Special Issue

Active Screen Plasma Treatment

Message from the Guest Editor

Conventional direct current plasma nitriding (DCPN) has some limitations and disadvantages. Thus, some new methods were presented to avoid the direct formation of plasma on the surface and its consequent problems. One of the methods is active screen plasma nitriding (ASPN) or cathodic cage plasma nitriding (CCPN). Many researchers have reported on factors that are critical to nitriding, including the geometry of the active screen or cathodic cage, the distance between the screen and the component, screen material, furnace size, the value of bias power, and the sample position. Various materials such as steels, titanium alloys, aluminum alloys, copper alloys, high-entropy alloys, polymers, and carbon fibers have been nitrided by ASPN or CCPN. Different materials such as silver, copper, titanium, chromium, and carbon have also been applied as an active screen. This Special Issue will collect reviews and articles related to active screen plasma treatments such as ASPN or CCPN as well as active screen plasma carburizing (ASPC) or cathodic cage plasma carburizing (CCPC).

Guest Editor

Prof. Dr. Akio NISHIMOTO

Department of Chemistry and Materials Engineering, Kansai University, Osaka, Japan

Deadline for manuscript submissions

closed (28 February 2022)



Metals

an Open Access Journal by MDPI

Impact Factor 2.5 CiteScore 5.3



mdpi.com/si/43700

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

mdpi.com/journal/ metals





Metals

an Open Access Journal by MDPI

Impact Factor 2.5 CiteScore 5.3



About the Journal

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.

Editor-in-Chief

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

Author Benefits

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)

Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 18 days after submission; acceptance to publication is undertaken in 2.6 days (median values for papers published in this journal in the first half of 2025).

