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Spatial distributions measurement of negative ion density by using floating probe in the oxygen inductive coupled plasmas HYE-JU HWANG, YU-SIN KIM, Department of Electrical Engineering, Hanyang University, YOUNG-CHOEL KIM, JUN-YOUNG KIM, Department of Nano-scale Semiconductor Engineering, Hanyang University, Seoul, Korea, IL-SEO PARK, CHIN-WOOK CHUNG, Department of Electrical Engineering, Hanyang University — Spatial distributions of the negative ion density were measured in an oxygen inductive discharge from the measurement of the positive ion density and electron density by using a floating harmonic method [1]. When the probe was electrically floated by a direct current (DC) blocking capacitor, the positive ion density was measured, while the electron density was measured without the DC blocking capacitor. Thus, the spatial negative ion density distribution could be obtained from the measurement of the spatial difference between the positive ion density and the electron density. The spatial distributions of negative ion density from two single Langmuir probe consist of planar and cylindrical probe tip are compared with those by our method for the reliability.

[1] M. H. Lee, S. H. Jang, and C. W. Chung, J. Appl. Phys.101 033305 (2007).

Hye-Ju Hwang
Department of Electrical Engineering, Hanyang University

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