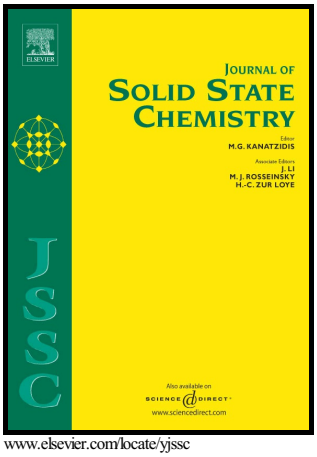

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Abstract

This work describes the effect of 2-aminopyrimidine (2-APY) on poly(vinylidinefluoride-co-hexafluoropropylene) (PVDF-HFP)/polyethylene oxide (PEO) blend polymer electrolyte along with binary iodide salts (tetrabutylammonium iodide (TBAI) and potassium iodide (KI)) and iodine (I_2) were studied for enhancing the efficiency of the dye-sensitized solar cells (DSSCs) consisting of g-C_3N_4/TiO_2 composite as photoanode. The g-C_3N_4 was synthesized from low cost urea by thermal condensation method. It was used as a precursor to synthesize the various weight percentage ratios (5, 10 and 15 %) of g-C_3N_4/TiO_2 composites by wet-impregnation method. The pure and 2-APY incorporated PVDF-HFP/PEO polymer blend electrolytes were arranged by wet chemical process (casting method) using DMF as a solvent. The synthesized g-C_3N_4/TiO_2 composites and polymer blend electrolytes were studied and analysed by Fourier transform infrared (FT-IR) spectroscopy, X-ray diffractometer (XRD) and scanning electron microscopy (SEM). The ionic conductivity values of the pure and 2-APY incorporated PVDF-HFP/PEO blend electrolytes were estimated to be 4.53×10^{-5} and