

Side-stream P/N공정의 아질산-암모늄  
최적 유입비 targeting을 위한 ABAC/aeration time dual optimum profile searching

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Ammonium content in industrial wastewater require proper treatments before discharging. An integral wastewater treatment approach consists of partial nitrification (PN) and Anammox could efficiently remove excessive nitrogen content. This research report a preliminary modeling of PN process in sequential batch reactor that involve several phases. An alteration of operational configuration in PN-SBR is further executed to identify the optimal aeration rate based on ammonia-based aeration control (ABAC) and dual determination of DO setpoint and aeration timing with DO and Ammonia/NO<sub>x</sub> removal ratio(A/N ratio). The ultimate goal of the PN-SBR is to achieve a desired ratio between nitrite and ammonium (NO<sub>2</sub>:NH<sub>4</sub>) of 1.2 before subsequent Anammox process. The developed model is further compared to an existing WWTP in South Korea. **Acknowledgments:** This work is supported by the National Research Foundation (NRF) grant funded by the Korean government (MSIT) (No. NRF-2017R1E1A1A03070713), Korea Ministry of Environment (MOE) as Graduate School specialized in Climate Change, and Korea Ministry of Environment as "Prospective green technology innovation project (2020003160009)".