

Abstract Submitted
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EMPIRE Simulation of the RKA Electron Beam in a Gas Cell

BRANDON MEDINA, Sandia National Laboratories — As part of a continued validation effort for Sandia's new plasma code, EMPIRE, we have modeled and are simulating the RKA beam experiment. Specifically, we have begun simulations of the RKA diode into the gas cell. The current EMPIRE (informal) validation effort is ultimately concerned with the electron-beam transport (e.g. electron-neutral chemistry) through an Ar-filled gas cell at various pressures from vacuum to ~ 1 Torr. In the current work, we will compare our simulations to CEA results and test a possible explanation for why the CEA/CESTA is seeing asymmetric burn-through on their cathode foil. Sandia National Laboratories is a multimission laboratory managed and operated by National Technology & Engineering Solutions of Sandia, LLC, a wholly owned subsidiary of Honeywell International Inc., for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-NA0003525.

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