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Abstract

The system performance and microbial community succession in a partial nitrification biofilm reactor in response to salinity stress was conducted. It was found that the NH_4^+-N removal efficiency decreased from 98.4% to 42.0% after salinity stress increased to 20 g/L. Specific oxygen uptake rates suggested that AOB activity was more sensitive to the stress of salinity than that of NOB. Protein and polysaccharides contents showed an increasing tendency in both LB-EPS and TB-EPS after the salinity exposure. Moreover, EEM results indicated that protein-like substances were the main component in LB-EPS and TB-EPS as self-protection in response to salinity stress. Additionally, humic acid-like substances were identified as the main component in the effluent organic matter (EfOM) of partial nitrification biofilm, whereas fulvic acid-like substances were detected at 20 g/L salinity stress. Microbial

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