DEVELOPMENT AND FABRICATION Dye Sensitized Solar Cells (DSSC) BASED ON GINGER OFFICIALE VAR. SUNTI WITH SPIN COATING AND DOCTOR BLADE METHOD

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ABSTRACT

Dye Sensitized Solar Cells (DSSC) has been fabricated based on Ginger officianale var sunti and TiO$_2$ nanoparticles (6-10 nm). These DSSC have been fabricated using deposition with spin coating and doctor blade methods. Maximum absorbance of the red ginger extract was at wavelength 383 and 403 nm, transmittance was at a wavelength of 413 nm. The result showed that the spin coating method is generally better than the doctor blade method, with the result efficiency 1.7%, Fill Factor (FF) 0.2 au and the maximum power density is 1.87 mW/cm$^2$ for one day submersion. Meanwhile maximum efficiency 0.0007%, FF 0.2 au and a maximum power density of 0.4 mW/cm$^2$, achieved with doctor blade method for the same period of submersion.

Key Word: DSSC, Efficiency, fill factor, maximum power density, absorbance dan transmittance, TiO nanoparticles, Ginger officianale var. sunti