

Abstract Submitted
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Optimisation of a laser-driven flyer system for the initiation of energetic materials JONATHAN HIRD, MARTIN GREENAWAY, University of Cambridge — A Q-switched Nd:YAG laser operating at a wavelength of 1.064 microns has been used to drive miniature flyer plates capable of inducing a prompt shock-to-detonation transition in secondary explosives. In this paper, we report the effect of flyer composition on performance, as determined by high-speed photography, optical diodes and piezoelectric gauges. Research has shown that flyers may reach velocities in excess of 5000 m/s producing impact pressures of the order 10 GPa. The results will be discussed in terms of the material properties of the launch films used and the effectiveness of laser-driven flyers as initiators in energetic material research.

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