Special Issue

Laser–Material Interaction: Principles, Phenomena, and Applications

Message from the Guest Editors

Laser–material interaction is a fascinating nexus wherein laser physics, optical physics, and materials science intersect. The main factors that influence this process are the laser beam properties, the material characteristics, and the phenomena that occur during and after the interaction.

The laser beam properties include the wavelength, intensity, pulse duration, and beam shape. These affect how the laser energy is absorbed, reflected, or transmitted by the material. The material characteristics include the composition, structure, phase, temperature, and optical properties. These determine how the material responds to laser irradiation. The phenomena that occur during and after the interaction include heating, melting, evaporation, plasma formation, shock waves, phase transformations, and material transport.

Laser–material interaction has many applications in various fields, such as microfabrication, surface modification, materials processing, biomedical engineering, and sensing. By controlling the laser parameters and the material properties, one can achieve the desired effects on the material surface or inside the material volume.

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Welcome to *Crystals*, the journal dedicated to the fascinating world of crystallographic research! Crystals are more than mere decorative elements; they hold the key to understanding the fundamental structure of matter. Our mission is to explore the crucial significance of this research across various fields. From medicine to technology, chemistry to geology, crystals play a vital role. Their structure provides insights into new advanced materials, innovative drugs, and groundbreaking technologies. Through *Crystals*, we delve into the microscopic world to discover solutions that will shape the future. Join us on a journey through the *Crystals*, where science merges with beauty and innovation.

Editor-in-Chief

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