

### Electrodenitrification of synthetic wastewater using strain HY7

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Nitrate in wastewater can be converted to nitrogen through a metabolic activity called denitrification by denitrifying microorganisms. In this process denitrifiers use carbon sources as electron donor and nitrate or nitrite as electron acceptor. In this study, electricity supplied by graphite felt electrode was used as an electron donor instead of carbohydrates for denitrification by strain HY7, an isolated denitrifier from an anaerobic chamber of A2O reactor. After establishment of biofilm on graphite felt electrode, electron was supplied to strain HY7 in the bioelectrical reactor filled with a synthetic wastewater not containing any carbon sources. HY7 removed nitrate using electron from a potentiostat. In bioelectrical reactors supplied 2 and 4 V of potential, 500 mg/L of nitrate was reduced under 200 mg/L in 49 hours and in 18 hours, respectively.