

ABSTRACT

Provided is a plasma processing apparatus (10), which is characterized in having: a processing chamber (12),
5 inside of which can be depressurized; a lower electrode which serves also as a mounting table (20) having a wafer (W) placed thereon in the processing chamber; an upper electrode or an antenna electrode, which is disposed to face the lower electrode; a gas supply source (32), which introduces a gas
10 into the processing chamber, said gas containing a halogen-containing gas and oxygen gas; a high frequency power supply (18), which applies high frequency power for generating plasma to at least the upper electrode, the antenna electrode or the lower electrode; and a means, which brings
15 the gas into the plasma state with the high frequency power for generating plasma, and performs plasma processing to the wafer on the mounting table using plasma effects. The plasma processing apparatus is also characterized in that, out of the surfaces exposed to plasma in the processing
20 chamber, at least a part of or all of the surfaces at the heights of the upper electrode, the antenna electrode or the lower electrode from a position where the wafer is placed are coated with a fluorinated compound.