

Special Issue

Laser Processing and Functional Applications of Coated Tools

Message from the Guest Editors

Our goal with this Special Issue is to compile the latest achievements across multiple disciplines, including laser manufacturing, materials science, mechanics, and surface engineering. This Special Issue will provide a platform for original research articles and reviews, including but not limited to the following topics:

- Laser-induced periodic surface structures for coating functionalization, especially the controllable preparation of (super)hydrophobic/hydrophilic and biologically active coatings on cutting tools.
- The collaborative design of laser surface texturing and coatings, including the selection of tool substrates and coatings, processing techniques for textured patterns, and characterization of mechanical properties.
- The friction and wear behavior of coated tools under dry, lubricating, high-temperature, and corrosive conditions.
- The development of gradient coatings and self-lubricating behavior, alongside wear mechanisms in dry high-speed cutting.
- The experimental investigation and simulation of ceramic- or metal-based coated tools for cutting/milling high-temperature alloys.

Guest Editors

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About the Journal

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.

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