

Singapore Stanford Partnership Programme

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Enrichment of Anammox Bacteria for High-Performance Nutrient Removal

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Anaerobic ammonium oxidation (Anammox) is a new process for ammonia removal from wastewater. This process requires neither complete oxidation for nitrification, nor the addition of an electron donor such for denitrification. So far, it has been known that Anammox bacteria have extremely low growth rate smaller than 0.1 d^{-1} , which would lead to a very long start-up period of the Anammox process in industrial application. Thus, this study will aim to develop enrichment cultures of Anammox bacteria using inocula from different sources. For such purpose, ammonium, nitrite and nitrate will be determined by FIA during the enrichment culture, while biogas generated will also be identified using GC. pH as a good indicator of the anammox reaction will be monitored closely. Moreover, changes in sludge morphology will be visualized by image analyzer.