

ABSTRACT

The present invention discloses a preparation method of an alumina-carbon nano tube composite powder material, which comprises the steps of using an organometallic precursor as a raw material, using metal nanoparticles formed on the surface of the alumina powder as a catalyst, and simultaneously feeding a carbonaceous gas such as methane and acetylene, so as to grow a carbon nano tube in situ, and obtain an alumina-metal nanoparticle-carbon nano tube composite powder material through a chemical vapor deposition method under a temperature condition of 400 to 800°C. Through changing various parameters such as the weight of the organic raw material, the flow or constituent of reactant gases and reaction temperature, the decomposition of the organic raw material and the generation of the metal nanoparticles and the carbon nano tube are adjusted, and the size and the microstructure of the powder are controlled. The method has the characteristics of simple method and short preparation period, and the prepared alumina- metal nanoparticle-carbon nano tube is uniformly distributed, and has wide application prospect in multiple fields such as conductive ceramics and catalytic materials.

FIG. 1