PLASMA CONFINEMENT BAFFLE AND FLOW EQUALIZER FOR ENHANCED MAGNETIC CONTROL OF PLASMA RADIAL DISTRIBUTION

ABSTRACT

A plasma reactor with plasma confinement and plasma radial distribution capability. The reactor comprises a reactor chamber including a side wall and a workpiece support pedestal in the chamber and defining a pumping annulus between the pedestal and side wall and a pumping port at a bottom of the pumping annulus. The reactor further comprises a means for confining gas flow in an axial direction through the pumping annulus to prevent plasma from flowing to the pumping port. The reactor further comprises a means for compensating for asymmetry of gas flow pattern across the pedestal arising from placement of the pumping port. The reactor further comprises a means for controlling plasma distribution having an inherent tendency to promote edge-high plasma density distribution. The means for confining gas flow is depressed below the workpiece support sufficiently to compensate for the edge-high plasma distribution tendency of the means for controlling plasma distribution.

FIG. 6A