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**Experimental measurement of plasma parameters and electron energy distribution in ferrite-core side type Ar/He inductively coupled plasma** DUKSUN HAN, JIN-YOUNG BANG, HYO-CHANG LEE, CHIN-WOOK CHUNG, Hanyang University — Spatial distributions of a plasma density and an effective electron temperature ( $T_{\text{eff}}$ ) were studied from the measurement of an electron energy probability function (EEPF) in the side type ferrite-core inductively coupled plasma with an argon-helium mixture. As the helium gas was diluted at the fixed total gas pressure of 5 mTorr in an argon discharge, the distribution of the plasma density was changed from a concave to a flat, and finally became a convex, while all spatial profiles of  $T_{\text{eff}}$  were the hollow shapes with the helium dilution. This evolution of the plasma uniformity with the helium gas could be explained by the increased energy relaxation length and the changed plasma potential, indicating the transition of the electron kinetics from the local to non-local kinetics. From this result, it is expected that the addition of helium gas could be applied as a method to control the plasma uniformity in a large area plasma processing.

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