



Analysis		Report	
Operator:	quantachrome	Date:	2021/11/09
Sample ID:	ljx-1	Filename:	20211108-ljx-1_iq2_phisy_st1_2021_11_09_17_31_23.qps
Sample Desc:		Comment:	N2- micro/mesopore analysis-general
Sample Weight:	0.0207 g	Instrument:	Autosorb iQ Station 1
Outgas Time:	12.0 hrs	Outgas Temp.:	200 °C
Analysis gas:	Nitrogen	Non-ideality:	6.58e-05 1/Torr
Analysis Time:	26:31 hr:min	Bath temp.:	77.35 K
Analysis Mode:	Standard	Cold Zone V:	7.66755 cc
VoidVol. Mode:	He Measure	CellType:	9mm w/o rod
		VoidVol Remeasure:	off
		Warm Zone V:	12.51 cc

Data Reduction Parameters

<u>t-Method</u>	Thermal Transpiration: on	Eff. mol. diameter (D): 3.54 Å	Eff. cell stem diam. (d): 4.0000 mm
<u>BJH/DH method</u>	Calc. method: de Boer		
<u>HK method</u>	Moving pt. avg.: off	Ignoring P-tags below 0.35 P/Po	
<u>DFT method</u>	Tabulated data interval: 1		
	Calc. Model: N2 at 77 K on carbon (slit/cylindr. pores, QSDFT adsorption branch)		
	Rel. press. range: 0.0000 - 1.0000	Moving pt. avg: off	
<u>Adsorbate model</u>	Nitrogen	Temperature 77.350K	
	Molec. Wt.: 28.013	Cross Section: 16.200 Å ²	Liquid Density: 0.808 g/cc
	Avg. Diameter: 0.300 nm	Polarizability: 1.460 (cc/molec) x 10 ⁻²⁴	Magn. Suscept.: 2.000
<u>Adsorbent model</u>	Carbon	Surf. Atom Dens.: 38.450 (mol/cm ²)x10 ⁻¹⁴	Polarizability: 1.020 (cc/molec)x10 ⁻²⁴
	Atom Diameter: 0.340 nm	Magn. Susc.: 13.500 (cc/molec)x10 ⁻²⁹	

Volume/Area summary

Surface Area Data

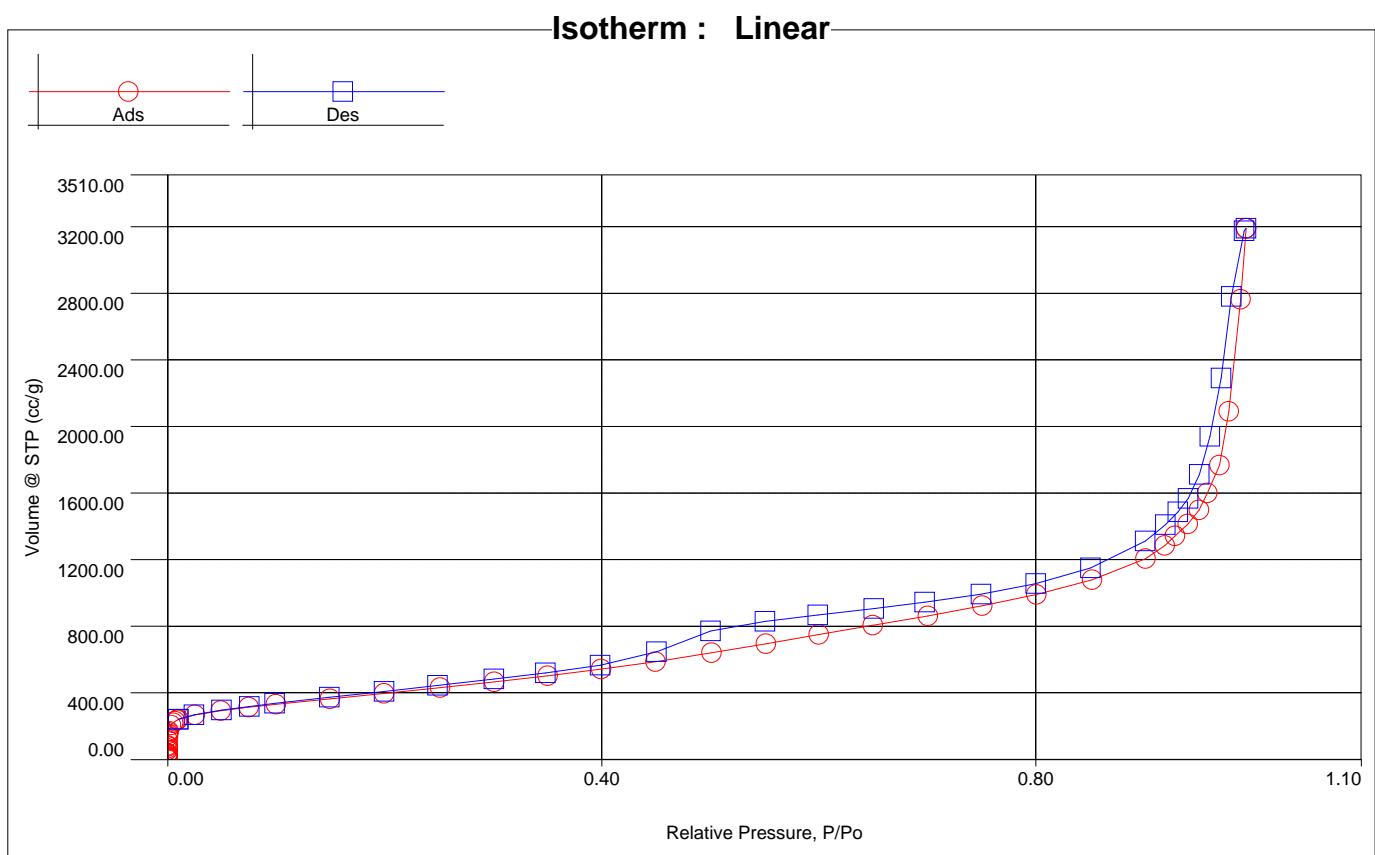
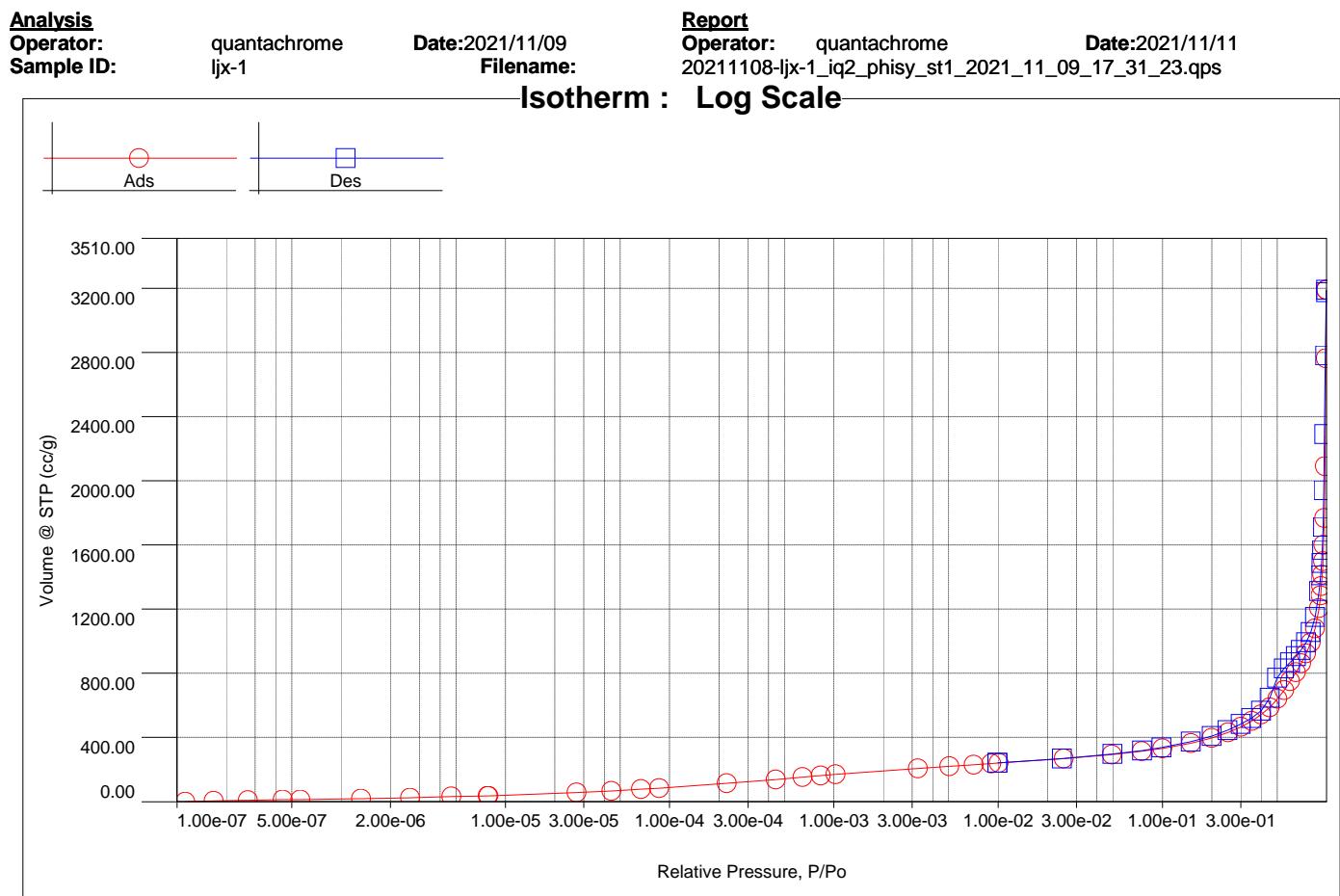
<u>MultiPoint BET</u>	1.440e+03 m ² /g
Langmuir surface area.....	2.296e+03 m ² /g
BJH method cumulative adsorption surface area.....	1.099e+03 m ² /g
BJH method cumulative desorption surface area.....	1.318e+03 m ² /g
DH method cumulative adsorption surface area.....	1.120e+03 m ² /g
DH method cumulative desorption surface area.....	1.347e+03 m ² /g
t-method external surface area.....	1.440e+03 m ² /g
DFT cumulative surface area.....	1.330e+03 m ² /g

Pore Volume Data

Total pore volume for pores with Diameter less than 311.40 nm at P/Po = 0.993813.....	4.934e+00 cc/g
BJH method cumulative adsorption pore volume.....	4.689e+00 cc/g
BJH method cumulative desorption pore volume.....	4.727e+00 cc/g
DH method cumulative adsorption pore volume.....	4.550e+00 cc/g
DH method cumulative desorption pore volume.....	4.594e+00 cc/g
HK method micropore volume.....	5.676e-01 cc/g
SF method micropore volume.....	4.077e-01 cc/g
DFT method cumulative pore volume.....	2.618e+00 cc/g

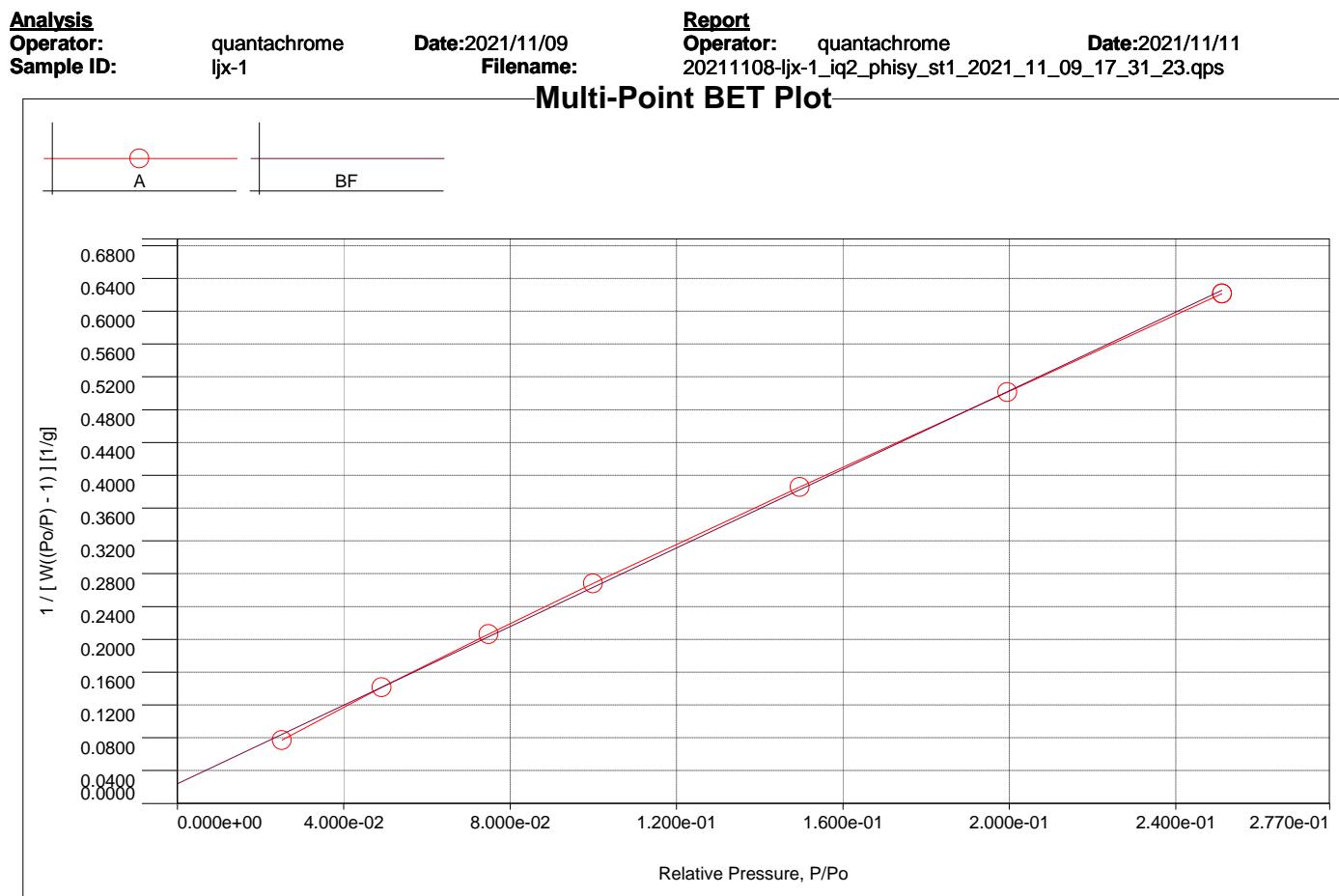
Pore Size Data

Average pore Diameter	1.371e+01 nm
BJH method adsorption pore Diameter (Mode Dv(d)).....	3.829e+00 nm
BJH method desorption pore Diameter (Mode Dv(d)).....	3.828e+00 nm
DH method adsorption pore Diameter (Mode Dv(d)).....	3.829e+00 nm
DH method desorption pore Diameter (Mode Dv(d)).....	3.828e+00 nm
HK method pore Diameter (Mode).....	6.075e-01 nm
SF method pore Diameter (Mode).....	1.043e+00 nm
DFT pore Diameter (Mode).....	1.007e+00 nm





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Isotherm			
Relative Pressure	Volume @ STP [cc/g]	Relative Pressure	Volume @ STP [cc/g]
1.12778e-07	0.0440	1.49642e-01	365.1429
1.67741e-07	5.9264	1.99578e-01	397.8543
2.70723e-07	8.8568	2.51176e-01	431.7263
4.40880e-07	11.7850	3.00977e-01	466.1892
5.64305e-07	13.2463	3.50305e-01	502.5192
1.32245e-06	19.1472	3.99485e-01	542.6978
2.63446e-06	25.0362	4.49771e-01	588.0463
4.70053e-06	30.8993	5.01351e-01	641.1416
7.83237e-06	36.7569	5.51545e-01	694.8266
7.87662e-06	36.8397	6.00158e-01	750.7049
2.71946e-05	56.6722	6.50004e-01	806.3935
4.42044e-05	67.0499	7.00900e-01	862.7201
6.69679e-05	77.2541	7.50770e-01	923.1491
8.65106e-05	84.1815	8.00635e-01	991.7561
2.23115e-04	113.8091	8.52163e-01	1078.7558
4.43899e-04	138.3922	9.01242e-01	1206.8794
6.46093e-04	152.5057	9.18954e-01	1284.8534
8.31764e-04	161.8714	9.28600e-01	1342.6961
1.02697e-03	169.5238	9.40061e-01	1412.8182
3.25456e-03	207.5989	9.50413e-01	1497.8539
5.06308e-03	220.7417	9.58140e-01	1599.9974
7.09699e-03	230.4627	9.69364e-01	1768.2337
9.08054e-03	237.5126	9.77916e-01	2090.0115
1.00715e-02	240.4804	9.88831e-01	2763.8387
2.51644e-02	267.6202	9.93813e-01	3189.9785
4.91869e-02	292.8193	9.91986e-01	3174.3459
7.48520e-02	313.6097	9.80485e-01	2781.0408
9.99760e-02	331.7200	9.70904e-01	2290.6839



Multi-Point BET

Relative Pressure [P/Po]	Volume @ STP [cc/g]	$1 / [W((Po/P) - 1)]$ [1/g]	Relative Pressure [P/Po]	Volume @ STP [cc/g]	$1 / [W((Po/P) - 1)]$ [1/g]
2.51644e-02	267.6202	7.7177e-02	1.49642e-01	365.1429	3.8560e-01
4.91869e-02	292.8193	1.4135e-01	1.99578e-01	397.8543	5.0144e-01
7.48520e-02	313.6097	2.0642e-01	2.51176e-01	431.7263	6.2164e-01
9.99760e-02	331.7200	2.6793e-01			

MBET summary

Slope =	2.395 1/g
Intercept =	2.380e-02 1/g
Correlation coefficient, r =	0.999773
C constant=	101.635
Surface Area =	1439.615 m²/g

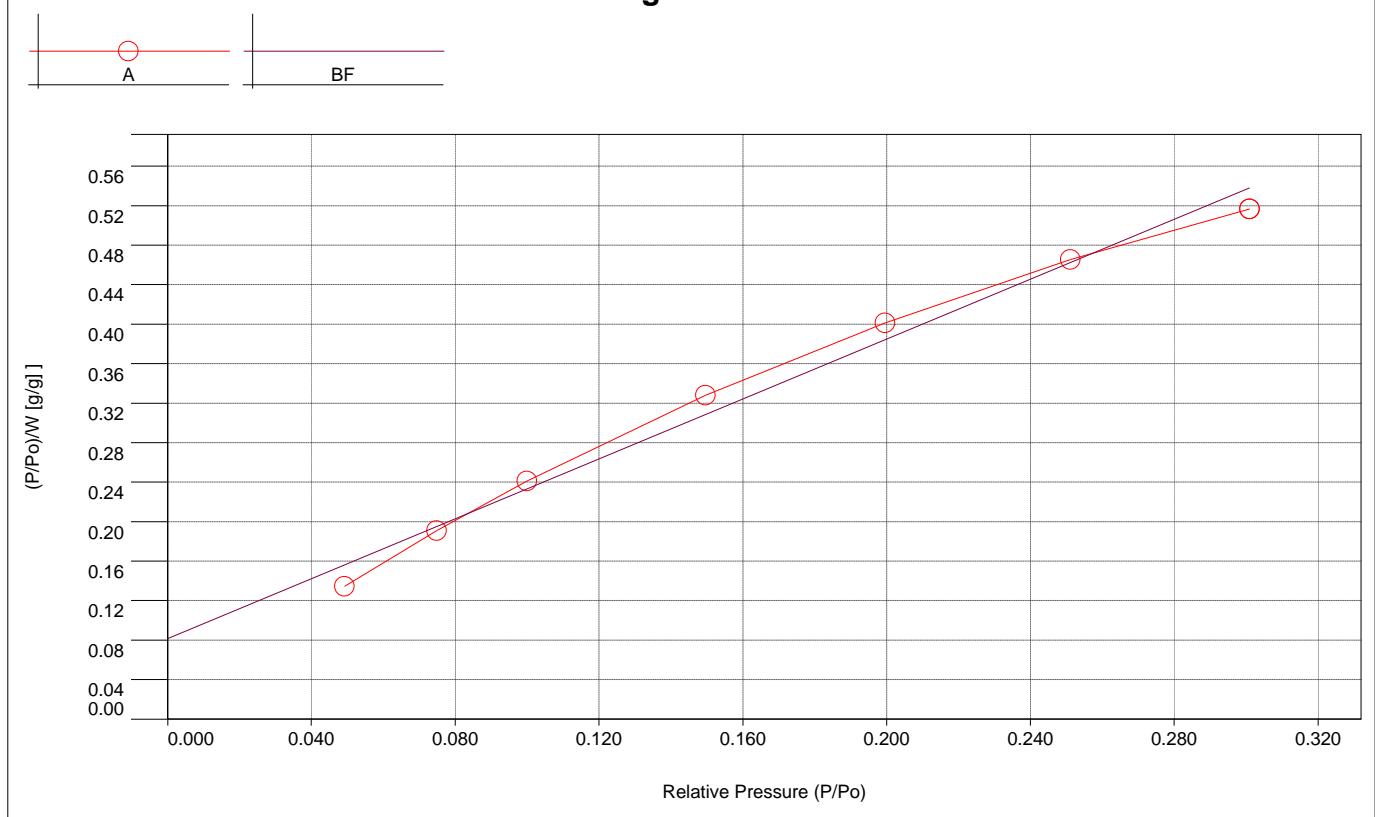


Analysis
Operator: quantachrome
Sample ID: ljjx-1

Date: 2021/11/09
Filename:

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File: 20211108-ljjx-1_iq2_phisy_st1_2021_11_09_17_31_23.qps

Langmuir Plot



Langmuir

P/P_0	$P/P_0/W$ [(g/g)]	P/P_0	$P/P_0/W$ [(g/g)]
4.91869e-02	1.3440e-01	1.99578e-01	4.0137e-01
7.48520e-02	1.9097e-01	2.51176e-01	4.6550e-01
9.99760e-02	2.4114e-01	3.00977e-01	5.1656e-01
1.49642e-01	3.2790e-01		

LangMuir summary

Slope = 1.51676
Intercept = 0.08156
Correlation coefficient, r = 0.993
Surface Area = 2296.019 m²/g



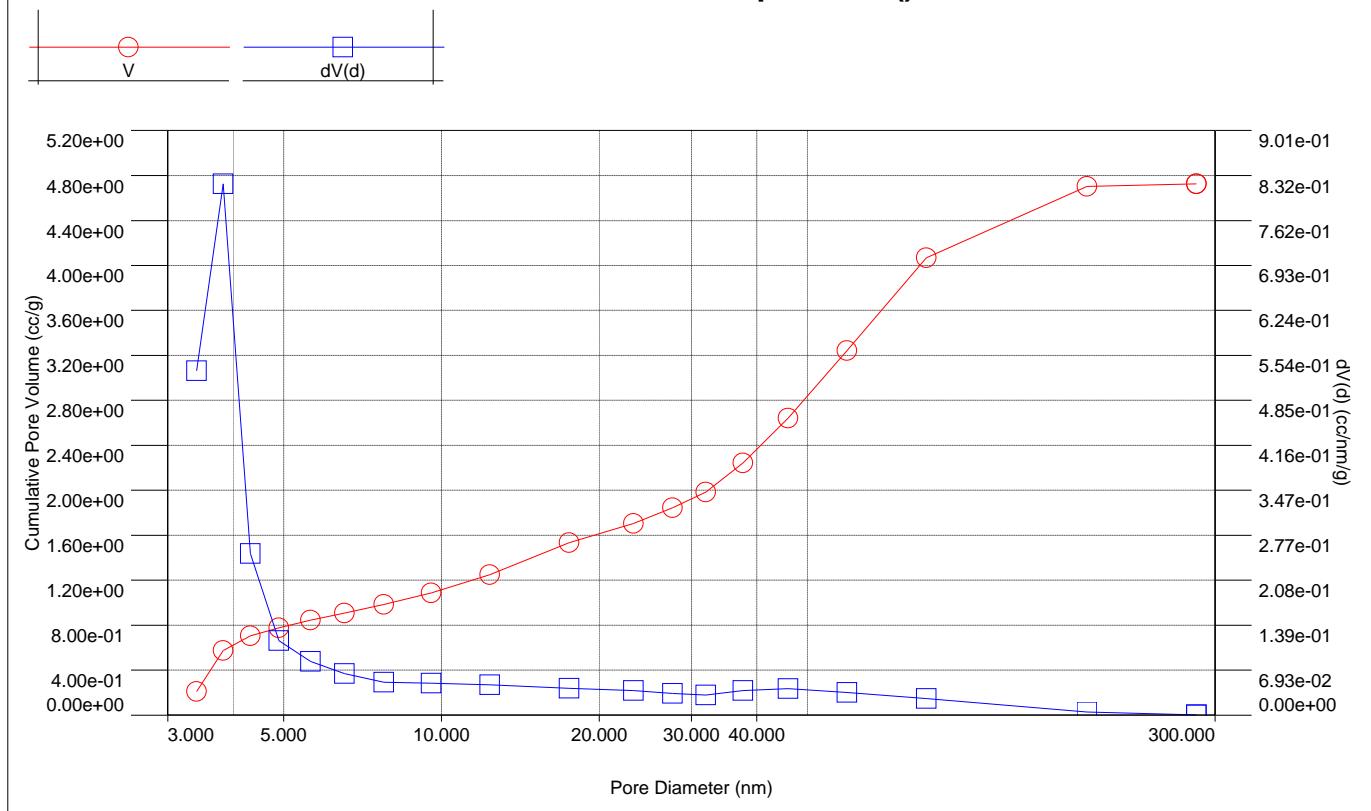
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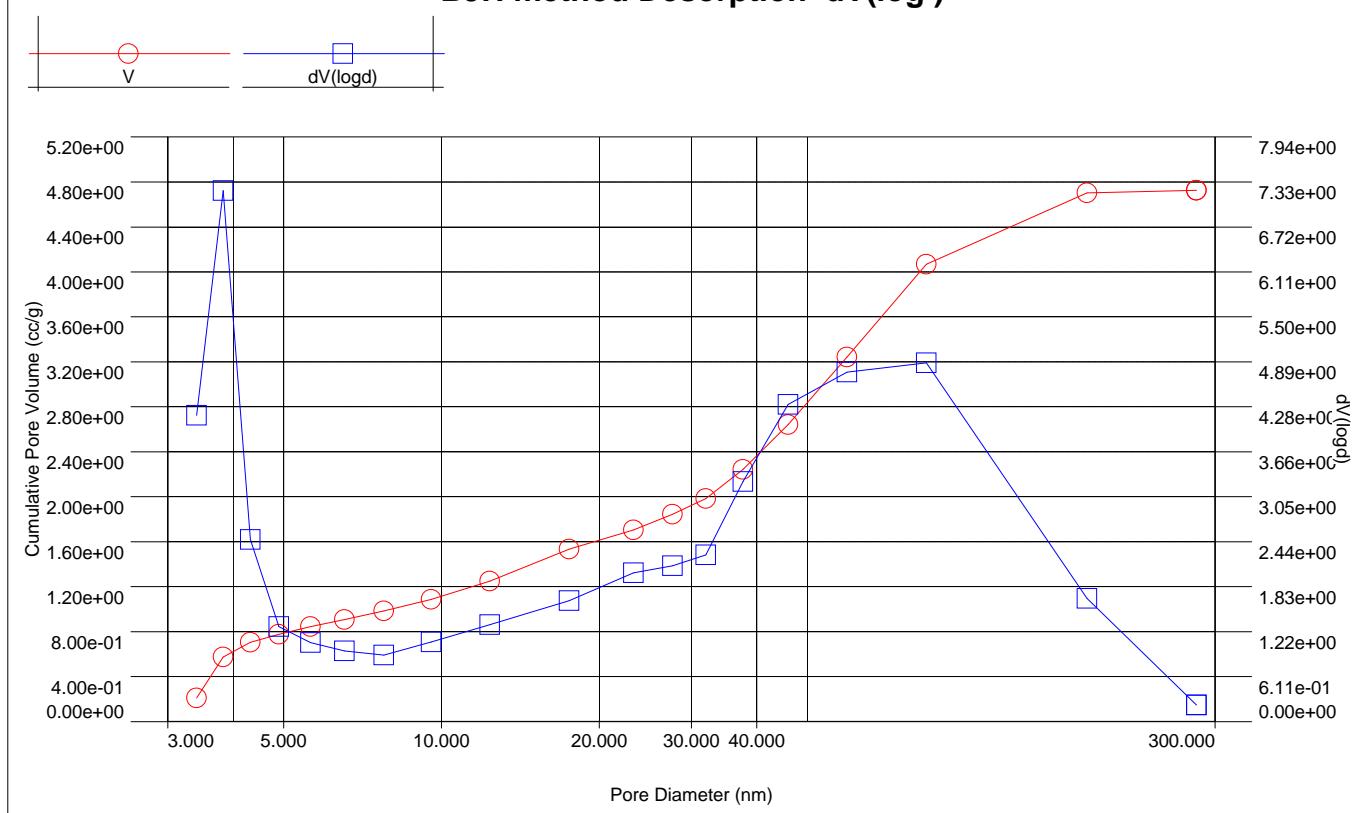
Report
Operator: quantachrome
Date: 2021/11/11

20211108-ljjx-1_iq2_phisy_st1_2021_11_09_17_31_23.qps

BJH method Desorption dV()



BJH method Desorption dV(log)





Analysis		Report	
Operator:	quantachrome	Operator:	quantachrome
Sample ID:	ljqx-1	Date:	2021/11/09
		Filename:	20211108-ljqx-1_iq2_phisy_st1_2021_11_09_17_31_23.qps
		Date:	2021/11/11

Desorption

Diameter	Pore Volume	Pore Surf Area	dV(d)	dS(d)	dV(logd)	dS(logd)
[nm]	[cc/g]	[m ² /g]	[cc/nm/g]	[m ² /nm/g]	[cc/g]	[cc/g]
3.4092	2.0943e-01	2.4573e+02	5.3054e-01	6.2247e+02	4.1601e+00	4.8810e+03
3.8284	5.7275e-01	6.2532e+02	8.1887e-01	8.5557e+02	7.2105e+00	7.5336e+03
4.3155	7.0482e-01	7.4774e+02	2.4901e-01	2.3080e+02	2.4712e+00	2.2906e+03
4.8927	7.7633e-01	8.0620e+02	1.1459e-01	9.3680e+01	1.2892e+00	1.0540e+03
5.6205	8.4532e-01	8.5530e+02	8.2965e-02	5.9044e+01	1.0717e+00	7.6274e+02
6.5290	9.0843e-01	8.9396e+02	6.4041e-02	3.9234e+01	9.6093e-01	5.8871e+02
7.7602	9.8336e-01	9.3259e+02	5.0733e-02	2.6150e+01	9.0379e-01	4.6586e+02
9.5585	1.0878e+00	9.7630e+02	4.9286e-02	2.0625e+01	1.0803e+00	4.5207e+02
12.3643	1.2506e+00	1.0290e+03	4.6606e-02	1.5078e+01	1.3180e+00	4.2639e+02
17.5385	1.5327e+00	1.0933e+03	4.1154e-02	9.3859e+00	1.6406e+00	3.7416e+02
23.2554	1.7061e+00	1.1231e+03	3.7871e-02	6.5139e+00	2.0213e+00	3.4767e+02
27.6216	1.8447e+00	1.1432e+03	3.3349e-02	4.8294e+00	2.1170e+00	3.0657e+02
31.9687	1.9846e+00	1.1607e+03	3.0831e-02	3.8577e+00	2.2657e+00	2.8349e+02
37.6419	2.2415e+00	1.1880e+03	3.7734e-02	4.0098e+00	3.2616e+00	3.4659e+02
45.9272	2.6405e+00	1.2228e+03	4.0871e-02	3.5597e+00	4.3059e+00	3.7502e+02
59.4476	3.2436e+00	1.2633e+03	3.4907e-02	2.3488e+00	4.7444e+00	3.1923e+02
84.2723	4.0670e+00	1.3024e+03	2.5436e-02	1.2073e+00	4.8743e+00	2.3136e+02
170.7560	4.7020e+00	1.3173e+03	4.5166e-03	1.0580e-01	1.6705e+00	3.9132e+01
276.2286	4.7269e+00	1.3177e+03	3.5354e-04	5.1196e-03	2.2365e-01	3.2386e+00

BJH desorption summary

Surface Area =	1317.650 m ² /g
Pore Volume =	4.727 cc/g
Pore Diameter Dv(d) =	3.828 nm



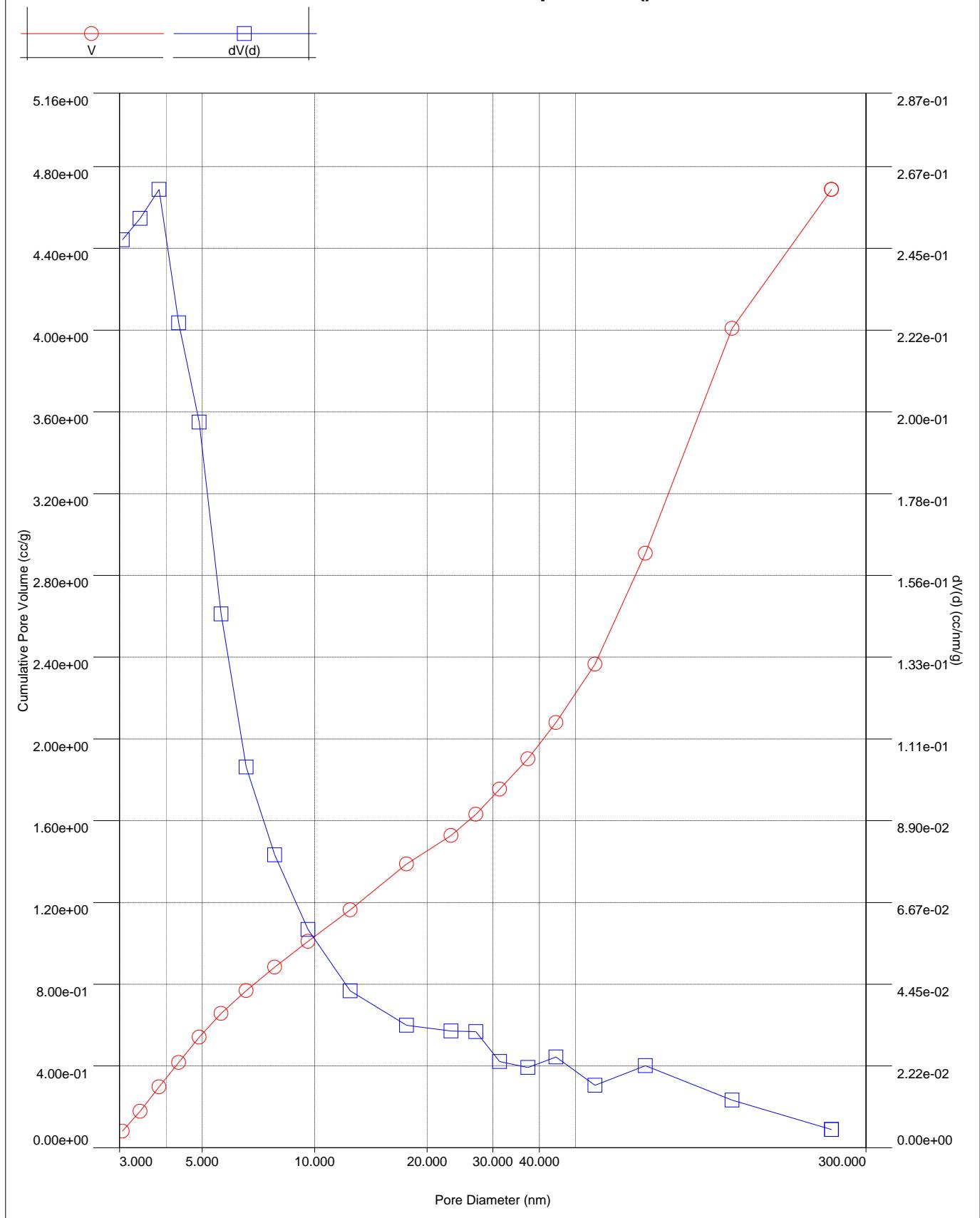
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Date: 2021/11/09
Filename:

Report
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File: 20211108-ljjx-1_iq2_phisy_st1_2021_11_09_17_31_23.qps

Date: 2021/11/11

BJH method Adsorption $dV()$

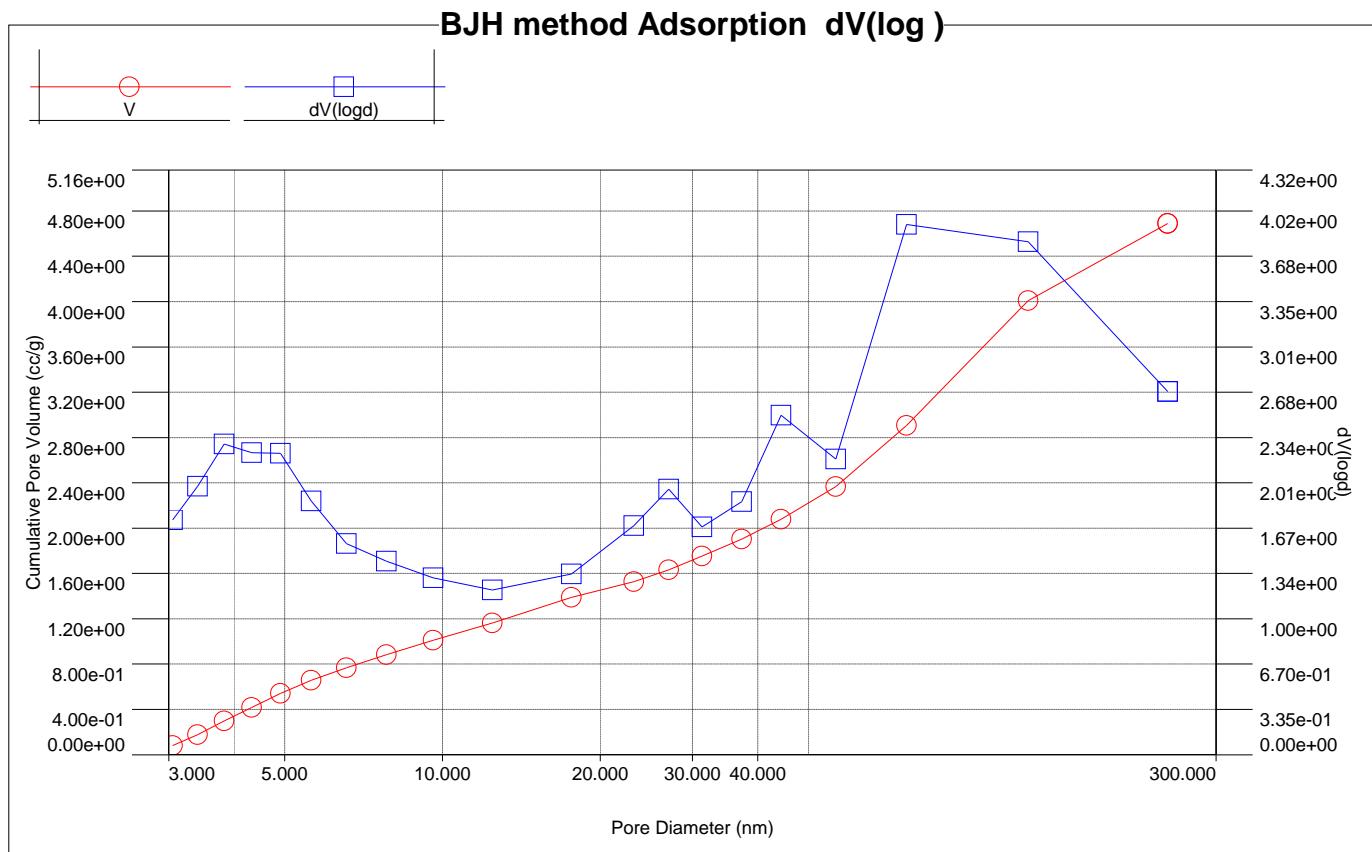




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Adsorption

Diameter [nm]	Pore Volume [cc/g]	Pore Surf Area [m²/g]	dV(d) [cc/nm/g]	dS(d) [m²/nm/g]	dV(logd) [cc/g]	dS(logd) [cc/g]
3.0529	8.1225e-02	1.0642e+02	2.4702e-01	3.2366e+02	1.7348e+00	2.2730e+03
3.4088	1.7810e-01	2.2010e+02	2.5292e-01	2.9678e+02	1.9831e+00	2.3270e+03
3.8295	2.9763e-01	3.4496e+02	2.6081e-01	2.7242e+02	2.2970e+00	2.3992e+03
4.3246	4.1704e-01	4.5540e+02	2.2449e-01	2.0764e+02	2.2326e+00	2.0650e+03
4.9038	5.4075e-01	5.5631e+02	1.9746e-01	1.6107e+02	2.2266e+00	1.8162e+03
5.6191	6.5753e-01	6.3944e+02	1.4525e-01	1.0340e+02	1.8760e+00	1.3355e+03
6.5573	7.6862e-01	7.0721e+02	1.0359e-01	6.3189e+01	1.5605e+00	9.5194e+02
7.8150	8.8364e-01	7.6608e+02	7.9710e-02	4.0798e+01	1.4303e+00	7.3206e+02
9.5948	1.0094e+00	8.1850e+02	5.9409e-02	2.4767e+01	1.3072e+00	5.4495e+02
12.4538	1.1633e+00	8.6792e+02	4.2724e-02	1.3722e+01	1.2166e+00	3.9075e+02
17.6333	1.3885e+00	9.1903e+02	3.3339e-02	7.5627e+00	1.3369e+00	3.0327e+02
23.2022	1.5278e+00	9.4303e+02	3.1787e-02	5.4799e+00	1.6932e+00	2.9190e+02
27.0313	1.6313e+00	9.5835e+02	3.1591e-02	4.6747e+00	1.9639e+00	2.9060e+02
31.2888	1.7541e+00	9.7405e+02	2.3439e-02	2.9964e+00	1.6847e+00	2.1537e+02
37.2950	1.9021e+00	9.8992e+02	2.1848e-02	2.3432e+00	1.8710e+00	2.0067e+02
44.2866	2.0799e+00	1.0060e+03	2.4662e-02	2.2275e+00	2.5094e+00	2.2665e+02
56.3282	2.3663e+00	1.0263e+03	1.6976e-02	1.2055e+00	2.1853e+00	1.5518e+02
76.8999	2.9082e+00	1.0545e+03	2.2326e-02	1.1613e+00	3.9201e+00	2.0391e+02
131.3683	4.0084e+00	1.0880e+03	1.2994e-02	3.9567e-01	3.7906e+00	1.1542e+02
242.5529	4.6887e+00	1.0992e+03	4.9402e-03	8.1471e-02	2.6833e+00	4.4252e+01

BJH adsorption summary

Surface Area = 1099.223 m²/g
Pore Volume = 4.689 cc/g
Pore Diameter Dv(d) = 3.829 nm

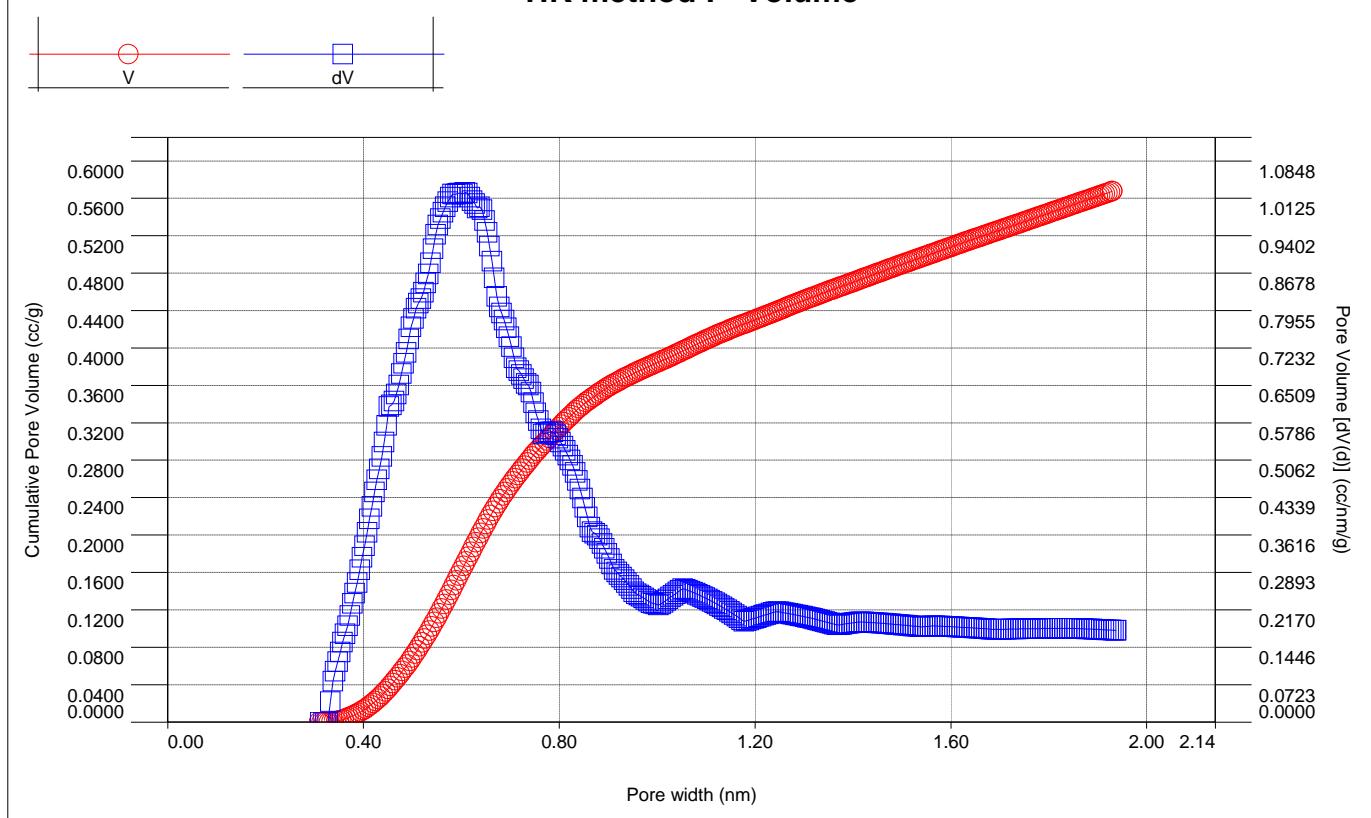


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HK method : Volume



Pore Size Distribution

Pore width [nm]	dV() [cc/nm/g]	Pore width [nm]	dV() [cc/nm/g]
0.3125	0.00000	0.4575	0.61272
0.3175	0.00000	0.4625	0.62042
0.3225	0.00000	0.4675	0.63423
0.3275	0.00000	0.4725	0.65127
0.3325	0.03926	0.4775	0.67364
0.3375	0.07911	0.4825	0.69361
0.3425	0.09798	0.4875	0.71479
0.3475	0.11702	0.4925	0.74054
0.3525	0.13520	0.4975	0.76371
0.3575	0.15417	0.5025	0.78033
0.3625	0.17031	0.5075	0.80017
0.3675	0.18616	0.5125	0.81006
0.3725	0.20566	0.5175	0.81878
0.3775	0.22954	0.5225	0.83091
0.3825	0.24943	0.5275	0.84862
0.3875	0.26974	0.5325	0.86584
0.3925	0.29421	0.5375	0.88751
0.3975	0.31850	0.5425	0.91495
0.4025	0.34063	0.5475	0.94263
0.4075	0.36692	0.5525	0.96080
0.4125	0.39266	0.5575	0.97339
0.4175	0.41676	0.5625	0.98532
0.4225	0.44499	0.5675	0.99633
0.4275	0.46797	0.5725	1.00610
0.4325	0.48897	0.5775	1.01431
0.4375	0.51326	0.5825	1.02059
0.4425	0.54124	0.5875	1.02022
0.4475	0.57337	0.5925	1.02198
0.4525	0.61011	0.5975	1.02263

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Report
Operator: quantachrome **Date:**2021/11/11
20211108-ljjx-1_iq2_physy_st1_2021_11_09_17_31_23.qps

Pore Size Distribution continued

Pore width [nm]	dV() [cc/nm/g]	Pore width [nm]	dV() [cc/nm/g]
0.6025	1.02116	0.9325	0.27498
0.6075	1.02376	0.9375	0.26949
0.6125	1.02262	0.9425	0.26377
0.6175	1.01478	0.9475	0.25783
0.6225	1.00783	0.9525	0.25166
0.6275	1.00245	0.9575	0.24782
0.6325	0.99368	0.9625	0.24534
0.6375	0.99616	0.9675	0.24272
0.6425	0.99026	0.9725	0.23996
0.6475	0.96962	0.9775	0.23706
0.6525	0.94635	0.9825	0.23402
0.6575	0.92023	0.9875	0.23084
0.6625	0.89107	0.9925	0.22910
0.6675	0.85863	0.9975	0.22782
0.6725	0.82271	1.0025	0.22644
0.6775	0.80244	1.0075	0.22804
0.6825	0.79067	1.0125	0.23142
0.6875	0.77721	1.0175	0.23479
0.6925	0.76193	1.0225	0.23815
0.6975	0.74472	1.0275	0.24150
0.7025	0.72547	1.0325	0.24483
0.7075	0.70404	1.0375	0.24814
0.7125	0.68461	1.0425	0.25144
0.7175	0.67896	1.0475	0.25473
0.7225	0.67211	1.0525	0.25799
0.7275	0.66398	1.0575	0.25665
0.7325	0.65450	1.0625	0.25484
0.7375	0.65148	1.0675	0.25297
0.7425	0.63789	1.0725	0.25102
0.7475	0.61723	1.0775	0.24901
0.7525	0.59768	1.0825	0.24694
0.7575	0.58276	1.0875	0.24479
0.7625	0.56666	1.0925	0.24257
0.7675	0.55643	1.0975	0.24029
0.7725	0.55823	1.1025	0.23794
0.7775	0.55975	1.1075	0.23552
0.7825	0.56098	1.1125	0.23303
0.7875	0.56135	1.1175	0.23047
0.7925	0.55518	1.1225	0.22785
0.7975	0.54849	1.1275	0.22516
0.8025	0.54124	1.1325	0.22239
0.8075	0.53343	1.1375	0.21957
0.8125	0.52503	1.1425	0.21667
0.8175	0.51603	1.1475	0.21371
0.8225	0.50641	1.1525	0.21068
0.8275	0.49615	1.1575	0.20758
0.8325	0.48267	1.1625	0.20442
0.8375	0.46694	1.1675	0.20119
0.8425	0.45044	1.1725	0.19790
0.8475	0.43314	1.1775	0.19453
0.8525	0.41503	1.1825	0.19571
0.8575	0.39609	1.1875	0.19725
0.8625	0.37631	1.1925	0.19878
0.8675	0.36822	1.1975	0.20030
0.8725	0.36490	1.2025	0.20180
0.8775	0.36133	1.2075	0.20328
0.8825	0.35439	1.2125	0.20475
0.8875	0.34531	1.2175	0.20620
0.8925	0.33585	1.2225	0.20764
0.8975	0.32602	1.2275	0.20906
0.9025	0.31582	1.2325	0.21047
0.9075	0.30523	1.2375	0.21185
0.9125	0.29479	1.2425	0.21323
0.9175	0.29016	1.2475	0.21319
0.9225	0.28532	1.2525	0.21243
0.9275	0.28026	1.2575	0.21164

Continued on next page



Analysis		Report	
Operator:	quantachrome	Operator:	quantachrome
Sample ID:	ljx-1	Filename:	20211108-ljx-1_iq2_physy_st1_2021_11_09_17_31_23.qps
		Date:	2021/11/11

Pore Size Distribution continued

Pore width [nm]	dV() [cc/nm/g]	Pore width [nm]	dV() [cc/nm/g]
1.2625	0.21082	1.5925	0.18468
1.2675	0.20998	1.5975	0.18445
1.2725	0.20911	1.6025	0.18421
1.2775	0.20821	1.6075	0.18397
1.2825	0.20729	1.6125	0.18371
1.2875	0.20635	1.6175	0.18345
1.2925	0.20538	1.6225	0.18319
1.2975	0.20438	1.6275	0.18291
1.3025	0.20336	1.6325	0.18263
1.3075	0.20232	1.6375	0.18234
1.3125	0.20125	1.6425	0.18205
1.3175	0.20016	1.6475	0.18175
1.3225	0.19904	1.6525	0.18144
1.3275	0.19790	1.6575	0.18112
1.3325	0.19674	1.6625	0.18080
1.3375	0.19555	1.6675	0.18047
1.3425	0.19434	1.6725	0.18014
1.3475	0.19310	1.6775	0.17980
1.3525	0.19185	1.6825	0.17945
1.3575	0.19057	1.6875	0.17910
1.3625	0.18926	1.6925	0.17903
1.3675	0.18794	1.6975	0.17917
1.3725	0.18799	1.7025	0.17930
1.3775	0.18872	1.7075	0.17943
1.3825	0.18945	1.7125	0.17955
1.3875	0.19017	1.7175	0.17967
1.3925	0.19087	1.7225	0.17979
1.3975	0.19156	1.7275	0.17989
1.4025	0.19224	1.7325	0.18000
1.4075	0.19291	1.7375	0.18009
1.4125	0.19357	1.7425	0.18019
1.4175	0.19343	1.7475	0.18027
1.4225	0.19318	1.7525	0.18036
1.4275	0.19292	1.7575	0.18044
1.4325	0.19264	1.7625	0.18051
1.4375	0.19235	1.7675	0.18058
1.4425	0.19205	1.7725	0.18065
1.4475	0.19173	1.7775	0.18071
1.4525	0.19141	1.7825	0.18076
1.4575	0.19107	1.7875	0.18081
1.4625	0.19071	1.7925	0.18086
1.4675	0.19035	1.7975	0.18090
1.4725	0.18997	1.8025	0.18094
1.4775	0.18959	1.8075	0.18098
1.4825	0.18919	1.8125	0.18101
1.4875	0.18878	1.8175	0.18103
1.4925	0.18836	1.8225	0.18106
1.4975	0.18792	1.8275	0.18108
1.5025	0.18748	1.8325	0.18109
1.5075	0.18702	1.8375	0.18110
1.5125	0.18656	1.8425	0.18111
1.5175	0.18608	1.8475	0.18111
1.5225	0.18559	1.8525	0.18108
1.5275	0.18510	1.8575	0.18088
1.5325	0.18459	1.8625	0.18068
1.5375	0.18407	1.8675	0.18048
1.5425	0.18433	1.8725	0.18027
1.5475	0.18468	1.8775	0.18006
1.5525	0.18502	1.8825	0.17984
1.5575	0.18536	1.8875	0.17963
1.5625	0.18569	1.8925	0.17941
1.5675	0.18572	1.8975	0.17918
1.5725	0.18552	1.9025	0.17896
1.5775	0.18533	1.9075	0.17873
1.5825	0.18512	1.9125	0.17849
1.5875	0.18490	1.9175	0.17826

Continued on next page



Analysis

Operator: quantachrome
Sample ID: ljjx-1

Date:2021/11/09
Filename:

Report

Operator: quantachrome
Date:2021/11/11
File:20211108-ljjx-1_iq2_phisy_st1_2021_11_09_17_31_23.qps

Pore Size Distribution continued

Pore width [nm]	dV() [cc/nm/g]	Pore width [nm]	dV() [cc/nm/g]
1.9225	0.17802	1.9325	0.17753
1.9275	0.17777	1.9375	0.17728

HK summary

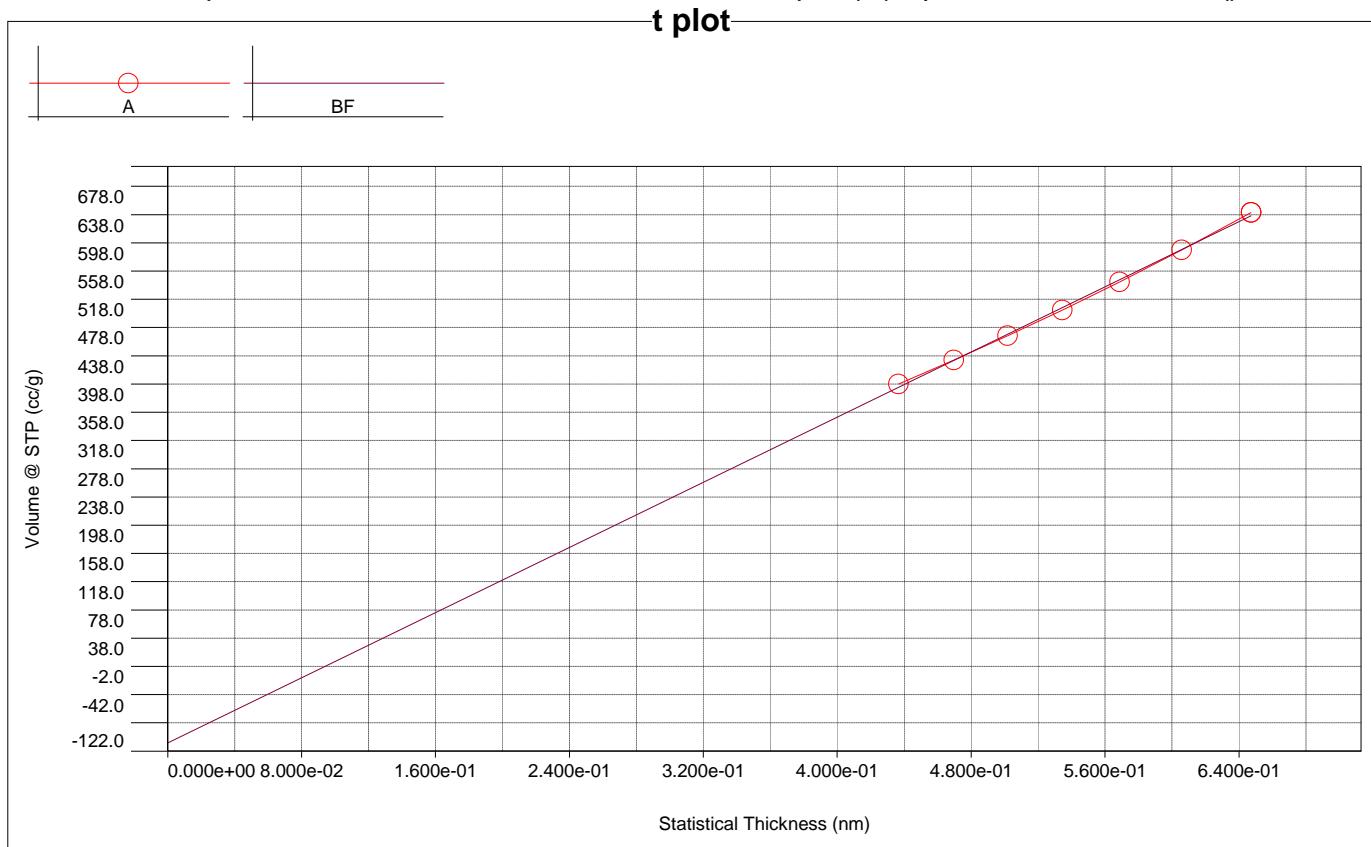
Mode : 0.608 nm
Micropore Volume : 0.568 cc/g



Analysis
Operator: quantachrome
Sample ID: ljjx-1

Date: 2021/11/09
Filename:

Report
Operator: quantachrome
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File: 20211108-ljjx-1_iq2_phisy_st1_2021_11_09_17_31_23.qps



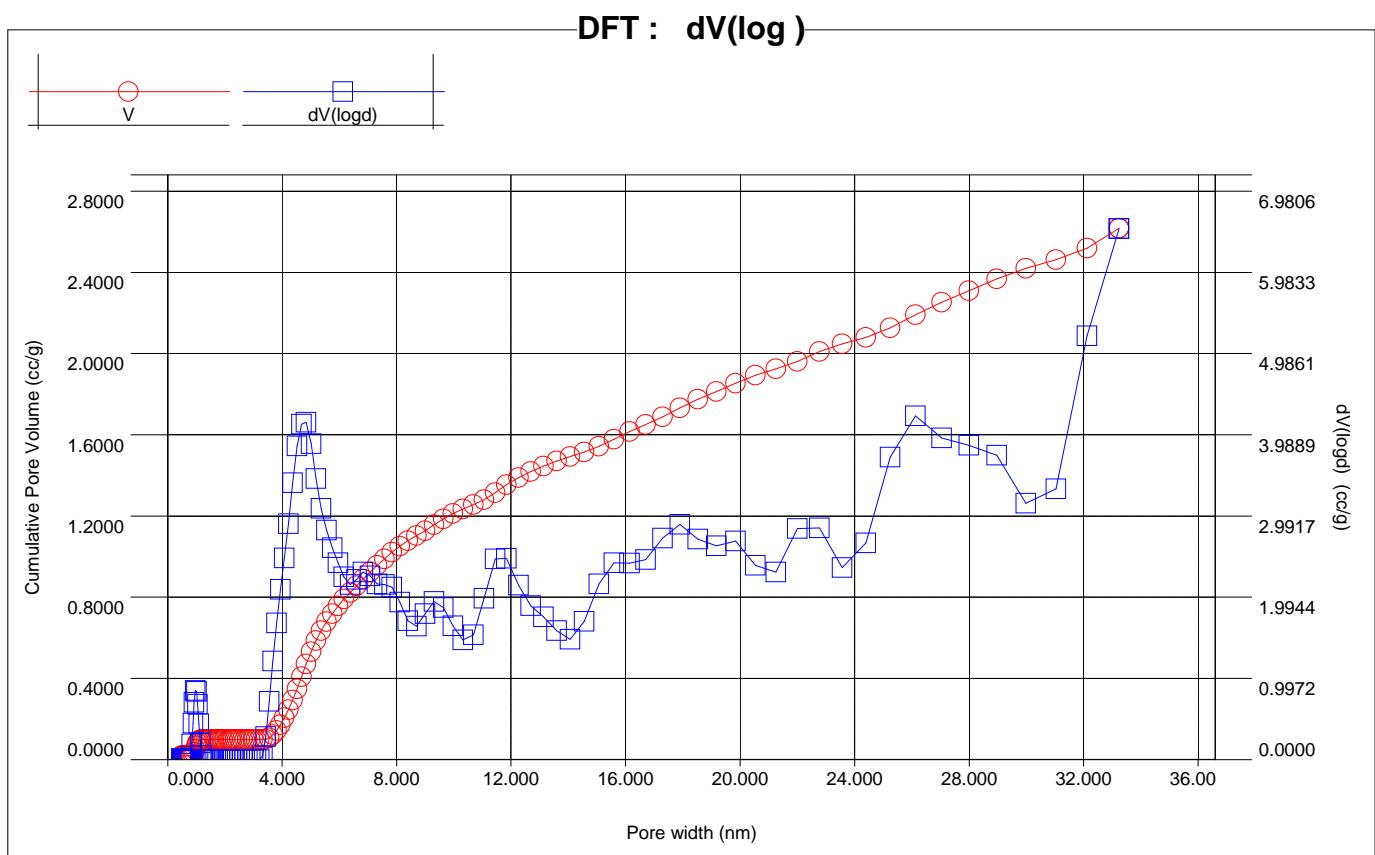
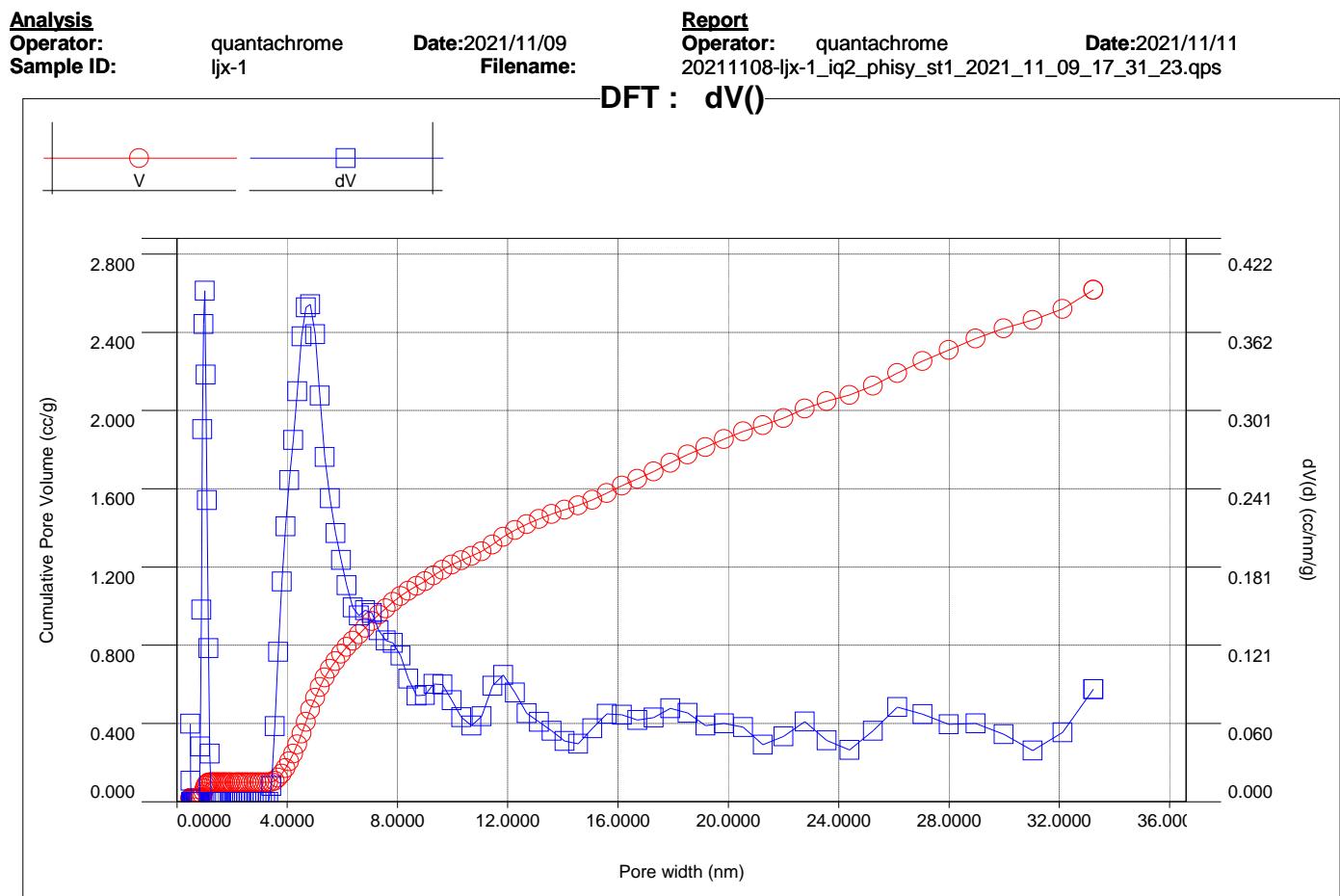
t-Plot Method Micropore Analysis

Relative Pressure	Thickness [(nm)]	Volume @ STP [(cc/g)]	Relative Pressure	Thickness [(nm)]	Volume @ STP [(cc/g)]
1.995784e-01	4.3661e-01	397.854	3.994853e-01	5.6874e-01	542.698
2.511760e-01	4.6974e-01	431.726	4.497706e-01	6.0596e-01	588.046
3.009773e-01	5.0186e-01	466.189	5.013512e-01	6.4733e-01	641.142
3.503050e-01	5.3458e-01	502.519			

V-t method summary

Thickness method: DeBoer
 Slope = 115.383
 Intercept = -110.540
 Correlation coefficient, r = 0.999190

Micropore volume = 0.000 cc/g
 Micropore area = 0.000 m²/g
 External surface area = 1439.615 m²/g



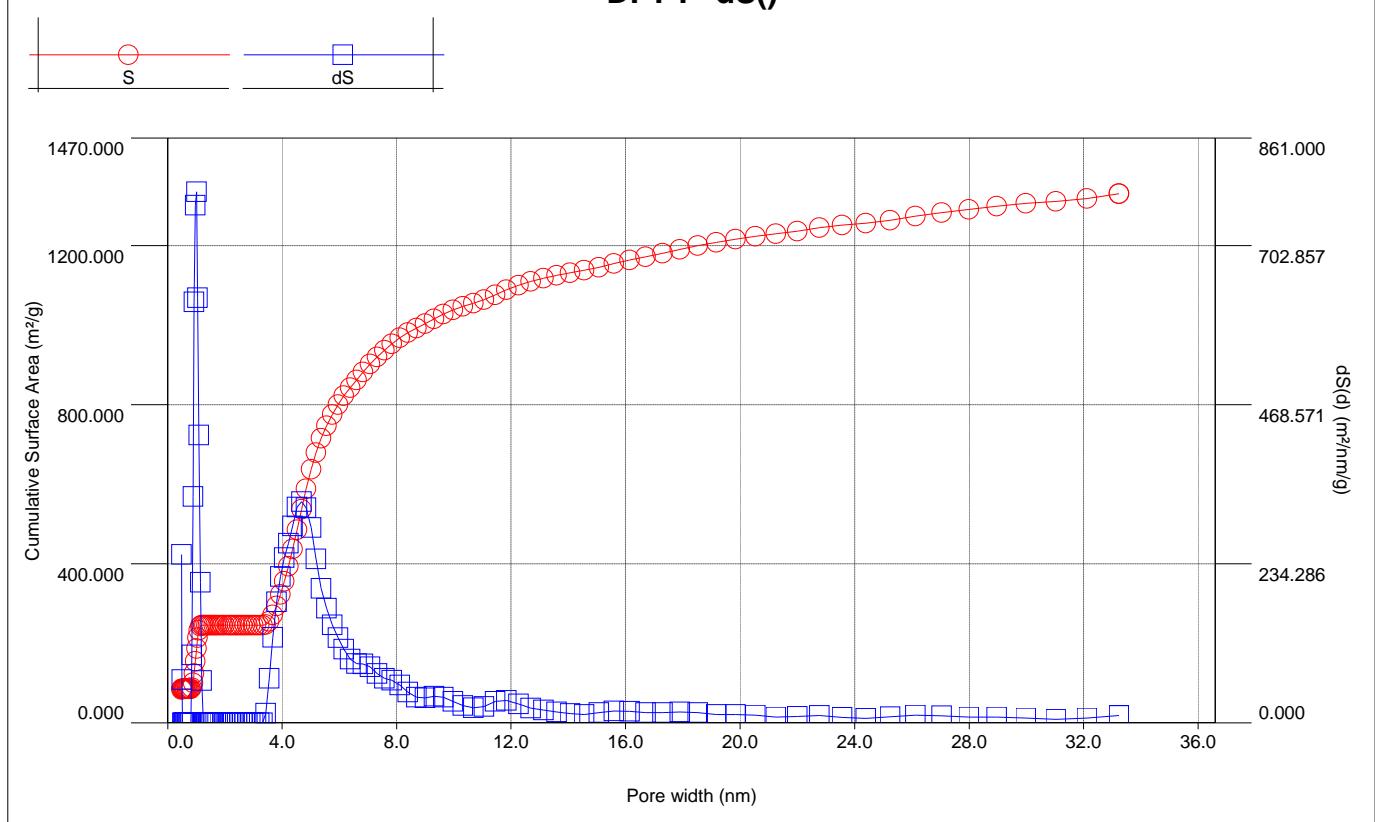


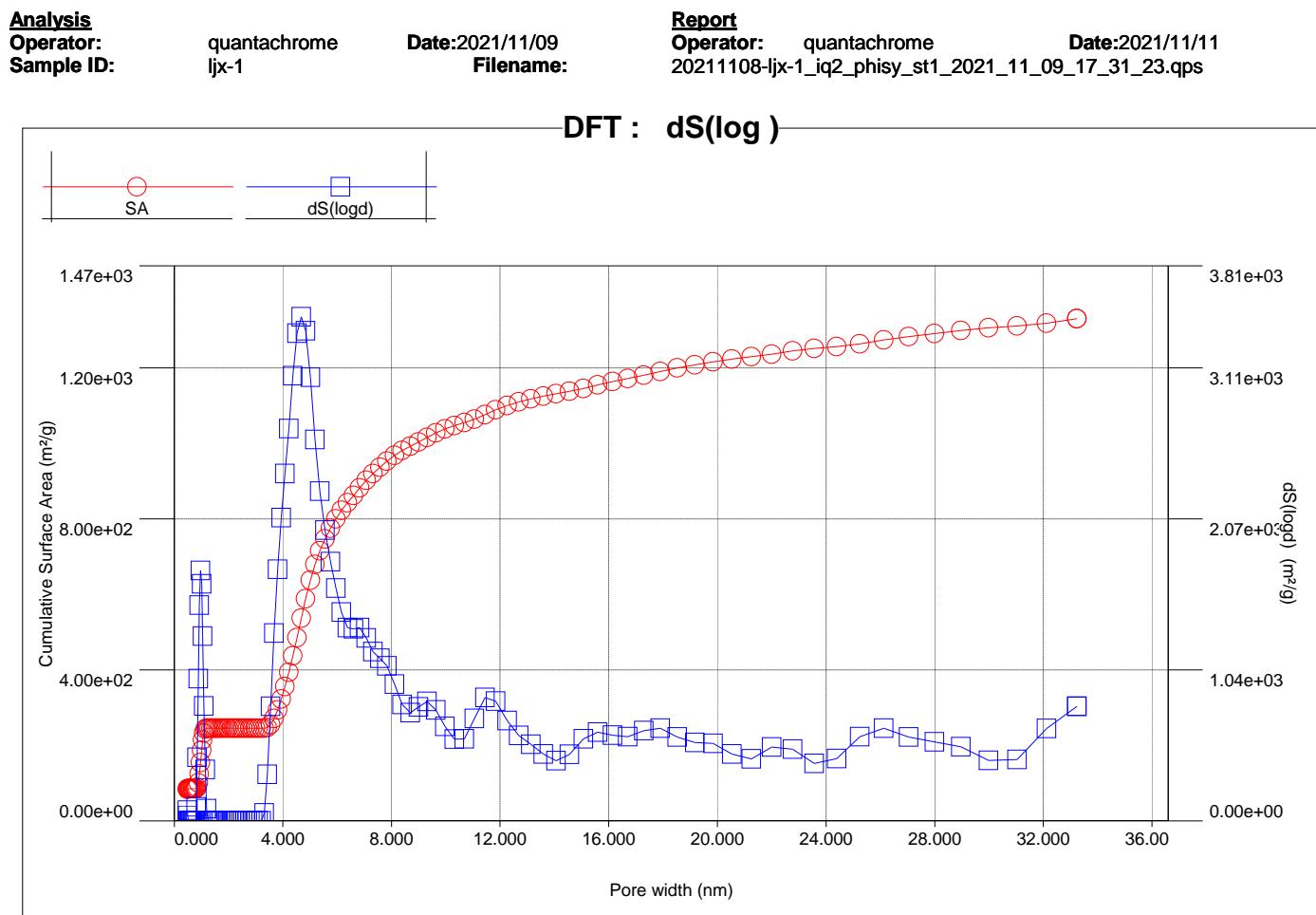
Analysis
Operator: quantachrome
Sample ID: ljjx-1

Date: 2021/11/09
Filename:

Report
Operator: quantachrome
Date: 2021/11/11
File: 20211108-ljjx-1_iq2_phisy_st1_2021_11_09_17_31_23.qps

DFT : dS()





Pore Size Distribution

Pore width [nm]	Cumulative Pore Volume [cc/g]	Cumulative Surface Area [m²/g]	dV(d) [cc/nm/g]	dS(d) [m²/nm/g]
0.4840	1.7854e-02	8.3545e+01	6.0020e-02	2.4802e+02
0.5040	1.8172e-02	8.4810e+01	1.5939e-02	6.3249e+01
0.5240	1.8172e-02	8.4810e+01	0.0000e+00	0.0000e+00
0.5450	1.8172e-02	8.4810e+01	0.0000e+00	0.0000e+00
0.5670	1.8172e-02	8.4810e+01	0.0000e+00	0.0000e+00
0.5900	1.8172e-02	8.4810e+01	0.0000e+00	0.0000e+00
0.6140	1.8172e-02	8.4810e+01	0.0000e+00	0.0000e+00
0.6400	1.8172e-02	8.4810e+01	0.0000e+00	0.0000e+00
0.6660	1.8172e-02	8.4810e+01	0.0000e+00	0.0000e+00
0.6940	1.8172e-02	8.4810e+01	0.0000e+00	0.0000e+00
0.7230	1.8172e-02	8.4810e+01	0.0000e+00	0.0000e+00
0.7530	1.8172e-02	8.4810e+01	0.0000e+00	0.0000e+00
0.7850	1.8172e-02	8.4810e+01	0.0000e+00	0.0000e+00
0.8180	1.8172e-02	8.4810e+01	0.0000e+00	0.0000e+00
0.8520	1.9616e-02	8.8199e+01	4.2465e-02	9.9682e+01
0.8890	2.5093e-02	1.0052e+02	1.4802e-01	3.3300e+02
0.9260	3.5712e-02	1.2345e+02	2.8700e-01	6.1986e+02
0.9660	5.0435e-02	1.5394e+02	3.6808e-01	7.6206e+02
1.0070	6.6580e-02	1.8600e+02	3.9378e-01	7.8209e+02
1.0510	8.1054e-02	2.1355e+02	3.2896e-01	6.2599e+02
1.0960	9.1505e-02	2.3262e+02	2.3226e-01	4.2383e+02
1.1440	9.7185e-02	2.4255e+02	1.1833e-01	2.0686e+02
1.1930	9.8998e-02	2.4559e+02	3.6996e-02	6.2021e+01
1.2450	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
1.2990	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
1.3560	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
1.4160	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
1.4780	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00

Continued on next page



Analysis
Operator: quantachrome **Date:**2021/11/09
Sample ID: ljjx-1 **Filename:**

Report
Operator: quantachrome **Date:**2021/11/11
20211108-ljjx-1_iq2_phisy_st1_2021_11_09_17_31_23.qps

Pore Size Distribution continued

Pore width [nm]	Cumulative Pore Volume [cc/g]	Cumulative Surface Area [m ² /g]	dV(d) [cc/nm ³ /g]	dS(d) [m ² /nm/g]
1.5430	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
1.6110	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
1.6820	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
1.7560	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
1.8340	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
1.9150	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
2.0000	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
2.1206	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
2.1948	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
2.2717	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
2.3512	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
2.4335	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
2.5186	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
2.6068	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
2.6980	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
2.7925	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
2.8902	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
2.9914	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
3.0961	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
3.2044	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
3.3166	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
3.4326	1.0039e-01	2.4721e+02	1.1980e-02	1.3960e+01
3.5528	1.0738e-01	2.5508e+02	5.8188e-02	6.5512e+01
3.6771	1.2173e-01	2.7069e+02	1.1539e-01	1.2552e+02
3.8058	1.4354e-01	2.9361e+02	1.6949e-01	1.7813e+02
3.9390	1.7178e-01	3.2229e+02	2.1201e-01	2.1529e+02
4.0769	2.0595e-01	3.5582e+02	2.4787e-01	2.4320e+02
4.2196	2.4573e-01	3.9353e+02	2.7876e-01	2.6426e+02
4.3673	2.9244e-01	4.3631e+02	3.1627e-01	2.8967e+02
4.5201	3.4727e-01	4.8482e+02	3.5865e-01	3.1738e+02
4.6784	4.0753e-01	5.3635e+02	3.8096e-01	3.2572e+02
4.8421	4.7029e-01	5.8819e+02	3.8327e-01	3.1661e+02
5.0116	5.3131e-01	6.3690e+02	3.6007e-01	2.8739e+02
5.1870	5.8619e-01	6.7922e+02	3.1280e-01	2.4122e+02
5.3690	6.3454e-01	7.1524e+02	2.6568e-01	1.9794e+02
5.5560	6.7827e-01	7.4672e+02	2.3384e-01	1.6835e+02
5.7510	7.1862e-01	7.7479e+02	2.0690e-01	1.4390e+02
5.9520	7.5603e-01	7.9993e+02	1.8612e-01	1.2508e+02
6.1600	7.9073e-01	8.2246e+02	1.6685e-01	1.0834e+02
6.3760	8.2303e-01	8.4272e+02	1.4952e-01	9.3799e+01
6.5990	8.5502e-01	8.6212e+02	1.4349e-01	8.6974e+01
6.8300	8.8911e-01	8.8208e+02	1.4755e-01	8.6416e+01
7.0690	9.2385e-01	9.0174e+02	1.4536e-01	8.2253e+01
7.3170	9.5661e-01	9.1965e+02	1.3209e-01	7.2209e+01
7.5730	9.8840e-01	9.3644e+02	1.2420e-01	6.5604e+01
7.8379	1.0208e+00	9.5296e+02	1.2222e-01	6.2373e+01
8.1122	1.0516e+00	9.6818e+02	1.1253e-01	5.5485e+01
8.3961	1.0786e+00	9.8101e+02	9.4816e-02	4.5171e+01
8.6900	1.1026e+00	9.9206e+02	8.1708e-02	3.7610e+01
8.9941	1.1275e+00	1.0032e+03	8.2051e-02	3.6491e+01
9.3089	1.1561e+00	1.0154e+03	9.0620e-02	3.8939e+01
9.6347	1.1855e+00	1.0276e+03	9.0241e-02	3.7465e+01
9.9720	1.2118e+00	1.0382e+03	7.7997e-02	3.1286e+01
10.3210	1.2345e+00	1.0470e+03	6.5126e-02	2.5240e+01
10.6820	1.2557e+00	1.0549e+03	5.8624e-02	2.1953e+01
11.0560	1.2803e+00	1.0638e+03	6.5821e-02	2.3814e+01
11.4430	1.3148e+00	1.0759e+03	8.9165e-02	3.1168e+01
11.8436	1.3539e+00	1.0891e+03	9.7568e-02	3.2952e+01
12.2581	1.3887e+00	1.1004e+03	8.3967e-02	2.7400e+01
12.6871	1.4179e+00	1.1096e+03	6.8026e-02	2.1447e+01
13.1312	1.4452e+00	1.1180e+03	6.1486e-02	1.8730e+01
13.5908	1.4702e+00	1.1253e+03	5.4535e-02	1.6051e+01
14.0664	1.4925e+00	1.1317e+03	4.6779e-02	1.3302e+01
14.5588	1.5144e+00	1.1377e+03	4.4482e-02	1.2221e+01
15.0683	1.5432e+00	1.1453e+03	5.6511e-02	1.5001e+01
15.5957	1.5788e+00	1.1545e+03	6.7574e-02	1.7331e+01

Continued on next page



Analysis
Operator: quantachrome
Sample ID: ljjx-1

Date:2021/11/09
Filename:

Report
Operator: quantachrome
Date:2021/11/11
File:20211108-ljjx-1_iq2_physy_st1_2021_11_09_17_31_23.qps

Pore Size Distribution continued

Pore width [nm]	Cumulative Pore Volume [cc/g]	Cumulative Surface Area [m ² /g]	dV(d) [cc/nm/g]	dS(d) [m ² /nm/g]
16.1416	1.6154e+00	1.1635e+03	6.6958e-02	1.6593e+01
16.7065	1.6509e+00	1.1720e+03	6.2838e-02	1.5045e+01
17.2912	1.6887e+00	1.1808e+03	6.4687e-02	1.4964e+01
17.8964	1.7321e+00	1.1905e+03	7.1810e-02	1.6050e+01
18.5228	1.7750e+00	1.1997e+03	6.8451e-02	1.4782e+01
19.1711	1.8131e+00	1.2077e+03	5.8720e-02	1.2252e+01
19.8421	1.8535e+00	1.2158e+03	6.0199e-02	1.2136e+01
20.5366	1.8933e+00	1.2236e+03	5.7346e-02	1.1169e+01
21.2553	1.9248e+00	1.2295e+03	4.3807e-02	8.2441e+00
21.9993	1.9621e+00	1.2363e+03	5.0189e-02	9.1254e+00
22.7693	2.0096e+00	1.2446e+03	6.1657e-02	1.0832e+01
23.5662	2.0471e+00	1.2510e+03	4.7096e-02	7.9938e+00
24.3910	2.0800e+00	1.2564e+03	3.9842e-02	6.5339e+00
25.2447	2.1266e+00	1.2638e+03	5.4570e-02	8.6466e+00
26.1282	2.1910e+00	1.2736e+03	7.2915e-02	1.1163e+01
27.0427	2.2527e+00	1.2828e+03	6.7438e-02	9.9751e+00
27.9892	2.3091e+00	1.2908e+03	5.9581e-02	8.5149e+00
28.9689	2.3680e+00	1.2990e+03	6.0198e-02	8.3120e+00
29.9828	2.4207e+00	1.3060e+03	5.1956e-02	6.9315e+00
31.0322	2.4620e+00	1.3113e+03	3.9373e-02	5.0752e+00
32.1183	2.5201e+00	1.3185e+03	5.3456e-02	6.6574e+00
33.2424	2.6175e+00	1.3303e+03	8.6665e-02	1.0428e+01

Pore Size Distribution (log)

Pore width [nm]	Cumulative Pore Volume [cc/g]	Cumulative Surface Area [m ² /g]	dV(log d) [cc/g]	dS(log d) [m ² /g]
0.4840	1.7854e-02	8.3545e+01	1.8127e-02	7.1935e+01
0.5040	1.8172e-02	8.4810e+01	9.2436e-03	3.6681e+01
0.5240	1.8172e-02	8.4810e+01	0.0000e+00	0.0000e+00
0.5450	1.8172e-02	8.4810e+01	0.0000e+00	0.0000e+00
0.5670	1.8172e-02	8.4810e+01	0.0000e+00	0.0000e+00
0.5900	1.8172e-02	8.4810e+01	0.0000e+00	0.0000e+00
0.6140	1.8172e-02	8.4810e+01	0.0000e+00	0.0000e+00
0.6400	1.8172e-02	8.4810e+01	0.0000e+00	0.0000e+00
0.6660	1.8172e-02	8.4810e+01	0.0000e+00	0.0000e+00
0.6940	1.8172e-02	8.4810e+01	0.0000e+00	0.0000e+00
0.7230	1.8172e-02	8.4810e+01	0.0000e+00	0.0000e+00
0.7530	1.8172e-02	8.4810e+01	0.0000e+00	0.0000e+00
0.7850	1.8172e-02	8.4810e+01	0.0000e+00	0.0000e+00
0.8180	1.8172e-02	8.4810e+01	4.0590e-02	9.5282e+01
0.8520	1.9616e-02	8.8199e+01	1.9145e-01	4.3460e+02
0.8890	2.5093e-02	1.0052e+02	4.4498e-01	9.7469e+02
0.9260	3.5712e-02	1.2345e+02	7.0247e-01	1.4807e+03
0.9660	5.0435e-02	1.5394e+02	8.4759e-01	1.7175e+03
1.0070	6.6580e-02	1.8600e+02	8.3600e-01	1.6275e+03
1.0510	8.1054e-02	2.1355e+02	6.7768e-01	1.2674e+03
1.0960	9.1505e-02	2.3262e+02	4.3807e-01	7.8759e+02
1.1440	9.7185e-02	2.4255e+02	2.0343e-01	3.5212e+02
1.1930	9.8998e-02	2.4559e+02	4.9337e-02	8.2710e+01
1.2450	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
1.2990	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
1.3560	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
1.4160	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
1.4780	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
1.5430	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
1.6110	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
1.6820	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
1.7560	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
1.8340	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
1.9150	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
2.0000	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00

Continued on next page



Analysis
Operator: quantachrome **Date:**2021/11/09
Sample ID: ljjx-1 **Filename:** 20211108-ljjx-1_iq2_phisy_st1_2021_11_09_17_31_23.qps

Report
Operator: quantachrome **Date:**2021/11/11

Pore Size Distribution (log) continued

Pore width [nm]	Cumulative Pore Volume [cc/g]	Cumulative Surface Area [m ² /g]	dV(log d) [cc/g]	dS(log d) [m ² /g]
2.1206	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
2.1948	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
2.2717	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
2.3512	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
2.4335	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
2.5186	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
2.6068	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
2.6980	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
2.7925	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
2.8902	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
2.9914	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
3.0961	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
3.2044	9.8998e-02	2.4559e+02	0.0000e+00	0.0000e+00
3.3166	9.8998e-02	2.4559e+02	4.6542e-02	5.4234e+01
3.4326	1.0039e-01	2.4721e+02	2.8050e-01	3.1764e+02
3.5528	1.0738e-01	2.5508e+02	7.1414e-01	7.8575e+02
3.6771	1.2173e-01	2.7069e+02	1.2102e+00	1.2896e+03
3.8058	1.4354e-01	2.9361e+02	1.6751e+00	1.7270e+03
3.9390	1.7178e-01	3.2229e+02	2.0888e+00	2.0818e+03
4.0769	2.0595e-01	3.5582e+02	2.4749e+00	2.3840e+03
4.2196	2.4573e-01	3.9353e+02	2.8944e+00	2.6936e+03
4.3673	2.9244e-01	4.3631e+02	3.3979e+00	3.0553e+03
4.5201	3.4727e-01	4.8482e+02	3.8517e+00	3.3481e+03
4.6784	4.0753e-01	5.3635e+02	4.1173e+00	3.4595e+03
4.8421	4.7029e-01	5.8819e+02	4.1425e+00	3.3650e+03
5.0116	5.3131e-01	6.3690e+02	3.8784e+00	3.0460e+03
5.1870	5.8619e-01	6.7922e+02	3.4502e+00	2.6184e+03
5.3690	6.3454e-01	7.1524e+02	3.0852e+00	2.2618e+03
5.5560	6.7827e-01	7.4672e+02	2.8165e+00	1.9947e+03
5.7510	7.1862e-01	7.7479e+02	2.6005e+00	1.7793e+03
5.9520	7.5603e-01	7.9993e+02	2.4169e+00	1.5979e+03
6.1600	7.9073e-01	8.2246e+02	2.2419e+00	1.4320e+03
6.3760	8.2303e-01	8.4272e+02	2.1504e+00	1.3264e+03
6.5990	8.5502e-01	8.6212e+02	2.2122e+00	1.3175e+03
6.8300	8.8911e-01	8.8208e+02	2.3034e+00	1.3260e+03
7.0690	9.2385e-01	9.0174e+02	2.2566e+00	1.2559e+03
7.3170	9.5661e-01	9.1965e+02	2.1583e+00	1.1602e+03
7.5730	9.8840e-01	9.3644e+02	2.1486e+00	1.1155e+03
7.8379	1.0208e+00	9.5296e+02	2.1172e+00	1.0626e+03
8.1122	1.0516e+00	9.6818e+02	1.9340e+00	9.3860e+02
8.3961	1.0786e+00	9.8101e+02	1.7045e+00	7.9909e+02
8.6900	1.1026e+00	9.9206e+02	1.6387e+00	7.4131e+02
8.9941	1.1275e+00	1.0032e+03	1.7899e+00	7.8166e+02
9.3089	1.1561e+00	1.0154e+03	1.9386e+00	8.1873e+02
9.6347	1.1855e+00	1.0276e+03	1.8642e+00	7.6158e+02
9.9720	1.2118e+00	1.0382e+03	1.6409e+00	6.4790e+02
10.3210	1.2345e+00	1.0470e+03	1.4694e+00	5.6021e+02
10.6820	1.2557e+00	1.0549e+03	1.5323e+00	5.6336e+02
11.0560	1.2803e+00	1.0638e+03	1.9782e+00	7.0158e+02
11.4430	1.3148e+00	1.0759e+03	2.4625e+00	8.4531e+02
11.8436	1.3539e+00	1.0891e+03	2.4726e+00	8.2179e+02
12.2581	1.3887e+00	1.1004e+03	2.1416e+00	6.8805e+02
12.6871	1.4179e+00	1.1096e+03	1.8904e+00	5.8628e+02
13.1312	1.4452e+00	1.1180e+03	1.7525e+00	5.2521e+02
13.5908	1.4702e+00	1.1253e+03	1.5835e+00	4.5864e+02
14.0664	1.4925e+00	1.1317e+03	1.4776e+00	4.1312e+02
14.5588	1.5144e+00	1.1377e+03	1.6966e+00	4.5718e+02
15.0683	1.5432e+00	1.1453e+03	2.1564e+00	5.6172e+02
15.5957	1.5788e+00	1.1545e+03	2.4158e+00	6.0900e+02
16.1416	1.6154e+00	1.1635e+03	2.4112e+00	5.8757e+02
16.7065	1.6509e+00	1.1720e+03	2.4539e+00	5.7729e+02
17.2912	1.6887e+00	1.1808e+03	2.7202e+00	6.1790e+02
17.8964	1.7321e+00	1.1905e+03	2.8893e+00	6.3494e+02
18.5228	1.7750e+00	1.1997e+03	2.7089e+00	5.7568e+02
19.1711	1.8131e+00	1.2077e+03	2.6258e+00	5.3833e+02
19.8421	1.8535e+00	1.2158e+03	2.6846e+00	5.3211e+02

Continued on next page



Analysis
Operator: quantachrome
Sample ID: ljjx-1

Date:2021/11/09
Filename:

Report
Operator: quantachrome
Date:2021/11/11
File:20211108-ljjx-1_iq2_phisy_st1_2021_11_09_17_31_23.qps

Pore Size Distribution (log) continued

Pore width [nm]	Cumulative Pore Volume [cc/g]	Cumulative Surface Area [m ² /g]	dV(log d) [cc/g]	dS(log d) [m ² /g]
20.5366	1.8933e+00	1.2236e+03	2.3866e+00	4.5791e+02
21.2553	1.9248e+00	1.2295e+03	2.3034e+00	4.2551e+02
21.9993	1.9621e+00	1.2363e+03	2.8383e+00	5.0631e+02
22.7693	2.0096e+00	1.2446e+03	2.8449e+00	4.9231e+02
23.5662	2.0471e+00	1.2510e+03	2.3559e+00	3.9355e+02
24.3910	2.0800e+00	1.2564e+03	2.6589e+00	4.2739e+02
25.2447	2.1266e+00	1.2638e+03	3.7151e+00	5.7711e+02
26.1282	2.1910e+00	1.2736e+03	4.2200e+00	6.3536e+02
27.0427	2.2527e+00	1.2828e+03	3.9512e+00	5.7500e+02
27.9892	2.3091e+00	1.2908e+03	3.8609e+00	5.4222e+02
28.9689	2.3680e+00	1.2990e+03	3.7366e+00	5.0771e+02
29.9828	2.4207e+00	1.3060e+03	3.1458e+00	4.1344e+02
31.0322	2.4620e+00	1.3113e+03	3.3258e+00	4.2023e+02
32.1183	2.5201e+00	1.3185e+03	5.2035e+00	6.3430e+02
33.2424	2.6175e+00	1.3303e+03	6.5208e+00	7.8463e+02

DFT method summary

Pore volume =	2.618 cc/g
Surface area =	1330.270 m ² /g
Lower confidence limit =	0.484 nm
Fitting error =	0.426 %
Pore width (Mode) =	1.007 nm

Moving point average : off