Abstract Submitted
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Measurement of Shock Propagation and Metal Plasma Expansion in Underwater Wire Explosion by Utilizing CW Laser Light Source SUNG-HYUN BAEK, EUN SOO LEE, INHO KIM, Agency for Defense Development, P.O. Box 35-5, Yuseong, Daejeon, 305-600, Korea — In order to get simultaneous high speed streak and framing images of exploding metal wires in water environment, we have employed cw green laser as a backlight source and laser beam splitter as a device separating images of exploding wires. By filtering the light emitted from the exploding wire with the help of a laser line filter, the images could become much finer than those taken with normal flash light source. The evolution and stability of the cylindrical plasma column together with the shock wave and metal plasma expansion speeds in water bath have been measured, and the data were applied to understand the plasma characteristics, e.g., electrical conductivity or thermodynamic properties of warm dense metal plasmas.

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