

Plan of procedures: production of electricity in the microbial fuel cell

1. Label both fuel cells.

- 1.1 Label one of these two fuel cells with control (c). This fuel cell mustn't contain micro organisms.
- 1.2 Label the second fuel cell with microbial fuel cell (MFC). This fuel cell is filled with micro organisms for producing electricity.

2. Filling fuel cell

- 2.1 Producing the mixture for the control fuel cell (c)

Mix in a beaker glas:
3,3 ml 1 M Glucose-solution,
3,3 ml 0,01 M Methylene blue-solution,
3,3 ml H₂O_{dest}.

- 2.2 Filling the controll fuel cell (c).
Fill in one of the two chamber of the control fuel cell (c) with 9,9 ml of the mixture.



- 2.3 Fill the other chamber of the control fuel cell (c) with 9,9 ml of 0,02 M alkali hexacyanoferrate-solution



- 2.4 Producing of the mixture for the microbial fuel cell (MFC).

Mix in a beaker glas:
3,3 ml 1 M Glucose-solution,
3,3 ml 0,01 M Methylene blue-solution,
3,3 ml Yeast-suspension

- 2.5 Filling the microbial fuel cell (MFC).
Fill in one of the two chamber of the microbial fuel cell (MFC) with 9,9 ml of the mixture.

- 2.6 Fill the other chamber of the microbial fuel cell (MFC) with 9,9 ml of 0,02 M alkali hexacyanoferrate-solution.

3. Measuring of current and tension.

- 3.1 With help of the alligator clip, connect the control fuel cell (c) to the measuring instrument with the end parts of the carbon fiber electrodes and measure the current and tension.



- 3.2 With help of the alligator clip, connect the microbial fuel cell (MFC) to the measuring instrument with the end parts of the carbon fiber electrodes.

Tasks:

1. Measure the current and tension.
2. Test if the current/tension of the microbial fuel cell is enough to activate the following consumers (e.g. LED's, sounder)
3. Write down the results.

4. Series connection of the microbial fuel cell (MFC)

- 4.1 Connect the microbial fuel cells in a series connection like in the figure below.

Tasks:

1. Measure the current and tension.
2. Test if the current/tension of the microbial fuel cell is enough to activate the consumer (e.g. LED's, sounder)
3. Write down the results.

