

Nitrogen Removal From Side Stream Effluent Through Partial Nitration/Anammox Process

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The anammox process, used to remove nitrogen from wastewaters is considered a promising approach due to its advantages over conventional processes. The current study emphasizes on the removal of nitrogen from the side stream effluent of anaerobic digester with Partial nitration (PN) and Anaerobic Ammonium Oxidation (AnAmmOx) process for the municipal wastewater treatment plant. The main objective of this study was to develop a baseline strategy for setting up a laboratory scale Sequencing Batch reactor (SBR) for improved nitrogen-removal efficiency (NRE). In this study, SBR was operated and monitored for the removal efficiency of Nitrogen. An average removal rate of around 75% was obtained during the initial period of its operation. Various control strategies such as intermittent aeration, alteration in the cycle length were introduced to optimize the cost of operation. The overall system contributes to lowering in the greenhouse gas emissions by lowering the use of energy and hence supporting the WHO mission of achieving sustainable development goals. Results further indicate the possibility of escalating the laboratory scale system to full scale applications.