

Abstract Submitted
for the GEC18 Meeting of
The American Physical Society

Electrical diagnostic method on electron temperature and ion density using the self-bias effect of square waveform voltage in a Langmuir probe HYUNDONG EO, MOO-YOUNG LEE, KYUNG-HYUN KIM, CHIN-WOOK CHUNG, Hanyang University — A method for measuring the electron temperature and ion density of a plasma using a dc self-bias effect generated by biasing two square voltages to a Langmuir probe is proposed. By sequentially applying square voltages with two amplitudes to the probe, each dc self-bias voltage is measured. Electron temperature can be obtained from the difference of the self-bias. The amplitude of the fundamental frequency with respect to the square voltage is obtained by Fourier transform. Ion density is obtained using the amplitude and the electron temperature. The measured electron temperature and ion density via our method are compared and good in agreement with the results of EEPF at various discharge conditions.

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Date submitted: 18 Jun 2018

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