

Abstract Submitted
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Liquid Cryogenic Target Development for Fast Ignition* D.L. HANSON, C. RUSSELL, R.A. VESEY, Sandia National Laboratories, D.G. SCHROEN, J.L. TAYLOR, C.A. BACK, D. STEINMAN, A. NIKROO, J.L. KAAE, E. GIRALDEZ, General Atomics, R.R. JOHNSTON, K. YOUNGMAN, Ktech Corp. — As an alternative to foam-stabilized cryogenic solid D-T fuel layers for indirect-drive fast ignitor targets, which will tend to β -layer to a nonuniform distribution in a reentrant cone geometry [1], we are investigating hemispherical cryogenic fast ignition capsules with a liquid fuel layer confined between a thick outer ablator shell and a thin inner shell [2]. The shape and surface quality of the fuel layer is determined entirely by the characteristics of the bounding shells. In the present design, structural support for the thin (4.5 μ m) hemispherical GDP inner shell is provided by a mounting ring. Fabrication of stronger thin Be hemi-shells is also being investigated. Technology issues for liquid cryogenic fuel capsule development and progress toward demonstration of a working target will be presented.

[1] J.K. Hoffer *et al.*, Fusion Sci. Technol. **50**, 15 (2006).

[2] D.L. Hanson *et al.*, Fusion Sci. Technol. **49**, 500 (2006).

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