PLASMA PROCESSING DEVICE, BIAS ELECTRIC POWER SUPPLY SYSTEM, AND PLASMA PROCESSING METHOD

ABSTRACT

A disclosed plasma processing apparatus includes a substrate support in a chamber and a bias power supply system. The substrate support includes a first electrode below a substrate supporting surface thereof and a second electrode below a ring supporting surface thereof. The bias power supply system is electrically coupled to the first and second electrodes. The bias power supply system includes at least one DC power supply, first and second switching circuits, and a single signal generator. The single signal generator is configured to generate a pulse control signal to control the first switching circuit to alternately connect the first electrode to the at least one DC power supply and ground, and to control the second switching circuit to alternately connect the second electrode to the at least one DC power supply and ground.

Figs. 3