

Integrated approach of green energy generation and bioremediation through photosynthetic microbial fuel cells

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Conversion of sustainable wastes into energy is the most fascinating and alternative route for numerous issues in energy shortage, resource depletion and environmental pollution. Microbial Fuel cell technology is considered one of the most reliable technology for generating energy in alternative manner for upcoming scenario. In microbial fuel cell, conversion of organic wastes into electricity were achieved by catalytic activity of various organisms. Algae utilizes organic wastes in the anode chamber for releasing electrons to the electrodes during algal degradation and by photosynthesis process it generates oxygen in the cathode chamber for producing electricity combined with algal cultivation. The maximum power density of 16.2 mW/m² was obtained in microbial fuel cells by using *Chlorella vulgaris* and it can also be used for biomass harvesting. Based on this, the integrated approach for sustainable means of converting wastewater into electricity through algal microbial fuel cell can be developed for large scale applications.