

Forster Energy Transfer and Optoelectronic Properties of (PFO/TiO₂)/Fluorol 7GA Hybrid Thin Films

Authors : Bandar Ali Al-Asbahi, Mohammad Hafizuddin Haji Jumali

Abstract : Forster energy transfer between poly (9,9'-di-n-octylfluorenyl-2,7-diyl) (PFO)/TiO₂ nanoparticles (NPs) as a donor and Fluorol 7GA as an acceptor has been studied. The energy transfer parameters were calculated by using mathematical models. The dominant mechanism responsible for the energy transfer between the donor and acceptor molecules was Forster-type, as evidenced by large values of quenching rate constant, energy transfer rate constant and critical distance of energy transfer. Moreover, these composites which were used as an emissive layer in organic light emitting diodes, were investigated in terms of current density-voltage and electroluminescence spectra.

Keywords : energy transfer parameters, forster-type, electroluminescence, organic light emitting diodes

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