

عنوان مقاله:

Investigation of optical properties of the Nano TiO₂ and Nano TiO₂ – SiO₂ Coatings on Glass Substrate

محل انتشار:

دومین کنگره بین المللی علوم و فناوری نانو (سال: 1387)

تعداد صفحات اصل مقاله: 2

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خلاصه مقاله:

Semiconductor photocatalysis offers convenient routes to the purification of air and water and the provision of self-maintaining clean surfaces [1,2]. Titanium dioxide is able to photocatalyse the complete mineralization of many organics. One practical way of using the advantages of titanium dioxide is as a film, strongly bound to an inert substrate such as glass or ceramic [3]. Indeed, several major glass manufacturers, including Pilkington Glass and the Pittsburgh Plate Company, have recently released self-cleaning glass products (ActivTM and SuncleanTM, respectively) which utilize, as their common active ingredient, a thin, strongly bound, nanocrystalline film of titania that acts as a photocatalyst and readily washable. The later one is possible by making the surface specially after exposed by UV ray, super hydrophilic. [3] Using SiO₂ in TiO₂/SiO₂ films could make the surface more hydrophilic [4]. As it can be seen in one hand, one of the major application of these films are in glass industry and on the other hand, light plays very essential role to these films properties. In this paper we try to focus on the optical properties of these films and the effect of different parameters on them, the samples substrates are ordinary glass and the coatings were made by using dip coating method, the variable parameters were heat treatment temperature, number of layers, and different concentration of SiO₂

کلمات کلیدی:

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