Preparation of nanocrystalline TiO_2 thin film by screen-printing technique

정성훈, 황경준, 유승준[1], 김선일, 이재욱*
조선대학교; [1]서남대학교
(jwlee@chosun.ac.kr*)

Dye-sensitised solar cells (DSSCs) are currently attracting academic and commercial interest as regenerative low-cost alternatives to conventional solid state devices. So far, the best performing nanocrystalline-TiO2 electrodes have been fabricated by screen-printing deposition. In this works, different paste has been used for preparing nanocrystalline TiO2 thin film by screen-printing technique, the main component of it comes from synthesized TiO2 power (SC-TiO2). The dye-sensitized solar cell based on this TiO2 thin film without further chemical treatments exhibits high overall conversion efficiency of 8.5 %, even with low TiO2 content and thin film thickness. The experimental repeatability is excellent and the properties of the films are uniform.