Abstract Submitted
for the SHOCK09 Meeting of
The American Physical Society

On the Compressive and Tensile Dynamic Strength of Magnesium Aluminate Spinel SHMUEL HAYUN, VITALY PARIS, MOSHE DARIEL, EUGENE ZARETSKY, NAHUM FRAGE, Ben-Gurion University of the Negev — Polycrystalline transparent Magnesium Aluminate Spinel (MAS) is an attractive material for a wide range of optical, electronic, structural and armor applications. Transparent MAS samples of 20-30 mm diameter and 3-5 mm thickness has been successfully fabricated by means of Field Assisted Sintering Technology. The dynamic response of MAS was investigated by plate impact experiments. The values of the Hugoniot Elastic Limit (HEL) and the spall strength were derived from the VISAR records of the velocities of the free sample surface or of the sample/window (PMMA) interface. The dependence of the HEL and the spall strength on the impact stress, as well as, correlation between the spall strength and the width of the loading pulse are discussed.

Shmuel Hayun
Ben-Gurion University of the Negev

Date submitted: 11 Feb 2009 Electronic form version 1.4