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**Suppression of film deposition in a plasma CVD system using gas flow** HIROTAKA TOYODA, KAZUKI KEYAMURA, Department of Electrical Engineering and Computer Science, TATSUO ISHIJIMA, Plasma Nanotechnology Research Center, Nagoya University — In plasma-enhanced chemical vapor deposition, film deposition on undesirable surfaces sometimes becomes an issue. In this study, intentional suppression of film deposition in a plasma CVD system is examined with introduction of high-speed gas flow in the vicinity of the solid surface. In this study, microwave plasma is produced at total pressures of  $\sim 10$  Pa with  $C_6H_6$  and rare gas (Ar or He).  $C_6H_6$  is introduced through an independent gas inlet facing to the sample substrate. Ar gas is introduced along the substrate surface through a slit-structured gas inlet. Deposited film thickness is measured by a step profiler. Monotonic decrease in the deposition rate down to 10% of initial (without Ar gas flow) value was observed at a Ar gas flow rate of 125 sccm at a position of 1 cm away from the Ar gas inlet. By changing the rare gas species from Ar to He, effect of the gas flow on the C film suppression became less effective. This result suggests that momentum transfer between high speed rare gas flow and deposition precursors diffusing from the plasma is one of important factors.

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