PLASMA ETCHING APPARATUS AND PLASMA ETCHING METHOD

ABSTRACT

A plasma etching apparatus includes a chamber, a gas supply that supplies a gas into the chamber, and a controller. The gas supply includes a gas box that supplies the gas, a gas-diffusion compartment that diffuses the gas from the gas box inside the gas-diffusion compartment and introduces the gas into the chamber, and an exhauster that discharges the gas in the gas-diffusion compartment. The controller controls operations including (a) supplying a first gas from the gas box at a first flow rate to generate plasma in the chamber and (b) stopping supply of the first gas from the gas box, supplying a second gas from the gas box at a second flow rate, and performing gas discharge from the gas-diffusion compartment, and (b) includes maintaining the gas-diffusion compartment at a pressure higher than or equal to a threshold predetermined based on a plasma processing condition as a pressure at which the plasma is maintained in the chamber.

Figure 6