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Simulation and Measurement of Characteristic in 450 mm CCP Plasma Source

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CST microwave studio is used to simulate the plasma profile of the 450mm CCP source. Standing wave effect becomes important at the high frequency as the electrode radius increases. To solve plasma non-uniformity problem, we designed multi electrode chamber to decreasing standing wave effect. Simulation showed the ratio of input power of each electrode is related with electric field strength. The multi electrode was constructed and measured by 2D probe arrays using floating harmonic method. Uniformity of 450 mm CCP was changed by the ratio of input power of each electrode. We described this dependence with circuit model.

Keywords: 450 mm, Capacitive coupled plasma, Uniformity