

Abstract Submitted
for the DPP07 Meeting of
The American Physical Society

Study of relative ion acceleration efficiencies from laser-solid interactions¹ CHRISTOPHER MURPHY, ENAM CHOWDHURY, JOHN MORRISON, LINN VAN WOERKOM, The Ohio State University, KARL KRUSHELNICK, University of Michigan, RICHARD FREEMAN, The Ohio State University — The production of high-energy proton and ion beams has important applications in many areas of science including inertial fusion energy, laboratory astrophysics and compact particle sources for use in radiography and medical oncology. Utilizing laser plasma interactions (LPI) for such a source is garnering support from the various communities due to its potential to be compact and mobile. Recent studies have suggested that while increasing the laser intensity in LPIs is important for high energy ion production, moving to ultrashort (sub-picosecond) laser pulses may not be as effective as increasing the energy. An experimental study of this hypothesis will be presented, comparing the ion beam spectrum, charge and spatial quality using both magnetic spectrometers and film stacks.

¹This work was supported by the Air Force Office of Scientific Research grant number FA9550-07-1-0088

Christopher Murphy
The Ohio State University

Date submitted: 20 Jul 2007

Electronic form version 1.4