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Characterization of an inductively coupled plasma (ICP) source for ion implantation process- DAECHUL JUNG, Hanynag University, CHIN-WOOK CHUNG, Hanyang University — Ion densities and electron temperatures are measured by using the floating harmonic method (FHM) in an argon inductively coupled plasma source for ion implantation process. Since the ion implantation processes operate at high vacuum, high voltages are required for ignition. However, ion energy losses increase, and ion densities decrease due to the high voltages. In this work, to reduce the ion energy loss, a capacitor connected in series to the termination of an antenna in the ICP. Ion densities and electron temperatures are quantitatively compared with and without the capacitor. When using the antenna with the capacitor, the transfer efficiency is lower than that of using the antenna without capacitor. however, the ion density is higher when using the antenna with the capacitor.

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