عنوان مقاله:

Sulfurous Analysis of Bioelectricity Generation from Sulfate-reducing Bacteria (SRB) in a Microbial Fuel Cell

محل انتشار:

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خلاصه مقاله:

The current importance of energy emphasizes the use of renewable resources (such as wastewater) for electricity generation by microbial fuel cell (MFC). In the present study, the native sulfate-reducing bacterial strain (R.gh 3) was employed simultaneously for sulfurous component removal and bioelectricity generation. In order to enhance the electrical conductivity and provision of a compatible bed, a complex electrode structure based on stainless steel-304 was prepared. Next, the electrode was coated with a composite of graphite and activated carbon solution. A new approach associated with increasing bacterial population was studied using two electron acceptors composed of iron and sulfate for respiration of sulfate-reducing bacteria. Finally, according to the maximum living cell number (nM = 20 ´108 cell ml-1) and the conditions of the bioreactor including the highly efficient anode electrode, a higher current generation (2.26 mA for the new structure as compared to 1.73 and 1.29 mA for graphite rod and carbon paper, .respectively) was observed in the culture media

کلمات کلیدی:

(Key words: Microbial fuel cell (MFC), electrode, bacterial growth, sulfate-reducing bacteria (SRB

لینک ثابت مقاله در پایگاه سیویلیکا: