

Supporting Information

Table 1S Experimental results of ketoprofen and aspirin adsorption using CCD matrix

N°Exp	X ₁	X ₂	X ₃	X ₄	ketoprofen removal %	Aspirin removal %
1	15	2.4	100	15	67.44	83.21
2	25	2.4	100	15	91.21	83.21
3	15	4.4	100	15	63.32	77.04
4	25	4.4	100	15	87.5	80.29
5	15	2.4	200	15	75.61	78.72
6	25	2.4	200	15	90.34	82.47
7	15	4.4	200	15	68.19	80.34
8	25	4.4	200	15	86.39	85.52
9	15	2.4	100	35	64.45	80.42
10	25	2.4	100	35	81.26	85.3
11	15	4.4	100	35	55.71	79.57
12	25	4.4	100	35	74.92	86.47
13	15	2.4	200	35	54.96	69.39
14	25	2.4	200	35	64.23	70.37
15	15	4.4	200	35	43.32	72.02
16	25	4.4	200	35	54.72	76.13
17	10	3.4	150	25	28.46	82.83
18	30	3.4	150	25	63.62	94.41
19	20	1.4	150	25	91.94	94.85
20	20	5.4	150	25	73.64	92.51
21	20	3.4	50	25	98.49	99.94
22	20	3.4	250	25	84.31	89.56
23	20	3.4	150	5	91.09	42.16
24	20	3.4	150	45	60.3	36.28
25	20	3.4	150	25	92	95.06
26	20	3.4	150	25	92.03	95.12
27	20	3.4	150	25	93.67	95.86

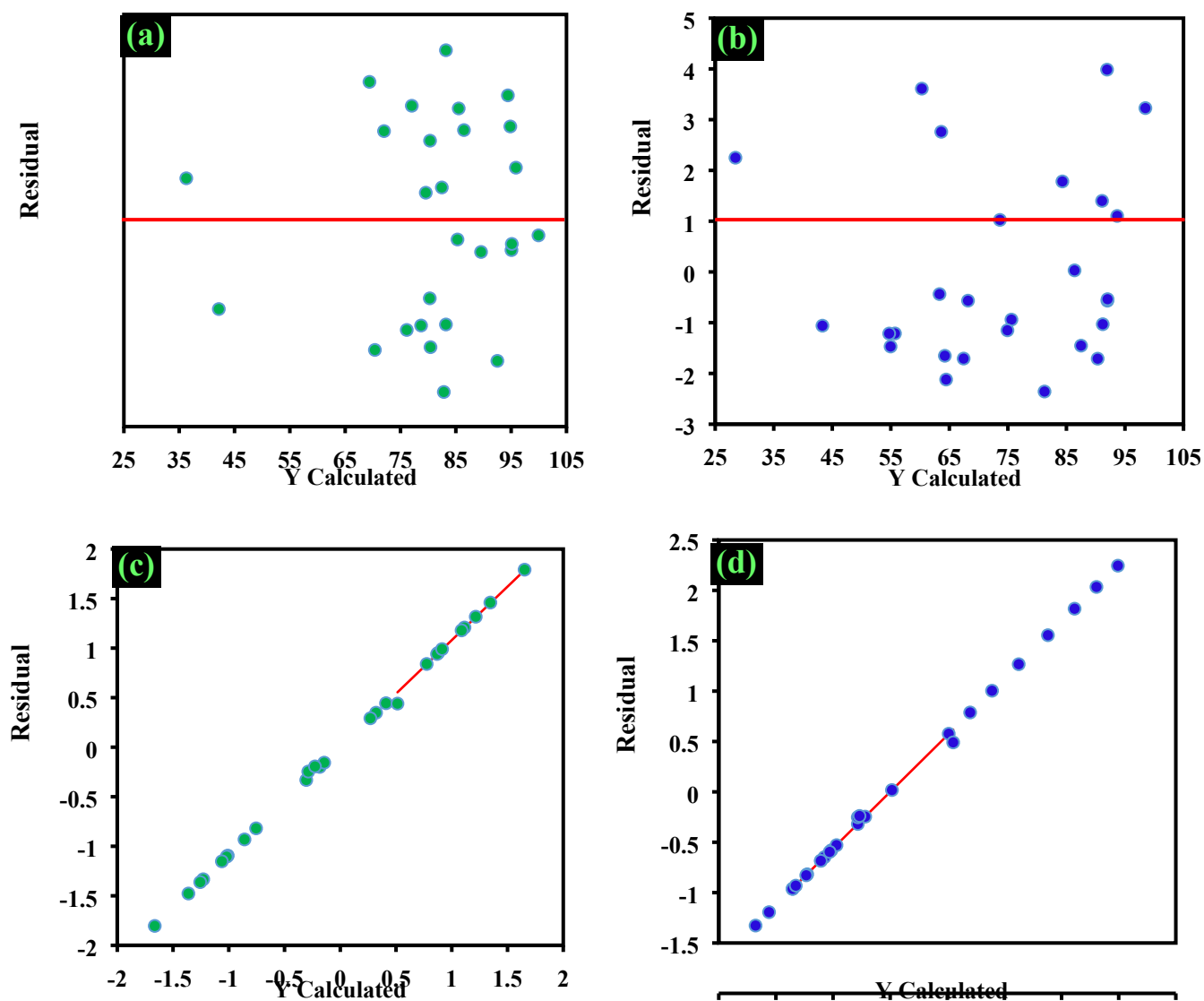


Figure 15. a) distribution of the residues for aspirin, b) distribution of the residues for ketoprofen, c) Plot of raw residuals vs responses for aspirin and d) for ketoprofen adsorption.

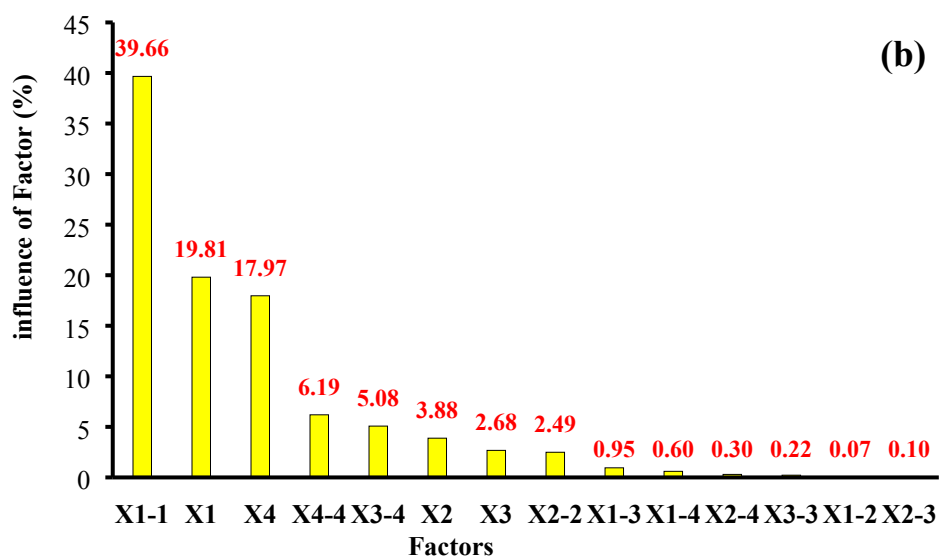
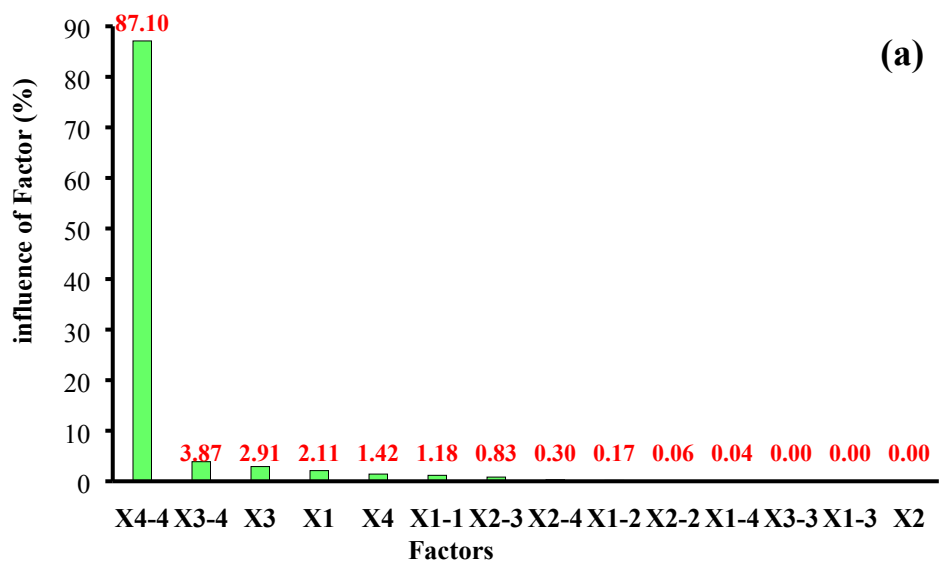


Figure 2S. Pareto plots of standardized effects at $p = 0.05$, for a) aspirin and b) ketoprofen adsorption

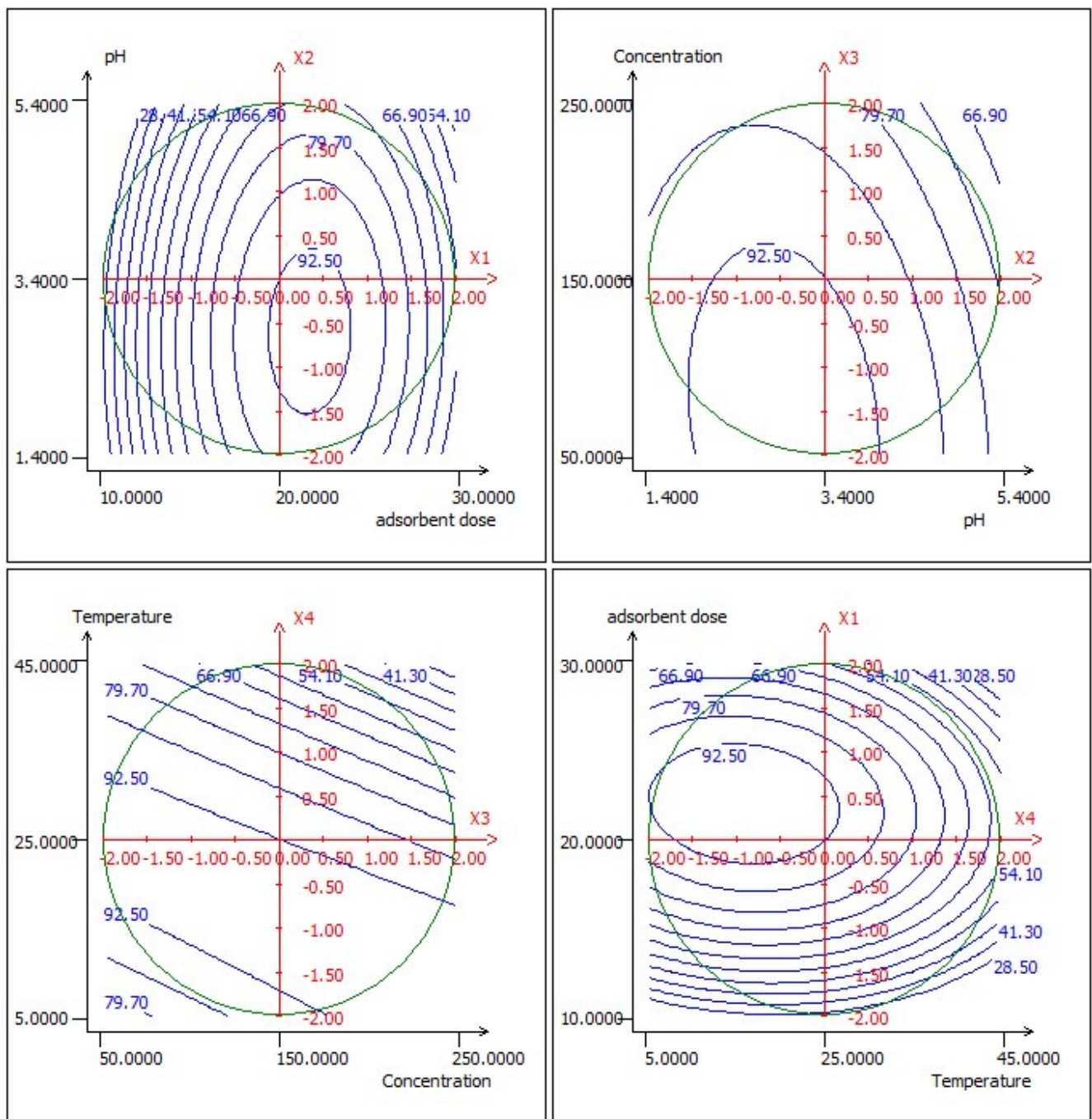


Figure 3S. a) Contour plot presentations for ketoprofen adsorption on different possible plans a) Adsorbent dose – pH b) pH – Concentration c) Concentration – temperature and d) adsorbent dose – temperature

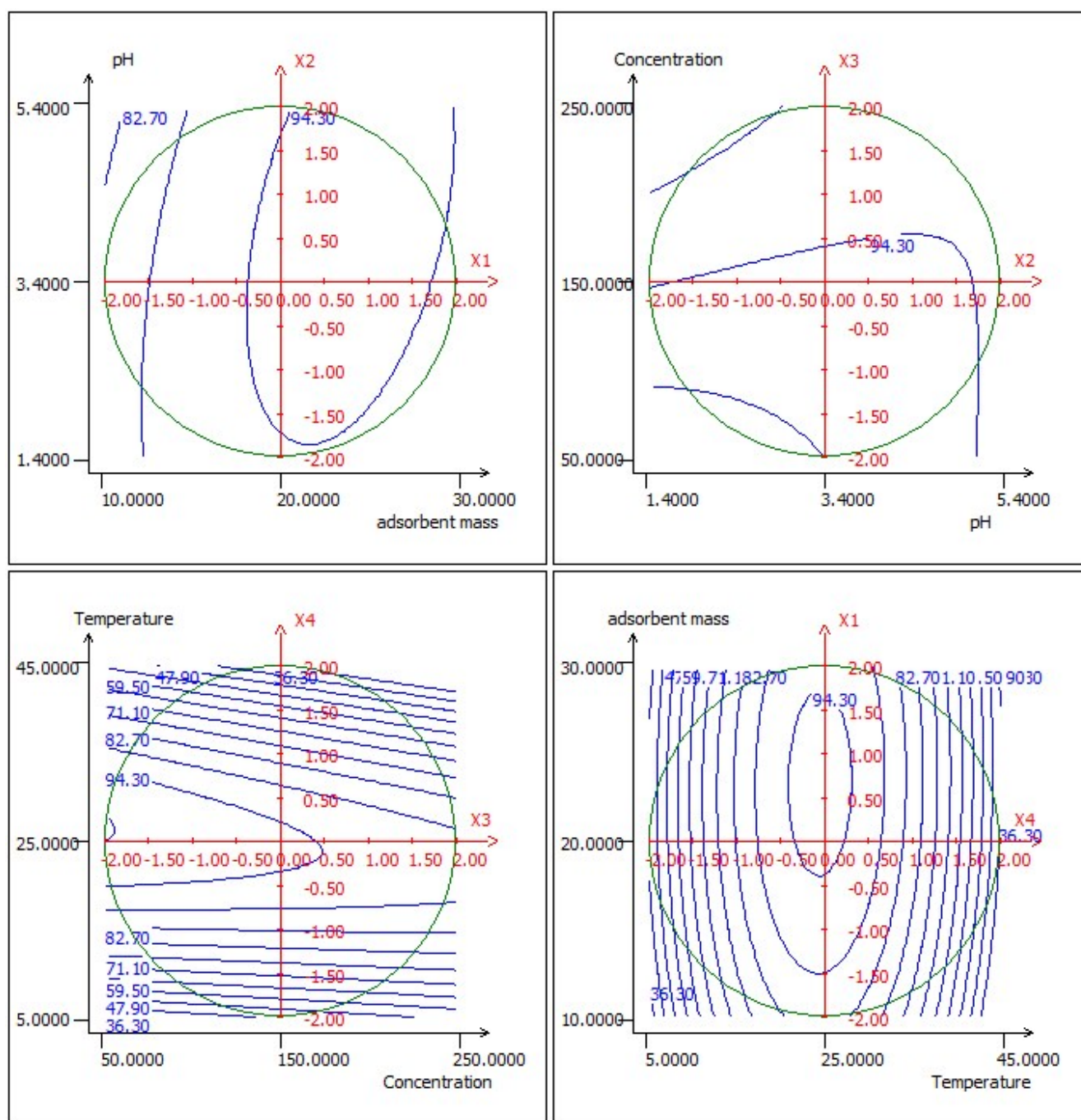


Figure 4S. a) Contour plot presentations for aspirin adsorption on different possible plans a) adsorbent dose – pH b) pH – Concentration c) Concentration – temperature and d) adsorbent dose – temperature

Table 2S ANOVA analyses

ketoprofen adsorption		
Nom	Coefficient	P-value
Model	-	< 0.0001
b0	92.567	< 0.0001
b1	8.662	< 0.0001
b2	-3.835	< 0.0001
b3	-3.184	0.000104
b3	-8.250	< 0.0001
b1-1	-12.258	< 0.0001
b2-2	-3.071	0.000238
b3-3	-0.918	0.149
b4-4	-4.844	< 0.0001
b1-2	0.526	0.459
b1-3	-1.898	0.0173
b2-3	-0.601	0.400
b1-4	-1.512	0.0482
b2-4	-1.064	0.148
b3-4	-4.386	< 0.0001
Lack of fit		0.097
R ²	0.989	
R ² _{Adj}	0.976	
Aspirin adsorption		
Nom	Coefficient	P-value
Model	-	< 0.0001
b0	95.347	< 0.0001
b1	2.175	0.956
b2	-0.016	< 0.0001
b3	-2.555	< 0.0001
b3	-1.787	0.000203
b1-1	-1.626	0.266
b2-2	-0.361	0.769
b3-3	-0.093	< 0.0001
b4-4	-13.976	0.111
b1-2	0.614	0.863
b1-3	-0.063	0.00244
b2-3	1.364	0.428
b1-4	0.293	0.0404
b2-4	0.821	< 0.0001
b3-4	-2.947	< 0.0001
Lack of fit		0.078
R ²	0.996	
R ² _{Adj}	0.990	

Table 3S Experimental and predicted removal by the model for ketoprofen and aspirin adsorption

<i>pH = 4.4</i> <i>Temperature = 25 °C</i> <i>Adsorbent dose = 19.90 mg</i> <i>Concentration = 150 mg/L</i>	Adsorption of ketoprofen	
	Predicted	Experimental
	85.56 % ± 3.02	86.12 % ± 4.80
<i>pH = 4.3</i> <i>Temperature = 25 °C</i> <i>Adsorbent dose = 19.98 mg</i> <i>Concentration = 150 mg/L</i>	Adsorption of aspirin	
	Predicted	Experimental
	94.97 % ± 1.57	95.33 % ± 2.09