

Use of Soil Microorganisms for the Production of Electricity through Microbial Fuel Cells

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Abstract : The world's energy demands are continuing to rise, resulting in a worldwide energy crisis and environmental pollution. Because of finite, declining supply and environmental damage, reliance on fossil fuels is unsustainable. As a result, experts are concentrating on alternative, renewable, and carbon-free energy sources. Energy sources that are both environmentally and economically sustainable are required. Microbial fuel cells (MFCs) have recently received a lot of attention due to their low operating temperatures and ability to use a variety of biodegradable substrates as fuel. There are single-chamber MFCs as well as traditional MFCs with anode and cathode compartments. Bioelectricity is produced when microorganisms actively catabolize substrate. MFCs can be used as a power source in small devices like biosensors. Understanding of its components, microbiological processes, limiting variables, and construction designs in MFC systems must be simplified, and large-scale systems must be developed for them to be cost-effective as well as increase electricity production. The purpose of this research was to review current microbiology knowledge in the field of electricity. The manufacturing process, the materials, and procedures utilized to construct the technology, as well as the applications of MFC technology, are all covered.

Keywords : bio-electricity, exoelectrogenic bacteria, microbial fuel cells, soil microorganisms

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