

Characteristics of Graphene/Metal Grid Hybrid Transparent Conductive Films

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We present a systematic study of the electrical, optical and electromechanical properties of flexible graphene/metal grid hybrid transparent conductive electrodes using 4-point probe method, ultraviolet/visible spectrometer and inner/outer bending test system. The hybrid electrodes were synthesized by depositing a silver grid on a graphene surface. The sheet resistance of hybrid electrodes was as low as 30 Ω /square, while the transmittance was 90%. The electromechanical properties as a function of the change of bending radius were evaluated by measuring the change in resistance. The result will be presented in detail. We believe that these results will provide useful information for the flexible optoelectronic devices based on graphene transparent electrodes.

Keywords: Flexible, Transparent electrode, Metal grid, Graphene