LAMPIRAN

Lampiran 1. Hasil Determinasi Tanaman Mahkota Dewa (Phaleria macrocarpa)

DINAS KESEHATAN
UPT MATERIA MEDICA BATU
Jalan Lahor No.87 Telp. (0341) 593396
KOTA BATU 65313

Nomor : 074/ 276/ 102.7/ 2017
Sifat : Biasa
Perihal : **Determinasi Tanaman Mahkota Dewa**

Memenuhi permohonan saudara :

Nama / NIM : FITRIA ABBAS THALIB / 114114003
TRI PUJI LESTARI / 114114500
Instansi : MAGISTER ILMU FARMASI PEMINATAN INDUSTRI UNIVERSITAS SURABAYA

1. Perihal determinasi tanaman mahkota dewa
   - Kingdom : Plantae (Tumbuhan)
   - Subkingdom : Tracheobionta (Tumbuhan berpembuluh)
   - Super Divisi : Spermatophyta (Menghasilkan biji)
   - Divisi : Magnoliophyta (Tumbuhan berbunga)
   - Kelas : Dicotyledonae
   - Bangsa : Myrtales.
   - Suku : Thymelaeaceae.
   - Marga : Phaleria
   - Jenis : *Phaleria macrocarpa* [Scheff.] Boerl
   - Nama Daerah : Mahkota dewa, makuto dewo (Jawa), simalakama (Melayu).
   - Kunci Determinasi : 1b-2b-3b-4b-12b-13b-14b-17b-18b-19b-20b-21b-22b-23b-24b-25b-26b-799b-800b-801b-802b-806b-807b-808c-809b-810b-811a-812b-815b-816b-818b-820b-821a-822b-823c-825b-826b-829b-830b-831b-832b-833b-834b-835b-837b-851a-852b-853b-855c-856b-857a-858b-860a-861b-862b-863b-876b-877d-933b-934a-935b-936b-937a-938c-939a-940b-941b-942b-1a-1a-2b.
2. Morfologi : Habitus: Perdu, menahun, tegak, tinggi 1-2,5 m. Batang: Bulat, percabangan simpodial, permukaan kasar, coklat. Daun: Tunggal, berhadapan, tangkai bulat, panjang 3-5 mm, hijau, helaian daun bentuk lanset atau lonjong, ujung dan pangkal runcing, tepi rata, panjang 7-10 cm, lebar 2-5 cm, pertulangan menyirip, permukaan licin, hijau. Bunga: Majemuk, tersebar, di batang atau pada ketiak daun, tersusun dalam kelompok 2-4 buang, tanpa kelopak bunga, berkelamin ganda, benang sari melekat pada mahkota, putik keluar dari tabung mahkota, panjang 2-2,5 cm, putih, dasar mahkota bentuk tabung, ujung lepas, 4 helai, panjang 1,5-2 cm, putih. Buah: Tunggal, bentuk bulat atau bulat telur, panjang 4-6 cm, diameter 3-5 cm, permukaan licin, beralur, warna merah. Biji: Bulat, keras, warna coklat. Akar: Tunggang, kuning kecoklatan.
3. Nama Simplisia : Phaleriae Folium / Daun mahkota dewa.
4. Kandungan kimia : Daun mahkota dewa mengandung antihistamin, alkaloid, saponin, dan polifenol (lignan). Kulit buah mengandung alkaloid, saponin, triterpenoid, steroid dan flavonoid.
5. Penggunaan : Penelitian.
6. Daftar Pustaka
   - Anonim. http://www.plantamor.com/mahkota-dewa, diakses tanggal 21 Desember 2010.
   - Anonim. www.warintek.ristek.go.id/mahkota-dewa, diakses tanggal 6 Novemver 2010.
   - Backer, C.A. & Bakhuizen Van Den Brink, R.C. 1963. *Flora of Java (Spermatophytes Only), Vol I.* N.V.P. Noordhoff, Groningen.
   - Syamsuhidayat, Sri Sugati dan Johny Ria Hutapea. 1991. *Inventaris Tanaman Obat Indonesia I.* Departemen Kesehatan Republik Indonesia: Badan Penelitian dan Pengembangan Kesehatan.

Demikian surat keterangan determinasi ini kami buat untuk dipergunakan sebagaimana mestinya.

Batu, 16 Juni 2017
Kepala UPT Materia Medica Batu

Dr. Husin R.M., Drs., Apt., M.Kes.

Lampiran 2. Pembuatan $AgNO_3$ 1 mM dan buffer NaOH 0,2 M

1. AgNO3 1 mM

   M = $\frac{\text{mol}}{\text{L}}$ □ mol = $\frac{\text{g}}{\text{Mr}}$ (Mr AgNO3 = 169,873)

   M = 169,873$\frac{\text{g}}{\text{L}}$ = 16,9873 $\frac{\text{g}}{100\ \text{mL}}$

   mM = 16,9873 $\frac{\text{mg}}{100\ \text{mL}}$

   AgNO3 yang ditambahkan ke dalam larutan ekstrak dengan volume 100mL adalah 16,99 mg untuk memperoleh konsentrasi AgNO3 1 mM dalam larutan. Untuk menyeragamkan jumlah AgNO3 dan meminimalisasi variasi dalam proses penambahan AgNO3, dibuat terlebih dahulu larutan stok AgNO3 100 mM (1,698 g/100 mL). Catatan: untuk keperluan sintesis, 1 mL dari setiap larutan ekstrak dengan volume total 100 mL, dieliminasi dan ditambahkan 1 mL larutan AgNO3 100mM sehingga tercapai konsentrasi AgNO3 1 mM dalam larutan ekstrak tanaman.

2. NaOH 0,2 M

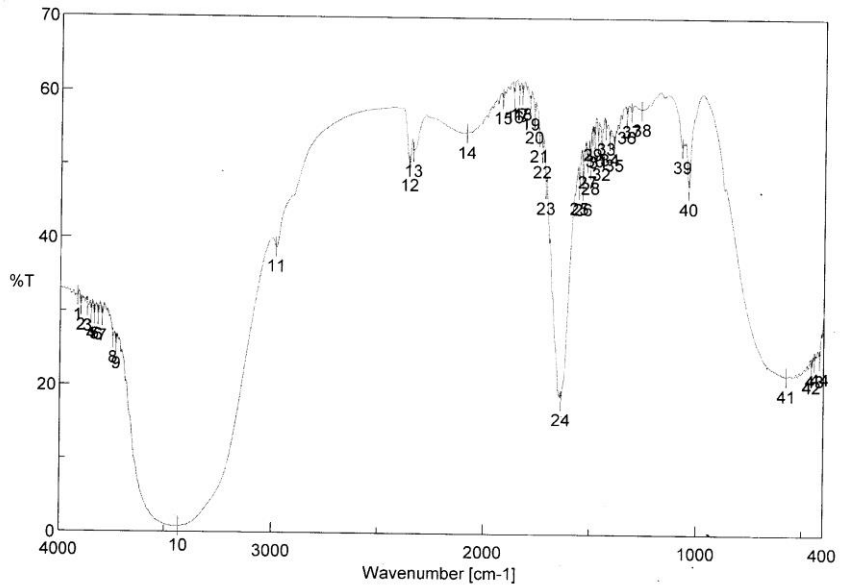
   N = $\frac{\text{m}}{\text{Mr}} \times \frac{1000}{\text{V}}$ □ Mr NaOH = 40

   0,2 = $\frac{\text{m}}{40} \times \frac{1000}{100}$

   m = 0,8 g = 800 mg

   Ditimbang 800 mg NaOH, masukan ke dalam beaker glass lalu ditambahkan 20 mL aquabidest steril sedikit demi sedikit. Pindahkan No. 2 ke labu ukur 100,0 mL lalu tambahkan aquabidest steril sampai tanda

Lampiran 3. Spektra FTIR Ekstrak Etanol Daun Mahkota Dewa .



Result of Peak Picking

No.	Position	Intensity	No.	Position	Intensity
1	3917.68	31.9516	2	3902.25	30.5926
3	3870.43	30.4792	4	3853.08	29.3995
5	3837.65	29.4346	6	3819.33	29.3215
7	3800.04	29.1719	8	3748.94	26.1742
9	3734.48	25.4051	10	3434.6	0.762465
11	2985.27	38.7663	12	2360.44	49.9128
13	2341.16	51.8458	14	2089.49	54.3658
15	1921.72	59.1304	16	1867.72	59.2765
17	1844.58	59.6442	18	1829.15	59.6771
19	1792.51	58.3354	20	1771.3	56.5213
21	1748.16	53.9919	22	1732.73	51.8277
23	1715.37	46.9122	24	1636.3	18.1965
25	1558.2	46.9245	26	1540.85	46.8179
27	1521.56	50.5139	28	1507.1	49.6617
29	1497.45	54.2412	30	1488.78	53.3843
31	1473.35	53.2242	32	1456.96	51.5955
33	1435.74	55.0193	34	1418.39	53.5965
35	1396.21	52.8557	36	1339.32	56.601
37	1318.11	57.4245	38	1269.9	57.6278
39	1077.05	52.6251	40	1045.23	46.9026
41	575.647	21.6129	42	457.047	22.9126
43	443.547	23.7539	44	419.442	23.9882

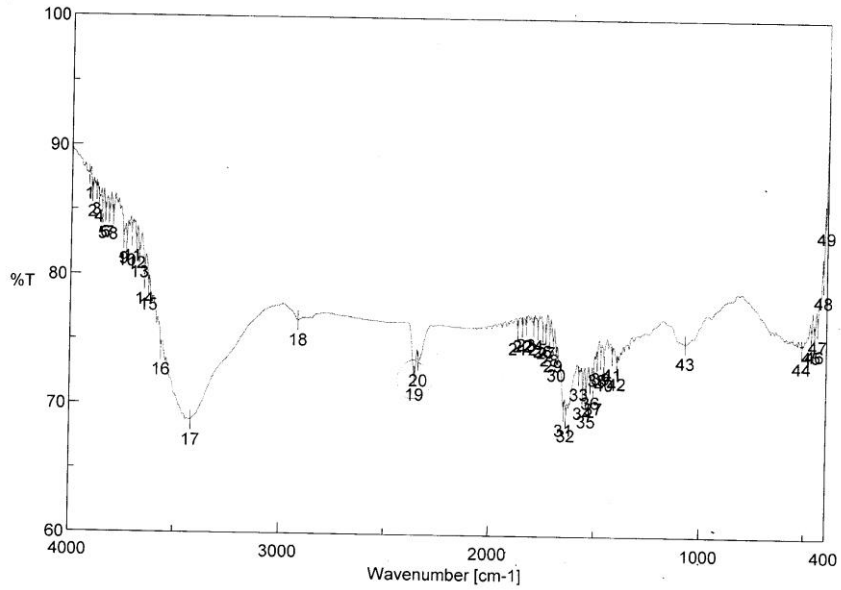
[Comment]

Sample Name	Eks Etanol 0,125%
Comment	Sampel
User	Nn
Division	Lb. Penelitian
Company	JASCO

[Measurement Information]

Model Name	FT/IR-4200typeA
Serial Number	B015261018
Light Source	Standard
Detector	TGS
Accumulation	Auto (30)
Resolution	4 cm-1
Zero Filling	On
Apodization	Cosine
Gain	Auto (2)
Aperture	Auto (7.1 mm)
Scanning Speed	Auto (2 mm/sec)
Filter	Auto (30000 Hz)

Lampiran 4. Spektra FTIR Nanopartikel Perak Ekstrak Etanol Daun Mahkota Dewa 0,125%.



Result of Peak Picking

No.	Position	Intensity	No.	Position	Intensity
1	3916.72	87.6045	2	3901.29	86.2527
3	3882	86.4207	4	3869.47	85.8314
5	3852.11	84.5658	6	3837.65	84.6722
7	3819.33	84.6395	8	3800.04	84.5317
9	3749.9	82.6467	10	3734.48	82.4741
11	3710.37	82.8443	12	3688.19	82.2897
13	3674.69	81.5886	14	3647.7	79.5247
15	3627.45	79.0712	16	3565.74	74.0737
17	3420.14	68.644	18	2916.81	76.4712
19	2359.48	72.3498	20	2341.16	73.4525
21	1867.72	76.002	22	1844.58	76.213
23	1828.19	76.3082	24	1792.51	76.2667
25	1771.3	75.9864	26	1748.16	75.8343
27	1732.73	75.7321	28	1716.34	75.1575
29	1698.02	74.7084	30	1682.59	74.001
31	1646.91	69.7372	32	1635.34	69.3158
33	1575.56	72.5243	34	1558.2	71.0789
35	1540.85	70.4152	36	1521.56	71.8711
37	1507.1	71.4108	38	1488.78	73.658
39	1473.35	73.7646	40	1456.96	73.276
41	1418.39	74.0912	42	1396.21	73.3633
43	1073.19	74.9865	44	517.793	74.704
45	472.474	75.6292	46	457.047	75.7104
47	442.583	76.4424	48	417.513	79.8796
49	407.871	84.8693			

[Comment]

Sample Name	AgNPs Eks Etanol 0,125%
Comment	Sampel
User	Nn
Division	Lb. Penelitian
Company	JASCO

[Measurement Information]

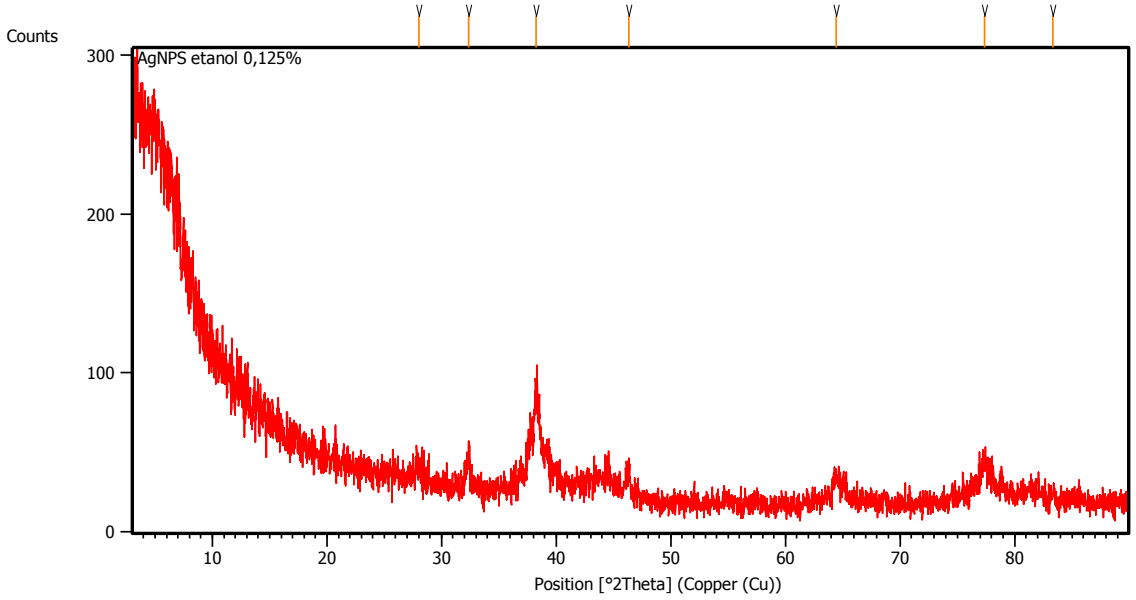
Model Name	FT/IR-4200typeA
Serial Number	B015261018
Light Source	Standard
Detector	TGS
Accumulation	Auto (70)
Resolution	4 cm-1
Zero Filling	On
Apodization	Cosine
Gain	Auto (8)
Aperture	Auto (7.1 mm)
Scanning Speed	Auto (2 mm/sec)
Filter	Auto (30000 Hz)

Lampiran 5. Hasil Pengujian XRD Nanopartikel Perak 0,125%

Dataset Name	AgNPS etanol 0,125%
File name	E:\DATA PENGUJIAN\Pengujian 2017\Desember\Tri Puji\AgNPS etanol 0,125%\AgNPS etanol 0,125%.rd
Comment	Configuration=Reflection-Transmission Sp
	Goniometer=PW3050/60 (Theta/Theta); Mini
Measurement Date / Time	12/9/2017 1:02:00 PM
Raw Data Origin	PHILIPS-binary (scan) (.RD)
Scan Axis	Gonio
Start Position [°2Th.]	3.0084
End Position [°2Th.]	89.9804
Step Size [°2Th.]	0.0170
Scan Step Time [s]	10.1500
Scan Type	Continuous
Offset [°2Th.]	0.0000
Divergence Slit Type	Fixed
Divergence Slit Size [°]	0.2500
Specimen Length [mm]	10.00
Receiving Slit Size [mm]	12.7500
Measurement Temperature [°C]	-273.15
Anode Material	Cu
K-Alpha1 [Å]	1.54060
K-Alpha2 [Å]	1.54443
K-Beta [Å]	1.39225
K-A2 / K-A1 Ratio	0.50000
Generator Settings	30 mA, 40 kV
Diffractometer Type	XPert MPD
Diffractometer Number	1
Goniometer Radius [mm]	200.00
Dist. Focus-Diverg. Slit [mm]	91.00
Incident Beam Monochromator	No

Spinning Yes

Main Graphics, Analyze View: (Bookmark 2)

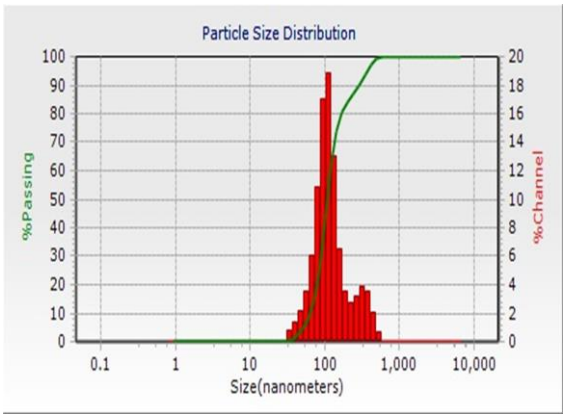


Peak List: (Bookmark 3)

Pos. [°2Th.]	Height [cts]	FWHM Left [°2Th.]	d-spacing [Å]	Rel. Int. [%]
28.0213	7.09	0.6691	3.18435	14.16
32.3980	21.24	0.2007	2.76347	42.41
38.2396	50.09	0.2007	2.35369	100.00
46.3239	13.54	0.3346	1.96002	27.03
64.4111	14.26	0.5353	1.44652	28.47
77.4183	19.41	0.4684	1.23277	38.76
83.3259	3.91	0.4684	1.15974	7.80

Lampiran 6. Hasil Pengujian Distribusi Ukuran Nanopartikel Perak 0,125% replikasi 1

	A	B	C
1			
2	Title:	Particle Size Analysis	
3	ID 1:	AG NPS	
4	ID 2:	AgNPs Etanol 0,125% run 8	
5	Date:	12/15/2017	
6	Time:	3:46 PM	
7	Db Rec#:	67	
8	DB Name:	D:\fitria\MTDatabase.mdb	
9		Summary Data	
10		MI(nm):	140.2
11		MN(nm):	67.50
12		MA(nm):	103.9
13		CS:	57.73
14		SD:	65.20
15		PDI:	0.2167
16		Mz:	130.1
17		si:	0.0796
18		Ski:	0.552
19		Kg:	2.051
20	User Defined Calculations		
21		Name	Value
22	Formula 1:		
23	Formula 2:		
24	Formula 3:		
25		Percentiles	
26		%Tile	Size(nm)
27		10	65.1
28		20	80.2
29		30	90.9
30		40	100.3
31		50	109.7
32		60	120.5
33		70	135.9
34		80	169.4
35		90	290.7
36		95	363
37		Size Percent	
38		Size(nm)	%Tile
39			
40			
41			
42			
43			
44			
45			
46			
47			
48			
49		Peaks	
50	Dia(nm)	Volume %	Width
51	317.0	16.1	172.5
52	102.1	83.9	65.7
53			
54			
55			
56			
70			
71	Size(nm)	%Chan	% Pass
72	6540	0	100
73	5500	0	100
74	4620	0	100
75	3890	0	100
76	3270	0	100
77	2750	0	100
78	2312	0	100
79	1944	0	100
80	1635	0	100



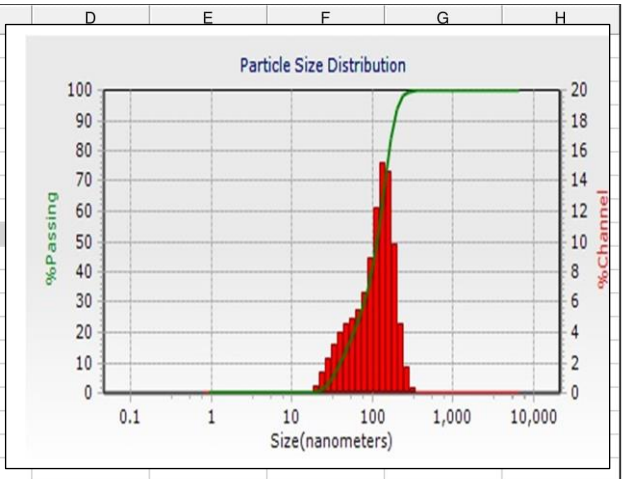
Click buttons to Add user defined formulas.

Name	Formula			
Add	Add	Edit	Save	Recall
Add	Add	Edit	Save	Recall
Add	Add	Edit	Save	Recall

81	1375	0	100
82	1156	0	100
83	972	0	100
84	818	0	100
85	687	0	100
86	578	0.7	100
87	486	2.01	99.3
88	409	3.5	97.29
89	344	3.91	93.79
90	289	3.21	89.88
91	243	2.76	86.67
92	204.4	3.49	83.91
93	171.9	6.56	80.42
94	144.5	12.99	73.86
95	121.5	18.81	60.87
96	102.2	17.06	42.06
97	85.9	10.91	25
98	72.3	6.11	14.09
99	60.8	3.54	7.98
100	51.1	2.2	4.44
101	43	1.4	2.24
102	36.1	0.84	0.84
103	30.4	0	0
104	25.55	0	0
105	21.48	0	0
106	18.06	0	0
107	15.19	0	0
108	12.77	0	0
109	10.74	0	0
110	9.03	0	0
111	7.6	0	0
112	6.39	0	0
113	5.37	0	0
114	4.52	0	0
115	3.8	0	0
116	3.19	0	0
117	2.69	0	0
118	2.26	0	0
119	1.9	0	0
120	1.6	0	0
121	1.34	0	0
122	1.13	0	0
123	0.95	0	0

Replikasi 2

Title:	Particle Size Analysis	
ID 1:	AG NPS	
ID 2:	AgNPs Etanol 0,125% run 03	
Date:	12/15/2017	
Time:	3:54 PM	
Db Rec#:	73	
DB Name:	D:\fitria\MTDatabase.mdb	



Summary Data	
MI(nm):	116.1
MN(nm):	39.20
MA(nm):	83.20
CS:	72.15
SD:	60.60
PDI:	0.2720
Mz:	113.2
si:	0.0577
Ski:	0.00970
Kg:	0.877

User Defined Calculations

	Name	Value
Formula 1:		
Formula 2:		
Formula 3:		

Click buttons to Add user defined formulas.

Name	Formula			
Add	Add	Edit	Save	Recall
Add	Add	Edit	Save	Recall
Add	Add	Edit	Save	Recall

Percentiles

%Tile	Size(nm)
10	40.7
20	59.4
30	80.2
40	99.2
50	115.6
60	130.5
70	145.9
80	163.8
90	189.9
95	213.1

Size Percent

Size(nm)	%Tile

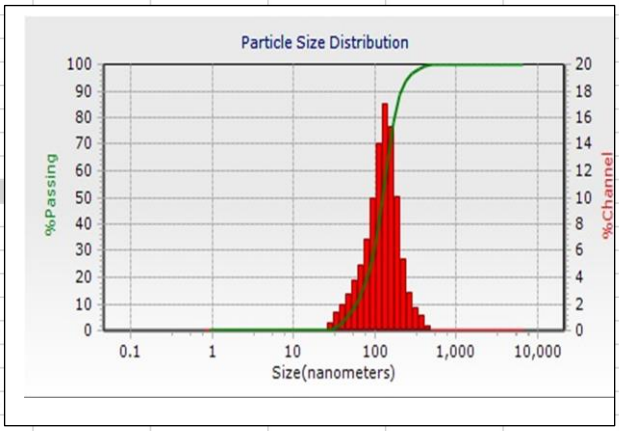
Peaks

Dia(nm)	Volume %	Width
115.6	100	121.1

Size(nm)	%Chan	% Pass
6540	0	100
5500	0	100
4620	0	100
3890	0	100
3270	0	100
2750	0	100
2312	0	100
1944	0	100
1635	0	100
1375	0	100
1156	0	100
972	0	100
818	0	100
687	0	100
578	0	100
486	0	100
409	0	100
344	0.31	100
289	1.66	99.69
243	4.52	98.03
204.4	9.78	93.51
171.9	14.6	83.73
144.5	15.22	69.13
121.5	12.18	53.91
102.2	8.89	41.73
85.9	6.67	32.84
72.3	5.47	26.17
60.8	4.88	20.7
51.1	4.52	15.82
43	4.02	11.3
36.1	3.22	7.28
30.4	2.23	4.06
25.55	1.36	1.83
21.48	0.47	0.47
18.06	0	0
15.19	0	0
12.77	0	0
10.74	0	0
9.03	0	0
7.6	0	0
6.39	0	0
5.37	0	0
4.52	0	0
3.8	0	0
3.19	0	0
2.69	0	0
2.26	0	0
1.9	0	0
1.6	0	0
1.34	0	0
1.13	0	0
0.95	0	0

Replikasi 3

Title:	Particle Size Analysis		
ID 1:	AG NPS		
ID 2:	AgNPs Etanol 0,125% run 7		
Date:	12/15/2017		
Time:	3:45 PM		
Db Rec#:	66		
DB Name:	D:\fitria\MTDatabase.mdb		
Summary Data			
	MI(nm):	134.7	
	MN(nm):	58.50	
	MA(nm):	105.0	
	CS:	57.17	
	SD:	56.70	
	PDI:	0.1768	
	Mz:	129.0	
	si:	0.0603	
	Ski:	0.1544	
	Kg:	1.175	



User Defined Calculations			Click buttons to Add user defined formulas.				
	Name	Value	Name	Formula			
Formula 1:			Add	Add	Edit	Save	Recall
Formula 2:			Add	Add	Edit	Save	Recall
Formula 3:			Add	Add	Edit	Save	Recall

Percentiles		
	%Tile	Size(nm)
	10	59.8
	20	81.8
	30	99
	40	113.3
	50	126.5
	60	139.9
	70	155.3
	80	175.8
	90	212.5
	95	257.5

Size Percent		
	Size(nm)	%Tile

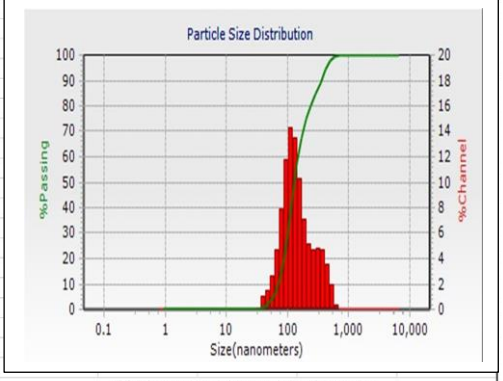
Peaks		
Dia(nm)	Volume %	Width
126.5	100	113.3

Size(nm)	%Chan	% Pass
6540	0	100
5500	0	100
4620	0	100
3890	0	100
3270	0	100
2750	0	100
2312	0	100
1944	0	100
1635	0	100
1375	0	100
1156	0	100
972	0	100
818	0	100
687	0	100
578	0	100
486	0.36	100
409	1.19	99.64
344	1.72	98.45
289	2.87	96.73
243	5.38	93.86
204.4	10.01	88.48
171.9	15.26	78.47
144.5	17.04	63.21
121.5	14.04	46.17
102.2	9.92	32.13
85.9	6.85	22.21
72.3	4.96	15.36
60.8	3.73	10.4
51.1	2.79	6.67
43	2	3.88
36.1	1.36	1.88
30.4	0.52	0.52
25.55	0	0
21.48	0	0
18.06	0	0
15.19	0	0
12.77	0	0
10.74	0	0
9.03	0	0
7.6	0	0
6.39	0	0
5.37	0	0
4.52	0	0
3.8	0	0
3.19	0	0
2.69	0	0
2.26	0	0
1.9	0	0
1.6	0	0
1.34	0	0
1.13	0	0

Lampiran 7. Hasil Pengujian Distribusi Ukuran Nanopartikel Perak 0,25%

Replikasi 1

Title:	Particle Size Analysis	
ID 1:	AG NPS	
ID 2:	AG NPS EtOH 0,25 Run 3	
Date:	12/14/2017	
Time:	2:38 PM	
Db Rec#:	21	
DB Name:	D:\fitria\MTDatabase.mdb	
Summary Data		
MI(nm):		171.2
MN(nm):		75.10
MA(nm):		122.1
CS:		49.15
SD:		100.0
PDI:		0.341
Mz:		165.6
si:		0.1052
Ski:		0.565
Kg:		1.356



User Defined Calculations		
	Name	Value
Formula 1:		
Formula 2:		
Formula 3:		

Click buttons to Add user defined formulas.

Name	Formula			
Add	Add	Edit	Save	Recall
Add	Add	Edit	Save	Recall
Add	Add	Edit	Save	Recall

Percentiles		
	%Tile	Size(nm)
	10	72.3
	20	89
	30	102.7
	40	115.9
	50	130.9
	60	150.1
	70	180.7
	80	243.6
	90	351
	95	424

Size Percent		
	Size(nm)	%Tile

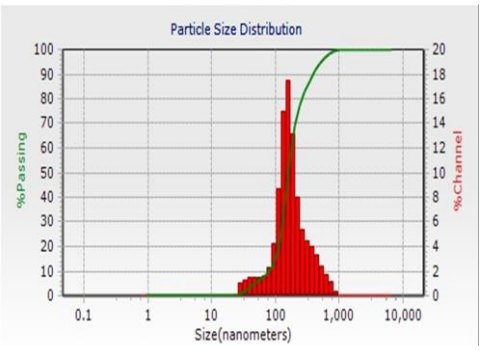
Peaks		
Dia(nm)	Volume %	Width
130.9	100	200

86	578	1.89	99.62
87	486	3.59	97.73
88	409	4.74	94.14
89	344	4.82	89.4
90	289	4.65	84.58
91	243	5.19	79.93
92	204.4	7.03	74.74
93	171.9	10.25	67.71
94	144.5	13.48	57.46
95	121.5	14.33	43.98
96	102.2	11.74	29.65
97	85.9	7.89	17.91
98	72.3	4.68	10.02
99	60.8	2.66	5.34
100	51.1	1.54	2.68
101	43	0.99	1.14
102	36.1	0.15	0.15
103	30.4	0	0
104	25.55	0	0
105	21.48	0	0
106	18.06	0	0
107	15.19	0	0
108	12.77	0	0
109	10.74	0	0
110	9.03	0	0
111	7.6	0	0
112	6.39	0	0
113	5.37	0	0
114	4.52	0	0
115	3.8	0	0
116	3.19	0	0
117	2.69	0	0
118	2.26	0	0
119	1.9	0	0
120	1.6	0	0
121	1.34	0	0
122	1.13	0	0
123	0.95	0	0

Size(nm)	%Chan	% Pass
6540	0	100
5500	0	100
4620	0	100
3890	0	100
3270	0	100
2750	0	100
2312	0	100
1944	0	100
1635	0	100

Replikasi 2

Title:	Particle Size Analysis	
ID 1:	AG NPS	
ID 2:	AG NPS EtOH 0,25 Run 4	
Date:	12/14/2017	
Time:	2:40 PM	
Db Rec#:	23	
DB Name:	D:\fitria\MTDatabase.mdb	
Summary Data		
	MI(nm):	201.9
	MN(nm):	50.80
	MA(nm):	134.0
	CS:	44.76
	SD:	99.50
	PDI:	0.2427
	Mz:	190.0
	si:	0.1188
	Ski:	0.468
	Kg:	1.769



User Defined Calculations		
	Name	Value
Formula 1:		
Formula 2:		
Formula 3:		

Click buttons to Add user defined formulas.

Name	Formula			
Add	Add	Edit	Save	Recall
Add	Add	Edit	Save	Recall
Add	Add	Edit	Save	Recall

Percentiles	
%Tile	Size(nm)
10	81.3
20	114.4
30	131.7
40	146.4
50	161.4
60	179.5
70	207
80	263.6
90	387
95	504

Size Percent	
Size(nm)	%Tile

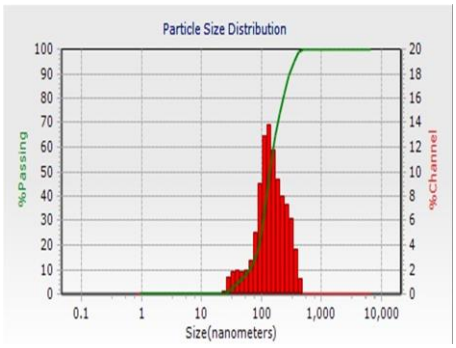
Peaks		
Dia(nm)	Volume %	Width
161.4	100	198.9

Size(nm)	%Chan	% Pass
6540	0	100
5500	0	100
4620	0	100
3890	0	100
3270	0	100
2750	0	100
2312	0	100
1944	0	100
1635	0	100

81	1375	0	100
82	1156	0	100
83	972	0	100
84	818	0	100
85	687	0	100
86	578	0	100
87	486	1.72	100
88	409	3.5	98.28
89	344	4.55	94.78
90	289	4.04	90.23
91	243	3.63	86.19
92	204.4	4.87	82.56
93	171.9	8.51	77.69
94	144.5	11.93	69.18
95	121.5	9.73	57.25
96	102.2	4.89	47.52
97	85.9	2.25	42.63
98	72.3	1.75	40.38
99	60.8	2.82	38.63
100	51.1	6.11	35.81
101	43	10.36	29.7
102	36.1	10.44	19.34
103	30.4	6.05	8.9
104	25.55	2.33	2.85
105	21.48	0.52	0.52
106	18.06	0	0
107	15.19	0	0
108	12.77	0	0
109	10.74	0	0
110	9.03	0	0
111	7.6	0	0
112	6.39	0	0
113	5.37	0	0
114	4.52	0	0
115	3.8	0	0
116	3.19	0	0
117	2.69	0	0
118	2.26	0	0
119	1.9	0	0
120	1.6	0	0
121	1.34	0	0

Replikasi 3

Title:	Particle Size Analysis		
ID 1:	AG NPS		
ID 2:	AG NPS EtOH 0,25 Run 5		
Date:	12/14/2017		
Time:	2:41 PM		
Db Rec#:	24		
DB Name:	D:\fitria\MTDatabase.mdb		
Summary Data			
	MI(nm):	162.3	
	MN(nm):	49.30	
	MA(nm):	114.3	
	CS:	52.51	
	SD:	86.40	
	PDI:	0.2832	
	Mz:	160.2	
	si:	0.0888	
	Ski:	0.351	
	Kg:	1.127	
User Defined Calculations			
	Name	Value	
Formula 1:			
Formula 2:			
Formula 3:			
Percentiles			
	%Tile	Size(nm)	
	10	65.3	
	20	92.2	
	30	108.5	
	40	123.5	
	50	139.8	
	60	160.6	
	70	190.3	
	80	234.4	
	90	297	
	95	343	
Size Percent			
	Size(nm)	%Tile	
Peaks			
Dia(nm)	Volume %	Width	
139.8	100	172.8	



Click buttons to Add user defined formulas.

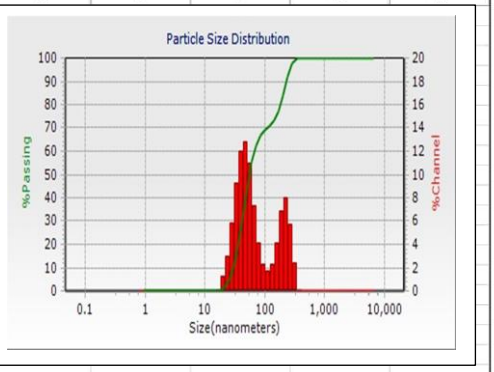
Name	Formula				
	Add	Add	Edit	Save	Recall
	Add	Add	Edit	Save	Recall
	Add	Add	Edit	Save	Recall

Size(nm)	%Chan	% Pass	
6540	0	100	
5500	0	100	
4620	0	100	
3890	0	100	
3270	0	100	
2750	0	100	
2312	0	100	
1944	0	100	
1635	0	100	
1375	0	100	
1156	0	100	
972	0.34	100	
818	1.17	99.66	
687	1.67	98.49	
578	2.38	96.82	
486	3.27	94.44	
409	4.01	91.17	
344	4.49	87.16	
289	5.38	82.67	
243	7.99	77.29	
204.4	13.12	69.3	
171.9	17.49	56.18	
144.5	15.02	38.69	
121.5	8.64	23.67	
102.2	4.18	15.03	
85.9	2.29	10.85	
72.3	1.65	8.56	
60.8	1.47	6.91	
51.1	1.46	5.44	
43	1.44	3.98	
36.1	1.31	2.54	
30.4	1.06	1.23	
25.55	0.17	0.17	
21.48	0	0	
18.06	0	0	
15.19	0	0	
12.77	0	0	
10.74	0	0	
9.03	0	0	
7.6	0	0	
6.39	0	0	
5.37	0	0	
4.52	0	0	
3.8	0	0	
3.19	0	0	
2.69	0	0	
2.26	0	0	
1.9	0	0	
1.6	0	0	

Lampiran 8. Hasil Pengujian Distribusi Ukuran Nanopartikel Perak 0,5%

Replikasi 1

Title:	Particle Size Analysis		
ID 1:	AG NPS		
ID 2:	AG NPS EtOH 0,5 run 6		
Date:	12/14/2017		
Time:	3:00 PM		
Db Rec#:	32		
DB Name:	D:\fitria\MTDatabase.mdb		
Summary Data			
	MI(nm):	97.60	
	MN(nm):	33.30	
	MA(nm):	55.30	
	CS:	108.5	
	SD:	85.50	
	PDI:	0.768	
	Mz:	98.29	
	si:	0.0789	
	Ski:	0.750	
	Kg:	0.808	



User Defined Calculations		
	Name	Value
Formula 1:		
Formula 2:		
Formula 3:		

Click buttons to Add user defined formulas.

Name	Formula			
Add	Add	Edit	Save	Recall
Add	Add	Edit	Save	Recall
Add	Add	Edit	Save	Recall

Percentiles		
	%Tile	Size(nm)
	10	30.2
	20	36.4
	30	42.2
	40	48.2
	50	55.6
	60	67.4
	70	114.2
	80	186.9
	90	233
	95	264.4

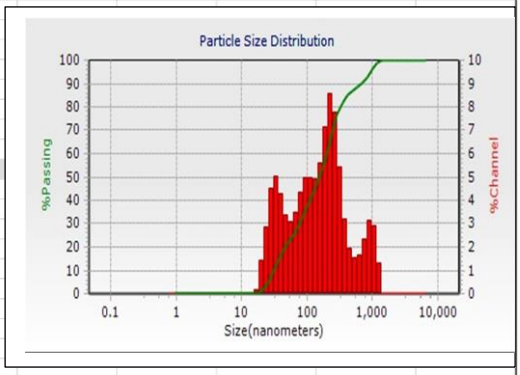
Size Percent		
	Size(nm)	%Tile

Peaks		
Dia(nm)	Volume %	Width
207.1	31.1	112.4
44.80	68.9	33.3

Size(nm)	%Chan	% Pass
6540	0	100
5500	0	100
4620	0	100
3890	0	100
3270	0	100
2750	0	100
2312	0	100
1944	0	100
1635	0	100
1375	0	100
1156	0	100
972	0	100
818	0	100
687	0	100
578	0	100
486	0	100
409	0.11	100
344	2.38	99.89
289	5.66	97.51
243	8.02	91.85
204.4	6.87	83.83
171.9	4.07	76.96
144.5	2.26	72.89
121.5	1.74	70.63
102.2	2.26	68.89
85.9	4.08	66.63
72.3	7.37	62.55
60.8	10.94	55.18
51.1	12.84	44.24
43	11.95	31.4
36.1	9.23	19.45
30.4	5.81	10.22
25.55	2.97	4.41
21.48	1.29	1.44
18.06	0.15	0.15
15.19	0	0
12.77	0	0
10.74	0	0
9.03	0	0
7.6	0	0
6.39	0	0
5.37	0	0
4.52	0	0
3.8	0	0
3.19	0	0
2.69	0	0
2.26	0	0
1.9	0	0
1.6	0	0

Replikasi 2

Title:	Particle Size Analysis	
ID 1:	AG NPS	
ID 2:	AG NPS EtOH 0,5 run 5	
Date:	12/14/2017	
Time:	2:58 PM	
Db Rec#:	31	
DB Name:	D:\fitria\MTDatabase.mdb	
Summary Data		
	MI(nm):	242.7
	MN(nm):	30.50
	MA(nm):	84.70
	CS:	70.87
	SD:	170.9
	PDI:	0.496
	Mz:	192.5
	si:	0.2229
	Ski:	0.509
	Kg:	1.714



User Defined Calculations		
	Name	Value
Formula 1:		
Formula 2:		
Formula 3:		

Click buttons to Add user defined formulas.

Name	Formula			
Add	Add	Edit	Save	Recall
Add	Add	Edit	Save	Recall
Add	Add	Edit	Save	Recall

Percentiles		
	%Tile	Size(nm)
	10	31.5
	20	46.9
	30	78
	40	111.4
	50	157.4
	60	203.9
	70	249.7
	80	320
	90	669
	95	933

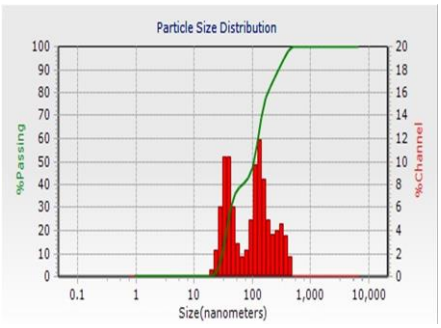
Size Percent		
	Size(nm)	%Tile

Peaks		
Dia(nm)	Volume %	Width
863.0	12.9	485
178.3	65.5	205.5
32.40	21.6	18.51

Size(nm)	%Chan	% Pass
6540	0	100
5500	0	100
4620	0	100
3890	0	100
3270	0	100
2750	0	100
2312	0	100
1944	0	100
1635	0	100
1375	0	100
1156	0	100
972	0	100
818	0	100
687	0	100
578	0	100
486	0	100
409	0.11	100
344	2.38	99.89
289	5.66	97.51
243	8.02	91.85
204.4	6.87	83.83
171.9	4.07	76.96
144.5	2.26	72.89
121.5	1.74	70.63
102.2	2.26	68.89
85.9	4.08	66.63
72.3	7.37	62.55
60.8	10.94	55.18
51.1	12.84	44.24
43	11.95	31.4
36.1	9.23	19.45
30.4	5.81	10.22
25.55	2.97	4.41
21.48	1.29	1.44
18.06	0.15	0.15
15.19	0	0
12.77	0	0
10.74	0	0
9.03	0	0
7.6	0	0
6.39	0	0
5.37	0	0
4.52	0	0
3.8	0	0
3.19	0	0
2.69	0	0
2.26	0	0
1.9	0	0
1.6	0	0
1.34	0	0
1.13	0	0

Replikasi 3

Title:	Particle Size Analysis		
ID 1:	AG NPS		
ID 2:	AG NPS EtOH 0,5 run 4		
Date:	12/14/2017		
Time:	2:57 PM		
Db Rec#:	30		
DB Name:	D:\fitria\MTDatabase.mdb		
Summary Data			
	MI(nm):	124.8	
	MN(nm):	33.80	
	MA(nm):	65.60	
	CS:	91.46	
	SD:	92.20	
	PDI:	0.545	
	Mz:	120.2	
	si:	0.0945	
	Ski:	0.352	
	Kg:	1.076	
User Defined Calculations			
	Name	Value	
Formula 1:			
Formula 2:			
Formula 3:			
Percentiles			
	%Tile	Size(nm)	
	10	31	
	20	36.5	
	30	43.3	
	40	69.5	
	50	107.6	
	60	126.5	
	70	146.6	
	80	184.7	
	90	286.4	
	95	347	
Size Percent			
	Size(nm)	%Tile	
Peaks			
Dia(nm)	Volume %	Width	
301.0	17.4	151	
127.5	44	66	
36.10	38.6	17.37	
Size(nm)	%Chan	% Pass	
6540	0	100	
5500	0	100	
4620	0	100	
3890	0	100	
3270	0	100	
2750	0	100	
2312	0	100	
1944	0	100	
1635	0	100	

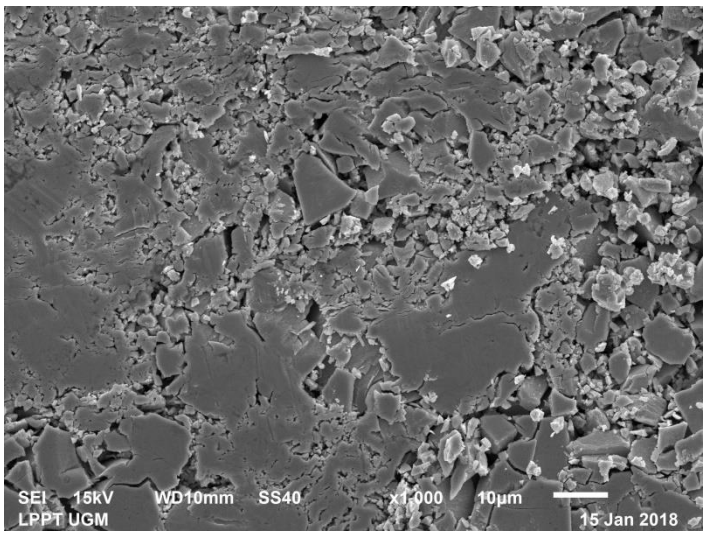


Click buttons to Add user defined formulas.

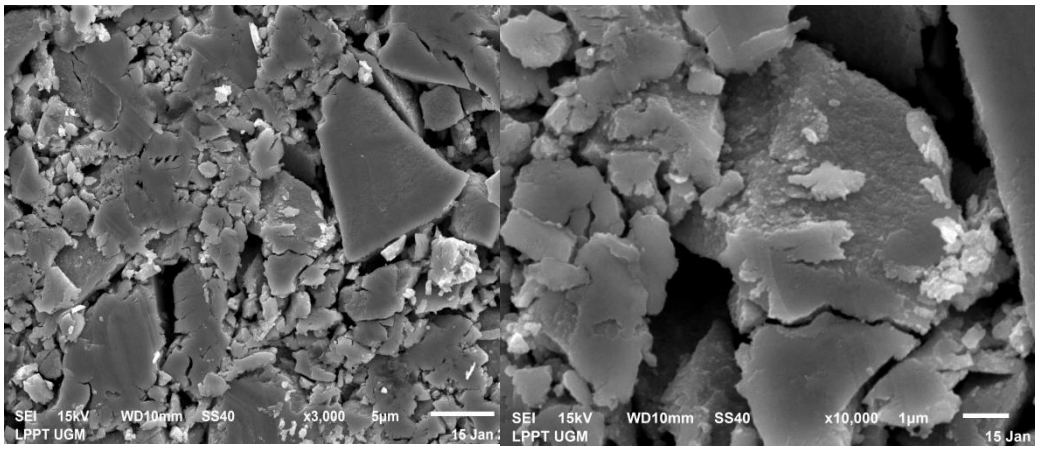
Name	Formula			
Add	Add	Edit	Save	Recall
Add	Add	Edit	Save	Recall
Add	Add	Edit	Save	Recall

81	1375	1.33	100
82	1156	2.9	98.67
83	972	3.16	95.77
84	818	2.32	92.61
85	687	1.67	90.29
86	578	1.54	88.62
87	486	1.97	87.08
88	409	3.2	85.11
89	344	5.43	81.91
90	289	7.79	76.48
91	243	8.57	68.69
92	204.4	7.14	60.12
93	171.9	5.6	52.98
94	144.5	4.91	47.38
95	121.5	4.96	42.47
96	102.2	4.97	37.51
97	85.9	4.37	32.54
98	72.3	3.5	28.17
99	60.8	3.07	24.67
100	51.1	3.37	21.6
101	43	4.29	18.23
102	36.1	5.02	13.94
103	30.4	4.49	8.92
104	25.55	2.87	4.43
105	21.48	1.4	1.56
106	18.06	0.16	0.16
107	15.19	0	0
108	12.77	0	0
109	10.74	0	0
110	9.03	0	0
111	7.6	0	0
112	6.39	0	0
113	5.37	0	0
114	4.52	0	0
115	3.8	0	0
116	3.19	0	0
117	2.69	0	0
118	2.26	0	0
119	1.9	0	0
120	1.6	0	0
121	1.34	0	0

Lampiran 9. Hasil Pengujian SEM Nanopartikel Perak 0,125% dengan perbesaran (A) 1000x, (B) 3000x dan (C) 10.000

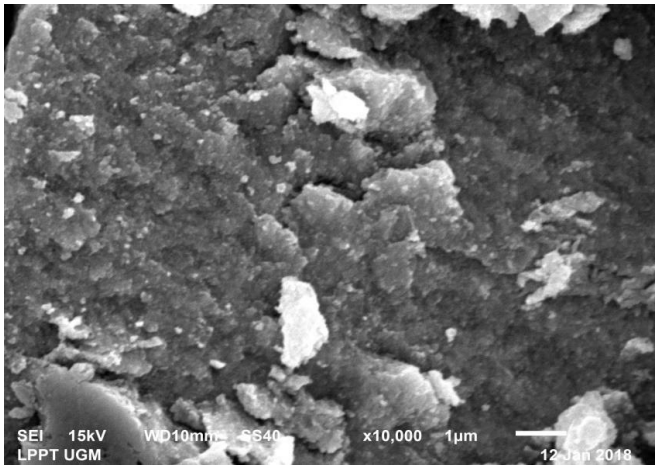

SEI 15kV WD10mm SS40 x1,000 10µm
LPPT UGM
15 Jan 2018

(A)

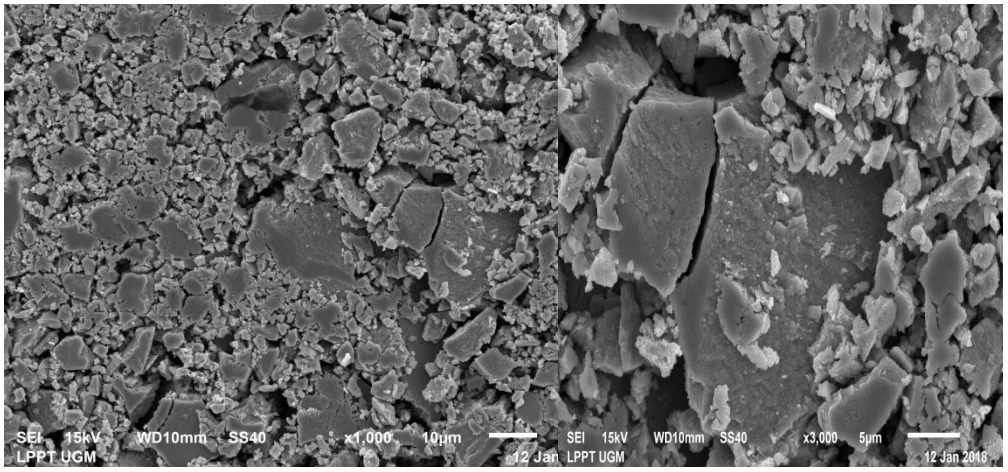

SEI 15kV WD10mm SS40 x3,000 5µm
LPPT UGM
SEI 15kV WD10mm SS40 x10,000 1µm
LPPT UGM
15 Jan

(B) (C)

Lampiran 10. Hasil Pengujian SEM Nanopartikel Perak 0,25% dengan perbesaran (A) 1000x, (B) 3000x dan (C) 10.000

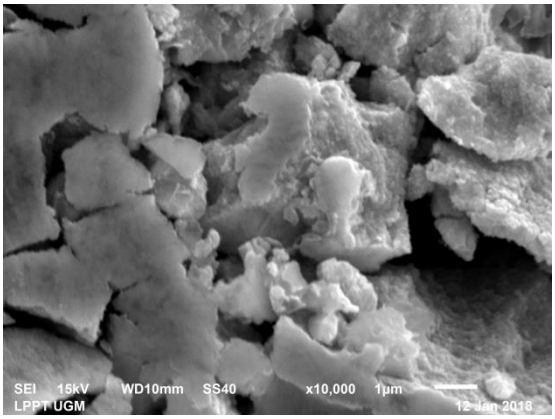


(A)

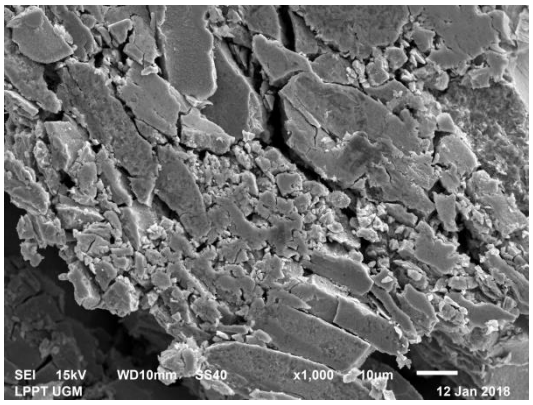


(B) (C)

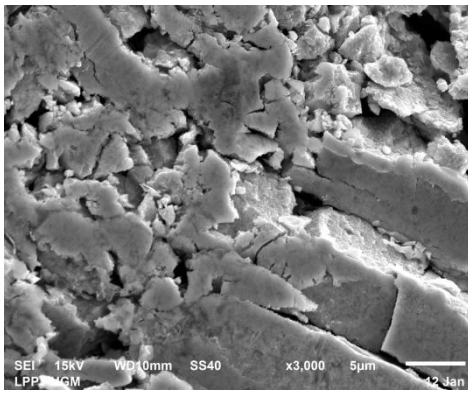
Lampiran 11. Hasil Pengujian SEM Nanopartikel Perak 0,5% dengan perbesaran (A) 1000x, (B) 3000x dan (C) 10.000



(A)

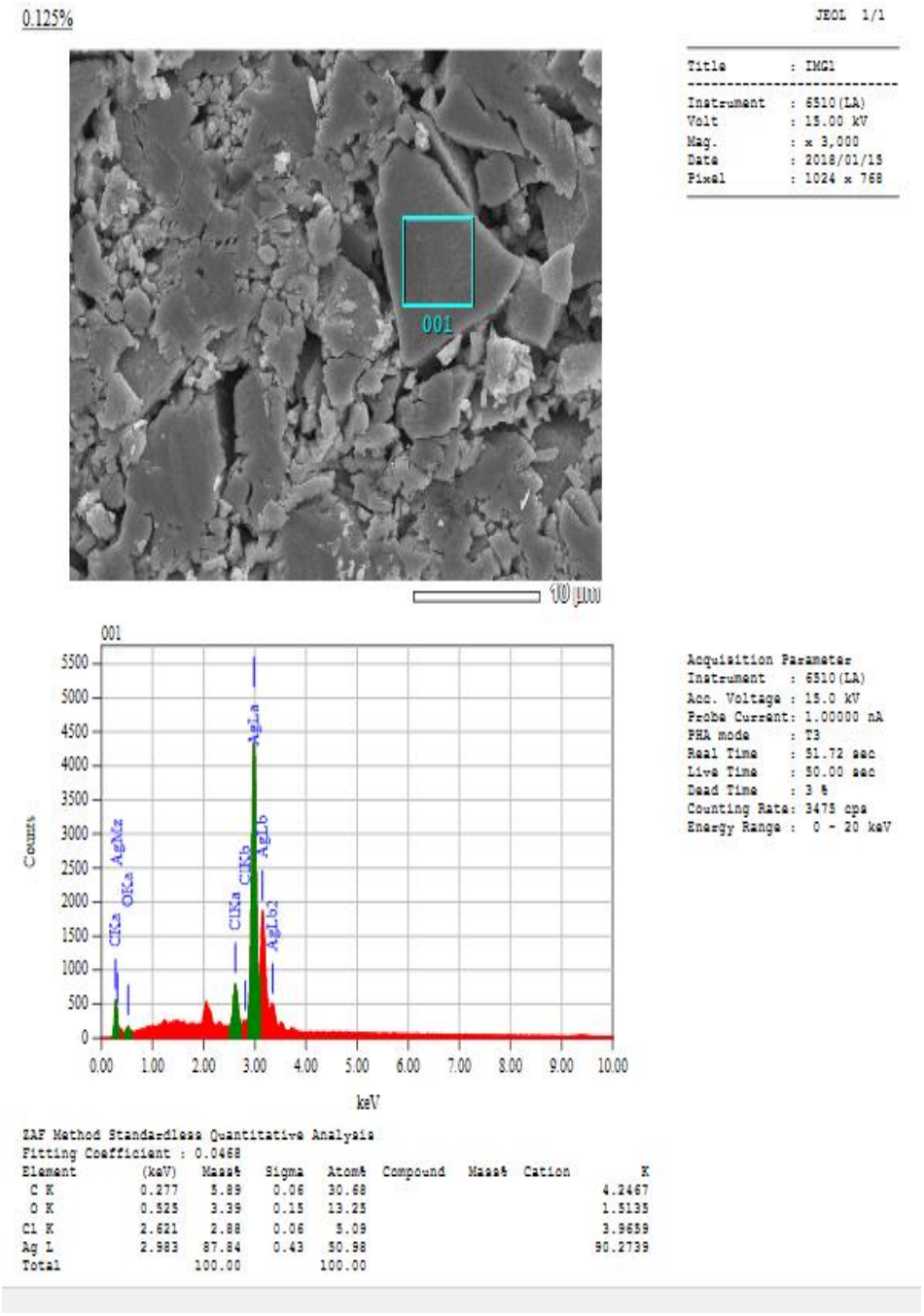


(B)



(C)

Lampiran 12. Hasil Pengujian EDX Nanopartikel Perak 0,125%



Lampiran 13. Hasil Uji T Independen Nilai PDI

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
PDI	Equal variances assumed	,260	,637	-2,960	4	,042	-,100333	,033895	-,194442	-,006225
	Equal variances not assumed			-2,960	3,565	,048	-,100333	,033895	-,199148	-,001518

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
PDI	Equal variances assumed	3,827	,122	-2,124	4	,101	-,147667	,069509	-,340653	,045320
	Equal variances not assumed			-2,124	2,737	,132	-,147667	,069509	-,381376	,086043

Group Statistics

	kelompok	N	Mean	Std. Deviation	Std. Error Mean
PDI	0,125	3	,22133	,048222	,027841
	0,5	3	,36900	,110313	,063689

Group Statistics

	kelompok	N	Mean	Std. Deviation	Std. Error Mean
PDI	0,25	3	,32167	,033486	,019333
	0,5	3	,36900	,110313	,063689

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
PDI	Equal variances assumed	6,752	,060	-,711	4	,516	-,047333	,066559	-,232131	,137464
	Equal variances not assumed			-,711	2,365	,541	-,047333	,066559	-,295224	,200557