: free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility: indexed within Scopus, SCIE (Web of Science), Inspec, CAPlus / SciFinder, and other databases.

Journal Rank: JCR - Q2 (*Metallurgy and Metallurgical Engineering*) / CiteScore - Q1 (Metals and Alloys)

Contact Us

Metals Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
www.mdpi.com

mdpi.com/journal/metals
metals@mdpi.com
[X@Metals_MDPI](https://twitter.com/Metals_MDPI)