
POLY (ϵ -CAPROLACTONE) AS BIOFILM SUPPORT AND CARBON SOURCE FOR GROUNDWATER DENITRIFICATION

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ABSTRACT

The application of biodegradable polymers (solid carbon sources) has been gaining importance in groundwater denitrification process. Solid carbon sources serve not only as sources of reducing power for denitrification but also as solid matrices for biofilms development. Moreover, in contrast to conventional processes, the use of this kind of carbon sources has no potential risks of release of excess dissolved organic carbon with the resultant deterioration of water quality.

The aim of the present work was to investigate the feasibility and efficiency of nitrate removal from groundwater by biological denitrification in column laboratory reactors packed with supports of poly (ϵ -caprolactone) (PCL).

The maximum denitrification rate attained with PCL was 4.38 mg/L.h N-NO₃ at velocity of 0.08 m/h, at 20 °C and pH 7.0.