The Study of Structural and Optical Properties of Iron Pyrite nanoparticles for Bulk Hetero-junction Solar Cells

윈응옥프엉타오, 박진호*
영남대학교 화학공학부
(chpark@ynu.ac.kr*)

Polymer solar cells have been interested due to low-cost and flexible photovoltaic devices. Recently, a promising conversion efficiency in polymer/inorganic nanocrystals (NCs) solar cells was achieved in the visible region. Especially, Iron pyrite (FeS2) NCs are cheap, non-toxic, large absorption coefficient and narrow bandgap (Eg=0.95 eV) is the advantaged candidate for the active layer in bulk hetero-junction (BHJ) solar cells. In this study, the structural and optical properties of FeS2 are investigated by TEM and UV-Vis techniques. The influence of FeS2 concentration and loading amount as mixing with polymer were studied to increase efficiency of BHJ solar cells.
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