

ABSTRACT

There is provided a sputtering apparatus which can perform film forming with a good film thickness distribution in a substrate in-plane when a film is formed by sputtering a sintered target.

The sputtering apparatus SM is provided with: a vacuum chamber 1 having a target 31 manufactured by sintering raw material powder; a magnet unit 4 having a plurality of magnets 41, 42 disposed on the same surface above the target which is mounted on the vacuum chamber in a non-rotatable manner, in order to cause leakage magnetic field penetrating the target to function in uneven distribution on the sputtering surface 31a; a rotary shaft 44 which is disposed on the center line Cl passing through the center of the target and is coupled to the magnet unit; and a drive motor 45 for driving the rotary shaft to rotate, thereby rotating the magnet unit such that a function region of the leakage magnetic field on the sputtering surface revolves about an imaginary circle with the center of the target serving as the center. The sputtering apparatus further comprises a tilting means 5 for tilting the rotary shaft relative to the center line such that each of the magnets is moved toward or away from the upper surface of the target depending on the density distribution of the target at the time of sintering the raw material powder.