Supporting Information

DNA Sequence Mediates Apparent Length Distribution in Single-Walled Carbon Nanotubes

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Figure S1. Overlaid histograms for distributions of (a) Length of (GT)$_6$-SWCNTs and (GT)$_{30}$-SWCNTs, (b) Length of (GT)$_6$-displaced and (GT)$_{30}$-displaced SDC-SWCNTs, and (c) Peak to peak distances in height profiles.
Figure S2. Box and whisker plots for all the data obtained from four or five AFM images per sample combined together for (a) Length of (GT)$_6$-SWCNTs and (GT)$_{30}$-SWCNTs deposited onto mica, (b) Length of (GT)$_6$-displaced and (GT)$_{30}$-displaced SDC-SWCNTs deposited onto mica, (c) Length of (GT)$_6$-displaced and (GT)$_{30}$-displaced SDC-SWCNTs spin coated onto silicon wafers, (d) N/L ratios, and (e) Peak to peak distances in height profiles. The boxes represent minimum and maximum values, and the whiskers represent 25-75 percentile data.
Figure S3. (a) Absorbance spectra for (GT)$_6$-SWCNTs, (GT)$_{30}$-SWCNTs and SDC-SWCNTs (all samples diluted with a 1:10 dilution factor) to compare the dispersing ability of three wrappings with each other. (b) and (c) (6,5) nanotube peaks in normalized absorbance spectra. The blue shifts confirm that the DNA is displaced by SDC.
Figure S4. DNA-SWCNTs spin-coated onto silicon wafers. AFM images of (a) (GT)$_6$-displaced SDC-SWCNTs and (b) (GT)$_{30}$-displaced SDC-SWCNTs. (c) Histograms for length distributions of (GT)$_6$-displaced SDC-SWCNTs ((GT)$_6$ to SDC) and (GT)$_{30}$-displaced SDC-SWCNTs ((GT)$_{30}$ to SDC). (d) The corresponding box and whisker plots to compare the average SWCNT lengths from each of four AFM images per sample for (GT)$_6$-displaced SDC-SWCNTs and (GT)$_{30}$-displaced SDC-SWCNTs. (e) and (f) Box and whisker plots to compare the average SWCNT lengths of deposited samples to that of spin-coated samples. The boxes represent the minimum, maximum, and mean values from n=4 images. The whiskers represent 25-75 percentile data. A two-sample t-test was performed on the image-averaged data (***, p<0.001). Note: significant aggregations were observed in these spin-coated samples. For length distribution analysis, SWCNTs within aggregates were not counted.
Figure S5. (a) Histograms for distribution of peak to peak distances for (GT)$_6$-SWCNTs and (GT)$_{30}$-SWCNTs. (b) Box and whisker plots for peak to peak distances from each of five AFM images per sample for (GT)$_6$-SWCNTs and (GT)$_{30}$-SWCNTs. The boxes represent minimum and maximum values, and the whiskers represent 25-75 percentile data.