

Abstract Submitted
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Injection Acceleration experiment in laser triggered capillary plasma channel.¹ DMITRI KAGANOVICH², Naval Research Laboratory, ANTONIO TING, DANIEL GORDON, RICHARD HUBBARD, THEODORE JONES, PHILLIP SPRANGLE, Naval Research Laboratory, ARIE ZIGLER, Hebrew University, Jerusalem, Israel — Recent experiment on optically injected Laser Wakefield Acceleration (LWFA) demonstrated electron injection and acceleration in separate injection and acceleration stages. Accelerated electrons >20 MeV were observed, implying an acceleration gradient of 20 GeV/m for the 1 mm acceleration distance. Longer acceleration distance is required to achieve higher energies. Laser triggered capillary discharge is able to create long and stable plasma channel for guiding of the acceleration laser beam. Combination of the gas jet as injector and the capillary as the electron accelerator in a new experimental setup is discussed. Recent upgrade of the laser and the electron detection system are presented.

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