

Abstract Submitted  
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**Dependence of the Current on the Hollow Cathode Dimensions  
and Seed Electron Properties in a Pseudospark Discharge Initiation<sup>1</sup>**

SELMA CETINER, PETER STOLTZ, PETER MESSMER, Tech-X Corporation  
— Hollow cathode discharges can be triggered by different mechanisms, including laser irradiation on the front or back wall of the cathode or beam triggering from another hollow cathode source, resulting in different developments of the discharge. The two-dimensional kinetic plasma simulation code OOPIC Pro and the two and three-dimensional code VORPAL are used to study the properties of both standard and compact hollow cathode devices. This investigation studies variations in the peak initiation current with the hollow cathode dimensions and the location and energy of the seed electrons. The relative importance of secondary electrons due to both ion and electron impact is also studied. It is demonstrated that the magnitude of the peak current has a dependency on all these factors combined and trends cannot be established by varying a parameter in isolation.

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Selma Cetiner  
Tech - X Corporation

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