

LAMPIRAN

1. Lampiran Perhitungan

1.1 Pembuatan Larutan H₃PO₄ 1 M dalam 100 mL

$$\rho \text{ H}_3\text{PO}_4 = 1,71 \text{ kg/L}$$

$$m = \rho \times V$$

$$m = 1,71 \text{ kg/L} \times 1 \text{ L}$$

$$m = 1710 \text{ gram} \rightarrow \text{jika kadar } 100\%$$

$$\text{massa H}_3\text{PO}_4 \text{ 85\%} = \frac{85\%}{100\%} \times 1710 \text{ gram}$$

$$= 1453,5 \text{ gram}$$

$$M = \frac{\text{mol}}{L}$$

$$M = \frac{m/Mr}{L}$$

$$M = \frac{1453,3 \text{ gram} / 98 \text{ gram/mol}}{1 \text{ L}}$$

$$M = 14,83 \text{ M}$$

Untuk membuat konsentrasi H₃PO₄ 1 M

$$M_1 \cdot V_1 = M_2 \cdot V_2$$

$$1 \text{ M} \cdot 100 \text{ mL} = 14,83 \text{ M} \cdot V_2$$

$$V_2 = 6,74 \text{ mL}$$

1.2 Pembuatan Larutan Standar KOH 0,1 M dalam 100 mL

$$M = \frac{\text{mol}}{L}$$

$$0,1 M = \frac{\text{mol}}{0,1 L}$$

$$\begin{aligned} \text{mol} &= 0,1 M \times 0,1 L \\ &= 0,01 \text{ mol} \end{aligned}$$

$$\text{mol} = \frac{\text{gram}}{Mr}$$

$$0,01 \text{ mol} = \frac{\text{gram}}{56 \frac{\text{gram}}{\text{mol}}}$$

gram = 0,56 gram, dilarutkan dalam 100 mL akuades
KOH hasil standarisasi

$$V_1 \cdot N_1 = V_2 \cdot N_2$$

$$5 \times 3 = 30 \cdot N_2$$

$N_2 = 0,5$ N KOH terstandar adalah konsentrasi 0,5 M.

1.3 Perhitungan Kebasaan Katalis

Volume titrasi katalis sebelum digunakan: 0,6 mL

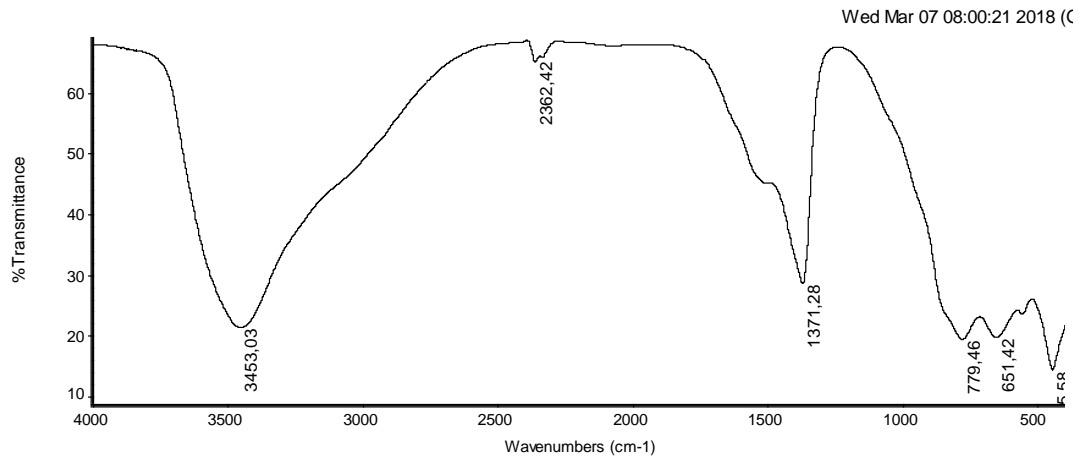
Volume titrasi katalis sesudah digunakan: 1.2 mL

$$\begin{aligned} \text{Katalis sebelum digunakan:} &= \frac{V_o - V_t \times 3}{m} \\ &= \frac{30 - 0,6 \times 3}{0,1} \end{aligned}$$

$$= 882 \text{ mgrek/gram}$$

$$\begin{aligned} \text{Katalis setelah digunakan:} &= \frac{V_o - V_t \times 3}{m} \\ &= \frac{30 - 1,2 \times 3}{0,1} \end{aligned}$$

$$= 864 \text{ mgrek/gram}$$



Collection time: Tue Mar 06 13:41:24 2018 (GMT+0);

Wed Mar 07 08:00:15 2018 (GMT+07:00)

FIND PEAKS:

Spectrum: *1564-1 Sorbacid Sebelum

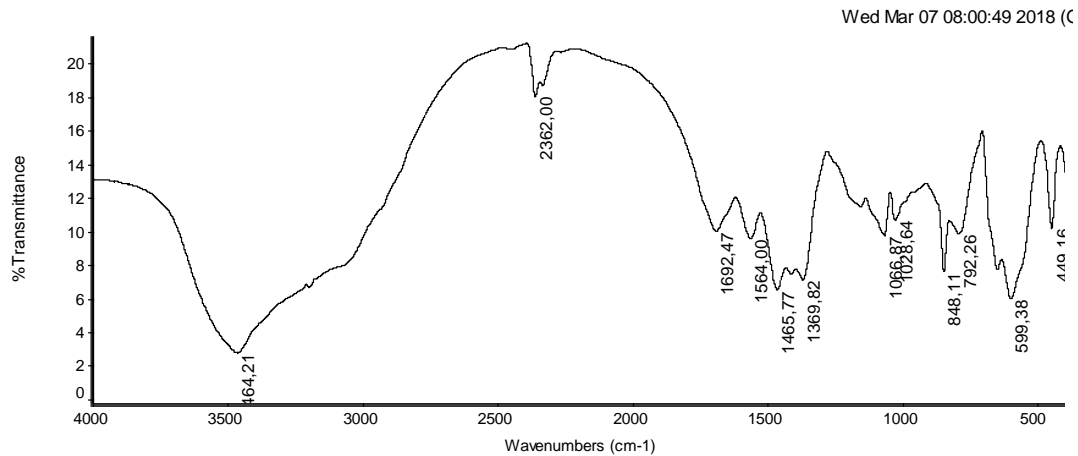
Region: 4000,00 400,00

Absolute threshold: 70,337

Sensitivity: 51

Peak list:

Position: 445,58	Intensity: 14,101
Position: 779,46	Intensity: 19,137
Position: 651,42	Intensity: 19,399
Position: 3453,03	Intensity: 21,059
Position: 1371,28	Intensity: 28,298
Position: 2362,42	Intensity: 64,946



Collection time: Tue Mar 06 13:45:12 2018 (GMT+0);

Wed Mar 07 08:00:47 2018 (GMT+07:00)

FIND PEAKS:

Spectrum: *1564-2 Katalis Sebelum

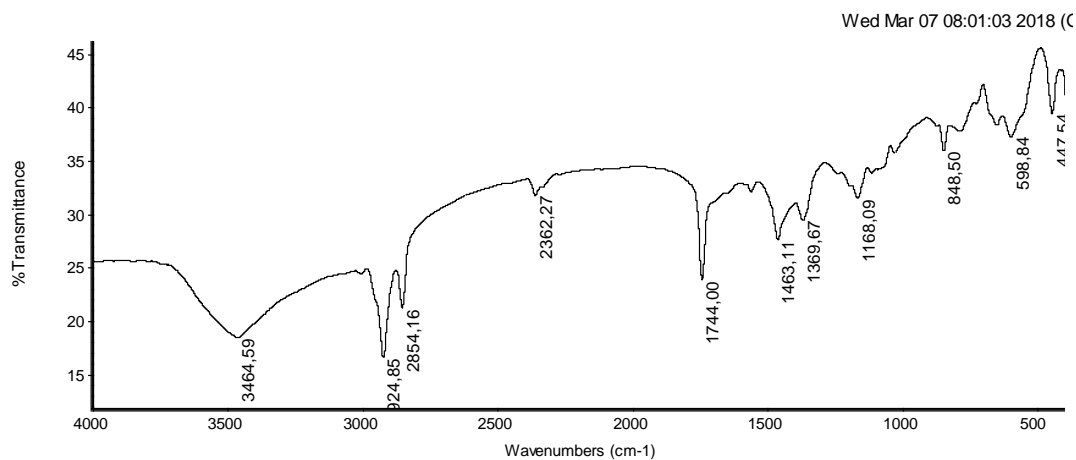
Region: 4000,00 400,00

Absolute threshold: 21,676

Sensitivity: 51

Peak list:

Position: 3464.21	Intensity: 2,657
Position: 599.38	Intensity: 5,905
Position: 1465.77	Intensity: 6,429
Position: 1369.82	Intensity: 7,036
Position: 848.11	Intensity: 7,511
Position: 1564.00	Intensity: 9,464
Position: 1066.87	Intensity: 9,658
Position: 792.26	Intensity: 9,764
Position: 1692.47	Intensity: 9,915
Position: 449.16	Intensity: 10,085
Position: 1028.64	Intensity: 10,628
Position: 2362.00	Intensity: 17,987



Collection time: Tue Mar 06 13:51:31 2018 (GMT+0);

Wed Mar 07 08:01:02 2018 (GMT+07:00)

FIND PEAKS:

Spectrum: *1564-3 Katalis Setelah

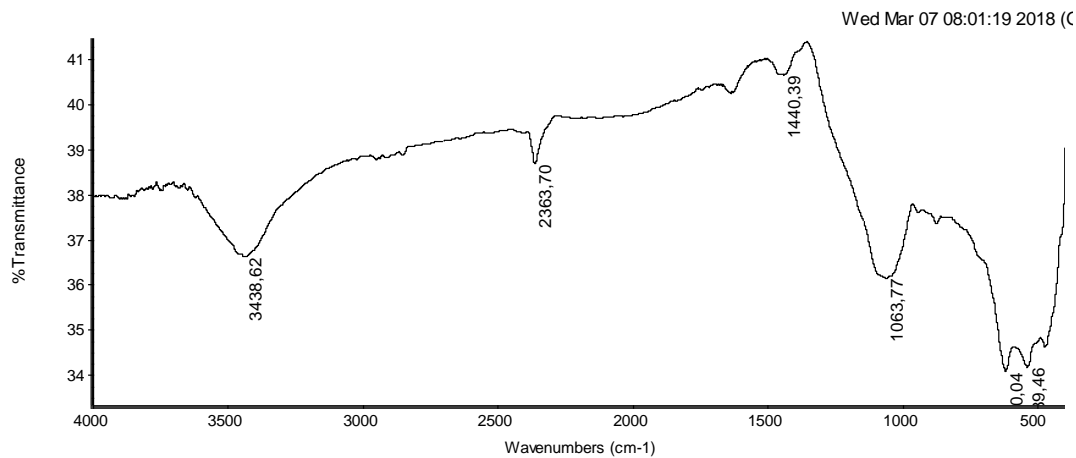
Region: 4000,00 400,00

Absolute threshold: 46,366

Sensitivity: 51

Peak list:

Position: 2924,85	Intensity: 16,399
Position: 3464,59	Intensity: 18,276
Position: 2854,16	Intensity: 20,997
Position: 1744,00	Intensity: 23,703
Position: 1463,11	Intensity: 27,482
Position: 1369,67	Intensity: 29,340
Position: 1168,09	Intensity: 31,390
Position: 2362,27	Intensity: 31,678
Position: 848,50	Intensity: 35,845
Position: 598,84	Intensity: 37,153
Position: 447,54	Intensity: 39,351



Collection time: Tue Mar 06 14:05:40 2018 (GMT+0);

Wed Mar 07 08:01:17 2018 (GMT+07:00)

FIND PEAKS:

Spectrum: *1564-4 Sampel K (1)

Region: 4000,00 400,00

Absolute threshold: 41,598

Sensitivity: 51

Peak list:

Position: 620,04	Intensity: 34,049
Position: 539,46	Intensity: 34,133
Position: 1063,77	Intensity: 36,110
Position: 3438,62	Intensity: 36,585
Position: 2363,70	Intensity: 38,648
Position: 1440,39	Intensity: 40,620



Collection time: Tue Mar 06 14:00:12 2018 (GMT+0)

Wed Mar 07 08:01:33 2018 (GMT+07:00)

FIND PEAKS:

Spectrum: *1564-5 Sampel K (2)

Region: 4000,00 400,00

Absolute threshold: 34,480

Sensitivity: 51

Peak list:

Position: 622,45 Intensity: 22,129

Position: 535,11 Intensity: 22,524

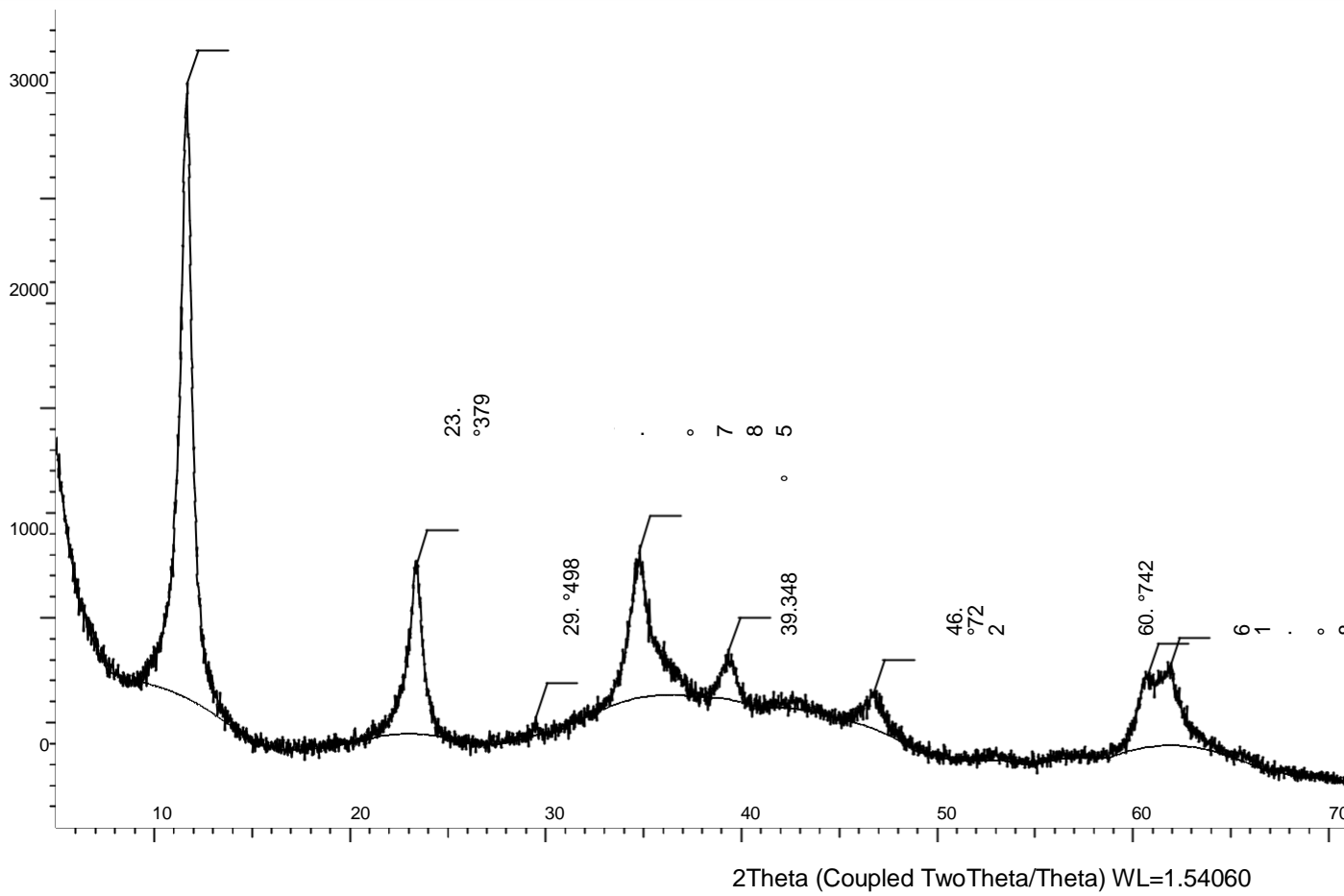
Position: 1037,57 Intensity: 26,283

Position: 3432,24 Intensity: 26,495

Position: 2364,71 Intensity: 29,835

Sorbacid_Is Fatimah.brml, 22-Jan-18 2:29:08 PM

1 1 . 6



11.666 °

23.379 °

29.498 °

34.785 °

39.348 °

46.722 °

60.742 °

61.820 °

Sorbacid_Is Fatimah.brml, 22-Jan-18 2:29:08 PM

7.57926 Å	2927	3543	100.0 %	n.a.
3.80191 Å	806	1253	27.5 %	n.a.
3.02570 Å	80.9	523	2.8 %	n.a.
2.57701 Å	701	1320	23.9 %	n.a.
2.28801 Å	225	836	7.7 %	n.a.
1.94262 Å	161	633	5.5 %	n.a.
1.52354 Å	331	714	11.3 %	n.a.
1.49954 Å	349	740	11.9 %	n.a.

No

No

No

No

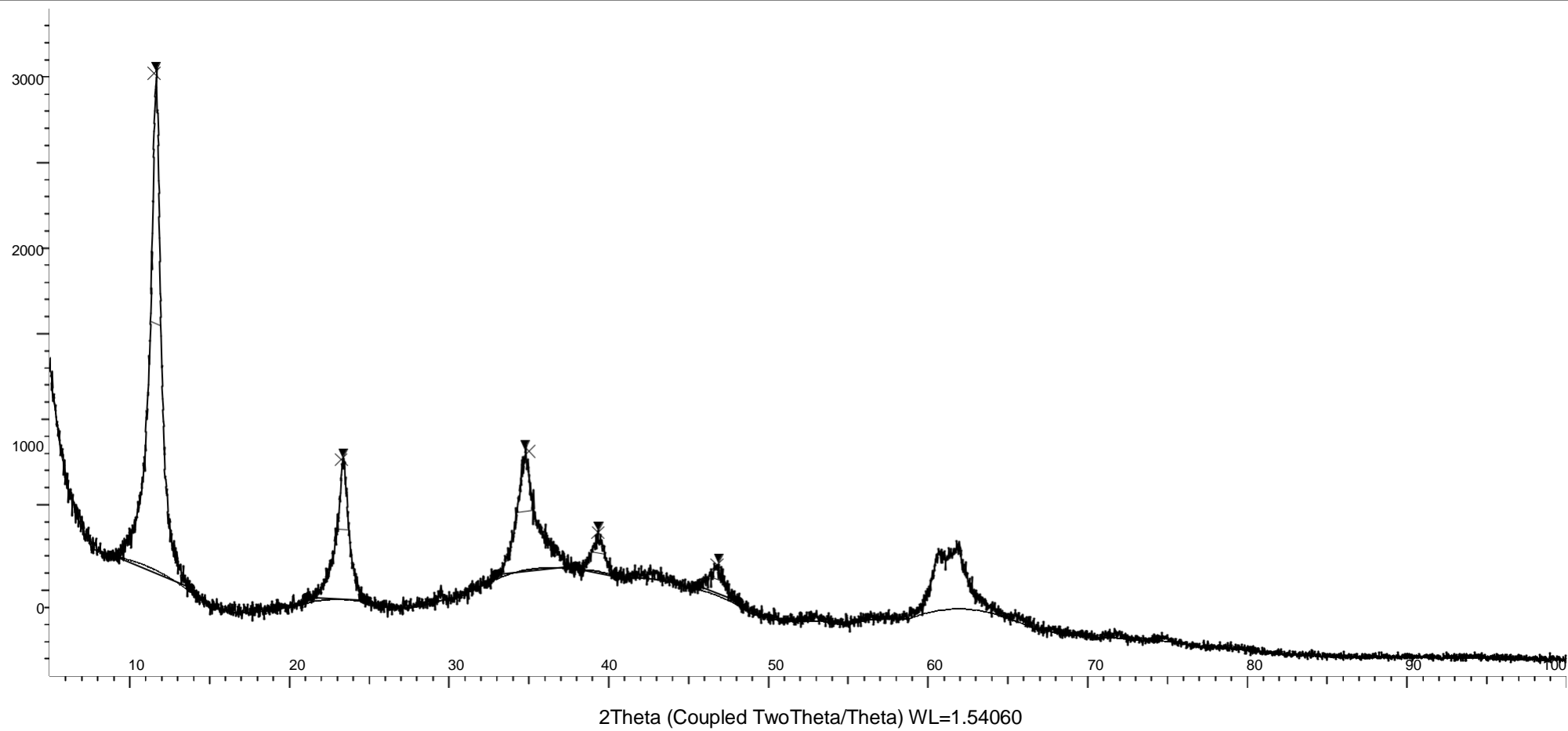
No

No



No

No

Sorbacid_Is Fatimah.brml, 22-Jan-18 2:31:13 PM



Sorbacid_Is Fatimah.brml, 22-Jan-18 2:31:13 PM

Yes			1	[8.862 ° - 13.818 °]	Area List #1	Sorbacid_Is Fatimah.brml #1
Yes			2	[21.110 ° - 24.787 °]	Area List #1	Sorbacid_Is Fatimah.brml #1
Yes			3	[32.973 ° - 37.930 °]	Area List #1	Sorbacid_Is Fatimah.brml #1
Yes			4	[38.295 ° - 40.530 °]	Area List #1	Sorbacid_Is Fatimah.brml #1
Yes			5	[45.567 ° - 48.188 °]	Area List #1	Sorbacid_Is Fatimah.brml #1

8.862 °	13.818 °	10.7	7.79
21.110 °	24.787 °	6.96	6.72
32.973 °	37.930 °	9.01	9.76
38.295 °	40.530 °	9.42	8.82
45.567 °	48.188 °	8.01	6.58

11.644 °	7.59365 Å	53.7	44.6	0.673	11.622 °
23.374 °	3.80275 Å	19.3	12.5	0.758	23.343 °
34.757 °	2.57899 Å	20.0	10.7	1.055	34.736 °
39.360 °	2.28735 Å	12.8	3.63	0.809	39.355 °
46.889 °	1.93609 Å	9.90	2.61	0.799	46.799 °

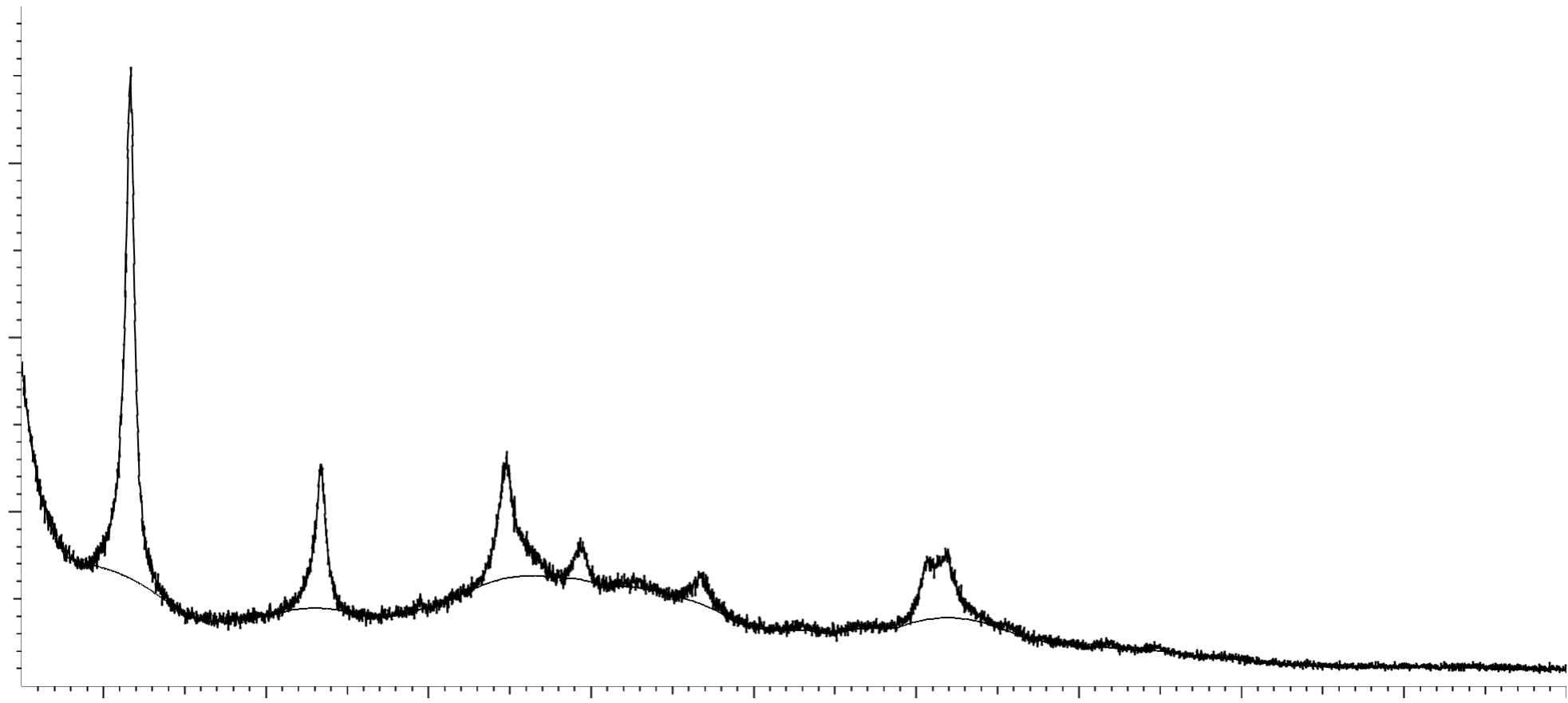
S0rbacid_Is Fatimah.brml, 22-Jan-18 2:31:13 PM

7.60819 Å	0.942	11.530 °	7.66861 Å	87.95	42.02	131.9 Å	1.000
3.80774 Å	0.975	23.246 °	3.82340 Å	37.29	12.15	118.9 Å	1.000
2.58048 Å	1.446	35.018 °	2.56037 Å	62.03	15.51	87.7 Å	1.000
2.28760 Å	0.876	39.346 °	2.28811 Å	23.56	3.181	115.9 Å	1.000
1.93961 Å	0.960	46.788 °	1.94003 Å	21.62	2.502	120.4 Å	1.000

0.000

No

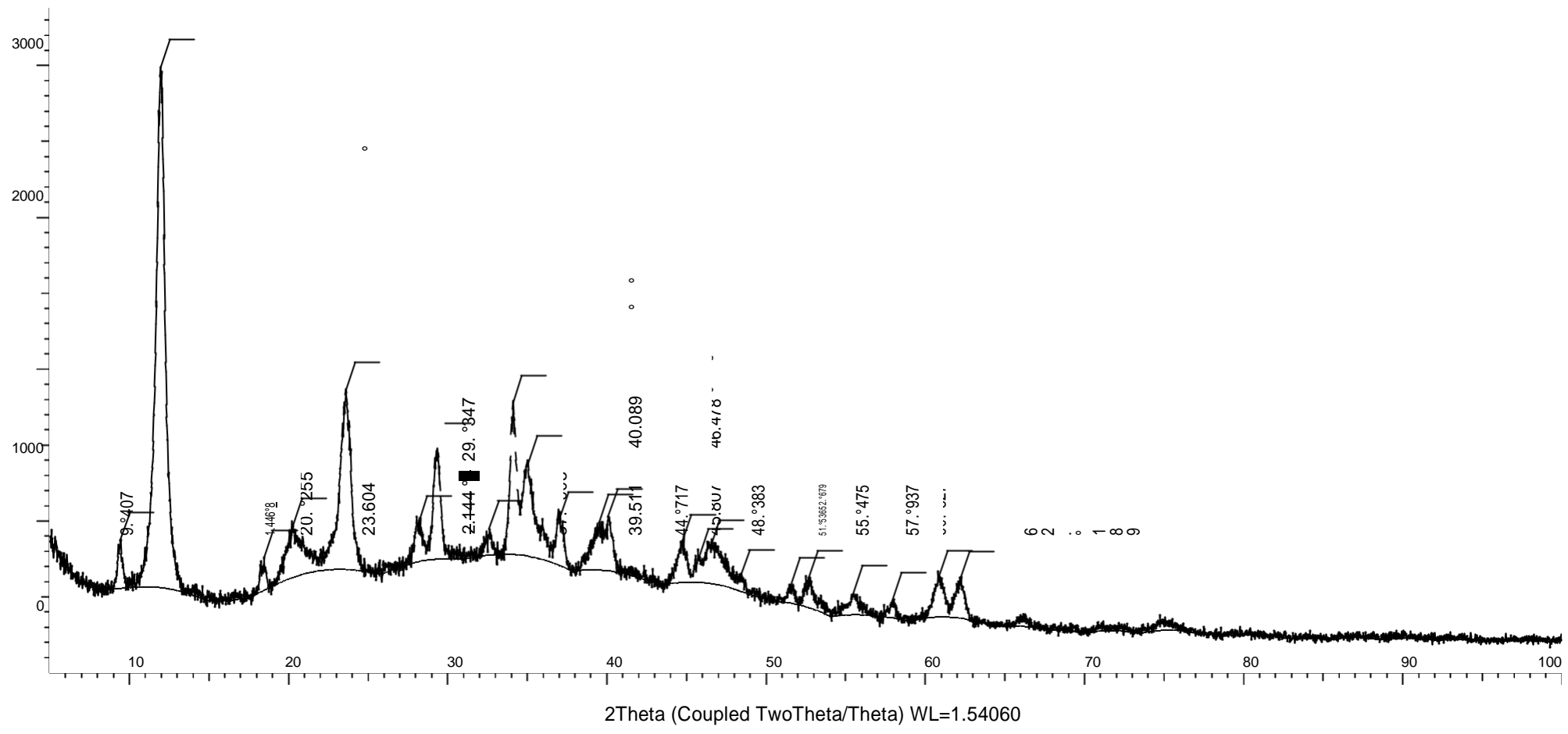
0.000 No
0.000 No
0.000 No
0.000 No



Kitosan+Sorbacid_Is Fatimah.brml, 22-Jan-18 2:35:13 PM

← ↩ ☉

4000



Kitosan+Sorbacid_Is Fatimah.brml, 22-Jan-18 2:35:13 PM

Yes			1	Peak #1	Peak List #1	9.407 °	Kitosan+Sorbacid_Is Fatimah.brml #1
Yes			2	Peak #2	Peak List #1	11.969 °	Kitosan+Sorbacid_Is Fatimah.brml #1
Yes			3	Peak #3	Peak List #1	18.446 °	Kitosan+Sorbacid_Is Fatimah.brml #1
Yes			4	Peak #4	Peak List #1	20.255 °	Kitosan+Sorbacid_Is Fatimah.brml #1
Yes			5	Peak #5	Peak List #1	23.604 °	Kitosan+Sorbacid_Is Fatimah.brml #1
Yes			6	Peak #6	Peak List #1	28.144 °	Kitosan+Sorbacid_Is Fatimah.brml #1
Yes			7	Peak #7	Peak List #1	29.347 °	Kitosan+Sorbacid_Is Fatimah.brml #1
Yes			8	Peak #8	Peak List #1	32.622 °	Kitosan+Sorbacid_Is Fatimah.brml #1

Yes			9	Peak #9	Peak List #1	34.094 °	Kitosan+Sorbacid_Is Fatimah.brml #1
Yes			10	Peak #10	Peak List #1	35.034 °	Kitosan+Sorbacid_Is Fatimah.brml #1
Yes			11	Peak #11	Peak List #1	37.003 °	Kitosan+Sorbacid_Is Fatimah.brml #1
Yes			12	Peak #12	Peak List #1	39.511 °	Kitosan+Sorbacid_Is Fatimah.brml #1
Yes			13	Peak #13	Peak List #1	40.089 °	Kitosan+Sorbacid_Is Fatimah.brml #1
Yes			14	Peak #14	Peak List #1	44.717 °	Kitosan+Sorbacid_Is Fatimah.brml #1
Yes			15	Peak #15	Peak List #1	45.807 °	Kitosan+Sorbacid_Is Fatimah.brml #1
Yes			16	Peak #16	Peak List #1	46.478 °	Kitosan+Sorbacid_Is Fatimah.brml #1
Yes			17	Peak #17	Peak List #1	48.383 °	Kitosan+Sorbacid_Is Fatimah.brml #1
Yes			18	Peak #18	Peak List #1	51.536 °	Kitosan+Sorbacid_Is Fatimah.brml #1

Yes			19	Peak #19	Peak List #1	52.679 °	Kitosan+Sorbacid_Is Fatimah.brml #1
Yes			20	Peak #20	Peak List #1	55.475 °	Kitosan+Sorbacid_Is Fatimah.brml #1
Yes			21	Peak #21	Peak List #1	57.937 °	Kitosan+Sorbacid_Is Fatimah.brml #1
Yes			22	Peak #22	Peak List #1	60.827 °	Kitosan+Sorbacid_Is Fatimah.brml #1
Yes			23	Peak #23	Peak List #1	62.189 °	Kitosan+Sorbacid_Is Fatimah.brml #1

Kitosan+Sorbacid_Is Fatimah.brml, 22-Jan-18 2:35:13 PM

9.407 °
11.969 °
18.446 °
20.255 °
23.604 °
28.144 °
29.347 °
32.622 °

34.094 °

35.034 °

37.003 °

39.511 °

40.089 °

44.717 °

45.807 °

46.478 °

48.383 °

51.536 °

52.679 °

55.475 °

57.937 °

60.827 °

62.189 °

Kitosan+Sorbacid_Is Fatimah.brml, 22-Jan-18 2:35:13 PM

9.39388 Å	313	870	9.1 %	n.a.
7.38857 Å	3427	3988	100.0 %	n.a.
4.80593 Å	210	754	6.1 %	n.a.
4.38080 Å	336	964	9.8 %	n.a.
3.76620 Å	1178	1861	34.4 %	n.a.
3.16809 Å	251	982	7.3 %	n.a.
3.04092 Å	709	1459	20.7 %	n.a.
2.74276 Å	173	948	5.0 %	n.a.
2.62759 Å	995	1774	29.0 %	n.a.
2.55922 Å	607	1375	17.7 %	n.a.
2.42746 Å	299	1008	8.7 %	n.a.
2.27894 Å	311	989	9.1 %	n.a.
2.24744 Å	352	1025	10.3 %	n.a.
2.02495 Å	262	858	7.6 %	n.a.
1.97930 Å	169	766	4.9 %	n.a.
1.95226 Å	231	821	6.7 %	n.a.
1.87976 Å	86.7	625	2.5 %	n.a.

1.77190 Å	114	574	3.3 %	n.a.
1.73612 Å	192	622	5.6 %	n.a.
1.65507 Å	136	519	4.0 %	n.a.
1.59044 Å	113	474	3.3 %	n.a.
1.52161 Å	256	623	7.5 %	n.a.
1.49153 Å	257	617	7.5 %	n.a.

Kitosan+Sorbacid_Is Fatimah.brml, 22-Jan-18 2:35:13 PM

No
No
No
No
No
No
No
No

No

No

No

No

No

No

No

No

No

No

No

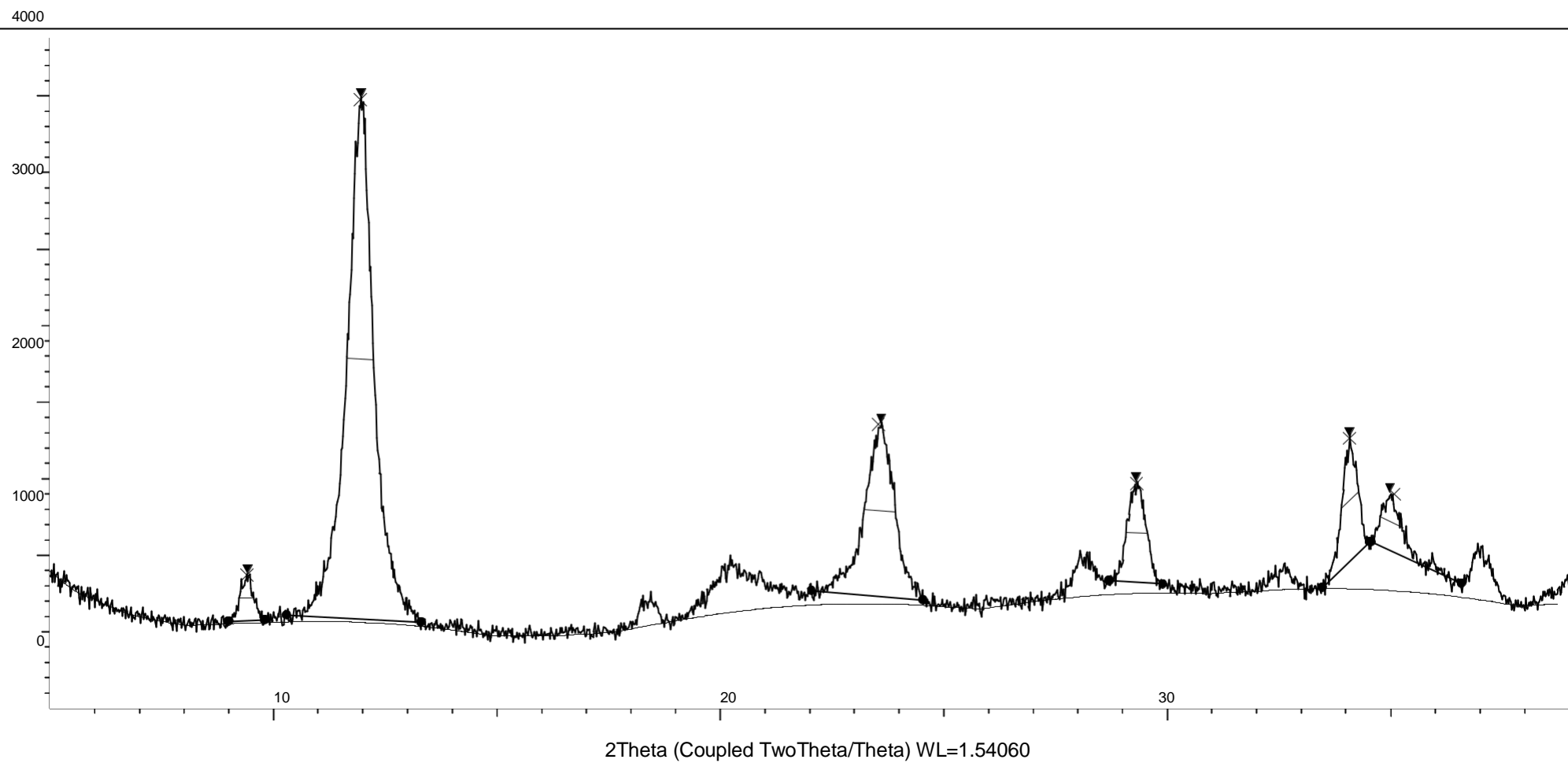
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







No

No

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Kitosan+Sorbacid_Is Fatimah.brml, 22-Jan-18 2:37:50 PM

Yes			1	[9.004 ° - 9.816 °]	Area List #1	Kitosan+Sorbacid_Is Fatimah.brml #1
Yes			2	[10.304 ° - 13.310 °]	Area List #1	Kitosan+Sorbacid_Is Fatimah.brml #1
Yes			3	[22.045 ° - 24.543 °]	Area List #1	Kitosan+Sorbacid_Is Fatimah.brml #1
Yes			4	[28.708 ° - 29.906 °]	Area List #1	Kitosan+Sorbacid_Is Fatimah.brml #1
Yes			5	[33.481 ° - 34.537 °]	Area List #1	Kitosan+Sorbacid_Is Fatimah.brml #1
Yes			6	[34.578 ° - 36.589 °]	Area List #1	Kitosan+Sorbacid_Is Fatimah.brml #1

9.004 °	9.816 °	8.66	8.79
10.304 °	13.310 °	9.26	8.56
22.045 °	24.543 °	11.7	10.8
28.708 °	29.906 °	12.7	12.4
33.481 °	34.537 °	12.0	16.6
34.578 °	36.589 °	16.6	12.4

9.422 °	9.37948 Å	13.3	4.53	0.340	9.397 °
11.959 °	7.39421 Å	60.6	51.8	0.604	11.945 °
23.593 °	3.76790 Å	28.2	17.1	0.706	23.571 °
29.308 °	3.04485 Å	22.4	9.84	0.474	29.317 °
34.084 °	2.62835 Å	26.9	12.3	0.385	34.094 °
34.987 °	2.56259 Å	21.3	5.61	0.518	35.017 °

9.40419 Å	0.337	9.403 °	9.39770 Å	8.617	1.528	260.2
7.40295 Å	0.728	11.941 °	7.40586 Å	64.47	37.68	147.0
3.77132 Å	0.794	23.535 °	3.77709 Å	41.67	13.60	127.7
3.04400 Å	0.480	29.317 °	3.04398 Å	19.77	4.730	192.4
2.62757 Å	0.397	34.075 °	2.62905 Å	19.99	4.877	239.7
2.56047 Å	0.531	35.082 °	2.55584 Å	32.11	2.979	178.7

Kitosan+Sorbacid_Is Fatimah.brml, 22-Jan-18 2:32:34 PM

