

Special Issue

Surface Modification of Advanced Metallic Materials

Message from the Guest Editors

Metallic materials, such as steels, aluminum alloys, and magnesium alloys, are widely used structural materials in engineering applications. Usually, it is difficult for most metals and their alloys to achieve high toughness with good corrosion resistance or high toughness with high wear resistance. With the progress of society, increasingly demanding service conditions (heavy/cyclic loads, high corrosive environments, high temperatures, etc.) are challenging the future applications of metallic materials. Traditional thermal diffusion can no longer meet the requirements, so various surface modification treatments, including deposition technologies (physical, chemical or electrical), spraying technologies (thermal or plasma), and high-energy beam (laser or electron beam) treatments, have emerged. This Special Issue focuses on the application of such advanced surface modification technologies to metallic materials. Traditional thermal diffusion, such as pack-cementation, with attractive advantages of low cost and wide application, will also be considered in this Special Issue.

Guest Editors

Prof. Dr. Ning Guo

Faculty of Materials and Energy, Southwest University, Chongqing 400715, China

Prof. Dr. Linjiang Chai

College of Materials Science and Engineering, Chongqing University of Technology, Chongqing 400054, China

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

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About the Journal

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.

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

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