ABSTRACT

Carbon nanotube based organic solar cell

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The organic or polymer based solar cells are of great interest, because of low cost, light weight, large area and flexible form factor. But the efficiency is very low as compared to inorganic solar cell. The main problems regarding efficiency of organic solar cell are the charge transportation and absorption of light. To enhance the charge transportation people are using CNT as electron transporter. But usually synthesis of CNT is done from petroleum precursor, which is a highly energy intensive process. We are trying with CNT synthesized from *Ricinus communis* (castor oil), a green precursor. The synthesized CNT were of diameter 85-90 nm. It has been found that by using synthesized MWNT in the solar cell ITO/P3OT-PCBM-MWNT/LiF-Al shows better performance than the solar cell ITO/P3OT-PCBM/LiF-Al. The organic solar cell with MWNT shows 40% better efficiency than the organic solar cell without MWNT.