Table S1. Estimated coefficients of the fitted quadratic polynomial equation for the response of mean fibre diameter; X_1: biopolymer (%), X_2: voltage (kV), X_3: flow rate (mL/h), and X_4: spinning distance (mm); ($R^2 = 98.58\%$, Adjusted-$R^2 = 97.15\%$)

| Source	Coefficients	T value	DF	Mean Square	F value	P Value	Sig.
Model			14	5.19	68.11	0.000	0.05
Constant	13.41	108.66				0.000	0.05
X_1	-2.22	-27.84	1	59.01	775.17	0.000	0.05
X_2	-0.48	-6.04	1	2.78	36.52	0.000	0.05
X_3	0.28	3.56	1	0.97	12.69	0.003	0.05
X_4	-2.2	-2.75	1	0.58	7.58	0.016	0.05
X_1^2	-0.62	-5.67	1	2.45	32.18	0.000	0.05
X_2^2	-0.43	-3.99	1	1.21	15.89	0.001	0.05
X_3^2	-1.07	-9.88	1	7.44	97.69	0.000	0.05
X_4^2	-0.31	-2.89	1	0.64	8.35	0.012	0.05
$X_1 X_2$	-0.02	-0.16	1	0.00	0.02	0.877	NS
$X_1 X_3$	0.04	0.28	1	0.01	0.08	0.782	NS
$X_1 X_4$	-0.05	-0.33	1	0.01	0.11	0.746	NS
$X_2 X_3$	0.24	1.74	1	0.23	3.02	0.104	NS
$X_2 X_4$	0.14	1.03	1	0.08	1.06	0.321	NS
$X_3 X_4$	0.20	1.47	1	0.16	2.15	0.164	NS
Error			14	0.08			
Lack of fit			10	0.09	1.72	0.317	NS
Pure error			4	0.05			

NS= not significant

Table S2. Estimated coefficients of the fitted quadratic polynomial equation for the response of mean diameter of fibre defects; X$_1$: biopolymer (%), X$_2$: voltage (kV), X$_3$: flow rate (mL/h), and X$_4$: spinning distance (mm); (R^2 = 99.84%, Adjusted-R^2 = 99.67%

Source	Coefficients	T value	DF	Mean Square	F value	P Value	Sig.
Model			14	69.43	427.56	0.000	0.05
Constant	9.36	51.96				0.000	0.05
X_1	7.64	65.65	1	699.77	4309.36	0.000	0.05
X_2	-0.44	-3.74	1	2.27	13.97	0.002	0.05
X_3	0.65	5.56	1	5.02	30.89	0.000	0.05
X_4	-0.40	-3.43	1	1.92	11.79	0.004	0.05
X_1^2	-0.62	-3.91	1	2.49	15.31	0.002	0.05
X_2^2	3.93	24.83	1	100.14	616.68	0.000	0.05
X_3^2	4.33	27.38	1	121.74	749.67	0.000	0.05
X_4^2	3.56	22.53	1	82.41	507.50	0.000	0.05
$X_1 X_2$	-0.06	-0.31	1	0.02	0.10	0.760	NS
$X_1 X_3$	-0.04	-0.21	1	0.01	0.04	0.837	NS
$X_1 X_4$	0.45	2.21	1	0.80	4.89	0.044	0.05
$X_2 X_3$	-0.09	-0.46	1	0.035	0.21	0.652	NS
$X_2 X_4$	-1.04	-5.14	1	4.29	26.40	0.000	0.05
$X_3 X_4$	-0.45	-2.24	1	0.81	5.00	0.042	0.05
Error			14	0.16			
Lack of fit			10	0.17	1.09	0.509	NS
Pure error			4	0.15			

NS= not significant
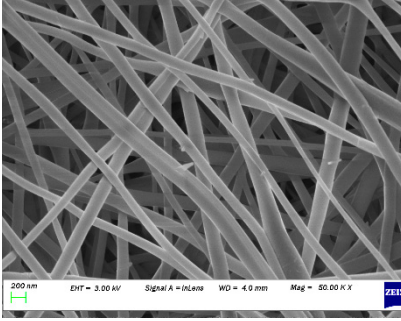
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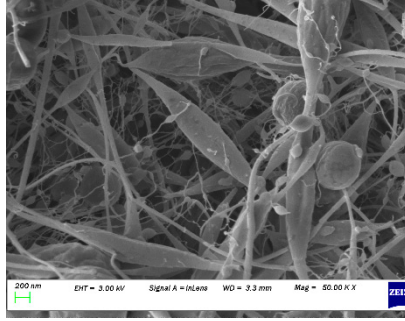
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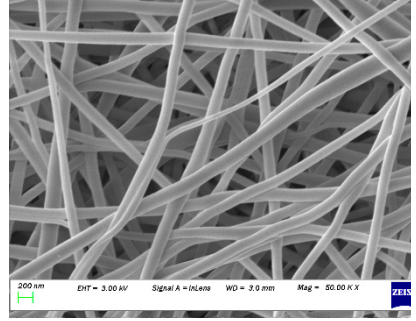
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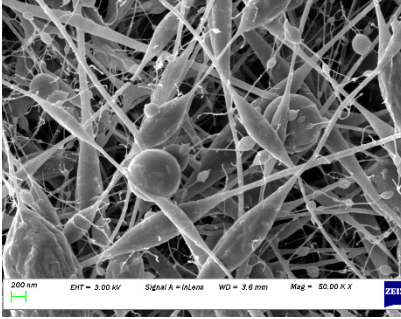
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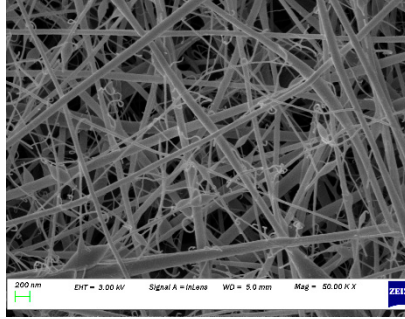
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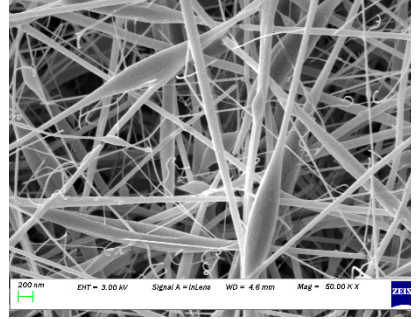
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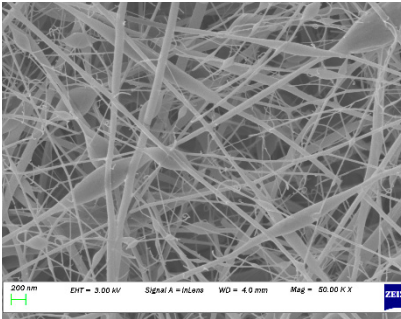
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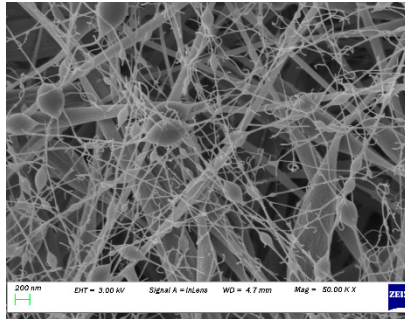
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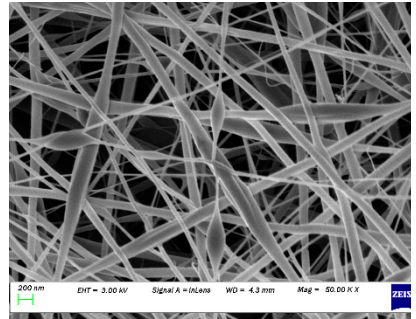
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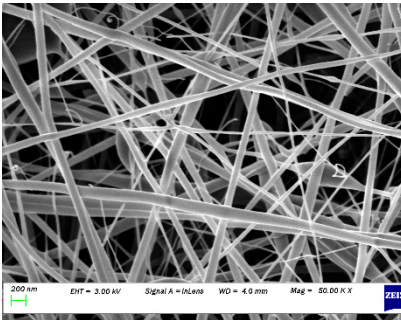
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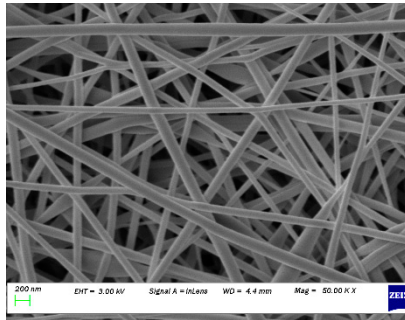
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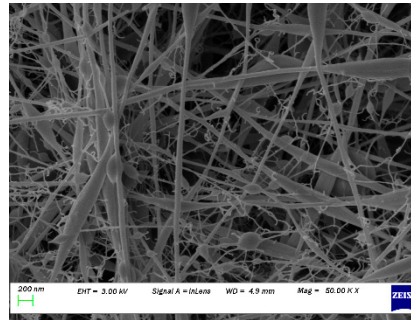
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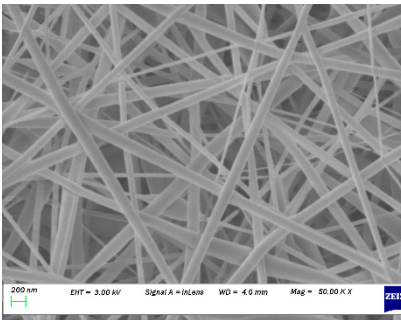
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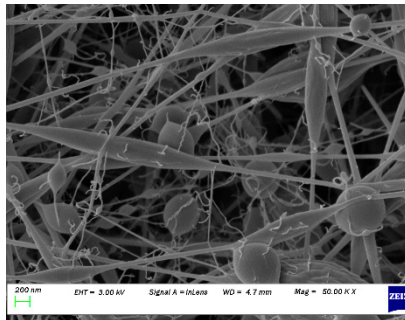
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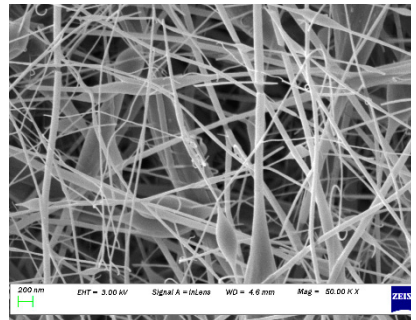
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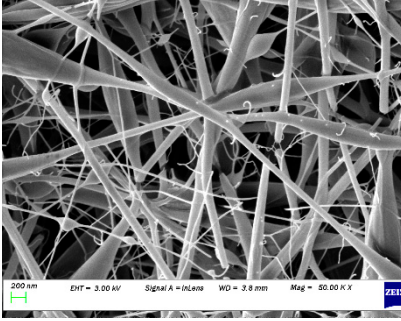
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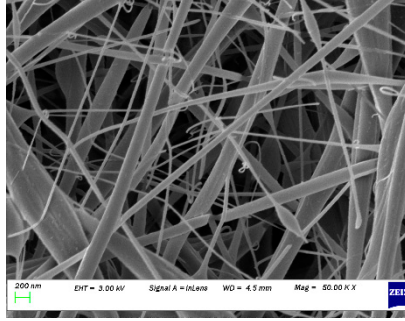
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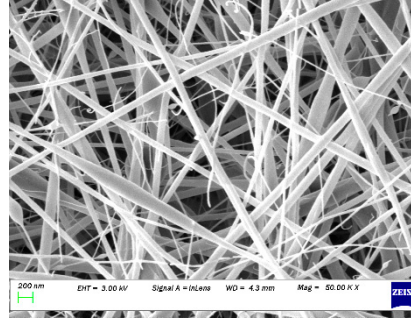
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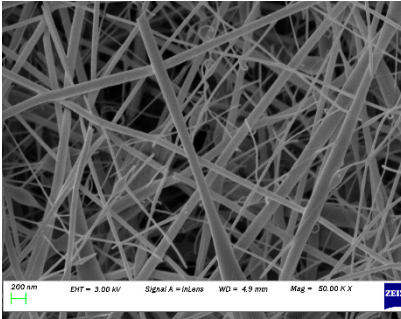
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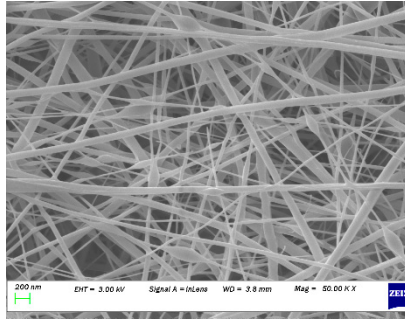
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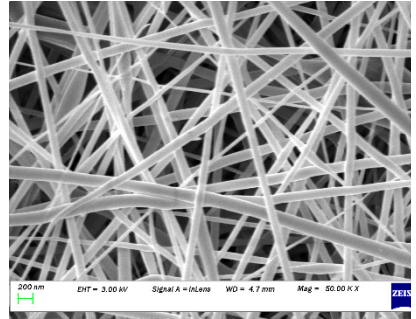
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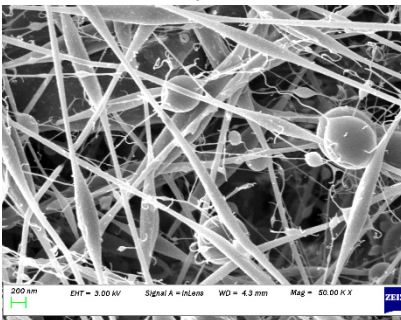
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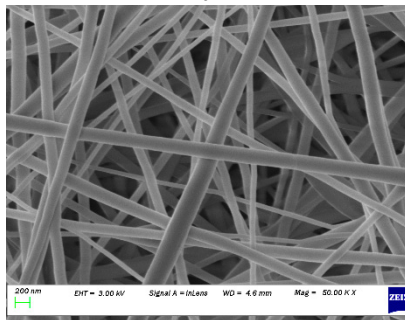
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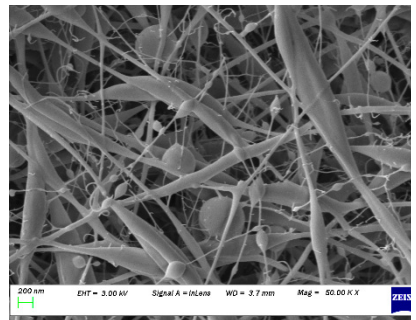
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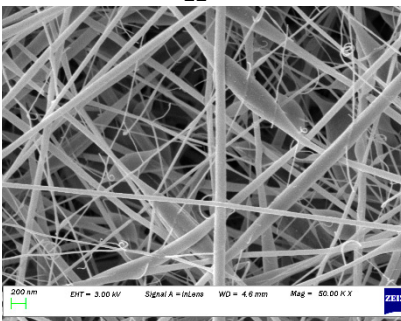
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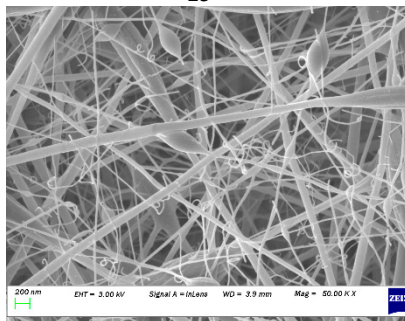
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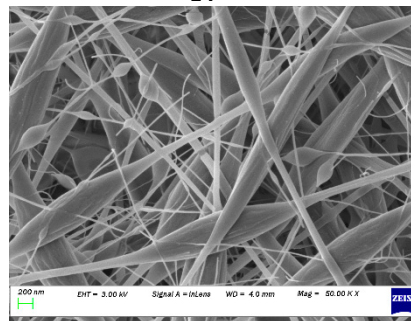
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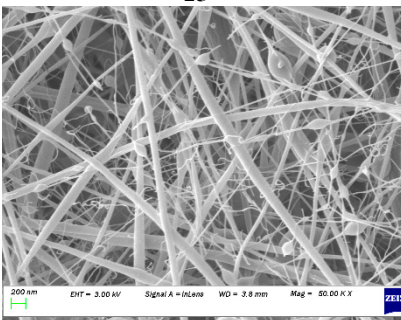
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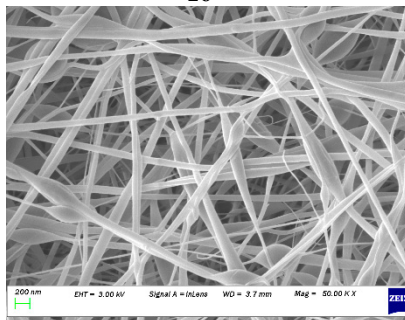
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Figure S1. SEM micrographs of the 3DENS

Normal Probability Plot
Mean fibre diameter

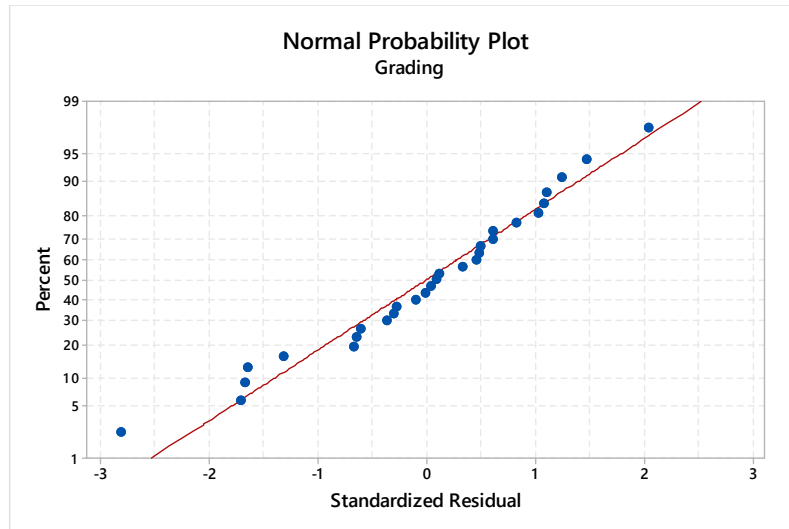
Normal Probability Plot
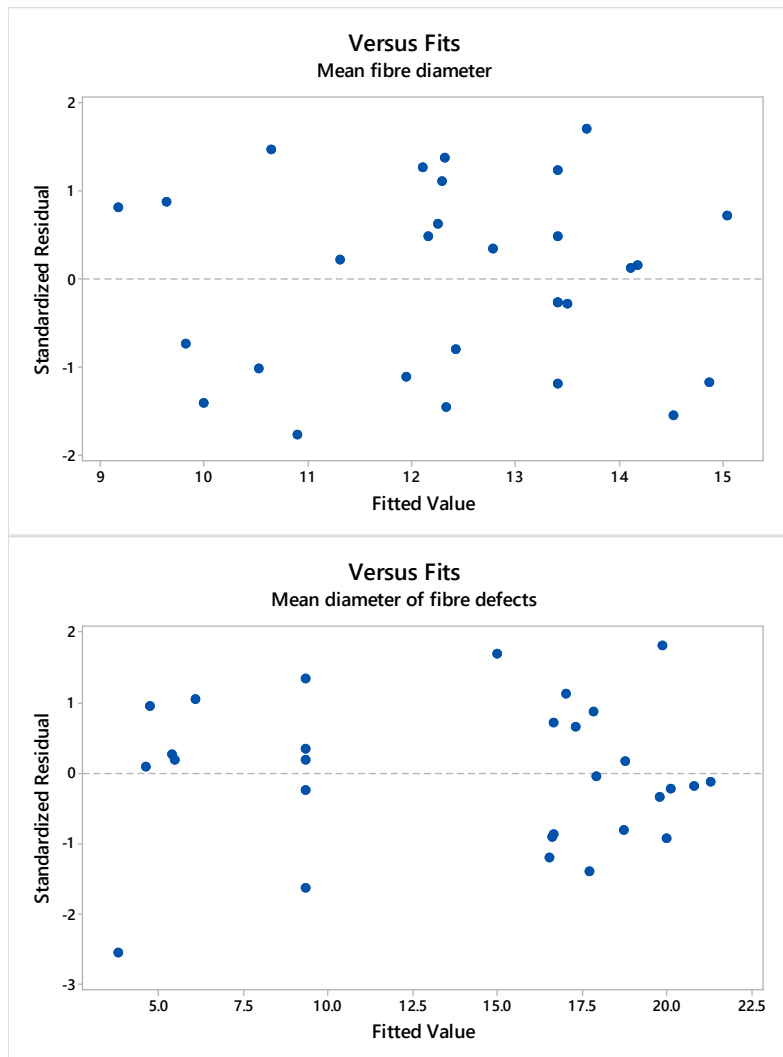Mean diameter of fibre defects
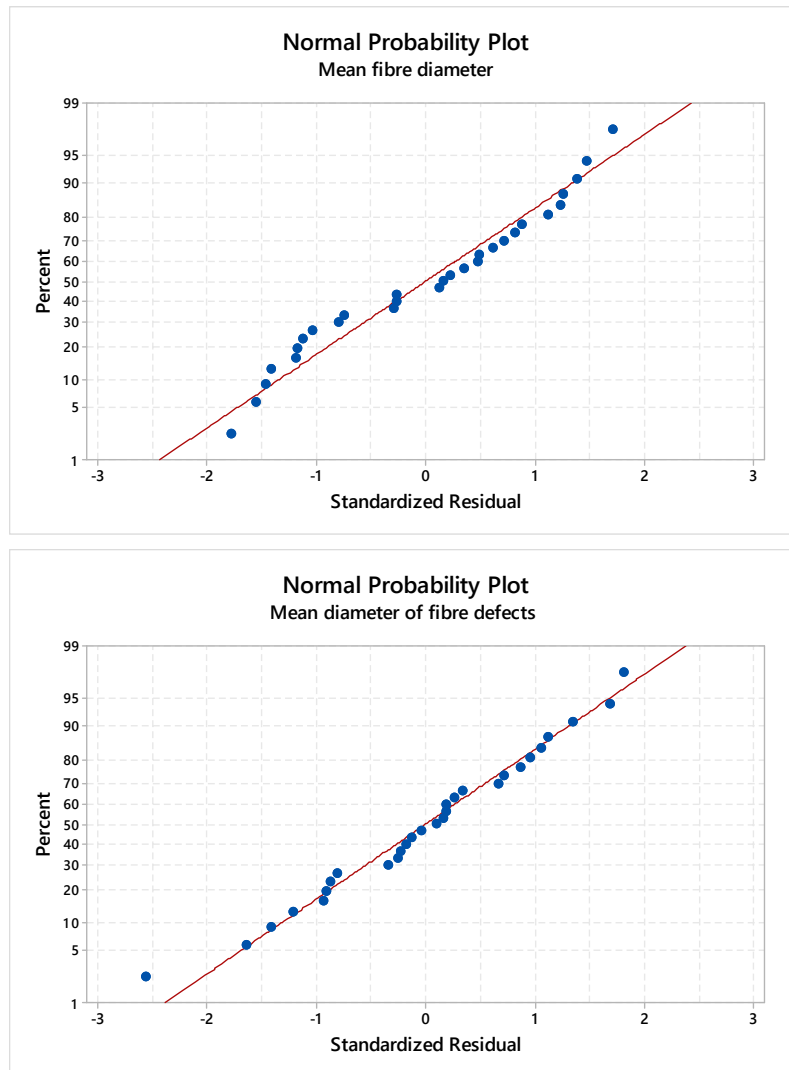
Figure S2. Normal probability plot for mean fibre and mean diameter of fibre defects
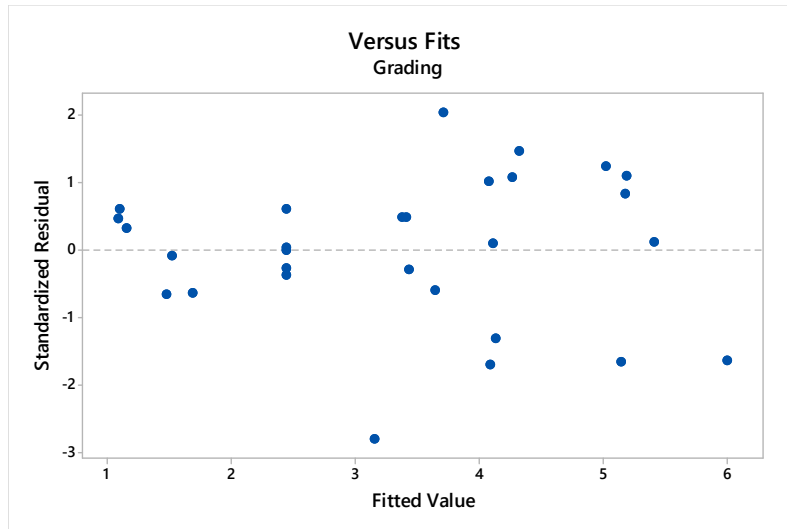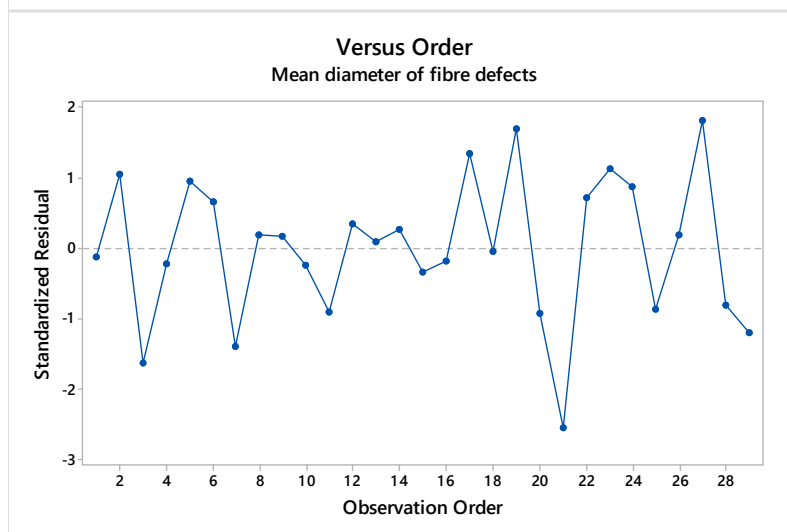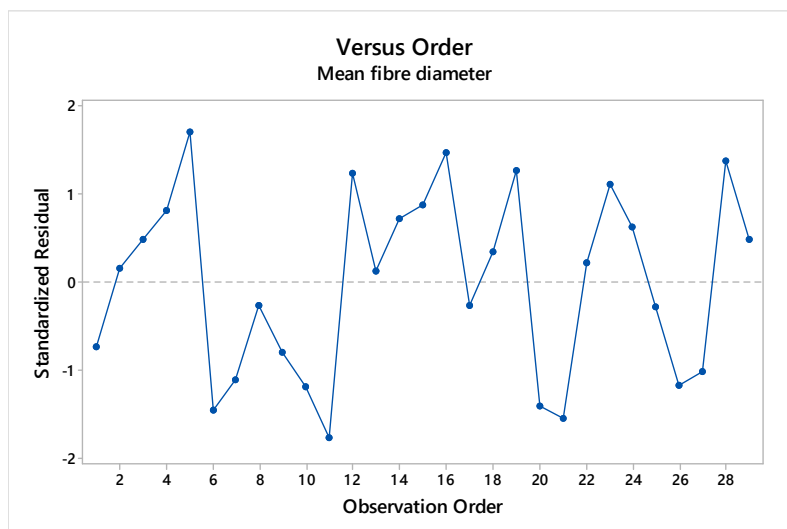
Figure S3. Residual versus fit plot for mean fibre and mean diameter of fibre defects
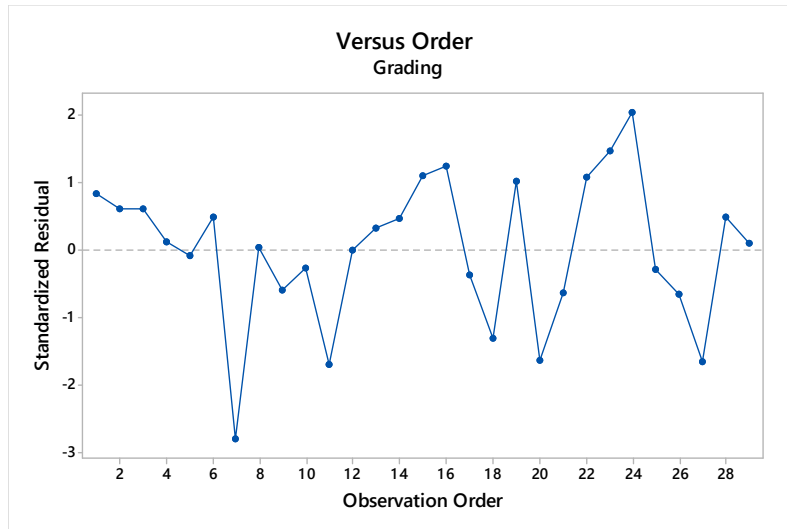
Figure S4. Residual versus order plot for mean fibre and mean diameter of fibre defects