

Titania nanotubes synthesised via the electrochemical anodisation method: synthesis and supercapacitor applications

ABSTRACT

Titania nanotube is gaining tremendous interest for its unique features including high surface area, ion-exchange ability, photocatalytic potential and prominent electrical properties. Many attempts were made to manipulate the unique properties of titania nanotubes for supercapacitor application. In this review a comprehensive list of literatures on fabrication of titania nanotubes via anodisation method in fluoride-based electrolytes and its application as supercapacitor are discussed. This review shows that the nanotube morphology can be optimized by varying the anodisation parameter such as electrolyte concentration, pH, voltage, and bath temperature. The review also includes studies on the application of titania nanotubes as supercapacitor on improving the specific capacitance value by doping with metal oxides and conducting polymers.

Keyword: Electro-thermal anodisation; Titania nanotube; Supercapacitor