Abstract Submitted
for the GEC15 Meeting of
The American Physical Society

Improved tunable external filter for Langmuir probe measurement at low density plasmas YOON-MIN CHANG, HYO-CHANG LEE, SANG-BUM JEON, DONG-HWAN KIM, JU-HO KIM, CHIN-WOOK CHUNG, Hanyang University, DEPARTMENT OF ELECTRICAL ENGINEERING TEAM, DEPARTMENT OF NANOSCALE SEMICONDUCTOR ENGINEERING TEAM —
Measurement of the electron energy probability function (EEPF) at low density plasma, especially in molecular gas discharge, is difficult due to large RF fluctuation. To overcome the problem, an improved tunable external filter was developed. In contrast to an internal filter, the external filter can tune the resonance frequency of the choke filter. However, conventional external filter has low impedance due to a large stray capacitance between a probe tip and the external filter. To reduce the effect of the stray capacitance, an appropriate inductor was connected to the probe tip, and the external filter was designed to tune the first and the second harmonic frequencies independently. Using our filter, the EEPFs were measured at low density plasma with various gases, and the results show the improved performance of the filter as compared to the previous studies.

Chin-Wook Chung
Hanyang University

Date submitted: 18 Jun 2015 Electronic form version 1.4