metals

an Open Access Journal by MDPI

IMPACT FACTOR 2.5

CITESCORE 5.3

# Advances in Titanium Alloys: Mechanical Properties, Microstructure and Ultrasonic Impact Treatment

Guest Editor:

**Prof. Dr. Alexey Panin**
Institute of Strength Physics and Materials Science, Siberian Branch of Russian Academy of Sciences, Tomsk 634055, Russia

Deadline for manuscript submissions:
**closed (20 March 2024)**

## Message from the Guest Editor

Dear Colleagues,

Due to the remarkable combination of high strength-to-weight ratio, strong resistance to creep, excellent corrosion resistance, and low heat conductivity, titanium and its alloys have been extensively used in a wide range of applications. However, the poor wear resistance of titanium alloys is still the main shortcoming that restricts their applications, particularly in areas involving friction and wear.

Currently, ultrasonic impact treatment (UIT) and its modifications (ultrasonic impact peening, ultrasonic nanostructural surface modification, etc.) are effective methods for surface hardening that significantly improves functional properties of structural materials, as well as their welded joints.

In this Special Issue, we welcome articles that focus on the experimental observations, a molecular dynamics simulation and ab initio calculation mechanisms underlying the development of structural and phase transformations in loaded titanium alloys which made it possible to explain the UIT effect on their microstructure, mechanical properties, as well as deformation and fracture behavior under different external actions.

Prof. Dr. Alexey Panin
*Guest Editor*

metals

IMPACT FACTOR 2.5

CITESCORE 5.3

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, Ei Compendex, 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