

Abstract Submitted  
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**An earth-isolated optically coupled wideband high voltage probe powered by ambient light**<sup>1</sup> XIANG ZHAI, PAUL BELLAN, California Institute of Technology, CALTECH EXPERIMENTAL PLASMA GROUP TEAM — An earth-isolated optically coupled wideband high voltage probe has been developed for pulsed power applications. The probe uses a capacitive voltage divider coupled to a fast LED that converts high voltage into an amplitude-modulated optical signal, which is then conveyed to a receiver via an optical fiber. A solar cell array powered by ambient laboratory lighting charges a capacitor that, when triggered, acts as a short-duration power supply for an on-board amplifier in the probe. The entire system has a noise level  $\leq 0.03$  kV, a DC-5 MHz bandwidth and a measurement range from  $-6$  to 2 kV; this range can be conveniently adjusted.

<sup>1</sup>USDOE

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