

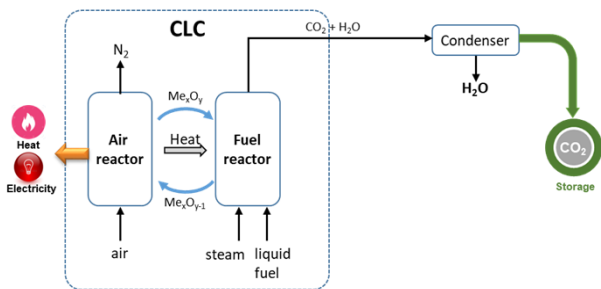
1.5 kW_{th} CL unit for LIQUID fuels

The 1.5 kW_{th} unit was built in 2014, to test the use of liquid fuels in Chemical Looping processes. Liquid fuels can be fed to the fuel reactor after evaporation or directly as liquid with the use of a special injector. The fuel reactor was conical-shape to cover the gas expansion during liquid injection.



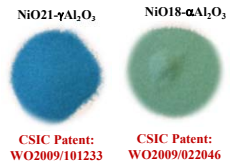
This unit can be used for the production of hydrogen via autothermal Chemical Looping Reforming (CLR-a) or for Chemical Looping Combustion (CLC) with inherent CO₂ capture. One of the advantages is the possibility to produce pure N₂ at the air reactor outlet. This unit can control and measure the solids circulation rate.

Chemical Looping Combustion

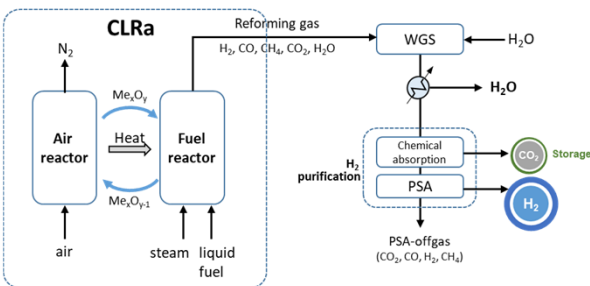


Fuels
Bioethanol
Diesel
Synthetic oil
Mineral oil

Oxygen carriers
Synthetic
Cu14Al
Fe20Al
Ni18aAl
Ni21gAl



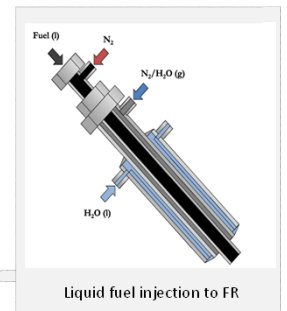
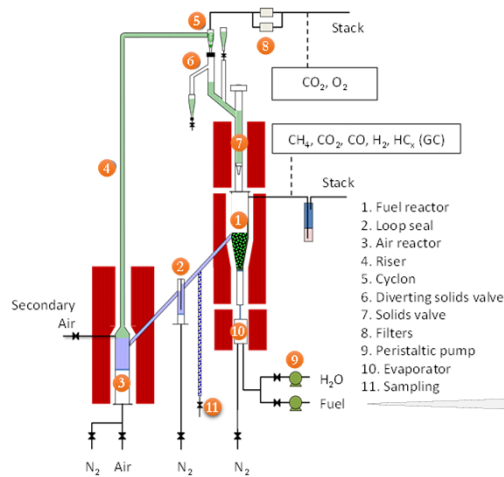
Autothermal Chemical Looping Reforming



Fuels
Bioethanol
Diesel
Glycerol
Bio-oil

Oxygen carriers
Synthetic
Cu14Al
Ni18aAl, Ni21gAl
MnFeTi

FR (Ø x bed height) (m)	0.05 x 0.1
AR (Ø x bed height) (m)	0.05 x 0.1
Solids inventory (kg)	1.5



▶ About 500 h of operational experience (≈58% world hours)

MILESTONES

