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Implementation of a high throughput spectrograph for Thomson scattering measurements on the Compact Toriodal Hybrid[1] MATTHEW GOFORTH, PETER TRAVERSO, DAVID MAURER, Auburn University — To better understand the equilibrium and stability of Compact Toroidal Hybrid (CTH) plasmas, a multipoint Thomson scattering system is under development at Auburn University. Thomson scattering will be performed at 532nm using a frequency doubled Continuum PL DLS Nd:YAG laser [1, 2]. The Thomson scattered light will be measured using a high throughput HoloSpec $f/1.8$i imaging spectrograph with in-line interference filter for spectral discrimination of stray laser light. An image intensified charge coupled device (ICCD) camera employing a Gen III photocathode with quantum efficiency of approximately 50% near the frequency doubled laser line is planned as the detection element for the scattered light. Bench and CTH impurity line emission measurements will be presented quantifying spectrometer and ICCD performance and suitability for scattering measurements over the visible spectral region near 532nm.

[1] D. J. Schlossberg, et al., Rev. Sci. Instr. 82, 10, 10E335
[2] N. L. Schonenbeck, et al., Rev. Sci. Instr. 82, 10, 10E330

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