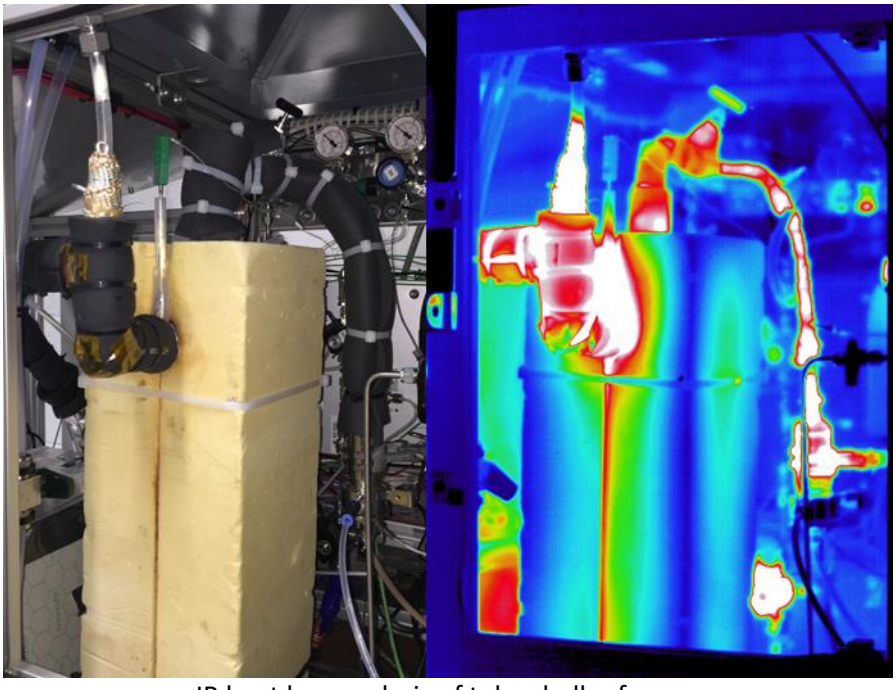
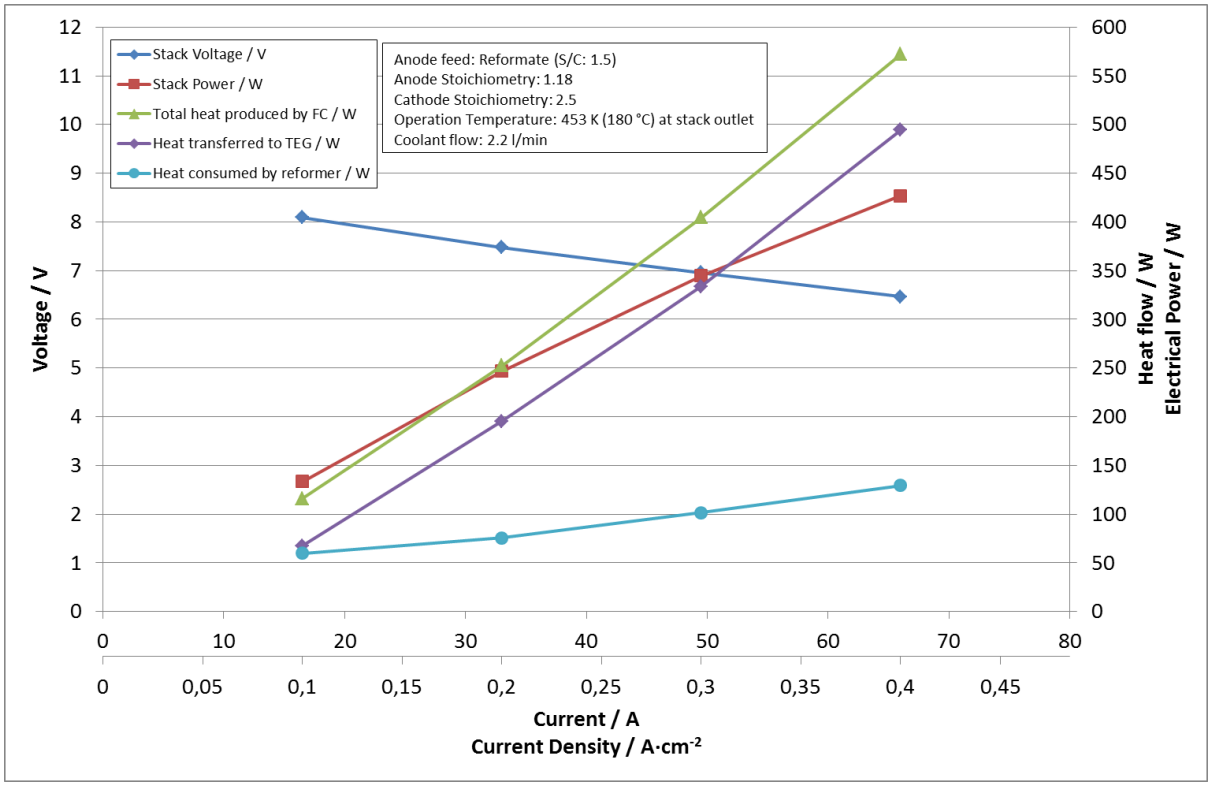
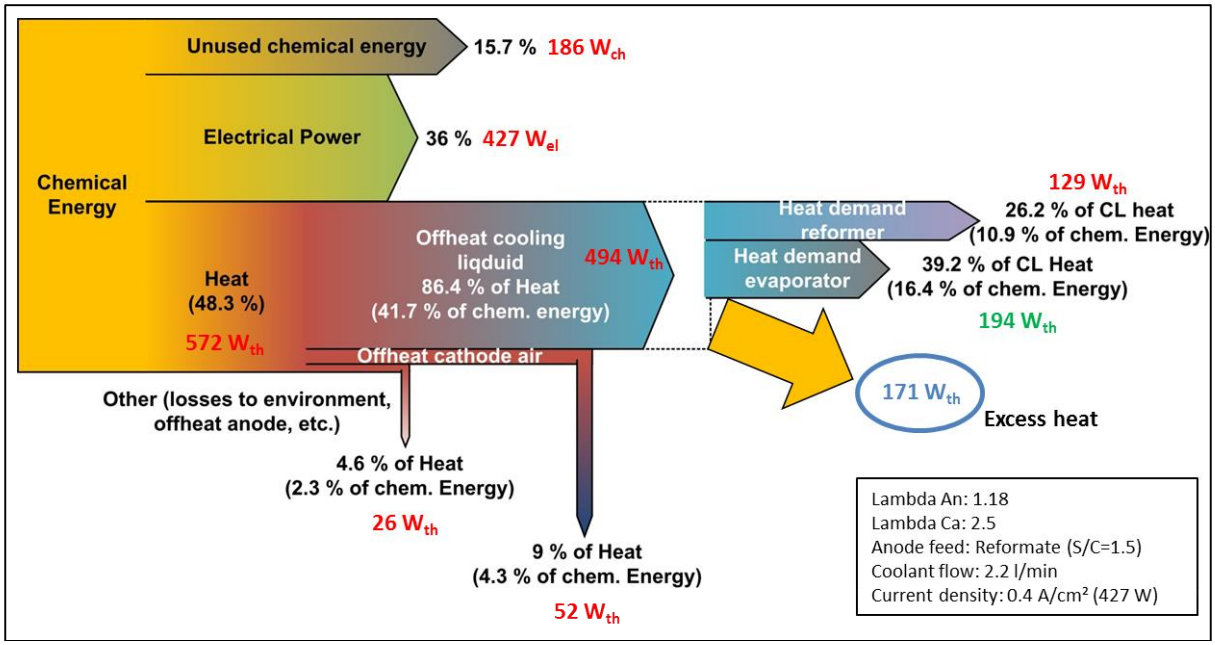
Test bench developed in WP4 for coupled system testing



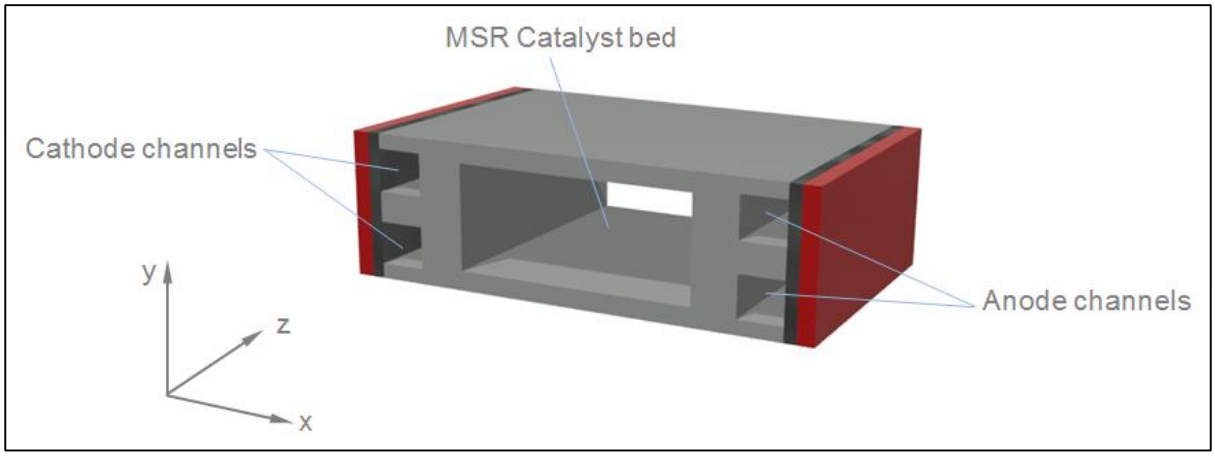
IR heat loss analysis of tube shell reformer



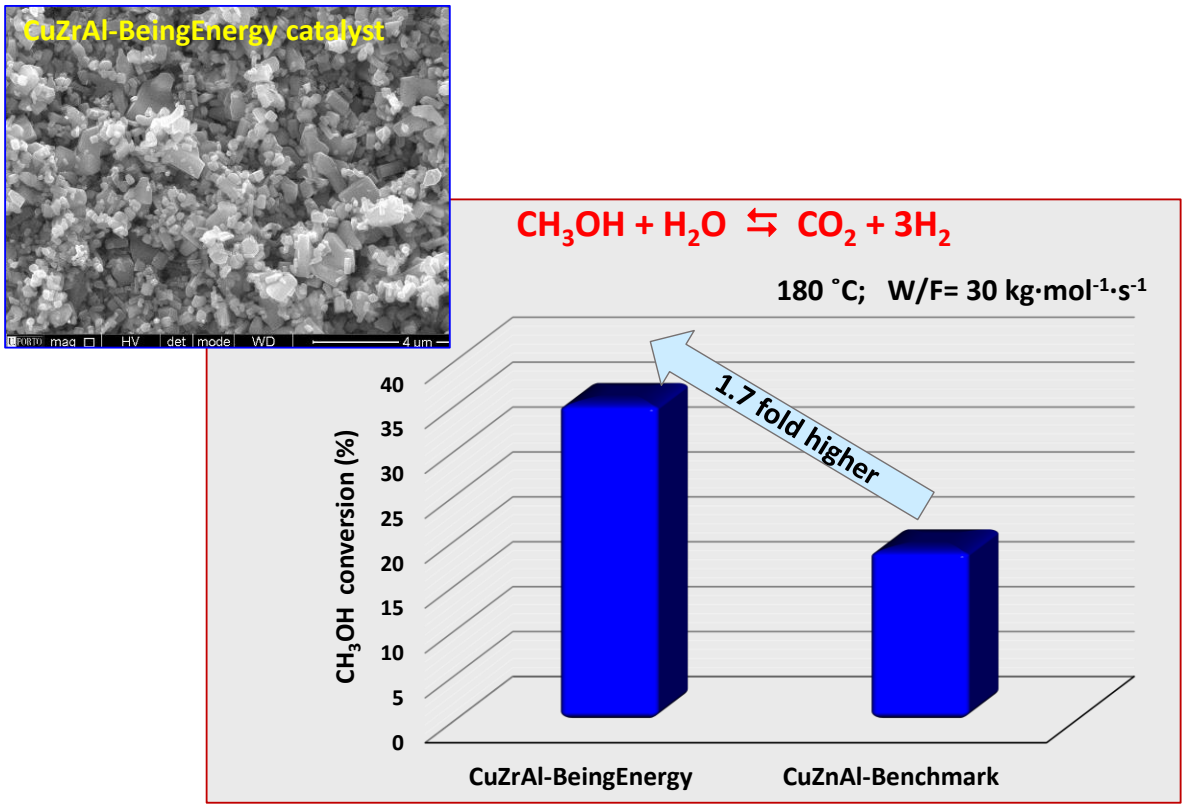
Coupled system performance. Plate type HEX methanol reformer coupled with 12-cell HT-PEMFC



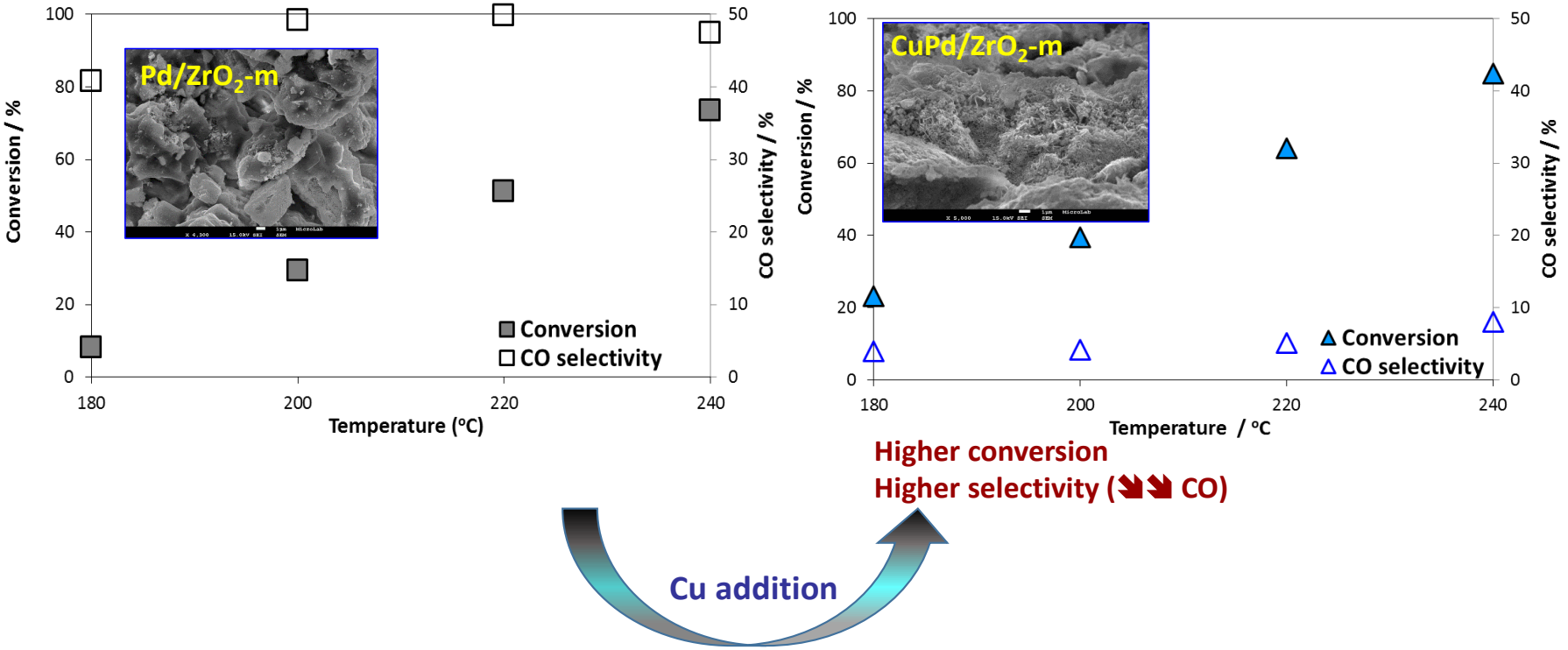
Sankey plot of system heat and energy balance at maximum power output (427 W_{el})



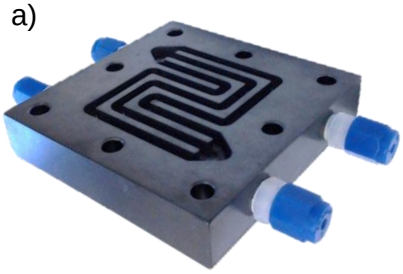
CAD-Drawing of the internal reforming fuel cell concept



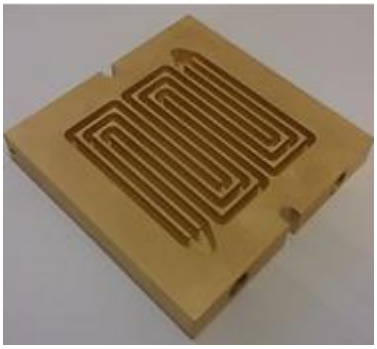
Developed catalyst


Pd/ZrO2-m
Conversion / %
CO selectivity / %
Temperature (°C)
Conversion
CO selectivity
CuPd/ZrO2-m
Conversion / %
CO selectivity / %
Temperature / °C
Conversion
CO selectivity
Higher conversion
Higher selectivity (↘↘ CO)
Cu addition

a)

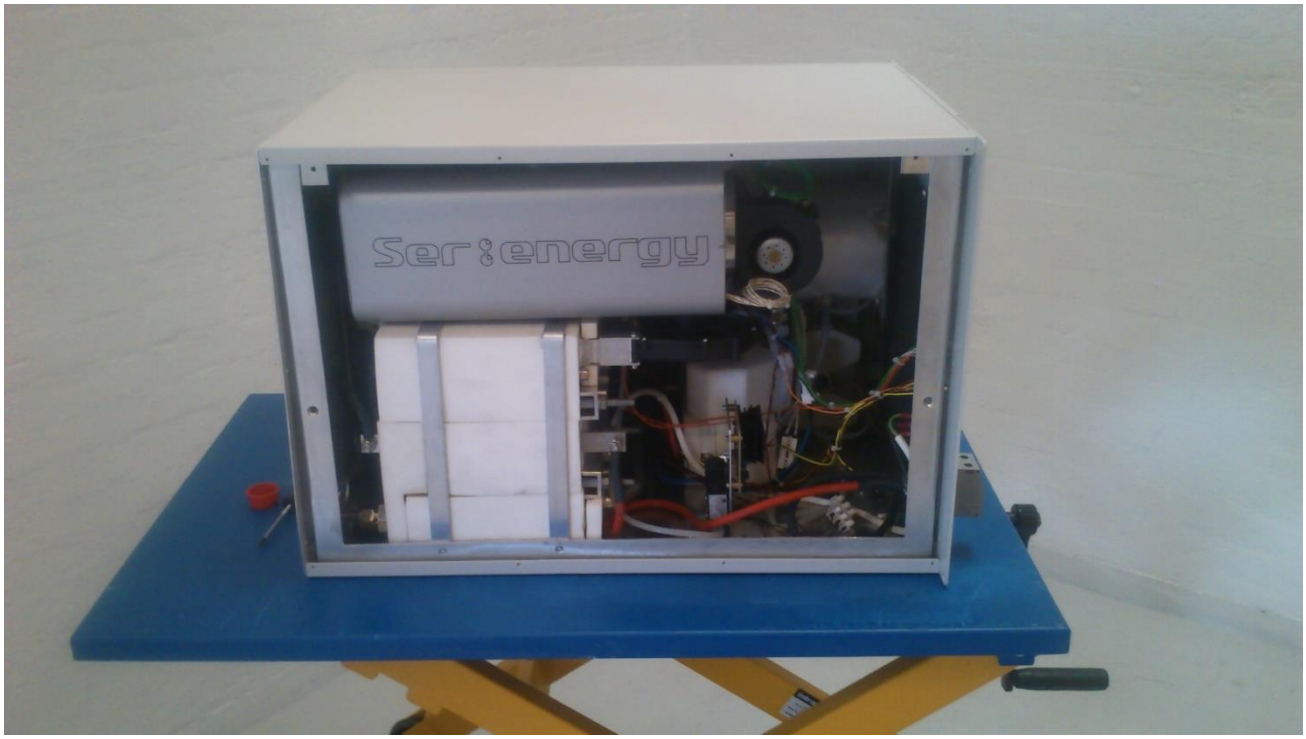


b)

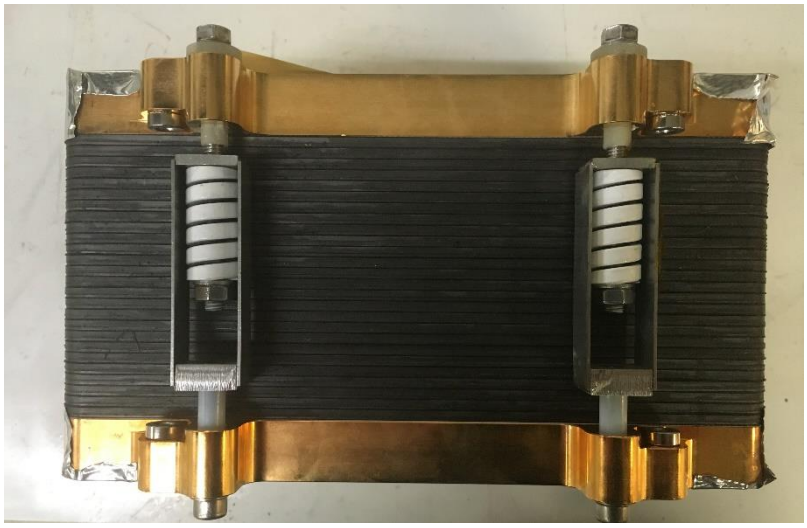


Bipolar plate for cellular reformer a) 25 cm^2 made of PPS and b) 45 cm^2 made of aluminium with gold plating

Fuel cell system seen form the front/side

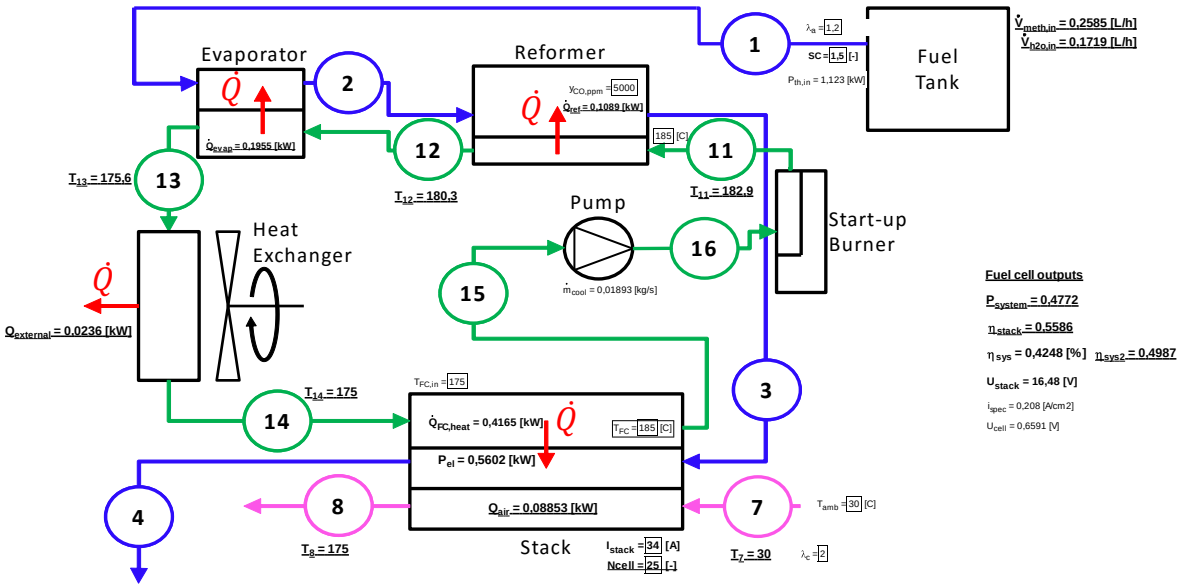


Fuel cell system seen from the side



Fuel cell as used in the system

Test setup for long term testing. Here cabin with 6 simultaneous running 10 cell stacks



System diagram