

Abstract Submitted
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Assembly of the Lithium Tokamak Experiment¹ C.L. ELLISON, University of Colorado, Boulder, L. BERZAK, R. KAITA, T. KOZUB, D. LUNDBERG, R. MAJESKI, D. MOSER, K. SNIECKUS, J. TAYLOR, Princeton Plasma Physics Laboratory — The Lithium Tokamak Experiment (LTX) will explore the effects of liquid lithium as the plasma facing component (PFC) of tokamak walls. Expected modifications include decreased recycling, improved energy confinement times, and flat electron temperature profiles. While the vacuum vessel has been used in the Current Drive Experiment – Upgrade, the new research emphasis on a full wall (5 m²) liquid lithium PFC complicates the design and assembly. For instance, the heated shells (400°C) for the liquid lithium PFCs require any temperature-sensitive components to be thermally isolated. The potentially reactive nature of the heated lithium restricts the allowable materials within the chamber, e.g., all copper components are plated with nickel or surfaced with stainless steel. The electrical, thermal, and chemical isolation for chamber components thus introduce complexity in the assembly. These will be described in the context of a design that will test the effects of liquid lithium as a first wall.

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