

Table S1. Design Matrix and the Results of the Central Composite Fractional Factorial Design*

Run	Temperature (°C)	Time (min)	pH	Salt Concentration (M)	Polymer Concentration (mg/dL)	Adsorbed Polymer (mg/g)
1	1	-1	1	1	-1	70.21
2	1	-1	1	-1	1	95.11
3	2	0	0	0	0	84.98
4	1	-1	-1	1	1	97.87
5	0	0	0	0	0	87.09
6	0	0	0	0	0	80.01
7	1	1	-1	-1	1	114.20
8	0	0	0	2	0	74.88
9	0	0	0	0	-2	55.23
10	-1	-1	-1	1	-1	54.77
11	1	1	-1	1	-1	70.13
12	-1	1	1	-1	1	84.39
13	0	0	0	-2	0	69.05
14	-1	-1	1	-1	-1	39.99
15	0	0	0	0	2	114.50
16	1	1	1	-1	-1	55.27
17	0	0	-2	0	0	79.10
18	0	0	0	0	0	84.03
19	0	0	0	0	0	87.99
20	1	1	1	1	1	100.11
21	0	0	0	0	0	81.96
22	-2	0	0	0	0	65.24
23	0	-2	0	0	0	69.88
24	-1	1	-1	-1	-1	55.08
25	-1	-1	1	1	1	73.58
26	-1	1	1	1	-1	75.33
27	1	-1	-1	-1	-1	60.20
28	0	0	0	0	0	83.32
29	-1	-1	-1	-1	1	89.07
30	-1	1	-1	1	1	84.32
31	0	2	0	0	0	95.11
32	0	0	2	0	0	67.20

* All experiment were done in one block.

Table S2. Analysis of Variance Table (ANOVA) for Response Surface Quadratic Model

Source	Sum of Squares	df ^a	Mean Square	F Value ^b	p-value ^c	Prob > F
Model	8961.00	20	448.05	42.19	< 0.0001	significant
A	888.78	1	888.78	83.70	< 0.0001	
B	490.42	1	490.42	46.18	< 0.0001	
C	128.11	1	128.11	12.06	0.0052	
D	83.14	1	83.14	7.83	0.0173	
E	5897.25	1	5897.25	555.36	< 0.0001	
AB	40.29	1	40.29	3.76	0.0774	
AC	8.63	1	8.63	0.81	0.3867	
AD	2.20	1	2.20	0.21	0.6580	
AE	128.20	1	128.20	12.07	0.0052	
BC	12.94	1	12.94	1.22	0.2932	
BD	4.94	1	4.94	0.47	0.5093	
BE	0.66	1	0.66	0.062	0.8077	
CD	195.51	1	195.51	18.41	0.0013	
CE	67.61	1	67.61	6.37	0.0283	
DE	470.78	1	470.78	44.33	< 0.0001	
A2	138.90	1	138.90	13.08	0.0041	
B2	3.19	1	3.19	0.30	0.5946	
C2	208.49	1	208.49	19.63	0.0010	
D2	257.40	1	257.40	24.24	0.0005	
E2	2.02	1	2.02	0.19	0.6708	
Residual	116.81	11	10.62			
Lack of Fit ^d	70.82	6	11.80	1.28	0.4011	not significant
Pure Error	45.99	5	9.20			
Cor Total	9077.81	31				

^a Degrees of freedom.^b Test for comparing model variance with residual (error) variance.^c Probability of seeing the observed F-value if the null hypothesis is true.^d The variation of the data around the fitted model.

Table S3. Design Matrix and the Results of the Box-Behnken Design*

Run	Temperature (°C)	pH	Salt Concentration (M)	Polymer Concentration (g/Lit)	Transmittance (%)
1	0	0	-1	1	93.16
2	0	0	-1	-1	97.86
3	1	0	1	0	82.30
4	1	0	0	-1	83.87
5	0	0	0	0	90.67
6	1	1	0	0	80.25
7	0	-1	0	-1	96.61
8	1	0	0	1	83.06
9	0	1	1	0	90.07
10	0	0	0	0	93.81
11	0	-1	0	1	91.28
12	-1	0	0	1	81.27
13	1	0	-1	0	92.63
14	-1	0	1	0	90.29
15	-1	0	0	-1	94.50
16	0	1	0	-1	91.16
17	0	1	-1	0	95.54
18	-1	-1	0	0	91.29
19	0	0	1	1	81.17
20	0	0	0	0	95.30
21	-1	1	0	0	88.65
22	0	1	0	1	82.90
23	0	0	1	-1	90.39
24	0	0	0	0	96.33
25	-1	0	-1	0	94.75
26	0	0	0	0	95.69
27	0	-1	-1	0	95.55
28	1	-1	0	0	92.74
29	0	-1	1	0	91.11

* All experiment were done in one block.

Table S4. Analysis of Variance Table (ANOVA) for Response Surface Quadratic Model

Source	Sum of Squares	df ^a	Mean Square	F Value ^b	p-value ^c	Prob > F
Model	728.21	14	52.01	10.84	< 0.0001	significant
A	55.90	1	55.90	11.65	0.0042	
B	75.05	1	75.05	15.65	0.0014	
C	162.51	1	162.51	33.88	< 0.0001	
D	143.87	1	143.87	29.99	< 0.0001	
AB	24.26	1	24.26	5.06	0.0412	
AC	8.61	1	8.61	1.80	0.2016	
AD	38.56	1	38.56	8.04	0.0132	
BC	0.27	1	0.27	0.055	0.8175	
BD	2.15	1	2.15	0.45	0.5144	
CD	5.11	1	5.11	1.06	0.3196	
A2	156.59	1	156.59	32.64	< 0.0001	
B2	6.10	1	6.10	1.27	0.2785	
C2	7.613E-004	1	7.613E-004	1.587E-004	0.9901	
D2	77.63	1	77.63	16.18	0.0013	
Residual	67.15	14	4.80			
Lack of Fit ^d	46.70	10	4.67	0.91	0.5896	not significant
Pure Error	20.45	4	5.11			
Cor Total	795.39	28				

^a Degrees of freedom.

^b Test for comparing model variance with residual (error) variance.

^c Probability of seeing the observed F-value if the null hypothesis is true.

^d The variation of the data around the fitted model.