



## Gradient Nanocrystalline Surfaces Produced by Mechanical Surface Engineering, Machining and Wear

Guest Editors:

**Dr. Quanshun Luo**

Materials and Engineering  
Research Institute, Sheffield  
Hallam University, Sheffield S1  
1WB, UK

**Prof. Dr. Sanming Du**

School of materials Science and  
Engineering, Henan University of  
Science and Technology, 263  
Kaiyuan Road, Luo-Long District,  
Luoyang, Henan Province, China

Deadline for manuscript  
submissions:

**closed (23 July 2023)**

### Message from the Guest Editors

The scope of this Special Issue aims to address the recent research of nano-structured surfaces generated either in mechanical surface strengthening, such as shot peening, rolling, or other types; in machining; or in a wear process. These processes are known to result in various severities of plastic deformation, work hardening, and residual stresses. Recent research is more focused on the nano-/atomic-scale characterization of such near-surface structures in order to either further enhance the mechanical properties, or to address the fundamentals of microstructure evolution. We welcome research papers, case studies, and topic reviews on various types of mechanically induced nano-scale surface structures, regarding the structural characterization, mechanical properties, and tribological performance, as well as the related failure investigation. There is special interest in the characterization of such surfaces by means of electron microscopy, nano-/micro-indentation, and X-ray diffraction analyses. We also welcome contributions on advances in analytical and testing techniques.





an Open Access Journal by MDPI

## Editors-in-Chief

### Prof. Dr. Wei Pan

State Key Laboratory of New  
Ceramics and Fine Processing,  
School of Materials Science &  
Engineering, Tsinghua University,  
Beijing 100084, China

### Dr. Emerson Coy

NanoBioMedical Centre, Adam  
Mickiewicz University in Poznań,  
ul. Wszechnicy Piastowskiej 3, 61-  
614 Poznań, Poland

## Message from the Editorial Board

Now more than ever, research is asked to deliver knowledge and technologies to solve the major challenges faced by our society. The development of new materials and devices for (without the ambition to be exhaustive) energy, health and food technology, together with the need for establishing processes that reduce the impact on critical resources and the environment, is indeed in the spotlight of most contemporary research. Surface science and engineering play a key role in this regard, with an incredible potential in delivering new and deep scientific understanding and technical solutions essential to solve most of the major societal challenges.

Coatings is a well-established, peerreviewed, online journal dedicated to the vibrant field of surface science and engineering. Coatings publishes original research articles that report cutting-edge results and review papers that make the point on the hottest research topics.

## 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 (*Physics, Applied*) / CiteScore - Q2 (*Surfaces, Coatings and Films*)

## Contact Us

---

Coatings Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland

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

mdpi.com/journal/coatings  
coatings@mdpi.com  
X@Coatings\_MDPI