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Additional planar antenna effect on the ferromagnetic core inductively coupled plasma JIN YOUNG BANG, CHIN WOOK CHUNG, Hanyang University — The side type ferrite inductively coupled plasma (ICP) with 400 kHz driving frequency suitable for the next generation processing in large areas was recently developed in our previous work [1]. In this ICP, the plasma density at the edge of the chamber is higher than the center at high pressure because the plasma generation by heated electrons is localized at the edge and hardly diffuses to the center. In this paper, in order to improve the uniformity of the plasma density by increasing the ionization around center, a planar antenna whose driving frequency is 13.56 MHz was installed on the top of the chamber. The synergy effect was observed when the plasma was generated by two sources, and the uniformity could be controlled by applying only small power compared with that of the ferrite ICP to the additional planar antenna.

[1] Kyeonghyo Lee, Youngkwang Lee, Sungwon Jo, Chin Wook Chung and Valery Godyak, Plasma Sources Sci. Technol., 17, 015014 (2008)

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