Special Issue

Metallothermic Reactions

Message from the Guest Editor

Metallothermic reactions are the basis of most metallurgical processes, during which the redox interaction characterized by heat release due to exothermic reactions is realized. This class of reactions can be used to create energy-saturated systems and to produce materials for various purposes: ceramics, heat-resistant alloys, and functional gradient materials. The practical aim of such metallothermic reactions has a wide scope, from synthesis of pure materials from systems with high oxophilicity (Ti, Ta, Nd, etc.) to processing of recycled materials in the metallurgical industry, including the solution of environmental problems and obtaining of catalyst precursors. Topics of interest include, but are not limited to, the following:

- Reaction control methods: imposition of gravitational and electromagnetic fields.
- Experimental research methods and mathematical modeling based on approaches of mechanics of multiphase, multicomponent, chemically active continuous media.
- Controlling thermodynamic parameters (pressure and temperature).

Guest Editor

Dr. Dmitrii E. Andreev

Merzhanov Institute of Structural Macrokinetics and Materials Science, Russian Academy of Sciences (ISMAN), Academician Osipyan str., 8, Chernogolovka 142432, Russia

Deadline for manuscript submissions

closed (30 September 2021)

Metals

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 5.3

mdpi.com/si/42826

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

mdpi.com/journal/metals

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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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