

Abstract Submitted
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Measurement of the electron energy distribution in magnetized solenoidal inductively coupled plasma JIN-YONG KIM, HYO-CHANG LEE, YOUNG-DO KIM, YOUNG-CHEOL KIM, CHIN-WOOK CHUNG, Department of Electrical Engineering, Hanyang University, Republic of Korea — Study on the changes in the plasma parameters and electron energy distribution (EED) was performed in magnetized solenoidal inductively coupled plasma. Without DC magnetic field, the electron temperature was almost same in radial position and the EED in total electron energy scale was radially coincided, which indicate that the discharge property is governed by non-local electron kinetics. However, as the DC magnetic field was increased, dramatic changes in the plasma uniformity and electron temperature, and radially non-coincidence of the EED in total electron energy scale were measured. These changes show the transition from nonlocal to local electron kinetics and thus, with increasing the DC magnetic field, the electrons were cooled at the discharge center where the electron heating is absent. As a further work, we will also study Ar/O₂ gas mixing effect in the magnetized solenoidal inductively coupled plasma.

Jin-Yong Kim
Dept of Electrical Engineering, Hanyang University, Republic of Korea

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