

II INTERNATIONAL SYMPOSIUM ON SCIENCE AND BIOTECHNOLOGY ENTREPRENEURSHIP AND INNOVATION

MINICURSO: MICROBIAL FUEL CELLS: NOVEL BIOTECHNOLOGY FOR ENERGY GENERATION

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Abstract

Microbial fuel cells (MFCs) provide new opportunities for the sustainable production of energy from biodegradable, reduced compounds. MFCs function on different carbohydrates but also on complex substrates present in wastewaters. MFC is equivalent to stacks and batteries, its main components are: anode, cathode, electrodes, and membrane switched protons. In the anode chamber, by means of anaerobic degradation, the organic compounds (present in the sewage) are degraded and electrons are released (which will generate the electric current) and positive ions. The cathode chamber (aerobic) is generated a positive potential, through forced or natural aeration, in this chamber can also be inserted aerobic bacteria to complete the biological treatment of the sewage. Different models of MFC can be used: two cameras, single chamber, and multiple. The MFC can be designed for the evaluation of Biochemical Oxygen Demand (BOD) in a continuous way, besides being able to treat diverse organic compounds, studies also evaluate the possibility of insertion of landfill leachate.

Keywords: Sewage treatment. Electron transfer. Electric potential. Green energy. Renewable energy.

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