

عنوان مقاله:

Commercial power transistor p-type semiconductor segment as an efficient photocathode for oxygen reduction (reaction (ORR) in a microbial fuel cell (MFC

محل انتشار:

ششمین کنفرانس بین المللی علوم و توسعه فناوری نانو (سال: 1400)

تعداد صفحات اصل مقاله: 8

نویسندگان:

Vahid Mohammadzadeh - *Research Laboratory for Electrochemical Instrumentation and Energy Systems, Department of Physical Chemistry, Faculty of Chemistry, University of Tabriz, Tabriz, Iran*

Iraj Ahadzadeh, - *Research Laboratory for Electrochemical Instrumentation and Energy Systems, Department of Physical Chemistry, Faculty of Chemistry, University of Tabriz, Tabriz, Iran*

Mir Ghasem Hosseini - *Research Laboratory for Electrochemical Instrumentation and Energy Systems, Department of Physical Chemistry, Faculty of Chemistry, University of Tabriz, Tabriz, Iran*

Hamed Nosrati - *Research Laboratory for Electrochemical Instrumentation and Energy Systems, Department of Physical Chemistry, Faculty of Chemistry, University of Tabriz, Tabriz, Iran*

Nazila Farsad Layegh - *Research Laboratory for Electrochemical Instrumentation and Energy Systems, Department of Physical Chemistry, Faculty of Chemistry, University of Tabriz, Tabriz, Iran*

Shaghayegh Bordbar Ghazijahani - *Research Laboratory for Electrochemical Instrumentation and Energy Systems, Department of Physical Chemistry, Faculty of Chemistry, University of Tabriz, Tabriz, Iran*

خلاصه مقاله:

Oxygen (O₂) is the most abundant element in the Earth's crust. The oxygen reduction reaction (ORR) is also the most important reaction processes such as biological respiration, and in energy converting systems such as fuel cells. the ORR, which is one of the most important reactions in energy conversion systems such as fuel cells, including its reaction kinetics, is presented. Recent developments in electrocatalysts for ORR in fuel cells, including low and non-Pt electrocatalysts, metal oxides, transition metal macrocycles and chalcogenides, are discussed. Because of the expensive electrochemical catalysts; In recent decades, many efforts have been made to reduce the cost of these reactions. In this research, using the commercial ۲N۳۰۵۵ and MJ۲۹۵۵ power transistors for oxygen reduction reaction, open circuit potential (OCP) and chronoamperometry (CHA) electrochemical methods were studied. The results showed that p-type surface of transistors can be used to reduce oxygen, which can be a simple and inexpensive .(method can be used as a photocathode electrode in microbial fuel cells (MFC

کلمات کلیدی:

Oxygen Reduction Reaction, BJT transistor, p-type semiconductor, photocathode

لینک ثابت مقاله در پایگاه سیویلیکا:

