Microbial Fuel Cell for Conversion of Chemical Energy to Electrical Energy from Food Industry Wastewater

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Abstract: Microbial Fuel Cell (MFC) is a bio-electrochemical system that drives a current by using bacteria and mimicking bacterial interactions found in nature. This study was conducted to investigate the efficiency of MFC for electricity generation and removal of Chemical Oxygen Demand (COD). This research also study the effect of several parameters such as electrode sizes and type of microbial fuel cell on the performance of MFC. This study was carried out by using single and double chamber MFC. In effect, on electrode size, the 8×8 cm gives the highest maximum current generation which is 0.72 mA and highest COD removal efficiency of 62.96%. For effect of types MFC, single chamber microbial fuel cell gives the highest maximum current generation which is 0.78 mA and highest COD removal efficiency of 64.20%. This result shows that, MFC from food wastewater can convert chemical energy to electrical energy.

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