

## عنوان مقاله:

Bioelectric generation using microbial fuel cell and modified grafit electerod with biological syntesis of silver nanoparticles

## محل انتشار:

چهارمین کنفرانس بین المللی رویکردهای نوین در نگهداشت انرژی (سال: 1393)

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## خلاصه مقاله:

Recently, renewable energy that ability replacing traditional energy such as fossil fuels, has attracted the attention of many researchers. Microbial fuel cell is the newest methods that using Microorganisms for generate electricity. In this study, the amount of produced electricity in the presence of Saccharomyces cerevisiae and modified grafit electerod with biological synthesis of silver nano particles was evaluated. For the first stege designed MFC system. Subsequently, synthesized silver nanoparticles with biological method and investigated properties using electron microscopy SEM, UV-vis spectroscopy and particle size analysis(PSA). Eventually, modified grafit electerod(POCO3) with this nanoparticles and The amount of produced electricity in the presence of electerods was evaluated. Oure results showed that yeast s. cerevisiae has a good ability to growed in anaerobic condition. It is also showed that modified grafit electerod with nanoparticles has high potential for electricity generation than grafit electerod. Indeed maximum power and current density generated for the grafit electerod were 82 mW/m<sup>3</sup> and 1100 mA/m<sup>3</sup> but maximum power and current density generated for the Modified electrod POCO3 by biological synthesis of silver nanoparticles respectively were 160 mW/m<sup>3</sup> and 1400 mA/m<sup>3</sup>. This results showed that the nanoparticles increases .the conductivity of the electrode and increased output of MFC system

## کلمات کلیدی:

microbial fuel cell, Saccharomyces cerevisiae, grafit electerod, silver nanoparticles

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/365530>

