Abstract Submitted
for the DPP08 Meeting of
The American Physical Society

Improvements to the applicability of laser plasma ion acceleration CHRISTOPHER D. MURPHY, REBECCA L. DASKALOVA, ENAM A. CHOWDHURY, RICHARD R. FREEMAN, ANDREW KRYGIER, JOHN MORRISON, LINN D. VAN WOERKOM, The Ohio State University, Columbus, OH, ANATOLY MAKSIMCHUK, TAKESHI MATSUOKA, CHRISTOPHER MCGUFFEY, KARL KRUSHELNICK, University of Michigan, Ann Arbor, MI — The study of laser plasma acceleration of ions is a rapidly advancing field due to the potential applications in oncology by proton therapy, astrophysics and neutron production for radiography. At present, most of the experiments use water and oil contaminants on the rear surface of the target as the ion source although this source is not well controlled. In order to advance the progress of laser driven ion sources, the partition of energy between the species present must be studied along with methods of controlling the contaminant content. Preliminary experimental results from an extensive study of the relevant issues will be presented.

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Date submitted: 18 Jul 2008 Electronic form version 1.4