

## Supplementary Materials

**Table S1.** Operation parameters and physical properties of the polymeric solutions/emulsions prior to the electrospinning process and experimental nanofiber diameter.

Solutions/emulsions %(w/w)	Flow rate (mL/h)	Voltage (kV)	Viscosity (Pa·s)	Conductivity (mS/cm)	Experimental nanofiber diameter (nm)
PVA 10%	0.1	24	0.43	0.49	310.97 ±57.85
					298.40 ±42.85
					317.34 ±42.61
					331.01 ±65.34
PVA 8%			0.28	0.58	178.59 ±22.84
					171.75 ±23.77
					172.77 ±31.90
					174.32 ±30.53
PVA 10%/OO 4%			0.39	0.55	207.69 ±45.28
					217.45 ±72.55
					209.60 ±57.19
					232.37 ±46.93
PVA 10%/OO 8%			0.43	0.52	289.76 ±51.20
					285.31 ±29.22
					297.87 ±70.49
					284.83 ±59.10
PVA 10%	1.8		0.55	0.48	289.82 ±63.14
					307.47 ±69.57
					305.36 ±60.22
					287.65 ±39.35
PVA 10%/OEO 5%	0.6		0.63	0.45	270.18 ±56.21
					266.49 ±69.46
					270.03 ±36.70
					288.85 ±44.90
PVA 10%/OEO 7.5%	1.2		0.72	0.43	300.51 ±55.93
					266.92 ±45.22
					270.63 ±38.41
					256.41 ±34.55
PVA 10%/OEO 10%	1.8		0.76	0.43	343.61 ±61.47
					327.47 ±68.58
					352.01 ±51.61

					315.72 ±67.04
GT 18%/ α -TOC 5%	0.02	30	0.28	2.63	247.81 ±51.28
					266.49 ±45.02
					237.26 ±53.50
					260.24 ±59.68
GT 20%/ α -TOC 5%			0.45	2.73	194.94 ±34.10
					229.70 ±32.89
					222.82 ±25.30
					220.76 ±30.64
GT 22%/ α -TOC 5%			0.51	2.89	239.98 ±46.10
					203.85 ±33.23
					191.33 ±31.29
					188.60 ±30.88
GT 22%/ α -TOC 7.5%			0.54	1.99	173.29 ±28.02
					169.90 ±25.86
					175.36 ±22.92
					175.37 ±20.37
GT 22%/ α -TOC 10%	0.60	1.88	223.28 ±51.35		
			202.68 ±31.80		
			208.91 ±44.72		
			195.11 ±43.10		
PVA 10%/CS 0.5%	0.1	26	0.23	0.50	279.18 ±41.62
					257.83 ±60.38
					260.81 ±42.58
					263.34 ±44.75
PVA 10%/CS 2%			0.25	0.59	209.32 ±51.89
					249.06 ±56.02
					249.02 ±57.22
					241.35 ±41.19
PVA 10%/CS 1%	0.14	21	0.20	1.16	275.18 ±46.51
					257.65 ±51.03
					267.98 ±48.90
					261.79 ±41.89
PVA 8%/CS 1.5%	0.1	26	0.40	1.27	268.95 ±36.30
					246.61 ±44.48
					242.36 ±35.06
					241.50 ±26.38
PVA 10%/AO 22%	0.6	24	0.32	0.47	103.49 ±19.28
					102.68 ±12.79
					93.52 ±15.87
					103.96 ±17.85

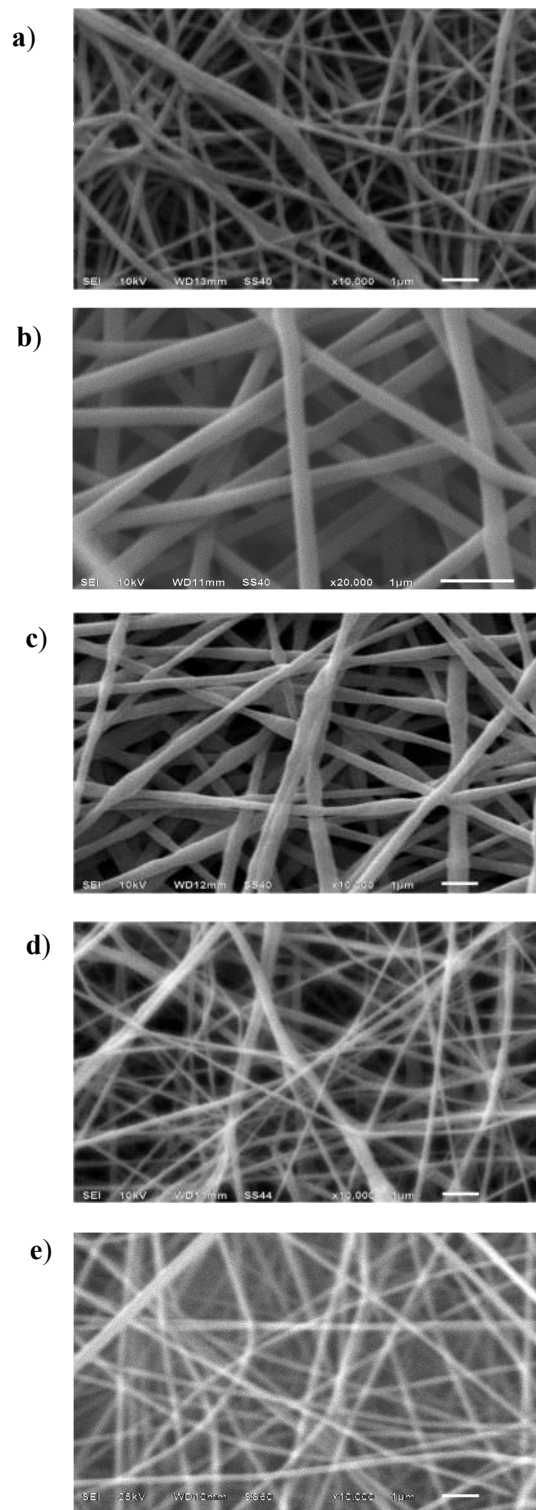
<b>PVA 10%/Av 55%</b>	1	24	0.08	1.77	103.51 ±13.74
					103.53 ±14.08
					96.05 ±16.68
					107.58 ±18.15

**Table S2.** Normalized Data.

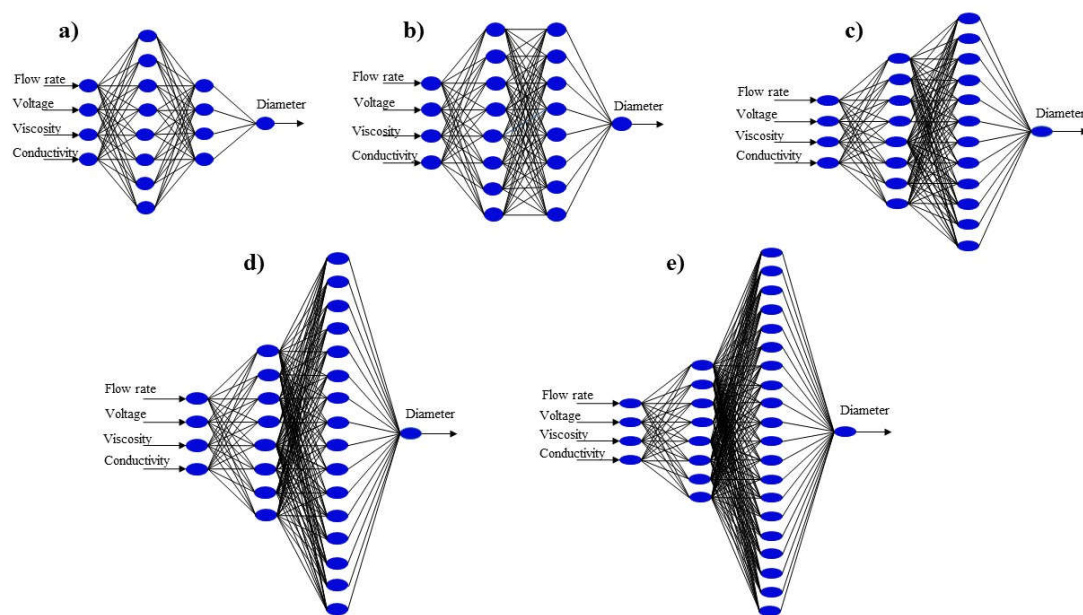
<b>Solutions/emulsions %(w/w)</b>	<b>Flow (mL/h)</b>	<b>Voltage (kV)</b>	<b>Viscosity (Pa·s)</b>	<b>Conductivity (mS/cm)</b>	<b>Experimental nanofiber diameter (nm)</b>
<b>PVA 10%</b>	-0.54	-0.63	0.04	-0.76	1.20
					1.01
					1.30
					1.52
<b>PVA 8%</b>	-0.54	-0.63	-0.80	-0.66	-0.88
					-0.98
					-0.97
					-0.94
<b>PVA 10%/OO 4%</b>	-0.54	-0.63	-0.18	-0.69	-0.42
					-0.27
					-0.39
					-0.03
<b>PVA 10% /OO 8%</b>	-0.54	-0.63	0.04	-0.73	0.87
					0.80
					1.00
					0.79
<b>PVA 10%</b>	2.36	-0.63	0.73	-0.77	0.87
					1.15
					1.11
					0.84
<b>PVA 10%/OEO 5%</b>	0.31	-0.63	1.15	-0.81	0.56
					0.50
					0.56
					0.86
<b>PVA 10%/OEO 7.5%</b>	1.34	-0.63	1.64	-0.83	1.04
					0.51
					0.57
					0.35
<b>PVA 10%/OEO 10%</b>	2.36	-0.63	1.87	-0.83	1.72
					1.46
					1.85

					1.28
<b>GT 18%/ <math>\alpha</math> -TOC 5%</b>	-0.68	1.54	-0.80	1.71	0.21
					0.50
					0.05
					0.41
<b>GT 20%/ <math>\alpha</math> -TOC 5%</b>	-0.68	1.54	0.13	1.83	-0.62
					-0.07
					-0.18
					-0.21
<b>GT 22%/ <math>\alpha</math> -TOC 5%</b>	-0.68	1.54	0.46	2.01	0.09
					-0.48
					-0.68
					-0.72
<b>GT 22%/ <math>\alpha</math> -TOC 7.5%</b>	-0.68	1.54	0.65	0.97	-0.96
					-1.01
					-0.93
					-0.93
<b>GT 22%/ <math>\alpha</math> -TOC 10%</b>	-0.68	1.54	1.00	0.85	-0.17
					-0.50
					-0.40
					-0.62
<b>PVA 10%/CS 0.5%</b>	-0.54	0.10	-1.11	-0.75	0.70
					0.37
					0.42
					0.45
<b>PVA 10%/CS 2%</b>	-0.54	0.10	-0.95	-0.64	-0.39
					0.23
					0.23
					0.11
<b>PVA 10%/CS 1%</b>	-0.48	-1.71	-1.27	0.02	0.64
					0.37
					0.53
					0.43
<b>PVA 8%/CS 1.5%</b>	-0.54	0.10	-0.13	0.14	0.54
					0.19
					0.13
					0.11
<b>PVA 10%/AO 22%</b>	0.31	-0.63	-0.57	-0.78	-2.06
					-2.07
					-2.21
					-2.05

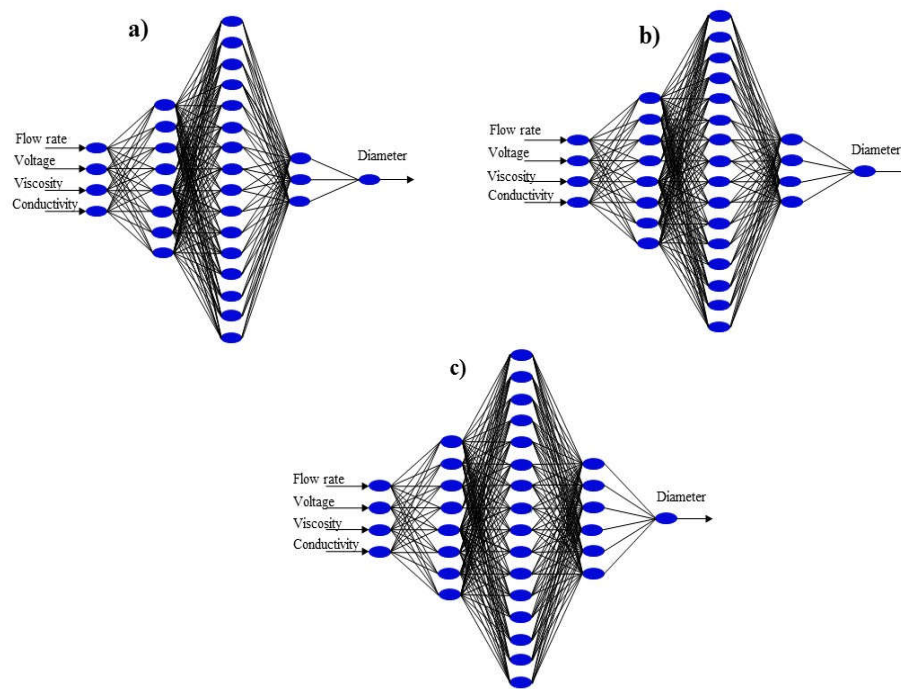
<b>PVA 10%/Av 55%</b>	1.00	-0.63	-1.91	0.72	-2.06
					-2.06
					-2.17
					-1.99



**Figure S1.** Micrographs of the studied systems: a) 8% PVA, b) 10% PVA, c) PVA/GO, d)GT/  $\alpha$  -TOC and e) PVA/CS.

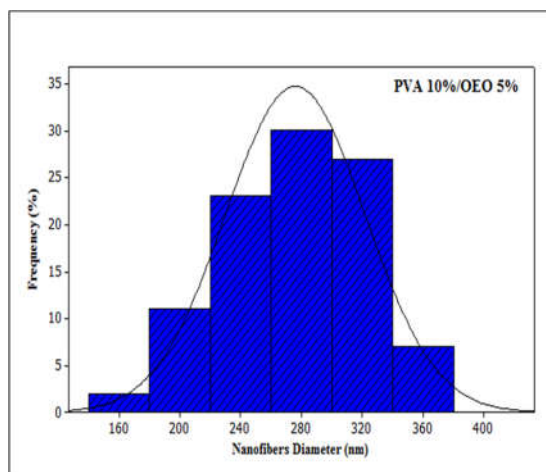
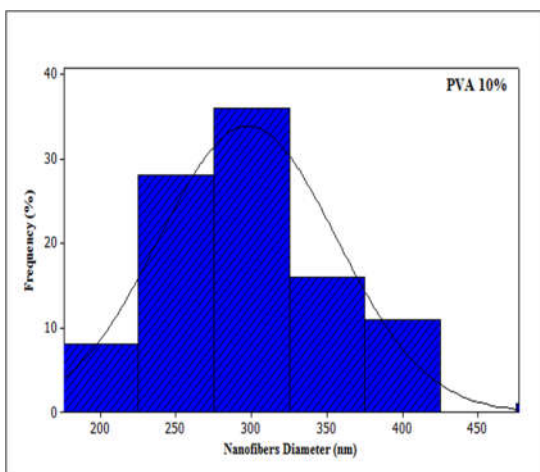
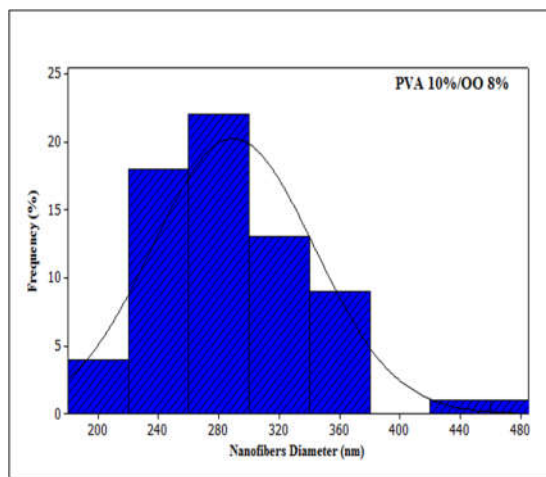
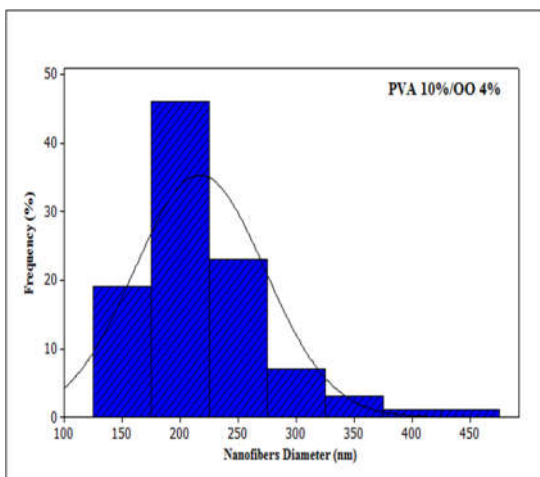
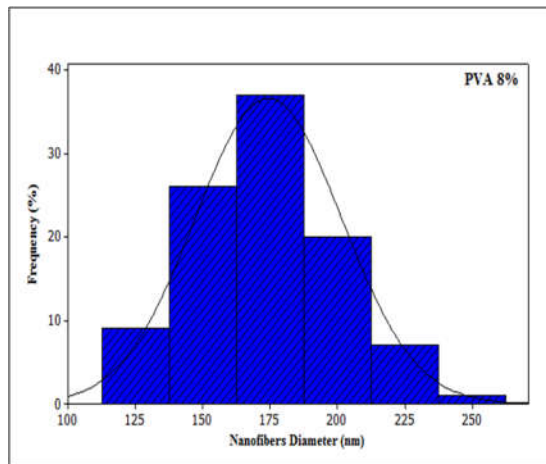
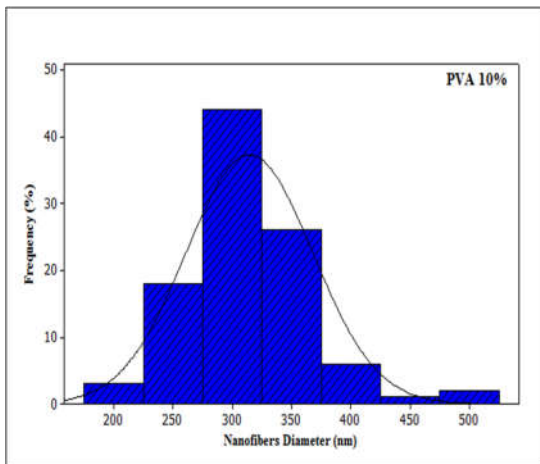


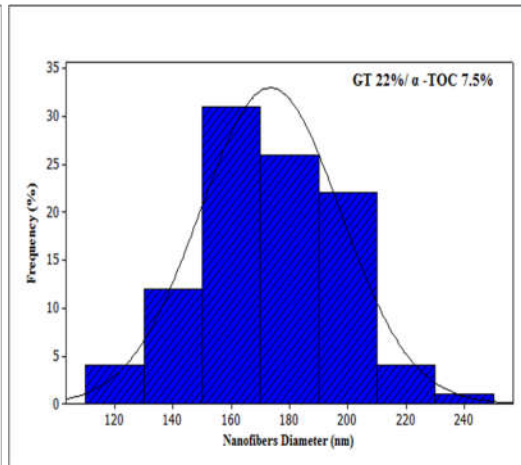
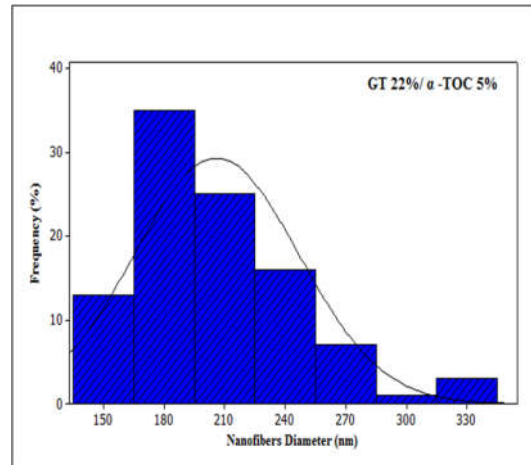
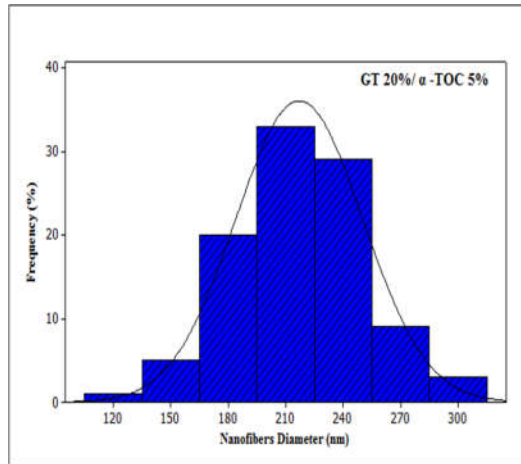
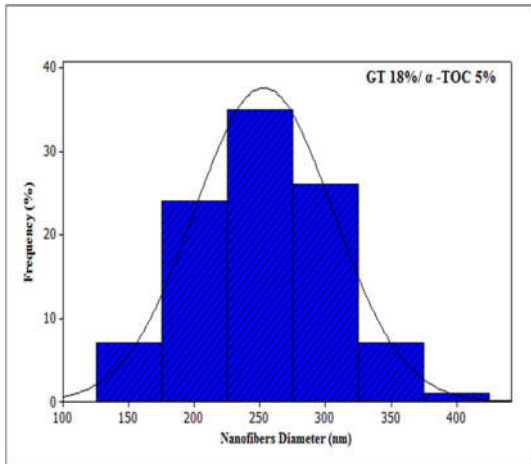
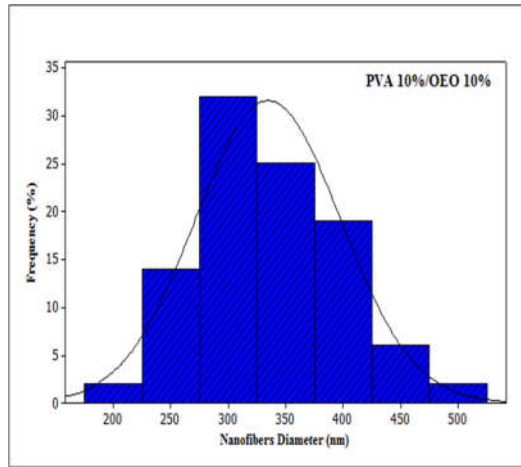
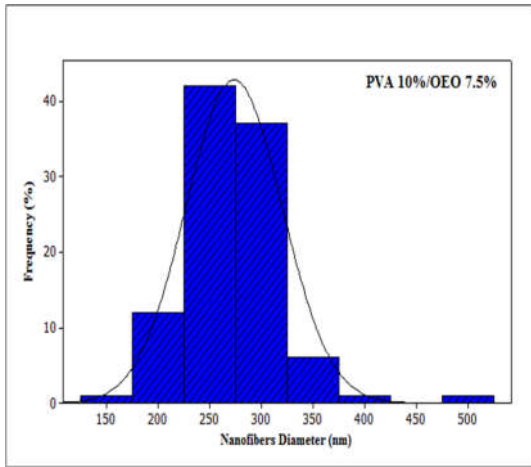
**Figure S2.** Configurations with two hidden layers.

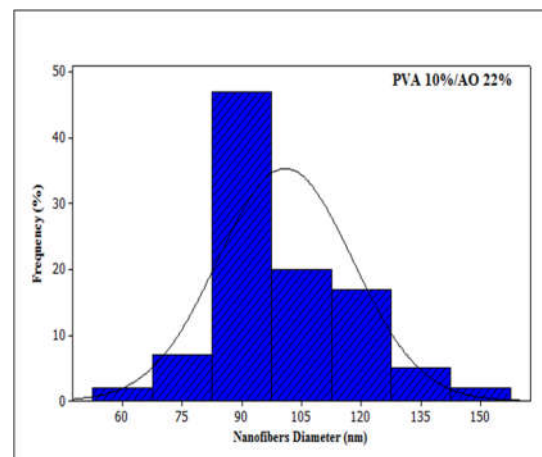
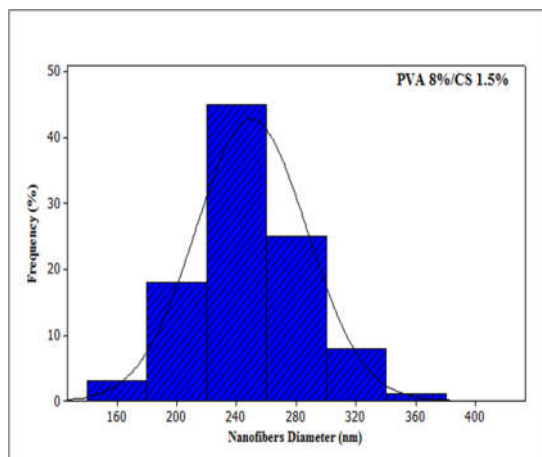
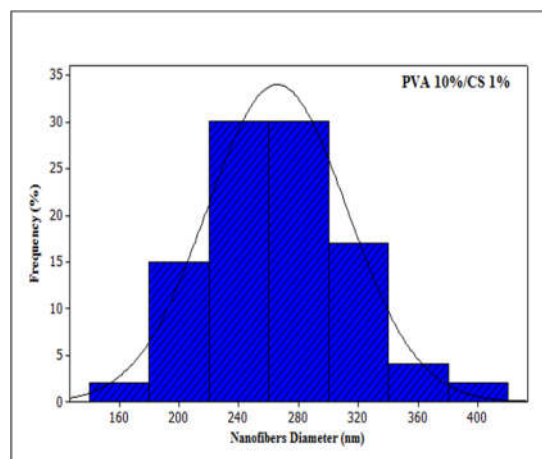
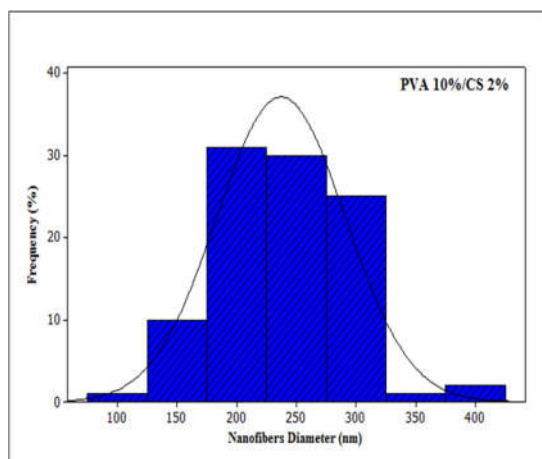
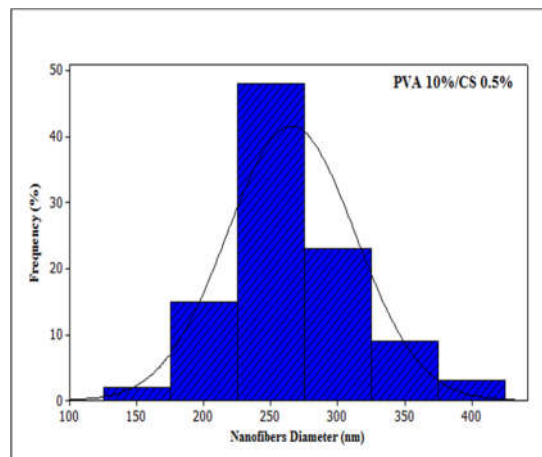
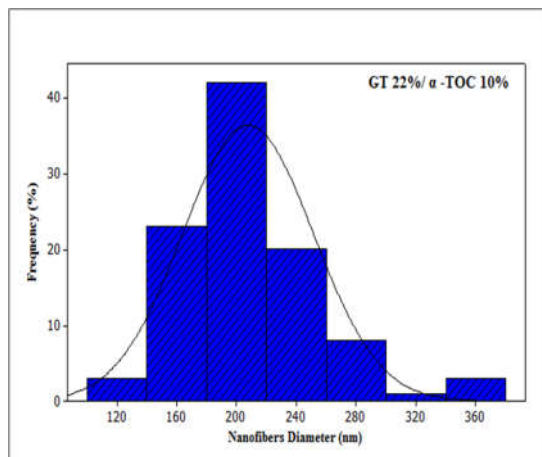


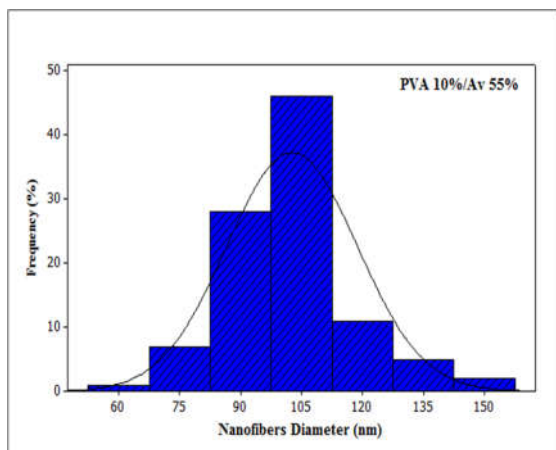
**Figure S3.** Configurations with three hidden layers.











**Figure S4.** Diameter distribution of the electrospun nanofibers.