Table S1 The original data of Figure 1(a).

Name	Microalgae Number	Maximum OD	SD	Days	SD
Unit		680nm		d	
	X	Y1	Y1Er±	Y2	Y2Er±
1	*Micractinium sp.*	0.908	0.198	16	0
2	*Leptolyngbya boryana*	0.4465	0.11682	14	1.73205
3	*Desmodesmus sp.*	1.04283	0.32053	14.66667	2.3094
4	*Pediastrum sp.*	0.48867	0.02122	11.33333	1.1547
5	*Scenedesmus obliquus*	1.19033	0.31071	15.66667	0.57735
6	*Synechocystis sp.*	0.76933	0.08429	15.66667	0.57735
7	*Chlorella pyrenoidosa*	0.55122	0.08923	12.33333	2.51661
8	*Chlamydomonas reinhardtii*	0.742	0.15096	11.33333	1.1547
9	*Nannochloropsis oceanica*	0.76842	0.17132	14	1.73205
10	*Spirulina sp.*	0.73667	0.14647	12	6.9282

Table S2 The original data of Figure 1(b).

Name	Microalgae Number	Lipid	SD	Carbohydrate	SD	Protein	SD
Unit		%		%		%	
	X	Y1	Y1Er±	Y2	Y2Er±	Y2	Y3Er±
1	*Micractinium sp.*	33.71674	3.26977	27.71481	5.73953	13.79768	3.32741
2	*Leptolyngbya boryana*	32.33333	2.51661	21.70667	2.85274	42.88455	0.51722
3	*Desmodesmus sp.*	36.66568	16.69346	31.04303	11.62835	4.97916	0.34939
4	*Pediastrum sp.*	35.15869	11.10388	32.47422	4.09176	6.95635	2.0241
5	*Scenedesmus obliquus*	48.19004	0.90137	21.26117	9.90468	11.30902	3.5572
6	*Synechocystis sp.*	40.01008	12.08909	15.96927	3.50155	12.13682	5.91923

7	*Chlorella pyrenoidosa*	15.47262	5.6673	15.92064	0.7122	10.63342	5.10765
8	*Chlamydomonas reinhardtii*	19.02744	9.73274	25.02463	11.35999	8.83362	0.08146
9	*Nannochloropsis oceanica*	21	1.73205	33.16549	14.57119	20.4495	6.46718
10	*Spirulina sp.*	22.5244	3.51884	28.43066	2.60087	12.4926	2.73478

Table S3 The original data of Figure 2.

Name Unit	Microalgae Number	Lipid mg/L/d	Carbohydrate mg/L/d	Protein mg/L/d	Dry Weight mg/L/d	Biocrude conversion rate %
1	*Micractinium sp.*	8.72708	2.54057	0.24981	41.64063	39.46143
2	*Leptolyngbya boryana*	1.3325	0.5175	0.18666	7.1875	26.61747
3	*Desmodesmus sp.*	7.98583	3.48223	0.18748	68.20312	35.91556
4	*Pediastrum sp.*	13.465	4.38544	0.27194	54.84375	39.63152
5	*Scenedesmus obliquus*	12.08317	1.16486	0.17606	40.54688	54.77054
6	*Synechocystis sp.*	8.115	1.39596	0.25516	27.10938	44.08742
7	*Chlorella pyrenoidosa*	3.10833	1.06971	0.18834	22.57812	33.67248
8	*Chlamydomonas reinhardtii*	3.39583	2.12702	0.12315	23.04688	31.16919
9	*Nannochloropsis oceanica*	4.10083	1.65381	0.25559	32.8125	32.35888
10	*Spirulina sp.*	3.92167	2.02886	0.19768	23.28125	31.58076

Table S4 The original data of Figure 3(a).

Name		TN	SD	TKN	NO_3^-	NH_4^+	Organonitrogen
Unit				mg/L	mg/L	mg/L	mg/L
	X	Y1	YEr±				
0	Initial	57.8		56.2	1.15	51.8	4.4
1	*Micractinium sp.*	46.10667	1.13738	40.3	5.80667	35.8	4.5
2	*Leptolyngbya boryana*	50.77	1.90172	49.3	1.47	44.93333	4.36667
3	*Desmodesmus sp.*	31.23667	12.32895	25.46667	5.77	19.18	6.28667
4	*Pediastrum sp.*	31.33	14.42798	29.5	1.83	27.26667	2.23333
5	*Scenedesmus obliquus*	43.57	0.36373	40.13333	3.43667	36.9	3.23333
6	*Synechocystis sp.*	54.47333	6.10837	45.16667	9.30667	39.96667	5.2
7	*Chlorella pyrenoidosa*	60.54	9.97661	49.1	11.44	40.03333	9.06667
8	*Chlamydomonas reinhardtii*	52.01333	3.56225	50.9	1.11333	43.26667	7.63333
9	*Nannochloropsis oceanica*	47.87	4.44338	39.3	8.57	35.4	3.9
10	*Spirulina sp.*	49.30333	1.53575	47.9	1.40333	44.3	3.6

Table S5 The original data of Figure 3(b).

Name		TP	SD	PO_4^{3+}	Organophosphorus
Unit		mg/L		mg/L	mg/L
	X	Y	YEr±		
0	Initial	5.1		4.08	1.02
1	*Micractinium sp.*	1.88333	1.20106	1.12667	0.75667
2	*Leptolyngbya boryana*	4.87667	1.00481	4.63333	0.24333
3	*Desmodesmus sp.*	2.15333	0.10599	0.51667	1.63667
4	*Pediastrum sp.*	2.15	2.16564	1.76	0.39
5	*Scenedesmus obliquus*	0.91	0.86377	0.59667	0.31333

6	*Synechocystis sp.*	4.03333	1.57424	3.65333	0.38
7	*Chlorella pyrenoidosa*	4.71333	0.26274	3.63667	1.07667
8	*Chlamydomonas reinhardtii*	5.16333	2.23168	4.57	0.59333
9	*Nannochloropsis oceanica*	2.27	2.23168	1.73	0.54
10	*Spirulina sp.*	4.93667	0.10263	4.62	0.31667

Table S6 The original data of Figure 4

sample	MDS1	MDS2	MDS3
MS-1	-0.40705	-0.03677	-0.08352
MS-2	-0.24097	0.202386	0.29821
MS-3	-0.0554	-0.08659	-0.14189
LB-1	0.469102	0.16544	-0.07259
LB-2	0.540244	0.08199	0.021636
LB-3	0.295924	0.228651	-0.05393
DS-1	-1.00081	-0.27374	0.232845
DS-2	-0.09743	0.116707	0.362656
DS-3	-0.94696	-0.32287	0.210061
PS-1	-0.50656	0.465923	-0.18656
PS-2	0.287213	0.085099	0.174312
PS-3	-0.4814	0.463928	-0.20238
SO-1	-0.35538	0.248144	-0.07821
SO-2	-0.04993	0.290627	0.049032
SO-3	-0.3467	0.19718	-0.09944
SyS-1	0.218163	-0.34108	-0.38319
SyS-2	-0.00496	0.199117	0.184112
SyS-3	0.245295	-0.3732	-0.35413
CP-1	0.099198	-0.87641	0.003004
CP-2	0.245506	0.067139	0.263677
CP-3	0.080312	-0.86453	-0.00292
CR-1	0.543738	-0.06608	0.221283
CR-2	0.271959	0.117616	0.09738

CR-3	0.520283	-0.0495	0.242492
NO-1	-0.1948	-0.05453	-0.1109
NO-2	-0.09468	-0.37023	-0.08814
NO-3	-0.28008	0.229152	-0.35898
SpS-1	0.422087	0.204465	-0.0974
SpS-2	0.394059	0.154151	0.055088
SpS-3	0.430025	0.197803	-0.10159