

Abstract Submitted
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Shock wave acceleration in weakly ionized plasmas¹ NIRMOL K. PODDER, ANASTASIA V. TARASOVA, RALPH B. WILSON IV, Troy University, Troy, AL — A significant increase in velocity and considerable decrease in amplitude result in a supersonic electromagnetic shock wave when it is allowed to traverse into the positive column of an argon glow discharge plasma. The simultaneous increase in velocity and decrease in amplitude of the shock in plasma is not fully understood. In this work, a comprehensive set of measurements is performed on the plasma, shock wave, and their correlation. Plasma parameters are measured through the use of Langmuir probes, while the shock parameters are monitored through a multipoint laser deflection technique. These measurements enable the isolation of the plasma and gas parameters responsible for the shock modification in plasma.

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