

Abstract Submitted
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Experimental study of the electromagnetic effect in large-area, very-high-frequency capacitively coupled plasmas¹ DAO-MAN HAN, YONG-XIN LIU, FEI GAO, YOU-NIAN WANG, Dalian University of Technology — Large-area very-high-frequency capacitive discharges have been attracting much attention due to their wide applications in material etching and thin film deposition. However, in this regime electromagnetic effect becomes a major limitation for plasma material processing uniformity. In this work, measurements were carried out in a large-area cylindrical reactor (45 cm in electrode diameter) driven over a wide range of frequencies (27–100 MHz). We utilized a fiber Bragg grating sensor and a probe (hairpin probe or double probe) to measure the radial profiles of neutral gas temperature and plasma density, respectively. Influences of the RF power, the working pressure and the driving frequency on the evolution of the electromagnetic effect were studied.

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