Special Issue

Laser-Based Techniques for Coating Deposition and Surface Modification

Message from the Guest Editors

Laser-based technologies have become essential tools for the precise fabrication and modification of surface coatings, offering localized energy delivery, rapid processing, and superior control over microstructure. These unique advantages enable the creation of coatings with outstanding mechanical, thermal, and functional properties, suitable for applications ranging from wear and corrosion protection to optical, electrical, and catalytic surfaces. This Special Issue of *Coatings* focuses on recent advances in laser-assisted coating deposition and surface modification, including laser cladding, alloying, ablation, texturing, and other emerging processes. Topics of interest include laser melting for protective and functional coatings, surface texturing for tribological and wettability control, laser-induced/enhanced deposition, composite formation, and hybrid laser processes integrated with additive manufacturing. Contributions addressing modeling, simulation, and in situ diagnostics of laser–material interactions are also welcome. We invite original research, reviews, and short communications that advance laser-based coating technologies for modern materials engineering.

Guest Editors

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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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