

PLASMA PROCESSING APPARATUS AND PLASMA PROCESSING METHOD

Abstract of the Disclosure

A plasma processing apparatus is provided. In the apparatus, an inside surface of a process chamber is prevented from varying its quality or becoming a heavy metal contamination source by a plasma, and at the same time a plasma characteristic is stabilized over time. In a plasma processing apparatus comprising a plasma generating unit, a process chamber capable of reducing its inside pressure, a gas supply system for supplying a gas to the process chamber, a sample table for holding a sample and a vacuum pumping system, the process chamber comprises an outer cylinder capable of withstanding depressurization and an inner cylinder arranged inside the outer cylinder through a gap, and a heater and a temperature control means are provided in the outer cylinder. A non-magnetic metallic material not containing heavy metals, or ceramic, carbon, silicon or quartz is used for the inner cylinder. The temperature of the inner cylinder is controlled to a desired value by heating the outer cylinder using the heater and the temperature control means. By controlling the temperature of the inner cylinder to, for example, 100°C to 350°C, the surface temperature of the inner cylinder can be maintained at a desired value.

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