Special Issue

Towards Compact and Tunable Plasma-Based Accelerators: Advances in Laser–Plasma Interaction and Applied Laser Physics

Message from the Guest Editor

This Special Issue aims to bring together recent advancements in the development of compact and tunable plasma-based accelerators, with a focus on their potential for integration into future scientific, medical, and industrial applications. Key areas of interest include laser wakefield acceleration, beam-driven plasma wakefield acceleration, hybrid acceleration schemes, and innovations in plasma target design and laser technology.
We welcome contributions on experimental and theoretical studies, simulation techniques, and diagnostics that enhance the control, tunability, and reliability of plasma-based accelerators. Special emphasis will be placed on compact accelerator systems suitable for tabletop setups and novel injection methods that enable beam quality optimization. Additionally, this Special Issue seeks to explore cross-disciplinary applications ranging from ultrafast X-ray and THz sources to medical therapies, materials science, and high-energy physics.

Guest Editor

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Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal *Applied Sciences* has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

Editor-in-Chief

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