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EUV spectroscopy on the SSPX spheromak J.H.T. CLEMENTSON, P. BEIERSDORFER, R.D. WOOD, Lawrence Livermore National Laboratory, SSPX TEAM — EUV plasma spectroscopy is one of the diagnostics used at the Sustained Spheromak Physics Experiment (SSPX) to study plasma impurity ions. SSPX produces hydrogen plasmas of densities around 10^{14} cm^{-3} with peak electron temperatures from 10 eV up to 550 eV, thus covering a broad range of plasma conditions. The diagnostic consists of a grating spectrometer with a field of view through the magnetic axis at the mid-plane of the spheromak. It employs a spherical flat-field grating, covering the spectral region of 25 – 400 Å with a resolution of 1 Å. The recording of spectra is done using a Photometrics CCD camera. Several charge states of low-Z elements have been identified, notably B, C, N and O. Of the heavier elements, Cu and Ti are found in the machine, again in a variety of charge states. We are exploring the possibility of injecting metallic compounds, such as tungsten and iron, of interest to fusion engineering, atomic theory and atomic astrophysics. Work at UC Lawrence Livermore National Laboratory was performed under the auspices of the US Department of Energy under Contract No W-7405-ENG-48.

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