

ABSTRACT

There are provided a sputtering apparatus and a method of discriminating the state as to whether the atmosphere in a vacuum chamber is in a state fit for film formation or not. A method of discriminating a state of a sputtering apparatus in which, by sputtering a target (2), a film is formed on a substrate (W) disposed to lie opposite to the target, the discrimination being made, prior to the film formation on the substrate, as to whether an atmosphere in the vacuum chamber is in a state fit for film formation. As the sputtering apparatus, use is made of one provided inside the vacuum chamber with an isolated space which is isolated from the vacuum chamber by an isolating means (6, 71-73), the isolated space being for the target and the substrate to lie therein opposite to each other, the sputtering apparatus being so arranged that the isolated space is evacuated accompanied by the evacuation in the vacuum chamber. The vacuum chamber is evacuated to a predetermined set pressure and a gas is introduced therein in this state to obtain a pressure in the isolated space at this time. Let that pressure in the isolated space which is obtained in advance during film formation in a predetermined in-plane film thickness and film quality distribution be defined as a reference pressure, then this reference pressure is compared with the pressure in the isolated space, thereby discriminating the state of the sputtering apparatus.