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Abstract

In this study, an autotrophic denitrifying biocathode was investigated to couple the reduction of nitrate or/and perchlorate with electricity generation. Results showed that when the current density in microbial fuel cell (MFC) with sole perchlorate and sole nitrate as the substrate stabilized at 3.00 and 1.52 mA/m^3 respectively, the perchlorate and nitrate removal efficiency achieved 53.14% and 87.05%. As influent molar ratio of NO_3^-/ClO_4^- was 1:1, the stable current density reached the a peak value (3.10 A/m^3) accompanied by the maximum integral mixed substrate removal (40.97% for ClO_4^-