



**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING  
ACADEMIC YEAR 2021-2022(EVEN SEMESTER)**

**WEBINAR REPORT**

Department of Electrical Electronics Engineering has organized webinar on "**Microbial Fuel cell-Technology for Future**" on 15.6.22 for external and internal students.

Time: 11.00 A.M to 12.00P.M

Venue: Hybrid mode

Beneficiaries:

Internal: 62:(II, III&IV Year EEE Students)

External:30

Total:92

Resource Person (External):

Dr.Y.Thiagarajan

Associate Professor&HOD/EEE

Chirst College of Engineering and Technology

Puducherry

Name of the Coordinators:

1. Mr.R.Sundaramoorthi, AP/EEE 2. Dr.M.Meenalochani, AP/EEE

The main objective of the webinar:

- To understand the important theory aspects of Fuel cell Technology and elements.
- To provide Comprehensive understanding of the functions and operations of Microbial Fuel cell,
- To impart technical skills to the students and make them to prepare simple projects and technical Presentation.

Mr.R.Sundaramoorthi, AP/EEE has welcomed all the external participants and second, third and final year EEE of our internal students. Introduction about the resource person was delivered by Dr.Meenalochani, AP/EEE. Before starting the presentation, Dr.Y.Thiagarajan, Associate Professor/EEE, have interacted with students about basic Introduction about Energy and current trends in Electrical Engineering. The entire session was segregated with four sections such as Energy scenario, basics of Fuel cell, types of fuel cells, Elements of fuel cell and current research areas in Microbial Fuel cell .In addition, activity session was also included during the presentation.

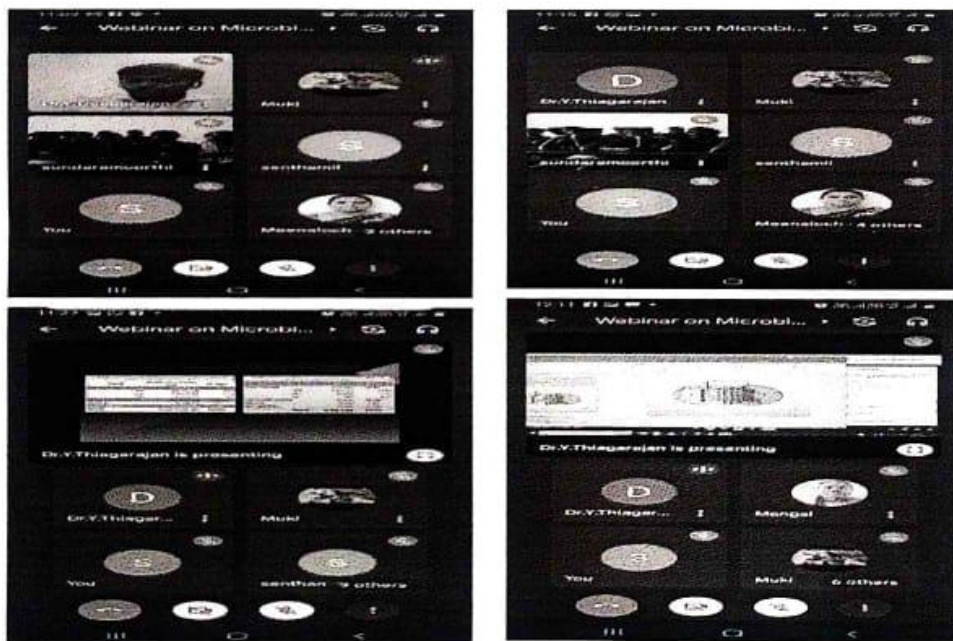
During his initial part of the session, he started with basic questions related to Energy Scenario and necessity of Fuel cell. All the external participants and Second year and final year students of our internal students have interacted well and answered. Then, he introduced about the importance of fuel cell and applications. He explained in detailed about Microbial cell(MFC) act as biocatalysts for the natural conversion to energy of organic substrates and different elements. In addition, he pointed about list of organic substrates used in MFC such as Acetate, Glucose, Lignocellulosic Biomass, Synthetic waste water, Brewery waste water and Inorganic substrates. He also discussed the concepts related to effect of Anode in MFC such as Proton Exchange membrane and graphite granules. He mentioned the effect of cathode in MFC and electrical Interaction between Electrodes-Bacterial species. He explained how different energy systems works and all the components involved in Microbial fuel cell with animation pictures. Next, he briefly explained about fuel cell and its types, graphical representation between different types of fuel cell. He also pointed out the main functions and applications of Fuel cell Energy. Then he started to present the most important concept of the MFC Commercialization and future perspectives where he mentioned that how commercialization of MFC will bring more benefits due to its function in energy production through the utilization of waste. He also mentioned that small surface area of an MFC is also a big challenge as a limited number of microorganisms can adhere to it and listed new techniques that can improve the performance of MFC which provide a more efficient configuration of small scale MFC. He also discussed about energy generation and performance stability of MFC. He has introduced about the Fuel cell examples-Energy providers and Energy storage systems. He has briefed about the different techniques of the Microbial fuel cell particularly evident within the renewable energy industry and explained how fuel cell helps countries manage their energy demand, enabling power stations to produce more electricity at peak times.

Finally, he has given idea about the implementation of Microbial fuel cell technology for Electricity generation by utilizing organic substrates that are oxidized by bacterial species can provide a promising technique for the future. Before concluding the session, he has given idea about student's project areas of Fuel cell. At the end of the session, participants from other colleges and internal participants of our department have interacted to the resource person and asked questions about importance of fuel cell and scope of job opportunities in different Energy sector.

**OUTCOME:**

- Students will be able to emphasize theoretical knowledge on Microbial fuel cell.
- Students can be able to understand the different types of fuel cell, smart and viable energy solution that allow the students to observe applications in this field.
- Students shall select Energy and Microbial fuel cell area for their Project work, Paper Publication, Conference presentation and PCE activities.

**SNAPSHOTS**



Dr. Dr.Y.Thiagarajan, Professor/EEE delivering lecture (online mode) during webinar

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22/6/22  
COORDINATORS

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HOD/EEE

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22/6/22  
PRINCIPAL