

## First results on biostimulation of denitrifying activated sludge using low frequency ultrasound

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### Description

Reduction of nitrate to nitrogen is critical for wastewater treatment process. The present work proposed a promising approach to improve the activity of denitrifying activated sludge by using low frequency ultrasonic treatment. Batch activity assays showed that when ultrasound was applied, denitrification performance was 2.64 higher than the control. Kinetic analysis of nitrate removal rate versus ultrasonic power and duty cycle was performed to investigate the effect of operational parameters on activated sludge activities. The best stimulating effect was observed at 40 W ultrasonic power and 40% duty cycle. The above results demonstrated that ultrasonic stimulation can be used as a technique for enhancing bacterial activities for water treatment. Studies of other parameters that also affect the denitrification under ultrasound are under way.