ABSTRACT

HYDROPHOBIC CONDUCTIVE FILM AND PREPARATION AND USE THEREOF

The present application provides a hydrophobic conductive film and preparation and use thereof, belonging to the technical field of semiconductor preparation. The method comprises the following steps: 1) performing zinc-containing pre-surface treatment on a substrate surface to form a zinc atom saturated layer; 2) alternately introducing a zinc precursor and an oxygen precursor into a reaction chamber, and introducing an inert gas for purging, such that the zinc oxide film layer grows on the surface of the zinc atom saturated layer; 3) performing zinc-containing post-surface treatment on the zinc oxide film layer to form a zinc-containing transition layer; and 4) performing fluorination post-surface treatment on the zinc-containing transition layer to form a zinc fluoride surface layer. The hydrophobic conductive film prepared in the present application has the characteristics of high hydrophobicity, good film-base bonding, high film reliability, good film density, precise and controllable thickness, good film uniformity, high step coverage, and high optical transmittance. Compared with microstructures, it has stronger stability, is compatible with various semiconductor packaging processes, can effectively resist environmental interference, and can be applied to a variety of hydrophobic applications.

[FIG.1]