

Abstract Submitted
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Study of shock shape and strength as a function of plasma energy using background oriented schlieren and shadowgraph. BHAVINI SINGH, LALIT RAJENDRAN, MATTHEW GIARRA, SALLY BANE, PAVLOS VLACHOS, None — The formation of a spark is a random, chaotic process. The flow field generated by this spark can be used in flow control and plasma assisted combustion applications. In order to understand the flow field some time after spark discharge (approximately 1 microsecond), it is important to observe the shape and strength of the shockwave immediately following the plasma discharge. It is also important to understand the effect that the energy deposited in the spark gap has on the shock strength and shock shape. We therefore propose a background oriented schlieren (BOS) technique to measure density gradients associated with the spark discharge and hence quantify shock strength. Simultaneous shadowgraph measurements will be used to observe the shape of the shock and compare it with the reconstructed density gradients obtained from BOS measurements.

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None

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