Abstract Submitted
for the GEC17 Meeting of
The American Physical Society

Experimental investigation of rf bias power on the plasma density and electron heating in an inductively coupled plasma. HO-WON LEE, JU-HO KIM, CHIN-WOOK CHUNG, Department of Electrical Engineering, Hanyang University — Plasma densities are measured with rf bias powers at an inductively coupled plasma (ICP) using rf compensated Langmuir probe. When the ICP power is fixed, the plasma density has a maximum at a specific rf bias power. The rf bias power having maximum plasma density varies with ICP powers. This seem to be related to discharge mode transition (electron heating mode and ion acceleration mode) according to rf bias powers. These modes are determined by the power balance depending on rf bias voltages. Since the rf bias voltage decreases with ICP power, the bias power having the maximum density is shifted. This shows that electron heating and generation can be controlled by rf bias power..

Chin-Wook Chung
Department of Electrical Engineering, Hanyang University

Date submitted: 02 Jun 2017 Electronic form version 1.4