Abstract Submitted
for the GEC20 Meeting of
The American Physical Society

Experimental investigation on capacitively coupled plasma source using a passive resonant antenna JU-HO KIM, YOUNG-HUN HONG, KYUNG-HWAN YOU, CHIN-WOOK CHUNG, Hanyang Univ — We developed a capacitively coupled plasma source using a passive resonant antenna. The source consists of a transmitter coil (powered antenna) connected to the power supply and a receiver coil (resonant antenna) connected to the electrode plate, and the distance between the two coils is 5 cm. At non-resonance, the powered antenna current is very high and there is no plasma discharge in the chamber. However, at resonance, the powered antenna current rapidly decrease and plasma discharge is maintained in the chamber. Plasma density distribution is measured by varying RF power and argon gas pressure, and the results are discussed along with the matcher efficiency.

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Date submitted: 10 Dec 2020 Electronic form version 1.4