

Title (en)  
ORGANIC PHOTOVOLTAIC ARRAY AND METHOD OF MANUFACTURE

Title (de)  
ORGANISCHES PHOTOVOLTAIKARRAY UND HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)  
GÉNÉRATEUR PHOTOVOLTAÏQUE ORGANIQUE ET PROCÉDÉ DE FABRICATION

Publication  
**EP 2638577 A2 20130918 (EN)**

Application  
**EP 12746750 A 20120214**

Priority  
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Abstract (en)  
[origin: WO2012112533A2] The fabrication and characterization of large scale inverted organic solar array fabricated using all-spray process is disclosed, consisting of four layers; ITO-Cs<sub>2</sub>CO<sub>3</sub>-(P3HT:PCBM)-modified PEDPT:PSS, on a substrate. With PEDPT:PSS as the anode, the encapsulated solar array shows more than 30% transmission in the visible to near IR range. Optimization by thermal annealing was performed based on single-cell or multiple-cell arrays. Solar illumination has been demonstrated to improve solar array efficiency up to 250% with device efficiency of 1.80% under AM1.5 irradiance. The performance enhancement under illumination occurs only with sprayed devices, indicating device enhancement under sunlight, which is beneficial for solar energy applications. The semi-transparent property of the solar module allows for applications on windows and windshields, indoor applications, and soft fabric substances such as tents, military back-packs or combat uniforms, providing a highly portable renewable power supply for deployed military forces.

IPC 8 full level  
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