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Boron-Doped Carbon Nanotube Films XIAO MING LIU, H.E. ROMERO, H.R. GUTIERREZ, P.C. EKLUND — Here we report room temperature optical and resistivity studies on transparent thin films of bundled single-walled carbon nanotubes exposed to B_2O_3 at 1000^oC. This reaction is proposed to B-dope the films. They are stable in air. At 300K the four-probe sheet resistance and the optical transmission in the NIR-UV range are used to evaluate the effects of this chemical exposure. Our preliminary results show that for films with a visible optical transmittance around 80% (550nm), the sheet resistance in the pristine film is lowered from $\sim$2KΩ to $\sim$300Ω via B_2O_3 exposure, a factor of five decrease. We find that the magnitude of the decrease in the sheet resistance increases in samples with higher transmission. Our results suggest that boron-doped SWNT may provide a better approach to touch-screen technology, as well as for transparent contacts in solar cells.

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