

Abstract Submitted
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Fiber Bragg Grating sensor for shock wave diagnostics AVI RAVID, EHUD SHAFIR, SHLOMI ZILBERMAN, GARRY BERKOVIC, BENNY GLAM, GABRIEL APPELBAUM, Applied Physics Division, Soreq NRC, 81800 Yavne, Israel — Fiber Bragg Grating (FBG) sensor response was studied in gas-gun shock wave experiments. The sensors were embedded in PMMA target subjected to planar shock waves under 1GPa. Two orientations of the FBG sensor with respect to the shock plane were examined: parallel and perpendicular. The shift of the reflected wavelength was measured with a system based on commonly available communication grade add-drop filters that covered the maximal expected wavelength swing. The FBG sensors survived the shock and their strain-to-wavelength response was determined by comparison to the calculated strain based on the known PMMA EOS and VISAR measurements.

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