

Abstract Submitted
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Measurement of electron energy distribution functions in a low pressure and low density inductively coupled plasma HYUN-JU KANG, YU-SIN KIM, Department of Electrical Engineering, Hanyang University, DONG-HWAN KIM, Department of Nanoscale Semiconductor Engineering, Hanyang University, CHIN-WOOK CHUNG, Department of Electrical Engineering, Hanyang University — Electron energy distribution functions (EEDFs) and electron densities versus RF power were measured in a low-pressure argon discharge. The measurement was performed with an RF compensated single Langmuir probe, accurate measurement circuits and improved data acquisition algorithms in order to obtain the high quality EEDFs. As power increases, the EEDF evolves from a bi-Maxwellian distribution to a Maxwellian distribution. In low density region, a bi-Maxwellian distribution is clearly observed and their density is higher than the estimated density with a Maxwellian distribution. Energetic electrons and their high temperature that are directly related to collisional energy loss for creating one electron–ion pair can explain these results.

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