Supporting Information

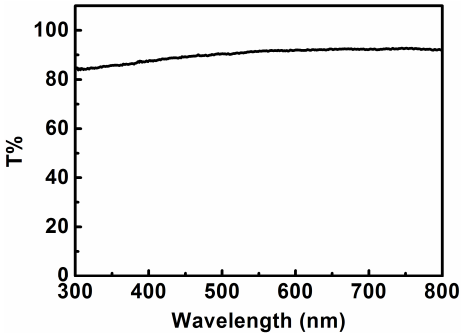

Figure S1. Transmittance characterization of an aligned CNT/olefin composite film with thickness of 100 nm by UV-vis spectroscopy.

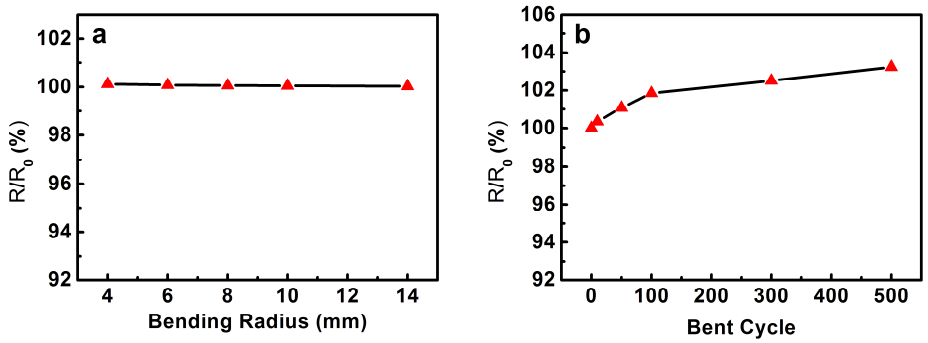

Figure S2. Electrical resistances of an aligned CNT/olefin composite film under bending. In a typical test, silver paint was coated at the top and bottom surfaces of composite film, followed by connection to two wire electrodes of an Agilent 34401A digital multimeter. Here R_0 and R correspond to electrical resistances in the normal direction of the film before and after bending, respectively. One bent cycle means that a film is bent to 180^o (with a radius of 4 mm at the bending part) and then recovered to the original state.

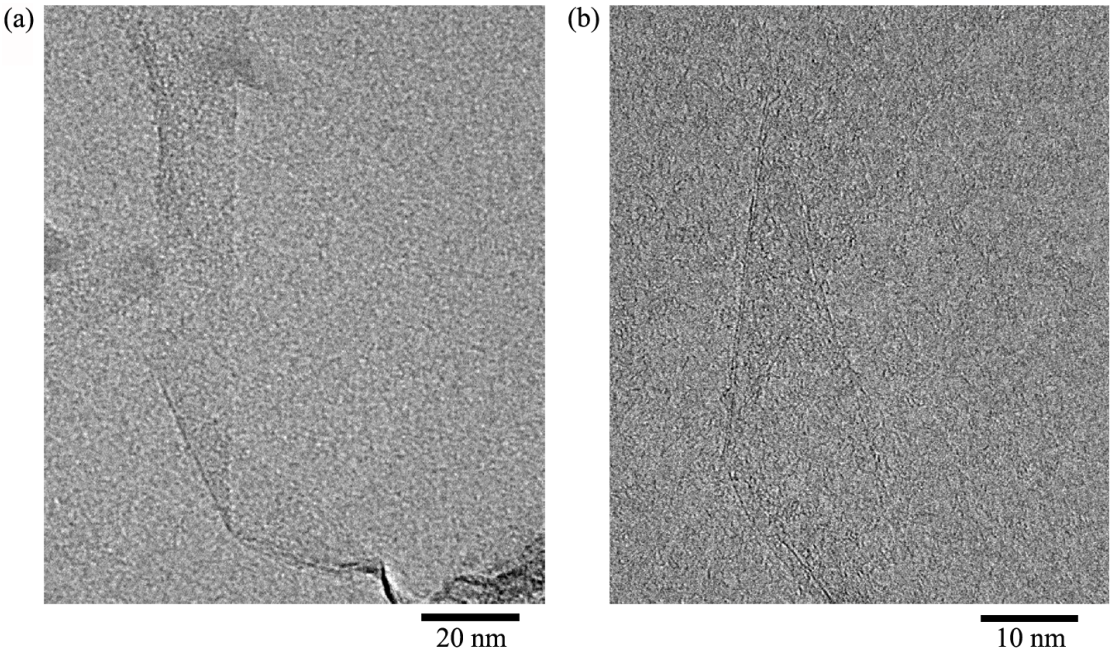

Figure S3. High resolution transmission electron microscopy (TEM) images of two nanosheets with a kink structure.

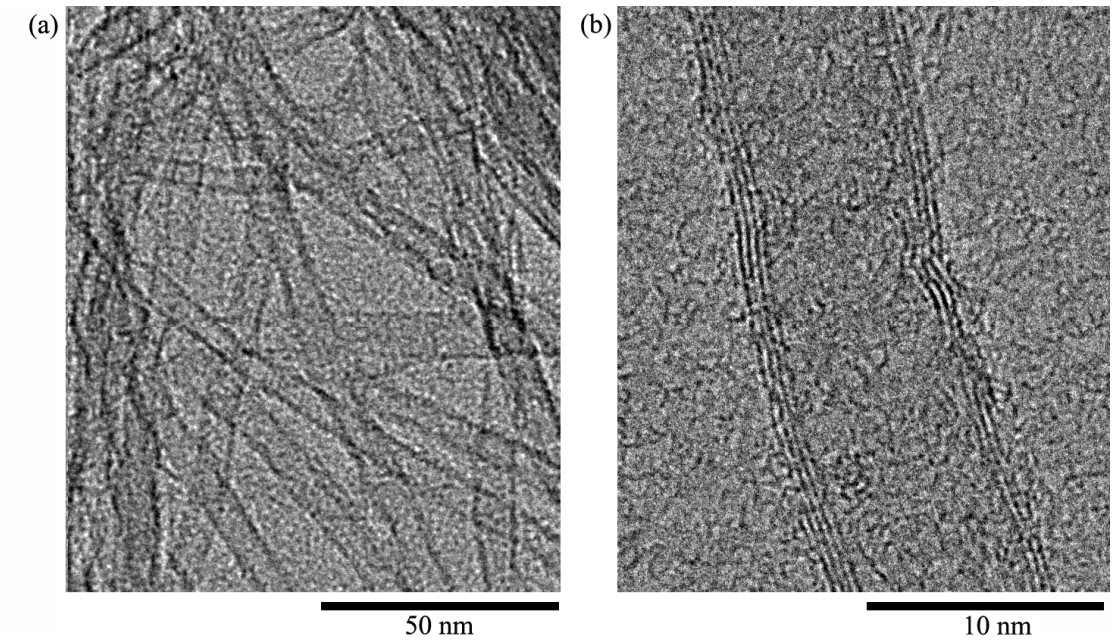

Figure S4. High resolution TEM image of the heat-treated CNTs which had not been sliced after ultrasonic treatment.

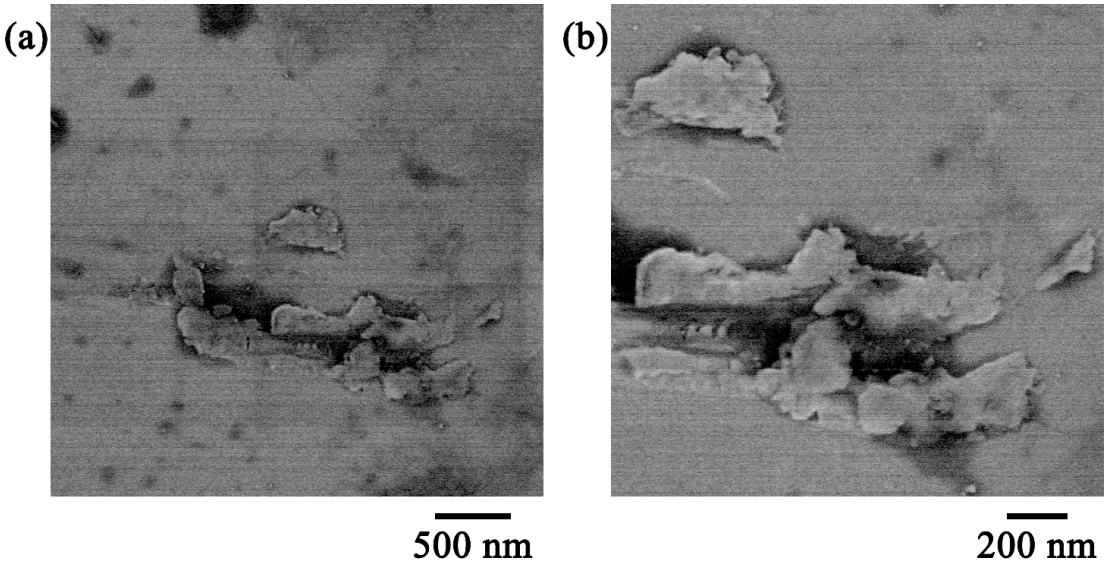

Figure S5. SEM image of the resulting product after an ultrasonic treatment of CNTs. (a) low magnification. (b) high magnification, gold powder had been sprayed on the sample for 20 s before the SEM characterization.

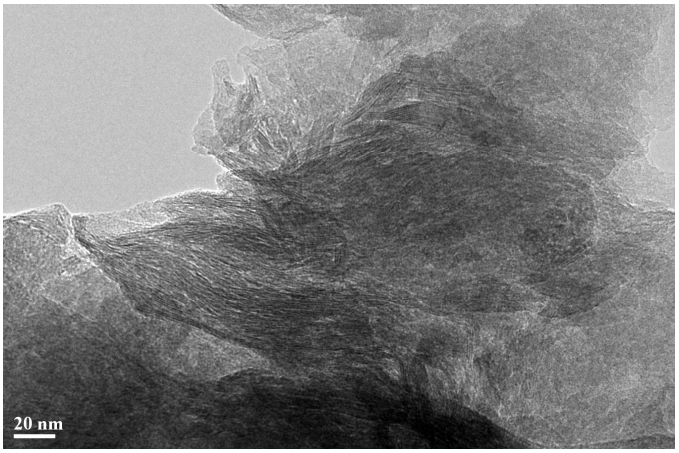

Figure S6. TEM image of the resulting product after an ultrasonic treatment of CNTs.

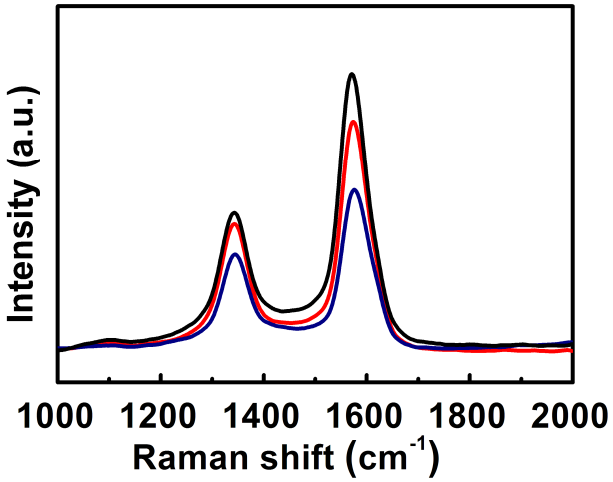

Figure S7. Raman spectra of as-synthesized CNTs (black line), CNTs after cutting (red line), and the resulting nanosheets (blue line).

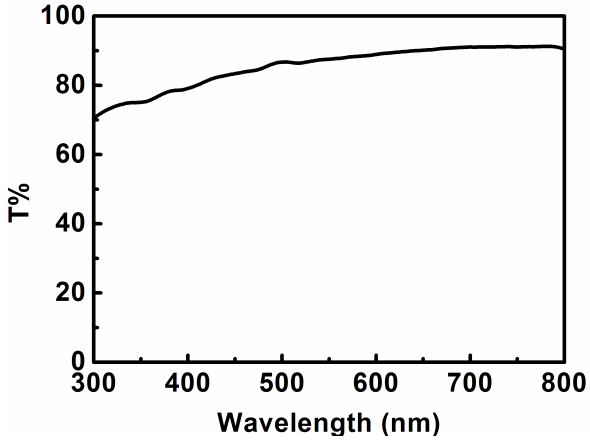

Figure S8. Transmittance characterization of a nanosheet film with thickness of 40 nm by UV-vis spectroscopy. The film was prepared by spincoating graphene nanosheet solution in ethanol (0.005 mg/ml).