Abstract

A method for applying power to target material in a magnetron sputtering process is provided. The method includes: 10) connecting a main power supply and a maintaining power supply to the target material (2) respectively; 20) applying a particular main power in the form of pulses to the target material (2) by the main power supply; applying a particular maintaining power which is smaller than the main power to the target material (2) by the maintaining power supply at least during the pulse interval time (t2) of the main power supply, so as to maintain a glow discharge procedure of the sputtering process during the pulse interval time (t2) of the main power supply. The method for applying power to target material can obviously enhance the metal ionization rate while the process stability and controllability are guaranteed. A power supply for target material (8) which includes a main power module (81) and a maintaining power module (82), and a semiconductor processing apparatus using the method for applying power to target material or the power supply for target material are also provided.

The drawing accompanying with the abstract is Fig. 4.

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