

Abstract Submitted  
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**Shock Loading of polycrystalline alumina and sapphire—a comparative study** GEREMY KLEISER, LALIT CHHABILDAS, AFRL, WILLIAM REINHART, Sandia National Laboratories, AIR FORCE RESEARCH LABORATORY TEAM, SANDIA NATIONAL LABORATORIES TEAM — There is considerable interest in the shock loading behavior of aluminum oxide whether it is in the polycrystalline phase or in the single crystal phase. Results of well-controlled experiments conducted recently on polycrystalline alumina and Z- cut sapphire at Sandia National Laboratories are summarized to conduct a comparative study. Although the experimental results appear to have the same behavior in the shock-velocity vs. particle-velocity plane, they are considerably different in the stress-volume compression plane. This is an extremely interesting observation and cannot be explained merely by the differences in the strength of the material in the shocked state.

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