

LAMPIRAN 1

LAMPIRAN I

A. Hasil Analisa Morfologi membran nanofiber

Tabel Hasil Distribusi Diameter Nanofiber

No	KONSENTRASI			
	PVA	AVG (2%)/PVA	AVG (2%)/CS (8%)/PVA	AVG (2%)CSNE (8%)/PVA
1	112.195	96.506	70.968	89.19
2	118.5	117.828	93.008	91.862
3	119.371	122.014	98.681	97.378
4	122.481	126.368	101.613	103.308
5	126.871	128.706	101.728	107.532
6	127.451	129.691	111.792	110.215
7	132.378	131.024	114.632	112.244
8	133.987	135.592	118.79	114.813
9	134.146	139.272	120.178	117.445
10	134.92	142.973	123.469	118.088
11	135.16	144.273	125.641	118.26
12	136.74	144.679	125.806	118.951
13	139.555	145.456	126.145	119.166
14	139.875	145.739	127.115	120.383
15	147.062	149.347	127.677	120.717
16	148.38	158.115	128.568	125.493
17	148.648	160.264	128.619	125.718
18	152.198	160.482	130.525	126.521
19	152.454	162.638	134.742	128.757
20	152.785	166.142	141.139	130.8
21	153.142	166.635	143.285	133.338
22	153.734	168.406	143.628	134.466
23	154.256	169.225	145.599	134.631
24	154.257	169.858	147.402	136.99
25	155.667	169.935	147.581	138.367
26	156.102	171.218	149.515	138.371
27	157.341	171.572	150.545	138.493
28	157.784	171.992	150.614	139.367
29	157.933	173.453	151.389	141.022
30	158.161	174.745	151.861	141.119
31	159.163	174.837	153.847	141.14
32	159.314	175.895	154.199	141.399
33	159.35	175.903	154.469	142.187
34	160.994	176.488	156.053	143.054
35	161.639	178.516	156.633	143.139
36	161.69	178.74	157.388	143.552
37	161.952	179.56	158.36	143.882

38	162.117	179.966	158.371	144.33
39	163.431	182.919	160.231	145.911
40	163.72	183.225	160.572	146.76
41	164.216	183.269	160.751	146.812
42	166.49	183.298	161.822	147.607
43	166.585	183.693	162.584	147.636
44	166.667	183.7	163.781	148.438
45	166.667	183.828	165.509	149.106
46	167.466	184.648	165.951	149.315
47	168.204	185.668	167.792	150.724
48	168.31	185.761	168.301	150.984
49	168.459	185.812	169.88	151.284
50	172.5	186.339	170.505	152.241
51	172.956	186.646	171.007	153.679
52	173.809	188.725	171.218	154.573
53	175.627	188.883	171.228	155.867
54	175.737	193.749	172.128	156.186
55	176.501	193.922	172.213	158.431
56	176.592	194.679	173.453	159.101
57	177.079	195.577	174.309	159.372
58	179.143	196.752	174.849	160.465
59	179.513	197.287	175.503	160.79
60	179.828	197.604	176.475	161.323
61	181.373	197.881	176.478	161.457
62	181.604	198.743	178.607	162.37
63	182.375	199.656	182.019	162.593
64	182.943	199.775	182.929	162.867
65	184.518	199.888	186.87	162.87
66	184.648	200.463	187.097	163.022
67	184.88	202.71	188.469	163.579
68	184.909	203.237	193.122	163.797
69	186.021	203.342	193.627	163.967
70	187.304	204.461	195.025	164.647
71	188.422	204.506	199.454	167.213
72	188.646	207.207	200.857	171.938
73	190.729	208.815	202.585	175.199
74	191.476	210.784	205.659	175.73
75	192.976	211.915	205.675	175.857
76	194.618	213.179	205.779	177.765
77	195.618	215.271	214.818	180.049
78	196.755	216.612	228.221	180.059
79	200.89	218.378	238.279	181.032
80	202.788	221.554	252.933	181.368
81	204.128	229.017	258.328	183.607
82	204.878	229.549	258.871	184.311

83	205.168	236.971	260.493	189.797
84	206.305	237.454	260.947	192.23
85	207.227	237.912	263.979	192.998
86	207.833	239.968	265.703	194.465
87	208.562	243.667	266.173	195.11
88	210.093	245.93	266.555	195.958
89	213.076	250.678	267.275	210.968
90	213.993	251.784	271.321	211.668
91	215.644	255.855	282.524	214.272
92	218.261	257.329	282.843	216.896
93	223.01	257.675	290.096	217.262
94	223.483	258.913	304.277	220.624
95	223.979	271.173	329.304	222.975
96	231.565	287.971	342.012	223.897
97	237.485	288.439	369.57	238.692
98	239.196	295.512	380.077	248.373
99	247.306	301.826	387.844	253.041
100	306.764	331.672	396.934	258.197
AVG	175.60702	194.27709	188.15266	158.45013
STDEV	31.793981	42.55632579	67.07422993	35.09734449

B. Tabel Analisis Diameter Nanofiber

NO	Konsentrasi	Diameter (nm)	Standar Deviasi
1	PVA	175.6	31.79398076
2	AVG (2%)/PVA	194.3	42.55632579
3	AVG (2%)/CS (8%)/PVA	188.2	67.07422993
4	AVG (2%)/CSNE (8%)/PVA	158.5	35.09734449

C. Tabel Hasil Uji Viskositas

NO	Sampel	Ulangan 1 (cP)	Ulangan 2 (cP)	Rata-rata
1	PVA	429.9	429.9	429.9
2	AVG (2%)/PVA	607.9	607.9	607.9
3	AVG (2%)/CS (8%)/PVA	553.9	553.9	553.9
4	AVG (2%)/CSNE (8%)/PVA	421.9	421.9	421.9

D. Hasil Uji Tarik

Tabel Nilai Kuat Tarik Membran Nanofiber

Spesimen	Nilai Kuat Tarik Membran Nanofiber (MPa)			
	PVA	AVG (2%)/PVA 98 : 2	AVG (2%)/CS (8%)/PVA 92 : 8	AVG (2%)/ CSNE (8%)/PVA 92:8
1	10.1658	13.6255	15.9689	22.9434
2	14.3126	15.0442	12.6993	18.3855
3	10.2348	14.6043	19.3392	22.3949
Rata-rata	11.5711	14.4247	16.0025	21.24126667
Standar Deviasi	2.3745	0.7262	3.3201	2.031709543

Tabel Nilai Regangan Membran Nanofiber

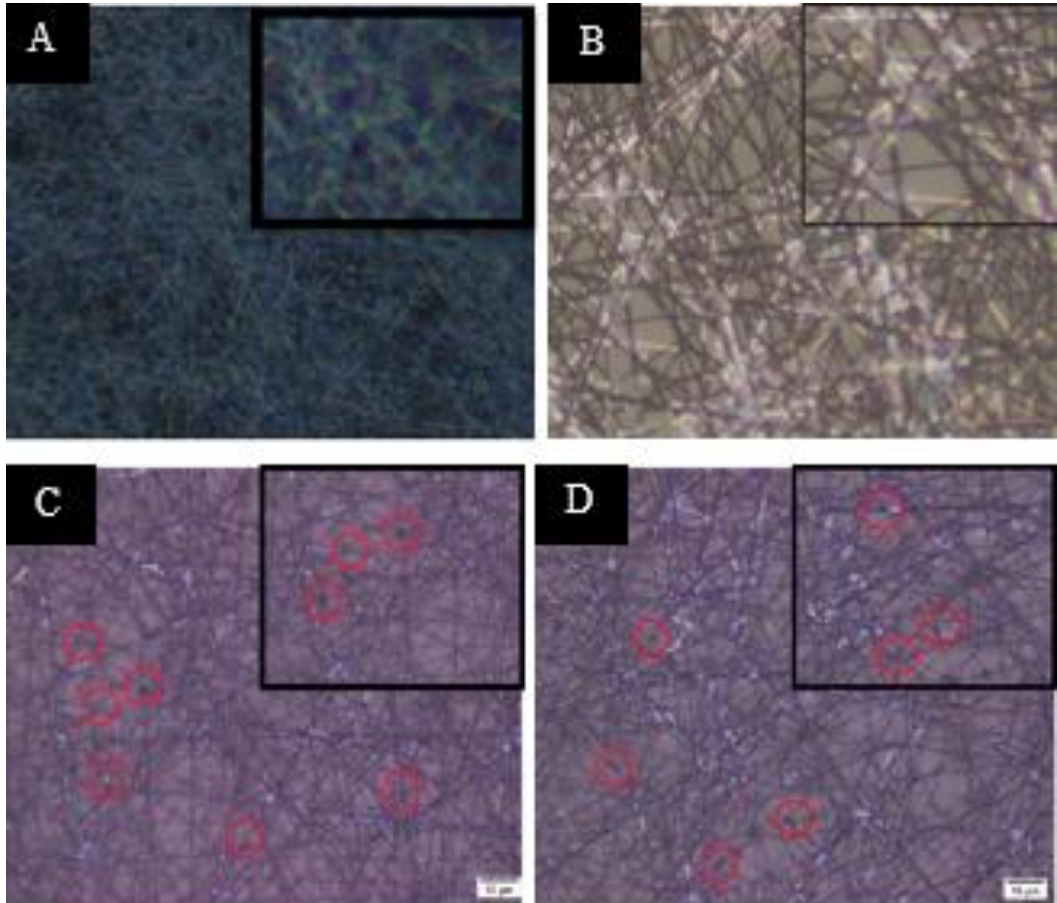
Spesimen	Nilai Regangan Membran Nanofiber (MPa)			
	PVA	AVG (2%)/PVA 98 : 2	AVG (2%)/CS (8%)/PVA 92 : 8	AVG (2%)/CSNE (8%)/PVA 92:8
1	62.7022	61.9047	85.458	108.59
2	95.2048	55.5213	88.8044	101.3015
3	32.1288	65.6237	81.1522	101.3015
Rata-rata	63.3453	61.0166	85.1382	103.731
Standar Deviasi	31.5429	5.1094	3.8361	4.208017437

Tabel Nilai Modulus Elastisitas Membran Nanofiber

Spesimen	Nilai Modulus Elastisitas Membran Nanofiber (MPa)			
	PVA	AVG (2%)/PVA 98 : 2	AVG (2%)/CS (8%)/PVA 92 : 8	AVG (2%)/CSNE (8%)/PVA 92:8
1	68.53932584	27.83306581	38.8101983	65.85365854
2	78.72983871	26.82926829	48.65735768	67.98131811
3	90.32258065	26.61122661	63.12098188	64.89361702
Rata-rata	79.1972	27.0912	50.1962	66.24286456
Standar Deviasi	10.8991	0.6517	12.2282	1.580216915

LAMPIRAN 2

LAMPIRAN 2
HASIL FOTO PENGUJIAN *OPTIC MICROSCOPE*

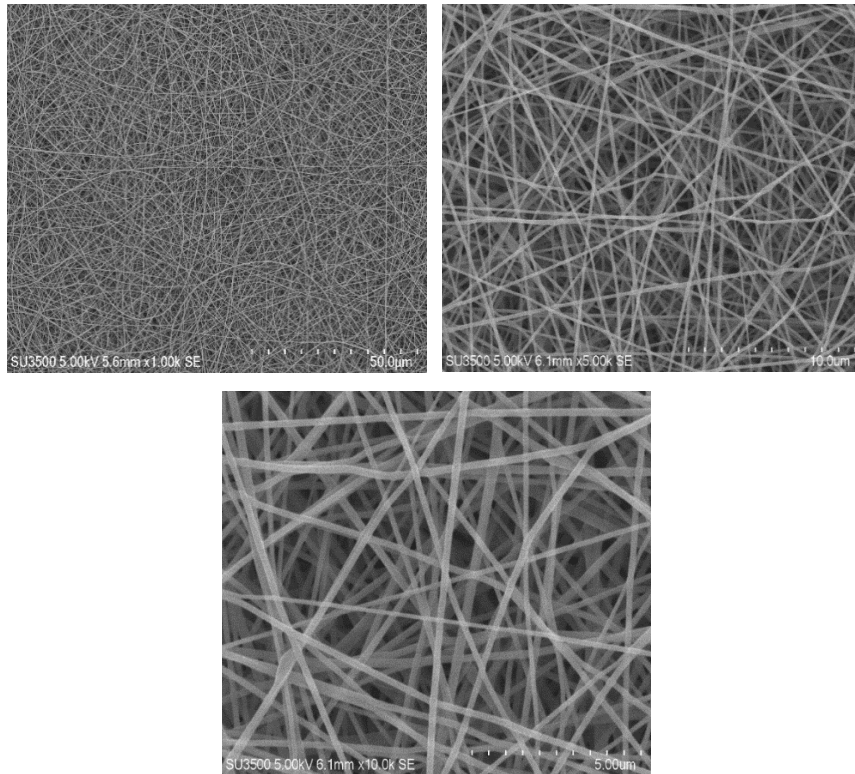


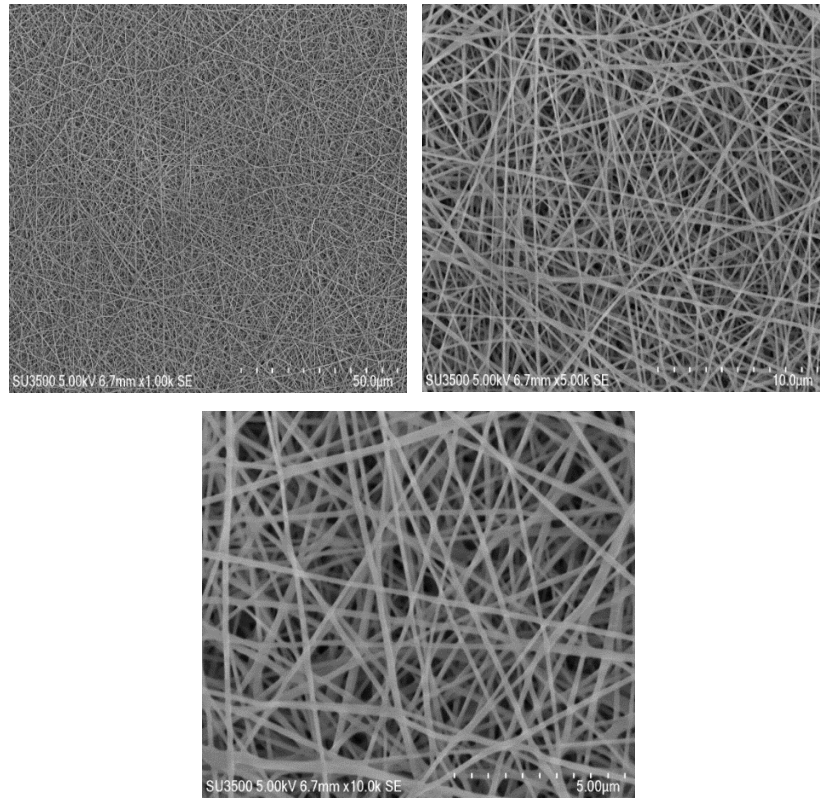
A. Konsentrasi PVA, B. Konsentrasi AVG (2%), C. Konsentrasi AVG (2%)/CS (8%)/PVA, dan AVG/CSNE (8%)/PVA

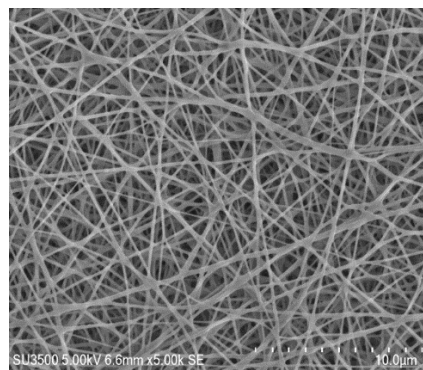
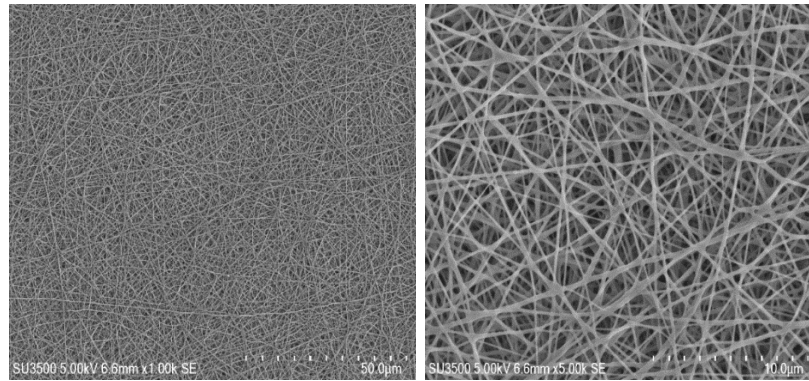
LAMPIRAN 3

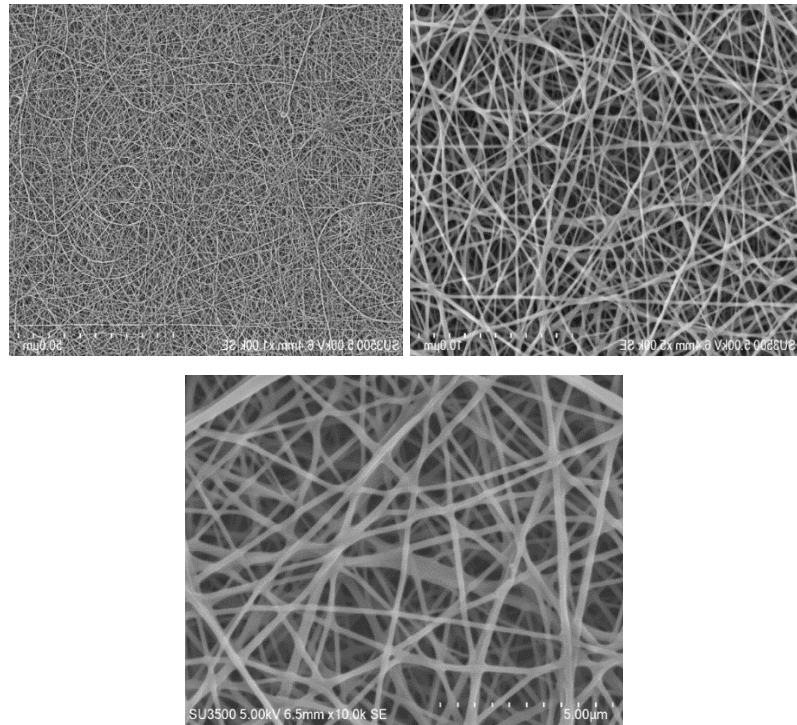
LAMPIRAN 3
HASIL FOTO PENGUJIAN *SCANNING ELEKTRON MICROSCOPE*
(SEM)

A. Foto Membran Nanofiber PVA



B. Foto Membran Nsnofiber AVG (2%)/PVA

C. Foto Membran Nanofiber AVG (2%)/CS (8%)/PVA

D. Foto Membran Nanofiber AVG (2%)/CSNE (8%)/PVA

LAMPIRAN 4

LAMPIRAN 4

377/PS/04/19

31.03.2019

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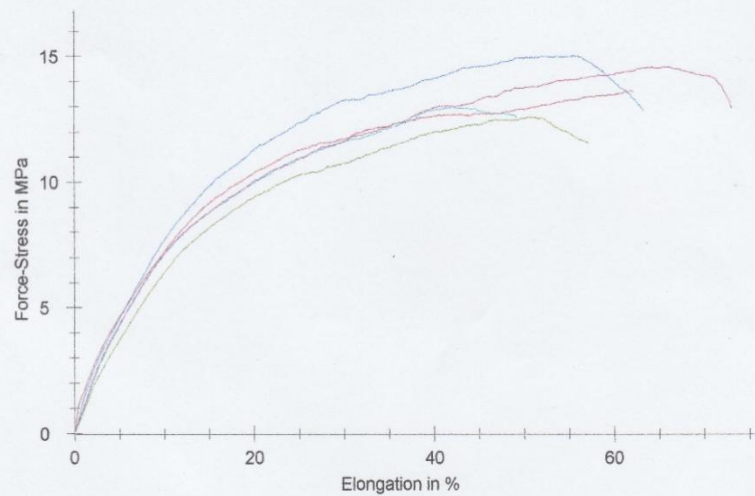
Parameter table:

Company name: 377/PS/04/19 Test standard : Tensile strength
Customer : Hendrawan Material : PVA/AV 2%
Tester : Rachmat
Test speed: 10 mm/min

Results:

Nr	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
1	0.02798	10	20	3.8124	13.6255	61.9047
2	0.02635	10	20	3.3191	12.5963	50.6627
3	0.03122	10	20	4.6968	15.0442	55.5213
4	0.02378	10	20	3.0848	12.9723	42.0635
5	0.0271	10	20	3.9578	14.6043	65.6237

Series graphics:



Statistics:

Series n = 5	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
x	0.02729	10	20	3.7742	13.7685	55.1552
s	0.0027	0.000	0.000	0.6262	1.0434	9.3120
v	9.90	0.00	0.00	16.59	7.58	16.88

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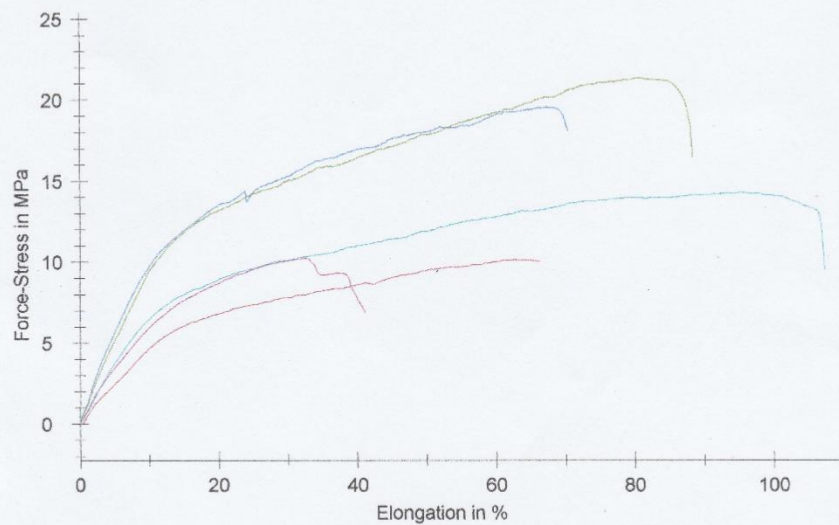
Parameter table:

Company name: 377/PS/04/19 Test standard : Tensile strength
 Customer : Hendrawan Material : PVA
 Tester : Rachmat
 Test speed: 10 mm/min

Results:

Nr	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
1	0.0246	10	20	2.5008	10.1658	62.7022
2	0.0246	10	20	5.2570	21.3701	80.7886
3	0.023	10	20	4.5039	19.5822	67.3478
4	0.02788	10	20	3.9903	14.3126	95.2048
5	0.03286	10	20	3.3632	10.2348	32.1288

Series graphics:



Statistics:

Series n = 5	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
x	0.02659	10	20	3.9230	15.1331	67.6344
s	0.00393	0.000	0.000	1.0557	5.1970	23.5490
v	14.78	0.00	0.00	26.91	34.34	34.82

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31.03.2019

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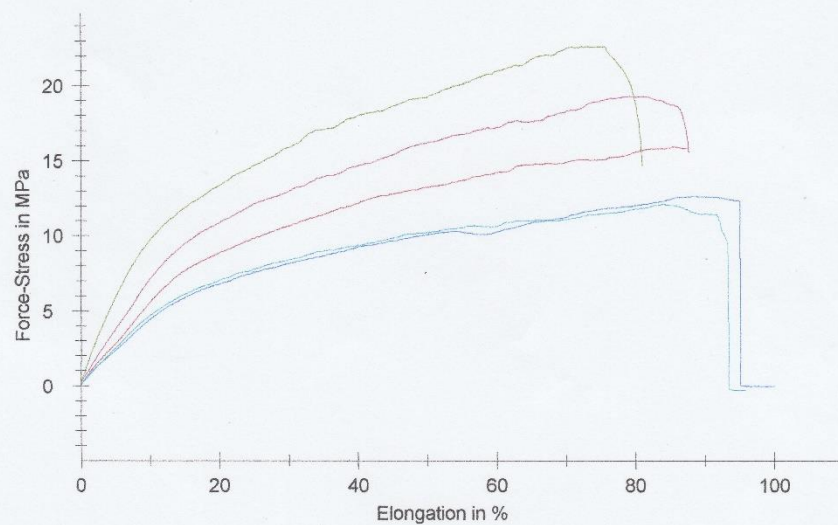
Parameter table:

Company name: 377/PS/04/19 Test standard : Tensile strength
 Customer : Hendrawan Material : PVA/AV/Cs
 Tester : Rachmat
 Test speed: 10 mm/min

Results:

Nr	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
1	0.02132	10	20	3.4046	15.9689	85.4580
2	0.01558	10	20	3.5332	22.6776	75.0226
3	0.01886	10	20	2.3951	12.6993	88.8044
4	0.01886	10	20	2.2894	12.1388	84.2947
5	0.01586	10	20	3.0672	19.3392	81.1522

Series graphics:



Statistics:

Series n = 5	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
\bar{x}	0.0181	10	20	2.9379	16.5648	82.9464
s	0.002392	0.000	0.000	0.5710	4.4707	5.2069
v	13.22	0.00	0.00	19.44	26.99	6.28

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31.03.2019

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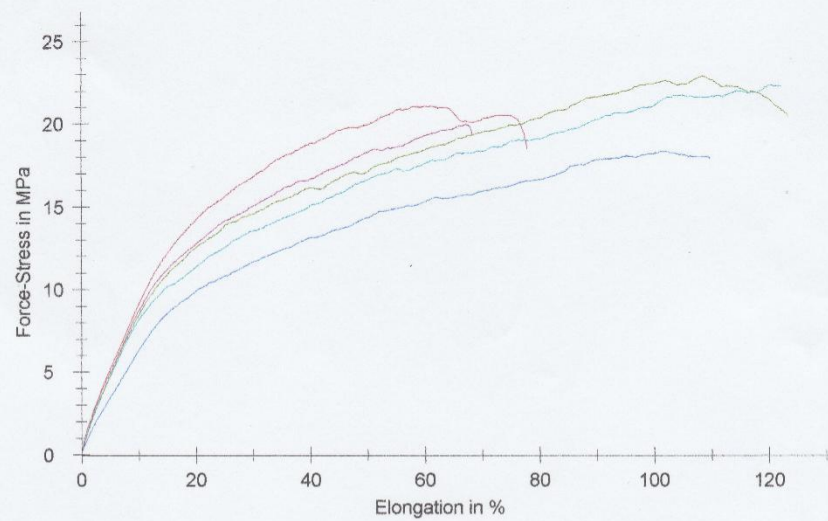
Parameter table:

Company name: 377/PS/04/19 Test standard : Tensile strength
 Customer : Hendrawan Material : PVA/AV/CSNe
 Tester : Rachmat
 Test speed: 10 mm/min

Results:

Nr	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
1	0.0172	10	20	3.6301	21.1051	61.0381
2	0.01558	10	20	3.5746	22.9434	108.5900
3	0.0164	10	20	3.0152	18.3855	101.3015
4	0.01558	10	20	3.4891	22.3949	120.4800
5	0.01804	10	20	3.6072	19.9954	67.2459

Series graphics:



Statistics:

Series n = 5	a0 mm	b0 mm	Lc mm	FMax N	Tensile Strength MPa	Strain at Fmax. %
x	0.01656	10	20	3.4632	20.9649	91.7311
s	0.001066	0.000	0.000	0.2561	1.8420	26.1911
v	6.44	0.00	0.00	7.39	8.79	28.55



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 Telp.0274-524517, 901311; Fax. 0274-549650

HASIL ANALISA

NO:345/PS / 03 / 19

Lab. Penguji : Rekayasa Proses Pengolahan
 Tanggal Pengujian : 27 Maret 2019
 Sampel : PVA
 Jenis Analisa : Viskositas
 Alat : Viskometer
 Merk : Brookfield
 Spindle : 63
 Kecepatan : 60 rpm
 Satuan : cP

No	Sampel/Kode	Hasil Analisa	
		UL 1	UL 2
1	PVA/AV2%/CsNe8%	421,9	421,9
2	PVA/AV2%/Cs3%	553,9	553,9
3	PVA/AV2%	607,9	607,9
4	PVA/AV0%	429,9	429,9

Penyelia

 Anisa Ardiya, STP., M.Sc.

Yogyakarta, 28 Maret 2019
 Analis

 (Rahmat Teguh S

NB: Hasil Analisa hanya berlaku untuk sampel yang dianalisa