Supporting Information for
Chirality-Dependent Transport in Double-Walled Carbon Nanotube Assemblies: The Role of Inner Tubes

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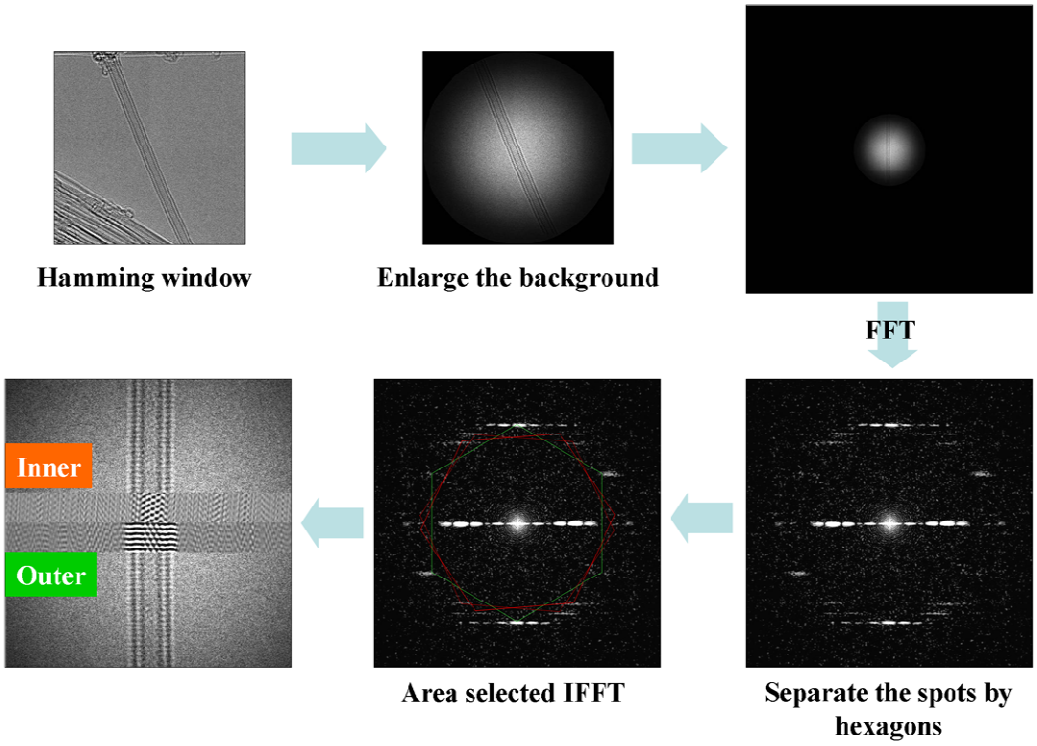

Figure S1 Image processing procedure for identifying the chirality of the inner and the outer tubes.

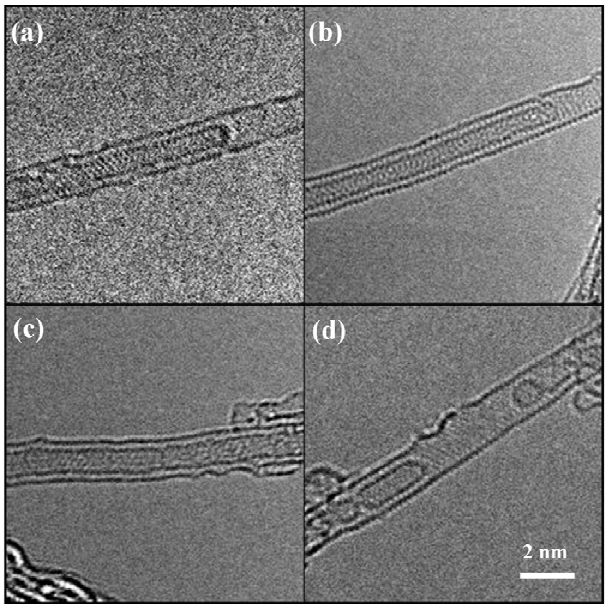

Figure S2 Typical TEM images of peapod-grown DWNTs exhibiting that inner tubes are short and partially defective.

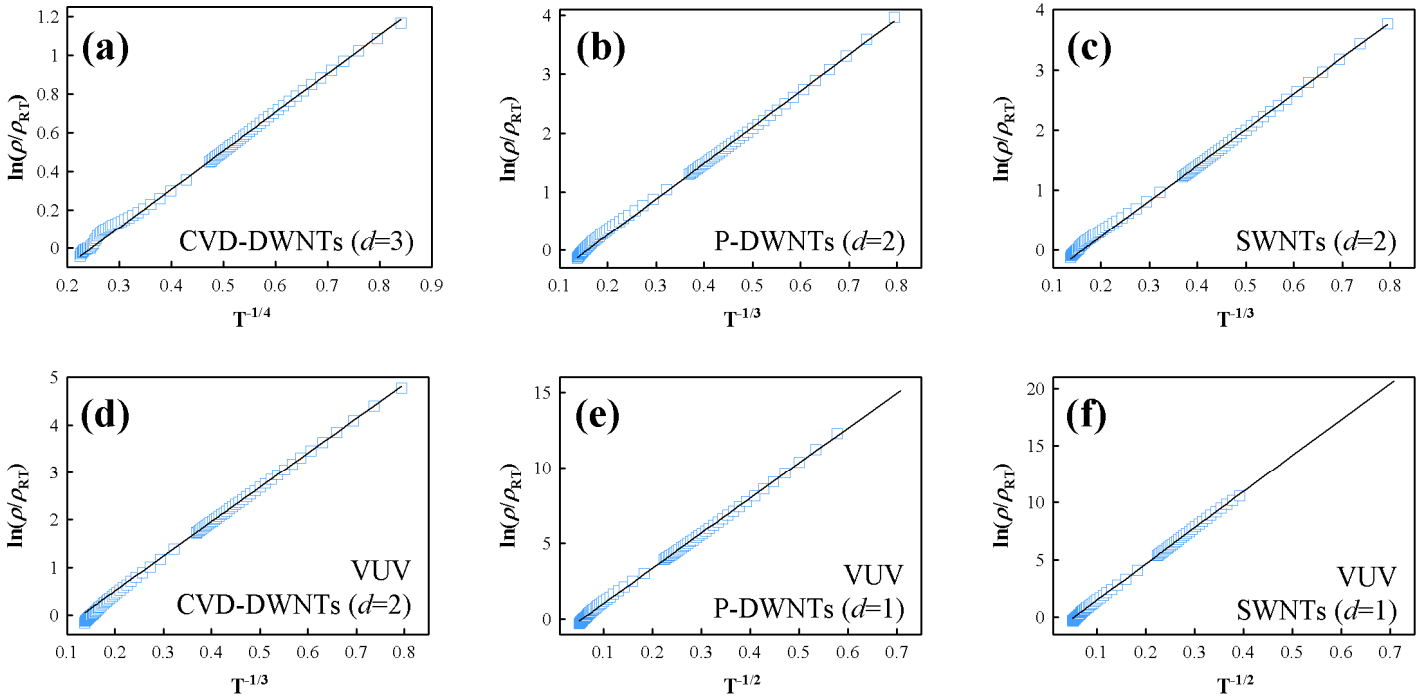

Figure S3 The data in Figure 3 could be linearly fitted using the VRH model with d = 3 (a), 2 (b-d), 1 (e, f).

Table S1 The chirality distributions of the inner and the outer tubes in peapod-DWNTs using a FFT image processing procedure.

No.	i/o	Measured		Assignment		Theory		Error		MOD	Interlayer Space
		d (nm)	angle	n	m	d (nm)	angle	d	angle		
1	**inner**	0.695	23.935	6	4	0.692	23.413	0.416	1.738	2	0.335
	outer	1.365	29.768	10	10	1.375	30.000	0.734	0.772	0	
2	**inner**	0.803	15.275	8	3	0.782	15.295	2.697	0.067	2	0.327
	outer	1.457	28.284	12	11	1.444	28.562	0.872	0.926	1	
3	**inner**	0.691	23.071	6	4	0.692	23.413	0.162	1.141	2	0.339
	outer	1.369	26.534	11	9	1.377	26.696	0.609	0.540	2	
4	**inner**	0.765	15.599	8	3	0.782	15.295	2.163	1.011	2	0.331
	outer	1.426	8.884	16	3	1.405	8.445	1.525	1.466	1	
5	**inner**	0.630	26.740	5	4	0.620	26.330	1.602	1.369	1	0.352
	outer	1.333	17.606	13	6	1.336	17.992	0.192	1.285	1	
6	**inner**	0.692	29.768	5	5	0.688	30.000	0.647	0.772	0	0.341
	outer	1.374	2.876	17	1	1.391	2.833	1.226	0.143	1	
7	**inner**	0.693	22.648	6	4	0.692	23.413	0.127	2.550	2	0.335
	outer	1.362	27.031	11	9	1.377	26.696	1.117	1.118	2	
8	**inner**	0.703	23.901	6	4	0.692	23.413	1.572	1.626	2	0.328
	outer	1.359	18.027	13	6	1.336	17.992	1.754	0.118	1	
9	**inner**	0.730	26.524	6	5	0.757	26.996	3.611	1.571	1	0.334
	outer	1.398	29.405	10	10	1.375	30.000	1.665	1.984	0	
10	**inner**	0.743	27.068	6	5	0.757	26.996	1.894	0.242	1	0.339
	outer	1.421	-0.464	18	0	1.429	0.000	0.563	1.548	0	
11	**inner**	0.705	17.638	7	3	0.706	16.996	0.092	2.140	1	0.328
	outer	1.360	23.387	12	8	1.384	23.413	1.751	0.087	1	
12	**inner**	0.633	26.072	5	4	0.620	26.330	2.086	0.858	1	0.354
	outer	1.340	25.353	11	8	1.312	24.791	2.153	1.874	0	
13	**inner**	0.818	24.210	7	5	0.829	24.504	1.311	0.978	2	0.310
	outer	1.438	-0.006	18	0	1.429	0.000	0.627	0.019	0	
14	**inner**	0.741	27.069	6	5	0.757	26.996	2.158	0.246	1	0.316
	outer	1.372	5.478	16	2	1.357	5.818	1.132	1.131	2	
15	**inner**	0.682	29.770	5	5	0.688	30.000	0.807	0.765	0	0.310
	outer	1.302	20.425	12	7	1.321	21.361	1.463	3.120	2	
16	**inner**	0.757	26.933	6	5	0.757	26.996	0.046	0.209	1	0.335
	outer	1.427	22.019	13	8	1.457	22.173	2.088	0.514	2	
17	**inner**	0.843	19.237	8	4	0.840	19.107	0.333	0.436	1	0.335
	outer	1.512	23.819	13	9	1.521	24.007	0.586	0.628	1	
18	**inner**	0.742	27.391	6	5	0.757	26.996	2.026	1.317	1	0.334
	outer	1.410	8.444	16	3	1.405	8.445	0.386	0.003	1	
19	**inner**	0.757	20.392	7	4	0.766	21.052	1.126	2.198	0	0.317
	outer	1.390	26.809	11	9	1.377	26.696	0.916	0.377	2	
20	**inner**	0.840	19.340	8	4	0.840	19.107	0.024	0.777	1	0.334
	outer	1.507	26.420	12	10	1.515	26.996	0.508	1.919	2	
Inner Average:		**0.733**									
Outer Average:		**1.396**								**Average:**	**0.331**

Table S2 The chirality distributions of the inner and the outer tubes in CVD-DWNTs using a FFT image processing procedure.

No.	i/o	Measured		Assignment		Theory		Error		MOD	Interlayer Space
		d (nm)	angle	n	m	d (nm)	angle	d	angle		
1	**inner**	0.927	22.448	8	5	0.902	22.411	2.804	0.124	0	0.352
	outer	1.631	20.364	15	8	1.606	20.034	1.583	1.100	1	
2	**inner**	0.829	24.585	7	5	0.829	24.504	0.016	0.272	2	0.322
	outer	1.472	16.711	15	6	1.487	16.102	1.035	2.029	0	
3	**inner**	0.826	9.704	9	2	0.806	9.826	2.515	0.408	1	0.346
	outer	1.517	7.462	16	3	1.562	7.589	2.869	0.425	1	
4	**inner**	0.938	22.113	8	5	0.902	22.411	4.024	0.993	0	0.352
	outer	1.641	10.173	18	4	1.611	9.826	1.833	1.154	2	
5	**inner**	0.979	15.320	10	4	0.992	16.102	1.270	2.607	0	0.347
	outer	1.672	29.431	12	12	1.650	30.000	1.326	1.897	0	
6	**inner**	0.864	27.815	7	6	0.895	27.457	3.431	1.192	1	0.335
	outer	1.533	23.740	13	9	1.521	24.007	0.794	0.893	1	
7	**inner**	0.792	15.312	8	3	0.782	15.295	1.290	0.055	2	0.359
	outer	1.510	15.380	16	6	1.564	15.295	3.442	0.283	1	
8	**inner**	0.728	11.957	8	2	0.728	10.893	0.050	3.544	0	0.364
	outer	1.456	19.620	14	7	1.470	19.107	0.976	1.713	1	
9	**inner**	0.954	16.761	10	4	0.992	16.102	3.792	2.195	0	0.347
	outer	1.647	7.734	19	3	1.641	7.223	0.394	1.705	1	
10	**inner**	0.754	15.222	8	3	0.782	15.295	3.570	0.244	2	0.330
	outer	1.413	8.138	16	3	1.405	8.445	0.600	1.022	1	
11	**inner**	0.767	4.871	10	1	0.757	5.209	1.275	1.127	0	0.339
	outer	1.445	10.440	16	4	1.455	10.893	0.706	1.510	0	
12	**inner**	0.999	11.266	11	3	1.014	11.742	1.441	1.586	2	0.356
	outer	1.710	26.072	14	11	1.723	26.037	0.754	0.117	0	
13	**inner**	0.828	19.050	8	4	0.840	19.107	1.452	0.187	1	0.327
	outer	1.482	28.571	11	10	1.444	28.425	2.603	0.485	1	
14	**inner**	0.867	7.593	10	2	0.884	8.948	1.930	4.519	2	0.322
	outer	1.511	12.477	16	5	1.508	13.174	0.170	2.322	2	
15	**inner**	0.926	17.437	9	4	0.916	17.480	1.137	0.144	2	0.341
	outer	1.607	29.038	12	11	1.582	28.562	1.589	1.586	1	
16	**inner**	0.729	11.084	8	2	0.728	10.893	0.188	0.635	0	0.353
	outer	1.434	19.266	14	7	1.470	19.107	2.472	0.532	1	
17	**inner**	0.893	27.846	7	6	0.895	27.457	0.189	1.297	1	0.357
	outer	1.607	2.477	20	1	1.629	2.419	1.349	0.193	1	
18	**inner**	0.666	23.447	6	4	0.692	23.413	3.774	0.114	2	0.352
	outer	1.369	2.651	17	1	1.391	2.833	1.585	0.607	1	
19	**inner**	0.632	26.332	5	4	0.620	26.330	1.925	0.007	1	0.341
	outer	1.313	20.913	12	7	1.321	21.361	0.631	1.492	2	
20	**inner**	0.942	20.006	9	5	0.976	20.633	3.442	2.089	1	0.335
	outer	1.611	27.083	13	11	1.652	27.245	2.483	0.540	2	
Inner Average:		**0.842**									
Outer Average:		**1.529**								**Average:**	**0.344**