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| <input type="checkbox"/> Bachelor thesis               | <input type="checkbox"/> theoretical             |
| <input type="checkbox"/> Construction exercise         | <input checked="" type="checkbox"/> experimental |
| <input checked="" type="checkbox"/> Master thesis      | <input type="checkbox"/> constructive            |
| <input checked="" type="checkbox"/> Paid master thesis |  |

## Topic: Influence of production parameters on membrane electrode assembly performance

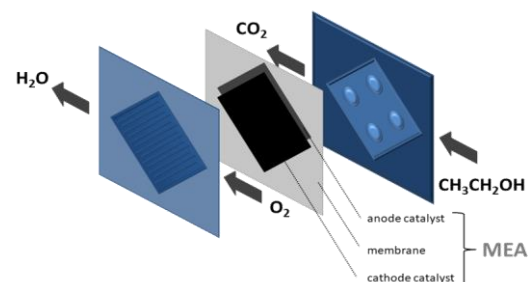
Alkaline direct ethanol fuel cells (ADEFCs) have gained much attention in recent decades due to their use of alternative energy sources. They are characterized by low toxicity, low cost, environmental friendliness and robustness.

There are several challenges to overcome in the development of fuel cells: performance (activity), durability (stability) and cost. Moreover, incomplete ethanol oxidation reaction (EOR) at the anode and ethanol crossover from anode to cathode are major issues.

Therefore, catalyst and membrane development are the challenges that need to be addressed to enhance the performance, durability and costs of the ADEFC. In this project, the influence of the production parameters on the performance of the membrane electrode assemblies (MEA) will be investigated.

The **experimental work** includes:

- Design of the fuel cell
- Testing of production methods
- Production of MEAs
- Performance characterization of MEAs



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