

PRESS RELEASE

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Chandrashekhar Joshi to describe New Particle Accelerators.

Chandrashekhar Joshi, Distinguished Professor of Electrical Engineering at UCLA, will deliver this year's Plasma Science and Technology Distinguished Speaker Lecture entitled "*Surfing Plasma Waves: A New Paradigm for Particle Accelerators.*" The lecture will be held on the Princeton University campus, Thursday, November 1, 2007 at 7:30 PM in Room 101, Friend Center, corner of Olden and William Streets.

Conventional particle accelerators for the exploration of terascale physics would be extremely large and costly. Recognizing this, the U.S. Department of Energy supported research to develop entirely new concepts for charged particle acceleration. Plasma-Based Particle Accelerators have recently made spectacular advances, accelerating electrons and positrons by "surfing" on waves in plasmas produced by intense laser pulses or electron beams. This talk reviews the principles of this new technique and prognosticates how it is likely to impact science and technology in the future.

Professor Joshi, winner of the American Physical Society's James Clerk Maxwell Prize, Director of Center for High Frequency Electronics and of the Neptune Laboratory for Advanced Accelerator Research at UCLA, is known worldwide for developing the field of laser and electron beam-driven plasma-based particle accelerators. Joshi's UCLA group was the first to conclusively demonstrate the acceleration of electrons using relativistically propagating plasma waves. These breakthroughs were followed by a series of elegant beam-driven plasma particle-acceleration experiments at the Stanford Linear Accelerator Center. In collaboration with groups from SLAC and USC, Joshi's team has shown energy doubling of 42 GeV electrons from the SLAC linac in less than a meter of plasma, opening a way to build ultra-compact high-energy accelerators. This lecture is sponsored by the Princeton Plasma Physics Laboratory and the School of Engineering and Applied Science.