

# Developing A Novel Alum Sludge-Based Floating Treatment Wetland for Natural Water Restoration

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## Supplementary Materials:

**Table S1.** Parameters of materials.

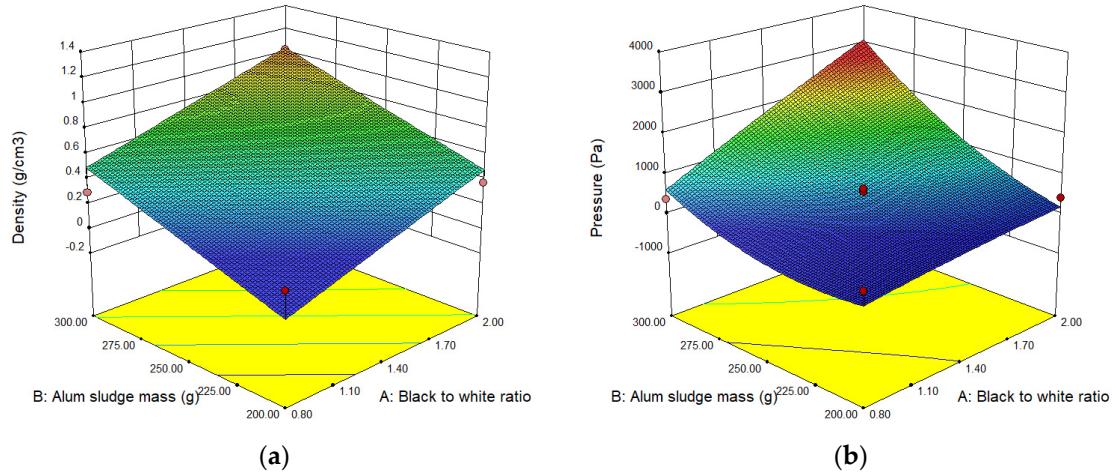
Factors	Low level (-1)	High Level (+1)
black to white polymer ratio A	0.8	2
alum sludge mass B (g)	200	300
water mass C (g)	2	5

**Table S2.** RSM designed experiments and results.

Number	Factors			Response	
	A	B	C	R1:density (g/cm <sup>3</sup> )	R2:pressure (Pa)
1	0.8	300	3.5	0.2971	380
2	1.4	200	5	0.2499	220
3	2	300	3.5	1.0225	2738
4	1.4	250	3.5	0.3718	575
5	2	250	5	0.5286	971
6	1.4	250	3.5	0.3544	509
7	1.4	250	3.5	0.3747	480
8	2	200	3.5	0.3755	419
9	1.4	300	2	0.8930	2688
10	1.4	250	3.5	0.3762	646
11	0.8	200	3.5	0.1493	87
12	1.4	200	2	0.2399	248
13	0.8	250	2	0.2225	222
14	1.4	250	3.5	0.4181	560
15	1.4	300	5	1.0338	2690
16	2	250	2	1.1450	2623
17	0.8	250	5	0.2410	254

**Table S3.** ANOVA for response quadratic model.

Factors	R <sub>1</sub> : density (g/cm <sup>3</sup> )		R <sub>2</sub> : pressure (Pa)	
	F-value	P-value	F-value	P-value
Model	12.58	0.0004	11.64	0.0019
A	17.90	0.0010	29.03	0.0010
B	19.08	0.0008	48.69	0.0002
C	0.77	0.3975	2.33	0.1708



**Figure S1.** Interactive effect of alum sludge mass and black to white polymer ratio.