

**“POWER GENERATION FROM KITCHEN AND INDUSTRIAL WASTE
WATER USING MICROBIAL FUEL CELLS (MFC’S) WITH GRAPHITE AS
CATHODE AND ANODE”**

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INDIAN INSTITUTE OF SCIENCE

BANGALORE-560012

Submitted By

MOSHAMI S. SHAH

SAHANA S.V

Under the Guidance of

Mrs. Soumya C

Assistant Professor, SCE

Mrs. Vinutha Moses

Assistant Professor, SCE



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Department Of Biotechnology

Sapthagiri College Of Engineering

14/5, Chikkasandra, Hesarghatta Main Road, Bangalore-560057

ABSTRACT:

Degradation of fossil fuels and increased accumulation of waste water has become the major issue in the world over decades. Microbial fuel cells are one such advancement that makes use of renewable waste sources like Dhobi Ghats, pond water, domestic kitchen waste water and industrial waste water and directly convert it into electricity.

Microbial fuel cells are electrochemical cells that directly convert chemical energy into electrical energy using microorganisms as a biocatalyst. The two chambered or the H configuration MFC's were used to carry out the voltage studies. Agar medium was used as a salt bridge for the transfer of free electrons from the anode to cathode.

Graphite rods were chosen as anode and cathode due to its amorphous nature. SEM analysis was done to check the morphological structure of graphite rods before and after introducing into the MFC's and observed for scaling. The voltages created across the electrodes were tabulated, initially without any substrate observed over a period and later with substrate, the readings thus obtained were compared for increase in voltage created by the waste water considered. The current and power generated by MFC's were evaluated using ohms equations. The power generated was than stored into rechargeable batteries.

Keywords: Microbial fuel cell (MFC's), Waste water, Domestic, Kitchen, Detergent, Graphite rods, SEM Analysis, Voltage, Current, Pond, Substrate.