Hello team York!

We hope your project is coming along well. Around here, everyone is getting a little stressed out with the Jamboree date closing in.
In this parcel you will find the fuel cell we have built for you. Before you sent us your specifications, we already went ahead and started building the fuel cell. It takes a few days and there is only so little time left before the jamboree. We were afraid you would not get the fuel cell in time, so we decided not to wait for your answer. I hope you don't mind. The size of the chambers is exactly what you asked for, the rest of the design is a little different. Nevertheless i am sure you will be able to use this model just as well. If you have any questions, please send us a message.
We look forward to seeing all of you in Lyon.

Regards

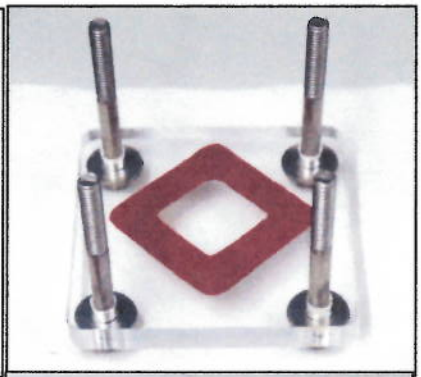
iGEM-Team Bielefeld

P.S. Before using the membrane, heat deionized water to 95°C and put the membrane in for 30 minutes. To wash the membrane, put it in 5% HCl for 15 minutes.

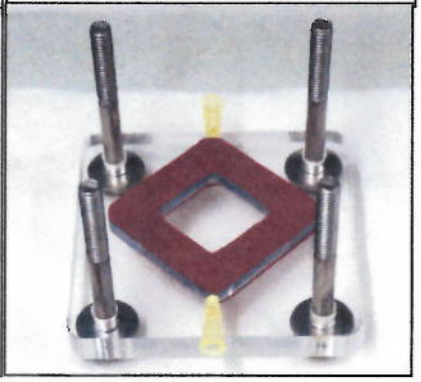
# Microbial Fuel Cell Assembly Instructions

To build the microbial fuel cell, you need all the parts shown in the picture below. The front and back plate (1), four screws (2), four nuts (3), eight shims (4), four frames (5), two thick and six think gaskets (6), two electrodes (7), a membrane (8) and wire (9).
The frames have holes for hollow needles in them. If you need to connect tubes to the fuel cell, please connect them to these needles. The parts have to be assembled in the following order:
Back plate - thin gasket - frame - thin gasket - electrode - wire - thick gasket - frame - thin gasket - membrane - thin gasket - frame - thin gasket - electrode - wire - thick gasket - frame - thin gasket - front plate.


**Step 1**
Start by pushing the screws through the back plate and putting the first thin gasket in the middle of the back plate.



**Step 2**
Now place one of the frames on top of the gasket, and put another thin gasket on that frame. The frame in the picture already has a hollow needle sticking in it.



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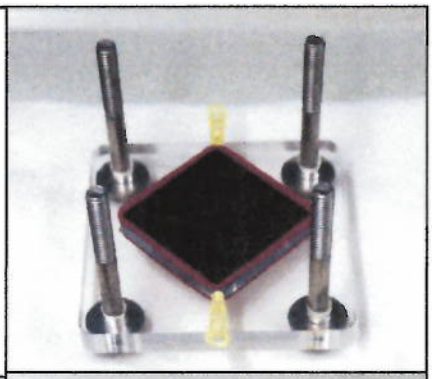
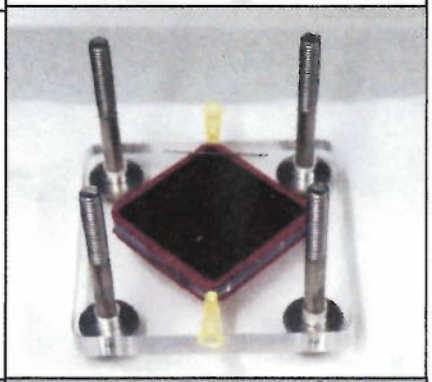
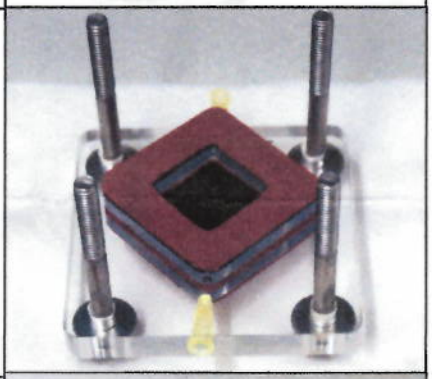
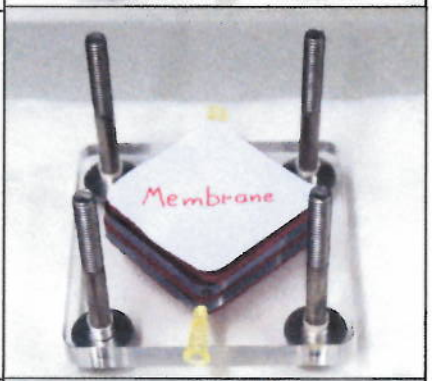
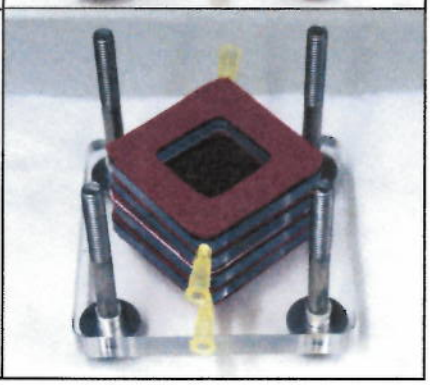
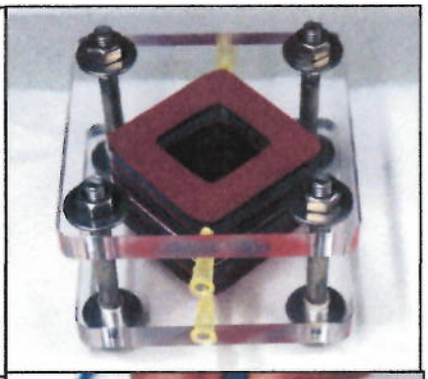
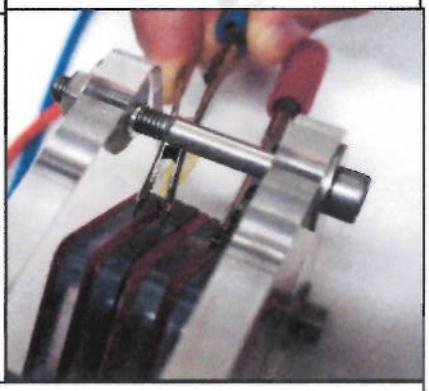
|---|---|
| **Step 3**<br>Now place in of the electrodes on top of the gasket. |  |
| **Step 4**<br>Now you can place a wire of your choice in top of the electrode. It will allow you to connect your measurement equipment to the electrodes after the fuel cell is assembled. |  |
| **Step 5**<br>On top of the electrode, put a thick gasket, a frame and another thin gasket. |  |
| **Step 6**<br>Place the membrane on top. |  |
| **Step 7**<br>Half of your fuel cell is finished. Now, repeat the previous steps in reverse order: Thin gasket, frame, thin gasket, electrode, wire, thick gasket, frame, thin gasket. |  |

**Step 8**
Use the screws and shims to mount the front plate on top.



**Step 9**
Your fuel cell is now fully assembled. Put hollow needles in all of the frames and connect tubes to them or seal them shut. To seal them, you can just stick in syringes. You can fill the fuel cell through the tubes you might connect or just by using another syringe. Finally, connect your measurement devices to the two wires.



**Step 10**
Start measuring!