CLAIMS

1. A vacuum arc deposition apparatus for forming a ta-C film on a substrate using arc discharge, the apparatus comprising:

a holding unit that holds a target unit;

an anode unit into which electrons emitted from the target unit flow; and

a power supply that supplies, between the target unit and the anode unit, a current for generating a plasma by arc discharge,

wherein the current supplied by the power supply at the time of the arc discharge is generated by superimposing, on a DC current, a pulse current of a pulse frequency within a range of 50 Hz to 70 Hz.

2. A vacuum processing apparatus comprising a vacuum arc deposition apparatus defined in claim 1.

3. A deposition method of forming a ta-C film on a substrate using arc discharge caused by supplying a current between a target unit and an anode unit, wherein

a current at the time of the arc discharge is generated by superimposing, on a DC current, a pulse current of a pulse frequency within a range of 50 Hz to 70 Hz.