WHAT IS CLAIMED IS:

1. An exhaust flow rate control apparatus comprising:

an exhaust device configured to be capable of exhausting a processing space in which a substrate processing apparatus is disposed;

a first exhaust flow rate-variable device capable of adjusting a flow rate of exhaust from the processing space; and

a control device configured to adjust an amount of latent vaporization heat at a predetermined location inside the processing space by controlling the first exhaust flow rate-variable device, so that a temperature of the predetermined location inside the processing space falls within a predetermined temperature range.

2. The exhaust flow rate control apparatus according to claim 1, further comprising a temperature-measuring device for measuring the temperature of the predetermined location inside the processing space,

wherein the control device calculates an exhaust flow rate necessary for the temperature of the predetermined location inside the processing space to fall within the predetermined temperature range on the basis of the measured temperature, and controls the first exhaust flow rate-variable device to achieve the calculated exhaust flow rate.

3. The exhaust flow rate control apparatus according to claim 2, further comprising a flow rate-measuring device for measuring the flow rate of exhaust from the processing space,

wherein the control device controls the first exhaust flow rate-variable device on the basis of the measured exhaust

flow rate to achieve the calculated exhaust flow rate.

4. The exhaust flow rate control apparatus according to claim 1, wherein the control device includes a storage device storing control data on previously-calculated exhaust flow rates necessary for the temperature of the predetermined location to fall within the predetermined temperature range, and controls the first exhaust flow rate-variable device on the basis of the control data.

5. The exhaust flow rate control apparatus according to claim 1, further comprising:

a first exhaust line connected to the processing space;

a second exhaust line connected to a space other than the processing space;

a second exhaust flow rate-variable device provided on the second exhaust line and capable of adjusting a flow rate of exhaust from the space other than the processing space,

wherein the first exhaust flow rate-variable device is provided on the first exhaust line,

an upstream end of the second exhaust line is connected to the space other than the processing space,

a downstream end of the second exhaust line is connected to the first exhaust line downstream of the first exhaust flow rate-variable device, and

the exhaust device is configured to be capable of exhausting the other space and controls the first exhaust flow rate-variable device and the second exhaust flow rate-variable device, so that the sum of the flow rate of exhaust from the processing space and the flow rate of exhaust from the other space is constant.

6. A substrate processing apparatus comprising:

an exhaust flow rate control apparatus comprising:

an exhaust device configured to be capable of exhausting a processing space in which a substrate processing apparatus is disposed;

a first exhaust flow rate-variable device capable of adjusting a flow rate of exhaust from the processing space; and

a control device configured to adjust an amount of latent vaporization heat at a predetermined location inside the processing space by controlling the first exhaust flow rate-variable device, so that a temperature of the predetermined location inside the processing space falls within a predetermined temperature range.

7. The substrate processing apparatus according to claim 6 further comprising:

a polishing table in the processing space configured to support the polishing pad,

wherein the control device of the exhaust flow rate control apparatus is configured to adjust an amount of latent vaporization heat on a polishing pad by controlling the first exhaust flow rate-variable device, so that a temperature on the polishing pad falls within a predetermined temperature range and the substrate processing apparatus is a CMP apparatus.