

700 bar Type IV Hydrogen Pressure Vessel with Plastic Liner

Presented Object

- ❖ Type IV full composite cylinder with polymeric liner

Characteristics

- ❖ Design requirements according to European Integrated Hydrogen Project (EIHP-II)
- ❖ Inner lightweight plastic liner (nylon based)
- ❖ Working pressure: 700 bar
- ❖ Dimensions: 300 mm diam. x 900 mm length
- ❖ Volume: 34 L
- ❖ Weight: 28 kg
- ❖ Neck size: 1.125"-12UNF



Status & Future Perspectives

- ❖ Cycling resistance and hydrogen tightness exceed the standard requirements (> 15,000 cycles at 20-875 bar and <<< 1Ncm³/L/h)
- ❖ Fast filling compatibility demonstrated
- ❖ Enhanced gravimetric storage density (5.4% for 34L tank)
- ❖ Burst resistance > 1,645 bar (according to safety ratio 2.35)

In the short-term future...

- ❖ Smart composite cylinder development featuring embedded sensors, improved safety and recyclability
- ❖ Development of fully instrumented testing
- ❖ Study and understanding of durability and long-term ageing of composite materials and structures
- ❖ Influence of manufacturing processes on short-term / long-term performance and scattering of properties

Partner

- ❖ C.E.A.



with its subcontractor



Website

www.storhy.net



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