

Abstract Submitted  
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**Possible Radiochemical Signatures for Imploding Capsule Diagnostics on the National Ignition Facility**<sup>1</sup> CHARLES CERJAN, MARK STOYER, ROB HOFFMAN, PETER AMENDT, JEFF COLVIN, Lawrence Livermore Natl Lab — One of the most important and challenging issues confronting capsule implosion experiments will be a quantitative evaluation of the implosion dynamics. Given the extreme conditions under which these experiments will occur, developing robust, sensitive diagnostics will be difficult. Radiochemical signatures might provide important insight into material mixing and laser drive asymmetry that would complement planned x-ray and nuclear diagnostics since the relevant nuclear reactions sample the core conditions directly. Simulations of both single-shell and double-shell target configurations with selected radiochemical tracers indicate that several experimentally accessible isotopic ratios would be suitable diagnostics for the expected implosion conditions.

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