

Abstract Submitted
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Laser-Driven Spall in Al: Velocity Interferometry and Target Recovery STEPHEN ROTHMAN, AWE Aldermaston, SUJIT BANDHYOPADHYAY, Rutherford Appleton Laboratory, Science and Technology Facilities Council, COLIN BROWN, ADRIAN GEORGE, NYDHYRJN GJSHCHKHMYJ, REBECCA GREEDHAREE, TOM GUYMER, NIGEL PARK, MIKE PARSLEY, ED PRICE, AWE — Using the HELEN laser at AWE we have done spall experiments on pure Al at strain rates between $\sim 6 \times 10^5$ and $2 \times 10^6 \text{ s}^{-1}$. A heterodyne velocity interferometer (Het-V) recorded rear-surface velocity profiles and the majority of targets were recovered. We have compared the behaviour of polycrystalline and single-crystal Al of four different crystal orientations. The results allow the correlation of pre-shot target structure – determined by electron backscatter diffraction – with the velocity profiles and recovered-target metallurgy.

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