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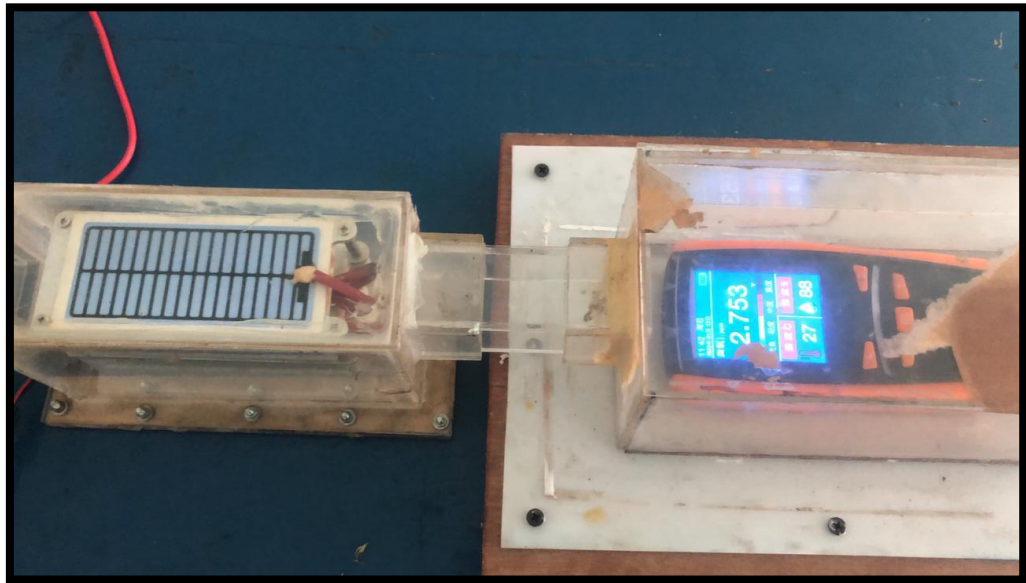
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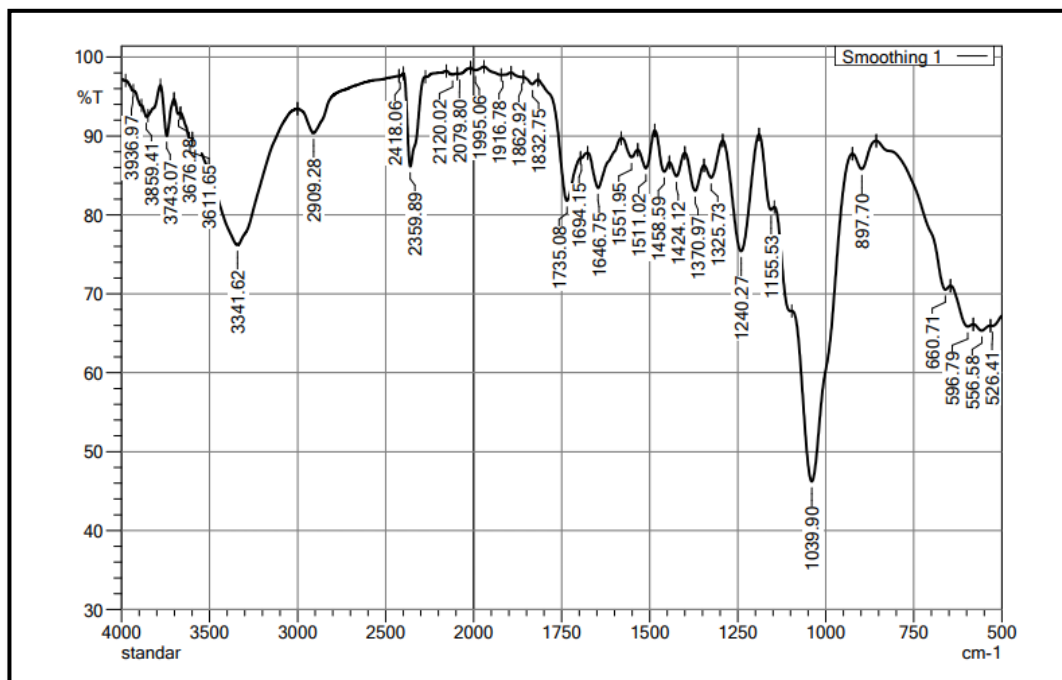
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LAMPIRAN





Non treatment



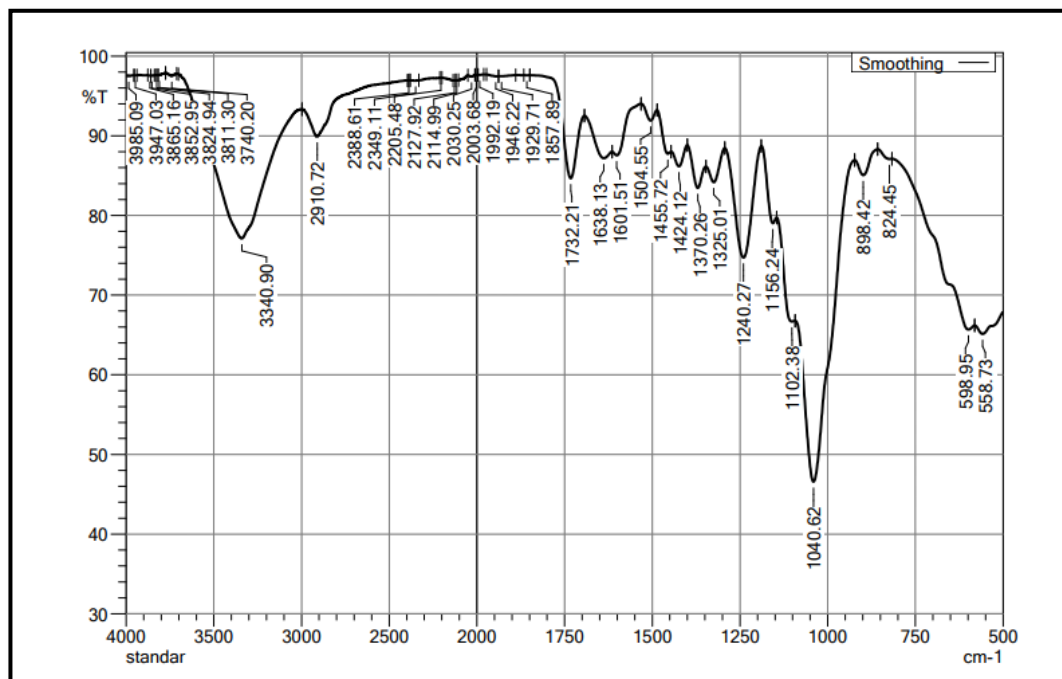
	Peak	Intensity	Corr. intensity	Base (H)	Base (L)	Area	Corr. Area	Comment
1	526.41	65.94	0.24	532.16	499.84	1086.695	7.051	
2	556.58	65.32	0.72	580.99	532.16	1674.797	16.572	
3	596.79	65.85	1.48	645.63	580.99	2082.343	51.386	
4	660.71	70.53	1.81	856.77	645.63	3790.408	-388.416	
5	897.70	85.81	2.59	924.28	856.77	847.522	76.233	
6	1039.90	46.21	28.17	1096.64	924.28	6062.192	2233.831	
7	1155.53	80.65	2.34	1189.28	1146.19	677.184	55.956	
8	1240.27	75.40	14.40	1292.69	1189.28	1804.841	749.115	
9	1325.73	84.72	2.74	1345.84	1292.69	721.184	74.958	
10	1370.97	83.06	3.94	1400.42	1345.84	811.847	105.335	
11	1424.12	84.90	2.30	1444.23	1400.42	607.742	49.193	
12	1458.59	85.48	2.57	1485.88	1444.23	526.950	55.495	
13	1511.02	85.90	3.52	1534.00	1485.88	593.804	87.375	
14	1551.95	87.31	1.50	1580.68	1534.00	546.821	32.295	

1

SHIMADZU

15	1646.75	83.41	5.02	1676.19	1580.68	1288.927	218.042	
16	1694.15	87.18	0.10	1696.30	1676.19	250.728	0.109	
17	1735.08	81.79	8.61	1816.95	1696.30	1239.246	293.836	
18	1832.75	96.57	0.68	1858.61	1816.95	125.846	13.063	
19	1862.92	97.44	0.09	1893.80	1858.61	82.765	3.361	
20	1916.78	97.74	0.06	1921.81	1893.80	60.744	1.540	
21	1995.06	98.33	0.37	2017.32	1970.64	69.504	9.149	
22	2079.80	97.89	0.15	2092.73	2017.32	136.284	6.356	
23	2120.02	97.76	0.29	2155.21	2092.73	130.123	9.453	
24	2359.89	86.14	11.65	2400.10	2273.71	984.983	695.930	
25	2418.06	97.58	0.10	2424.52	2400.10	56.350	1.769	
26	2909.28	90.36	3.75	3000.49	2424.52	2781.425	204.382	
27	3341.62	76.19	15.12	3598.72	3000.49	9164.311	4121.649	
28	3611.65	89.55	0.79	3662.64	3598.72	577.407	21.211	
29	3676.28	92.81	0.38	3702.13	3670.53	204.816	7.941	
30	3743.07	90.00	5.61	3778.98	3702.13	539.944	198.175	
31	3859.41	92.43	0.50	3885.98	3849.36	256.404	8.008	
32	3936.97	95.74	0.12	3977.19	3933.38	156.738	-1.515	

1 ppm



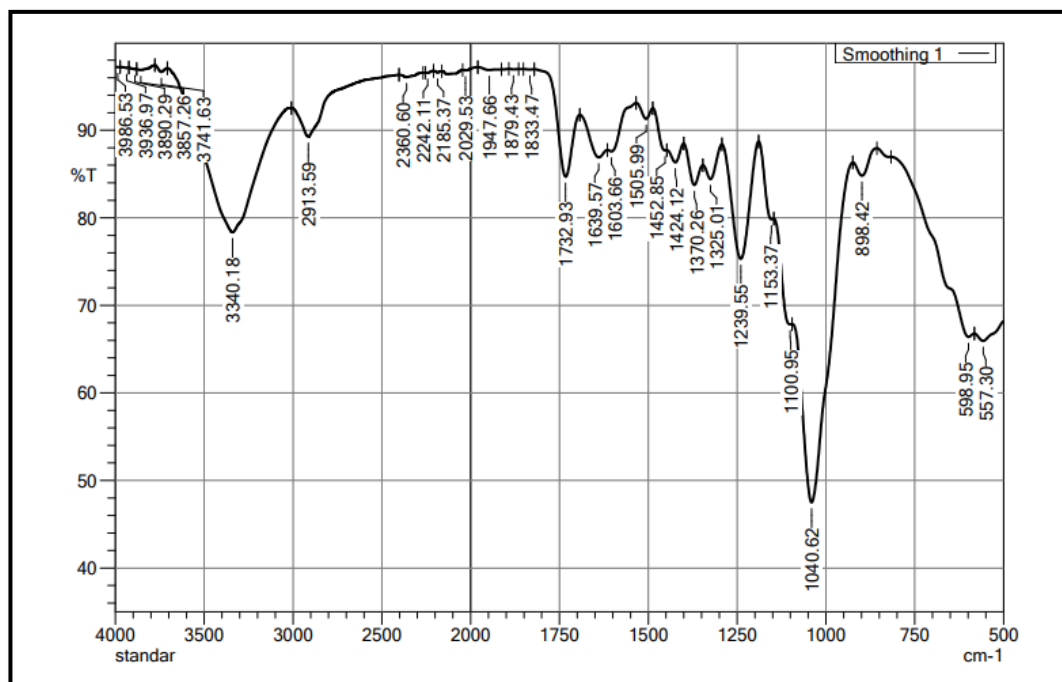
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1	558.73	65.14	1.52	580.99	499.84	2750.157	75.623	
2	598.95	65.69	2.10	816.55	580.99	5472.877	-26.771	
3	824.45	87.09	0.25	857.49	816.55	510.521	7.570	
4	898.42	85.06	2.40	922.84	857.49	877.435	69.055	
5	1040.62	46.57	26.41	1093.05	922.84	5947.962	2008.783	
6	1102.38	66.69	2.39	1145.47	1093.05	1492.706	90.420	
7	1156.24	79.03	2.91	1189.28	1145.47	755.488	64.465	
8	1240.27	74.71	13.88	1293.41	1189.28	1917.527	729.354	
9	1325.01	84.16	2.93	1347.28	1293.41	764.149	79.970	
10	1370.26	83.45	3.85	1400.42	1347.28	765.769	100.512	
11	1424.12	86.16	2.25	1446.38	1400.42	585.041	52.891	
12	1455.72	87.74	1.48	1486.60	1446.38	411.580	34.338	
13	1504.55	91.91	1.63	1531.84	1486.60	324.886	36.393	
14	1601.51	87.54	1.40	1614.43	1531.84	733.244	-8.968	

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SHIMADZU

15	1638.13	87.18	2.18	1693.43	1614.43	861.862	92.684	
16	1732.21	84.66	9.13	1849.27	1693.43	1031.922	262.657	
17	1857.89	97.59	0.01	1866.51	1849.27	41.363	0.134	
18	1929.71	97.48	0.04	1938.32	1889.49	120.344	1.090	
19	1946.22	97.46	0.08	1972.80	1938.32	84.359	1.370	
20	1992.19	97.64	0.03	1997.21	1980.70	38.617	0.245	
21	2003.68	97.63	0.02	2010.86	1997.21	32.229	0.155	
22	2030.25	97.43	0.18	2051.08	2010.86	99.960	4.070	
23	2114.99	96.94	0.04	2121.46	2105.66	47.953	0.266	
24	2127.92	96.94	0.02	2135.10	2121.46	41.606	0.113	
25	2205.48	97.26	0.02	2211.23	2199.02	33.332	0.147	
26	2349.11	96.91	0.05	2381.43	2331.16	153.975	1.470	
27	2388.61	96.95	0.02	2395.08	2381.43	41.563	0.104	
28	2910.72	89.90	3.96	2997.62	2395.08	3158.803	234.853	
29	3340.90	77.11	18.36	3702.13	2997.62	9172.511	6023.950	
30	3740.20	97.50	0.33	3775.39	3711.47	147.718	9.711	
31	3811.30	97.61	0.06	3818.48	3775.39	97.722	0.897	
32	3824.94	97.60	0.02	3831.40	3818.48	30.900	0.130	
33	3852.95	97.53	0.04	3860.13	3839.30	50.926	0.396	
34	3865.16	97.54	0.04	3876.65	3860.13	40.227	0.350	
35	3947.03	97.58	0.02	3954.93	3939.13	38.077	0.124	
36	3985.09	97.52	0.06	4000.17	3954.93	110.791	1.353	

3 ppm



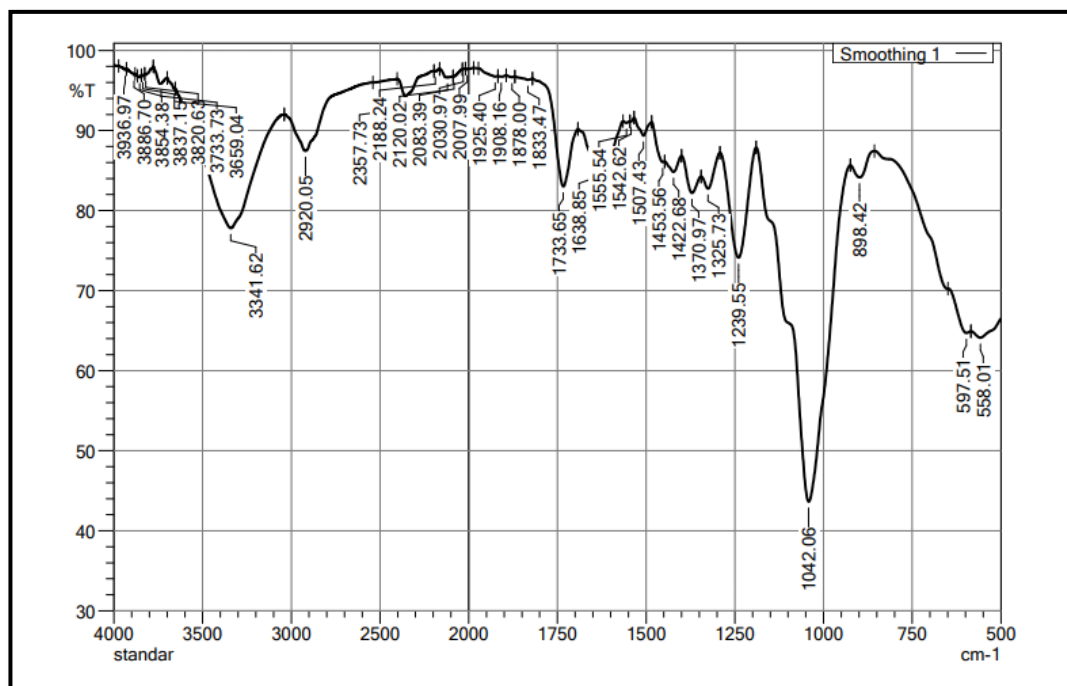
	Peak	Intensity	Corr. Intensity	Base (H)	Base (L)	Area	Corr. Area	Comment
1	557.30	65.95	1.26	582.43	499.84	2747.120	62.543	
2	598.95	66.40	1.80	816.55	582.43	5339.686	-76.403	
3	898.42	84.82	2.13	924.28	856.77	932.784	64.692	
4	1040.62	47.50	26.26	1095.20	924.28	5978.570	2063.155	
5	1100.95	67.83	1.37	1146.91	1095.20	1404.046	53.705	
6	1153.37	79.83	1.42	1189.28	1146.91	706.732	42.365	
7	1239.55	75.32	13.25	1292.69	1189.28	1875.423	692.508	
8	1325.01	84.42	2.55	1346.56	1292.69	757.333	68.362	
9	1370.26	83.75	3.37	1400.42	1346.56	777.136	91.024	
10	1424.12	86.33	1.79	1447.82	1400.42	605.943	42.637	
11	1452.85	87.70	0.64	1487.32	1447.82	409.377	19.575	
12	1505.99	91.30	1.46	1534.72	1487.32	373.417	33.322	
13	1603.66	87.59	0.92	1615.15	1534.72	762.354	-7.427	
14	1639.57	86.90	2.11	1692.71	1615.15	876.237	81.827	

1

SHIMADZU

15	1732.93	84.69	8.71	1821.26	1692.71	1028.383	305.265	
16	1833.47	96.93	0.05	1851.43	1821.26	91.673	0.665	
17	1879.43	96.96	0.04	1892.36	1865.07	82.384	0.509	
18	1947.66	96.89	0.20	1979.98	1913.19	201.411	6.338	
19	2029.53	96.83	0.13	2045.33	1979.98	198.092	5.200	
20	2185.37	96.60	0.17	2208.35	2163.11	149.644	3.596	
21	2242.11	96.56	0.07	2254.32	2208.35	153.680	1.457	
22	2360.60	96.08	0.34	2402.98	2267.24	503.247	22.477	
23	2913.59	89.26	3.88	3009.82	2402.98	3619.733	246.514	
24	3340.18	78.35	16.34	3706.44	3009.82	8890.979	5277.726	
25	3741.63	96.66	0.60	3777.54	3707.88	210.998	20.438	
26	3857.26	96.89	0.21	3880.24	3777.54	300.395	14.640	
27	3890.29	96.97	0.06	3924.76	3880.24	131.667	1.309	
28	3936.97	97.12	0.06	3973.60	3924.76	138.048	1.025	
29	3986.53	97.22	0.01	4000.17	3973.60	73.740	0.179	

5 ppm 30 g

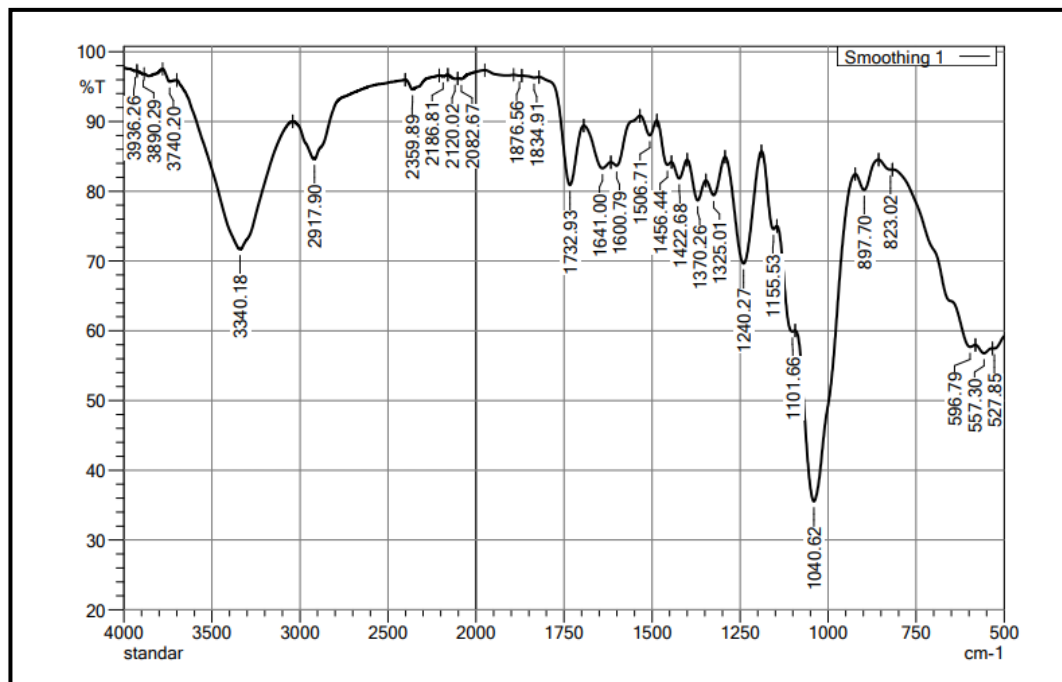


	Peak	Intensity	Corr. Intensity	Base (H)	Base (L)	Area	Corr. Area	Comment
1	558.01	64.12	1.30	584.59	499.84	2975.625	69.872	
2	597.51	64.72	1.28	649.22	584.59	2136.666	41.739	
3	898.42	84.14	2.20	924.28	856.77	978.411	70.859	
4	1042.06	43.63	43.02	1190.00	924.28	8690.691	5176.813	
5	1239.55	74.12	13.45	1291.98	1190.00	1967.474	698.664	
6	1325.73	82.74	2.60	1345.12	1291.98	827.414	69.604	
7	1370.97	82.21	3.25	1400.42	1345.12	891.013	91.657	
8	1422.68	84.84	1.67	1447.82	1400.42	681.511	41.261	
9	1453.56	86.06	0.86	1484.44	1447.82	444.525	27.296	
10	1507.43	89.36	1.96	1534.00	1484.44	477.808	48.482	
11	1542.62	91.13	0.14	1545.49	1534.00	100.096	1.025	
12	1555.54	90.95	0.22	1564.88	1545.49	173.381	2.139	
13	1638.85	85.76	2.31	1691.99	1612.28	994.560	86.036	
14	1733.65	83.01	9.24	1820.55	1691.99	1192.774	337.885	

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15	1833.47	96.34	0.22	1870.10	1820.55	173.089	5.737	
16	1878.00	96.66	0.13	1894.52	1870.10	79.441	1.853	
17	1908.16	96.73	0.12	1917.50	1894.52	73.982	1.627	
18	1925.40	96.75	0.20	1972.80	1917.50	158.677	8.590	
19	2007.99	97.64	0.14	2018.76	1985.72	75.299	2.349	
20	2030.97	97.65	0.04	2035.99	2018.76	39.899	0.412	
21	2083.39	96.75	0.10	2088.42	2035.99	148.821	2.946	
22	2120.02	96.63	0.52	2163.83	2088.42	231.785	22.231	
23	2188.24	97.38	0.12	2195.43	2163.83	78.479	1.270	
24	2357.73	94.32	2.36	2402.98	2195.43	817.591	185.003	
25	2920.05	87.46	5.51	3039.27	2540.15	3651.800	662.661	
26	3341.62	77.81	15.79	3654.02	3039.27	8593.426	4675.878	
27	3659.04	95.23	0.16	3699.98	3654.02	192.079	3.842	
28	3733.73	95.86	1.33	3777.54	3699.98	269.266	58.377	
29	3820.63	96.95	0.25	3827.09	3777.54	129.304	7.506	
30	3837.15	96.79	0.18	3845.05	3827.09	55.632	1.572	
31	3854.38	96.66	0.20	3867.31	3845.05	72.176	2.124	
32	3886.70	96.95	0.23	3929.07	3880.24	131.767	4.724	
33	3936.97	97.58	0.18	3973.60	3929.07	96.970	2.738	

5 ppm 20 g

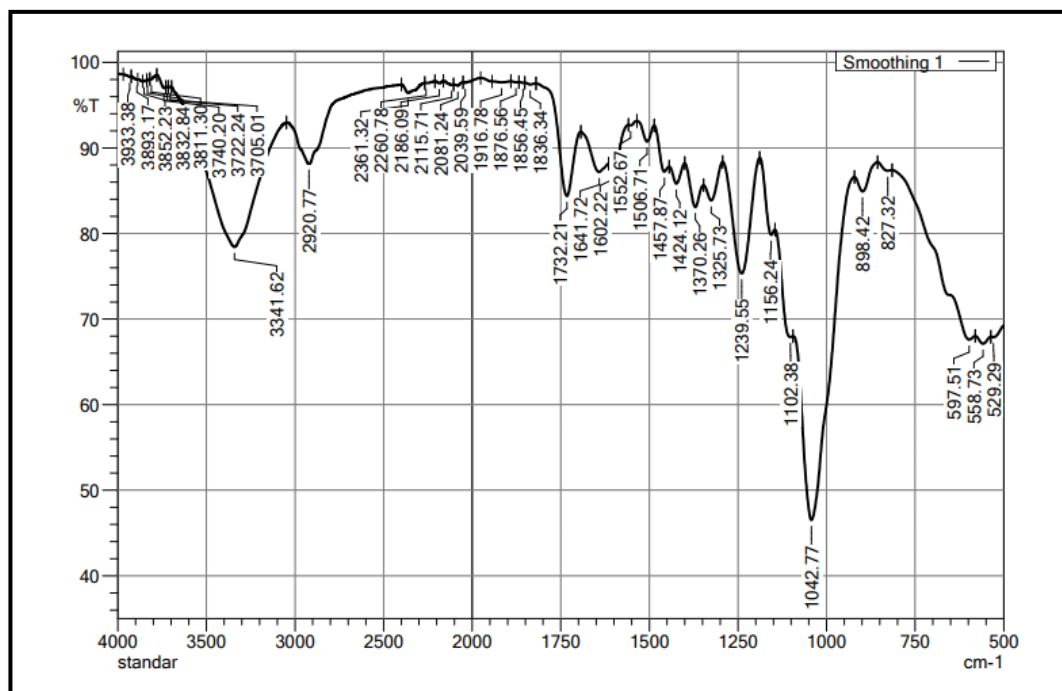


	Peak	Intensity	Corr. Intensity	Base (H)	Base (L)	Area	Corr. Area	Comment
1	527.85	57.47	0.31	533.60	499.84	1414.924	9.194	
2	557.30	56.77	0.95	581.71	533.60	2056.263	22.073	
3	596.79	57.68	1.90	817.27	581.71	6853.205	-85.925	
4	823.02	83.11	0.22	856.77	817.27	646.043	7.313	
5	897.70	80.20	3.05	922.84	856.77	1177.459	87.099	
6	1040.62	35.55	31.46	1093.76	922.84	7525.427	2610.168	
7	1101.66	59.89	2.43	1145.47	1093.76	1768.124	89.045	
8	1155.53	74.58	2.91	1189.28	1145.47	924.988	65.665	
9	1240.27	69.65	15.69	1292.69	1189.28	2343.329	827.048	
10	1325.01	79.43	3.50	1347.28	1292.69	1012.131	97.830	
11	1370.26	78.69	4.15	1400.42	1347.28	1009.475	108.493	
12	1422.68	81.84	2.52	1444.95	1400.42	752.796	56.426	
13	1456.44	83.78	2.05	1486.60	1444.95	580.638	46.163	
14	1506.71	88.02	2.41	1534.72	1486.60	512.830	54.988	

1

15	1600.79	83.68	1.82	1617.30	1534.72	1042.796	9.768	
16	1641.00	83.30	2.49	1694.15	1617.30	1103.900	89.019	
17	1732.93	80.89	10.65	1821.26	1694.15	1275.790	372.784	
18	1834.91	96.28	0.15	1870.10	1821.26	174.547	2.553	
19	1876.56	96.57	0.04	1893.08	1870.10	77.763	0.446	
20	2082.67	96.09	0.28	2103.50	1974.95	420.901	5.469	
21	2120.02	96.12	0.22	2159.52	2103.50	206.894	7.618	
22	2186.81	96.45	0.21	2209.07	2159.52	170.242	4.943	
23	2359.89	94.61	1.51	2401.54	2209.07	827.021	115.746	
24	2917.90	84.62	6.55	3040.71	2401.54	5015.155	545.074	
25	3340.18	71.68	21.04	3699.26	3040.71	11206.786	6584.031	
26	3740.20	95.72	1.02	3780.41	3699.26	305.035	39.655	
27	3890.29	96.81	0.08	3925.48	3885.27	120.725	1.777	
28	3936.26	97.22	0.09	4000.17	3925.48	189.690	0.176	

5 ppm 10 g



Peak	Intensity	Corr. Intensity	Base (H)	Base (L)	Area	Corr. Area	Comment
1	529.29	67.89	0.31	536.47	499.84	1159.069	8.705
2	558.73	67.13	0.86	580.28	536.47	1421.931	19.235
3	597.51	67.61	1.83	815.12	580.28	5219.248	-13.321
4	827.32	67.33	0.36	856.05	815.12	505.479	9.316
5	898.42	84.92	2.30	921.40	856.05	883.434	65.251
6	1042.77	46.52	27.05	1094.48	921.40	6073.602	2146.200
7	1102.38	67.90	2.04	1145.47	1094.48	1393.878	79.838
8	1156.24	79.85	2.71	1188.56	1145.47	720.966	59.890
9	1239.55	75.33	13.29	1293.41	1188.56	1894.128	700.273
10	1325.73	63.86	2.88	1347.28	1293.41	780.102	60.478
11	1370.26	83.09	3.67	1400.42	1347.28	789.408	95.422
12	1424.12	85.83	2.18	1444.23	1400.42	572.126	47.509
13	1457.87	67.23	2.14	1486.60	1444.23	459.663	45.458
14	1506.71	90.75	2.10	1535.43	1486.60	394.247	47.401

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SHIMADZU

15	1552.67	92.64	0.19	1559.13	1535.43	169.603	2.193
16	1602.22	87.80	1.37	1614.43	1559.13	562.664	33.960
17	1641.72	87.19	2.27	1693.43	1614.43	870.148	82.439
18	1732.21	84.38	9.24	1819.83	1693.43	1004.658	335.848
19	1836.34	97.41	0.17	1851.43	1819.83	79.014	2.494
20	1856.45	97.60	0.04	1867.94	1851.43	38.988	0.321
21	1876.56	97.66	0.08	1890.93	1867.94	52.672	0.883
22	1916.78	97.66	0.13	1944.07	1890.93	121.147	3.702
23	2039.59	97.60	0.16	2051.79	1976.39	164.354	8.010
24	2081.24	97.27	0.26	2105.66	2051.79	137.805	5.688
25	2115.71	97.37	0.11	2163.11	2105.66	140.353	3.764
26	2186.09	97.57	0.25	2209.79	2163.11	107.984	5.933
27	2260.78	97.58	0.04	2267.96	2209.79	136.081	2.285
28	2361.32	96.42	1.05	2399.39	2267.96	398.478	70.901
29	2920.77	88.15	5.69	3047.89	2399.39	3639.885	521.197
30	3341.62	78.42	16.44	3697.11	3047.89	8301.310	5090.708
31	3705.01	97.08	0.06	3715.78	3697.11	53.961	0.536
32	3722.24	97.07	0.06	3729.42	3715.78	39.481	0.407
33	3740.20	96.99	0.44	3780.41	3729.42	120.051	9.742
34	3811.30	97.99	0.16	3819.19	3780.41	68.113	1.988
35	3832.84	97.91	0.04	3836.43	3819.19	35.212	0.516
36	3852.23	97.77	0.07	3859.41	3836.43	49.811	0.763
37	3893.17	97.98	0.07	3924.76	3888.14	67.865	1.565
38	3933.38	98.31	0.11	3970.01	3924.76	70.075	1.931



**LABORATORIUM PRODUKTIVITAS & KUALITAS PERAIRAN
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Telp / Fax: +62-0411-599025, email: fkip@unhas.ac.id, website: http://fkip.unhas.ac.id

No : 02.UM.Sub/Lab.Air/II/2023
Pemilik sampel : Muhammad Rizal (Teknik UNHAS)
Tanggal terima sampel : 2 Maret 2023
Jumlah sampel : 2
Jenis sampel : Kapuk
Asal sampel : Lab. Metalurgi Fisik FTUH
Jenis Kegiatan : Penelitian S1

DATA HASIL PENGUJIAN

No	Kode Sampel	Parameter Uji		
		Kadar Lignin (%)	Kadar Selulosa (%)	Kadar Hemiselulosa (%)
1	Kapuk biasa	15,3	50,10	35,86
2	Kapuk 5 ppm (10 gr)	7,95	48,15	27,25

Pranata Lab. Pendidikan (PLP)

Fitriyani, S.Si., M.K.M
NIP 19771012 200112 2 001

Makassar, 20 Maret 2022
Kepala Lab.

Dr. Ir. Badraeni, MP
NIP 19651023 199103 2 001





**LABORATORIUM PRODUKTIVITAS & KUALITAS PERAIRAN
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Telp / Fax. +62-0411-586025, email : fkip@unhas.ac.id, website :http://fkip.unhas.ac.id

No : 08.UM.Sub/Lab.Air/III/2023
 Pemilik sampel : Muhammad Rijal (Teknik UNHAS)
 Tanggal terima sampel : 29 Maret 2023
 Jumlah sampel : 4
 Jenis sampel : Kapuk
 Asal sampel : Lab. Metalurgi Fisik FTUH
 Jenis Kegiatan : Penelitian S1

DATA HASIL PENGUJIAN

No	Kode Sampel	Parameter Uji		
		Kadar Lignin (%)	Kadar Selulosa (%)	Kadar Hemiselulosa (%)
1	1 ppm	13,3	39,60	32,79
2	3 ppm	9,00	47,57	29,07
3	5 ppm (20 gr)	7,45	48,91	27,94
4	5 ppm (30 gr)	7,37	49,30	28,09

Makassar, 8 Mei 2022

Pranata Lab. Pendidikan (PLP)



Fitriyani, S.Si, M.K.M

NIP.19771012 200112 2 001

Berat 10 gram

	Berat Awal (g)	Konsentrasi (ppm)	Berat Akhir	Selisih
	10,003		9,744	0,259
	10,002	1	9,756	0,246
	10,001		9,751	0,250
Average	10,002		9,750	0,252
STD	0,001		0,005	0,005
	10,002		9,589	0,413
	10,001	3	9,594	0,407
	10,002		9,596	0,406
Average	10,002		9,593	0,409
STD	0,000		0,003	0,003
	10,001		9,422	0,579
	10,002	5	9,417	0,585
	10,002		9,411	0,591
Average	10,002		9,417	0,585
STD	0,000		0,004	0,005

Berat 20 gram

	Berat Awal (g)	Konsentrasi (ppm)	Berat Akhir	Selisih
	20,000		19,578	0,422
	20,001	1	19,585	0,416
	20,004		19,583	0,421
	20,002		19,582	0,420
	0,002		0,003	0,003
	20,003		19,414	0,589
	20,005	3	19,409	0,596
	20,001		19,416	0,585
	20,003		19,413	0,590
	0,002		0,003	0,005
	20,004		19,382	0,622
	20,003	5	19,380	0,623
	20,004		19,385	0,619
	20,004		19,382	0,621
	0,000		0,002	0,002

Berat 30 gram

Berat Awal (g)	Konsentrasi (ppm)	Berat Akhir	Selisih
30,001		29,339	0,662
30,000	1,000	29,334	0,666
30,002		29,341	0,661
30,001		29,338	0,663
0,001		0,003	0,002
30,005		29,251	0,754
30,008	3,000	29,252	0,756
30,007		29,254	0,753
30,007		29,252	0,754
0,001		0,001	0,001
30,010		29,197	0,813
30,012	5,000	29,195	0,817
30,015		29,193	0,822
30,012		29,195	0,817
0,002		0,002	0,004

Selisih rata-rata

Berat (g)	Konsentrasi (ppm)	Selisih rata-rata	Standar Deviasi
10	1	0,252	0,005
10	3	0,409	0,003
10	5	0,585	0,005
20	1	0,420	0,003
20	3	0,59	0,005
20	5	0,621	0,002
30	1	0,663	0,002
30	3	0,754	0,001
30	5	0,817	0,004

