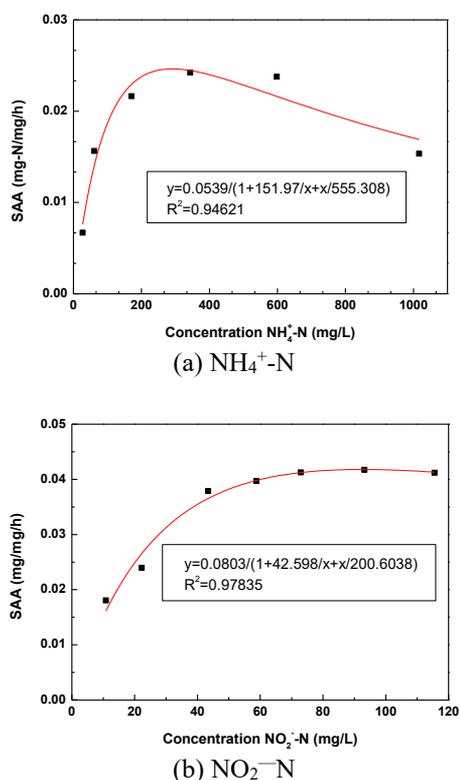








respectively. The fitting correlation coefficient  $R^2$  was 0.94621 and 0.97835 respectively. The ammonium of  $V_{max}$ ,  $K_m$ ,  $K_i$  was 0.05039  $\text{mg}\cdot\text{mg}^{-1}\cdot\text{h}^{-1}$ , 151.97  $\text{mg}\cdot\text{L}^{-1}$ , 555.3  $\text{mg}\cdot\text{L}^{-1}$  respectively. The nitrite of  $V_{max}$ ,  $K_m$ ,  $K_i$  was 0.0803  $\text{mg}\cdot\text{mg}^{-1}\cdot\text{h}^{-1}$ , 42.598  $\text{mg}\cdot\text{L}^{-1}$ , 200.6038  $\text{mg}\cdot\text{L}^{-1}$  respectively.



**Figure 4.** Dynamics characteristics of ANAMMOX bacteria

#### 4. CONCLUSIONS

(1) Temperature had a significant effect on ANAMMOX bacteria activity. The decreasing of temperature could inhibit ANAMMOX bacteria activity. When the temperature gradually recovered to 35 °C, the ANAMMOX bacteria activity gradually recovered. 35 °C is a suitable temperature for ANAMMOX process.

(2) When mixed with denitrification bacteria in ANAMMOX sludge, the ANAMMOX bacteria are faced with the substrate and space competition of the denitrification bacteria under the condition of a certain concentration of organics.

(3) The half saturation constants  $K_m$  of experiment cultured ANAMMOX bacteria on substrate of ammonia and nitrite were 151.97  $\text{mg}\cdot\text{L}^{-1}$  and 42.598  $\text{mg}\cdot\text{L}^{-1}$  respectively, and the inhibition constant  $K_i$  were 555.3  $\text{mg}\cdot\text{L}^{-1}$  and 200.6038  $\text{mg}\cdot\text{L}^{-1}$  respectively.

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#### NOMENCLATURE

$V_{max}$	maximum reaction rate
S	substrate concentration