

Abstract Submitted
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Generation of Relativistic Electron Beam via Capillary Discharge Guided Laser Plasma Accelerator¹ KEI NAKAMURA, BOB NAGLER, CSABA TOTH, CAMERON GEDDES, CARL SCHROEDER, ERIC ESAREY, WIM LEEMANS, LBNL, ANTHONY GONSALVES, SIMON HOOKER, Oxford University — Generation of semi-monoenergetic relativistic electron beam was demonstrated with capillary discharge guided laser plasma wakefield accelerator (g-LWFA) at LOASIS laser facility of Lawrence Berkeley National Laboratory (LBNL). With 40TW-40fs Ti:Sapphire laser and 33 mm length capillary, 1 GeV electron beam with 4% energy spread (rms) was produced. Also, the stable generation of the 0.5 GeV electron beam was observed with 12TW-75fs laser. Capillary dimension, plasma density and discharge current dependence of the electron beam properties will be presented and electron self trapping within g-LWFA will be discussed.

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