

Abstract

Organic solar cells was refer to photo voltaic cells and it was a kind of green energy source of great potential application due to low production costs, mechanical flexibility devices. The aim of our work was to focus on the evolution of the polymeric solar with comparing studies for the period 2007-2015. 1.

INTRODUCTION The sun is the main natural source of energy.it providing the earth with great amount of energy in spite of that we exploits a little part of it. The sun's light cannot be used directly there is many device that can exploits these type of natural energy. These devices can be consider very attractive because it will convert sun's light to many type of energy which is useful for heating water (house warming and other different application)[1], Also there is another type of these devices which convert the optical energy to electrical energy which is a part of our work. The solar cell which is the most commonly used for purpose of saving and converting energy. [2] The solar cell can be divided to many types such as silicon solar cells, dye solar cell, Polymer solar cell.[3] In another study, some researchers compared the polymeric solar cell and their electrical and optical properties. Polymer solar cell, has low cost and also very flexible.[4] In particular compared to the limited solar light absorption of fullerenes (electron acceptor)for the polymer :fullerene solar cells ,the polymer: polymer solar cells have an advantage in enhancing the light absorption efficiency because electron-accepting polymers can be tuned to absorb more sun light in visible region and that was useful for solar cell device.[5,6] Indium tin oxide (ITO) is the material-of-choice for transparent electrode in hetero junction solar cells (PSCS) it is used to generate a built-in electrical field due to the difference in the metals' work functions. This electric field is used dissociate the exactions, which are created from the absorption of the light by the active layer of the polymeric solar cell, then pull the charge carrier out of the active layer [7]. Poly (3,4-ethylenedioxythiophene): poly(styrenesulfonate)(PEDOT:PSS) have many advantages because of that advantages it widely use in polymer solar cells, (PEDOT: PSS) work function can be vary in controlling the amount of PSS [8], the layer of (PEDOT:PSS) polymer can decreasing the roughness of ITO surface, high conductivity and low-temperature solution process ability [9]. To enhance the polymer solar cells catalyzed Al₂O₃ and TiO₂ nanoparticles and laser. Utilizing nanoparticles made clarify change in the conductivity and absorption of polymer solar cell because it represents electron transport material (inorganic material) in photo voltaic device while the conjugated polymer consider as hole transport material[10,14].