

Abstract Submitted  
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**Measurements of Two-Dimensional Shock Initiation Process of Condensed Explosive** FENGLEI HUANG, XIANGYU HU, Beijing Institute of Technology — In two-dimensional shock initiation, great differences exist between the axial center and the surface of shock profile. A two-streak high-speed photography measuring system is designed to record the reaction behavior within the run distance of shock initiation. The PMMA attached to the output surface of the explosive acts as the first streak. The second streak is produced by the opaque aluminum foil and paper. As the wave arriving time to the PMMA gap is different, the refractive index around the vicinity of the incline shock wave in the PMMA gap has been abruptly changed. The light changes its direction where the profile of the reactive shock wave can be recorded by high-speed camera. As the reactive wave has strong reaction, the light will pass the second streak and the reflection mirror to enter the camera. The reactive wave at different locations can be obtained by designing different length of the acceptor. The experiment results show that the delay-time of strong reaction decreases and the strength of reaction increases when the run distance of shock wave increased. The reaction rate and strength are smaller near the input shock zone within the initiation distance.

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