

Abstract Submitted
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Imaging of High-Z doped, Imploded Capsule Cores¹ SHON T. PRISBREY, M. JOHN EDWARDS, LARRY J. SUTER, Lawrence Livermore National Laboratory — The ability to correctly ascertain the shape of imploded fusion capsules is critical to be able to achieve the spherical symmetry needed to maximize the energy yield of proposed fusion experiments for the National Ignition Facility. Implosion of the capsule creates a hot, dense core. The introduction of a high-Z dopant into the gas-filled core of the capsule increases the amount of bremsstrahlung radiation produced in the core and should make the imaging of the imploded core easier. Images of the imploded core can then be analyzed to ascertain the symmetry of the implosion. We calculate that the addition of Ne gas into a deuterium gas core will increase the amount of radiation emission while preserving the surrogacy of the radiation and hydrodynamics in the indirect drive NIF hohlraum in the proposed cryogenic hohlraums. The increased emission will more easily enable measurement of asymmetries and tuning of the implosion.

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