

Abstract Submitted
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Characterization of lithium evaporators for LTX¹ M. NIETO-PEREZ, CICATA-IPN, R. MAJESKI, J. TIMBERLAKE, D. LUNDBERG, R. KAITA, PPPL, B. AREVALO-TORRES, CICATA-IPN — The presence of lithium on the internal components of fusion devices has proven to be beneficial for reactor performance. The Lithium Tokamak Experiment (LTX) will be the first experimental fusion device operating with a significant portion of its internal surface coated with lithium. One of the key capabilities in the device is the reliable production of lithium films inside the reactor. This task is accomplished with the use of lithium evaporators, specially designed for LTX using resistively heated yttria crucibles. In the present work, results from the operation of one of these evaporators on a separate test stand are presented. Deposition measurements at different power levels were performed using a quartz crystal deposition monitor, and temperature distributions in the evaporator crucible and its content were obtained using an infrared camera and a dip-in thermocouple probe. Modeling of the evaporation cloud was done with the raytracing software OptiCAD, and comparisons between the computations and the temperature and flux measurements were performed, in order to accurately predict spatial lithium deposition rates in different locations of the LTX device.

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