Abstract of the Disclosure

There are provided a plasma processing apparatus and a plasma processing method which are suitable for processing a processed substance using a gas plasma containing fluorine atoms.

Structural materials used for a high vacuum processing chamber of a plasma processing apparatus are aluminum, aluminum having an anodic oxide coating processed surface and a material having a film of aluminum oxide or a film having aluminum oxide as a main component. A part or the whole of the inner surfaces of the processing chamber is constructed with a pre-fluorinated material.

When plasma processing of a processed substance is performed using a gas plasma containing fluorine atoms in the processing chamber having the pre-fluorinated inner surfaces, time-varying processing characteristic can be suppressed.