

Abstract Submitted
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Construction of the Lithium Tokamak Experiment (LTX)
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ZAKHAROV, Princeton Plasma Physics Lab, LTX TEAM TEAM — The Lithium
Tokamak eXperiment (LTX)* will investigate the low recycling operating regime
for magnetically confined plasmas using liquid lithium plasma facing surfaces. The
engineering design and machine fabrication process will be presented. The most
significant new feature of the LTX machine is the installation of a heated copper
toroidal shell that will be operated at 300 °C to 500 °C. Its stainless steel plasma-
facing liner will be internally coated with an evaporated layer of liquid lithium. The
shell is comprised of four quadrants that have been fabricated in-house from explo-
sively bonded stainless steel on copper to conform closely to the outer plasma flux
surface. All internal components of the LTX machine have been designed and built
to meet the simultaneous requirements for liquid lithium compatibility, high tem-
perature operation, and electrical isolation. These requirements have led to unique
design features, such as the method of supporting the shell quadrants, and con-
struction of the new internal poloidal field coils. *Supported by US DOE contract
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