CLAIMS

[Claim 1]

A substrate processing apparatus comprising:

a power storage part configured to store a DC power; and

at least one unit or member that uses a power,

wherein charges stored in the power storage part are supplied, as a power, to the unit or the member,

wherein a relatively small-capacity power storage part having a smaller capacity than a capacity of the power storage part is connected in parallel between the power storage part and the unit or the member.

[Claim 2]

The substrate processing apparatus of claim 1, further comprising:

a power receiving coil configured to receive a power without being in contact with a power transmitting coil to which a power from an AC power source is supplied,

wherein a conversion part configured to convert an AC power from the power receiving coil to a DC power is connected to the power storage part.

[Claim 3]

The substrate processing apparatus of claim 1, further comprising:

a controller,

wherein the controller is configured to convert a power from an AC power source to a DC power and supply the DC power to the power storage part, and

the controller is configured to electrically cut off the power storage part and the AC power source during substrate processing using an RF power in the substrate processing apparatus.

[Claim 4]

The substrate processing apparatus of claim 3, wherein the controller is configured to supply a power to the power storage part through an electrical supply path after the power from the AC power source is converted to the DC power,

a relay is disposed in the electrical supply path, and

the relay is cut off during substrate processing using an RF power in the substrate processing apparatus.

[Claim 5]

The substrate processing apparatus of claim 2, further comprising:

a frequency conversion circuit configured to convert a frequency of the power supplied from the AC power source to a transmission frequency and transmit the corresponding power; and

a rectifier circuit and a smoothing circuit configured to rectify and smooth the power whose frequency has been converted by the frequency conversion circuit and supply the corresponding power to the power storage part.

[Claim 6]

The substrate processing apparatus of claim 1, wherein the power supply to the power storage part is performed by supplying a DC power from a battery.

[Claim 7]

The substrate processing apparatus of claim 6, wherein the battery is charged by a DC power converted from a power from an AC power source.

[Claim 8]

The substrate processing apparatus of claim 1, further comprising:

a power generation mechanism,

wherein the power supply to the power storage part is performed by supplying a power obtained by the power generation mechanism.

[Claim 9]

The substrate processing apparatus of claim 8, wherein the power generation mechanism uses fuel cell power generation.

[Claim 10]

The substrate processing apparatus of claim 9, wherein at least one of oxygen and hydrogen used in the fuel cell power generation is used for substrate processing in a facility where the substrate processing apparatus is installed.

[Claim 11]

The substrate processing apparatus of any one of claims 1 to 10, wherein a plurality of the power storage parts are provided, and the plurality of power storage parts are connected in parallel to the unit or the member, and

when a voltage of one of the plurality of power storage parts decreases and becomes lower than a voltage required for the unit or the member to which charges stored in said one power storage part is supplied as a power, power supply is switched to supply from another power storage part.

[Claim 12]

The substrate processing apparatus of claim 11, wherein after the power supply is switched to the supply from said another power storage part, said one power storage part whose voltage has decreased supplies a power to a unit or a member that is driven even at the decreased voltage.

[Claim 13]

The substrate processing apparatus of claim 11, wherein after the power supply is switched to the supply from said another power storage part, a power is supplied to said one power storage part whose voltage has decreased.

[Claim 14]

The substrate processing apparatus of claim 1, wherein another relatively small-capacity power storage part having a smaller capacity than a capacity of the relatively small-capacity power storage part is connected in parallel between the relatively small-capacity power storage part and the unit or the member.

[Claim 15]

The substrate processing apparatus of any one of claims 1 to 14, wherein the power storage part is a capacitor element or a battery.

[Claim 16]

The substrate processing apparatus of claim 15, wherein an internal resistance of the capacitor element is 100 mΩ or less.

[Claim 17]

A substrate processing method for processing a substrate using a substrate processing apparatus,

wherein the substrate processing apparatus includes a power storage part configured to store a DC power and at least one unit or member that uses a power, and

charges from the power storage part are supplied as a power to the unit or the member,

wherein a relatively small-capacity power storage part having a smaller capacity than a capacity of the power storage part is connected in parallel between the power storage part and the unit or the member.