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

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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.

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Message from the Editorial Board

Now more than ever, research is called for to produce technologies and improve knowledge 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 at the center of most contemporary research. Surface science and engineering play a key role in this regard. Refining surfaces and their modifications provides new materials, architectures and processes with a huge potential to aid most societal challenges. *Coatings* is a well-established, peer-reviewed, online journal that focuses on the dissemination of publications in the field of surface science and engineering. *Coatings* publishes original research articles that report cutting-edge results and review papers on the hottest topics.

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