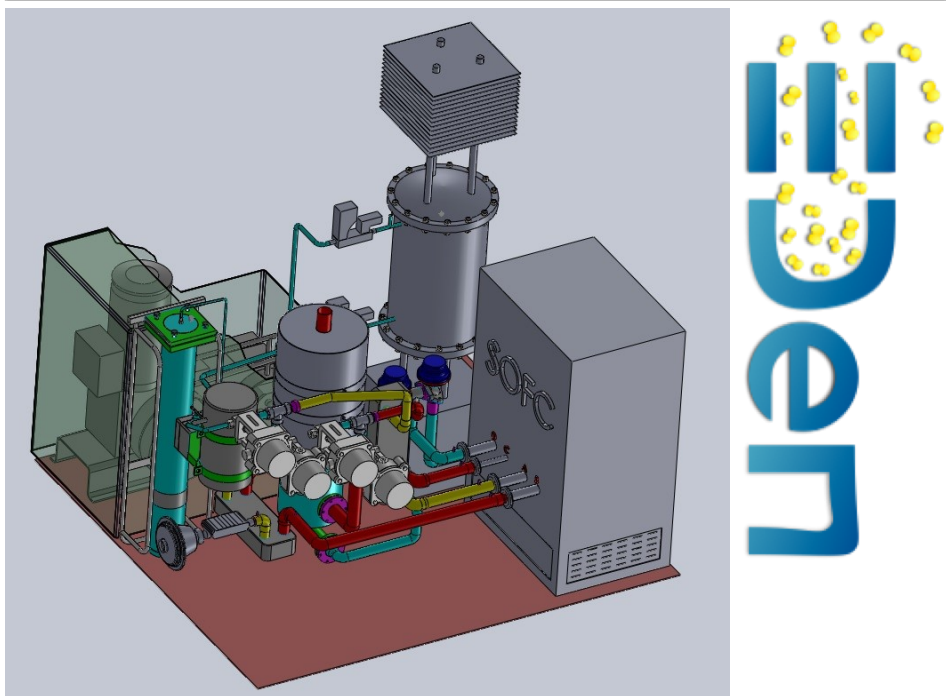
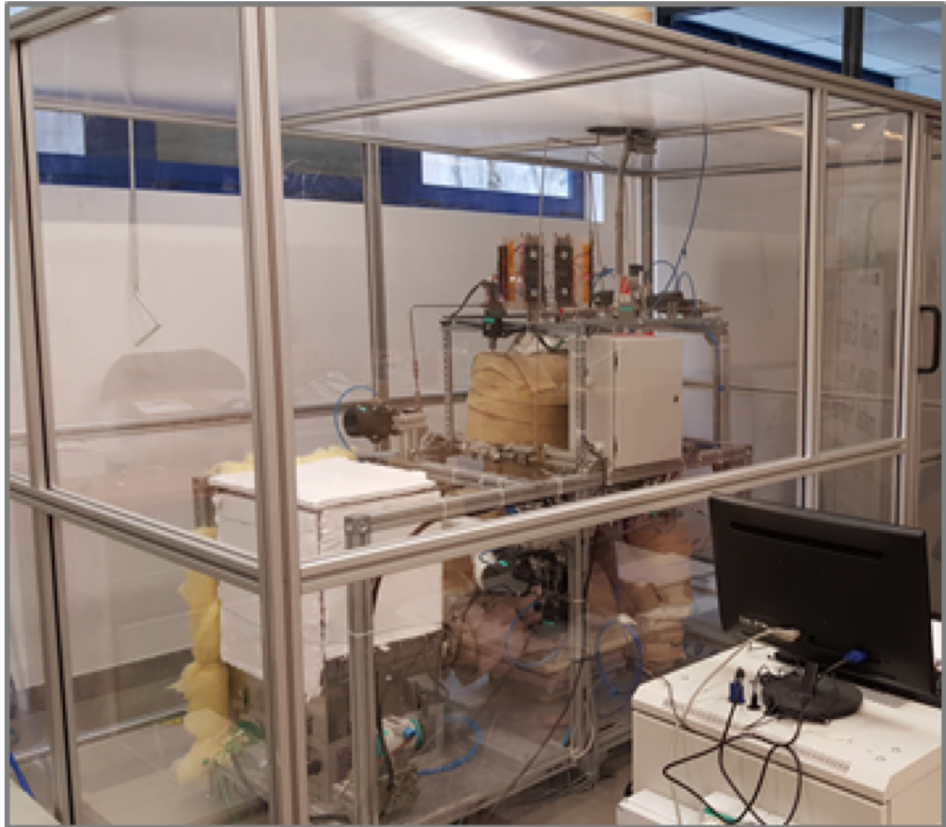


H2 storage with reversible solid oxide system r-SOC



Novel hydrogen based power-to-power system, integrating reversible SOC and a new hydrogen storage tank.

RIFERIMENTI E LINK

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DESCRIPTION

The technology is integrating Mg-based storage material, within an innovative tank system and integrated in an overall system, designed with BoP components. It has full hydrogen and thermal management. It can manage intermittent sources and generate electrical and thermal power on demand.

SPECIFICATIONS

- Power input (Electrolyzer mode): 2,5 kWel
- Power output (FC mode): 1,5 kWel
- Delivery: 20Nm³/min H₂ (about 1mol)
- Hourly consumption 240 mol (= 6000 g MgH₂)
- Tank prototype: effective Volume: 20 l => 720g H₂, equivalent to 10 kWh
- About 8000 Nm³ H₂, lasts for about 10h (full load)

ADVANTAGES & APPLICATIONS

- BUILDINGS: The daily extra production is converted through the Battery into demand response service for end-users [1 – 10 kW].
- BACKUP OF RES: wider penetration of renewables in distribution grids, utilization of extra production. Direct integration with wind mills, PV solar plants [100 kW – 1 MW].
- GRID SERVICES: Optimization of energy flows within the energy market, P2P for distribution grid regulation, peak leveraging, load following [10 MW – 100 MW].

STATUS

- TRL 5 - technology validated in relevant environment (industrially relevant environment in the case of key enabling technologies)
- Non-Patented technology.