**Testing protocol definition**

- **Heating, Sealing and Ni reduction** following cell manufacturer recommendations
- **Test start-up**
  - OCV stabilisation at 800°C under $H_2$ with 3 vol.% $H_2O$
- **Operation in fuel cell** mode at 800°C to check SRU performance
  - EIS at OCV , j-V curves and EIS = f(j)
- **Operation in Electrolysis Mode at 800°C:**
  - Change of humidity **50 vol.% Hum** ($H_2$ 10%/$N_2$ 40%) and stabilisation at OCV,
  - EIS at OCV, j-V curves V≤1.5V, EIS = f(j),
  - Change of humidity **70 vol.% Hum** ($H_2$ 10%/$N_2$ 40%) and stabilisation at OCV,
  - EIS at OCV, j-V curves V≤1.5V, EIS = f(j),
  - Change of humidity **90 vol.% Hum** ($H_2$ 10%/$N_2$ 40%) and stabilisation at OCV,
  - EIS at OCV, j-V curves V≤1.5V, EIS = f(j),
  - Back to **50 vol.% Hum** to change operation temperature to 750°C
- **Operation in Electrolysis Mode at 750°C**
- **Operation in Electrolysis Mode at 850°C:**
- **Durability test at 800°C** (-1 A/cm$^2$ under 90 vol.% Hum/10 vol.% $H_2$)