SEMICONDUCTOR AND A METHOD FOR MANUFACTURING AN OXIDE FILM ON THE SURFACE OF A SEMICONDUCTOR SUBSTRATE

ABSTRACT

The semiconductor of the present invention comprises at least an oxide film and a metal thin film on the surface of the semiconductor. The metal thin film includes a metal serving as an oxidation catalyst and has a thickness in the range of 0.5-30nm. The oxide film comprises a metal serving as an oxidation catalyst and having a thickness in the range of 1-20nm. Thus, a high-quality oxide film can be formed on the surface of the semiconductor substrate with high controllability without conducting a high temperature heat treatment. The invention employs the method of manufacturing the semiconductor has a steps of forming the first oxidation film having thickness in the range of 0.1-2.5nm on the semiconductor substrate ; forming the metal thin film (for example platinum film) serving as an oxide catalyst to the thickness in the range of 0.5-30nm on the first oxide thin film; and then forming the second oxide film by heat treating in an oxidizing atmosphere at temperatures from 25 to 600℃.

Figure 1