

Removal of Nitrogen Compounds from Industrial Wastewater Using Sequencing Batch Reactor: The Effects of React Time

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Abstract : This study was performed to optimise the react time (RT) and study its effects on the removal rates of nitrogen compounds in a sequencing batch reactor (SBR) treating synthetic industrial wastewater. The results showed that increasing the RT from 4 h to 10, 16 and 22 h significantly improved the nitrogen compounds' removal efficiency, it was increased from 69.5% to 95%, 75.7 to 97% and from 54.2 to 80.1% for $\text{NH}_3\text{-N}$, $\text{NO}_3\text{-N}$ and $\text{NO}_2\text{-N}$ respectively. The results obtained from this study showed that the RT of 22 h was the optimum for nitrogen compounds removal efficiency.

Keywords : ammonia-nitrogen, retention time, nitrate, nitrite, sequencing batch reactor, sludge characteristics

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