

LAMPIRAN 1

LAMPIRAN 1

A. Optimasi kondisi *electrospinning*

Tabel Optimasi kondisi *electrospinning*

NO	Larutan	Konsentrasi/ perbandingan (w/w)	Jarak (cm)	Diameter spineret (mm)	Tegangan (kv)	Waktu	Keterangan			total
							Spot	Fiber terkumpul	sirkel	
1	PVA	10%	10	0,6	10	20 menit	3	2	1	6
2	PVA	10%	10	0,6	15	20 menit	3	2	0	5
3	PVA	10%	10	0,6	20	20 menit	3	1	0	4
4	PVA	10%	10	0,6	25	20 menit	0	0	1	1
5	PVA	10%	12,5	0,6	10	20 menit	3	2	3	8
6	PVA	10%	12,5	0,6	15	20 menit	2	2	2	6
7	PVA	10%	12,5	0,6	20	20 menit	3	2	1	6
8	PVA	10%	12,5	0,6	25	20 menit	3	1	0	4
9	PVA	10%	15	0,6	10	20 menit	2	3	3	8
10	PVA	10%	15	0,6	15	20 menit	2	3	2	7
11	PVA	10%	15	0,6	20	20 menit	2	2	1	5
12	PVA	10%	15	0,6	25	20 menit	3	1	1	5
13	PVA	10%	16,5	0,6	10	20 menit	3	3	3	9
14	PVA	10%	16,5	0,6	15	20 menit	2	2	2	6
15	PVA	10%	16,5	0,6	20	20 menit	2	2	1	5
16	PVA	10%	16,5	0,6	25	20 menit	3	2	1	6

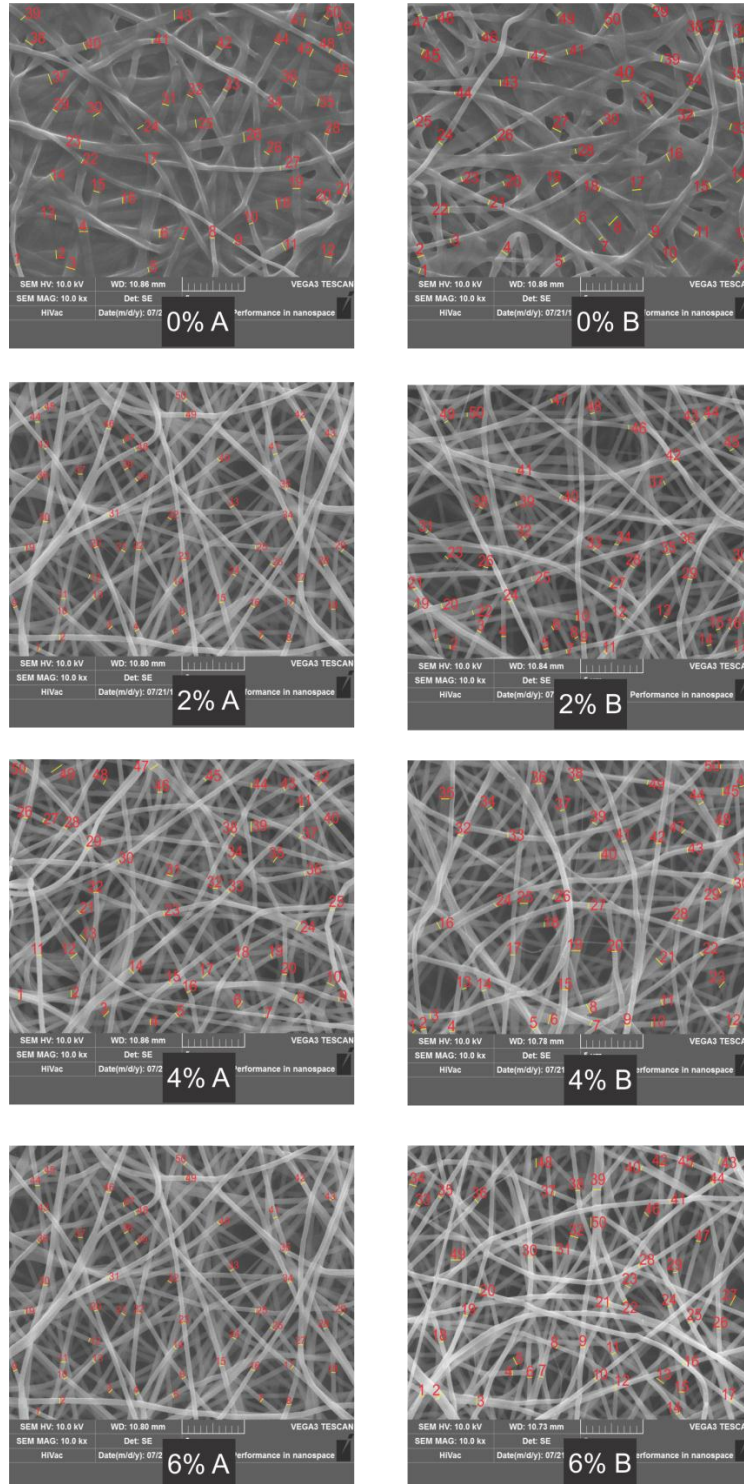
B. Hasil pengujian tarik

Tabel Hasil pengujian tarik membran serat nano PVA/lendir bekicot

No	Sampel	a0 (mm)	b0 (mm)	Fmax (N)	Tensil Strenght (Mpa)	Rata-rata Tegangan	Standar Deviasi Tegangan
1	0%	0.03837	10	1.9573	5.101	3.483	0.432
2	0%	0.08954	10	2.7264	3.045		
3	0%	0.03837	10	1.9089	4.975		
4	0%	0.06297	10	2.2022	3.497		
5	0%	0.05707	10	2.2304	3.908		
6	2%	0.08659	10	3.5456	4.095	5.367	0.434
7	2%	0.07478	10	3.7455	5.009		
8	2%	0.05018	10	2.6303	5.242		
9	2%	0.05807	10	3.3967	5.849		
10	2%	0.1318	10	3.4346	2.606		
11	4%	0.06002	10	2.995	4.990	3.815	1.020
12	4%	0.1361	10	3.2055	2.355		
13	4%	0.1161	10	3.8353	3.303		
14	4%	0.1102	10	3.1526	2.861		
15	4%	0.1318	10	4.1542	3.152		
16	6%	0.02755	10	2.1925	7.958	3.965	0.837
17	6%	0.06199	10	2.8346	4.573		
18	6%	0.09446	10	2.8426	3.009		
19	6%	0.07183	10	3.0971	4.312		
20	6%	0.05904	10	1.5283	2.589		

C. Perhitungan diameter serat nano

Pengukuran diameter serat nano PVA/lendir bekicot



D. Hasil pengukuran diameter serat nano

Tabel hasil perhitungan diameter serat nano

Konsentrasi PVA/lendir bekicot											
0%			2%			4%			6%		
No.	Diameter	Rata-rata	No.	Diameter	Rata-rata	No.	Diameter	Rata-rata	No.	Diameter	Rata-rata
1	410.49		1	340.754		1	414.268		1	430.527	
2	516.396		2	286.791		2	519.744		2	816.581	
3	350.467		3	357.346		3	432.432		3	669.399	
4	637.8		4	373.714		4	461.198		4	390.628	
5	334.976		5	403.705		5	521.886		5	642.537	
6	551.451		6	334.313		6	766.267		6	352.695	
7	370.947		7	324.754		7	453.615		7	445.419	
8	983.143		8	313.123		8	845.627		8	357.856	
9	458.814		9	386.586		9	520.544		9	423.215	
10	498.332		10	387.445		10	433.276		10	395.547	
11	453.633		11	367.565		11	490.086		11	415.218	
12	332.784		12	311.197		12	472.994		12	420.139	
13	386.649		13	340.465		13	422.297		13	757.048	
14	491.719		14	378.313		14	401.786		14	421.049	
15	428.943		15	349.609		15	486.486		15	429.241	
16	592.021		16	213.067		16	677.295		16	385.12	
17	760.14	459	17	291.21	348	17	405.405	486	17	364.28	477
18	386.199		18	384.031		18	432.432		18	409.83	
19	596.965		19	350.648		19	783.784		19	408.844	
20	387.841		20	350.576		20	432.432		20	408.949	
21	397.488		21	369.23		21	802.662		21	446.18	
22	478.128		22	342.228		22	451.655		22	387.516	
23	394.832		23	328.029		23	671.618		23	502.761	
24	405.116		24	358.042		24	466.651		24	365.563	
25	364.565		25	366.522		25	702.711		25	423.203	
26	335.026		26	394.242		26	449.774		26	370.781	
27	747.685		27	339.582		27	452.715		27	846.405	
28	392.639		28	393.399		28	408.993		28	407.446	
29	252.245		29	375.252		29	463.51		29	397.173	
30	417.66		30	350.543		30	457.889		30	413.373	
31	503.374		31	287.351		31	412.168		31	374.019	
32	311.314		32	392.389		32	487.237		32	752.971	
33	496.861		33	350.885		33	436.96		33	378.524	

34	328.443	34	337.401	34	441.548	34	617.755
35	396.838	35	383.135	35	397.013	35	401.338
36	384.765	36	285.765	36	516.892	36	438.454
37	335.113	37	345.587	37	427.335	37	390.492
38	377.666	38	314.189	38	488.36	38	415.767
39	509.174	39	350.543	39	448.908	39	682.898
40	638.509	40	333.318	40	595.209	40	340.298
41	400.239	41	362.249	41	419.572	41	428.683
42	513.426	42	418.802	42	486.486	42	557.241
43	463.993	43	345.773	43	409.91	43	403.891
44	200.563	44	321.268	44	496.15	44	331.179
45	467.723	45	399.565	45	648.649	45	408.29
46	357.737	46	335.042	46	616.311	46	483.951
47	333.723	47	330.411	47	496.886	47	397.173
48	282.195	48	374.12	48	376.443	48	610.535
49	450.401	49	363.622	49	419.572	49	761.584
50	384.641	50	309.388	50	379.342	50	735.354
51	384.283	51	289.624	51	393.357	51	364.583
52	623.918	52	360.823	52	551.323	52	386.382
53	752.939	53	371.327	53	652.103	53	409.72
54	658.521	54	377.082	54	433.139	54	397.135
55	347.084	55	348.102	55	396.526	55	453.434
56	593.137	56	322.664	56	675.294	56	705.051
57	407.41	57	364.486	57	244.755	57	390.625
58	350.785	58	360.823	58	545.839	58	423.839
59	277.934	59	335.05	59	352.514	59	388.455
60	352.703	60	351.158	60	683.511	60	694.444
61	641.511	61	382.397	61	432.742	61	493.667
62	520.382	62	288.151	62	693.142	62	642.713
63	358.086	63	291.589	63	713.906	63	442.708
64	701.299	64	328.037	64	643.3	64	416.221
65	460.179	65	385.472	65	370.976	65	470.895
66	419.234	66	345.915	66	404.8	66	416.667
67	397.939	67	369.295	67	580.899	67	651.562
68	642.153	68	352.336	68	398.311	68	678.209
69	493.677	69	335.607	69	368.094	69	372.86
70	381.346	70	318.795	70	357.299	70	657.681
71	331.331	71	380.534	71	423.41	71	582.633
72	325.252	72	373.734	72	410.862	72	694.661
73	572.755	73	357.615	73	394.23	73	399.306

74	485.544	74	379.393	74	645.02	74	666.611
75	528.209	75	322.421	75	439.248	75	345.7
76	463.274	76	381.243	76	409.838	76	369.306
77	337.662	77	393.092	77	367.653	77	387.137
78	353.285	78	349.629	78	373.427	78	360.112
79	418.819	79	306.836	79	422.846	79	431.066
80	508.561	80	399.482	80	403.137	80	664.987
81	535.468	81	329.3	81	526.408	81	442.325
82	480.388	82	340.458	82	375.525	82	687.465
83	384.846	83	309.411	83	401.765	83	345.113
84	338.66	84	384.232	84	502.527	84	898.272
85	577.334	85	321.712	85	503.742	85	452.764
86	450.653	86	341.054	86	368.068	86	475.26
87	597.403	87	380.644	87	393.357	87	364.714
88	668.547	88	355.153	88	420.501	88	373.264
89	424.021	89	328.037	89	787.696	89	841.759
90	535.468	90	364.486	90	401.842	90	498.291
91	338.66	91	351.807	91	406.521	91	442.708
92	480.266	92	352.179	92	432.67	92	365.106
93	635.907	93	353.059	93	366.488	93	360.269
94	366.466	94	365.118	94	402.952	94	590.405
95	539.096	95	319.604	95	347.018	95	364.583
96	628.288	96	383.631	96	400.127	96	300.609
97	487.393	97	334.333	97	753.284	97	332.704
98	340.77	98	353.8	98	648.624	98	271.883
99	453.617	99	326.487	99	577.072	99	382.339
100	413.051	100	348.607	100	372.71	100	347.222

LAMPIRAN 2

LAMPIRAN 2

578/PS/06/17

14.06.2017

Parameter table:

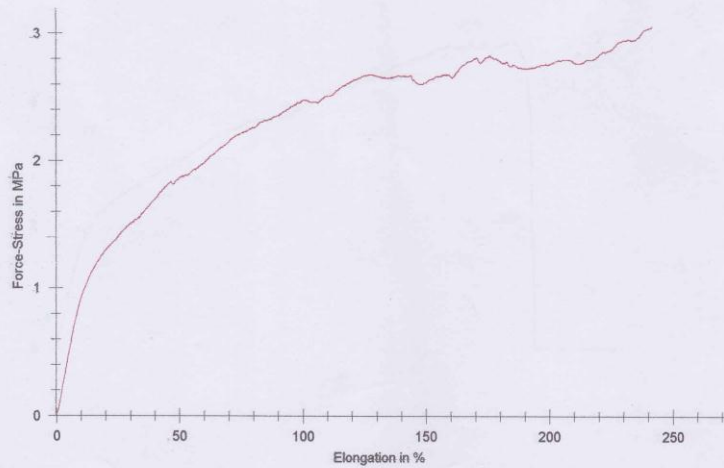
Heading :
Company name: 578/PS/06/17
Customer : Imam Nur Soleh
Test speed: 5 mm/min

Tester : Rachmat
Test standard : Tensile strength
Material : 0% A2

Results:

Nr	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
2	0,08954	10	20	2,7264	3,0449	241,5094

Series graphics:



Statistics:

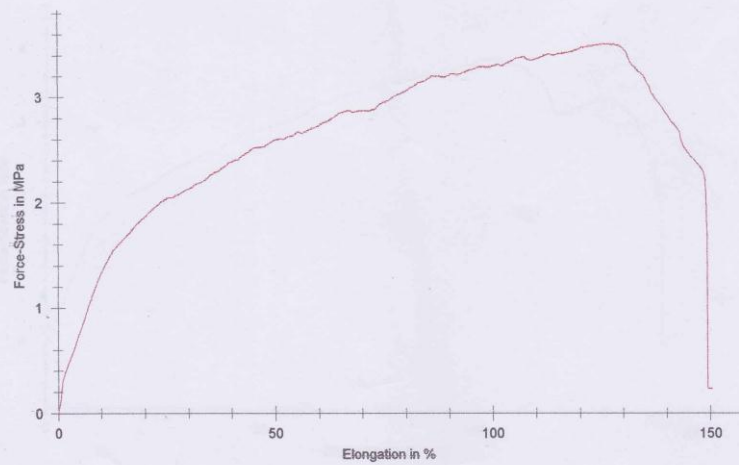
Series n = 1	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
\bar{x}	0,08954	10	20	2,7264	3,0449	241,5094
s	-	-	-	-	-	-
v	-	-	-	-	-	-

Parameter table:

Heading :
 Company name : 578/PS/06/17
 Customer : Imam Nur Soleh
 Test speed : 5 mm/min
 Tester : Rachmat
 Test standard : Tensile strength
 Material : 0% A4

Results:

Nr	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
4	0,06297	10	20	2,2022	3,4972	125,9707

Series graphics:**Statistics:**

Series n = 1	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
x	0,06297	10	20	2,2022	3,4972	125,9707
s	-	-	-	-	-	-
v	-	-	-	-	-	-

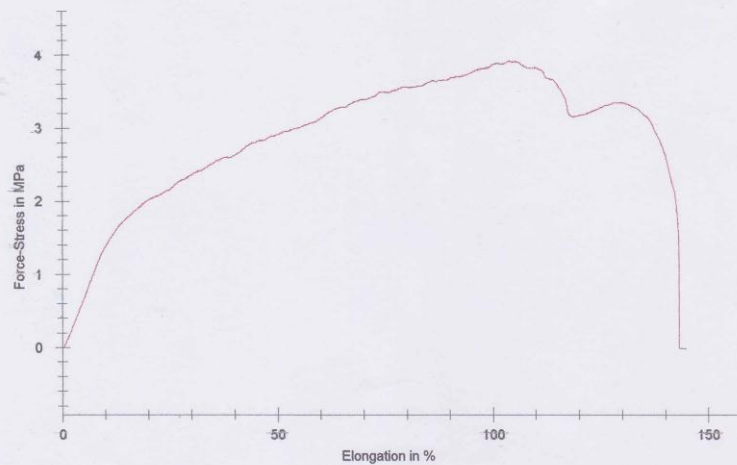
Parameter table:

Heading :
 Company name: 578/PS/06/17
 Customer : Imam Nur Soleh
 Test speed: 5 mm/min

Tester : Rachmat
 Test standard : Tensile strength
 Material : 0% A5

Results:

Nr	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
5	0,05707	10	20	2,2304	3,9082	103,9206

Series graphics:**Statistics:**

Series n = 1	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
x	0,05707	10	20	2,2304	3,9082	103,9206
s	-	-	-	-	-	-
v	-	-	-	-	-	-

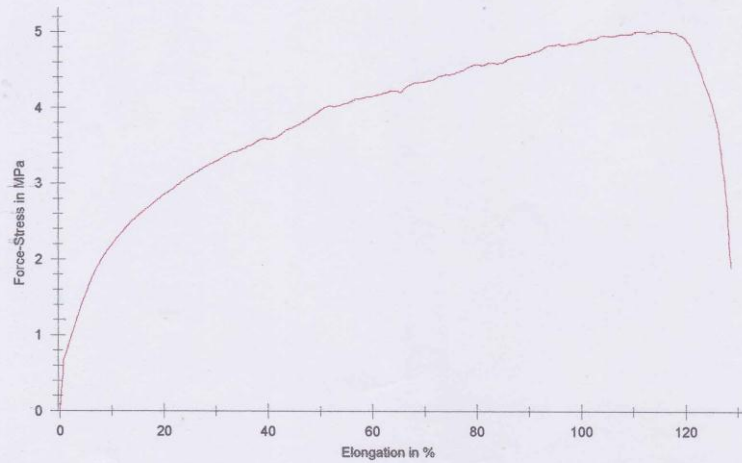
Parameter table:

Heading :
 Company name: 578/PS/06/17
 Customer : Imam Nur Soleh
 Test speed: 5 mm/min
 Tester : Rachmat
 Test standard : Tensile strength
 Material : 2% B2

Results:

Nr	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
2	0,07478	10	20	3,7455	5,0087	114,5044

Series graphics:



Statistics:

Series n = 1	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
\bar{x}	0,07478	10	20	3,7455	5,0087	114,5044
s	-	-	-	-	-	-
v	-	-	-	-	-	-

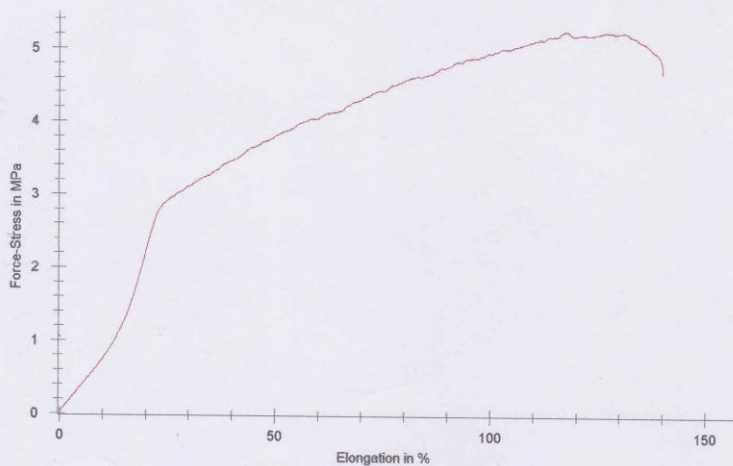
Parameter table:

Heading :
 Company name: 578/PS/06/17
 Customer : Imam Nur Soleh
 Test speed: 5 mm/min

Tester : Rachmat
 Test standard : Tensile strength
 Material : 2% B3

Results:

Nr	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
3	0,05018	10	20	2,6303	5,2418	117,0170

Series graphics:**Statistics:**

Series n = 1	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
\bar{x}	0,05018	10	20	2,6303	5,2418	117,0170
s	-	-	-	-	-	-
v	-	-	-	-	-	-

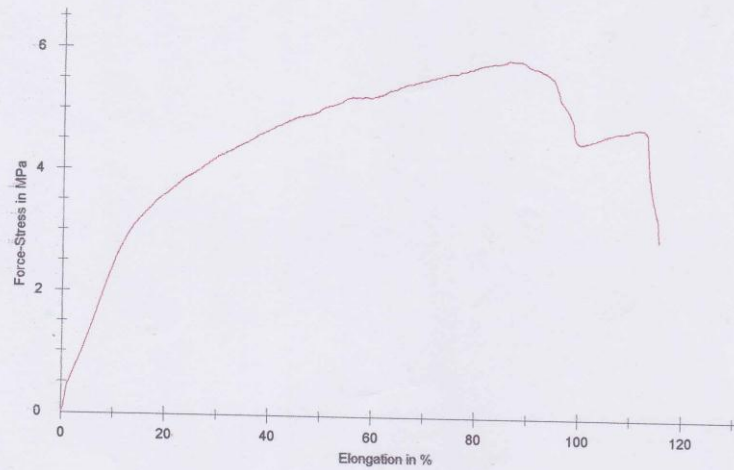
Parameter table:

Heading :
 Company name: 578/PS/06/17
 Customer : Imam Nur Soleh
 Test speed: 5 mm/min

Tester : Rachmat
 Test standard : Tensile strength
 Material : 2% B4

Results:

Nr	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
4	0,05807	10	20	3,3967	5,8493	86,1366

Series graphics:**Statistics:**

Series n = 1	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
x	0,05807	10	20	3,3967	5,8493	86,1366
s	-	-	-	-	-	-
v	-	-	-	-	-	-

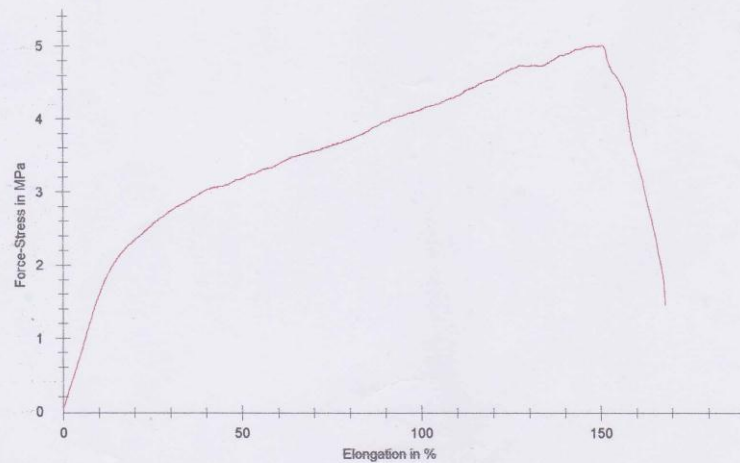
Parameter table:

Heading :
 Company name: 578/PS/06/17
 Customer : Imam Nur Soleh
 Test speed: 5 mm/min

Tester : Rachmat
 Test standard : Tensile strength
 Material : 4% C1

Results:

Nr	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
1	0,06002	10	20	2,9950	4,9899	149,7971

Series graphics:**Statistics:**

Series n = 1	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
\bar{x}	0,06002	10	20	2,9950	4,9899	149,7971
s	-	-	-	-	-	-
v	-	-	-	-	-	-

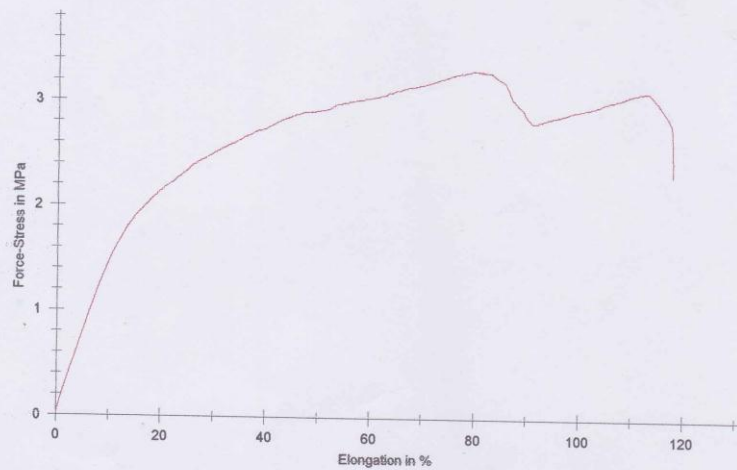
Parameter table:

Heading :
 Company name: 578/PS/06/17
 Customer : Imam Nur Soleh
 Test speed: 5 mm/min

Tester : Rachmat
 Test standard : Tensile strength
 Material : 4% C3

Results:

Nr	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
3	0,1161	10	20	3,8353	3,3035	79,6094

Series graphics:**Statistics:**

Series n = 1	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
x	0,1161	10	20	3,8353	3,3035	79,6094
s	-	-	-	-	-	-
v	-	-	-	-	-	-

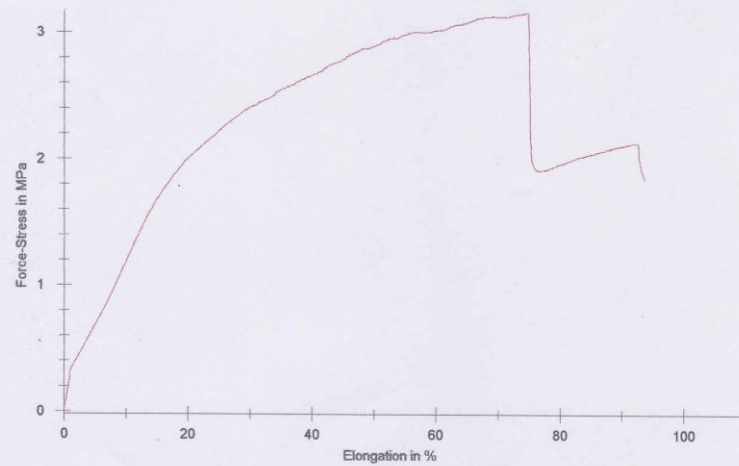
Parameter table:

Heading :
 Company name: 578/PS/06/17
 Customer : Imam Nur Soleh
 Test speed: 5 mm/min

Tester : Rachmat
 Test standard : Tensile strength
 Material : 4% C5

Results:

Nr	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
5	0,1318	10	20	4,1542	3,1519	74,3429

Series graphics:**Statistics:**

Series n = 1	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
x	0,1318	10	20	4,1542	3,1519	74,3429
s	-	-	-	-	-	-
v	-	-	-	-	-	-

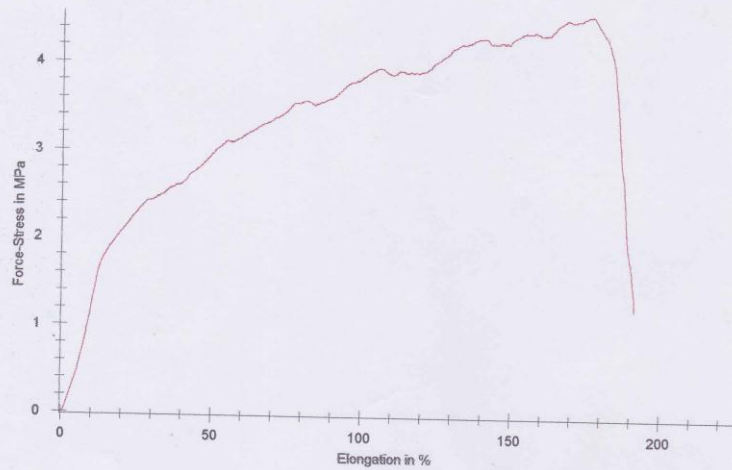
Parameter table:

Heading :
 Company name: 578/PS/06/17
 Customer : Imam Nur Soleh
 Test speed: 5 mm/min

Tester : Rachmat
 Test standard : Tensile strength
 Material : 6% D2

Results:

Nr	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
2	0,06199	10	20	2,8346	4,5727	176,3513

Series graphics:**Statistics:**

Series n = 1	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
x	0,06199	10	20	2,8346	4,5727	176,3513
s	-	-	-	-	-	-
v	-	-	-	-	-	-

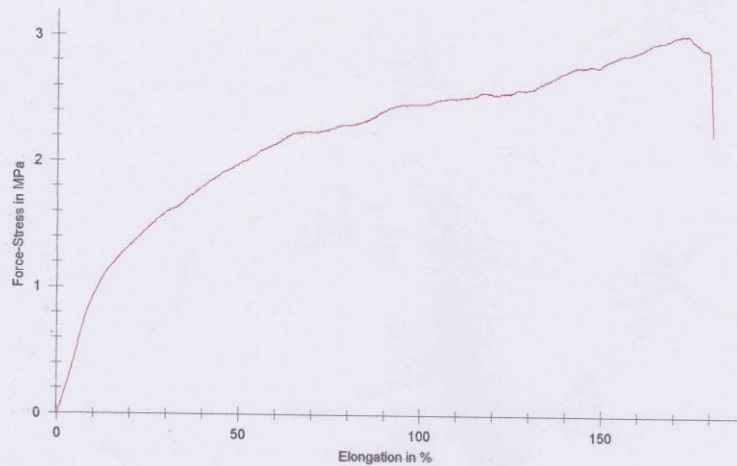
Parameter table:

Heading :
 Company name: 578/PS/06/17
 Customer : Imam Nur Soleh
 Test speed: 5 mm/min

Tester : Rachmat
 Test standard : Tensile strength
 Material : 6% D3

Results:

Nr	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
3	0,09446	10	20	2,8426	3,0093	172,0557

Series graphics:**Statistics:**

Series n = 1	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
x	0,09446	10	20	2,8426	3,0093	172,0557
s	-	-	-	-	-	-
v	-	-	-	-	-	-

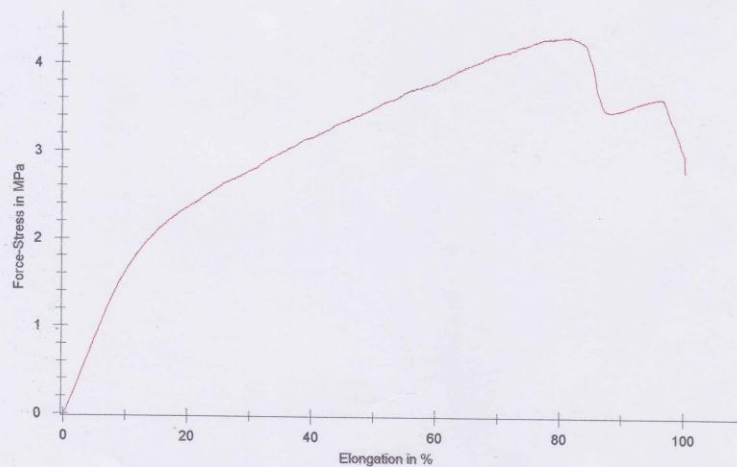
Parameter table:

Heading :
 Company name: 578/PS/06/17
 Customer : Imam Nur Soleh
 Test speed: 5 mm/min

Tester : Rachmat
 Test standard : Tensile strength
 Material : 6% D4

Results:

Nr	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
2	0,07183	10	20	3,0971	4,3117	81,2236

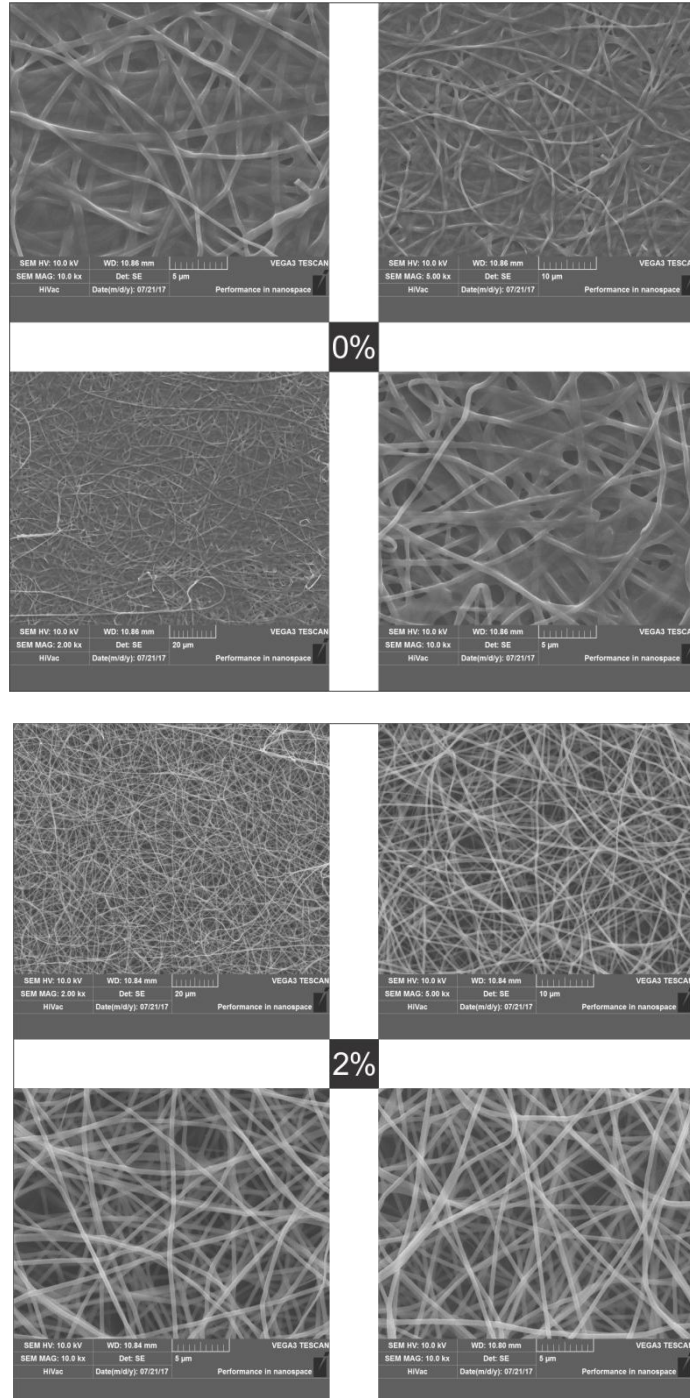
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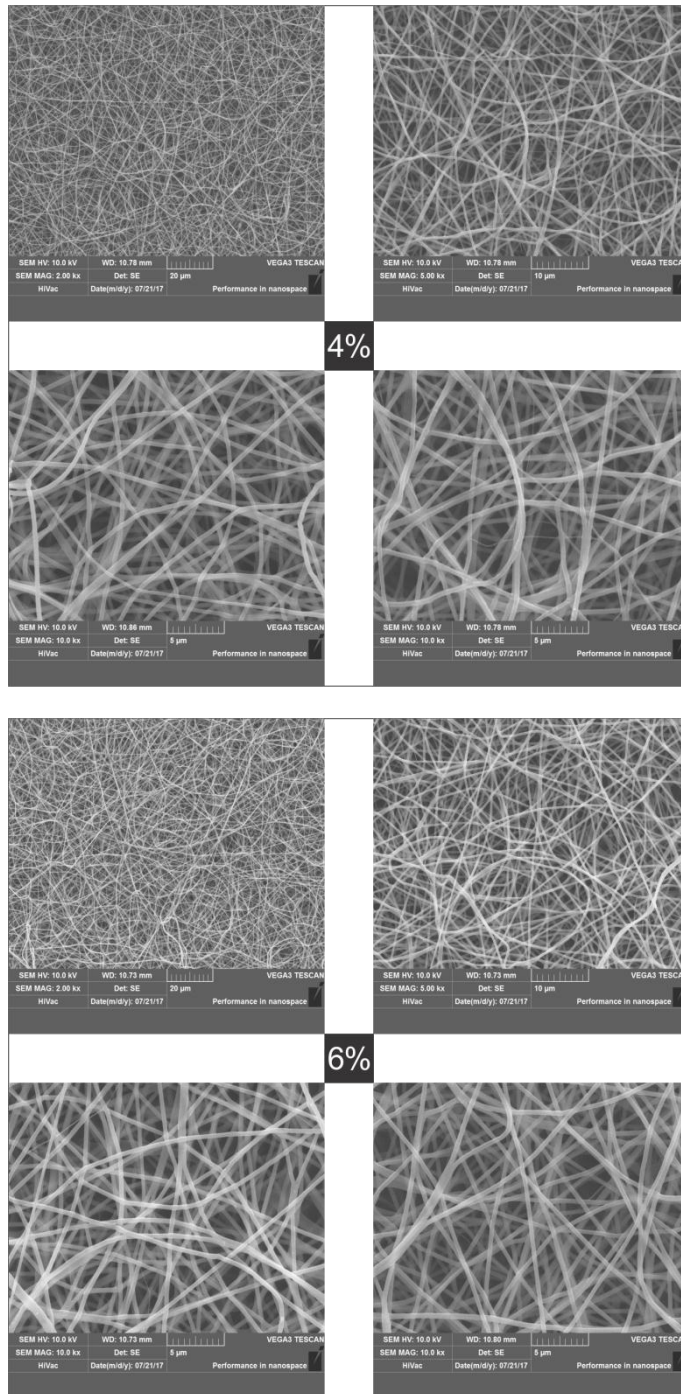
Series n = 1	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
x	0,07183	10	20	3,0971	4,3117	81,2236
s	-	-	-	-	-	-
v	-	-	-	-	-	-

LAMPIRAN 3

LAMPIRAN 3

A. Hasil pengujian SEM





B. Foto Penelitian



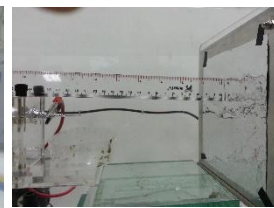
Penimbangan bahan larutan PVA



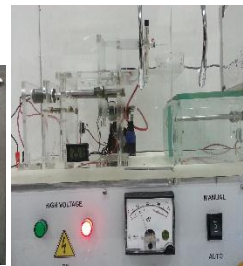
Pembuatan larutan PVA



Larutan PVA/lendir bekicot



Pengukuran jarak TCD



Pengaturan tegangan



Optimasi kondisi



Membran serat nano PVA



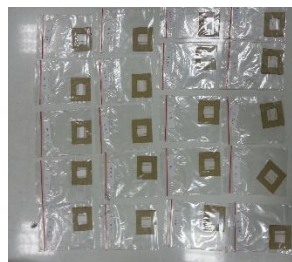
Membran serat nano PVA/lendir bekicot



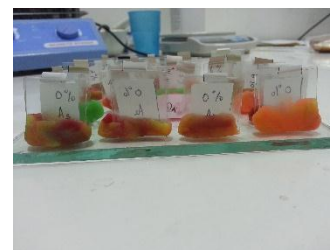
Sampel uji tarik ASTM D 882



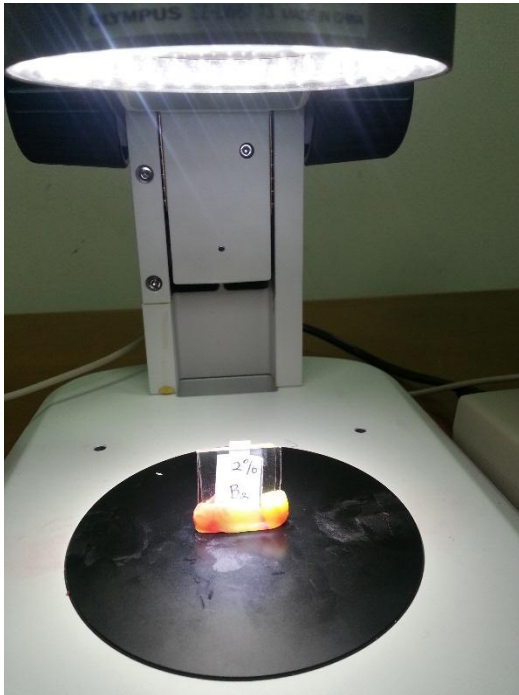
Sampel SEM



Sampel uji tarik



Sampel uji ketebalan



Pengukuran ketebalan menggunakan OM



Mesin uji tarik Zwick 0,5

