

Abstract Submitted  
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**A New Spin on an Old Technology: Piezoelectric Ejecta Diagnostics for Shock Environments** WENDY VOGAN, WILLIAM ANDERSON, Los Alamos National Laboratory, MICHAEL GROVER, Bechtel Nevada Special Technologies Laboratory, ROBERT HIXSON, NICHOLAS KING, STEVE LAMOREAUX, KEVIN MORLEY, PAULO RIGG, Los Alamos National Laboratory, GERALD STEVENS, WILLIAM TURLEY, Bechtel Nevada Special Technologies Laboratory, WILLIAM BUTTLER, Los Alamos National Laboratory — In our investigation of ejecta, or metal particulate emitted from a surface subjected to shock-loaded conditions, we have developed a shock experiment suitable for testing new ideas in piezoelectric mass and impact detectors. High-explosive (HE) shock loading of tin targets subjected to various machined and compressed finishes results in significant trends in ejecta characteristics of interest such as areal density and velocity. Our enhanced piezoelectric diagnostics, “piezo-pins” modified for shock mitigation, have proven levels of robustness and reliability suitable for effective operation in these ejecta milieu. These field tests address questions about ejecta production from surfaces of interest; experimental results are discussed and compared with those from complementary diagnostics such as x-ray and optical attenuation visualization techniques.

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