

Abstract Submitted  
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**Design and Fabrication of the Lithium Tokamak Experiment<sup>1</sup>**

THOMAS KOZUB, RICHARD MAJESKI, ROBERT KAITA, CRAIG PRINISKI, LEONID ZAKHAROV, PPPL — The design objective of the lithium tokamak experiment (LTX) is to investigate the equilibrium and stability of tokamak discharges with near-zero recycling. The construction of LTX incorporates the conversion of the existing current drive experiment (CDX) vessel into one with a nearly complete plasma facing surface of liquid lithium. This paper will describe the design, fabrication, and installation activities required to convert CDX into LTX. The most significant new feature is the addition of a plasma facing liner on a shell that will be operated at 300 °C to 400 °C and covered with an evaporated layer of liquid lithium. The shell has been fabricated in-house from explosively bonded stainless steel on copper to a rather unique geometry to match the outer flux surface. Other significant device modifications include the construction of a new ohmic heating power system, rebuilding of the vacuum vessel, new lithium evaporators, additional diagnostics, modifications to the poloidal field coil geometry and their associated power supplies. Details on the progress of this conversion will be reported.

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