

**Abstract Submitted for the 54th Annual Meeting
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Category Number and Subject: 10.0.0 Undergraduate or High School Research

Theory Experiment Combined/General

Spectroscopic Analysis of Light Emitted from Gyrotron Tubes,* L.S. Riford, *Lehigh University*; M. Cengher, J. Lohr *General Atomics* – During operation of high power 1 MW class gyrotron tubes, and especially during conditioning to full operational parameters, sparkdowns and normal plasma discharges in the tubes emit light. A spectrometer can be installed on a gyrotron to look back through the diamond output window to measure the spectra of the atoms excited in a discharge. Identifying the emitted lines spectroscopically and inferring the locations from which the light is coming can lead to a better understanding of normal and abnormal gyrotron operation. Data from several gyrotrons will be presented and compared.

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