

In-situ vibrational spectroscopy of adsorbed nitrogen in porous carbon materials

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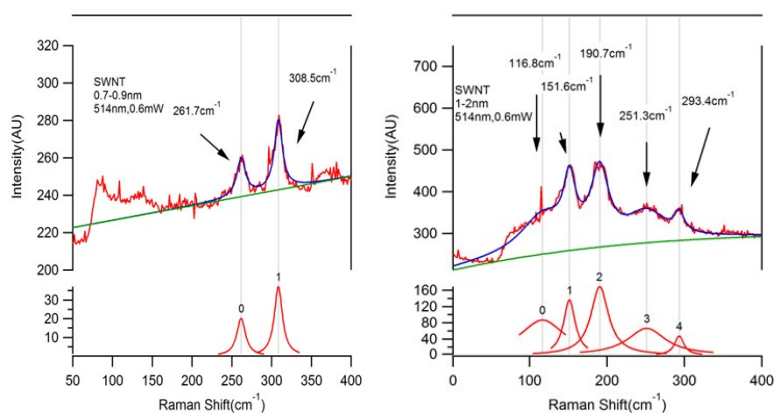
SUPPORTING INFORMATION

Table S1: Raman data of N₂ peaks as a function of pressure for N₂ adsorption on 0.7-0.9nm SWNT at 79K

SWNT	N _{2(I)} Peak Position (cm ⁻¹)	FWHM- N _{2(I)} (cm ⁻¹)	N _{2(II)} peak position (cm ⁻¹)	ΔN _{2(II)} (cm ⁻¹) Relative to HOPG	FWHM- N _{2(II)} (cm ⁻¹)
0.2	2331.1	1.6	2329.1	-1.7	3.4
0.48	2331.1	0.8	2328.2	-2.1	2.5
0.55	2330.9	1.62	2328.2	-2.6	1.57
0.61	2330.9	1.63	2328.2	-2.6	1.26
0.96	2331.1	1.88	2328.3	-2.5	1.25

Table S2: N₂ Raman data as a function of pressure for N₂ adsorbed on Maxsorb-AC at 298K

AC Maxsorb b P(bar)	N _{2(I)} Peak position (cm ⁻¹)	FWHM -N _{2(I)} (cm ⁻¹)	N _{2(II)} peak position (cm ⁻¹)	ΔN _{2(II)} (cm ⁻¹) Relative to HOPG	FWHM -N _{2(II)} (cm ⁻¹)	N _{2(III)} peak position (cm ⁻¹)	ΔN _{2(III)} (cm ⁻¹) Relative to HOPG	FWHM -N _{2(III)} (cm ⁻¹)
0.34	2330.4	0.58	2328.3	-2.5	3.27	-	-	-
0.64	2330.4	1.4	2328.1	-2.7	1.35	-	-	-
1.01	2330.8	1.15	2328.7	-2.1	3.47	-	-	-
1.04	2330.8	1.17	2328.8	-2	3.45	-	-	-
1.36	2330.4	1.64	2327.9	-2.9	0.7	-	-	-
1.62	2330.3	2.21	2328	-2.8	1.88	2325.7	-5.1	1.36



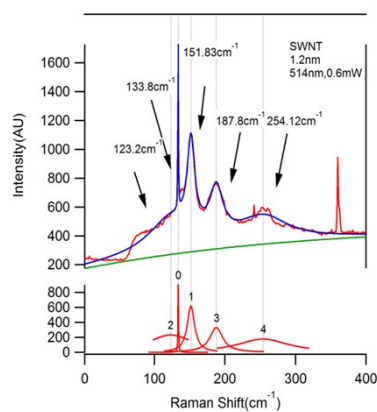


Figure S1: Raman spectroscopy of SWNT showing the Radial breathing mode at 514nm and 0.6mW.

Table S3: Table showing the RBM and corresponding SWNT diameter obtained from 514nm Raman spectra.

Sample (SWNT)	RBM(cm ⁻¹)	Tube diameter(nm)
0.7-0.9nm	261.7	0.85
	308.5	0.72
1.2nm	123.2	1.81
	133.8	1.67
	151.8	1.47
	187.8	1.19
	254.12	0.88
1-2nm	116.8	1.91
	151.6	1.47
	190.7	1.17
	251.3	0.89
	293.4	0.76