

Abstract Submitted
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Optical Emission Measurements of Dual Frequency Capacitively Coupled Plasmas ERIC BENCK, KRISTEN STEFFENS, National Institute of Standards and Technology — Dual frequency capacitively coupled plasma sources are becoming increasingly important in semiconductor manufacturing processes. By having the two frequencies separated sufficiently far apart, it is possible to essentially independently control the plasma density and ion energies impacting wafers. This significantly increases the operating range and etching control over that of a single frequency CCP. An imaging spectrometer combined with a high speed intensified CCD camera is utilized to obtain spatially and temporally resolved measurements of the optical emissions from dual frequency fluorocarbon plasmas created in a Gaseous Electronics Conference (GEC) reference reactor. Plasma behavior is characterized for a variety of operating conditions. In particular, the influence of a single vs. multiple powered electrodes will be presented.

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