

Fabrication of Flexible Transparent Conductive Films using Carbon Nanotube

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The demands for transparent conductive films(TCFs) are increasing tremendously as the production of markets such as Touch Panels, E-paper, Displays, and Thin-film Solar Cell is improved. In this regard, the recent material for TCFs is the Indium Tin Oxide (ITO) which has a great conductivity and very low sheet resistance. However, the Indium(In) price is expensive and often fluctuated because of its scarce amounts, and in addition, it accounts for about 75 wt% of ITO. Additionally, there is a demand for a new kind of material for flexible TCFs made by plastic substrates, substituting the conventional material which doesn't have a good flexibility. For the demand, some carbon structures such as Fullerene, Graphene, and Carbon Nanotube(CNT) are spotlighted as an alternative material of the flexible TCFs. Among these three structures, CNT has been studied much for application to TCFs with a good flexibility, high conductivity and great tensile strength. In this study, we set our purpose on the fabrication of flexible TCFs using CNT, concentrating on the dispersion and deposition of CNT.