

ABSTRACT

PLASMA PROCESSING DEVICE, POWER SUPPLY SYSTEM, AND CONTROL METHOD

5

A disclosed power supply system of a plasma processing apparatus includes a radio frequency power supply, a bias power supply, and a power supply controller. The radio frequency power supply generates radio frequency power for plasma generation. The bias power supply supplies an electric bias to a substrate support. The power supply controller periodically modulates a power level of the radio frequency power in repetitions of a modulation cycle including at least two sub-periods. The power supply controller is configured to adjust a frequency of the radio frequency power for an n-th phase period included in a feedback period continuing from a start time of each of the at least two sub-periods within the modulation cycle, based on a change in the frequency of the radio frequency power and a change in a degree of reflection of the radio frequency power in the n-th phase period in preceding repetitions of the modulation cycle.

20

[Fig.2]