

ABSTRACT

SUBSTRATE HOLDING DEVICE

Provided is a substrate holding device which makes it possible to grasp the warpage state of a substrate even during plasma processing and which clamps the substrate with an appropriate clamping force without damaging the substrate and inducing an abnormal discharge.

A substrate holding device ES for clamping a substrate in a processing chamber in which plasma processing is carried out includes a chuck main body having positive and negative electrodes 3a and 3b, a chuck plate 2 having a rib portion 2a capable of bringing the peripheral edge portion of the substrate into surface contact therewith and multiple support portions 2c provided upright and arranged at predetermined intervals in an internal space 2b surrounded by the rib portion, a DC power supply E1 for applying a DC voltage between the two electrodes, an AC power supply E2 for passing an alternating current through the capacitance of the chuck plate, and first measuring means M for measuring the alternating current passing through the capacitance of the chuck plate, and further includes removing means F for removing an AC component superimposed on the alternating current from a plasma produced in the processing chamber during plasma processing.

Figure 1