

Abstract Submitted  
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**Fluid and ionized gas dynamics in a nanosecond discharge** MANISH JUGROOT, Royal Military College of Canada — Understanding ionized gases and plasmas in small spaces are highly interesting as the complexity of micro-technology systems increases. A self-consistent model of plasma and neutral gas dynamics is applied to nanosecond short-gap microplasmas. Fluid equations of the fully self-consistent model are described with emphasis on the close coupling among the plasma, the fluid and the electric field. The microplasmas are studied from an initial cloud and the momentum and energy transfer are investigated. Gas heating and depletion initiation are observed, highlighting the close interaction between the fluid and the ionized gas in governing the evolution of the nanosecond microplasmas.

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