Fig. S1 Perturbation plots of EAH and effluent supernatant pH, where X_1-alkaline hydrolysis pH, X_2-distilled water volume, and X_3-sludge sample volume

Fig. S2 Three-dimensional surface response plot of EAH and effluent supernatant pH

Fig. S3 Titration curve for the sludge sample

Fig. S1

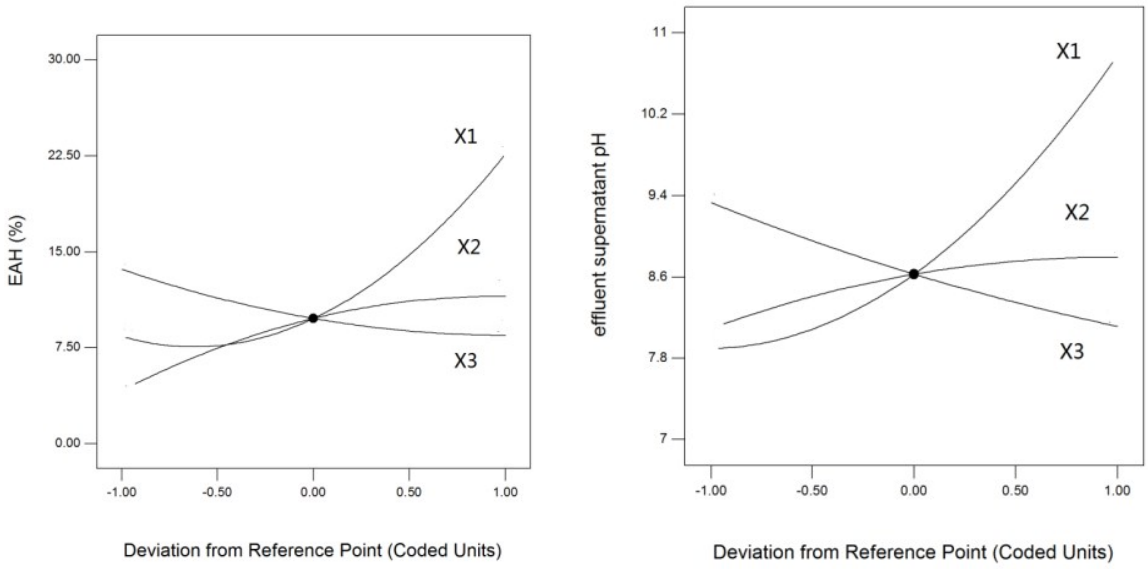

Fig. S2

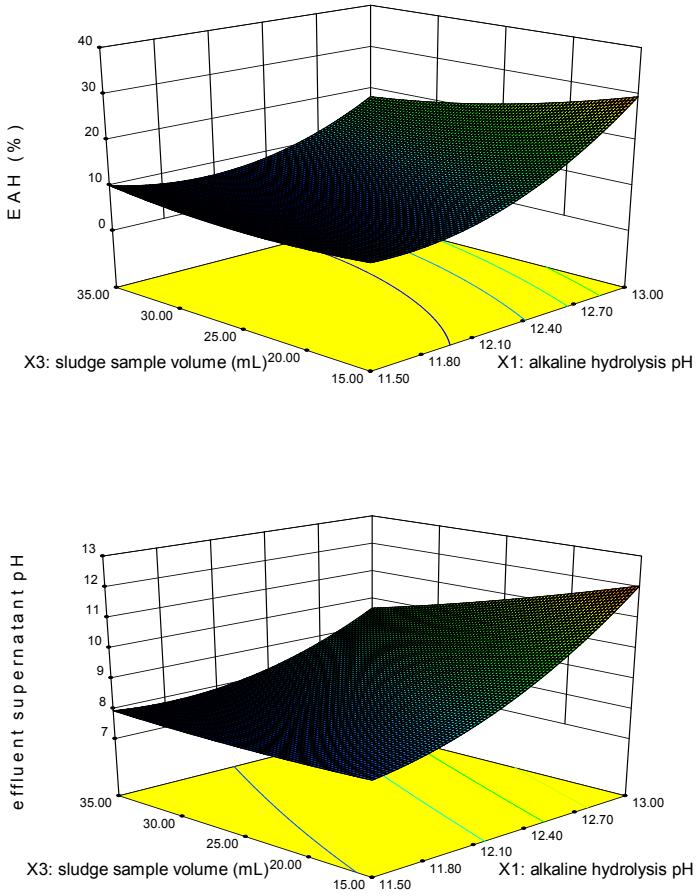
EAH (%)
40
30
20
10
0
35.00
30.00
25.00
20.00
15.00
X3: sludge sample volume (mL)
11.50
11.80
12.10
12.40
12.70
13.00
X1: alkaline hydrolysis pH
effluent supernatant pH
13
12
11
10
9
8
7
35.00
30.00
25.00
20.00
15.00
X3: sludge sample volume (mL)
11.50
11.80
12.10
12.40
12.70
13.00
X1: alkaline hydrolysis pH

Fig. S3

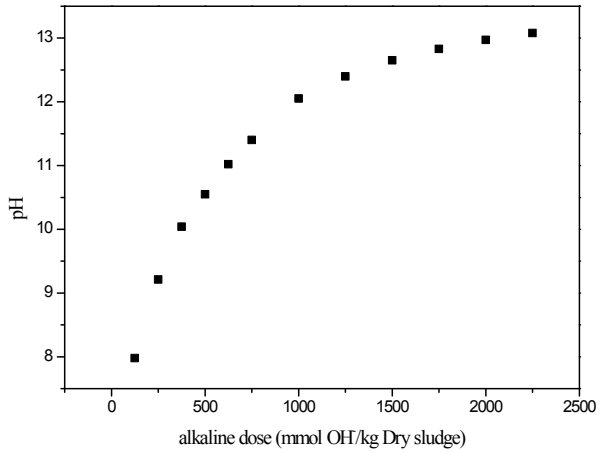

Table S1 Analysis of variance for the RSM quadratic model, where X_1-alkaline hydrolysis pH, X_2-distilled water volume, X_3-sludge sample volume, Y_1-EAH, and Y_2-effluent supernatant pH

Table S1

Source	Sum of squares		Mean square		F value		p-value	
	Y_1	Y_2	Y_1	Y_2	Y_1	Y_2	Y_1	Y_2
Model	865.85	26.15	96.21	2.91	6.81	15.29	0.0096	0.0008
X_1	406.41	16.65	406.41	16.65	28.76	87.60	0.0010	< 0.0001
X_2	108.03	0.98	108.03	0.98	7.65	5.16	0.0279	0.0574
X_3	54.00	2.98	54.00	2.98	3.82	15.67	0.0915	0.0055
X_1X_2	76.97	1.90	76.97	1.90	5.45	10.02	0.0523	0.0158
X_1X_3	38.63	1.32	38.63	1.32	2.73	6.96	0.1422	0.0335
X_2X_3	1.50	0.053	1.50	0.053	0.11	0.28	0.7540	0.6141
X_1^2	158.22	2.11	158.22	2.11	11.20	11.12	0.0123	0.0125
X_2^2	10.08	0.15	10.08	0.15	0.71	0.77	0.4263	0.4091
X_3^2	11.81	0.03	11.81	0.03	0.84	0.19	0.391	0.673

		7		7		0	1
Residual	98.91	1.33	14.13	0.19			