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Correlation between spatial distribution of wafer surface temperature and plasma parameters YEONG-MIN LIM, HYUNDONG EO, CHIN-WOOK CHUNG, Hanyang University — The spatial distributions of wafer surface temperature and plasma parameters were measured in an inductively coupled plasma(ICP) source with different gas pressures and powers. In the plasma process, the temperature of the wafer surface is a very important parameter as well as the plasma parameters such as plasma density and electron temperature. Because if the surface temperature distribution of the wafer is not uniform, problems such as uniformity of process profile or warpage may occur. In this work, the surface temperature of the wafer was measured with a platinum resistance thermometer and the spatial temperature distribution was obtained by placing thermometers in a concentric circle. The spatial plasma density and electron temperature were measured by wafer-type two dimensional probe based on the floating harmonic method. The spatial distribution of wafer surface temperature and the distribution of plasma parameters were compared and analyzed for their correlation.

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