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The electrical properties of carbon nanowalls by the depostion of conductive oxide film

To improve the electrical properties of carbon nanowalls(CNW), conductive oxide films such as indium tin oxide(ITO), aluminium-doped zinc oxide(AZO), zinc oxide(ZnO) and gallium doped zinc oxide(GZO) were deposited on the surface of carbon nanowalls. CNW were grown directly on silicon wafers using microwave plasma-enhanced chemical vapor depostion(MPECVD). Conductive oxide films were deposited by rf magnetron sputter on the carbon nanowalls. The images of carbon nanowalls deposited with oxide films were identified by field emission scanning electron microscope(FE-SEM), and the components of the specimen were analyzed using an energy dispersive spectrometer(EDS). The Structural properties of the specimen were analyzed using a Raman spectrometer. The crystals were analyzed using x-ray diffraction spectroscopy(XRD). Electrical properties were analyzed using Hall measurements and 4-point probe.

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