Table S1. ANOVA for MLVSS removal (Y1) quadratic model.

Source	Sum of Squares	df	Mean Square	F-value	p-value	
Model	2187.31	14	156.24	7.56	0.0002	significant
A-pH	1552.26	1	1552.26	75.15	< 0.0001	
B-Sludge concentration	382.81	1	382.81	18.53	0.0006	
C-Electrolysis time	31.92	1	31.92	1.55	0.2329	
D-Current density	3.27	1	3.27	0.1584	0.6962	
AB	25.83	1	25.83	1.25	0.2811	
AC	6.5	1	6.5	0.3148	0.583	
AD	0.0731	1	0.0731	0.0035	0.9533	
BC	1.48	1	1.48	0.0715	0.7928	
BD	0.4616	1	0.4616	0.0223	0.8832	
CD	3.78	1	3.78	0.1829	0.6749	
A^2	108.76	1	108.76	5.27	0.0366	
B^2	5.19	1	5.19	0.2514	0.6233	
C^2	28.57	1	28.57	1.38	0.2579	
D^2	15.37	1	15.37	0.7442	0.4019	
Residual	309.84	15	20.66			
Lack of Fit	293.66	10	29.37	9.08	0.0126	significant
Pure Error	16.17	5	3.23			
Cor Total	2497.15	29				

Table S2. ANOVA for CST reduction (Y2) quadratic model.

Source	Sum of Squares	df	Mean Square	F-value	p-value	
Model	7839.22	14	559.94	8.39	< 0.0001	significant
A-pH	2083.88	1	2083.88	31.21	< 0.0001	
B-Sludge concentration	373.41	1	373.41	5.59	0.0319	
C-Electrolysis time	38.26	1	38.26	0.5731	0.4608	
D-Current density	1.53	1	1.53	0.0229	0.8817	
AB	211.57	1	211.57	3.17	0.0953	
AC	0.8264	1	0.8264	0.0124	0.9129	
AD	7.44	1	7.44	0.1114	0.7432	
BC	0.2066	1	0.2066	0.0031	0.9564	
BD	1.86	1	1.86	0.0279	0.8697	
CD	1.86	1	1.86	0.0279	0.8697	
A²	3924.7	1	3924.7	58.78	< 0.0001	
B²	277.53	1	277.53	4.16	0.0595	
C²	0.0897	1	0.0897	0.0013	0.9712	
D²	273.39	1	273.39	4.09	0.0612	
Residual	1001.52	15	66.77			
Lack of Fit	964.48	10	96.45	13.02	0.0055	significant
Pure Error	37.04	5	7.41			
Cor Total	8840.74	29				

Table S3. ANOVA for sCOD (Y3) quadratic model.

Source	Sum of Squares	df	Mean Square	F-value	p-value	
Model	1.35×10^8	14	9.67×10^6	9.81	< 0.0001	significant
A-pH	9.86×10^7	1	9.86×10^7	99.95	< 0.0001	
B-Sludge concentration	6.74×10^6	1	6.74×10^6	6.83	0.0195	
C-Electrolysis time	5.18×10^6	1	5.18×10^6	5.26	0.0368	
D-Current density	87,640.42	1	87,640.42	0.0889	0.7697	
AB	1.10×10^7	1	1.10×10^7	11.16	0.0045	
AC	94,787.02	1	94,787.02	0.0961	0.7608	
AD	71435.93	1	71,435.93	0.0725	0.7915	
BC	1.37×10^5	1	1.37×10^5	0.1384	0.7151	
BD	34,456.64	1	34,456.64	0.0349	0.8542	
CD	1.36×10^5	1	1.36×10^5	0.1382	0.7153	
A^2	3.66×10^5	1	3.66×10^5	0.3709	0.5516	
B^2	6.58×10^6	1	6.58×10^6	6.67	0.0208	
C^2	1.73×10^6	1	1.73×10^6	1.75	0.2055	
D^2	2.946×10^6	1	2.94×10^6	2.98	0.1048	
Residual	1.48×10^7	15	9.86×10^5			
Lack of Fit	1.42×10^7	10	1.42×10^6	12.68	0.0059	significant
Pure Error	5.61×10^5	5	1.12×10^5			
Cor Total	1.50×10^8	29				

Table S4. ANOVA for EPS (Y4) quadratic model.

Source	Sum of Squares	df	Mean Square	F-value	p-value	
Model	4.49×10^5	14	32,083.56	12.3	< 0.0001	significant
A-pH	2.29×10^5	1	2.29×10^5	87.74	< 0.0001	
B-Sludge concentration	47,582.83	1	47,582.83	18.24	0.0007	
C-Electrolysis time	22,293.59	1	22,293.59	8.55	0.0105	
D-Current density	2025.87	1	2025.87	0.7765	0.3921	
AB	28,642.1	1	28,642.1	10.98	0.0047	
AC	692.49	1	692.49	0.2654	0.6139	
AD	35.7	1	35.7	0.0137	0.9084	
BC	14,210.63	1	14,210.63	5.45	0.0339	
BD	399.98	1	399.98	0.1533	0.7009	
CD	128.15	1	128.15	0.0491	0.8276	
A^2	74,459.71	1	74,459.71	28.54	< 0.0001	
B^2	456.72	1	456.72	0.1751	0.6816	
C^2	15,630.04	1	15,630.04	5.99	0.0272	
D^2	7288.86	1	7288.86	2.79	0.1154	
Residual	39,133.27	15	2608.88			
Lack of Fit	34,119.21	10	3411.92	3.4	0.0944	not significant
Pure Error	5014.06	5	1002.81			
Cor Total	4.88×10^5	29				