

Abstract Submitted  
for the DFD15 Meeting of  
The American Physical Society

**Experimental investigation of turbulent mixing in post-explosion environment** JOSH SMITH, MICHAEL HARGATHER, New Mexico Tech — Experiments are performed to investigate the turbulent mixing of product gases and the ambient environment in a post-explosion environment. The experiments are performed in a specially constructed shock tunnel where thermitic-enhanced explosions are set off. The explosives are detonated at one end of the tunnel, producing a one-dimensional shock wave and product gas expansion which moves toward the open end of the tunnel. Optical diagnostics are applied to study the shock wave motion and the turbulent mixing of the gases after the detonation. Results are presented for schlieren, shadowgraph, and interferometry imaging of the expanding gases with simultaneous pressure measurements. An imaging spectrometer is used to identify the motion of product gas species. Results show varying shock speed with thermitic mass and the identification of turbulent mixing regions.

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Date submitted: 31 Jul 2015

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