Supporting Information

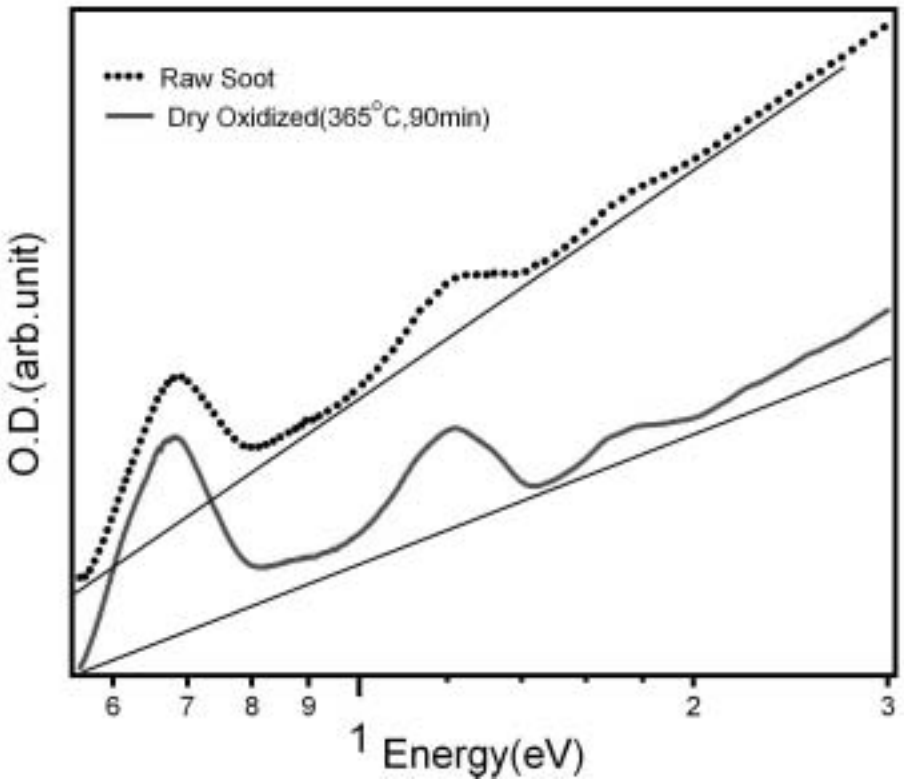

Figure S-1: Comparison of the Optical Density of Raw SWNT soot (arc process) and the same soot exposed to flowing dry air to reduce the amorphous carbon fraction in the sample. The samples were supported on quartz substrates. The peaks are due to optical transitions between the van Hove singularities and the quasi-linear background is estimated from the straight lines in the figure. The background has been attributed to amorphous carbon in the sample [19,22]. The background may also have a contribution from transitions in the nanotube between π and π^* states similar with those observed in graphitic carbons.

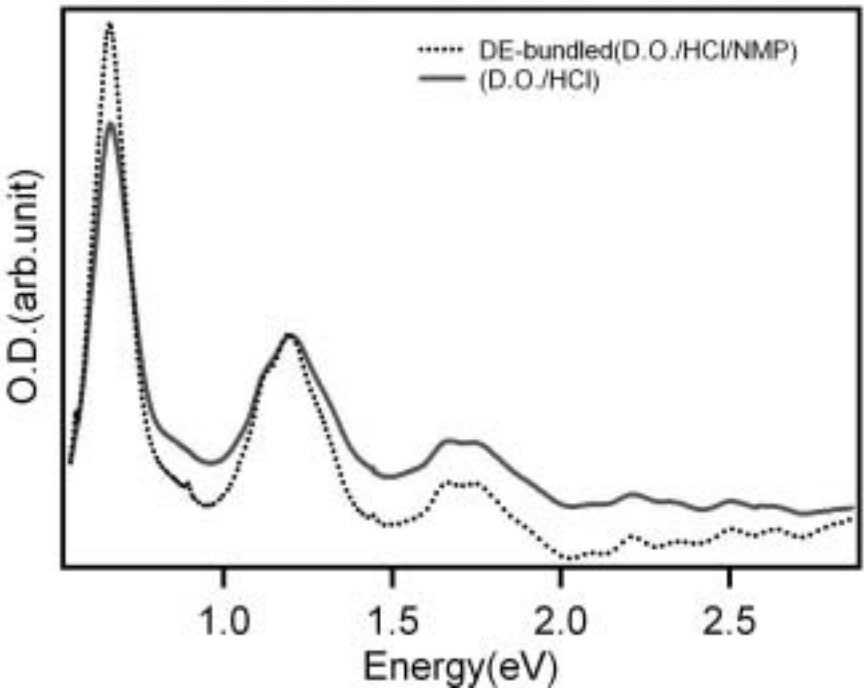

Figure S-2: Optical Density of SWNTs before (solid line) and after (dotted line) debundling in NMP. The samples were supported on quartz substrates. The SWNTs were first subjected to dry oxidation and then HCl reflux. The quasi-linear background has been removed and the tubes were ultrasonically dispersed in NMP.

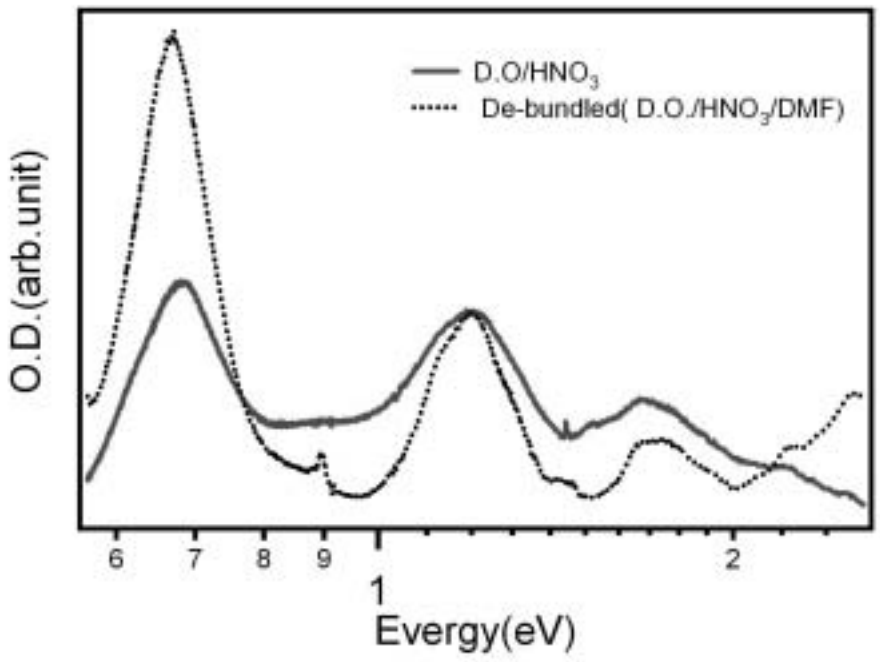

Figure S-3: Optical Density of SWNTs before (solid line) and after (dotted line) debundling in DMF. The samples were supported on quartz substrates. The SWNTs were first subjected to dry oxidation and then HNO_3 reflux. The quasi-linear background has been removed and the tubes were ultrasonically dispersed in DMF. Note the change of the relative intensity of the two lowest van Hove peaks between the two samples. Consistent with the Raman data, we think this intensity is also a measure of disorder and charge transfer.

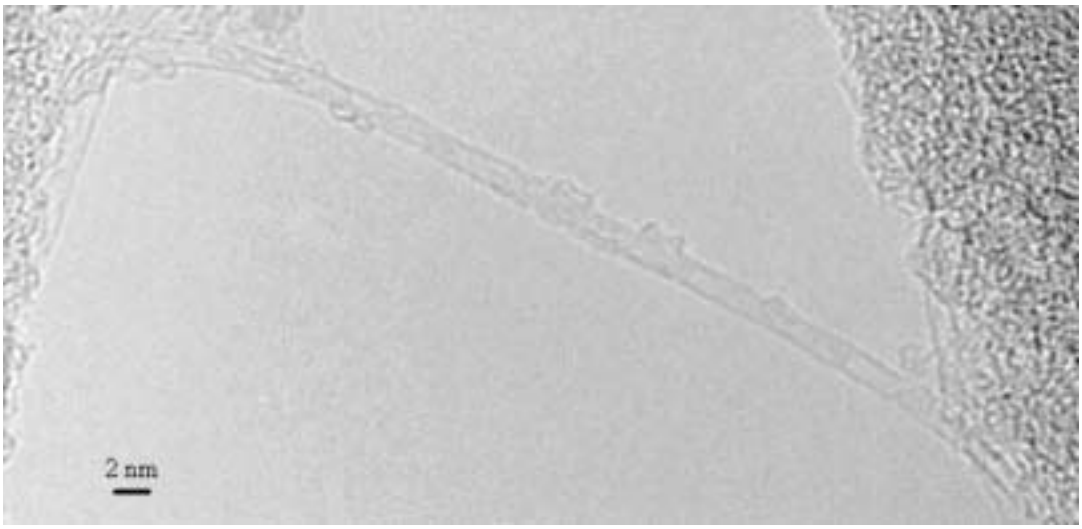

Fig. S-4: HRTEM image of an individual SWNT subjected to dry oxidation, then aggressive HNO_3-reflux and ultrasonic debundling in DMF followed by annealing at 1100° C in vacuum. This and other HRTEM images appeared to indicate the absence of large holes in the tube walls that are caused by nitric acid refluxing (see for example Fig. 8 that show tubes refluxed in nitric acid but not annealed). These images suggest that large wall defects anneal at these temperatures and in times of less than a few hours, consistent with the work of Monthioux et al. [18].