

## Nutrient Removal in Membrane Coupled Fixed Phase Biofilm Reactor for Municipal Sewage Treatment

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Membrane bioreactor (MBR) technology has been increasingly used in wastewater treatment industries around the world. However, membrane fouling is a major obstacle to increasing MBR development because of reduction in the membrane performance by forming cake layer on the membrane. In this work, we investigated the removal efficiency of nutrient according to changes in air flow rate and support carrier volume fraction in the membrane coupled fixed phase biofilm reactor system using a waste lime support carrier. The results of the study can be successfully used for the design of an efficient autotrophic denitrification membrane bioreactor for municipal sewage treatment at full scale.