Testing setup for automatic cycling of metal hydride composites

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Goal:
Metal hydride applications

Heat pump
Pre-heating
Air-conditioning
H₂ storage
Thermal compressors
Purification systems
Etc.

Testing setup:

Main Characteristics:
- Fully automatic cycling
- 4 reactors with different sizes and/or different materials can be tested in parallel (up to 1.8 g H₂)
- Temperature range: -20 .....300 °C
- Pressure range: 10¹…10⁷ Pa
- Composition of gas can be varied
- Setup available for projects, etc.

Testing Experience:

Hydralloy C5 [1]
- >1000 cycles
- 30 bar / ambient
- 50 °C

MgH₂
- ~500 cycles
- 20 bar
- 300 °C

NaAlH₄
- ~100 cycles
- 90 bar
- 110-160 °C

Ti₀.₉₈Zr₀.₀₂V₀.₄₃Fe₀.₀₉Cr₀.₅₃Mn₁.₅
+ FeV substitution [2]
- 1000 cycles
- 40 bar
- 30°C