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Effect of capacitor termination to a planar antenna coil on electron density distribution in an inductively coupled plasma TAEWOO KIM, CHINWOOK CHUNG, Hanyang University — The effects of capacitor termination to a planar antenna coil on electron density distributions and the electron energy distribution function (EEDF) are investigated in an argon inductive discharge. As changing the capacitance, the plasma parameters are significantly changed. When the reactance of the termination capacitor is half that of the planar coil, electrostatic coupling between the antenna coil and the plasma is suppressed. At low pressures, electron densities are maximized, while electron temperatures and plasma potentials are minimized. At high pressures, electron temperatures and plasma potentials are minimized, however, electron density is not maximized. Electron energy distribution functions (EEDFs) and electron density distributions are also measured. As pressure increases, non-local to local electron kinetics transition occurs. In local kinetics or high pressures, the experimental results show that the electron density distribution is changed by the position of the virtual ground of the antenna coil..

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