

Supplemental Data

Zetasizer results:

Size:

Sample Name:	Measurement Start				
	Date And time				
C60-Cl	10/10/2024 11:29				
C60-Cl	10/10/2024 11:30				
Name	Mean	Standard Deviation	RSD	Minimum	Maximum
Z-Average (nm)	726.875	68.588	9.436	678.376	775.375
Polydispersity Index (PI)	0.464	0.2	43.209	0.322	0.605
Peak 1 Mean by Intensity ordered by area (nm)	526.69	73.891	14.029	474.441	578.939
Peak 1 Area by Intensity ordered by area (%)	99.157	1.191	1.202	98.315	100
Peak 2 Mean by Intensity ordered by area (nm)	5467.693	0	0	5467.693	5467.693
Peak 2 Area by Intensity ordered by area (%)	1.685	0	0	1.685	1.685
Sample Name:	Measurement Start				
	Date And time				
Ag-C60-Cl	10/10/2024 10:57				
Ag-C60-Cl	10/10/2024 10:58				
Ag-C60-Cl	10/10/2024 10:59				
Name	Mean	Standard Deviation	RSD	Minimum	Maximum
Z-Average (nm)	827.305	63.316	7.653	754.197	864.344
Polydispersity Index (PI)	0.572	0.037	6.493	0.54	0.613
Peak 1 Mean by Intensity ordered by area (nm)	443.916	43.485	9.796	409.631	492.83
Peak 1 Area by Intensity ordered by area (%)	100	0	0	100	100
Sample Name:	Measurement Start				
	Date And time				
Cu-C60-Cl	10/10/2024 11:50				
Cu-C60-Cl	10/10/2024 11:51				
Cu-C60-Cl	10/10/2024 11:52				
Name	Mean	Standard Deviation	RSD	Minimum	Maximum
Z-Average (nm)	1044.481	56.993	5.457	984.882	1098.45
Polydispersity Index (PI)	0.941	0.054	5.784	0.893	1
Peak 1 Mean by Intensity ordered by area (nm)	436.625	41.361	9.473	410.955	484.339
Peak 1 Area by Intensity ordered by area (%)	98.307	2.932	2.983	94.921	100
Peak 2 Mean by Intensity ordered by area (nm)	111.778	0	0	111.778	111.778
Peak 2 Area by Intensity ordered by area (%)	5.079	0	0	5.079	5.079

Zeta results:

Sample Name:	Measurement Start				
	Date And time				
C60-Cl	10/7/2024 13:18				
C60-Cl	10/7/2024 13:20				
C60-Cl	10/7/2024 13:22				
Name	Mean	Standard Deviation	RSD	Minimum	Maximum
Zeta Potential (mV)	-58.375	0.692	1.186	-59.124	-57.759
Conductivity (mS/cm)	0.005	0	0	0.005	0.005
Wall Zeta Potential (mV)	-81.219	2.188	2.694	-83.669	-79.459
Quality Factor	6.968	1.285	18.449	6.195	8.452
Zeta Peak 1 Mean (mV)	-58.413	0.642	1.1	-59.124	-57.874
Zeta Peak 2 Mean (mV)	-33.899	0	0	-33.899	-33.899

Sample Name:	Measurement Start				
	Date And time				
Ag-C60-Cl	10/7/2024 13:45				
Ag-C60-Cl	10/7/2024 13:46				
Ag-C60-Cl	10/7/2024 13:48				
Name	Mean	Standard Deviation	RSD	Minimum	Maximum
Zeta Potential (mV)	-47.48	2.746	5.784	-49.317	-44.323
Conductivity (mS/cm)	0.008	0	0	0.008	0.008
Wall Zeta Potential (mV)	-59.093	4.8	8.123	-64.455	-55.197
Quality Factor	3.593	0.778	21.648	3.081	4.488
Zeta Peak 1 Mean (mV)	-47.48	2.746	5.784	-49.317	-44.323

Sample Name:	Measurement Start				
	Date And time				
Cu-C60-Cl	10/7/2024 13:27				
Cu-C60-Cl	10/7/2024 13:29				
Cu-C60-Cl	10/7/2024 13:31				
Name	Mean	Standard Deviation	RSD	Minimum	Maximum
Zeta Potential (mV)	25.402	1.292	5.086	24.565	26.89
Conductivity (mS/cm)	0.543	0	0	0.543	0.543
Wall Zeta Potential (mV)	-8.674	1.361	15.687	-10.111	-7.405
Quality Factor	2.655	1.025	38.593	1.727	3.754
Zeta Peak 1 Mean (mV)	25.402	1.292	5.086	24.565	26.89

Catalase:

Catalase					
	C60		Ag-C60		Cu-C60
E. coli	61346.66667		65642.33333		33313.33333
	62826.10872		65876.36063		38249.0187
	59867.22462		65408.30603		28377.64796
		0.007665811		0.000706983	0.000345672
MRSA	54826.33333		36768		4663
	56599.00827		39062.24759		6166.38363
	53053.65839		34473.75241		3159.61637
		0.000418692		3.05837E-06	3.49521E-05
				0.0000031	0.000035
				0.0000031	0.000035

Relaxed Geometry

A. Ag-Outside:

opt freq=raman b3lyp/lanl2dz empiricaldispersion=gd3 geom=connectivity

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0 1
C      17.09033578 -7.66498386  0.90224560
C      17.01369118 -8.03232037 -0.38237416
C      17.61599377 -9.10484088 -0.94989990
C      18.03389357 -8.34884669  1.59288502
C      16.74582179 -6.33870417  1.19699137
C      16.84811578 -6.94149099 -1.05260151
C      17.85161364 -9.20237274 -2.32821532
C      18.51462442 -9.68571610 -0.14616987
C      18.83370489 -7.73296661  2.39768258
C      18.69949924 -9.43054963  1.17137569
C      17.65202312 -5.64089666  2.10884270
C      16.83078713 -5.95497460 -0.14841559
C      17.27372836 -6.84986033 -2.33538463
C      19.18326692 -9.59394726 -2.13313644

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C	17.66400822	-7.96639416	-3.08761773
C	19.51437508	-9.99772678	-0.90093667
C	18.74369119	-6.39184000	2.56588661
C	19.95334798	-8.46503833	2.43300472
C	19.89080162	-9.73545136	1.84411178
C	18.48412019	-4.68183391	1.51524218
C	17.50306188	-4.85178420	-0.55574760
C	17.90982989	-5.70125078	-2.59428101
C	20.21880293	-9.03263930	-2.80218406
C	18.84099748	-7.33897630	-3.51862067
C	20.76612090	-10.07554590	-0.38887116
C	19.93524013	-5.78261790	2.55738158
C	21.07888582	-7.71111869	2.43404801
C	21.02354176	-10.08898092	0.98891190
C	19.76965542	-4.69179555	1.88714408
C	18.30287663	-4.23590538	0.24904673
C	17.96845990	-4.61436191	-1.78774152
C	18.90957868	-6.01323987	-3.34904926
C	20.05322894	-7.94178118	-3.47241547
C	21.50434804	-9.04261513	-2.43026204
C	21.68556242	-9.48855870	-1.16405037
C	21.14750567	-6.38543504	2.60359741
C	22.07861204	-8.02314069	1.67922557
C	22.01996026	-9.11003067	0.87275152
C	20.80519477	-4.13048700	1.21808301
C	19.22228133	-3.64886662	-0.52611154
C	18.96485284	-3.63535662	-1.90385046
C	20.03506465	-5.25929552	-3.34803066
C	21.24478932	-7.33255120	-3.48095574
C	22.33650885	-8.08358302	-3.02392423
C	22.48538500	-8.87266574	-0.35927449
C	22.32450923	-5.75806164	2.17250703
C	22.71475418	-6.87458854	1.42028304
C	22.13687915	-4.52211125	1.41308003
C	20.47406109	-3.72670575	-0.01407442
C	20.09759768	-3.98885746	-2.75907234
C	21.15474714	-5.99140675	-3.31274190
C	23.24275945	-7.38579090	-2.11211561
C	23.15775663	-7.76949488	-0.76666562
C	23.14038500	-6.78296708	0.13749032
C	22.37244827	-4.61966984	0.03477025
C	21.47380177	-4.03873320	-0.76889930
C	21.28890079	-4.29383417	-2.08640416

C	21.95457564	-5.37554931	-2.50798437
C	22.89819707	-6.05945312	-1.81736337
C	22.97480852	-5.69213758	-0.53275604
Ag	20.71035537	-11.57972679	2.44120451
Ag	15.67061070	-5.51287024	2.80678979
Ag	19.27814682	-2.14443975	-3.35593740
Ag	24.31791303	-8.21181419	-3.72190204
Ag	16.53535667	-9.52591647	-3.93830830
Ag	23.45350634	-4.19861183	3.02286396

A. Ag-Inside:

#p opt freq=raman b3lyp/lanl2dz empiricaldispersion=gd3 geom=connectivity

0 1			
C	1.98390100	2.88612600	1.26399500
C	0.67075400	3.55747900	0.79972900
C	-0.59481300	3.32331700	1.55476700
C	1.98809300	2.02369200	2.46735500
C	2.74964300	2.49450900	0.04365500
C	0.66929600	3.58486400	-0.66836500
C	-1.86164000	3.08577800	0.78427000
C	-0.62475100	2.43662800	2.79002600
C	2.72308400	0.68872300	2.41169300
C	0.66424100	1.77683900	3.28606800
C	3.52353900	1.24435400	0.01964800
C	1.98158800	2.93111100	-1.15986300
C	-0.59775500	3.37889900	-1.42915000
C	-2.69616400	2.06124400	1.54592200
C	-1.86317400	3.11278800	-0.66541600
C	-1.89812900	1.62126300	2.73105100
C	3.50928800	0.33791000	1.22650700
C	1.91284400	-0.33375600	3.14555100
C	0.64573900	0.31251300	3.63488200
C	3.50689500	0.38341500	-1.21997000
C	1.98329800	2.11392400	-2.39430300
C	-0.63020200	2.53870800	-2.69643700
C	-3.56929900	1.10489600	0.80074800
C	-2.69930700	2.11739000	-1.46292500
C	-1.90657800	0.21642200	3.15959400
C	3.57108200	-1.13383700	0.75207800
C	1.90352500	-1.72167600	2.66513200

C	-0.63851600	-0.44752700	3.62203600
C	3.56947300	-1.10497200	-0.80062600
C	2.71832800	0.77785400	-2.38975300
C	0.65786100	1.89760100	-3.21901500
C	-1.90354700	1.72164600	-2.66514400
C	-3.57117000	1.13385800	-0.75192200
C	-3.50678100	-0.38351400	1.22005900
C	-2.71828100	-0.77801700	2.38985000
C	2.69925000	-2.11738000	1.46297900
C	0.63019500	-2.53872000	2.69630400
C	-0.65773600	-1.89785100	3.21907200
C	2.69627600	-2.06138700	-1.54588500
C	1.90662500	-0.21656100	-3.15950100
C	0.63858100	0.44738700	-3.62195000
C	-1.91283400	0.33369600	-3.14551200
C	-3.50934400	-0.33795300	-1.22642200
C	-3.52352600	-1.24445200	-0.01954900
C	-1.98322800	-2.11418700	2.39441800
C	1.86316600	-3.11285900	0.66544600
C	0.59775100	-3.37890700	1.42911600
C	1.86169900	-3.08592900	-0.78421500
C	1.89823500	-1.62143100	-2.73104100
C	-0.64573700	-0.31259300	-3.63482900
C	-2.72309900	-0.68876700	-2.41160900
C	-2.74961600	-2.49462500	-0.04360000
C	-1.98149400	-2.93127400	1.15989900
C	-0.66923800	-3.58496000	0.66838700
C	0.59485200	-3.32350500	-1.55478400
C	0.62480900	-2.43683300	-2.79004100
C	-0.66429400	-1.77688700	-3.28598100
C	-1.98804300	-2.02367400	-2.46721600
C	-1.98385200	-2.88619200	-1.26391600
C	-0.67074500	-3.55763300	-0.79971500
Ag	-1.64656500	0.49461300	0.01024300
Ag	1.64653900	-0.49479500	-0.01074700
Ag	0.35265800	1.15787300	1.23683800
Ag	-0.35222600	-1.15793800	-1.23682800
Ag	-0.35065200	-1.20321300	1.19338900
Ag	0.35011700	1.20384500	-1.19309700

C. Cu-Outside:

opt freq=raman b3lyp/lanl2dz empiricaldispersion=gd3 geom=connectivity

01

C	3.21112924	-1.08248267	-1.17609223
C	2.61881016	-2.32304354	-0.71953351
C	1.53816121	-2.90254706	-1.44067173
C	2.68459294	-0.42186997	-2.32064817
C	3.62105969	-0.31529934	0.00120467
C	2.61871580	-2.31648558	0.73967487
C	0.42543374	-3.53498432	-0.73029850
C	1.00206274	-2.23005951	-2.60620931
C	2.50994987	1.02680626	-2.32688952
C	1.58411725	-1.01199341	-3.05467188
C	3.44266043	1.16598358	-0.00527573
C	3.21091939	-1.07193532	1.18522733
C	1.53816671	-2.88957887	1.46608771
C	-0.80638133	-3.18450902	-1.43908629
C	0.42544163	-3.52838696	0.76159719
C	-0.44667894	-2.40440534	-2.60527065
C	2.86338426	1.80350896	-1.18874541
C	1.30159065	1.33238738	-3.06482933
C	0.74048384	0.07342964	-3.55745285
C	2.86347970	1.81395390	1.17258506
C	2.68482286	-0.40127394	2.32414804
C	1.00220173	-2.20690407	2.62571755
C	-1.99302136	-2.87828492	-0.71679359
C	-0.80637684	-3.17181803	1.46739326
C	-1.30180544	-1.35939318	-3.05272359
C	1.99304291	2.87189351	-0.74239866
C	0.44654696	2.38137164	-2.62657345
C	-0.74072952	-0.10492620	-3.55656101
C	1.99304825	2.87826798	0.71680551
C	2.51042873	1.04748848	2.31783611
C	1.58416450	-0.98484744	3.06308565
C	-0.44652333	-2.38138479	2.62659070
C	-1.99301750	-2.87190912	0.74241205
C	-2.86345297	-1.81396719	-1.17257221
C	-2.51040374	-1.04750496	-2.31782599
C	0.80640213	3.17180560	-1.46738161
C	-1.00218106	2.20689051	-2.62570186
C	-1.58414240	0.98483438	-3.06307238
C	0.80640461	3.18449327	1.43909941
C	1.30182626	1.35937705	3.05273403
C	0.74075193	0.10491040	3.55657303

C	-1.30156970	-1.33240193	3.06484545
C	-2.86336019	-1.80352434	1.18875665
C	-3.44261911	-1.16599396	0.00528818
C	-2.68479994	0.40126007	-2.32413606
C	-0.42541697	3.52838086	-0.76158462
C	-1.53814615	2.88956338	-1.46607525
C	-0.42540593	3.53495074	0.73030780
C	0.44670329	2.40438876	2.60528322
C	-0.74046398	-0.07344561	3.55747446
C	-2.50992705	-1.02682039	2.32690376
C	-3.62105171	0.31528362	-0.00119204
C	-3.21089728	1.07191932	-1.18521776
C	-2.61869315	2.31646658	-0.73966265
C	-1.53813745	2.90252807	1.44068362
C	-1.00204209	2.23004292	2.60622397
C	-1.58409424	1.01197844	3.05468435
C	-2.68457214	0.42185324	2.32066108
C	-3.21110943	1.08246775	1.17610633
C	-2.61878924	2.32302334	0.71954663
Cu	-0.00012988	-0.02420028	-5.52349952
Cu	5.48424405	0.66058162	-0.00297576
Cu	0.00012335	0.02428553	5.52351191
Cu	-5.48422896	-0.66053305	0.00292726
Cu	0.66034109	-5.48414625	0.02407254
Cu	-0.66049308	5.48410995	-0.02411711

D. Cu-Inside:

#p opt freq=raman b3lyp/lanl2dz empiricaldispersion=gd3 geom=connectivity

0 1			
C	-1.16608930	-3.32604322	1.18359135
C	0.26997783	-3.63704118	0.70616437
C	1.44474114	-3.11469640	1.46808632
C	-1.37635763	-2.51366246	2.39906065
C	-2.01375929	-3.11864717	-0.02342952
C	0.26829850	-3.62489644	-0.76567119
C	2.60016608	-2.52826774	0.70149192
C	1.25432896	-2.27700127	2.73297656
C	-2.43737309	-1.42039848	2.39089129
C	-0.16842271	-1.97057546	3.22918147
C	-3.09108924	-2.10748296	-0.01393233
C	-1.16847770	-3.30654367	-1.23496684

C	1.44157117	-3.09017587	-1.52120866
C	3.14065760	-1.34586393	1.48706057
C	2.59847726	-2.51650425	-0.74768282
C	2.27570760	-1.15800166	2.68788983
C	-3.30578371	-1.25761506	1.22009974
C	-1.91153100	-0.24773605	3.15232509
C	-0.52279600	-0.55906100	3.62386453
C	-3.30830824	-1.23751028	-1.23384721
C	-1.38110938	-2.47436604	-2.43691813
C	1.24875343	-2.23220489	-2.77223564
C	3.73923012	-0.18225146	0.76398491
C	3.13725499	-1.32113565	-1.51505474
C	1.91791924	0.19613324	3.15193809
C	-3.73723138	0.16978729	0.77435814
C	-2.27012292	1.11397227	2.71106872
C	0.53032378	0.49980243	3.63142986
C	-3.73906021	0.18230041	-0.76416757
C	-2.44208785	-1.38140386	-2.40855547
C	-0.17524434	-1.91815887	-3.26060397
C	2.27007892	-1.11404720	-2.71109875
C	3.73707753	-0.16975834	-0.77454944
C	3.30843942	1.23749818	1.23368722
C	2.44216259	1.38131908	2.40846079
C	-3.13736057	1.32113529	1.51497836
C	-1.24880535	2.23216909	2.77234893
C	0.17533324	1.91787153	3.26055399
C	-3.14053436	1.34577828	-1.48712889
C	-1.91782648	-0.19622736	-3.15201855
C	-0.53029896	-0.49986030	-3.63149019
C	1.91146355	0.24768733	-3.15238757
C	3.30564292	1.25758281	-1.22024278
C	3.09108402	2.10743406	0.01381158
C	1.38124098	2.47413570	2.43678193
C	-2.59850073	2.51639366	0.74766838
C	-1.44156138	3.09009302	1.52128955
C	-2.60004121	2.52813860	-0.70150512
C	-2.27556744	1.15791874	-2.68789167
C	0.52275596	0.55895657	-3.62388771
C	2.43726078	1.42036532	-2.39097102
C	2.01377824	3.11859107	0.02333599
C	1.16856203	3.30642982	1.23495771
C	-0.26824395	3.62479581	0.76571246
C	-1.44463953	3.11446255	-1.46797468

C	-1.25423623	2.27681148	-2.73291953
C	0.16830693	1.97063206	-3.22925165
C	1.37626330	2.51378820	-2.39926882
C	1.16610425	3.32609810	-1.18365489
C	-0.26994658	3.63686900	-0.70612434
Cu	1.71836840	0.07534806	0.00000254
Cu	-1.71838411	-0.07557196	0.00049253
Cu	0.05684334	-1.23785323	1.20426656
Cu	-0.05633469	1.23793070	-1.20428890
Cu	-0.05554683	1.21660981	1.22572945
Cu	0.05498297	-1.21618412	-1.22599928

E. Plain:

opt freq=raman b3lyp/lanl2dz empiricaldispersion=gd3 geom=connectivity

0 1			
C	3.21112924	-1.08248267	-1.17609223
C	2.61881016	-2.32304354	-0.71953351
C	1.53816121	-2.90254706	-1.44067173
C	2.68459294	-0.42186997	-2.32064817
C	3.62105969	-0.31529934	0.00120467
C	2.61871580	-2.31648558	0.73967487
C	0.42543374	-3.53498432	-0.73029850
C	1.00206274	-2.23005951	-2.60620931
C	2.50994987	1.02680626	-2.32688952
C	1.58411725	-1.01199341	-3.05467188
C	3.44266043	1.16598358	-0.00527573
C	3.21091939	-1.07193532	1.18522733
C	1.53816671	-2.88957887	1.46608771
C	-0.80638133	-3.18450902	-1.43908629
C	0.42544163	-3.52838696	0.76159719
C	-0.44667894	-2.40440534	-2.60527065
C	2.86338426	1.80350896	-1.18874541
C	1.30159065	1.33238738	-3.06482933
C	0.74048384	0.07342964	-3.55745285
C	2.86347970	1.81395390	1.17258506
C	2.68482286	-0.40127394	2.32414804
C	1.00220173	-2.20690407	2.62571755
C	-1.99302136	-2.87828492	-0.71679359
C	-0.80637684	-3.17181803	1.46739326
C	-1.30180544	-1.35939318	-3.05272359
C	1.99304291	2.87189351	-0.74239866

C	0.44654696	2.38137164	-2.62657345
C	-0.74072952	-0.10492620	-3.55656101
C	1.99304825	2.87826798	0.71680551
C	2.51042873	1.04748848	2.31783611
C	1.58416450	-0.98484744	3.06308565
C	-0.44652333	-2.38138479	2.62659070
C	-1.99301750	-2.87190912	0.74241205
C	-2.86345297	-1.81396719	-1.17257221
C	-2.51040374	-1.04750496	-2.31782599
C	0.80640213	3.17180560	-1.46738161
C	-1.00218106	2.20689051	-2.62570186
C	-1.58414240	0.98483438	-3.06307238
C	0.80640461	3.18449327	1.43909941
C	1.30182626	1.35937705	3.05273403
C	0.74075193	0.10491040	3.55657303
C	-1.30156970	-1.33240193	3.06484545
C	-2.86336019	-1.80352434	1.18875665
C	-3.44261911	-1.16599396	0.00528818
C	-2.68479994	0.40126007	-2.32413606
C	-0.42541697	3.52838086	-0.76158462
C	-1.53814615	2.88956338	-1.46607525
C	-0.42540593	3.53495074	0.73030780
C	0.44670329	2.40438876	2.60528322
C	-0.74046398	-0.07344561	3.55747446
C	-2.50992705	-1.02682039	2.32690376
C	-3.62105171	0.31528362	-0.00119204
C	-3.21089728	1.07191932	-1.18521776
C	-2.61869315	2.31646658	-0.73966265
C	-1.53813745	2.90252807	1.44068362
C	-1.00204209	2.23004292	2.60622397
C	-1.58409424	1.01197844	3.05468435
C	-2.68457214	0.42185324	2.32066108
C	-3.21110943	1.08246775	1.17610633
C	-2.61878924	2.32302334	0.71954663

Simulated Raman

A. Ag-Outside :

X-Axis: Frequency (cm-1)
Y-Axis: Intensity (Arbitrary)

# X	Y
181.0	694.253449718592
184.2	734.2942631019232
187.4	810.5454557172809
190.6	915.5698504104373
193.8	1038.8223606968586
197.0	1167.5020893131482
200.2	1287.78799273589
203.4	1386.3741390123869
206.6	1452.114392686155
209.8	1477.493987216193
213.0	1459.5879884299097
216.2	1400.3424957343668
219.4	1306.1815045869166
222.6	1186.7528410565299
225.8	1053.5056133282874
229.0	918.1698651128847
232.2	791.4475887363784
235.4	682.1496702328691
238.6	596.8287052774374
241.8	539.8056824147282
245.0	513.3915569656933
248.2	518.1337436189044
251.4	552.9481030082562
254.6	615.0948815537591
257.8	700.0594272245196
261.0	801.473667685679
264.2	911.2349996134174
267.4	1019.9417126566441
270.6	1117.675333847869
273.8	1195.050184489981
277.0	1244.3846177665441
280.2	1260.6830624197114
283.4	1242.1869916455405
286.6	1190.5639954921394
289.8	1110.5119821623496
293.0	1008.9040594295517
296.2	893.7195989757856
299.4	772.9599730701407
302.6	653.7425828491778
305.8	541.698682820776
309.0	440.7034960018745
312.2	352.90576036710786

315.4 278.97196672898036
318.6 218.4390817833397
321.8 170.09181437506345
325.0 132.30295523160194
328.2 103.30386773692928
331.4 81.37582318976473
334.6 64.96822611999532
337.8 52.75709822351837
341.0 43.659404822336086
344.2 36.83558987883812
347.4 31.664838032081747
350.6 27.66217620787264
353.8 24.497141633668342
357.0 21.920460048619443
360.2 19.766059268330817
363.4 17.926618606495467
366.6 16.337949202619857
369.8 14.959683388616602
373.0 13.762449628357793
376.2 12.73163130647679
379.4 11.861283018675845
382.6 11.148738034983465
385.8 10.598203113349133
389.0 10.220768199514016
392.2 10.03628263526676
395.4 10.076505653560789
398.6 10.38800208273271
401.8 11.032842704836463
405.0 12.085883381449902
408.2 13.630779256809934
411.4 15.748219015506493
414.6 18.499896925501655
417.8 21.909464816570843
421.0 25.94353958038028
424.2 30.497383118404397
427.4 35.39012111906412
430.6 40.373131277052515
433.8 45.15248223234574
437.0 49.42267750833526
440.2 52.905360546335025
443.4 55.38510214095395
446.6 56.734397020105256
449.8 56.92289416107611

453.0	56.01051949107746
456.2	54.12882896113915
459.4	51.456119195806906
462.6	48.193927958380726
465.8	44.54979348963386
469.0	40.72746281777626
472.2	36.918768734743985
475.4	33.30804361369936
478.6	30.07412055582751
481.8	27.391472051566126
485.0	25.43179770375954
488.2	24.355246029049155
491.4	24.32683390390796
494.6	25.523475873875544
497.8	28.136569929803287
501.0	32.37578598757853
504.2	38.46573826672602
507.4	46.63199690834383
510.6	57.07609102421995
513.8	69.93620998170255
517.0	85.23655068613151
520.2	102.84665850465387
523.4	122.42867012379227
526.6	143.42758220782065
529.8	165.08007434688588
533.0	186.46092279609618
536.2	206.57420246052052
539.4	224.47731584928545
542.6	239.42592560174756
545.8	251.00765875429647
549.0	259.22752459743117
552.2	264.53781783020474
555.4	267.76555418335613
558.6	269.95402865564415
561.8	272.21870271083196
565.0	275.54828679461576
568.2	280.67455317810237
571.4	288.03636681727943
574.6	297.84235746729377
577.8	310.2063996594757
581.0	325.2999659208743
584.2	343.4517193668811
587.4	365.1346788735592

590.6 390.81576718892507
593.8 420.68886869250156
597.0 454.3584898598771
600.2 490.5777611502553
603.4 527.1535805945805
606.6 561.0699601584446
609.8 588.8656055845893
613.0 607.1994951061961
616.2 613.4440973500199
619.4 606.2793595580924
622.6 586.0433422588583
625.8 554.7924749858337
629.0 516.0874751971426
632.2 474.51743897441884
635.4 435.1003681778835
638.6 402.7167146869031
641.8 381.63883596619394
645.0 375.1945966369842
648.2 385.60428330910855
651.4 413.95061518543423
654.6 460.22812129400313
657.8 523.4309057049791
661.0 601.6624064292585
664.2 692.2537177351635
667.4 791.8691517950112
670.6 896.637560798256
673.8 1002.3073960694345
677.0 1104.4243296263369
680.2 1198.5307529334737
683.4 1280.3848051395867
686.6 1346.2092100144987
689.8 1392.9488092642518
693.0 1418.4758380977992
696.2 1421.8103613034657
699.4 1403.22185691172
702.6 1364.218228889358
705.8 1307.390684178479
709.0 1236.1568911023169
712.2 1154.4472629245251
715.4 1066.3887420963974
718.6 976.0305270272581
721.8 887.1274654754263
725.0 802.9713592840078

728.2 726.248953565636
731.4 658.9066633814529
734.6 602.0225322855433
737.8 555.7223133651337
741.0 519.168048415414
744.2 490.65769362297476
747.4 467.8671878207377
750.6 448.1327321401274
753.8 428.8379015262649
757.0 407.8007588475167
760.2 383.5516877044495
763.4 355.4970447186098
766.6 323.914937730951
769.8 289.78654637815714
773.0 254.55154687035488
776.2 219.83766171133698
779.4 187.18652404313977
782.6 157.84760018309677
785.8 132.66826095261288
789.0 112.0659989855401
792.2 96.09830515167553
795.4 84.5789658473555
798.6 77.2370560179421
801.8 73.81114063365509
805.0 74.14599474566147
808.2 78.36918372253203
811.4 86.91283441074962
814.6 100.55310787560295
817.8 120.43650304226216
821.0 148.05002815892655
824.2 185.14920193224629
827.4 233.6148162057531
830.6 295.2185754740177
833.8 371.2976448887926
837.0 462.350720391758
840.2 567.659620438044
843.4 684.9291505039354
846.6 810.097944324615
849.8 937.4142218090454
853.0 1059.8446793654234
856.2 1169.8173295229622
859.4 1260.2125343318705
862.6 1325.416324208866

865.8 1362.2175444057202
869.0 1370.3258907444026
872.2 1352.3321915477986
875.4 1313.2074712041124
878.6 1259.3512669842698
881.8 1197.4744821835027
885.0 1133.5837041106113
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894.6 968.1267626400695
897.8 927.4526133196982
901.0 894.8380692676985
904.2 870.5420107604215
907.4 854.9758856112127
910.6 848.5353946135298
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1131.4 44.9156272347703
1134.6 45.29318350432857
1137.8 44.98191683765685

1141.0 44.240538113830425
1144.2 43.354884251942735
1147.4 42.57851639842178
1150.6 42.08067385739349
1153.8 41.913392053352986
1157.0 42.004903936262195
1160.2 42.180169441068045
1163.4 42.203129803297045
1166.6 41.830341967735805
1169.8 40.86382320797655
1173.0 39.191523517322764
1176.2 36.807644330310076
1179.4 33.810316002421274
1182.6 30.37939747873312
1185.8 26.741497067099132
1189.0 23.131225843620758
1192.2 19.757224937038135
1195.4 16.77914748205062
1198.6 14.299466857913153
1201.8 12.365323695418779
1205.0 10.977514951634767
1208.2 10.108046391397924
1211.4 9.724453731044624
1214.6 9.80490238155734
1217.8 10.350064072414433
1221.0 11.394853980897532
1224.2 13.019700058954419
1227.4 15.353760896235674
1230.6 18.576362390914035
1233.8 22.90448175282753
1237.0 28.573176050637716
1240.2 35.82601633065488
1243.4 44.8896669246089
1246.6 55.94283128510343
1249.8 69.09740744468667
1253.0 84.38851538200544
1256.2 101.77725407086477
1259.4 121.1639659321967
1262.6 142.4030965732118
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1275.4 240.88966628242213

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1285.0 312.26803803605003
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1297.8 342.32025702555336
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1307.4 290.1067424335781
1310.6 263.5085630653714
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1320.2 188.66408054314908
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1339.4 201.60036020254165
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1387.4 491.740451273125
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1397.0 461.58050454569843
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1406.6 412.14588224441115
1409.8 397.65869492705446
1413.0 386.0651487871968

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1435.4 375.37780691522596
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1489.8 343.1650186142604
1493.0 375.5002736216169
1496.2 410.8848399425075
1499.4 446.94133525187016
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1505.8 511.53726222901486
1509.0 536.1008883156445
1512.2 553.8162764378282
1515.4 564.3635237399093
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1521.8 566.8386422789138
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1531.4 552.1224059938727
1534.6 551.7937298297272
1537.8 557.3387628732717
1541.0 570.1927520930011
1544.2 591.1967531942715
1547.4 620.6840898323935
1550.6 658.659409495532

1553.8 705.0011013529098
1557.0 759.6174326629123
1560.2 822.5379930902134
1563.4 893.7904047579032
1566.6 973.0775032144494
1569.8 1059.375835706315
1573.0 1150.6108268971896
1576.2 1243.468033696206
1579.4 1333.5825495041986
1582.6 1416.0760151976053
1585.8 1486.3955910846728
1589.0 1541.228152884058
1592.2 1579.284717272732
1595.4 1601.6417413160766
1598.6 1611.5228256327016
1601.8 1613.5273483017968
1605.0 1612.4738515598006
1608.2 1612.1456291548516
1611.4 1614.276349305842
1614.6 1618.0264154850584
1617.8 1620.0689239064086
1621.0 1615.2549286937774
1624.2 1597.7848646098514
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1637.0 1329.6441845795819
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1649.8 867.6570082506944
1653.0 773.6297235837508
1656.2 701.095631686919
1659.4 653.0306487973668
1662.6 629.8718993305924
1665.8 629.6089259947421
1669.0 648.2324139672394
1672.2 680.3180431631008
1675.4 719.7173415493036
1678.6 760.2799292946936
1681.8 796.5293330225767
1685.0 824.2004161202196
1688.2 840.5748901041081

1691.4 844.5290857184588
1694.6 836.4041312312538
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1704.2 757.2832732011198
1707.4 720.1346302322196
1710.6 680.8335776636076
1713.8 640.6183061734143
1717.0 600.244330141165
1720.2 560.1015891668244
1723.4 520.3674585383063
1726.6 481.1388693241823
1729.8 442.515811441962
1733.0 404.6321901113038
1736.2 367.6488702234479
1739.4 331.7329208655533
1742.6 297.04435841494654
1745.8 263.7406093859942
1749.0 232.00345859753708
1752.2 202.06627094594037
1755.4 174.19957682379356
1758.6 148.73668810985833
1761.8 126.05788761468105
1765.0 106.5367542483675
1768.2 90.51456352516468
1771.4 78.26575093937761
1774.6 69.99091122051175
1777.8 65.82473946296373

B. Ag- inside:

X-Axis: Frequency (cm-1)
Y-Axis: Intensity (Arbitrary)

#	X	Y
0.0	5.448762079091105	
3.2	5.9631754341855565	
6.4	6.994694853219672	
9.6	8.541202153994668	
12.8	10.58749425274179	
16.0	13.094872406848994	
19.2	15.991921906840492	
22.4	19.17036381772357	

25.6	22.488281437806194
28.8	25.781413137629016
32.0	28.876967957128365
35.2	31.61276908296388
38.4	33.853853100613335
41.6	35.502647199099975
44.8	36.50221022713625
48.0	36.83328328124074
51.2	36.507795530098704
54.4	35.562169425398
57.6	34.0529374899494
60.8	32.05532438810752
64.0	29.663482071031247
67.2	26.989910587190483
70.4	24.16175772262658
73.6	21.313037629875453
76.8	18.573397626325058
80.0	16.056060192126033
83.2	13.847551226394055
86.4	12.001703968897937
89.6	10.5390232766725
92.8	9.451038496319946
96.0	8.708120281354823
99.2	8.268703361114676
102.4	8.088049689547848
105.6	8.125797091461363
108.8	8.350764775149552
112.0	8.741666031737186
115.2	9.290027895419229
118.4	10.001428033580213
121.6	10.898978158783347
124.8	12.026275064549242
128.0	13.435686475430394
131.2	15.221001621338178
134.4	17.53089864225328
137.6	20.581798205264203
140.8	24.6620967540307
144.0	30.186027711341485
147.2	37.7044238606293
150.4	47.90713308477516
153.6	61.606760526518805
156.8	79.68769330453495
160.0	103.01303248239746

163.2 132.28862002278058
166.4 167.89388813666613
169.6 209.7023787728437
172.8 256.92630571693684
176.0 308.0270367346427
179.2 360.725307373795
182.4 412.1408780807112
185.6 459.0564831364438
188.8 498.3041732655621
192.0 527.2177298763628
195.2 544.0591882596705
198.4 548.3543493863566
201.6 541.0768376602357
204.8 524.6285855113845
208.0 502.60380452829037
211.2 479.35830743729827
214.4 459.43887680256955
217.6 446.94962500018534
220.8 444.9455103911425
224.0 454.94448967596963
227.2 476.6412382269888
230.4 507.88736273167166
233.6 544.9421307014063
236.8 582.9551492231305
240.0 616.7801230821796
243.2 641.791854506939
246.4 654.6736986687072
249.6 654.029786111073
252.8 640.6913508217275
256.0 617.6573061290028
259.2 589.6785588318468
262.4 562.5182045673562
265.6 542.0762221940597
268.8 533.4845678890022
272.0 540.28331830983
275.2 563.7770786507307
278.4 602.8509699640417
281.6 654.0636524619215
284.8 712.1065259713023
288.0 770.6815075494005
291.2 823.5622026359636
294.4 865.6977164227376
297.6 894.1615771064687

300.8	908.7292700158143
304.0	911.9338600055269
307.2	908.5281270914899
310.4	904.5288637361783
313.6	905.9609741304166
316.8	917.5912105631287
320.0	941.9251583016737
323.2	978.6588206717905
326.4	1024.8214177982663
329.6	1075.414116179083
332.8	1124.445658342585
336.0	1166.145436671073
339.2	1196.0711322531897
342.4	1211.8745739182696
345.6	1213.576246790136
348.8	1203.3174554769682
352.0	1184.6781940409608
355.2	1161.7421083694217
358.4	1138.1357049266087
361.6	1116.2610699747977
364.8	1096.8828376763374
368.0	1079.0718076293979
371.2	1060.5760031864227
374.4	1038.5354878400299
377.6	1010.2696761929437
380.8	974.0413237242791
384.0	929.6437026776208
387.2	878.6940922279534
390.4	824.5740871999976
393.6	772.0179807135789
396.8	726.4091079393991
400.0	692.8921714361504
403.2	675.4594936186343
406.4	676.1447389219394
409.6	694.4277508389198
412.8	727.1237921304297
416.0	768.6841451113625
419.2	811.8651425976072
422.4	848.7955563751558
425.6	872.1870089924364
428.8	876.4597950903276
432.0	858.580748000497
435.2	818.4522884570099

438.4 758.7831624179877
441.6 684.4533496120914
444.8 601.639001112679
448.0 516.8159207404215
451.2 435.8775851663957
454.4 363.5384628119715
457.6 303.00555830808736
460.8 256.0214712106895
464.0 223.1259560274274
467.2 203.99164724413095
470.4 197.73932148697136
473.6 203.1682851738934
476.8 218.87568225573133
480.0 243.2636333039102
483.2 274.5184697768919
486.4 310.5926662792865
489.6 349.24350023548084
492.8 388.13777700715053
496.0 425.07037563616757
499.2 458.2201590751018
502.4 486.2589086406478
505.6 508.52437676986494
508.8 525.068751432377
512.0 536.5493023081236
515.2 544.0826121554679
518.4 549.0557440053751
521.6 552.9262745860009
524.8 557.0572438230428
528.0 562.5867724496349
531.2 570.333403651424
534.4 580.7300391120796
537.6 593.7779946814142
540.8 609.0283455924698
544.0 625.6003106568235
547.2 642.2478683638492
550.4 657.4330756794434
553.6 669.5098757899568
556.8 676.936075594386
560.0 678.4722474299324
563.2 673.3961022960503
566.4 661.6837496683785
569.6 644.1350125085863
572.8 622.3909419153836

576.0 598.8158276809074
579.2 576.2698491444728
582.4 557.7533191409813
585.6 545.9505679431792
588.8 542.7542962138064
592.0 548.8539678302011
595.2 563.5263586900247
598.4 584.6508183928756
601.6 609.0081004243198
604.8 632.8197491827443
608.0 652.4299534985403
611.2 664.9971381904897
614.4 669.0090541116041
617.6 664.5300239679401
620.8 653.0960236745517
624.0 637.2920002564487
627.2 620.0849667838008
630.4 604.1345085210079
633.6 591.2244815685165
636.8 581.9087410250471
640.0 575.5064665371231
643.2 570.3870432573025
646.4 564.4385739997365
649.6 555.6420645495423
652.8 542.5965963335323
656.0 524.8554600430475
659.2 503.0481168500853
662.4 478.7413834506486
665.6 454.12426795176236
668.8 431.5921320360301
672.0 413.34508370698103
675.2 401.0680738930969
678.4 395.779898437031
681.6 397.8723001763863
684.8 407.2365139025159
688.0 423.51036028781454
691.2 446.3651435035455
694.4 475.6605824313297
697.6 511.4510013642986
700.8 553.8263463540945
704.0 602.6158282332691
707.2 657.0350574098325
710.4 715.3965677297402

713.6 774.9644511485421
716.8 832.0711650645949
720.0 882.4931841649995
723.2 922.0174828269382
726.4 947.0409112223953
729.6 955.160849116612
732.8 945.5487714841936
736.0 919.0366028429384
739.2 877.925180961577
742.4 825.5713087231109
745.6 765.8561843939272
748.8 702.649968603163
752.0 639.3733438350796
755.2 578.706513308571
758.4 522.4618916264162
761.6 471.59843038968506
764.8 426.3350399460787
768.0 386.3293780032251
771.2 350.86505478638236
774.4 319.0523666704581
777.6 289.9932030569359
780.8 262.9109245338251
784.0 237.24173681042635
787.2 212.6877291792298
790.4 189.19597709101888
793.6 166.95109558657012
796.8 146.32716341247496
800.0 127.8161636459302
803.2 111.96161403200267
806.4 99.3202584156437
809.6 90.42730572289871
812.8 85.77921757777929
816.0 85.81293400829898
819.2 90.87046132593392
822.4 101.12566904066941
825.6 116.50402790492696
828.8 136.58463819502782
832.0 160.50755327023018
835.2 186.92840396196502
838.4 214.05248561957015
841.6 239.7595223233228
844.8 261.86074713858426
848.0 278.3950470556069

851.2 287.93878393104325
854.4 289.8987117832156
857.6 284.6421867456893
860.8 273.52087857579926
864.0 258.72712077401906
867.2 243.02701638916787
870.4 229.4301412318602
873.6 220.85023719845967
876.8 219.78046195840898
880.0 228.06335748295874
883.2 246.7352234646283
886.4 275.921929212757
889.6 314.81414824004315
892.8 361.71302977220165
896.0 414.14892286174705
899.2 469.0813915445141
902.4 523.17817240118
905.6 573.1499037962029
908.8 616.0910529655187
912.0 649.7739623211532
915.2 672.8420508557238
918.4 684.8647024888007
921.6 686.2579526853813
924.8 678.0640416442932
928.0 661.6888618860303
931.2 638.6624892130923
934.4 610.4440221614914
937.6 578.3137718644338
940.8 543.3486023215363
944.0 506.4555823364125
947.2 468.4191173989385
950.4 429.9406300841201
953.6 391.65883600745104
956.8 354.1544339081123
960.0 317.9508368976962
963.2 283.5195013817325
966.4 251.29050524063732
969.6 221.66433245022944
972.8 195.01053715001072
976.0 171.63196503474273
979.2 151.74555460422673
982.4 135.4638752305324
985.6 122.76299219044436

988.8 113.52187163360658
992.0 107.54497945020546
995.2 104.64160172999651
998.4 104.70445644090222
1001.6 107.7557489107939
1004.8 113.94797950880141
1008.0 123.52884249782122
1011.2 136.7137576446383
1014.4 153.55354777996536
1017.6 173.80710670758083
1020.8 196.84241657848173
1024.0 221.6123508633084
1027.2 246.7422351756612
1030.4 270.7168219333556
1033.6 292.1156484663879
1036.8 309.85769010181104
1040.0 323.389736459345
1043.2 332.75857906918645
1046.4 338.5436543001306
1049.6 341.6675245505726
1052.8 343.13420084680126
1056.0 343.7645171200605
1059.2 343.99859987464197
1062.4 343.8116216685358
1065.6 342.75418224760483
1068.8 340.09663565781614
1072.0 335.0332913444961
1075.2 326.8893909466619
1078.4 315.2907109975219
1081.6 300.25853056249383
1084.8 282.2551942167712
1088.0 262.1699083230764
1091.2 241.24949644910427
1094.4 220.99154194878298
1097.6 203.05381842057275
1100.8 189.19076792528026
1104.0 181.13460752065058
1107.2 180.53159197969282
1110.4 188.89123013834944
1113.6 207.48011409871128
1116.8 237.24105105490088
1120.0 278.715241639502
1123.2 331.93518740130446

1126.4 396.3348810958753
1129.6 470.68341646898386
1132.8 553.0639425681304
1136.0 640.9007086825591
1139.2 731.0302734817095
1142.4 819.8326262386356
1145.6 903.3975337375936
1148.8 977.7321326158722
1152.0 1039.0273878669718
1155.2 1083.9567167528637
1158.4 1109.9552934474998
1161.6 1115.531310663392
1164.8 1100.5269388490797
1168.0 1066.2543517751615
1171.2 1015.4815633898579
1174.4 952.263237440775
1177.6 881.6118599586008
1180.8 809.0184177665237
1184.0 739.904651545315
1187.2 679.0709669438226
1190.4 630.2108173095747
1193.6 595.5531874648259
1196.8 575.6769731149146
1200.0 569.5179523479958
1203.2 574.5624036163244
1206.4 587.202813173705
1209.6 603.2086176791589
1212.8 618.2455456633696
1216.0 628.3571697309503
1219.2 630.3781480278467
1222.4 622.2304323062743
1225.6 603.0661260338579
1228.8 573.2254430500653
1232.0 534.0699530579993
1235.2 487.78255207583044
1238.4 437.0362861934852
1241.6 384.66904858912045
1244.8 333.424605530343
1248.0 285.71243416379394
1251.2 243.4296846618176
1254.4 207.89055921164146
1257.6 179.81569386312142
1260.8 159.3753891406241

1264.0 146.26535371467517
1267.2 139.81211571602847
1270.4 139.07166104897976
1273.6 142.9431428765705
1276.8 150.26744232145384
1280.0 159.94486516234392
1283.2 171.0374248044754
1286.4 182.8862271470126
1289.6 195.21559239104604
1292.8 208.13833010166312
1296.0 222.1029759452776
1299.2 237.75649974138508
1302.4 255.72251356361193
1305.6 276.3199324489981
1308.8 299.3133377015427
1312.0 323.8183897731138
1315.2 348.3085277044911
1318.4 370.80222104495544
1321.6 389.2365694544512
1324.8 401.89331094855584
1328.0 407.81323514597443
1331.2 407.09108016642466
1334.4 400.9675352811654
1337.6 391.6827536217359
1340.8 382.1080999243034
1344.0 375.22595585033497
1347.2 373.5612656670965
1350.4 378.6756197095106
1353.6 390.82503721679967
1356.8 408.84893351607303
1360.0 430.31691390335857
1363.2 451.8966685541481
1366.4 469.8790695042854
1369.6 480.7801012339711
1372.8 481.8867019889136
1376.0 471.65860920536846
1379.2 449.9194533679684
1382.4 417.8136581540845
1385.6 377.5539430546461
1388.8 332.0240405147962
1392.0 284.3279033769749
1395.2 237.3673213251804
1398.4 193.51421903858665

1401.6 154.43153274287042
1404.8 121.02311060095857
1408.0 93.51990396892772
1411.2 71.62916606967302
1414.4 54.71385379023674
1417.6 41.96502462252073
1420.8 32.5413487028295
1424.0 25.664710890989127
1427.2 20.672702437126937
1430.4 17.03622951618971
1433.6 14.353231362339056
1436.8 12.336083237111525
1440.0 10.789128188908403
1443.2 9.564687530186228
1446.4 8.568203484788274
1449.6 7.744553221845756
1452.8 7.046284099395895
1456.0 6.442079625737996
1459.2 5.911557616287494
1462.4 5.44011555466772
1465.6 5.016594329648536
1468.8 4.632248699002333
1472.0 4.28017754556907
1475.2 3.955054195381501
1478.4 3.652996702941257
1481.6 3.371391106242283
1484.8 3.1086844601138255
1488.0 2.8640906531731622
1491.2 2.6372311756446094
1494.4 2.427756453233217
1497.6 2.235009695377892
1500.8 2.057791663061622
1504.0 1.8942752755469836
1507.2 1.7420802694860278
1510.4 1.5984957322272284
1513.6 1.4608051814311713
1516.8 1.3266500702899133
1520.0 1.194363791100078
1523.2 1.0631925404521816
1526.4 0.933400113166678
1529.6 0.806188291006432
1532.8 0.6834761511045414
1536.0 0.5675721602485148

1539.2 0.460800358721334
1542.4 0.36514811464760916
1545.6 0.28199452665451014
1548.8 0.21195804679233277
1552.0 0.154879046631269
1555.2 0.10989890935075083
1558.4 0.07565988839253293
1561.6 0.050489346857571005
1564.8 0.03263170137826394
1568.0 0.020410058106358007
1571.2 0.012344207432396778
1574.4 0.0072127643489160245
1577.6 0.00406676828270693
1580.8 0.002208677833517098
1584.0 0.0011518236738745483
1587.2 0.0005731691979553373
1590.4 0.0002683674625866483
1593.6 0.00011406681811949786
1596.8 6.073689551757313e-05

C. Cu- outside:

X-Axis: Frequency (cm-1)
Y-Axis: Intensity (Arbitrary)

#	X	Y
0.0	169.51369993420553	
3.2	195.87306808580792	
6.4	244.69302070206493	
9.6	317.6007244501958	
12.8	425.565408468842	
16.0	598.5538059735089	
19.2	907.5864724311099	
22.4	1528.2704636880962	
25.6	2842.0081847086713	
28.8	5154.316426302985	
32.0	7396.055881738591	
35.2	7356.725929127707	
38.4	5087.106347905501	
41.6	2803.1022841440554	
44.8	1520.7534802572332	
48.0	923.2622411399927	
51.2	639.4130931030056	

54.4	497.235201218865
57.6	409.51764639538214
60.8	329.3266877298121
64.0	257.6382521040229
67.2	206.60700516887084
70.4	173.83397671838378
73.6	152.22239945625148
76.8	137.30399773074063
80.0	126.84344767602592
83.2	119.65187098509872
86.4	115.04281041357221
89.6	112.61255212083228
92.8	112.15842303349964
96.0	113.65722673680074
99.2	117.12737246641139
102.4	122.57377985339772
105.6	130.2611819573504
108.8	140.70632291665333
112.0	154.6321650211904
115.2	173.11785129950889
118.4	197.84576468960313
121.6	231.54095900435158
124.8	278.86048429566193
128.0	348.36864519673037
131.2	457.4381133703266
134.4	645.7738684257988
137.6	1010.9913700241889
140.8	1750.1118732266032
144.0	2964.052202166421
147.2	4019.2118637478216
150.4	3961.610640339476
153.6	3177.587653714911
156.8	2880.7983092391496
160.0	3820.2884569814373
163.2	6213.485714928907
166.4	8799.325124293693
169.6	8903.71225776408
172.8	6281.874433493828
176.0	3506.7182358565096
179.2	1909.394704367065
182.4	1149.4033832579012
185.6	769.0811531202493
188.8	555.1771369730232

192.0 421.570738692521
195.2 331.50000000627847
198.4 269.02416969122737
201.6 224.64022921354768
204.8 191.82457718333836
208.0 166.877908964911
211.2 147.61657493136582
214.4 132.62307094021753
217.6 120.94479669024543
220.8 111.95682678974829
224.0 105.28341350502096
227.2 100.72064386853782
230.4 98.24502902700719
233.6 98.0866560601063
236.8 100.90421925654817
240.0 108.20651498945927
243.2 123.1905062147442
246.4 153.59012891436288
249.6 218.7695615015483
252.8 348.66511712179647
256.0 525.9131263964956
259.2 612.819216095256
262.4 510.8628774371462
265.6 342.16047036306463
268.8 232.18470143560538
272.0 185.26484140519952
275.2 172.375916258194
278.4 177.7953011999528
281.6 196.9944247190977
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323.2 893.636525380446
326.4 559.0492154701903

329.6 382.337189525182
332.8 279.50895412144905
336.0 215.38009173065512
339.2 172.67975157059956
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361.6 82.31705333677596
364.8 82.84096855013779
368.0 82.95809362169558
371.2 84.23291935194658
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396.8 570.4322025782643
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569.6 173.4881532902112
572.8 162.6962856928377
576.0 152.60072918756828
579.2 143.63085586207964
582.4 134.05579884929068
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588.8 114.50128858902642
592.0 108.79943255169923
595.2 105.52488105035474
598.4 103.95461131406661
601.6 103.82620484594247

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608.0	107.09384955449134
611.2	110.55324121822495
614.4	116.75680478125909
617.6	126.77281662859411
620.8	142.20463172488525
624.0	167.29591158709832
627.2	212.68083109900982
630.4	302.8163528919621
633.6	466.1563163886772
636.8	655.2506777473492
640.0	713.3260493987549
643.2	591.5612759689834
646.4	443.65519777582216
649.6	373.93006622631174
652.8	372.6501335389098
656.0	416.2998686417169
659.2	501.14619722297084
662.4	642.4080607041402
665.6	882.2624594346274
668.8	1318.2569166785884
672.0	2131.7917169848088
675.2	3547.436772436572
678.4	5857.4162853165335
681.6	9242.906566394242
684.8	12014.50138140326
688.0	11165.686775446724
691.2	7423.872802623173
694.4	4052.0603540719253
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700.8	1335.7508711897708
704.0	892.0202407328503
707.2	639.7766937887768
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713.6	378.2665603305461
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720.0	252.6297727965625
723.2	213.52464145984067
726.4	184.11671915722383
729.6	162.05795441247196
732.8	146.13935745177864
736.0	136.34280614287934
739.2	134.66245577045862

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748.8 212.69606314454353
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758.4 272.52759128015475
761.6 335.7239374475047
764.8 334.29388625410786
768.0 248.69577624312348
771.2 156.0557568038018
774.4 100.88825116975687
777.6 73.44907705598251
780.8 58.941738796267806
784.0 50.35980999074624
787.2 44.9826376689842
790.4 41.85268138689888
793.6 41.04637260476011
796.8 43.9056966308347
800.0 53.05165511257998
803.2 67.36854189352228
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809.6 64.52813664031619
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828.8 18.888179152279825
832.0 17.23768578147627
835.2 15.798693775802592
838.4 14.386695904036358
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844.8 9.556422867977092
848.0 5.037738071936456
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854.4 1.5886691912216784
857.6 1.4091175296766825
860.8 1.2927250042918992
864.0 1.1925977715396376
867.2 1.1046744665691204
870.4 1.026895918989752
873.6 0.9576460098266619
876.8 0.895637030750273

880.0 0.8398292501752598
883.2 0.7893732596518621
886.4 0.743567852589369
889.6 0.7018287391621449
892.8 0.6636649707768572
896.0 0.6286608926029333
899.2 0.5964492323342645
902.4 0.5663246954011028
905.6 0.5336738688179967
908.8 0.48509654054819623
912.0 0.4240396215122957
915.2 0.3801502587209514
918.4 0.3447410145001144
921.6 0.27115972694860674
924.8 0.17935074055691042
928.0 0.32997593888887833
931.2 1.4915980947755352
934.4 4.382543578909776
937.6 7.777832237051093
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944.0 10.47224709800499
947.2 10.95011307592143
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956.8 12.502299244460017
960.0 13.092612352548482
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966.4 14.386993345646292
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972.8 15.911951011453057
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979.2 17.762422885776587
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985.6 20.008624115608463
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995.2 24.023409357275142
998.4 25.628951268653623
1001.6 27.401438434330466
1004.8 29.36483588764429
1008.0 31.54759432514335
1011.2 33.98370367151477
1014.4 36.71402620132112

1017.6 39.78802922222718
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1024.0 47.22233644991154
1027.2 51.74900746629899
1030.4 56.96158023645776
1033.6 63.006451299498266
1036.8 70.07140342164064
1040.0 78.40053425917378
1043.2 88.31589236375177
1046.4 100.24951474960022
1049.6 114.7920288370351
1052.8 132.76843940430754
1056.0 155.36009695931097
1059.2 184.30831407091907
1062.4 222.26973136628817
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1068.8 345.1664333023366
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1097.6 9616.2332572038
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1123.2 354.16555016332927
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1129.6 268.17656937001874
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1136.0 310.6929151907695
1139.2 341.4805223258364
1142.4 307.97598654978253
1145.6 229.82038936892522
1148.8 163.9115285797013
1152.0 126.06513635325558

1155.2 105.3645362835091
1158.4 92.78878663353402
1161.6 84.38625878811848
1164.8 78.5017589734667
1168.0 74.37291374057622
1171.2 71.65051847341796
1174.4 70.18093689242926
1177.6 69.79691982950234
1180.8 70.3454101419785
1184.0 71.88815559455993
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1216.0 288.5546739865662
1219.2 412.09731733863634
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1238.4 3386.869055295271
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1267.2 684.8380938270632
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1273.6 325.2021199745361
1276.8 246.56669102606241
1280.0 188.35576298626006
1283.2 148.32277939803726
1286.4 125.30517389731838
1289.6 112.72521583149

1292.8 105.84861134560315
1296.0 102.45719298700868
1299.2 101.56309914418148
1302.4 102.79222398229571
1305.6 106.1775618942022
1308.8 112.03702085884782
1312.0 121.13345813221659
1315.2 135.1409043151562
1318.4 157.7852181828507
1321.6 198.04735630352124
1324.8 277.17238048219303
1328.0 428.640670700303
1331.2 645.6829331611438
1334.4 799.781695247754
1337.6 748.5703324208497
1340.8 559.7942301612666
1344.0 403.9206137776129
1347.2 331.60853247894715
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1360.0 418.80485492247834
1363.2 519.9139575183303
1366.4 659.5656131383455
1369.6 800.7526542217087
1372.8 935.8816697072899
1376.0 1163.1536503288514
1379.2 1655.53297948573
1382.4 2725.470879938627
1385.6 4828.587155340265
1388.8 7646.959183752354
1392.0 9012.991370233605
1395.2 7504.827667094477
1398.4 5150.227310069053
1401.6 4007.768846993002
1404.8 4465.684205789263
1408.0 6605.322675898908
1411.2 9941.37016570364
1414.4 12631.943143757686
1417.6 13858.638210803647
1420.8 14212.093627824866
1424.0 12370.121793353614
1427.2 8345.958773054188

1430.4 4758.863412815993
1433.6 2754.109983936537
1436.8 1781.450228399602
1440.0 1278.9336641383907
1443.2 991.1190309718328
1446.4 813.7144667921569
1449.6 700.2339637887117
1452.8 627.7535702471527
1456.0 584.2586782387103
1459.2 563.4867531030445
1462.4 562.6981602820426
1465.6 581.7984733020396
1468.8 623.2767532616299
1472.0 692.9080863718261
1475.2 801.5899454741343
1478.4 969.4331489352292
1481.6 1235.163896761038
1484.8 1679.791839703016
1488.0 2492.0925038925825
1491.2 4138.903816845203
1494.4 7562.8488700598755
1497.6 13356.00858111887
1500.8 18902.383816308
1504.0 19116.254405763568
1507.2 13800.839222638158
1510.4 7930.029961975088
1513.6 4357.211120497734
1516.8 2638.295204120439
1520.0 1821.0708048475487
1523.2 1420.6833125595135
1526.4 1267.7092102185914
1529.6 1357.0867065325247
1532.8 1818.106698359407
1536.0 2745.3787721311437
1539.2 3607.85424355716
1542.4 3449.4956323616443
1545.6 2392.1790064555184
1548.8 1392.6491534182044
1552.0 831.1465170031755
1555.2 556.3771320778861
1558.4 411.0992020287176
1561.6 323.96828865206965
1564.8 266.2098461681858

1568.0 224.81395017864793
1571.2 192.45894720027417
1574.4 165.87628722732248
1577.6 144.8483073855937
1580.8 126.98922842882658
1584.0 110.73520737903429
1587.2 98.06085156387877
1590.4 88.75493158758354
1593.6 81.48306648777526
1596.8 76.94687007555817

D. Cu-inside:

X-Axis: Frequency (cm-1)
Y-Axis: Intensity (Arbitrary)

#	X	Y
0.0	1.5773776696747517	
3.2	1.6645249683985957	
6.4	1.8480930496180672	
9.6	2.1489520725369964	
12.8	2.594674986036312	
16.0	3.2231446280195937	
19.2	4.083246963363809	
22.4	5.232986323529735	
25.6	6.7363012538555465	
28.8	8.657865792942282	
32.0	11.055542261525936	
35.2	13.970624226395927	
38.4	17.416717675721753	
41.6	21.36855166200645	
44.8	25.752660658428297	
48.0	30.44214132776084	
51.2	35.25744428173922	
54.4	39.97459613222937	
57.6	44.34109039939601	
60.8	48.09827340761807	
64.0	51.00764277852936	
67.2	52.87740025425917	
70.4	53.58503553961836	
73.6	53.09237673617683	
76.8	51.45038844375352	
80.0	48.792897779647525	

83.2	45.32043266169629
86.4	41.276866166748896
89.6	36.922767658933026
92.8	32.50954171404437
96.0	28.25797921629487
99.2	24.34359172448145
102.4	20.889731367647297
105.6	17.968102156054616
108.8	15.605271806921047
112.0	13.793410192875594
115.2	12.503874912497032
118.4	11.698715563932256
121.6	11.333778410228305
124.8	11.383243295860504
128.0	11.846152715548305
131.2	12.73490697827352
134.4	14.10039555499435
137.6	16.04022461060789
140.8	18.699114387449292
144.0	22.274884178215352
147.2	27.021708391267463
150.4	33.24933571690262
153.6	41.31528929534317
156.8	51.60070209467613
160.0	64.48396168531961
163.2	80.29920300893755
166.4	99.28102637846048
169.6	121.51508007460683
172.8	146.8746255118027
176.0	174.96880376665803
179.2	205.13945336680518
182.4	236.4878932286907
185.6	267.92175877138425
188.8	298.25335174437475
192.0	326.33169940341344
195.2	351.19131752296494
198.4	372.19592392491995
201.6	389.15189472003897
204.8	402.36737246801766
208.0	412.6391356045821
211.2	421.15999346381295
214.4	429.3530602747196
217.6	438.6523491679604

220.8	450.2645394346654
224.0	464.95283802472903
227.2	482.84426188626657
230.4	503.37067817576684
233.6	525.3285857950425
236.8	547.0003381893665
240.0	566.3981712071718
243.2	581.5888453665162
246.4	591.003455299208
249.6	593.7096514319023
252.8	589.6148027755082
256.0	579.5509367972688
259.2	565.217223661271
262.4	549.0011063807984
265.6	533.69878362067
268.8	522.176362268935
272.0	517.0125201425212
275.2	520.1430618216007
278.4	532.6546373986096
281.6	554.6267728250448
284.8	585.1118828252502
288.0	622.2558597095339
291.2	663.4965658578859
294.4	705.877864448098
297.6	746.418332703417
300.8	782.4419513773423
304.0	811.8557299363229
307.2	833.4298235225396
310.4	846.9144520824873
313.6	853.0237269253789
316.8	853.3122895929527
320.0	849.9645778416382
323.2	845.528179995573
326.4	842.6260822290211
329.6	843.7108499775093
332.8	850.8330978476366
336.0	865.4900857443125
339.2	888.5848423107547
342.4	920.4021985872376
345.6	960.617839276503
348.8	1008.3219378535248
352.0	1062.0453271860547
355.2	1119.7883778615878

358.4 1179.0660544185205
361.6 1236.9992924102328
364.8 1290.4593813046947
368.0 1336.2775769143732
371.2 1371.506720195351
374.4 1393.7014812165853
377.6 1401.1665882597094
380.8 1393.1259067314747
384.0 1369.8012257282232
387.2 1332.3094285611214
390.4 1282.4650590948202
393.6 1222.5483136627938
396.8 1155.0062481604045
400.0 1082.1846026195326
403.2 1006.1679416687086
406.4 928.701725966903
409.6 851.1842633787901
412.8 774.7402352343385
416.0 700.3223891105114
419.2 628.7939714096944
422.4 560.9788562478584
425.6 497.6639101808482
428.8 439.5731417389911
432.0 387.33047608846766
435.2 341.35809663399607
438.4 301.8540299166124
441.6 268.7895593904321
444.8 241.92392166852377
448.0 220.84368114578484
451.2 205.02411675729618
454.4 193.89479612976444
457.6 186.90294261807404
460.8 183.55224041016024
464.0 183.4342086585977
467.2 186.2480183813204
470.4 191.82381803960655
473.6 200.1311560549907
476.8 211.27179304443214
480.0 225.44387672063877
483.2 242.96216839107473
486.4 264.24476912692035
489.6 289.79284733646017
492.8 320.130249359004

496.0 355.71845489197665
499.2 396.90499450448914
502.4 443.8231125182601
505.6 496.28524071135104
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1475.2 245.66906825910758
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1536.0 30.65088630344454
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1542.4 19.10435345591494
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1561.6 5.759794374980311
1564.8 4.996738785029057
1568.0 4.404084632544193
1571.2 3.9367206389549865
1574.4 3.5621537181242564
1577.6 3.262226997413352
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1587.2 2.6946704268615496
1590.4 2.588738198241851
1593.6 2.519052844211506

1596.8 2.4844678444189325

E. Plain:

X-Axis: Frequency (cm-1)
Y-Axis: Intensity (Arbitrary)

#	X	Y
200.0	17.053974222746426	
203.2	18.21390346355623	
206.4	20.072874231639915	
209.6	22.349093396170577	
212.8	25.04557918537293	
216.0	28.262509762986888	
219.2	32.14297372189461	
222.4	36.883332743394824	
225.6	42.75857379962076	
228.8	50.16348633399997	
232.0	59.68148729033118	
235.2	72.20463730406479	
238.4	89.15371495345897	
241.6	112.90699398553868	
244.8	147.70018102418788	
248.0	201.69821846959962	
251.2	292.3250590571219	
254.4	461.2853201776755	
257.6	812.1633148141062	
260.8	1534.4978525063357	
264.0	2641.132363603743	
267.2	3383.5544573865973	
270.4	2930.2575332250094	
273.6	1823.3209193516918	
276.8	971.617560260274	
280.0	535.8682500925458	
283.2	329.68028025972706	
286.4	222.7289517138105	
289.6	160.71242965159303	
292.8	121.53921349312968	
296.0	95.19143585307944	
299.2	76.60755408442171	
302.4	63.00337769368544	
305.6	52.742453737889875	

308.8	44.81074474862612
312.0	38.55224246046112
315.2	33.52708981257045
318.4	29.43157120654746
321.6	26.05837926725401
324.8	23.341398162608094
328.0	21.443983696990436
331.2	20.23317886148792
334.4	19.033043387433686
337.6	17.719822572151077
340.8	16.514252059437688
344.0	15.470913448451782
347.2	14.572683123144046
350.4	13.799762124325651
353.6	13.136040107365265
356.8	12.56855736973872
360.0	12.086910816890096
363.2	11.682809214798311
366.4	11.349742661599919
369.6	11.082742255931304
372.8	10.878214324404182
376.0	10.733839897478962
379.2	10.648535927122026
382.4	10.622480887647692
385.6	10.657214786197653
388.8	10.755833935788367
392.0	10.923316865992476
395.2	11.16704453821242
398.4	11.497625494806048
401.6	11.930225007330467
404.8	12.486770875489713
408.0	13.199769055117912
411.2	14.119261108941688
414.4	15.326363012363363
417.6	16.961429975833457
420.8	19.27950997009404
424.0	22.719576198744285
427.2	28.251331944890737
430.4	39.253982745147894
433.6	61.796047527424044
436.8	93.597682301203
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443.2	96.74498340398671

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456.0 49.85197583068678
459.2 56.09799991189159
462.4 66.60333248765384
465.6 82.5974051134694
468.8 106.98398760395841
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478.4 338.6450503007094
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494.4 1892.9638266262414
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