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Low cost membrane for efficient microbial fuel cell

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Electric energy generation from the association of organic materials in the wastewater by microbes using microbial fuel cell (MFC) is one of the developing techniques used to gain high efficiency for some applications. The goal of this project is to construct low-cost, double-chambered MFCs that harvest electricity and produce reclaimed water from wastewater. MFCs were constructed from cheap alternatives to traditionally used expensive Nafion membranes and platinum cathodes. Low-Density Polyethylene, aluminium and graphite for membrane, cathode, and anode respectively were used to construct double chamber MFC. The double-chambered consist of wastewater

and salt solution at the anode and cathode sides respectively. The MFC produced about 0.087 mA/cm² of anode area at a potential of more than 0.642 V. MFC efficiency produced 0.49%. A 3 MFCs series connected produce 2.232 V and 67% fuel cell efficiency.

Speaker Biography

Shrok Allami is a scientific researcher in the ministry of science and technology-renewable energy directory of the department of hydrogen and biofuel. She has completed her PhD in 2007 from University Technology, Iraq. She has published more than 25 papers in reputed journals, participated in more than 16 national and international conferences as a researcher and has been serving as an editorial board member in Iraqi scientific journals.

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