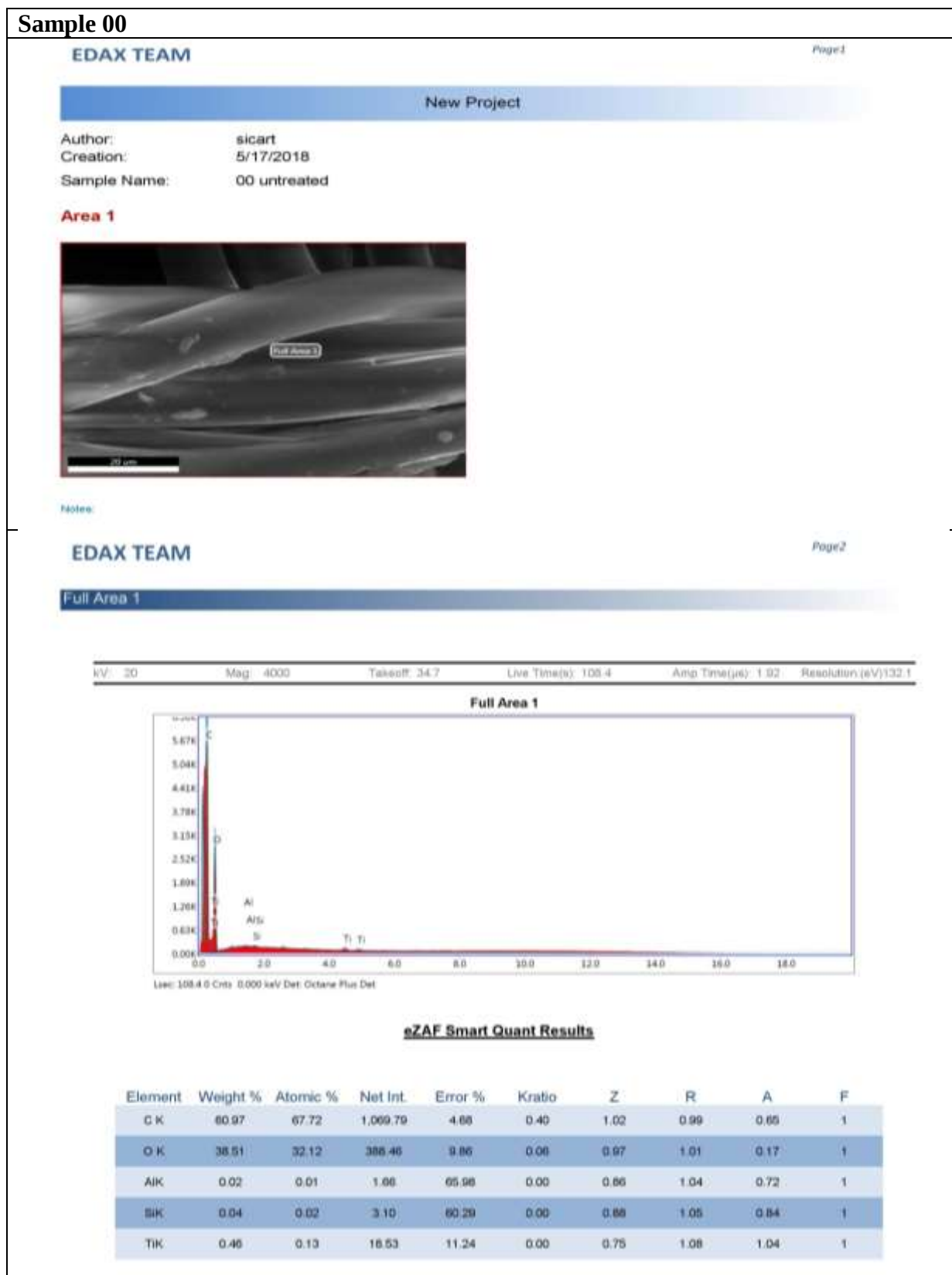


APPENDICES

Phase-II

Appendix – I: Results of Elemental assessment by Energy Dispersive X-Ray Spectroscopy (EDAX)

Sample 00



Sample 01

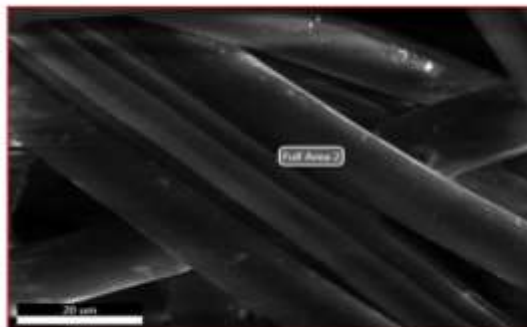
EDAX TEAM

Page 1

New Project

Author: sicart
 Creation: 5/17/2018
 Sample Name: 01 with Extract + AgNO₃

Area 1



Notes:

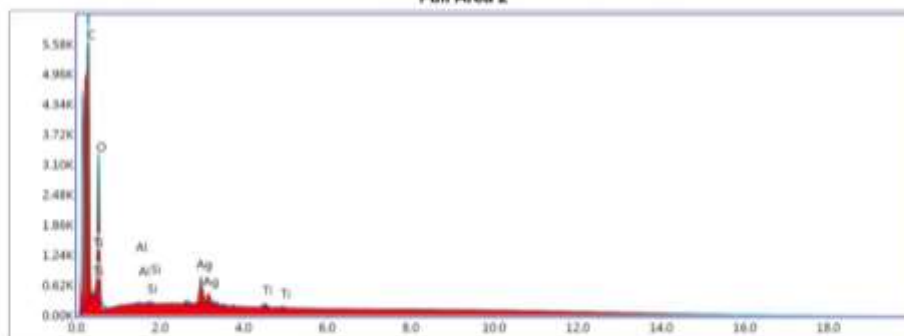
EDAX TEAM

Page 2

Full Area 2

kV: 20.00 Mag: 3500 Takeoff: 34.2 Live Time(s): 200 Amp Time(µs): 1.92 Resolution (eV): 132.1

Full Area 2



Live: 200.00 Cnts 0.000 keV Det: Octane Plus Det

eZAF Smart Quant Results

Element	Weight %	Atomic %	Net Int.	Error %	Kratio	Z	R	A	F
C K	57.80	66.47	529.98	4.72	0.39	1.03	0.98	0.85	1
O K	38.12	32.91	197.96	9.89	0.06	0.50	1	0.10	1
Al K	0.03	0.02	1.22	66.09	0.00	0.87	1.04	0.7	1
Si K	0.06	0.03	2.64	58.65	0.00	0.89	1.04	0.82	1
Ag L	3.56	0.46	61.33	9.58	0.03	0.67	1.26	1.2	1
Ti K	0.43	0.12	8.92	25.81	0.00	0.70	1.08	1.02	1

Appendix – II: Results of the Antibacterial Test

Table I: Zone of Inhibition (ZOI) readings			
		Zone of Inhibition (mm)	
Bacteria		Sample 00	Sample 01
Staphylococcus aureus (SA)	1.	00	22
	2.	00	22
	3.	00	23
	4.	00	28
Escherichia Coli (EC)	1.	00	20
	2.	00	22
	3.	00	28
	4.	00	28

Appendix – III: Results of the Physical properties

Table II: GSM readings (10 x 10 cm)		
	Sample 00	Sample 01
1	0.4109	0.4223
2	0.4115	0.4215
3	0.4004	0.4125
4	0.4097	0.4253
5	0.4155	0.4125
6	0.4121	0.4256
7	0.4017	0.4231
8	0.4116	0.4242
9	0.4004	0.4128
10	0.4166	0.4245

Table III: Thickness (mm) readings		
	Sample 00	Sample 01
1	0.42	0.38
2	0.41	0.43
3	0.4	0.45
4	0.39	0.42
5	0.44	0.41
6	0.45	0.38
7	0.42	0.46
8	0.41	0.42
9	0.43	0.39
10	0.38	0.44

Appendix – IV: Results of the Low-stress properties

Table IV: Bending Length Readings (cm)								
	Sample 00				Sample 01			
	Machine Direction		Cross Direction		Machine Direction		Cross Direction	
	Face side (Lf)	Back Side (Lb)	Face side (Lf)	Back Side (Lb)	Face side (Lf)	Back Side (Lb)	Face side (Lf)	Back Side (Lb)
1	4.7	4.8	2	2.3	4.2	4.3	2.4	2.5
2	4.3	4.5	2.1	2.3	4.1	4.2	2.7	2.9
3	4.4	4.6	1.9	2.2	4.4	4.5	2.4	2.4
4	5.1	5.2	2.3	2.5	4.2	4.3	1.9	2.1
5	4.2	4.3	2	2.3	4.2	4.3	2.5	2.6
6	4.7	4.9	1.8	2.2	3.9	4.1	2.4	2.4
7	4.9	5.2	2.1	2.3	4.3	4.4	2.5	2.7
8	5.2	5.3	2.3	2.4	4.2	4.5	2.1	2.3
9	4.7	4.9	2.1	2.3	4.1	4.3	2.5	2.6
10	4.8	5.1	1.8	2.2	4.3	4.5	2.6	2.6

Table V: Crease Recovery angle readings				
	Sample 00		Sample 01	
	Machine Direction	Cross Direction	Machine Direction	Cross Direction
1	115	110	110	105
2	119	112	116	111
3	114	109	111	105
4	118	112	117	112
5	115	110	109	105
6	114	109	116	110
7	120	114	109	104
8	117	111	115	111
9	122	117	112	109
10	110	106	108	105

Appendix – V: Results of the Comfort-associated properties

Table VI: Air permeability ($\text{m}^3/\text{m}^2/\text{h}$) readings

	Sample 00	Sample 01
1	4750	4650
2	4700	4575
3	4775	4600
4	4800	4700
5	4750	4725
6	4850	4750
7	4750	4625
8	4725	4650
9	4650	4675
10	4775	4625

Table VII: Moisture management test results reading

Sample 00

Multi-Measurement Profile

	Wetting Time Top(sec)	Wetting Time Bottom(sec)	Top Absorption Rate(%/sec)	Bottom Absorption Rate(%/sec)	Top Max Wetted Radius (mm)	Bottom Max Wetted Radius (mm)	Top Spreading Speed (mm/sec)	Bottom Spreading Speed (mm/sec)	Accumulative one-way transpor index(%)	OMMC
✓ F-1	1.217	5.305	71.6256	29.486	30.0	25.0	13.0363	7.4152	-1117.0243	0.3041
Mean	1.217	5.305	71.6256	29.486	30.0	25.0	13.0363	7.4152	-1117.0243	0.3041
S.Deviation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Sample 01

Multi-Measurement Profile

	Wetting Time Top(sec)	Wetting Time Bottom(sec)	Top Absorption Rate(%/sec)	Bottom Absorption Rate(%/sec)	Top Max Wetted Radius (mm)	Bottom Max Wetted Radius (mm)	Top Spreading Speed (mm/sec)	Bottom Spreading Speed (mm/sec)	Accumulative one-way transpor index(%)	OMMC
✓ F-1	120.0	16.38	0.0	5.4189	0.0	15.0	0.0	3.0762	186.1951	0.4132
Mean	120.0	16.38	0.0	5.4189	0.0	15.0	0.0	3.0762	186.1951	0.4132
S.Deviation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Appendix – VI: Results of the UV Transmission properties

Table VIII: UV transmittance profile readings			
Sample 00			
Number of Scans:	UPF 5	T(UVA) 5	T(UVB) 5
Mean:	6.48	34.12%	11.54%
STD:	0.96	3.34%	2.00%
COV:	14.75%	9.80%	17.35%
UPF Rating:	5		
Scan	UPF	Critical Wavelength	
Scan 1	6.39	384	
Scan 2	5.47	384	
Scan 3	6.90	383	
Scan 4	7.86	384	
Scan 5	5.75	384	
Sample 01			
Number of Scans:	UPF 5	T(UVA) 5	T(UVB) 5
Mean:	8.97	20.75%	9.18%
STD:	1.16	3.08%	1.39%
COV:	12.93%	14.85%	15.12%
UPF Rating:	8		
Scan	UPF	Critical Wavelength	
Scan 1	8.87	386	
Scan 2	7.03	386	
Scan 3	9.94	386	
Scan 4	9.69	386	
Scan 5	9.34	386	

Phase-III

Appendix – VII: Results of GC-MS analysis of CP leaves extract

Table IX: Readings of GC-MS retention time (RT) and % area of the phytoconstituents major peaks

Area Percent Report										
Peak List File :		D:\GCMS1\SICART2013.PRO\PeakDB\061120RAINISHMSU-3_1								
Last Modified :		Friday, November 06, 2020 2:34:10 PM								
Printed :		Friday, November 06, 2020 2:34:19 PM								
#	Name	RT	Area	Height	BL	Conc	Units	Area/Conc	m/z	Area %
1	1	9.411	64,905,500.0	297,366,560	MDN	0.00		0.00	TIC	8.37
2	2	18.705	195,703,168.0	955,722,432	MDN	0.00		0.00	TIC	25.23
3	3	19.780	119,474,688.0	646,030,720	MDN	0.00		0.00	TIC	15.40
4	4	20.330	247,743,040.0	935,484,032	MDN	0.00		0.00	TIC	31.94
5	5	25.813	69,247,952.0	403,962,528	MDN	0.00		0.00	TIC	8.93
6	6	39.298	78,632,176.0	246,013,888	MDN	0.00		0.00	TIC	10.14

Results of Phytochemical constituents present at 9.4 RT

MILK WEED (CALOTROPIS) POWDER				061120RAINISHMSU-3		
RT	REV	for	Compound Name	M.W.	Formula	CAS
1	795	529	ACETONITRILE, 2,2'-IMINOBI-	95	C4H5N3	628-87-5
2	684	534	ACETONITRILE, 2,2'-IMINOBI-	95	C4H5N3	628-87-5
3	657	438	9-BORABICYCLO[3.3.1]NONANE, 9-METHYL-	130	C9H17B	23418-81-7
4	623	446	8-NONENE-1-NITRILE	137	C9H15N	5048-34-0
5	569	424	9-DECENE-1-NITRILE	151	C10H17N	61549-49-3
6	587	329	1-(PYRROLIDIN-1-YL)CYCLOPENTANE-1-CARBONITRILE	164	C10H18N2	600396-93-6
7	582	457	PROPANENITRILE, 2,2'-AZOBIS[2-METHYL-	164	C8H12N4	78-67-1
8	579	394	2-CYCLOOCTENE-1-CARBOXYLIC ACID	154	C8H14O2	133341-64-7
9	578	381	ISO-BORNYL METHACRYLATE	222	C14H22O2	7534-94-3
10	573	370	[1,1-BICYCLOPENTYL]-2-OL	154	C10H18O	4894-25-7
11	569	335	10-UNDECENENITRILE	195	C11H19N	53179-64-7
12	563	404	BETA-MYRCENE	136	C10H16	123-35-3
13	547	350	[1,1-BICYCLOPENTYL]-2-OL	154	C10H18O	4894-25-7
14	545	378	3-BUTENOIC ACID, 3-METHYL-, (3-METHYL-3-BUTENYL) ESTER	168	C10H18O2	600151-51-7
15	537	335	4-METHYL-6-NITRO-7-OXO-4,7-DIHYDRO-1,2,4-TRIAZOLE[5,1-C][1,2,4]TRIAZINE	196	C5H4O3N6	118061-62-2
16	534	345	ISOBORNOL, TRIFLUOROACETATE (ESTER)	250	C12H17O2F3	600245-88-0
17	530	385	(2S,6R)-BORNE-10,2-SULFAM	215	C10H17O2NS	108449-77-7
18	529	336	BICYCLO[2.2.1]HEPTANE-2,3-DIONE, 1,7,7-TRIMETHYL-, 3-OXIME	161	C10H15O2N	683-17-2
19	529	369	2-METHYL-3-PROPYLPYRAZINE	138	C8H12N2	15695-80-8
20	528	333	2H-INDEN-2-ONE, 1,3,3A,4,5,7A-HEXAHYDRO-, TRANS-	138	C9H12O	70501-28-9

Phytochemical constituents present at 18.71 RT

MILK WEED (CALOTROPIS) POWDER				061120RAINISHMSU-3		
RT	REV	for	Compound Name	M.W.	Formula	CAS
1	795	404	NONADECANOIC ACID	298	C19H38O2	546-30-0
2	756	329	N-HEXADECANOIC ACID	256	C16H32O2	57-10-3
3	756	411	N-DECANOIC ACID	172	C10H20O2	334-49-8
4	750	406	N-HEXADECANOIC ACID	256	C16H32O2	57-10-3
5	746	333	EICOSANOIC ACID	312	C20H40O2	506-30-9
6	748	383	OCTADECANOIC ACID	284	C18H36O2	57-11-4
7	741	383	PENTADECANOIC ACID	242	C15H30O2	1002-84-2
8	739	317	NONADECANOIC ACID	298	C19H38O2	546-30-0
9	733	413	UNDECANOIC ACID	186	C11H22O2	112-37-8
10	732	344	HEPTADECANOIC ACID	270	C17H34O2	506-12-7
11	729	380	UNDECANOIC ACID	186	C11H22O2	112-37-8
12	724	310	OCTADECANOIC ACID	284	C18H36O2	57-11-4
13	716	367	TRIDECANOIC ACID	214	C13H26O2	438-43-9
14	714	392	N-DECANOIC ACID	172	C10H20O2	334-49-8
15	713	306	EICOSANOIC ACID	312	C20H40O2	506-30-9
16	713	306	PENTADECANOIC ACID	242	C15H30O2	1002-84-2
17	713	372	D-GLUCOPYRANOSIDE, 4-O-DECYL-	320	C18H32O6	600156-00-4
18	712	302	DODECANOIC ACID	340	C22H44O2	112-85-8
19	705	438	UNDECANOIC ACID	186	C11H22O2	112-37-8
20	703	484	N-CAPRIC ACID ISOPROPYL ESTER	214	C13H26O2	2311-59-3

Phytochemical constituents present at 19.78 RT

MILK WEED (CALOTROPIS) POWDER				061120RAINISHMSU-3		
RT	REV	for	Compound Name	M.W.	Formula	CAS
1	870	483	2-METHYL-6-METHYLENE-OCTA-1,7-DIEN-3-OL	152	C10H18O	22459-10-5
2	819	520	3,7,11,15-TETRAMETHYL-3-HEXADECEN-1-OL	296	C20H40O	102608-53-7
3	811	544	PHYTOL	296	C20H40O	150-85-7
4	799	551	CITRONELLOL	156	C10H20O	105-22-9
5	797	492	PHYTOL	296	C20H40O	150-85-7
6	790	494	PHYTOL	296	C20H40O	150-85-7
7	790	504	2,11-DODECADIE NE, 4-ACETOXY-	324	C14H24O3	600155-54-4
8	789	548	1,7-OCTADIENE-3,8-DIOL, 2,6-DIMETHYL-	170	C10H18O2	51275-33-6
9	786	571	1,7-OCTADIENE-3,8-DIOL, 2,6-DIMETHYL-	170	C10H18O2	51275-33-6
10	780	620	CITRONELLYL BUTYRATE	228	C14H26O2	141-15-2
11	778	510	1,7-OCTADIENE-3,8-DIOL, 2,6-DIMETHYL-	170	C10H18O2	51275-33-6
12	774	554	2,6,10-TRIMETHYLOCTA-1,3-DIENE	194	C14H26	600222-09-1
13	773	470	10-METHYL-11-TRIDEC-1-OL ACETATE	254	C16H30O2	600130-97-3
14	770	440	PHYTOL	296	C20H40O	150-85-7
15	770	495	7-DECEN-1-OL ACETATE	198	C13H22O2	600130-98-7
16	767	444	TETRACOSANAL	352	C24H48O	57895-08-7
17	756	520	OXIRANE, TETRADECYL-	240	C18H32O	7320-37-8
18	750	550	OXIRANE, TETRADECYL-	240	C18H32O	7320-37-8
19	757	542	OXIRANE, DECYL-	194	C12H24O	2955-16-8
20	757	525	2-OCTEN-1-OL, 3,7-DIMETHYL-	158	C10H20O	40807-48-5

Phytochemical constituents present at 20.33 RT

MILK WEED (CALOTROPIS) POWDER				061120RAINISHMSU-3		
#	REV	for	Compound Name	M.W	Formula	CAS
1	886	747	1,4,9-DECATRIENE, (E)-	136	C18H16	13363-60-7
2	886	725	1,3(2),13-TETRADECATRIENE	192	C14H24	900099-05-7
3	847	729	PENTANAL, 5-METHYLENECYCLOPROPYL-	138	C8H14O	600158-40-1
4	844	745	10-UNDECYN-1-OL	188	C11H20O	2774-84-7
5	834	727	10-DODECYN-1-OL	182	C12H22O	60221-99-4
6	831	754	8-NONYNOIC ACID	154	C8H14O2	30694-01-3
7	830	725	7-OXABICYCLO[4.1.0]HEPTANE, 3-OXIRANYL-	140	C6H10O2	106-67-6
8	830	703	8-HEPTADECYNE, 1-BROMO-	314	C17H31Br	59599-94-1
9	828	842	CYCLOPROPANE, (3-CHLOROPROPYL)METHYLENE-	130	C7H11Cl	120755-04-2
10	828	818	9-OCTADECYNOIC ACID	260	C18H32O2	906-24-1
11	826	591	13-TETRADEC-11-YN-1-OL	238	C14H24O	600131-00-4
12	825	880	9,12-OCTADECADIENOIC ACID, METHYL ESTER, (E,E)-	294	C19H34O2	2566-97-4
13	824	728	15-UNDECYN-1-OL	188	C11H20O	2774-84-7
14	820	578	11-TRIDECYN-1-OL	196	C13H24O	33625-75-6
15	819	571	9,12-OCTADECADIEN-1-OL, (Z,Z)-	286	C18H34O	508-43-4
16	819	718	3-NONYNE	124	C9H16	19447-29-1
17	819	658	SPIROPENTANE, BUTYL-	124	C9H16	6191-90-8
18	817	664	3-NONYNE	124	C9H16	19447-29-1
19	814	683	7-OXABICYCLO[4.1.0]HEPTANE, 2-METHYLENE-	110	C7H10O	98126-48-6
20	811	549	(Z), (Z)-PENTADECA-1,10-DIENE	224	C15H28O	77899-11-7

Phytochemical constituents present at 25.81 RT

MILK WEED (CALOTROPIS) POWDER				061120RAINISHMSU-3		
#	REV	for	Compound Name	M.W	Formula	CAS
1	858	717	(3E,7E)-4,8,12-TRIMETHYLTRIDECA-1,3,7,11-TETRAENE	218	C18H28	62235-26-7
2	854	697	SQUALENE	410	C30H50	111-02-4
3	842	683	SUPRAENE	410	C30H50	7883-94-9
4	841	674	SQUALENE	410	C30H50	111-02-4
5	839	664	SQUALENE	410	C30H50	111-02-4
6	830	656	SQUALENE	410	C30H50	111-02-4
7	830	656	SQUALENE	410	C30H50	111-02-4
8	822	663	1-(3,5-DINITROPHENOXY)-3,7,11-TRIMETHYL-DODECA-2,6,10-TRIENE	388	C21H28O5N2	600197-44-2
9	815	670	3,7,11-TRIDECATRIENENTRILE, 4,8,12-TRIMETHYL-	231	C18H25N3	6006-01-5
10	809	635	SUPRAENE	410	C30H50	7883-94-9
11	793	625	2,6,10-DODECATRIEN-1-OL, 3,7,11-TRIMETHYL-	222	C15H26O	4902-84-0
12	791	642	7,11-DIMETHYLDODECA-2,6,10-TRIEN-1-OL	258	C14H24O	125529-10-4
13	783	630	2-BROMOMETHYL-1-ISOPROPENYL-3-METHYL-CYCLOPENTANE	216	C10H17Br	600187-07-8
14	782	603	SQUALENE	410	C30H50	111-02-4
15	778	630	(E,E)-7,11,15-TRIMETHYL-3-METHYLENE-HEXADECA-1,6,10,14-TETRAENE	272	C20H32	70001-83-2
16	778	630	4,8,12-TETRADECATRIENENTRILE, 5,9,13-TRIMETHYL-	245	C17H27N3	5941-31-7
17	766	608	CARBONIC ACID, METHYL ESTER, (E,E)-3,7,11-TRIMETHYL-2,6,10-DODECATRIEN-1-	280	C17H30O3	600184-36-7
18	765	619	4,9,13,17-TETRAMETHYL-4,8,12,16-OCTADECATETRAENAL	310	C23H36O	58882-00-8
19	763	614	DOCOSEA-2,6,10,14,18-PENTAEN-22-AL, 2,6,10,15,18-PENTAMETHYL-, ALL-TRANS	384	C27H44O	600183-04-7
20	757	616	6,10,14-HEXADECATRIEN-1-OL, 3,7,11,15-TETRAMETHYL-, (R,E,E)-	292	C20H36O	35237-86-8

Phytochemical constituents present at 39.29 RT

MILK WEED (CALOTROPIS) POWDER				061120RAINISHMSU-3		
#	REV	for	Compound Name	M.W	Formula	CAS
1	815	594	ALPHA-AMYRIN	426	C30H50O	638-95-0
2	813	575	34-NOROLEANA-3,12-DIENE	394	C28H46	201358-24-9
3	797	559	OLEAN-12-EN-3-OL, ACETATE, (3,BETA)-	488	C32H52O2	1818-23-9
4	791	508	34-NORURSA-3,12-DIENE	394	C28H46	201356-25-0
5	779	553	BETA-AMYRIN	426	C30H50O	559-70-6
6	774	520	BETA-AMYRONE	424	C30H48O	638-07-1
7	757	415	URS-12-EN-3-OL, ACETATE, (3,BETA)-	408	C32H52O2	893-76-3
8	742	326	URS-12-EN-24-OIC ACID, 3-OXO-, METHYL ESTER, (+)-	468	C31H48O3	20475-86-9
9	736	462	ALPHA-AMYRIN	426	C30H50O	638-95-0
10	735	472	4,4,6A,9B,9A,11,12,14B-OCTAMETHYL-1,4,4A,5,5A,6B,7,8,8A,9,10,11,12,12A,14,14A,14B-HEXADOCYCLOHEPTENE, 2,4A,5,5,7,8,9,9A-OCTAHYDRO-3,5,5-TRIMETHYL-9-NE	424	C30H48O	600194-64-2
11	732	538	7-OXABICYCLO[4.1.0]HEPTANE, 2,2,6-TRIMETHYL-1-(3-METHYL-1,3-BUTADIENYL)-5-	218	C15H22O	70036-20-9
12	731	448	ALPHA-AMYRIN	426	C30H50O	638-95-0
13	728	395	ALPHA-AMYRIN	426	C30H50O	638-95-0
14	724	403	URS-12-EN-3-OL, ACETATE, (3,BETA)-	488	C32H52O2	893-76-3
15	717	512	6-ISOPROPENYL-4,8A-DIMETHYL-4A,5,5,7,8,8A-HEXAHYDRO-1H-NAPHTHALEN-2-O	218	C15H22O	88917-79-5
16	706	340	BETULIN	442	C30H50O2	473-98-3
17	706	445	AZULENE, 1,2,3,3A,4,5,6,7-OCTAHYDRO-1,4-DIMETHYL-7-(1-METHYLETHENYL)-, (1R	204	C15H24	22587-17-5
18	690	405	2,3,3-TRIMETHYL-2-(3-METHYLBUTA-1,3-DIENYL)-6-METHYLENECYCLOHEXANONE	218	C15H22O	77822-67-2
19	660	430	HIBANE	272	C20H32	2359-73-1
20	653	427	AZULENE, 1,2,3,3A,4,5,6,7-OCTAHYDRO-1,4-DIMETHYL-7-(1-METHYLETHENYL)-, (1R	204	C15H24	22587-17-5

Phase-IV

Appendix – VIII: Results of Antibacterial assessment of the Nano-composites

Table X: Reading of the Untreated Samples Zone of Inhibition (ZOI) in (mm)													
		PP30			PV40			PP50			PP45		
Organism		24 Hours	48 Hours	72 Hours	24 Hours	48 Hours	72 Hours	24 Hours	48 Hours	72 Hours	24 Hours	48 Hours	72 Hours
Staphylococcus aureus (SA)	1.	0	0	0	0	0	0	0	0	0	0	0	0
	2.	0	0	0	0	0	0	0	0	0	0	0	0
	3.	0	0	0	0	0	0	0	0	0	0	0	0
	4.	0	0	0	0	0	0	0	0	0	0	0	0
Escherichia Coli (EC)	1.	0	0	0	0	0	0	0	0	0	0	0	0
	2.	0	0	0	0	0	0	0	0	0	0	0	0
	3.	0	0	0	0	0	0	0	0	0	0	0	0
	4.	0	0	0	0	0	0	0	0	0	0	0	0

Table XI: Reading of the CP extract treated Samples Zone of Inhibition (ZOI) in (mm)

		PP30-CP			PV40-CP			PP50-CP			PP45-CP		
Organism		24 Hours	48 Hours	72 Hours	24 Hours	48 Hours	72 Hours	24 Hours	48 Hours	72 Hours	24 Hours	48 Hours	72 Hours
Staphylococcus aureus (SA)	1.	14	12	12	20	18	17	14	12	12	16	14	14
	2.	14	13	12	20	19	19	17	14	13	16	15	14
	3.	17	15	13	24	21	20	17	16	16	19	17	17
	4.	17	15	14	26	25	24	20	18	17	22	20	19
Escherichia Coli (EC)	1.	15	13	13	24	21	20	18	15	14	17	15	15
	2.	16	14	13	25	22	21	18	15	15	18	16	15
	3.	16	15	15	28	26	25	19	18	18	21	18	18
	4.	20	17	16	30	27	27	21	20	19	23	21	21

Table XII: Reading of the AgNPs/CP treated Samples Zone of Inhibition (ZOI) in (mm)

		PP30-AgNPs/CP			PV40-AgNPs/CP			PP50-AgNPs/CP			PP45-AgNPs/CP		
Organism		24 Hours	48 Hours	72 Hours	24 Hours	48 Hours	72 Hours	24 Hours	48 Hours	72 Hours	24 Hours	48 Hours	72 Hours
Staphylococcus aureus (SA)	1.	15	13	12	24	22	22	16	14	14	17	15	14
	2.	15	14	13	25	23	22	19	16	15	19	16	15
	3.	17	15	15	25	23	23	19	17	17	22	20	19
	4.	20	17	16	31	29	28	22	19	18	25	23	21
Escherichia Coli (EC)	1.	17	14	14	23	21	20	18	15	15	18	16	16
	2.	18	16	15	25	23	22	18	16	15	19	17	17
	3.	19	17	16	30	28	28	20	18	18	23	20	19
	4.	21	18	17	30	28	28	24	21	20	24	22	21

Appendix – IX: Results of the Physical properties

Table XIII: GSM (Gram per Sq. meter) readings														
	PP30	PV40	PP50	PP45		PP30-CP	PV40-CP	PP50-CP	PP45-CP		PP30-AgNPs/CP	PV40-AgNPs/CP	PP50-AgNPs/CP	PP45-AgNPs/CP
1	0.288	0.411	0.498	0.459		0.313	0.406	0.504	0.456		0.315	0.422	0.527	0.459
2	0.312	0.412	0.497	0.455		0.307	0.414	0.512	0.455		0.307	0.422	0.512	0.457
3	0.295	0.400	0.509	0.448		0.292	0.415	0.503	0.451		0.302	0.413	0.503	0.458
4	0.289	0.410	0.506	0.449		0.302	0.419	0.515	0.459		0.312	0.425	0.523	0.461
5	0.315	0.416	0.499	0.452		0.305	0.402	0.509	0.462		0.305	0.413	0.519	0.457
6	0.319	0.412	0.495	0.455		0.312	0.418	0.519	0.456		0.312	0.426	0.517	0.458
7	0.307	0.402	0.505	0.447		0.301	0.421	0.513	0.457		0.298	0.423	0.523	0.461
8	0.294	0.412	0.511	0.45		0.313	0.415	0.517	0.453		0.303	0.424	0.519	0.463
9	0.299	0.400	0.507	0.452		0.298	0.412	0.519	0.458		0.302	0.413	0.508	0.455
10	0.289	0.417	0.512	0.457		0.301	0.418	0.509	0.457		0.311	0.425	0.519	0.461
Table XIV: Thickness (mm) readings														
1	0.24	0.42	0.45	0.29		0.27	0.41	0.46	0.34		0.28	0.38	0.47	0.35
2	0.27	0.41	0.42	0.31		0.31	0.42	0.48	0.31		0.33	0.43	0.48	0.32
3	0.23	0.4	0.43	0.31		0.29	0.38	0.45	0.29		0.32	0.45	0.45	0.33
4	0.29	0.39	0.47	0.28		0.31	0.41	0.44	0.34		0.3	0.42	0.45	0.32
5	0.29	0.44	0.42	0.32		0.27	0.42	0.45	0.33		0.28	0.41	0.45	0.34
6	0.27	0.45	0.39	0.33		0.28	0.44	0.47	0.32		0.31	0.38	0.42	0.33
7	0.28	0.42	0.43	0.31		0.28	0.41	0.42	0.3		0.3	0.46	0.45	0.33
8	0.24	0.41	0.48	0.31		0.32	0.45	0.41	0.32		0.33	0.42	0.47	0.31
9	0.31	0.43	0.4	0.32		0.27	0.39	0.43	0.33		0.29	0.39	0.45	0.35
10	0.31	0.38	0.45	0.33		0.29	0.43	0.43	0.34		0.27	0.44	0.43	0.31

Appendix – X: Results of the Low-stress properties

Table XV: Readings for Bending Modulus (g/cm ²) of Untreated Samples																
	PP30				PV40				PP50				PP45			
	Machine direction (MD)		Cross direction (CD)		Machine direction (MD)		Cross direction (CD)		Machine direction (MD)		Cross direction (CD)		Machine direction (MD)		Cross direction (CD)	
	Face side (Lf)	Back Side (Lb)	Face side (Lf)	Back Side (Lb)	Face side (Lf)	Back Side (Lb)	Face side (Lf)	Back Side (Lb)	Face side (Lf)	Back Side (Lb)	Face side (Lf)	Back Side (Lb)	Face side (Lf)	Back Side (Lb)	Face side (Lf)	Back Side (Lb)
1	4.4	4.3	4.1	3.9	4.7	4.8	2	2.3	8.3	7.9	8.3	7.7	5.3	5.1	5.3	5.1
2	4.6	4.5	4	4	4.3	4.5	2.1	2.3	8.3	7.8	8.2	7.4	5.8	5.7	5.9	5.7
3	4.5	4.4	4.2	4.2	4.4	4.6	1.9	2.2	8.5	8.1	8.2	7.5	5.6	5.4	5.4	5.1
4	4.8	4.5	4.4	4.4	5.1	5.2	2.3	2.5	8.4	8.1	8.4	7.6	5.7	5.6	5.8	5.5
5	4.4	4.2	4.1	4.1	4.2	4.3	2	2.3	8.2	7.6	8.6	7.9	5.7	5.3	5.5	5.3
6	4.3	4.1	4.3	4.1	4.7	4.9	1.8	2.2	8.1	7.7	8.4	7.7	5.8	5.7	5.9	5.6
7	4.5	4.4	4.2	4.1	4.9	5.2	2.1	2.3	7.7	7.3	8.1	7.4	5.5	5.4	5.4	5.1
8	4.2	4.1	4.4	4.2	5.2	5.3	2.3	2.4	8.2	7.8	8.2	7.5	5.4	5.2	5.5	5.2
9	4.6	4.5	4.1	4	4.7	4.9	2.1	2.3	7.9	7.4	8.4	7.5	5.5	5.3	5.7	5.4
10	4.5	4.4	4.2	4.1	4.8	5.1	1.8	2.2	8.2	7.6	8.3	7.7	5.5	5.4	5.7	5.3

Table VI: Readings for Bending Modulus (g/cm^2) of CP Extract treated Samples

	PP30-CP				PV40-CP				PP50-CP				PP45-CP			
	Machine direction (MD)		Cross direction (CD)		Machine direction (MD)		Cross direction (CD)		Machine direction (MD)		Cross direction (CD)		Machine direction (MD)		Cross direction (CD)	
	Face side (Lf)	Back Side (Lb)	Face side (Lf)	Back Side (Lb)	Face side (Lf)	Back Side (Lb)	Face side (Lf)	Back Side (Lb)	Face side (Lf)	Back Side (Lb)	Face side (Lf)	Back Side (Lb)	Face side (Lf)	Back Side (Lb)	Face side (Lf)	Back Side (Lb)
1	5.1	4.6	4.8	4.7	4.3	4.5	2.2	2.3	9.2	8.9	8.5	8.2	5.9	5.7	6.1	5.8
2	5.2	4.7	4.5	4.4	4.5	4.8	2.2	2.4	8.9	8.8	8.4	8.2	5.7	5.7	5.9	5.6
3	5.1	4.6	4.4	4.2	4.3	4.6	2.5	2.5	8.5	8.1	8.2	7.8	5.9	5.6	5.7	5.5
4	5.1	4.7	4.5	4.4	4.4	4.5	2	2.2	8.3	7.8	8.3	7.9	5.8	5.7	6.1	5.7
5	5.2	4.7	4.2	4.2	3.9	4.1	2.4	2.4	8.2	7.6	8.5	8.1	6.1	5.8	5.7	5.5
6	5.2	4.7	4.7	4.5	4.2	4.3	1.9	2.1	8.1	7.6	8.5	8.1	5.9	5.6	5.9	5.6
7	4.9	4.6	4.7	4.6	4.7	4.8	2.2	2.2	8.2	7.4	8.2	7.8	5.7	5.2	5.8	5.5
8	5.1	4.7	4.4	4.3	4.4	4.6	2.4	2.5	8.3	7.5	8.2	7.7	5.9	5.6	5.9	5.6
9	4.9	4.4	4.5	4.4	4.3	4.6	2.3	2.3	8.5	8.1	8.3	7.9	5.9	5.6	5.8	5.5
10	5.1	4.6	4.7	4.5	4	4.2	2	2.1	8.2	7.8	8.1	7.6	6.1	5.8	5.7	5.5

Table XVII: Readings for Bending Modulus (g/cm^2) of AgNPs/CP treated Samples

	PP30-AgNPs/CP				PV40-AgNPs/CP				PP50-AgNPs/CP				PP45-AgNPs/CP			
	Machine direction (MD)		Cross direction (CD)		Machine direction (MD)		Cross direction (CD)		Machine direction (MD)		Cross direction (CD)		Machine direction (MD)		Cross direction (CD)	
	Face side (Lf)	Back Side (Lb)	Face side (Lf)	Back Side (Lb)	Face side (Lf)	Back Side (Lb)	Face side (Lf)	Back Side (Lb)	Face side (Lf)	Back Side (Lb)	Face side (Lf)	Back Side (Lb)	Face side (Lf)	Back Side (Lb)	Face side (Lf)	Back Side (Lb)
1	5.9	5.7	5.8	5.4	4.2	4.3	2.4	2.5	8.8	8.1	8.9	8.1	6.5	6.2	5.9	5.7
2	6.1	5.9	5.9	5.7	4.1	4.2	2.7	2.9	8.5	8.2	8.5	8.3	6.4	6.1	6.4	6.2
3	5.8	5.5	5.4	5.1	4.4	4.5	2.4	2.4	8.7	8.3	8.9	8.4	6.1	5.7	6.3	6.1
4	5.8	5.4	5.4	5	4.2	4.3	1.9	2.1	8.5	8.1	8.4	7.9	6.4	6.1	6.2	5.8
5	5.5	5.1	5.3	4.8	4.2	4.3	2.5	2.6	8.5	8.2	8.5	8.1	6.2	5.8	5.8	5.6
6	5.3	4.9	5.2	4.8	3.9	4.1	2.4	2.4	8.8	8.4	8.8	8.1	5.9	5.6	6.3	6.1
7	5.5	5.1	5.3	4.8	4.3	4.4	2.5	2.7	8.5	8.1	8.4	7.8	6.2	5.8	6.1	5.7
8	5.3	5	5.2	4.7	4.2	4.5	2.1	2.3	8.4	8	8.5	7.9	6.3	5.9	5.9	5.6
9	5.6	5.1	5.4	5.9	4.1	4.3	2.5	2.6	8.6	8.2	8.4	7.9	6.1	5.4	6.3	5.9
10	5.4	5.1	5.5	5.1	4.3	4.5	2.6	2.6	8.8	8.3	8.5	8	6.1	5.8	6.2	5.8

Appendix – XI: Results of the Crease Recovery angle (°)

Table XVIII: Readings for Crease Recovery angle (°) of Untreated Samples								
	PP30		PV40		PP50		PP45	
	Machine direction (MD)	Cross direction (CD)	Machine direction (MD)	Cross direction (CD)	Machine direction (MD)	Cross direction (CD)	Machine direction (MD)	Cross direction (CD)
1	110	105	115	110	120	115	110	105
2	110	107	119	112	120	115	110	104
3	105	104	114	109	110	104	105	100
4	105	103	118	112	115	109	108	102
5	107	100	115	110	110	105	105	101
6	108	105	114	109	114	109	112	105
7	110	107	120	114	110	105	115	109
8	108	105	117	111	115	110	109	103
9	105	102	122	117	120	114	110	105
10	110	105	110	106	115	111	110	105

Table XIX: Readings for Crease Recovery angle (°) of CP Extract treated Samples

	PP30-CP		PV40-CP		PP50-CP		PP45-CP	
	Machine direction (MD)	Cross direction (CD)	Machine direction (MD)	Cross direction (CD)	Machine direction (MD)	Cross direction (CD)	Machine direction (MD)	Cross direction (CD)
1	110	107	116	111	115	110	112	107
2	108	105	119	115	120	116	110	104
3	105	102	112	107	115	111	105	100
4	106	103	111	106	120	115	110	104
5	108	104	115	112	112	108	112	106
6	107	103	118	114	115	109	110	105
7	108	105	111	108	110	107	105	100
8	105	101	120	115	110	105	108	102
9	108	105	113	110	115	110	110	103
10	110	106	109	105	110	105	110	104

Table XX: Readings for Crease Recovery angle (°) of AgNPs/CP treated Samples

	PP30-AgNPs/CP		PV40-AgNPs/CP		PP50-AgNPs/CP		PP45-AgNPs/CP	
	Machine direction (MD)	Cross direction (CD)	Machine direction (MD)	Cross direction (CD)	Machine direction (MD)	Cross direction (CD)	Machine direction (MD)	Cross direction (CD)
1	110	104	110	105	110	105	110	105
2	105	100	116	111	115	110	110	104
3	105	101	111	105	110	104	105	100
4	106	100	117	112	115	110	112	106
5	108	102	109	105	110	105	110	105
6	105	100	116	110	103	100	105	101
7	108	102	109	104	107	102	108	102
8	110	105	115	111	102	99	107	102
9	105	100	112	109	107	101	107	103
10	105	100	108	105	110	105	108	103

Appendix – XII: Results of the Comfort-associated properties

Table XXI: Readings for Air permeability (NI/m ² /h or m ³ /m ² /h) of Nano-composites														
	PP30	PV40	PP50	PP45		PP30-CP	PV40-CP	PP50-CP	PP45-CP		PP30-AgNPs/CP	PV40-AgNPs/CP	PP50-AgNPs/CP	PP45-AgNPs/CP
1	4800	4750	4300	650		4700	4700	4200	550		4600	4650	4100	525
2	4700	4700	4250	675		4750	4725	4150	575		4700	4575	4150	475
3	4750	4775	4300	650		4700	4750	4200	475		4650	4600	4200	450
4	4750	4800	4200	700		4750	4675	4100	600		4700	4700	4100	500
5	4800	4750	4150	650		4800	4750	4050	525		4750	4725	4050	450
6	4700	4850	4150	650		4650	4625	4050	550		4600	4750	4050	550
7	4850	4750	4200	675		4800	4625	4100	500		4600	4625	4100	575
8	4750	4725	4300	700		4650	4800	4200	500		4650	4650	4100	450
9	4800	4650	4250	675		4700	4675	4150	550		4750	4675	4150	550
10	4750	4775	4150	650		4650	4725	4100	600		4600	4625	4050	500

Table XXII: Moisture management test results reading

PP30

Multi-Measurement Profile

	Wetting Time Top(sec)	Wetting Time Bottom(sec)	Top Absorption Rate(%/sec)	Bottom Absorption Rate(%/sec)	Top Max Wetted Radius (mm)	Bottom Max Wetted Radius (mm)	Top Spreading Speed (mm/sec)	Bottom Spreading Speed (mm/sec)	Accumulative Speedne-way transpor index(%)	OMMC
✓ F-1	1.581	120.0	12.447	0.0	5.0	0.0	2.8121	0.0	-548.7142	0.0
Mean	1.581	120.0	12.447	0.0	5.0	0.0	2.8121	0.0	-548.7142	0.0
S.Deviation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PP30-CP

Multi-Measurement Profile

	Wetting Time Top(sec)	Wetting Time Bottom(sec)	Top Absorption Rate(%/sec)	Bottom Absorption Rate(%/sec)	Top Max Wetted Radius (mm)	Bottom Max Wetted Radius (mm)	Top Spreading Speed (mm/sec)	Bottom Spreading Speed (mm/sec)	Accumulative Speedne-way transpor index(%)	OMMC
✓ F-1	1.779	120.0	12.1	0.0	5.0	0.0	2.5432	0.0	-488.7614	0.0
Mean	1.779	120.0	12.1	0.0	5.0	0.0	2.5432	0.0	-488.7614	0.0
S.Deviation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PP30-AgNPs/CP

Multi-Measurement Profile

	Wetting Time Top(sec)	Wetting Time Bottom(sec)	Top Absorption Rate(%/sec)	Bottom Absorption Rate(%/sec)	Top Max Wetted Radius (mm)	Bottom Max Wetted Radius (mm)	Top Spreading Speed (mm/sec)	Bottom Spreading Speed (mm/sec)	Accumulative Speedne-way transpor index(%)	OMMC
✓ F-1	1.581	91.822	15.1581	30.4894	5.0	0.0	2.8121	0.0	-390.6383	0.0569
Mean	1.581	91.822	15.1581	30.4894	5.0	0.0	2.8121	0.0	-390.6383	0.0569
S.Deviation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PV40

Multi-Measurement Profile

	Wetting Time Top(sec)	Wetting Time Bottom(sec)	Top Absorption Rate(%/sec)	Bottom Absorption Rate(%/sec)	Top Max Wetted Radius (mm)	Bottom Max Wetted Radius (mm)	Top Spreading Speed (mm/sec)	Bottom Spreading Speed (mm/sec)	Accumulative Speedne-way transpor index(%)	OMMC
✓ F-1	1.217	5.335	71.6256	29.486	30.0	25.0	13.0363	7.4152	-1117.0243	0.3041
Mean	1.217	5.335	71.6256	29.486	30.0	25.0	13.0363	7.4152	-1117.0243	0.3041
S.Deviation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PV40-CP

Multi-Measurement Profile

	Wetting Time Top(sec)	Wetting Time Bottom(sec)	Top Absorption Rate(%/sec)	Bottom Absorption Rate(%/sec)	Top Max Wetted Radius (mm)	Bottom Max Wetted Radius (mm)	Top Spreading Speed (mm/sec)	Bottom Spreading Speed (mm/sec)	Accumulative Speedne-way transpor index(%)	OMMC
✓ F-1	21.341	5.616	14.7385	16.5701	10.0	0.0	0.3321	0.0	-82.6629	0.0183
Mean	21.341	5.616	14.7385	16.5701	10.0	0.0	0.3321	0.0	-82.6629	0.0183
S.Deviation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PV40-AgNPs/CP

Multi-Measurement Profile

	Wetting Time Top(sec)	Wetting Time Bottom(sec)	Top Absorption Rate(%/sec)	Bottom Absorption Rate(%/sec)	Top Max Wetted Radius (mm)	Bottom Max Wetted Radius (mm)	Top Spreading Speed (mm/sec)	Bottom Spreading Speed (mm/sec)	Accumulative Speedne-way transpor index(%)	OMMC
✓ F-1	120.0	16.38	0.0	5.4189	0.0	15.0	0.0	3.0762	186.1961	0.4132
Mean	120.0	16.38	0.0	5.4189	0.0	15.0	0.0	3.0762	186.1961	0.4132
S.Deviation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PP50

Multi-Measurement Profile

	Wetting Time Top(sec)	Wetting Time Bottom(sec)	Top Absorption Rate(%/sec)	Bottom Absorption Rate(%/sec)	Top Max Wetted Radius (mm)	Bottom Max Wetted Radius (mm)	Top Spreading Speed (mm/sec)	Bottom Spreading Speed (mm/sec)	Accumulative one-way transpor index(%)	OMMC
✓ F-1	1.581	120.0	20.3884	0.0	5.0	0.0	2.8121	0.0	-519.0043	0.0
Mean	1.581	120.0	20.3884	0.0	5.0	0.0	2.8121	0.0	-519.0043	0.0
S.Deviation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PP50-CP

Multi-Measurement Profile

	Wetting Time Top(sec)	Wetting Time Bottom(sec)	Top Absorption Rate(%/sec)	Bottom Absorption Rate(%/sec)	Top Max Wetted Radius (mm)	Bottom Max Wetted Radius (mm)	Top Spreading Speed (mm/sec)	Bottom Spreading Speed (mm/sec)	Accumulative one-way transpor index(%)	OMMC
✓ F-1	1.884	120.0	16.3891	0.0	5.0	0.0	2.6709	0.0	-833.5368	0.0
Mean	1.884	120.0	16.3891	0.0	5.0	0.0	2.6709	0.0	-833.5368	0.0
S.Deviation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PP50-AgNPs/CP

Multi-Measurement Profile

	Wetting Time Top(sec)	Wetting Time Bottom(sec)	Top Absorption Rate(%/sec)	Bottom Absorption Rate(%/sec)	Top Max Wetted Radius (mm)	Bottom Max Wetted Radius (mm)	Top Spreading Speed (mm/sec)	Bottom Spreading Speed (mm/sec)	Accumulative one-way transpor index(%)	OMMC
✓ F-1	1.884	79.935	14.0016	17.549	25.0	0.0	3.1702	0.0	-634.8659	0.021
Mean	1.884	79.935	14.0016	17.549	25.0	0.0	3.1702	0.0	-634.8659	0.021
S.Deviation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PP45

Multi-Measurement Profile

	Wetting Time Top(sec)	Wetting Time Bottom(sec)	Top Absorption Rate(%/sec)	Bottom Absorption Rate(%/sec)	Top Max Wetted Radius (mm)	Bottom Max Wetted Radius (mm)	Top Spreading Speed (mm/sec)	Bottom Spreading Speed (mm/sec)	Accumulative one-way transpor index(%)	OMMC
✓ F-1	1.779	120.0	12.9075	0.0	5.0	0.0	2.5432	0.0	-510.7046	0.0
Mean	1.779	120.0	12.9075	0.0	5.0	0.0	2.5432	0.0	-510.7046	0.0
S.Deviation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PP45-CP

Multi-Measurement Profile

	Wetting Time Top(sec)	Wetting Time Bottom(sec)	Top Absorption Rate(%/sec)	Bottom Absorption Rate(%/sec)	Top Max Wetted Radius (mm)	Bottom Max Wetted Radius (mm)	Top Spreading Speed (mm/sec)	Bottom Spreading Speed (mm/sec)	Accumulative one-way transpor index(%)	OMMC
✓ F-1	1.885	88.955	8.0789	4.4665	5.0	0.0	2.6709	0.0	-609.4548	0.0
Mean	1.885	88.955	8.0789	4.4665	5.0	0.0	2.6709	0.0	-609.4548	0.0
S.Deviation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PP45-AgNPs/CP

Multi-Measurement Profile

	Wetting Time Top(sec)	Wetting Time Bottom(sec)	Top Absorption Rate(%/sec)	Bottom Absorption Rate(%/sec)	Top Max Wetted Radius (mm)	Bottom Max Wetted Radius (mm)	Top Spreading Speed (mm/sec)	Bottom Spreading Speed (mm/sec)	Accumulative one-way transpor index(%)	OMMC
✓ F-1	1.582	120.0	13.0402	0.0	5.0	0.0	2.8106	0.0	-278.7221	0.0
Mean	1.582	120.0	13.0402	0.0	5.0	0.0	2.8106	0.0	-278.7221	0.0
S.Deviation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Appendix –XIII: Results of the UV Transmission properties

Table XXIII: UV transmittance profile readings			
PP30			
Number of Scans:	UPF 5	T(UVA) 5	T(UVB) 5
Mean:	2.00	43.19%	51.07%
STD:	0.12	2.92%	2.91%
COV:	5.79%	6.75%	5.71%
UPF Rating:	2		
Scan	UPF	Critical Wavelength	
Location 1	2.14	390	
Location 2	2.03	390	
Location 3	2.06	390	
Location 4	1.86	390	
Location 5	1.91	390	
PP30-CP			
Number of Scans:	UPF 5	T(UVA) 5	T(UVB) 5
Mean:	2.64	35.00%	38.68%
STD:	0.29	3.98%	4.05%
COV:	11.04%	11.38%	10.46%
UPF Rating:	2		
Scan	UPF	Critical Wavelength	
Scan 1	3.08	389	
Scan 2	2.63	389	
Scan 3	2.34	389	
Scan 4	2.72	389	
Scan 5	2.41	389	
PP30-AgNPs/CP			
Number of Scans:	UPF 5	T(UVA) 5	T(UVB) 5
Mean:	3.10	30.71%	32.46%
STD:	0.28	2.97%	3.18%
COV:	9.15%	9.66%	9.79%
UPF Rating:	3		
Scan	UPF	Critical Wavelength	
Scan 1	3.30	389	
Scan 2	2.69	389	
Scan 3	2.93	389	
Scan 4	3.33	389	
Scan 5	3.28	389	

PV40

Number of Scans:	UPF 5	T(UVA) 5	T(UVB) 5
Mean:	6.48	34.12%	11.54%
STD:	0.96	3.34%	2.00%
COV:	14.75%	9.80%	17.35%

UPF Rating: 5

Scan	UPF	Critical Wavelength
Scan 1	6.39	384
Scan 2	5.47	384
Scan 3	6.90	383
Scan 4	7.86	384
Scan 5	5.75	384

PV40-CP

Number of Scans:	UPF 5	T(UVA) 5	T(UVB) 5
Mean:	8.69	23.39%	9.25%
STD:	1.55	2.92%	2.30%
COV:	17.84%	12.48%	24.82%

UPF Rating: 7

Scan	UPF	Critical Wavelength
Scan 1	9.01	385
Scan 2	6.25	386
Scan 3	10.49	385
Scan 4	8.50	386
Scan 5	9.21	385

PV40-AgNPs/CP

Number of Scans:	UPF 5	T(UVA) 5	T(UVB) 5
Mean:	8.97	20.75%	9.18%
STD:	1.16	3.08%	1.39%
COV:	12.93%	14.85%	15.12%

UPF Rating: 8

Scan	UPF	Critical Wavelength
Scan 1	8.87	386
Scan 2	7.03	386
Scan 3	9.94	386
Scan 4	9.69	386
Scan 5	9.34	386

PP50

Number of Scans:	UPF 5	T(UVA) 5	T(UVB) 5
Mean:	3.14	25.37%	33.23%
STD:	0.30	3.38%	3.24%
COV:	9.41%	13.33%	9.74%

UPF Rating: 3

Scan	UPF	Critical Wavelength
Scan 1	3.16	389
Scan 2	2.67	389
Scan 3	3.08	390
Scan 4	3.41	389
Scan 5	3.37	389

PP50-CP

Number of Scans:	UPF 5	T(UVA) 5	T(UVB) 5
Mean:	4.40	20.79%	23.10%
STD:	0.41	1.82%	2.11%
COV:	9.39%	8.77%	9.12%

UPF Rating: 4

Scan	UPF	Critical Wavelength
Scan 1	4.96	389
Scan 2	4.02	389
Scan 3	4.09	389
Scan 4	4.21	389
Scan 5	4.71	389

PP50-AgNPs/CP

Number of Scans:	UPF 5	T(UVA) 5	T(UVB) 5
Mean:	4.62	21.50%	22.14%
STD:	0.85	4.12%	4.15%
COV:	18.32%	19.18%	18.73%

UPF Rating: 4

Scan	UPF	Critical Wavelength
Scan 1	5.59	388
Scan 2	4.36	389
Scan 3	5.38	389
Scan 4	4.20	388
Scan 5	3.57	389

PP45

Number of Scans:	UPF 5	T(UVA) 5	T(UVB) 5
Mean:	16.32	6.95%	6.45%
STD:	1.95	0.87%	0.86%
COV:	11.94%	12.48%	13.39%

UPF Rating: 14

Scan	UPF	Critical Wavelength
Scan 1	13.06	386
Scan 2	16.15	386
Scan 3	18.07	386
Scan 4	17.29	386
Scan 5	17.03	386

PP45-CP

Number of Scans:	UPF 5	T(UVA) 5	T(UVB) 5
Mean:	23.43	4.90%	4.43%
STD:	2.18	0.48%	0.44%
COV:	9.32%	9.76%	9.85%

UPF Rating: 21

Scan	UPF	Critical Wavelength
Scan 1	22.47	386
Scan 2	24.79	387
Scan 3	24.73	386
Scan 4	25.14	387
Scan 5	20.02	387

PP45-AgNPs/CP

Number of Scans:	UPF 5	T(UVA) 5	T(UVB) 5
Mean:	30.22	3.82%	3.41%
STD:	2.64	0.34%	0.30%
COV:	8.74%	8.93%	8.74%

UPF Rating: 27

Scan	UPF	Critical Wavelength
Scan 1	27.86	387
Scan 2	27.37	387
Scan 3	30.14	387
Scan 4	33.17	387
Scan 5	32.57	387