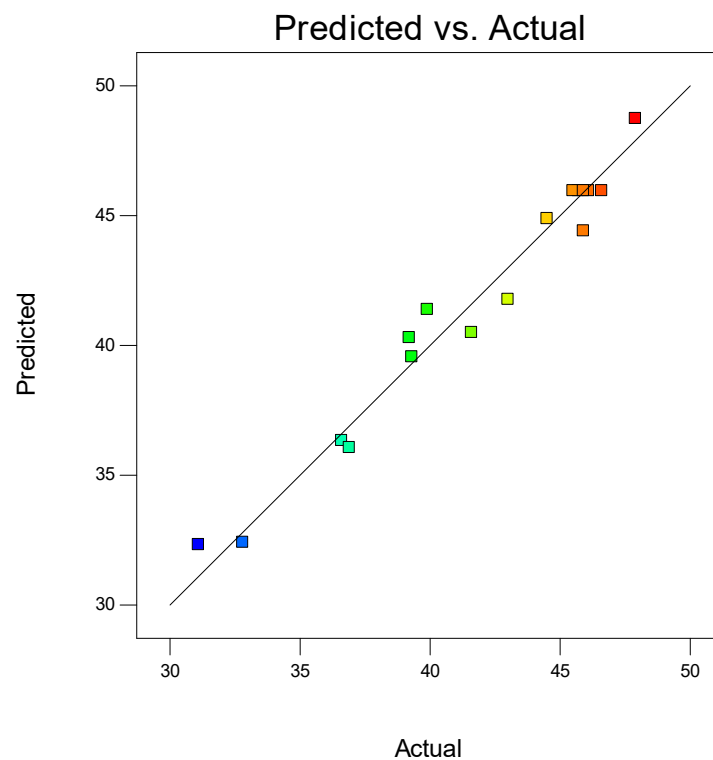


**Figure S1.** The effect of adding inorganic salts on the biomass of W33. (a) Effect of adding 0.06mM MgCl<sub>2</sub>, MnCl<sub>2</sub>, CaCl<sub>2</sub>, FeSO<sub>4</sub> and (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> alone on W33 biomass; (b) Effect of CaCl<sub>2</sub> concentration on W33 biomass; (c) Effect of MgCl<sub>2</sub> concentration on W33 biomass; (d) W33 growth curve without adding inorganic salts.



**Figure S2.** Fitness of predictive value and experimental value of final biomass

**Table S1.** Response surface test factor level table

Level	Factor		
	Time (A) /h	MgCl <sub>2</sub> (B) /mM	CaCl <sub>2</sub> (C) /mM
-1	72	0.06	0.03
0	80	0.09	0.06
1	88	0.12	0.09

**Table S2.** Response surface test plan design and results

Run	A	B	C	Y
1	1	1	0	44.5
2	1	0	1	43.0
3	1	0	-1	39.2
4	0	1	-1	45.9
5	0	0	0	46.6
6	1	-1	0	36.6
7	-1	-1	0	32.8
8	-1	0	1	41.6
9	0	0	0	46.1
10	0	1	1	47.9
11	0	-1	-1	36.9
12	-1	1	0	39.3
13	-1	0	-1	31.1
14	0	0	0	45.7
15	0	0	0	45.5
16	0	-1	1	39.9
17	0	0	0	45.9

**Table S3.** Results of variance analysis

Source of variance	Sum of square	Degree of freedom	Mean square	F-Value	p-Value	Significant t
Model	400.53	9	44.5	25.12	0.0002	**
A-Time	42.78	1	42.78	24.15	0.0017	**
B-concentration of MgCl <sub>2</sub>	123.24	1	123.24	69.58	< 0.0001	**
C concentration of CaCl <sub>2</sub>	46.56	1	46.56	26.29	0.0014	**
AB	0.49	1	0.49	0.28	0.6152	
AC	11.22	1	11.22	6.34	0.04	*
BC	.25	1	0.25	0.14	0.7183	
A <sup>2</sup>	141.28	1	141.28	79.76	< 0.0001	**
B <sup>2</sup>	14.68	1	14.68	8.29	0.0237	*
C <sup>2</sup>	8.76	1	8.76	4.95	0.0615	
Residual	12.4	7	1.77			
Missing item	11.69	3	3.9	21.89	0.0061	**
Pure error	0.71	4	0.18			
Total deviation	412.93	16				

Note: “\*\*\*” means very significant ( $p < 0.01$ ), “\*\*” means significant ( $0.01 < p < 0.05$ )