

LASER ACCELERATION OF QUASI-MONOENERGETIC MeV-GeV ION BEAMS

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Abstract

Laser interactions with thin solid targets can produce sheath fields of tens of TV/m, which have been used to accelerate ions to several MeV with ps pulse lengths, high currents, and low transverse emittance. While previous results have had 100% energy spread, recent experiments using foils coated with a few monolayers have produced quasi-monoenergetic beams with 17% energy spread near 3 MeV. Such beams may be of interest as injectors or sources. Simulations show the potential for acceleration to hundreds of MeV or GeV energies using very thin foils.

**CONTRIBUTION NOT
RECEIVED**