

Effect of TiO₂ crystal structure on photoelectrode

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In this study, TiO₂ particles having 300~400nm sizes were prepared for using a light scattering layer in Dye-sensitized solar cells. TiO₂ particles of required size have been taken by controlling amount of water without heat treatment or hydrothermal process in sol-gel process. TTIP(Titanium tetra isopropoxide) was used as a precursor which is synthesized with 2-propanol and acetic acid. After TTIP, 2-propanol and acetic acid were mixed in proportion of 5:1:5 respectively, stirred for 60min at 60°C. The aqueous solution of nitric acid having pH 1.5 was used to control sizes and dispersity that stirred for 360min at 80°C. TiO₂ crystalline for using a light scattering layer was obtained which was analyzed by XRD, SEM.