The advancement of laboratory based Extreme Ultraviolet (EUV) radiation has escalated with the desire to use EUV as a source for semiconductor device printing. Laser plasmas based on a mass-limited target concept, developed within the Laser Plasma Laboratory demonstrate a much-needed versatility for satisfying rigorous source requirements. This concept produces minimal debris concerns and allows for the attainment of high repetition rates as well as the accommodation of various laser and target configurations.

This work demonstrates the generation of EUV radiation by creating laser plasmas from mass-limited targets with indium, tin, and antimony doped droplets. Spectral emission from the laser plasmas is quantified using a flat-field spectrometer. COWAN code oscillator strength predictions for each of the dopants were convolved with narrow Gaussian functions creating synthetic spectra for the EUV region between 10 nm - 20 nm.

A preliminary comparison was made between the theoretical spectra and experimental results. From this comparison, ion stage transitions for each of the hot dense plasmas generated were assessed.

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The public is welcome to attend.