Reduction-Controlled Viologen in Bisolvent as an Environmentally Stable n-Type Dopant for Carbon Nanotubes

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Figure S1: Optical absorption spectra of the BV-doped CNTs with different concentrations. The main peak originating from $V^0$ appeared near 405 nm. This peak position was not altered with different concentrations, but the intensity increased with increasing concentrations. This confirms that the separated $V^0$ in toluene from the reduced viologen did not contain any other charged viologens such as $V^{1+}$ and $V^{2+}$. Thus, the separation yield of extracting only $V^0$ was high.
Figure S2: I-V characteristics of 5 mM benzyl viologen, methyl viologen and ethyl viologen-treated TFTs. The large off-currents were observed in the cases of MV and EV, whereas relatively small off-current was observed in the case of BV. From a device point of view, BV is a good n-type dopant with high on-current and low off-current.