

Small-scale shock experiments to characterize performance of detonator materials.

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The ability to develop an accurate model of shock initiation for detonators is hindered by a lack of appropriate thin-pulse shock data for validation and parameterization. In recent years, threshold criteria have been mapped for several detonator materials, however the historical pop-plot data was typically collected using a sustained pulse. Here we present measurements of the relationship between impulse pressure and run-distance in the thin-pulse regime, specific to detonator materials. A high voltage CDU was used to launch Parylene-C flyers at mini-wedge and thin samples of hexanitrostilbene. Streak camera and PDV diagnostics were utilized to collect the data, which is being used to validate grain-scale Hydrocode simulations of initiation.

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