عنوان مقاله:

Development of Microbial Fuel Cell Using Distillery Spent Wash:Evaluation of Current Generation and COD Removal with Respect to pH

محل انتشار:

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نویسندگان:

Vanita R. Nimje - *Department of Chemical Engineering,Institute of Chemical Technology, Matunga, Mumbai, India*

Yogita P. Labrath - *Department of Chemical Engineering,Institute of Chemical Technology, Matunga, Mumbai, India*

Vilas G. Gaikar - *Department of Chemical Engineering,Institute of Chemical Technology, Matunga, Mumbai, India*

خلاصه مقاله:

A single chamber microbial fuel cell (SCMFC) was operated with distillery spent wash (DSW) wastewater and microorganisms in cow-dung as inoculum source from pH 4 to 9. MFC signifies maximum current in the sequence of pH 6 (0.46 mA) > pH 7 (0.4 mA) > pH 8-9 (0.16-0.19 mA); whereas the chemical oxygendemand (COD) removed in order of pH 8-9 (80-81%) > pH 7 (79%) > pH 6 (68%). The losses in coulombic yieldwere due to alternating electron acceptors and air diffusion through the reactor. The polarization curve yielded the maximum current density of 84 mA/m and maximum power density 2 of 29 mW/m2 at an external resistance of 820 (pH 6). The cyclic voltammetry (CV) demonstrated 3-electron transfer process with best electrochemical responses at pH 6 and 7. The MFC at .desired operating conditions showed a positive response for bioelectricity generation

کلمات کلیدی:

Microbial fuel cell Distillery spent wash Cow dung inoculum Bioelectricity Cyclic voltammetry