

Internal Webinar

Advancing Compact Micro-Accelerators through Non-Linear Plasma Dynamics

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This study explores laser-plasma interactions to generate high-energy electrons and ions at moderate intensities and high repetition rates. It investigates interactions where the target size is comparable to the laser wavelength and aims to make these emissions viable for applications by achieving high-refresh-rate plasma generation.

Using pre-structured microscopic targets with a tailored laser prepulse, the study achieves significant energy enhancements, reaching electron temperatures of 6 MeV and proton energies of 600 keV. These enhancements result from resonant and non-resonant plasma processes, enabling compact emissions suitable for various applications.

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16:00 Hrs

