

Effects of oxidation–reduction potential for biological denitrification using packed–bed reactor by *Ochrobactrum anthropi* SY509

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Biological denitrification systems have been widely applied for nitrate removal from wastewater. This study investigated the potential of using biological denitrification in the one and two–stage packed–bed reactor for nitrate removal from wastewater. By using the packed–bed reactor with hybrid–immobilized beads by *Ochrobactrum anthropi* SY509, the effects of oxidation–reduction potential (ORP) on denitrification was examined. In one–stage packed–bed reactor, the influent ORP value affected the denitrification efficiency similarly with the batch reactor. The nitrate removal was higher at the lower influent ORP value. In two–stage packed–bed reactor, as the influent ORP value decreased through the packed–bed reactor, the lower ORP level effluent might input to next reactor. Since the influent ORP value was decreased in the first reactor, the higher denitrification efficiency was obtained in the second reactor. The denitrification efficiency of each packed–bed reactor could be monitored by effluent ORP value. The using of ORP was suggested that it could monitor the activity of packing hybrid–immobilized beads in the packed–bed reactor. The details will be discussed.