中央大學物理學系

Department of Physics, National Central University



Colloquium

Advances in Laser-Plasma Interaction

Research at the 100-TW Laser Facility of

National Central University

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Date: 2025/02/25(Tue) Venue: S4-625 Time: 14:00-16:00

Abstract :

The 100-TW laser facility was established in 2005 in the Department of Physics at National Central University for research on laser-plasma interactions. Our focus topics include laser-driven particle accelerators, plasma nonlinear optics, high-order harmonic generation, laser fusion, and more. In recent years, significant achievements have been made, including the probing of linear plasma wakefields using laser-driven femtosecond electron bunches, the generation of ultra-intense single-cycle long-wavelength infrared pulses from tailored plasma structures, the enhancement of laser-driven betatron x-ray emission through density-depressed plasma structures, phase-contrast imaging of biological specimens using betatron x-rays, and the 3D phase-matching profile measurement of laser-driven high-harmonic generation. A brief review of these achievements will be presented in this talk.