

Abstract Submitted  
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**Capsule Design Studies for Mid-Z Ion-Driven Fast Ignition<sup>1</sup>** B.J. ALBRIGHT, M.J. SCHMITT, G.E. CRAGG, J.C. FERNÁNDEZ, I.L. TREGILLIS, N.M. HOFFMAN, G.R. MAGELSEN, B.M. HEGELICH, K.A. FLIPPO, Los Alamos National Laboratory — Ion fast ignition (IFI) is an approach to fast ignition inertial confinement fusion where an energetic ion beam is used to ignite a hot spot. Recent work at LANL and elsewhere has shown that energetic mid-Z ion beams can be made when one directs a high-intensity short-pulse laser onto a target foil cleaned to remove impurities. Use of such mid-Z ion beams in IFI may have advantages over other approaches to fast ignition. In this presentation, preliminary capsule designs for mid-Z IFI are assessed. These designs comprise a DT gas pocket, a DT ice fuel layer, and a low-Z ablator. Dependence of gain with beam parameters will be shown and the viability of this approach to fast ignition will be discussed.

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