

SYNTHESES TiO₂ NANOCOMPOSITE USING EVAPORATION-INDUCED SELF-ASSEMBLY (EISA) METHOD FOR DSSC

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ABSTRACT

The objective of this study is to synthesize mesoporous titania using the Evaporation-Induced Self-Assembly (EISA) method. The samples were annealed at 400 C for 4 hours. Then the titania was pasted onto FTO glass and immersed in dye N719 for several hours. TiO₂ using EISA method and time immersing in the dye were prepared for comparison. Titanium Tetra Isopropoxide (Ti(O_iPr₄)) was chosen as a precursor and Trymethyl Ammonium Bromide (CTAB) as a surfactant. From SEM results, TiO₂ EISA produced small TiO₂ particles with high porosity and compact particles. From XRD spectrum, *anatase* phase had been produced by using this EISA method. Percentage efficiency for TiO₂ EISA that being immersed in the dye for 12 hours, and 6 hours is about 2.81% and 2.24%, respectively. The results show that TiO₂ gave a good result in terms of efficiency and will lead to a better DSSC system.

Keywords: EISA method; titania; FTO glass; N719 dye; DSSC

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