

## 전극과 계면간의 개질에 의한 유기태양전지의 성능 연구

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### A performance study of organic solar cells by electrode and interfacial modification

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**Abstract :** Application of organic materials with low cost, easy fabrication and advantages of flexible device are increasing attention by research work. Recently, one of them, organic solar cells were rapidly increased efficiency with regioregular poly(3-hexylthiophene) (P3HT) and [6,6]-phenyl-C61-butyricacidmethylester (PCBM) used typical material. To increased efficiency of organic solar cell has tried control of domain of PCBM and crystallite of P3HT by thermal annealing and solvent vapor annealing.[4-6] In those annealing effects, be made inefficiently efficiency, which is increased fill factor (FF), and current density by phase-separated morphology with blended P3HT and PCBM. In addition, increased conductivity by modified hole transfer layer (HTL) such as Poly(3,4-ethylenedioxythiophene) poly(styrenesulfonate) (PEDOT:PSS), increased both optical and conducting effect by titanium oxide (TiO<sub>x</sub>), and changed cathode material for control work function were increased efficiency of Organic solar cell.

In this study, we had described effect of organic photovoltaics by conductivity of interlayer such as PEDOT:PSS and TCO (Transparent conducting oxide) such as ITO, which is used P3HT and PCBM. And, we have measured with exactly defined shadow mask to study effect of solar cell efficiency according to conductivity of hole transfer layer.

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