

## **HYBRID NANOCOMPOSITE FILMS OF CdS AND CONJUGATED POLYMER MULTILAYER FOR EFFECTIVE PHOTOCURRENT GENERATIONS**

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### **ABSTRACT**

Hybrid nanocomposite films were prepared by CdS nanoparticles and two different conjugated polymer multilayer of (PPV/PEDOT:PSS)<sub>n</sub>. The negatively charged CdS nanoparticle thin films were prepared by chemical bath deposition method and by addition of 1-thioglycerol. Two kinds of water soluble conjugated polymers were used to fabricate polymer multilayer. They are positively charged poly(p-xylene tetrahydrothiophenium chloride) (pre-PPV), which is converted to poly(1,4-phenylenevinylene) (PPV) with a thermal treatment, and negatively charged poly(3, 4-ethylene dioxythiophene)/poly(styrene sulfonate) (PEDOT:PSS). In this hybrid nanocomposite films, the photocurrent generations were increased with number of (PPV/PEDOT:PSS) bilayers. The maximum photocurrent of 2600 nA was obtained with 4.5 bilayers of PPV/PEDOT:PSS on CdS.