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**Surface modification of TiO<sub>2</sub> nanotubes by grafting with APTS coupling agents**

**Duong Thi Hong Phan**

Da Nang University of Technology, Vietnam

The aggregation of Titanium dioxide Nanotube-sized (TNTs) in various liquid media was necessary improved. The methodic study has been investigated the grafted modification with 3-Aminopropyl Triethoxysilane (APTS) on its surface. TNTs with approximately 10-20 nm diameters were achieved by hydrothermal treatment of TiO<sub>2</sub> p25 particles. The obtained products were revealed by the modern physicochemical systems such as X-ray diffraction (XRD), Transmission Electron Microscopy (TEM) and the BET specific area surface. The amounts of silane agent, reaction temperature and time have been adjusted to the influence of the grafting efficiency (from 2.5 to 6.5%) by Thermal Gravimetric Analysis (TGA). Dispersion stability test was indicated that APTS modification has been enhanced to reduce stability of nanotubes in organic solvents. Fourier Transform Infrared Spectroscopy (FTIR) has been confirmed a presence of organic functional groups and Ti-O-Si chemical bonds on the grafted-TiO<sub>2</sub> nanotubes were successfully linked.

dthphan@dut.udn.vn

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