Full Name : Arumugam Pirashanthan

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Research areas : Physics of polymer nanocomposites, Hybrid photovoltaics, thin film fabrication and solar energy harvesting materials

Current position : Postgraduate Researcher

Title of the research: Role of Quaterthiophene and Ruthenium dyes in enhancing the performance of Hybrid Titanium dioxide/ Polymer solar cells

ResearchGate : https://www.researchgate.net/profile/Arumugam-Pirashanthan

Google Scholar : https://scholar.google.com/citations?user=dy6k21oAAAAJ&hl=en

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Description of current and past research:

The ongoing research project is titled “Role of Quaterthiophene and Ruthenium dyes in enhancing the performance of Hybrid Titanium dioxide/ Polymer solar cells”. The optoelectronic properties of fabricated thin films, nanocomposite and Hybrid solar cells have been studied. The performances of well-optimized fabricated solar cells were successfully published in high indexed reputed journals. The following three are in process for future publications.

1. Research article on “Doped Poly(3-hexylthiophene) in interface modified Titania based Hybrid Solar Cells: Enhanced current density through an efficient charge transport”.
2. Research article on “Synthesis of a carboxylic acid-based Ruthenium Sensitizer and its applicability towards Dye-Sensitized Solar Cells”.
3. Review on “Roles of Interfacial Modifiers in Hybrid Solar Cells: Inorganic Titania and Organic Poly (3-hexythiophene) Heterojunction”

Journal publications:

1. A multifunctional ruthenium based dye for hybrid nanocrystalline titanium dioxide/poly(3-hexylthiophene) solar cells. **A. Pirashanthan**, T. Murugathas, K. Mariappan, P. Ravirajan, V. Dhayalan, S. Yohi, Materials Letters 274 (2020) 127997. https://doi.org/10.1016/j.matlet.2020.127997

2. A Quarterthiophene-Based Dye as an Efficient Interface Modifier for Hybrid Titanium Dioxide/Poly (3-hexylthiophene)(P3HT) Solar Cells. **A. Pirashanthan**, T. Murugathas, N. Robertson, P.Ravirajan, V. Dhayalan, Polymers 11 (11), 1752(2019). https://doi.org/10.3390/polym11111752