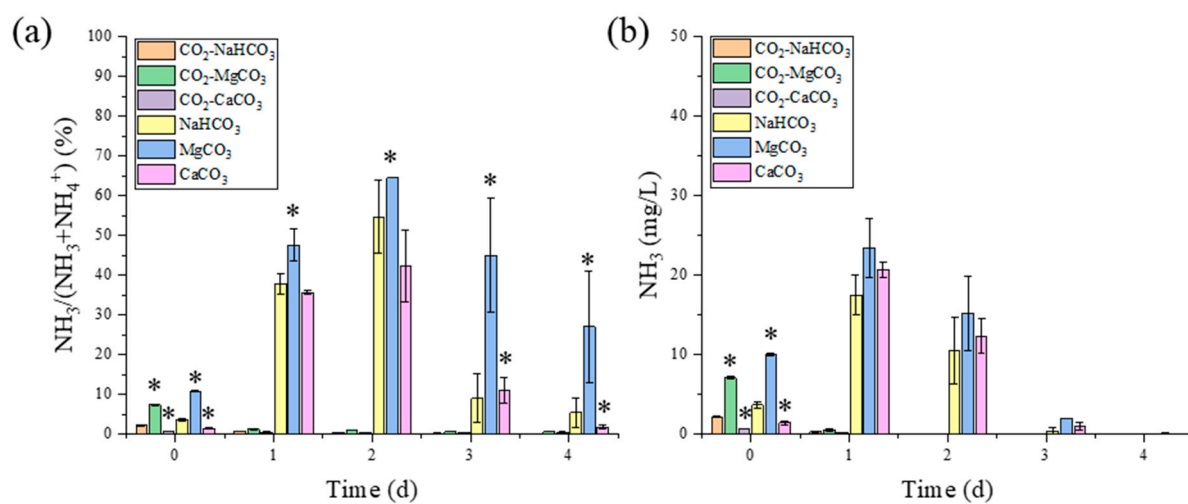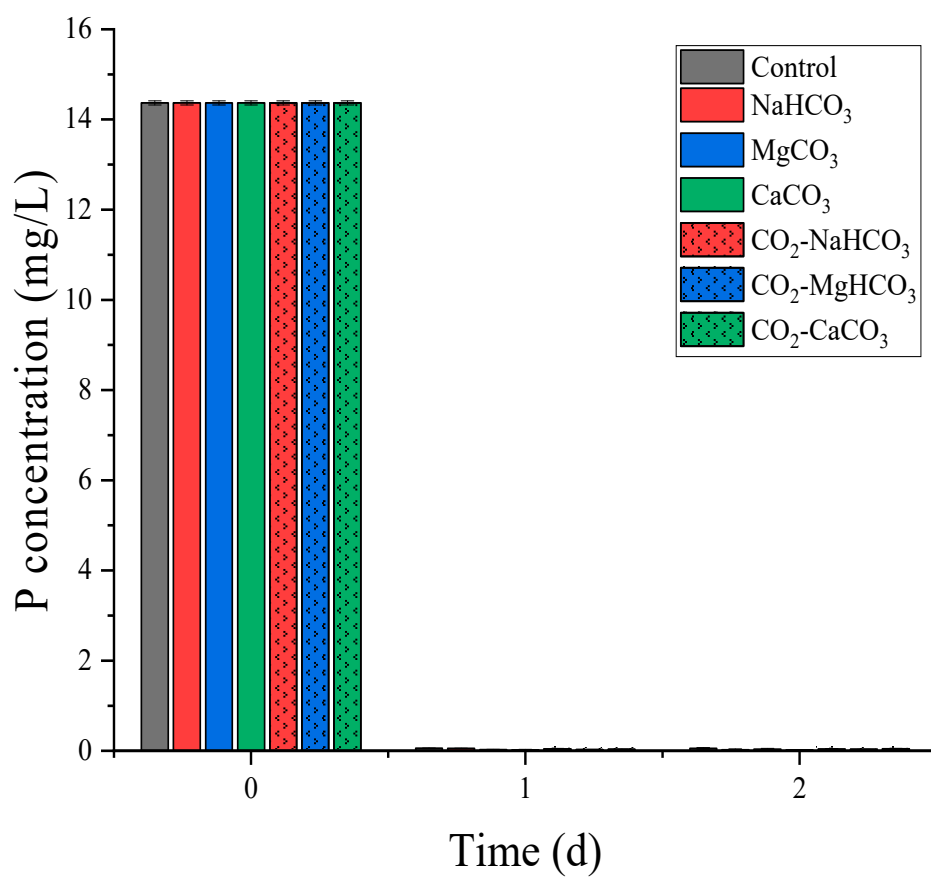**Figure S1.** Ca^{2+} concentration in the CO_2-$NaHCO_3$ and CO_2-$CaCO_3$ culture system.

Figure S2. The estimated free ammonia (NH_3) relative to the total ammonia (NH_3 and NH_4^+) (a) and the free ammonia concentration (NH_3, mg/L) in the medium (b) during the NH_4^+-N removal process. The asterisk (*) indicated the significant difference ($p<0.05$) compared with the corresponding $NaHCO_3$ culture.

Figure S3. The phosphorus (P) concentration in the medium under IC ($NaHCO_3$, $MgCO_3$ or $CaCO_3$) or CO_2-IC ($NaHCO_3$, $MgCO_3$ or $CaCO_3$) conditions during the NH_4^+-N removal by *Tetraselmis subcordiformis*.

Table S1 The calculated NH_4^+-N removal constant (k_N) fitted with the first-order removal kinetics model $N = N_0 \times e^{-k_N \times t}$ [75] and the estimated hydraulic retention time (HRT) with the formula of $(N_i - N_e)/HRT = k_N \times N_e$ [76] where N_i and N_e were the influent (100 mg/L) and effluent (5 mg/L) NH_4^+-N concentration, respectively under continuous cultivation mode.

Culture system	Bicarbonate/carbonate supply	k_N (day^{-1})	Estimated HRT (day)
IC	NaHCO$_3$	0.99	19.2
	MgCO$_3$	0.89	21.3
	CaCO$_3$	0.69	27.5
CO$_2$-IC	NaHCO$_3$	1.76	10.8
	MgCO$_3$	1.95	9.8
	CaCO$_3$	1.69	11.2