

### Carbon nanotube-platinum counter electrode for dye-sensitized solar cells

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Carbon nanotube-Platinum (CNTs-Pt) were deposited on conducting FTO-glass substrate for counter electrode application in dye-sensitized solar cells (DSCs) by doctor blade and annealing at 300°C for 30 min. Electrochemical impedance measurement shows that charge transfer resistance of CNTs-Pt in liquid electrolyte is 1.10  $\Omega\text{cm}^2$ , which is higher than that of 0.72  $\Omega\text{cm}^2$  for Pt-sputtered and less than that of 4.59  $\Omega\text{cm}^2$  for CNTs as counter electrode of DSC. Furthermore, the DSCs with CNTs-Pt electrode exhibited high energy conversion efficiency of 7.86( $\pm$ 0.05) %, which was higher than 6.02( $\pm$ 0.12) % for CNTs and less than 8.66( $\pm$ 0.06) for Pt-sputtered electrode.