

## **Glass/SWCNT flexible transparent and conducting films**

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Fabricating the transparent and conducting films on thermally stable glass flexible substrates is important for developing transparent electronics. The SWCNT is an excellent candidate for fabricating the thin flexible films and understanding its optical, mechanical, and thermal properties is essential for the future application. We produced transparent and conducting films by bar coating the SWCNT inks on ultrathin and flexible glass substrate which has a strain point at 650 °C. Resistivity against bending glass/SWCNT flexible films was constant after bending at 60°; the sheet resistance was maintained to be 80 ohm/sq at transmittance of 80 %. Thermal treatment of SWCNT films in vacuum decreased sheet resistance from 80 ohm/sq to 70 ohm/sq due to the mild reduction of SWCNTs in the temperature range of 25 °C to 350 °C. On the other hand, the sheet resistance increased from 80 ohm/sq to 400 ohm/sq by treating the films in air due to the mild oxidation of SWCNT thin films. The SWCNT/glass flexible films show high transparency in the near UV-region and infrared region which is promising for the application in the infrared solar cells and flexible electronics.