

Abstract Submitted
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Enhancement of laser driven proton acceleration by double-layer target¹ WEI WANG, HONGHAI AN, JUN XIONG, ZHIHENG FANG, ZHIYONG XIE, ANLE LEI, CHEN WANG, RUIRONG WANG, XIUGUANG HUANG, WENBIN PEI, SIZU FU, Shanghai Institute of Laser Plasma — Experimental results of proton acceleration driven by picosecond laser on SGII-UP laser facility are presented. The laser beam which delivering 150J in 1 picosecond pulse was focused onto the foil target. The laser intensity on target was about 310^{18} W/cm². A $0.3\mu\text{m}$ plastic film was placed $300\mu\text{m}$ in front of the $5\mu\text{m}$ Copper target, which was used as a filter to cut off the prepulse and protect the target rear surface, and also to produce a large-scale near-critical-density preplasma before the picosecond main pulse arriving. With plastic filter in front of the target, the maximum energy of proton increased from 10 MeV to 18 MeV, which indicates that the proton acceleration is enhanced by the plastic film in front of the Copper target.

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