

Dye sensitized solar cell based on polyethylene glycol/4, 4-diphenylmethane diisocyanate copolymer quasi solid state electrolyte

Abstract

In this study, quasi-solid state electrolyte (QSE) was prepared by blending the polyethylene glycol (PEG) with molecular weight of 400, 4,4'-diphenylmethane diisocyanate (MDI), potassium iodide (KI) and iodine (I_2) under a low reaction temperature (50°C) for two hours. QSEs with a different ratio of PEG to MDI were formulated. Adding 15 vol% of MDI into the QSE was found to give the highest open circuit voltage, short circuit current and energy conversion efficient, which were 360 mV, 0.077 mA/cm^2 and 0.02% respectively.