

ENFL

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**340 - Enhanced performance of polymer solar cells with PSSA-g-PANI /graphene oxide as hole transport layer**

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We have synthesized PSSA-g-PANIs which are self-doped conducting copolymer and then prepared the composites with GO. When the transmittances of PSSA-g-PANI and its composites are compared with that of PEDOT:PSS, PSSA-g-PANI and its composite with a small amount of GO (2.5 wt%, 5 wt%) show higher transmittance than PEDOT:PSS in the range of 450 nm to 600 nm, corresponding to the absorption range of P3HT. The electrical conductivities of PSSA-g-PANI and its composite are much larger than that of PEDOT:PSS. The device with the pristine PSSA-g-PANI shows higher PCE than that with PEDOT:PSS mainly due to enhancement of  $J_{SC}$ . When the composite with 2.5 wt% GO was used, the device exhibits the maximum PCE of 4.14%, which is 15% larger than the device with PEDOT:PSS.

**Monday, September 9, 2013 08:00 PM**[Sci-Mix \(08:00 PM - 10:00 PM\)](#)**Location: Indiana Convention Center****Room: Halls F&G****Tuesday, September 10, 2013 02:00 PM**[Advances in Energy and Fuels Processes, Systems, Materials, and Utilization \(02:00 PM - 04:00 PM\)](#)**Location: Indiana Convention Center****Room: Halls F&G**

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