

Abstract Submitted
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Detection of >100 keV electron and ion emission from 10 kJ Dense Plasma Focus¹ OCEAN ZHOU, UC Berkeley, Center of Energy Research (CER), DAVID HOUSLEY, FABIO CONTI, UC San Diego (UCSD), CER, FARHAT BEG, CER, UCSD Mechanical and Aerospace Engineering, HIGH ENERGY DENSITY PHYSICS (HEDP) TEAM — A dense plasma focus (DPF) is an intense source of neutrons and x-rays [1]. Ion and electron beams generated by the device along its central axis during the collapse phase of the plasma are of interest since the accelerated ions are believed to contribute to the neutron production in these devices. Furthermore, 100 keV ions are of particular interest since they exceed the energy threshold required for fusion reactions. We report on the detection of 100 keV electrons and ions from the particle beams emitted by a recently-constructed 10 kJ Mather-type DPF. For the ion beam diagnostic, an avalanche photodiode (APD) is positioned opposite the anode. For the electron beam diagnostic, a similar diagnostic setup, with a different APD model, is used with the polarity of the DPF reversed.

[1] M. Krishnan, IEEE Transactions on Plasma Science **40** , 3189-3221 (2012).

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