

Abstract Submitted
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High Voltage Pulsed Power Operation of Inertial Electrostatic Confinement Device at LANL J. PARK, R.A. NEBEL, M.R. KOSTORA, Los Alamos National Laboratory, C.R. MANSFIELD, Alme Associates — The inertial electrostatic confinement (IEC) system provides a favorable development path for practical fusion applications for technical simplicity, compact size, and long target lifetime. In order to improve the efficiency of the IEC system, a novel plasma heating concept based on a periodically oscillating plasma sphere (POPS) was proposed theoretically. Following the recent experimental confirmation of POPS oscillation, a high voltage pulsed power system has been constructed to provide fusion relevant voltages up to 75 kV. In this poster, we will present initial results about the virtual cathode formation and its stability using this pulsed power system. Separately, we will discuss the conventional IEC operation based on glow discharges at LANL for nuclear assay applications.

Richard Nebel
Los Alamos National Laboratory

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