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Thomson Scattering Measurements of Electron Temperature and Density on the Lithium Tokamak Experiment (LTX)¹ T. STRICKLER, R. MAJESKI, R. KAITA, B. LEBLANC, Princeton Plasma Physics Laboratory — The Lithium Tokamak eXperiment (LTX) is a spherical tokamak in which the plasma is almost entirely surrounded by a lithium-coated plasma-facing shell (5 m² area) conformal to the last closed magnetic flux surface. Based on previous experimental results and simulations, it is expected that the low-recycling liquid lithium surfaces will result in higher temperatures at the plasma edge, flatter overall temperature profiles, centrally-peaked density profiles, and an increased confinement time. To test these predictions, the electron temperature and density profiles in LTX are measured by a multi-point Thomson scattering system (TVTS). The TVTS system employs a ruby laser (15 J, 30 ns pulse width) with a spectrometer/ICCD detector. Here, the performance of the TVTS system is discussed. Initially, Thomson scattering measurements will be performed at several points between minor radius $r=0$ to $r=24$ cm (outboard). Later, an edge view Thomson scattering system will be implemented to look at the region a few centimeters within the last closed flux surface.

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