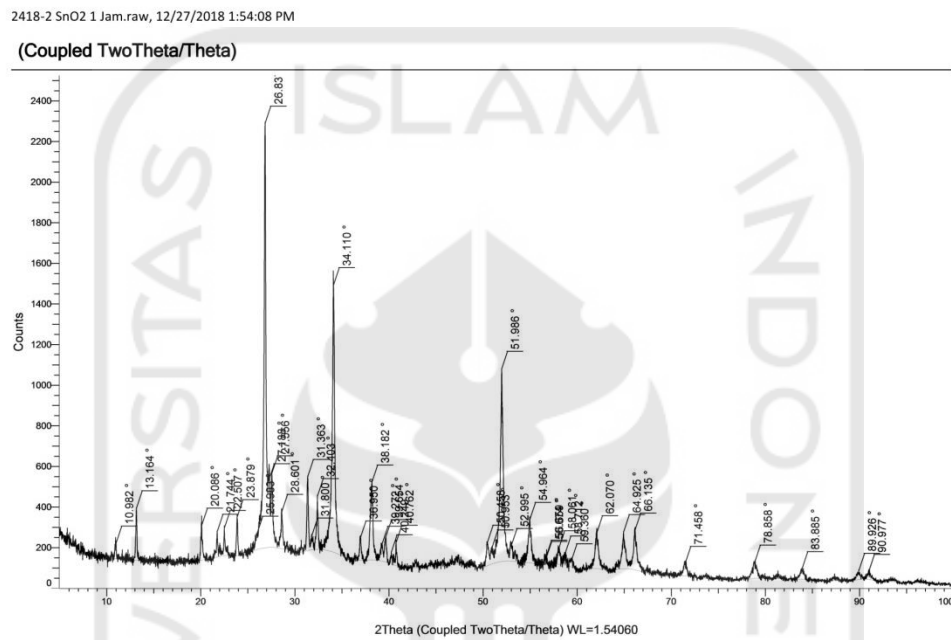


Lampiran 4. Hasil karakterisasi Green Synthesis nanopartikel SnO₂

4.1 Hasil Karakterisasi XRD



2418-2 SnO2 1 Jam.raw, 12/27/2018 1:54:08 PM

Peak List #1

Visible	Icon	Color	Index	Name	Parent	Caption (display)	Scan	Angle
Yes		■	39	Peak #39	Peak List #1	90.977 °	2418-2 SnO2 1 Jam.raw #1	90.977 °
Yes		■	38	Peak #38	Peak List #1	89.926 °	2418-2 SnO2 1 Jam.raw #1	89.926 °
Yes		■	37	Peak #37	Peak List #1	83.885 °	2418-2 SnO2 1 Jam.raw #1	83.885 °
Yes		■	36	Peak #36	Peak List #1	78.858 °	2418-2 SnO2 1 Jam.raw #1	78.858 °
Yes		■	35	Peak #35	Peak List #1	71.458 °	2418-2 SnO2 1 Jam.raw #1	71.458 °
Yes		■	34	Peak #34	Peak List #1	66.135 °	2418-2 SnO2 1 Jam.raw #1	66.135 °
Yes		■	33	Peak #33	Peak List #1	64.925 °	2418-2 SnO2 1 Jam.raw #1	64.925 °
Yes		■	32	Peak #32	Peak List #1	62.070 °	2418-2 SnO2 1 Jam.raw #1	62.070 °
Yes		■	31	Peak #31	Peak List #1	59.360 °	2418-2 SnO2 1 Jam.raw #1	59.360 °
Yes		■	30	Peak #30	Peak List #1	58.712 °	2418-2 SnO2 1 Jam.raw #1	58.712 °
Yes		■	29	Peak #29	Peak List #1	58.061 °	2418-2 SnO2 1 Jam.raw #1	58.061 °
Yes		■	28	Peak #28	Peak List #1	56.674 °	2418-2 SnO2 1 Jam.raw #1	56.674 °
Yes		■	27	Peak #27	Peak List #1	56.659 °	2418-2 SnO2 1 Jam.raw #1	56.659 °
Yes		■	26	Peak #26	Peak List #1	54.964 °	2418-2 SnO2 1 Jam.raw #1	54.964 °
Yes		■	25	Peak #25	Peak List #1	52.995 °	2418-2 SnO2 1 Jam.raw #1	52.995 °
Yes		■	24	Peak #24	Peak List #1	51.986 °	2418-2 SnO2 1 Jam.raw #1	51.986 °
Yes		■	23	Peak #23	Peak List #1	50.953 °	2418-2 SnO2 1 Jam.raw #1	50.953 °
Yes		■	22	Peak #22	Peak List #1	50.458 °	2418-2 SnO2 1 Jam.raw #1	50.458 °
Yes		■	21	Peak #21	Peak List #1	40.762 °	2418-2 SnO2 1 Jam.raw #1	40.762 °
Yes		■	20	Peak #20	Peak List #1	40.249 °	2418-2 SnO2 1 Jam.raw #1	40.249 °
Yes		■	19	Peak #19	Peak List #1	39.654 °	2418-2 SnO2 1 Jam.raw #1	39.654 °
Yes		■	18	Peak #18	Peak List #1	39.272 °	2418-2 SnO2 1 Jam.raw #1	39.272 °
Yes		■	17	Peak #17	Peak List #1	38.182 °	2418-2 SnO2 1 Jam.raw #1	38.182 °
Yes		■	16	Peak #16	Peak List #1	36.950 °	2418-2 SnO2 1 Jam.raw #1	36.950 °
Yes		■	15	Peak #15	Peak List #1	34.110 °	2418-2 SnO2 1 Jam.raw #1	34.110 °
Yes		■	14	Peak #14	Peak List #1	32.403 °	2418-2 SnO2 1 Jam.raw #1	32.403 °
Yes		■	13	Peak #13	Peak List #1	31.800 °	2418-2 SnO2 1 Jam.raw #1	31.800 °
Yes		■	12	Peak #12	Peak List #1	31.363 °	2418-2 SnO2 1 Jam.raw #1	31.363 °
Yes		■	11	Peak #11	Peak List #1	28.601 °	2418-2 SnO2 1 Jam.raw #1	28.601 °
Yes		■	10	Peak #10	Peak List #1	27.556 °	2418-2 SnO2 1 Jam.raw #1	27.556 °
Yes		■	9	Peak #9	Peak List #1	27.188 °	2418-2 SnO2 1 Jam.raw #1	27.188 °
Yes		■	8	Peak #8	Peak List #1	26.837 °	2418-2 SnO2 1 Jam.raw #1	26.837 °
Yes		■	7	Peak #7	Peak List #1	25.983 °	2418-2 SnO2 1 Jam.raw #1	25.983 °
Yes		■	6	Peak #6	Peak List #1	23.879 °	2418-2 SnO2 1 Jam.raw #1	23.879 °
Yes		■	5	Peak #5	Peak List #1	22.507 °	2418-2 SnO2 1 Jam.raw #1	22.507 °
Yes		■	4	Peak #4	Peak List #1	21.744 °	2418-2 SnO2 1 Jam.raw #1	21.744 °
Yes		■	3	Peak #3	Peak List #1	20.086 °	2418-2 SnO2 1 Jam.raw #1	20.086 °
Yes		■	2	Peak #2	Peak List #1	13.164 °	2418-2 SnO2 1 Jam.raw #1	13.164 °
Yes		■	1	Peak #1	Peak List #1	10.982 °	2418-2 SnO2 1 Jam.raw #1	10.982 °

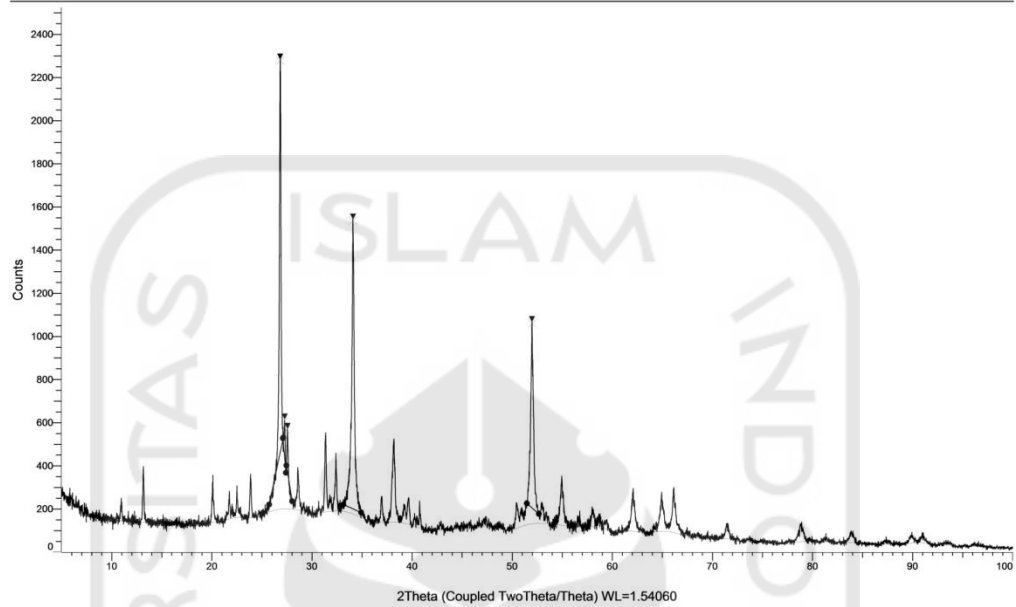
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الجامعة العربية السورية
المعهد العربي للدراسات والبحوث

2418-2 SnO2 1 Jam.raw, 12/27/2018 1:54:08 PM

d Value	Net Intensity	Gross Intensity	Rel. Intensity	h,k,l	Match
1.08020 Å	37.0	80.2	1.8 %	n.a.	No
1.09007 Å	43.3	85.9	2.1 %	n.a.	No
1.15247 Å	48.9	93.3	2.3 %	n.a.	No
1.21284 Å	77.2	126	3.7 %	n.a.	No
1.31911 Å	57.8	119	2.8 %	n.a.	No
1.41177 Å	192	283	9.2 %	n.a.	No
1.43512 Å	180	276	8.6 %	n.a.	No
1.49411 Å	174	271	8.3 %	n.a.	No
1.55567 Å	26.9	132	1.3 %	n.a.	No
1.57129 Å	57.2	171	2.7 %	n.a.	No
1.58733 Å	78.7	196	3.8 %	n.a.	No
1.62286 Å	28.5	144	1.4 %	n.a.	No
1.62325 Å	34.5	150	1.7 %	n.a.	No
1.66923 Å	211	336	10.1 %	n.a.	No
1.72652 Å	73.9	207	3.5 %	n.a.	No
1.75764 Å	948	1080	45.4 %	n.a.	No
1.79081 Å	80.5	200	3.9 %	n.a.	No
1.80719 Å	113	224	5.4 %	n.a.	No
2.21184 Å	113	224	5.4 %	n.a.	No
2.23886 Å	57.2	177	2.7 %	n.a.	No
2.27106 Å	123	251	5.9 %	n.a.	No
2.29223 Å	85.7	219	4.1 %	n.a.	No
2.35513 Å	381	520	18.2 %	n.a.	No
2.43081 Å	108	245	5.2 %	n.a.	No
2.62640 Å	1315	1492	62.9 %	n.a.	No
2.76077 Å	262	453	12.5 %	n.a.	No
2.81169 Å	69.6	259	3.3 %	n.a.	No
2.84986 Å	362	547	17.3 %	n.a.	No
3.11849 Å	181	376	8.7 %	n.a.	No
3.23434 Å	364	565	17.4 %	n.a.	No
3.27729 Å	326	527	15.6 %	n.a.	No
3.31936 Å	2089	2288	100.0 %	n.a.	No
3.42643 Å	78.2	268	3.7 %	n.a.	No
3.72343 Å	188	350	9.0 %	n.a.	No
3.94715 Å	137	297	6.5 %	n.a.	No
4.08389 Å	124	278	5.9 %	n.a.	No
4.41709 Å	169	307	8.1 %	n.a.	No
6.72014 Å	255	393	12.2 %	n.a.	No
8.04999 Å	74.1	220	3.5 %	n.a.	No

2418-2 SnO2 1 Jam.raw, 12/27/2018 1:55:47 PM

(Coupled TwoTheta/Theta)



2418-2 SnO2 1 Jam.raw, 12/27/2018 1:55:47 PM

Area List #1

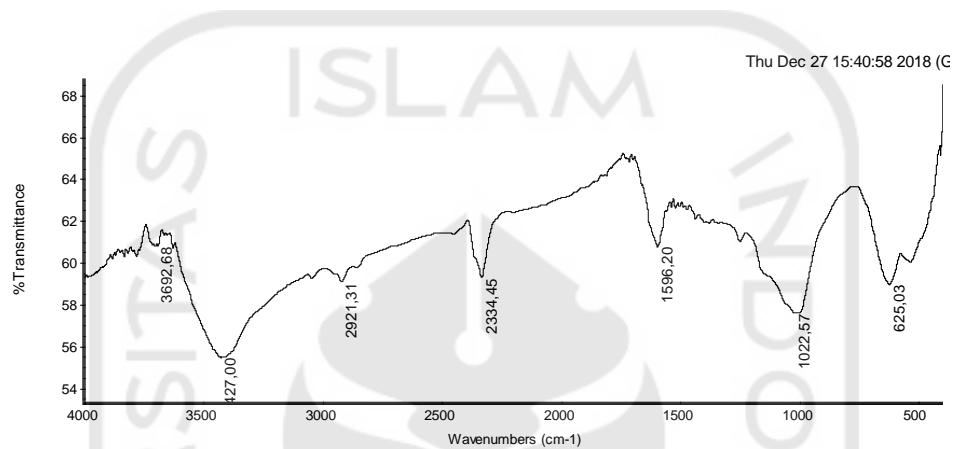
Visible	Icon	Color	Index	Name	Parent	Scan	Left Angle
Yes		■	1	[25.742 ° - 27.143 °]	Area List #1	2418-2 SnO2 1 Jam.raw #1	25.742 °
Yes		■	2	[27.103 ° - 27.407 °]	Area List #1	2418-2 SnO2 1 Jam.raw #1	27.103 °
Yes		■	3	[27.448 ° - 28.037 °]	Area List #1	2418-2 SnO2 1 Jam.raw #1	27.448 °
Yes		■	4	[33.156 ° - 34.923 °]	Area List #1	2418-2 SnO2 1 Jam.raw #1	33.156 °
Yes		■	5	[51.479 ° - 52.677 °]	Area List #1	2418-2 SnO2 1 Jam.raw #1	51.479 °

Right Angle	Left Int.	Right Int.	Obs. Max	d (Obs. Max)	Gross Int.	Net Height	FWHM	Chord Mid.
27.143 °	3.36	8.10	26.836 °	3.31954 Å	34.7	27.7	0.176	26.833 °
27.407 °	8.04	5.60	27.276 °	3.26689 Å	9.29	2.64	0.000	0.000 °
28.037 °	6.12	3.60	27.560 °	3.23394 Å	8.63	2.99	0.131	27.575 °
34.923 °	3.36	2.80	34.113 °	2.62618 Å	23.4	20.4	0.227	34.112 °
52.677 °	3.44	2.70	51.979 °	1.75786 Å	16.2	13.1	0.292	51.996 °

d (Chord Mid.)	I. Breadth	Gravity C.	d (Gravity C.)	Raw Area	Net Area	C. Size	K	Instr. Width
3.31986 Å	0.198	26.828 °	3.32049 Å	13.51	5.482	516.9 Å	1.000	0.000
∞ Å	0.125	27.273 °	3.26725 Å	2.407	0.3288	0.0 Å	1.000	0.000
3.23220 Å	0.079	27.424 °	3.24961 Å	3.098	0.2348	691.9 Å	1.000	0.000
2.62625 Å	0.333	34.086 °	2.62820 Å	12.22	6.779	406.3 Å	1.000	0.000
1.75732 Å	0.338	51.995 °	1.75736 Å	8.093	4.415	336.0 Å	1.000	0.000

Use I. Breadth
No
No
No
No
No

4.2 Hasil Karakterisasi FTIR



Collection time: Thu Dec 27 15:17:48 2018 (GMT+0)

Thu Dec 27 15:40:56 2018 (GMT+07:00)

FIND PEAKS:

Spectrum: *2418-2 SnO₂ 1 Jam

Region: 4000,00 400,00

Absolute threshold: 68,867

Sensitivity: 50

Peak list:

Position: 3427,00	Intensity: 55,397
Position: 1022,57	Intensity: 57,531
Position: 625,03	Intensity: 58,904
Position: 2921,31	Intensity: 59,034
Position: 2334,45	Intensity: 59,234
Position: 1596,20	Intensity: 60,718
Position: 3692,68	Intensity: 60,725

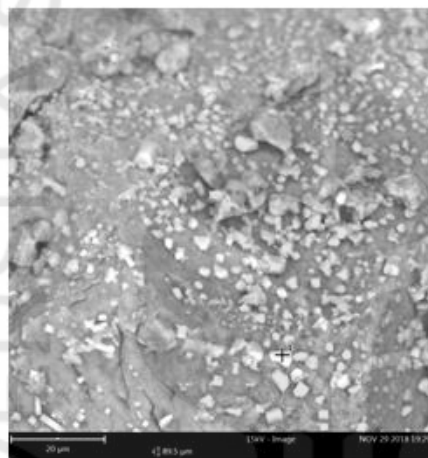
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4.3 Hasil Karakterisasi SEM-EDX

PHENOMWORLD

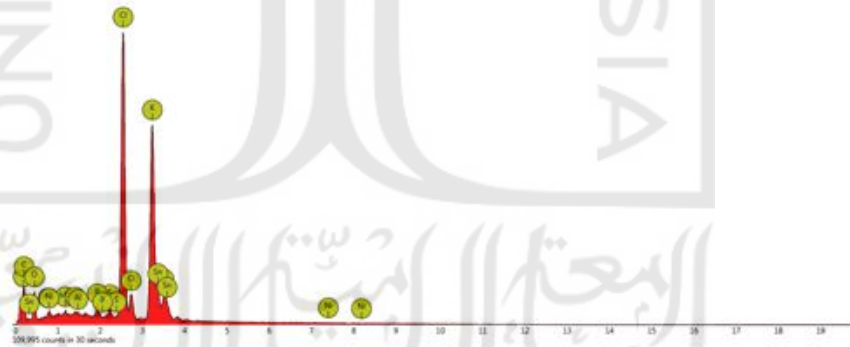
Image 1

1. spot



Element Symbol	Atomic Conc.	Weight Conc.	Oxide Symbol	Stoich. wt Conc.
Cl	18.36	25.84	Cl	29.28
K	16.57	25.73	K	29.15
C	42.03	20.05	C	22.71
Sn	3.18	14.99	Sn	16.98
O	18.46	11.73		
S	0.51	0.65	S	0.74
P	0.49	0.60	P	0.68
Mg	0.23	0.22	Mg	0.25
Al	0.18	0.19	Al	0.22
Ni	0.00	0.00	Ni	0.00

FOV: 89.5 μm , Mode: 15kV - Image, Detector: BSD Full, Time: NOV 29 2018 19:29



Disabled elements: B