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Progress towards monochromatic imaging of mix at the NIF<sup>1</sup> G.A. KYRALA, T.J. MURPHY, P.A. BRADLEY, N.S. KRASHENINNIKOVA, I.L. TREGILLIS, K. OBREY, R.C. SHAH, P. HAKEL, J.L. KLINE, G.P. GRIM, M.J. SCHMITT, R.J. KANZLEITER, Los Alamos National Laboratory, S.P. REGAN, LLE, M.A. BARRIOS, Lawrence Livermore National LAB — Mix of non-hydrogenic (Z > 1) material into the hydrogenic (D and T) ICF capsule fuel degrades implosion performance. The amount of degradation depends on the degree and the spatial distribution of mix. Experiments are underway at NIF to quantify the mix of shell material into fuel using directly driven capsules. CH or CD shells with various dopants, implanted at different depths in the shell are being used to change the amount of dopant mix. Spatially and spectrally resolved emission from the ionized dopants will be used to generate spatially and temporally dependent density and temperature maps of the ionized dopants that are mixed and heated in the core plasma. This information will be used to validate different mix models. This talk will describe the search for the appropriate dopant that gave a radiation spectrum that could be used to record images with the MMI diagnostic.

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