

**List of Supplementary Table**

Supp. Table 1: Experimental design and responses of the NF process.

Supp. Table 2: Experimental design and responses of the EC process

**Table S1.** Experimental design and responses of the NF process.

Std. No.	Coded Variables				Responses							
	X <sub>1</sub>	X <sub>2</sub>	X <sub>3</sub>	X <sub>4</sub>	Y <sub>1</sub>		Y <sub>2</sub>		Y <sub>3</sub>		Y <sub>4</sub>	
					Actual Value	Predicted Value	Actual Value	Predicted Value	Actual Value	Predicted Value	Actual Value	Predicted Value
1	4.5	10.0	10.0	15	12.39	13.16	47.34	57.59	51.42	64.36	89.57	87.78
2	9.5	10.0	10.0	15	14.71	14.13	98.99	100.85	98.97	102.90	99.81	101.01
3	4.5	25.0	10.0	15	30.97	31.29	44.55	53.99	49.39	59.89	88.66	85.72
4	9.5	25.0	10.0	15	38.71	36.5	98.41	99.33	98.67	98.43	99.60	100.72
5	4.5	10.0	25.0	15	12	13.03	36.75	44.55	47.86	56.72	82.03	80.86
6	9.5	10.0	25.0	15	14.32	11.89	97.93	95.64	97.82	95.27	98.93	100.11
7	4.5	25.0	25.0	15	34.06	32.5	33.75	39.59	42.21	52.25	78.31	77.47
8	9.5	25.0	25.0	15	36.39	35.6	95.94	92.76	95.23	90.80	97.16	98.49
9	4.5	10.0	10.0	35	17.03	19.14	42.52	50.13	48.78	60.02	87.03	84.39
10	9.5	10.0	10.0	35	22.45	23.38	98.06	96.08	98.03	98.56	99.05	98.88
11	4.5	25.0	10.0	35	45.48	47.27	40.38	46.52	45.95	55.55	84.81	82.62
12	9.5	25.0	10.0	35	55.47	55.75	97.93	94.56	97.42	94.09	99.01	98.87
13	4.5	10.0	25.0	35	20.52	22.09	35.09	38.03	45.93	52.38	80.69	78.55
14	9.5	10.0	25.0	35	23.23	24.22	96.82	91.81	96.54	90.92	97.41	99.05
15	4.5	25.0	25.0	35	49.66	51.56	30.48	33.05	41.57	47.91	77.94	75.44
16	9.5	25.0	25.0	35	59.34	57.93	95.32	88.93	94.98	86.45	96.93	97.71
17	2.0	17.5	17.5	25	22.45	18.83	36.85	14.70	70.65	36.86	52.91	59.86
18	12	17.5	17.5	25	23.23	26.17	99.96	113.82	99.63	113.95	99.99	95.36
19	7.0	2.5	17.5	25	4.72	2.87	82.12	75.68	80.98	79.88	96.19	96.98
20	7.0	32.5	17.5	25	53.54	54.71	71.03	69.19	64.13	70.94	92.05	93.58
21	7.0	17.5	2.5	25	32.52	31.15	91.12	79.83	89.31	83.04	95.96	98.58
22	7.0	17.5	32.5	25	32.52	33.2	58.15	61.15	56.74	67.77	90.81	90.51
23	7.0	17.5	17.5	5	21.68	24.74	90.49	79.31	81.79	79.75	96.78	96.57
24	7.0	17.5	17.5	45	56.79	53.05	65.13	68.02	61.92	71.06	89.89	92.41
25	7.0	17.5	17.5	25	26.32	26.75	90.48	89.32	86.76	75.41	92.95	92.65
26	7.0	17.5	17.5	25	25.78	26.75	89.01	89.32	84.87	75.41	91.45	92.65
27	7.0	17.5	17.5	25	27.1	26.75	89.93	89.32	85.40	75.41	93.84	92.65
28	7.0	17.5	17.5	25	26.32	26.75	87.34	89.32	82.05	75.41	91.97	92.65
29	7.0	17.5	17.5	25	27.87	26.75	88.59	89.32	83.19	75.41	90.94	92.65
30	7.0	17.5	17.5	25	27.1	26.75	90.57	89.32	84.02	75.41	94.74	92.65

**Table S2.** Experimental design and responses of the EC process.

Std No.	Coded Variables				Responses					
	X <sub>1</sub>	X <sub>2</sub>	X <sub>3</sub>	X <sub>4</sub>	Y <sub>1</sub>		Y <sub>2</sub>		Y <sub>3</sub>	
					Actual Value	Predicted Value	Actual Value	Predicted Value	Actual Value	Predicted Value
1	4.5	40	10	1.0	72.89	61.01	55.66	45.10	90.22	85.79
2	7.5	40	10	1.0	86.19	76.27	78.77	72.95	98.20	93.27
3	4.5	80	10	1.0	84.75	81.21	73.78	69.56	92.76	91.51
4	7.5	80	10	1.0	95.30	96.63	91.46	90.42	99.48	99.30
5	4.5	40	25	1.0	37.46	32.04	30.81	24.86	87.71	82.49
6	7.5	40	25	1.0	74.59	63.59	67.29	58.09	91.54	87.66
7	4.5	80	25	1.0	50.02	55.49	47.49	53.37	93.16	91.83
8	7.5	80	25	1.0	96.30	87.20	89.19	79.61	98.74	97.33
9	4.5	40	10	2.0	80.90	84.23	62.26	69.20	95.75	94.09
10	7.5	40	10	2.0	90.12	80.71	87.78	79.21	97.90	96.57
11	4.5	80	10	2.0	94.98	102.04	90.87	97.37	97.96	99.18
12	7.5	80	10	2.0	99.01	98.66	97.08	100.39	99.83	101.98
13	4.5	40	25	2.0	78.04	72.77	59.56	57.90	94.53	92.05
14	7.5	40	25	2.0	87.75	85.52	71.72	73.29	94.05	92.23
15	4.5	80	25	2.0	89.67	93.82	86.95	90.12	98.90	100.76
16	7.5	80	25	2.0	98.79	106.73	90.66	98.52	99.50	101.27
17	3.0	60	17.5	1.5	81.10	79.30	66.93	64.21	89.69	93.47
18	9.0	60	17.5	1.5	95.98	107.49	92.40	100.46	99.51	101.46
19	6.0	20	17.5	1.5	21.92	42.97	17.68	31.64	70.91	80.92
20	6.0	100	17.5	1.5	95.72	84.38	89.94	81.33	99.96	95.68
21	6.0	60	2.5	1.5	99.46	106.30	98.14	102.20	99.87	102.21
22	6.0	60	32.5	1.5	82.53	85.40	78.82	80.10	94.80	98.19
23	6.0	60	17.5	0.5	28.02	45.19	20.94	38.52	76.29	84.74
24	6.0	60	17.5	2.5	95.41	87.95	93.76	81.53	99.70	96.98
25	6.0	60	17.5	1.5	94.47	93.51	92.79	90.88	98.64	97.05
26	6.0	60	17.5	1.5	91.04	93.51	90.45	90.88	96.24	97.05
27	6.0	60	17.5	1.5	91.69	93.51	90.21	90.88	95.19	97.05
28	6.0	60	17.5	1.5	94.55	93.51	89.91	90.88	97.33	97.05
29	6.0	60	17.5	1.5	95.76	93.51	90.39	90.88	98.91	97.05
30	6.0	60	17.5	1.5	93.56	93.51	91.51	90.88	95.98	97.05