Abstract Submitted
for the GEC19 Meeting of
The American Physical Society

Improvement of power transfer efficiency in a capacitively coupled plasma YOU HE, YEONG-MIN LIM, CHIN-WOOK CHUNG, Hanyang University — In capacitively coupled plasma (CCP), the plasma resistance between electrodes is inversely proportional to the electron density. At low densities, the plasma resistance can be larger greater than the system resistance including power losses in an impedance matcher and a power feed line, than the power transfer efficiency is high. However, at high densities, the power transfer efficiency is low because the plasma resistance is smaller than the system resistance. To improve the power transfer efficiency, an inductor is connected to the CCP in parallel. This inductor increases the resistance of the chamber and improves the power transfer efficiency. The plasma density is increased compared to that of without the inductor. The resistance of the inductor should be much smaller than the plasma resistance so that the transmitted power is mostly applied to the plasma.

You He
Hanyang University

Date submitted: 05 Jun 2019 Electronic form version 1.4