

## Special Issue

# Novel Ideas for Laser-Plasma Accelerator Applications

### Message from the Guest Editor

In the past decade, great progress has been achieved in plasma wakefield acceleration, and the quality and the stability of electron beams have been greatly improved. Based on the novel accelerators, various compact radiation sources can be generated. Its application research has become a topic in recent years. Many compact sources are gradually realizing their application, including Compton scattering sources and Betatron radiation sources. Compact free-electron lasing has also achieved proof of principle, including wakefield accelerators based on laser-driven and particle beam-driven technologies. These light sources have the advantages of ultra-high brightness and miniaturization, but also have the many challenges of insufficient average brightness, stability and generation mechanism. In this context, many novel schemes have been proposed to overcome the drawbacks of this acceleration mechanism. These include the generation of electron beams with large charges, the compression of energy chirps, the injection control of electron beams, and even the optimization using machine learning and the enhancement of imaging techniques.

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### Guest Editor

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## Applied Sciences

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### Editor-in-Chief

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