

## Lampiran 1. Hasil Determinasi Tanaman



KEMENTERIAN RISET, TEKNOLOGI DAN PENDIDIKAN TINGGI  
UNIVERSITAS DIPONEGORO  
FAKULTAS SAINS DAN MATEMATIKA  
**LAB. EKOLOGI & BIOSISTEMATIKA DEPARTEMEN BOLOGI**  
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### HASIL DETERMINASI

#### Klasifikasi:

Kingdom	: Plantae
Sunkingdom	: Tracheobionta
Superdivisi	: Spermatophyta
Divisi	: Magnoliophyta
Kelas	: Magnoliopsida
Subkelas	: Rosidae
Ordo	: Myrtales
Famili	: Melastomaceae
Genus	: <i>Medinilla</i>
Species	: <i>Medinilla speciosa</i> Blume
Nama daerah	: Parijoto

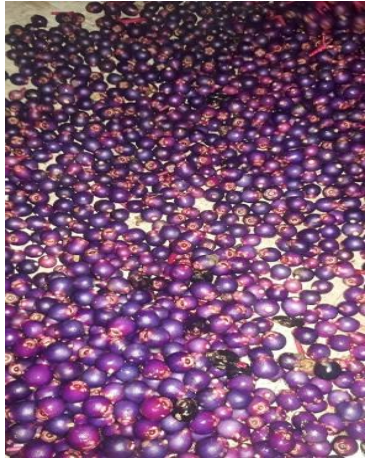
#### Kunci Determinasi:

1b-2b-3b-4b-6b-7b-9b-10b-11b-12b-13b-14b-16a- (Gol 10. Tumbuhan daun tunggal berhadapan)-109b-119b-120a-121b-124a- (Famili 95 Melastomaceae)) - (Genus *Medinilla*) - (*Medinilla speciosa*)

#### Deskripsi:

Parijoto atau *Medinilla speciosa* merupakan tanaman semak epifit dengan ketinggian 0,45 – 1,2 meter. Merupakan tumbuhan semak *evergreen* (selalu hijau) dengan batang dan cabang berkayu berwarna hijau. Daun berwarna hijau berbentuk lonjong dengan ujung lancip dengan tulang daun melengkung. Buah tersusun dalam malai yang besar dengan masing-masing buah berbentuk bulat kecil. Saat masih muda, buah berwarna pink muda namun semakin memerah keunguan setelah masak.

## Lampiran 2. Pembuatan Serbuk Buah Parijoto



Buah Parijoto



Proses Pengeringan



Penggilingan



Serbuk Buah Parijoto

### Lampiran 3. Pembuatan Ekstrak Etanol Buah Parijoto



A. Hasil penyaringan maserasi 1

B. Remaserasi



Proses *rotary evaporator*



Penguapan dengan *waterbath*



Ekstrak kental

#### Lampiran 4. Perhitungan Rendemen Ekstrak

Berat cawan kosong = 143.024 gram

Berat cawan + ekstrak = 205.904 gram

Berat ekstrak = 62.88 gram

Berat serbuk = 600 gram

% Rendemen =  $\frac{\textit{Berat ekstrak}}{\textit{Berat serbuk}} \times 100\%$

=  $\frac{62.88 \textit{ gram}}{600 \textit{ gram}} \times 100\%$

= 10.48%

## Lampiran 5. Perhitungan Pembuatan Nano Ekstrak Buah Parijoto

### A. Pembuatan Asam Asetat 2%

$$M_1 V_1 = M_2 V_2$$

$$100. V_1 = 100.2$$

$$V_1 = 2 \text{ mL}$$

### B. Pembuatan larutan stok kitosan 1%

$$\text{Kitosan} = 1 \text{ gram}$$

$$\text{Asam asetat 2\%} = 100 \text{ mL}$$

$$\text{Larutan kitosan} = \frac{1 \text{ g}}{100 \text{ mL}} = 1\%$$

### C. Pembuatan larutan kitosan 0.2%

$$M_1 V_1 = M_2 V_2$$

$$1\%. V_1 = 50.0.2\%$$

$$V_1 = 10 \text{ mL}$$

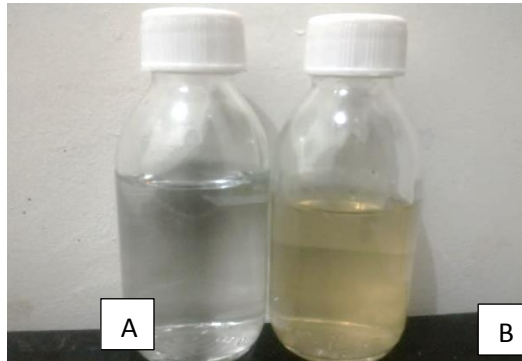
### D. Pembuatan larutan natrium tripolifosfat 0.1%

$$M_1 V_1 = M_2 V_2$$

$$0.2\%. V_1 = 10.0.1\%$$

$$V_1 = 5 \text{ mL}$$

## Lampiran 6. Pembuatan Nano Ekstrak Buah Parijoto Terenkapsulasi Kitosan



A. Larutan stok NaTPP 0.2%

B. Larutan kitosan 1%



Penimbangan ekstrak



Pengenceran ekstrak (etanol+air)



*Magnetic stirrer*



Sentrifugasi



Hasil sentrifugasi



PSA



Spektrofotometer UV



Hasil Nano Ekstrak Buah Parijoto  
terenapsulasi kitosan

## Lampiran 7. Hasil *Particle Size Analyser* Nano Ekstrak Terenkapsulasi Kitosan

### Size Distribution Report by Intensity v2.2



#### Sample Details

Sample Name: nanonana 3 1  
SOP Name: mansettings.nano  
General Notes:

File Name: Nana.dts      Dispersant Name: asam asetat  
Record Number: 23      Dispersant RI: 1.370  
Material RI: 1.50      Viscosity (cP): 1.2200  
Material Absorbtion: 0.001      Measurement Date and Time: Wednesday, January 22, 2020 ...

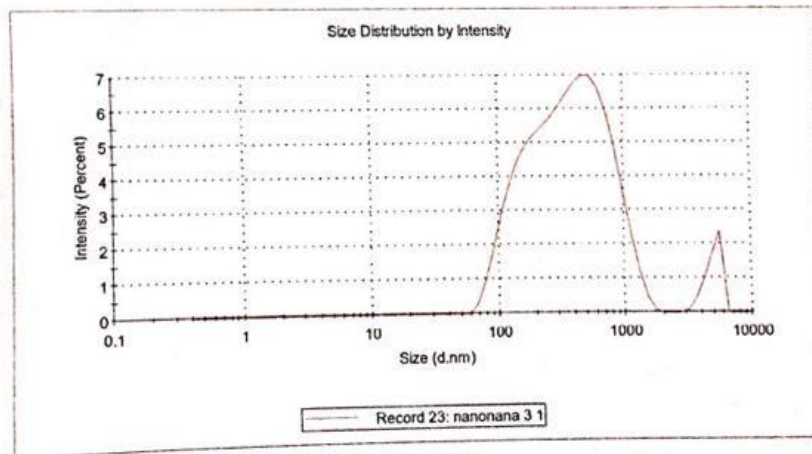
#### System

Temperature (°C): 25.0      Duration Used (s): 60  
Count Rate (kcps): 234.0      Measurement Position (mm): 4.65  
Cell Description: Glass cuvette with square aper...      Attenuator: 10

#### Results

	Size (d.nm):	% Intensity:	St Dev (d.n...
Z-Average (d.nm): 265.9 ✓	Peak 1: 431.1	94.4	289.7
Pdl: 0.526	Peak 2: 4891	5.6	681.0
Intercept: 0.942	Peak 3: 0.000	0.0	0.000

Result quality : Refer to quality report





# Size Distribution Report by Intensity

v2.2



## Sample Details

Sample Name: nanonana 14 1  
SOP Name: mansettings.nano  
General Notes:

File Name: Nana.dts  
Record Number: 35  
Material RI: 1.50  
Material Absorbtion: 0.001

Dispersant Name: asam asetat  
Dispersant RI: 1.370  
Viscosity (cP): 1.2200  
Measurement Date and Time: Friday, January 24, 2020 10:34...

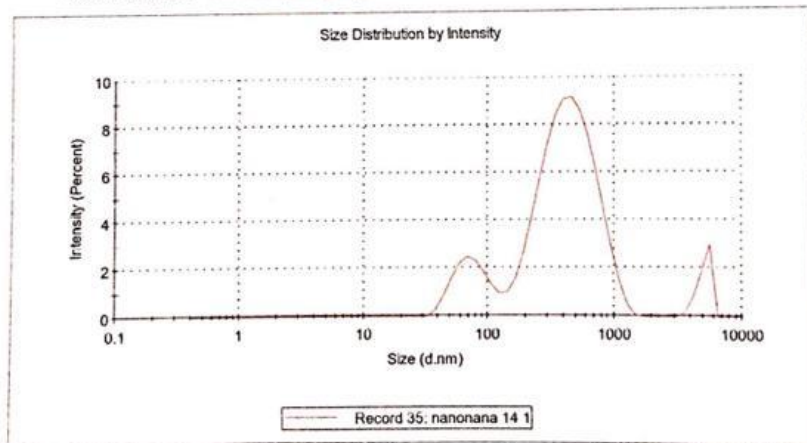
## System

Temperature (°C): 25.0  
Count Rate (kcps): 278.3  
Cell Description: Glass cuvette with square aper...  
Duration Used (s): 70  
Measurement Position (mm): 4.65  
Attenuator: 10

## Results

	Size (d.nm):	% Intensity:	St Dev (d.n...)
Z-Average (d.nm): 280.7	Peak 1: 471.4	80.5	227.2
Pdl: 0.590	Peak 2: 74.79	13.8	22.11
Intercept: 0.958	Peak 3: 5076	5.7	567.4

Result quality : Refer to quality report

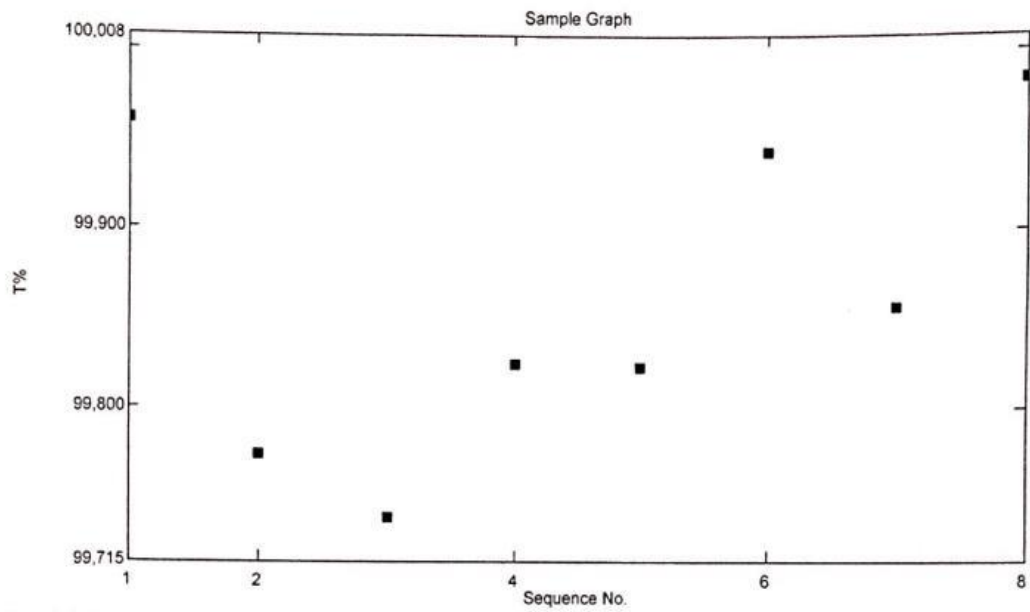


## Lampiran 8. Hasil Nilai Persen Transmittan Nano Ekstrak Terenkapsulasi Kitosan

### Sample Table Report

28/01/2020 10.44.20

File Name: C:\Users\HP\Documents\nanamizana\1-8.unk



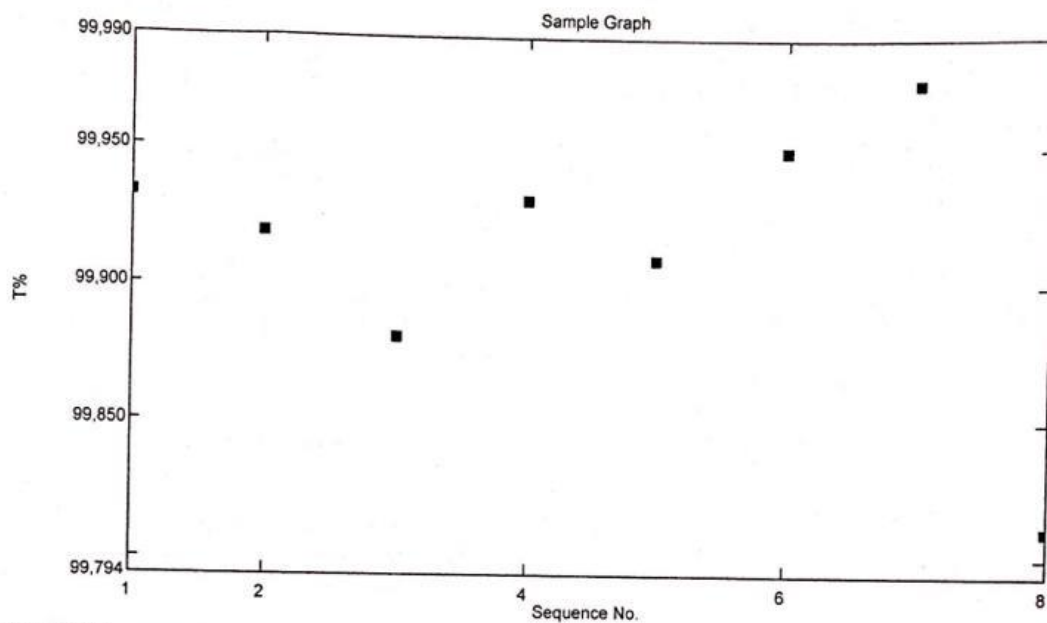
Sample Table

	Sample ID	%transmittan
1	sampel1	99.960
2	sampel2	99.774
3	sampel3	99.739
4	sampel4	99.825
5	sampel5	99.823
6	sampel6	99.944
7	sampel7	99.857
8	sampel8	99.983
9		

# Sample Table Report

28/01/2020 10:44:49

File Name: C:\Users\HP\Documents\nanamizana\9-16.unk



Sample Table

	Sample ID	%transmittan
1	sampel9	99.933
2	sampel10	99.919
3	sampel11	99.881
4	sampel12	99.931
5	sampel13	99.910
6	sampel14	99.950
7	sampel15	99.974
8	sampel16	99.811
9		

## Lampiran 9. Pemecahan Partikel Nano Ekstrak Menggunakan Metode Ultrasonikasi



Ultrasonikasi 80 Hz



Ultrasonikasi 45Hz



PSA



Spektrofotometer UV



Hasil pemecahan nano ekstrak Buah Parijoto menggunakan metode ultrasonikasi

## Lampiran 10. Hasil *Particle Size Analyser* Nanopartikel dengan Metode Ultrasonikasi

### Size Distribution Report by Intensity

v2.2



#### Sample Details

Sample Name: Nano F7 A 1

SOP Name: mansettings.nano

General Notes:

File Name:	nanaaa.dts	Dispersant Name:	asam asetat
Record Number:	7	Dispersant RI:	1.370
Material RI:	1.50	Viscosity (cP):	1.2200
Material Absorbtion:	0.001	Measurement Date and Time:	Friday, January 10, 2020 2:5...

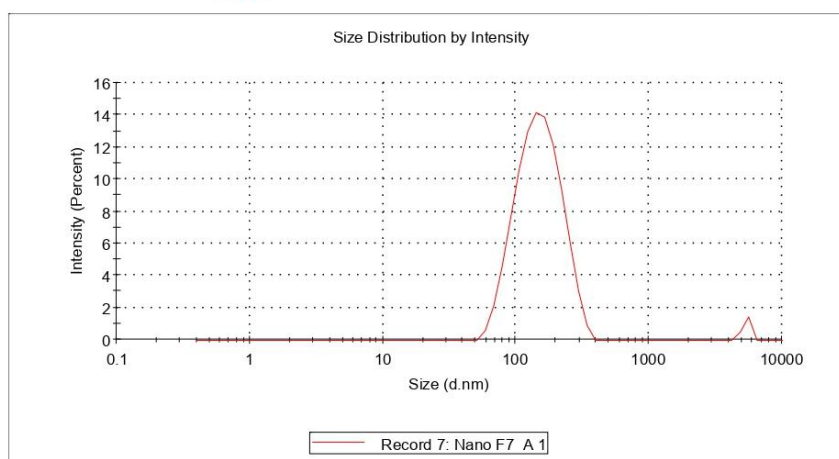
#### System

Temperature (°C):	25.0	Duration Used (s):	70
Count Rate (kcps):	195.8	Measurement Position (mm):	4.65
Cell Description:	Glass cuvette with square aper...	Attenuator:	10

#### Results

	Size (d.nm):	% Intensity:	St Dev (d.n...)
<b>Z-Average (d.nm):</b> 135.4	<b>Peak 1:</b> 156.6	98.0	58.02
<b>Pdl:</b> 0.324	<b>Peak 2:</b> 5367	2.0	330.5
<b>Intercept:</b> 0.950	<b>Peak 3:</b> 0.000	0.0	0.000

Result quality: **Good**



# Size Distribution Report by Intensity

v2.2



## Sample Details

Sample Name: Nano F7 B 1

SOP Name: mansettings.nano

General Notes:

File Name: nanaaa.dts

Dispersant Name: asam asetat

Record Number: 15

Dispersant RI: 1.370

Material RI: 1.50

Viscosity (cP): 1.2200

Material Absorbtion: 0.001

Measurement Date and Time: Monday, January 13, 2020 10...

## System

Temperature (°C): 25.0

Duration Used (s): 60

Count Rate (kcps): 253.3

Measurement Position (mm): 4.65

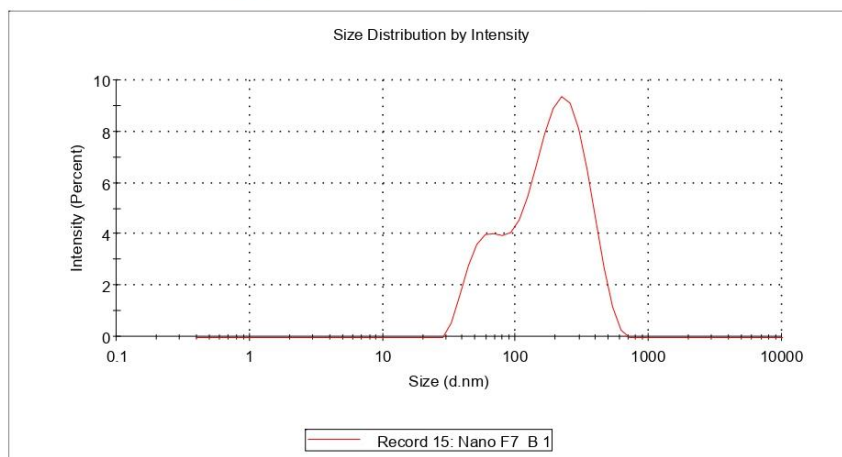
Cell Description: Glass cuvette with square aper...

Attenuator: 10

## Results

	Size (d.nm):	% Intensity:	St Dev (d.n...)
<b>Z-Average (d.nm):</b> 137.7	<b>Peak 1:</b> 223.6	80.2	106.2
<b>Pdl:</b> 0.310	<b>Peak 2:</b> 58.64	19.8	13.76
<b>Intercept:</b> 0.953	<b>Peak 3:</b> 0.000	0.0	0.000

Result quality : **Good**

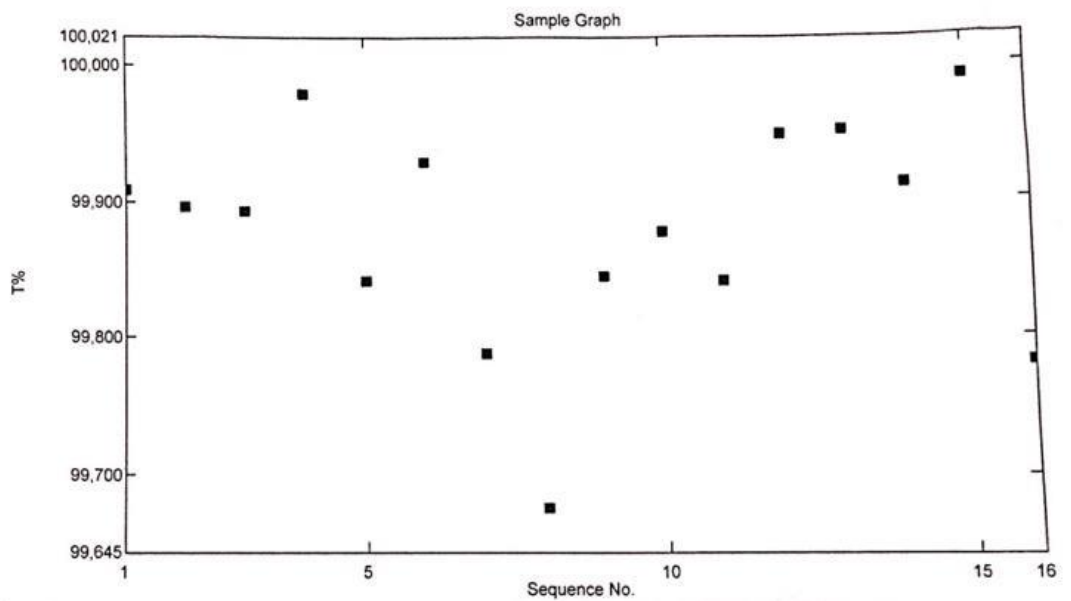


**Lampiran 11. Nilai persen transmittan Nanopartikel dengan Metode Ultrasonikasi**

**Sample Table Report**

22/01/2020 12:12:05

File Name: C:\Users\HP\Documents\nanamizana\Hz.unk



Sample Table

	Sample ID	%transmittan
1	sampel1	99.908
2	sanmpel2	99.896
3	sampel3	99.893
4	sampel4	99.979
5	sampel5	99.841
6	sampel6	99.928
7	sampel7	99.788
8	sampel8	99.677
9	sampel1.1	99.844
10	sampel2.1	99.878
11	sampel3.1	99.841
12	sampel4.1	99.948
13	sampel5.1	99.951
14	sampel6.1	99.911
15	sampel7.1	99.989
16	sampel8.1	99.782
17		

## Lampiran 12. Hasil Uji T Formula Optimal Penelitian dan *Design Expert*

T-TEST PAIRS=PDI1 WITH PDI2 (PAIRED)  
 /CRITERIA=CI(.9500)  
 /MISSING=ANALYSIS.

### T-Test

[DataSet0]

#### Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 PDI SEBELUM	.31400	3	.008718	.005033
PDI SESUDAH	.31500	3	.000000	.000000

#### Paired Samples Correlations

	N	Correlation	Sig.
Pair 1 PDI SEBELUM & PDI SESUDAH	3	.	.

#### Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 PDI SEBELUM - PDI SESUDAH	-.001000	.008718	.005033	-.022656	.020656	-.199	2	.861



T-TEST PAIRS=PT1 WITH PT2 (PAIRED)  
 /CRITERIA=CI(.9500)  
 /MISSING=ANALYSIS.

## T-Test

[DataSet0]

### Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PT1 SEBELUM	9.9885E1	3	.100683	.058129
	PT2 SESUDAH	9.9888E1	3	.000000	.000000

### Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	PT1 SEBELUM & PT2 SESUDAH	3	.	.

### Paired Samples Test

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	PT1 SEBELUM - PT2 SESUDAH	-.003000	.100683	.058129	-.253110	.247110	-.052	2	.964

T-TEST PAIRS=UP1 WITH UP2 (PAIRED)  
 /CRITERIA=CI(.9500)  
 /MISSING=ANALYSIS.

## T-Test

[DataSet0]

### Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 Ukuran partikel sebelum	1.3733E2	3	1.778576	1.026861
Ukuran partikel sesudah	1.3257E2	3	.000000	.000000

### Paired Samples Correlations

	N	Correlation	Sig.
Pair 1 Ukuran partikel sebelum & Ukuran partikel sesudah	3	.	.

### Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Ukuran partikel sebelum - Ukuran partikel sesudah	-4.758333E0	1.778576	1.026861	-9.176562	-.340105	-4.634	2	.054

### Lampiran 13. Hasil *Fourier Transform Infra Red*

#### A. Ekstrak

PerkinElmer Spectrum Version 10.4.00  
Friday, June 21, 2019 1:38 PM

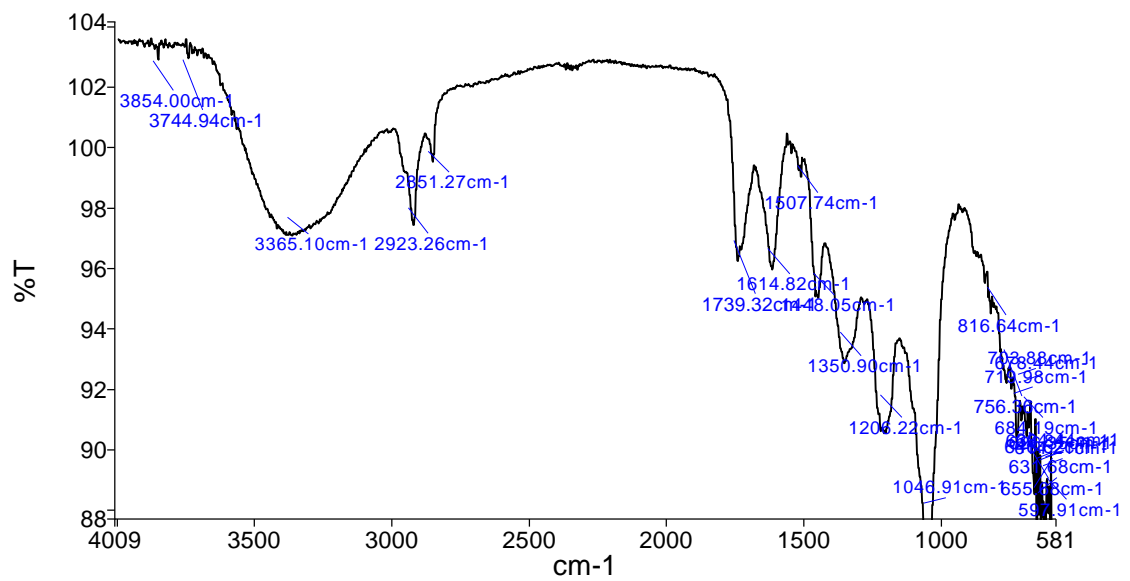
#### Report Details

Report Location C:\pel\_data\reports\Samples View 6\_nur syarohmawati\_4\_1.rtf  
Report Creator Labkim  
Report Date Friday, June 21, 2019 1:38 PM

#### Sample Details

Sample Name nur syarohmawati\_4  
Sample Description ekstrak buah parijoto  
Analyst Labkim  
Creation Date 6/21/2019 1:34:20 PM  
X-Axis Units cm-1  
Y-Axis Units %T

#### Spectrum



Name	Description
___ nur syarohmawati_4	ekstrak buah parijoto

### Peak Area/Height Results

Peak	X (cm-1)	Y (%T)	Area (%T)	Start	End	Base1
1	3854	103.04	-25.75	4000	3752.55	4000
2	3744.94	103.09	-5.41	3752.55	3735.04	3752.55
3	3365.1	97.85	-2610.35	3735.04	2997.37	3735.04
4	2923.26	98.16	-130.18	2997.37	2879.74	2997.37
5	2851.27	100.04	964.62	2879.74	2267.95	2879.74
6	1739.32	97.09	-531.97	2267.95	1679.21	2267.95
7	1614.82	96.83	-140.65	1679.21	1559.15	1679.21
8	1507.74	99.58	-30.68	1559.15	1505.66	1559.15
9	1448.05	96	-187.65	1505.66	1420.75	1505.66
10	1350.9	94.07	-290.56	1420.75	1287.02	1420.75
11	1206.22	91.99	-299.08	1287.02	1145.46	1287.02
12	1046.91	88.1	-252.44	1145.46	932.95	1145.46
13	816.64	95.54	-148.69	932.95	812.61	932.95
14	756.36	93.48	-88.52	812.61	746.49	812.61
15	719.98	91.72	-37.03	746.49	709.41	746.49
16	703.88	92.37	-5.13	709.41	691.52	709.41
17	684.19	91.92	-5.49	691.52	681.24	691.52
18	678.44	92.16	-1.51	681.24	669.53	681.24
19	655.68	90.18	-30.04	669.53	652.2	669.53
20	646.62	88.6	-20.11	652.2	641.63	652.2
21	638.84	89.57	-5.88	641.63	635.78	641.63
22	631.68	88.43	-10.86	635.78	628.8	635.78
23	626.35	89.52	-3.12	628.8	624.07	628.8
24	619.5	87.36	-9.4	624.07	616.24	624.07
25	614.21	89.33	0.42	616.24	609.52	616.24
26	604.44	89.62	-4.98	609.52	601.08	609.52
27	597.91	89.21	-2.65	601.08	594.35	601.08
28	591.05	87.49	-12.13	594.35	589.19	594.35
29	579.01	50.53	-175.09	589.19	577.26	589.19
30	574.62	-6.93	-81.75	577.26	573.48	577.26
31	572.25	-120.8	-257.43	573.48	570.97	573.48
32	569.88	-11.66	-279.79	570.97	569.15	570.97
33	568	-637.44	127.38	569.15	566.01	569.15
34	564.25	-95.26	-3062.54	566.01	563.39	566.01
35	562.52	57.27	-26.51	563.39	561.96	563.39
36	561.13	56.78	162.28	561.96	559.59	561.96
37	558	-31.02	-569.45	559.59	557.14	559.59
38	556.38	-66.44	47.22	557.14	554.86	557.14
39	553.5	-59.68	-464.48	554.86	552.01	554.86
40	550.39	4.53	-807.97	552.01	549.5	552.01
41	547.88	-98.68	-209.53	549.5	545.72	549.5
42	543.5	-160.45	-441.12	545.72	541.79	545.72
43	540.5	-100.76	-287.95	541.79	539.02	541.79
44	537.5	-110.24	-1046.75	539.02	536.5	539.02
45	535.38	-57.84	-113.25	536.5	534.02	536.5
46	533	-0.25	48.63	534.02	530.53	534.02
47	529.5	-55.16	-124.23	530.53	528.37	530.53
48	527	-579.95	-1183.66	528.37	525.91	528.37
49	525.25	-5.11	4.42	525.91	524.42	525.91
50	523.38	-517.1	137.42	524.42	521.97	524.42
51	519.62	-143.34	-8051.41	521.97	517.69	521.97

52	516.62	-79.7	-492.93	517.69	515.15	517.69
53	513.7	36.62	-551.92	515.15	513.5	515.15
54	512.5	-81.75	485.75	513.5	510.97	513.5
55	509.5	-249.27	-1882.45	510.97	508.41	510.97
56	507.12	-378.9	-1049.28	508.41	506	508.41
57	505.22	14.36	125.47	506	504.04	506
58	502.75	-492.1	-2356.19	504.04	501.57	504.04
59	500.75	-3.83	-122.48	501.57	500.5	501.57
60	499.62	-180.27	-69.89	500.5	498.5	500.5
61	497.62	-810.36	4517.36	498.5	495.69	498.5
62	493.68	91.96	-13849.61	495.69	492.98	495.69
63	491.62	-664.32	-1077.9	492.98	490.47	492.98
64	489	-2583.09	-4290.52	490.47	487.5	490.47
65	486.5	-261.7	-736.9	487.5	485.52	487.5
66	483.25	-4.71	-370.85	485.52	479.18	485.52
67	477.28	51.51	322.01	479.18	475.08	479.18
68	473.38	-355.35	-1852.58	475.08	472.1	475.08
69	471	-177.64	-543.35	472.1	470.22	472.1
70	469	-898.58	-1097.9	470.22	467.48	470.22
71	466.38	-32.91	-297.34	467.48	465.7	467.48
72	465	-25.77	341.39	465.7	462.62	465.7
73	461.62	-362.49	-705.67	462.62	460.5	462.62
74	459.12	-3856.8	-6155.86	460.5	457.57	460.5
75	456.5	-359.78	-1781.96	457.57	455.51	457.57
76	454.5	-66.84	-555.97	455.51	453.54	455.51
77	453.03	25.24	1468.25	453.54	450.31	453.54
78	448.62	-58.7	-2813.43	450.31	447.52	450.31
79	446.38	23.87	-298.64	447.52	445.54	447.52
80	444.95	25.77	312.1	445.54	443.17	445.54
81	441.12	-72.85	-1524.19	443.17	439.47	443.17
82	438.5	-654.75	-798.14	439.47	437.49	439.47
83	436.62	-2277.87	4062	437.49	434.99	437.49
84	433.5	-2695.64	-28812.93	434.99	432.47	434.99
85	429.75	-385.88	-12625.23	432.47	426.99	432.47
86	425.5	-503.35	-4224.99	426.99	424.49	426.99
87	423.62	-115.45	-259.24	424.49	422.55	424.49
88	421.38	-200.68	-413.71	422.55	420.5	422.55
89	419.25	-980.4	-1400.7	420.5	417.58	420.5
90	416.75	-78.5	-283.2	417.58	415.47	417.58
91	413.12	-35.99	-510.55	415.47	411.97	415.47
92	411.08	68.62	-116.69	411.97	410.57	411.97
93	409.62	-2343.35	-1347.4	410.57	408.49	410.57
94	407.5	-6965.19	-7121.8	408.49	406.49	408.49
95	405.38	-23877.9	30956.04	406.49	404	406.49
96	402.5	-25050.24	-255569.84	404	401.51	404

B. Kitosan

PerkinElmer Spectrum Version 10.4.00  
Friday, June 21, 2019 12:31 PM

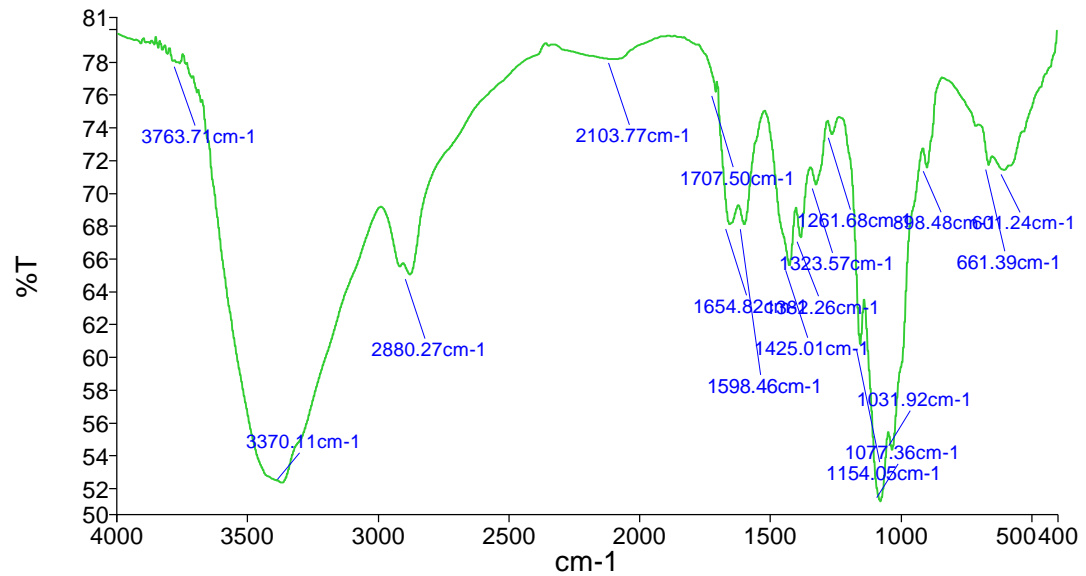
### Report Details

Report Location C:\pel\_data\reports\Samples View 2\_Nur S 2\_2\_1\_1\_1.rtf  
Report Creator Labkim  
Report Date Friday, June 21, 2019 12:31 PM

### Sample Details

Sample Name Nur S 2\_2\_1\_1  
Sample Description Kitosan  
Analyst Labkim  
Creation Date 6/21/2019 11:47:19 AM  
X-Axis Units cm-1  
Y-Axis Units %T

### Spectrum



Name	Description
Nur S 2_2_1_1	Kitosan

**Peak Area/Height Results**

Peak	X (cm-1)	Y (%T)	Area (%T)	Start	End	Base1
1	3763.71	78.04	-172.86	4000	3750.84	4000
2	3370.11	52.3	-12416.75	3750.84	2991.69	3750.84
3	2880.27	65.08	2533.79	2991.69	2359.39	2991.69
4	2103.77	78.28	-191.54	2359.39	1889.22	2359.39
5	1707.5	76.27	-154.49	1889.22	1700.51	1889.22
6	1654.82	68.15	-521.83	1700.51	1621.81	1700.51
7	1598.46	68.16	214.98	1621.81	1520.56	1621.81
8	1425.01	65.63	-648.77	1520.56	1400.56	1520.56
9	1382.26	67.36	9.53	1400.56	1344.46	1400.56
10	1323.57	70.61	18.74	1344.46	1279.54	1344.46
11	1261.68	73.7	-14.89	1279.54	1235.19	1279.54
12	1154.05	60.83	-537.06	1235.19	1138.61	1235.19
13	1077.36	51.16	-761.45	1138.61	1046.56	1138.61
14	1031.92	54.34	1052.13	1046.56	914.57	1046.56
15	898.48	71.65	114.06	914.57	839.67	914.57
16	661.39	71.79	-384.58	839.67	648.25	839.67
17	601.24	71.49	526.05	648.25	400	648.25

# C. Natrium Tripolifosfat

PerkinElmer Spectrum Version 10.4.00  
Friday, June 21, 2019 12:31 PM

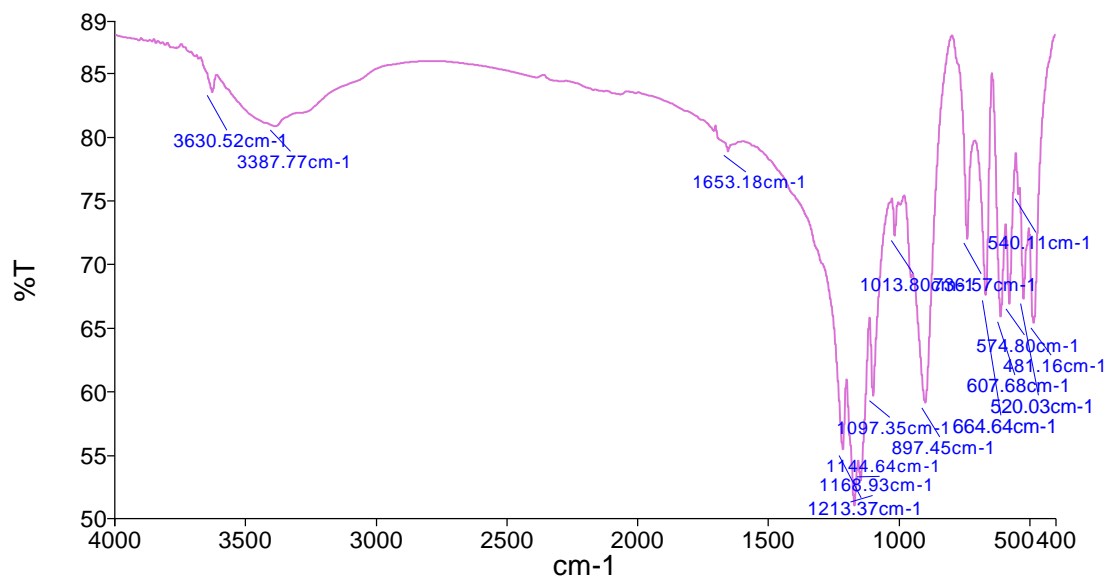
## Report Details

Report Location C:\pel\_data\reports\Samples View 2\_Nur S 3\_2\_1\_1\_1.rtf  
Report Creator Labkim  
Report Date Friday, June 21, 2019 12:31 PM

## Sample Details

Sample Name Nur S 3\_2\_1\_1  
Sample Description NaTTP  
Analyst Labkim  
Creation Date 6/21/2019 11:50:38 AM  
X-Axis Units cm-1  
Y-Axis Units %T

## Spectrum



Name	Description
Nur S 3_2_1_1	NaTTP



**Peak Area/Height Results**

Peak	X (cm-1)	Y (%T)	Area (%T)	Start	End	Base1
1	3630.52	83.67	-424.71	4000	3614.48	4000
2	3387.77	80.95	-1069.03	3614.48	2795.92	3614.48
3	1653.18	78.98	-2764.41	2795.92	1594.58	2795.92
4	1213.37	55.4	-2519.09	1594.58	1199.4	1594.58
5	1168.93	51	-273.14	1199.4	1154.45	1199.4
6	1144.64	52.99	141.21	1154.45	1110.85	1154.45
7	1097.35	59.67	270.22	1110.85	1024.17	1110.85
8	1013.8	72.29	-36.42	1024.17	978.41	1024.17
9	897.45	59.12	-484.72	978.41	794.39	978.41
10	736.57	72.08	-599.54	794.39	706.17	794.39
11	664.64	67.61	-266.63	706.17	640.64	706.17
12	607.68	65.91	-610.58	640.64	588.72	640.64
13	574.8	66.92	-30.69	588.72	549.32	588.72
14	540.11	75.58	-28.66	549.32	535.5	549.32
15	520.03	67.33	-179.72	535.5	498.69	535.5
16	481.16	65.43	548.24	498.69	400	498.69

## D. Nano Ekstrak Terenkapsulasi Kitosan'

PerkinElmer Spectrum Version 10.4.00  
Friday, June 21, 2019 12:18 PM

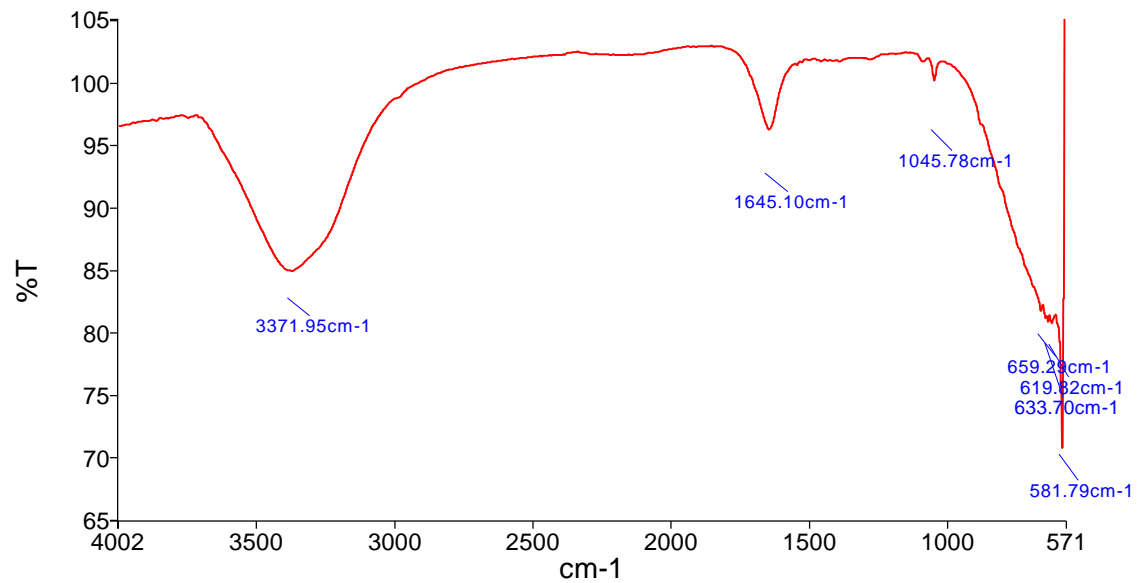
### Report Details

Report Location C:\pel\_data\reports\Samples View 1\_Nur S 1\_1\_1.rtf  
Report Creator Labkim  
Report Date Friday, June 21, 2019 12:18 PM

### Sample Details

Sample Name Nur S 1\_1  
Sample Description Nanopartikel  
Analyst Labkim  
Creation Date 6/21/2019 11:38:14 AM  
X-Axis Units cm-1  
Y-Axis Units %T

### Spectrum



Name	Description
Nur S 1_1	Nanopartikel

### Peak Area/Height Results

Peak	X (cm-1)	Y (%T)	Area (%T)	Start	End	Base1
1	1645.1	93.2	-986.67	1852.83	1148.5	1852.83
2	3371.95	83.19	479.83	3720.56	1852.83	3720.56
3	1645.1	93.2	-986.67	1852.83	1148.5	1852.83
4	1045.78	96.68	-74.79	1148.5	1015.7	1148.5
5	581.79	70.68	4.95	605.74	571.24	605.74

## E. Nanopartikel dengan Ultrasonikasi

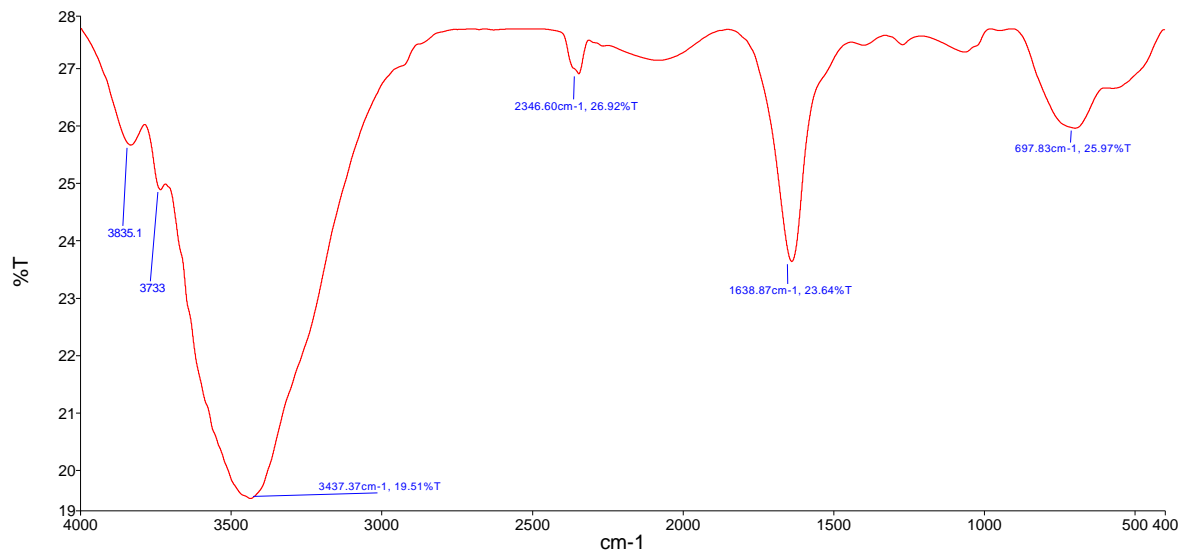
PerkinElmer Spectrum Version 10.03.06  
Wednesday, February 05, 2020 10:51 PM

### Report

Filename Mizana A Sampel 1\_1  
Analyst Administrator  
Description Sample 01 By Administrator Date Wednesday, February 05 2020

### Sample Details

Creation Date 2/5/2020 10:50:20 PM  
X-Axis Units cm-1  
X-Axis start value 4000  
X-Axis end value 400  
Data interval -1  
Number of points 3601  
Y-Axis Units %T

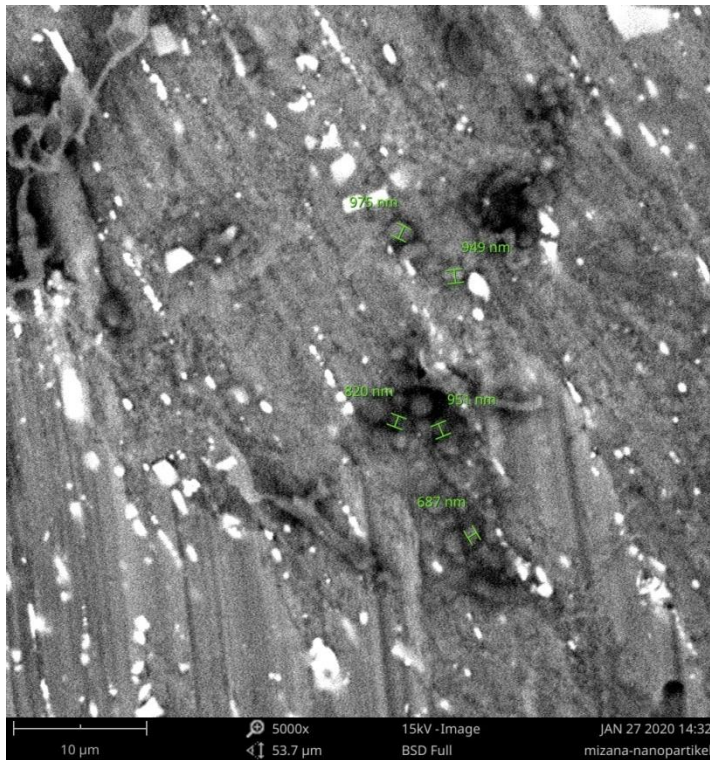
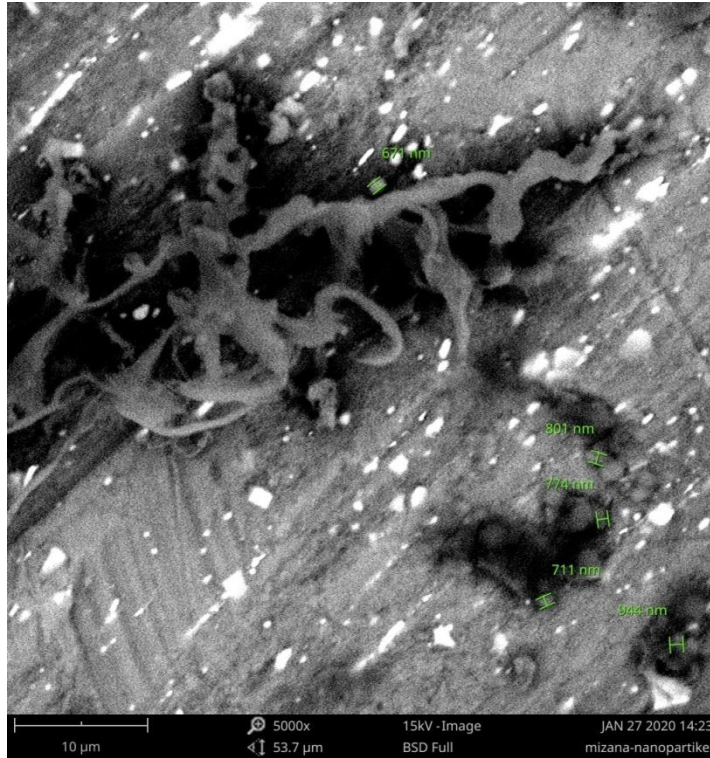


— Mizana A Sampel 1\_1 Sample 01 By Administrator Date Wednesday, February 05 2020

Name	Description
Mizana A Sampel 1_1	Sample 01 By Administrator Date Wednesday, February 05 2020

PeakName	X	Y
4	697.83	25.97
3	1638.87	23.64
2	2346.6	26.92
1	3437.37	19.51

**Lampiran 14. Hasil *Scanning Electron Microscopy***



## Lampiran 15. Hasil Uji T *Cycling Test*

T-TEST PAIRS=UPSB WITH UPST (PAIRED)  
 /CRITERIA=CI (.9500)  
 /MISSING=ANALYSIS.

### T-Test

[DataSet0]

#### Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	ukuran partikel sebelum	1.3540E2	3	.00000	.00000
	ukuran partikel setelah	1.7193E2	3	5.08068	2.93333

#### Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	ukuran partikel sebelum & ukuran partikel setelah	3	.	.

#### Paired Samples Test

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	ukuran partikel sebelum - ukuran partikel setelah	-3.653E1	5.08068	2.93333	-49.15445	-23.91222	-12.455	2	.006

T-TEST PAIRS=UPSB WITH UPST (PAIRED)  
 /CRITERIA=CI (.9500)  
 /MISSING=ANALYSIS.

## T-Test

[DataSet0]

### Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	ukuran partikel sebelum	1.3540E2	3	.00000	.00000
	ukuran partikel setelah	1.7193E2	3	5.08068	2.93333

### Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	ukuran partikel sebelum & ukuran partikel setelah	3	.	.

### Paired Samples Test

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	ukuran partikel sebelum - ukuran partikel setelah	-3.653E1	5.08068	2.93333	-49.15445	-23.91222	-12.455	2	.006

T-TEST PAIRS=PTSB WITH PTST (PAIRED)  
 /CRITERIA=CI (.9500)  
 /MISSING=ANALYSIS.

## T-Test

[DataSet0]

### Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	% transmitan sebelum	9.9855E1	3	.116047	.067000
	% transmitan setelah	9.9686E1	3	.000000	.000000

### Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	% transmitan sebelum & % transmitan setelah	3	.	.

### Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	% transmitan sebelum - % transmitan setelah	.169000	.116047	.067000	-.119278	.457278	2.522	2	.128

Lampiran 16. Sertifikat Kitosan

## Certificate of Analysis CHITOSAN [ Powder ]

- ▣ Product Name : CHITOSAN . [ Shrimp Shell ]
- ▣ Raw Material : Black tiger
- ▣ Use : Food Grade dan Medical Grade
  
- ▣ The date of manufacture : 10, MARET 2019
- ▣ Expiry Date : 10, MARET 2021
  
- ▣ Analysis Date : 11, MARET 2019

Items	Specification	Results	Method
Appearance	White Or Yellow	Pale Yellow	
Odor	Odorless	Complies	
Solution	99 % Min.	99 % UP	6 % Soln. in HCl 1.0 %
Moisture Content	12.0 % Max.	8.5 %	Infrared Moisture meter
Ash Content	1.0 % Max.	0.5 %	Ashing Method
Protein Content	1.0 % Max.	0.5 %	Lowry method
De-Acetylation ( DAC )	70 % Min.	87,5 %	PVSK
Viscosity	50 cps Max.	20 cps	0.5 % Soln. in Acid
Transparency	30 Cm Min.	39 Cm	Transparency meter ( JIS K )
pH ( 5 % dispersion )	6.5 ~ 7.5	7,1	pH meter
As	0.2 ppm Max.	Complies	ICP
Pb	1.0 ppm Max.	Complies	ICP
E-Coli	Negative	Negative	Flat Disk method
Salmonella	Negative	Negative	Flat Disk method
Particale size	Crushed	100 mesh	Mesh Method

• Chitosan Berat Molekul : 50,000 - 80,000 M / W

HACCP CERTIFIED



Ref No. : 24/PP/HACCP/1/10



Ref No. : 2009/MS/PP/01/10





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**Pembimbing 1** : Rissa Laila Vifta, S.Si, M.Sc  
**Pembimbing 2** : Agitya Resti E, S.Farm., M.Sc., Apt

No	Hari/ Tanggal	Topik Konsultasi	Masukan/ catatan	PARAF	
				Pembimbing I	Pembimbing II
1.	16/09/2019	Acc judul.			
2	27/09/19	Revisi Bab 1, 2, 3			
3.	19/10/19	Revisi Bab 1, 2, 3			
4.	02/12/19	ACC Bab 1, 2, 3			
5.	08/01/20	Konsultasi Data			
6.	10/01/20	Konsultasi Data.			
7.	05/02/20	Revisi Bab 4 & 5.			
8	06/02/20	ACC Bab 4 & 5			

