Abstract Submitted
for the GEC05 Meeting of
The American Physical Society

Noninvasive Measurement of Ion Energy Distributions in a Plasma Etching System SEJIN OH, CHINWOOK CHUNG, Division of Electrical Engineering, Hanyang University, SUNGHO CHA, GICHUNG KWON, Jusung Engineering Corporation — A monitoring of ion energy distributions is important during plasma etching processes. A commercial invasive ion energy analyzer is not well-suited to measure ion energy distributions because of various difficulties. A noninvasive monitoring technique in inductively coupled plasmas has been developed by M.A Sobolewski. We applied this technique to a plasma etching system. Plasma characteristic parameters and the rf bias dependent plasma potential were deduced by using the equations of power balance and particle balance to maintain completely noninvasive processes. The effects of source power, rf bias frequency, rf bias power, pressure and gas composition were measured. The experimental results agreed well with the predicted ion energy distributions.

SeJin Oh
Division of Electrical Engineering, Hanyang University

Date submitted: 13 Jun 2005 Electronic form version 1.4