

The improvement of cut-off probe for measuring plasma density at hard conditions.

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Diagnostics of plasma density is a key factor for monitoring plasma processing. Various probes are invented to measure plasma density and cut-off probe is a one of the most promising diagnostics tool for measuring plasma density. However, at the low density or high pressure the cut-off probe cannot clearly resolve the cut-off peak. Several reasons make this problem: Cut-off like peaks caused by cavity resonances and weaken transmission spectrum signal at high pressure. Recently, You et al., have researched mechanism of cut-off probe and we improve the cut-off reliability and sensitivity base on that research. Modified cut-off antenna is adapted and bias cut-off probe method is tried. These experiment results have good agreement with the previous study and show good measurement characteristics.

Keywords: plasma diagnostics, cut-off probe