

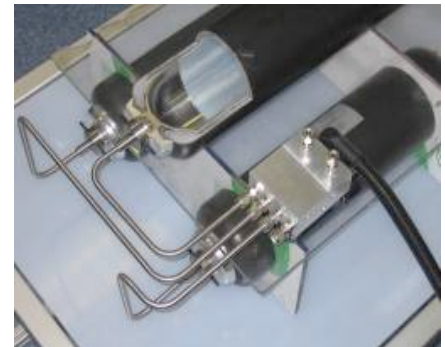
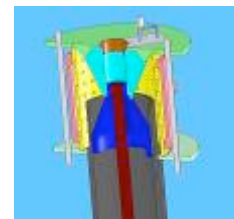
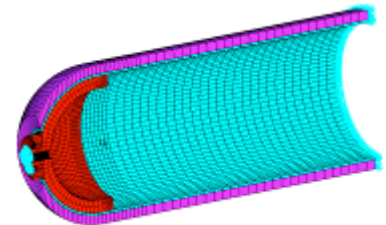
Modular System Pressure Vessel Technology

Objectives

- ❖ Development of a production technology for pressure vessels using endless tubes (DExWin®)
- ❖ Design and calculation of a modular system for high pressure vessels
- ❖ Feasibility demonstration


Achievements

- ❖ Several designs of COMAT's DExWin® FlexStore system were developed
- ❖ Finite element analysis (FEA) was done to study potential failure behaviours:
 - Different material combinations were studied.
 - Vessel design was optimised.
- ❖ Validation of the single DExWin® vessel in CFRP showed that the vessel will withstand the demanded burst pressure of 1750 bar.
- ❖ A new thermoforming concept was developed to connect the cylindrical section with the end caps:
 - Different forming concepts were analysed.
 - A flexible membrane forming process shows best results.
- ❖ The manufacturing of modular system pressure vessel prototypes based on GF/PP was done:
 - All processing steps have been performed.
 - The feasibility of the production technology was demonstrated.
 - The pressure vessels were tested.
 - Test results are in good correlation with calculation predictions.



Future Perspectives

- ❖ Feasibility of modular pressure vessel technique is demonstrated.
- ❖ Modular pressure vessel technology will be developed to further increase pressure level
 -> EU FP7 "H2SusBuild".

<p>Partners</p>	<ul style="list-style-type: none"> ❖ COMAT Composite Materials GmbH ❖ ADETE - Advanced Engineering & Technologies GmbH ❖ Institut für Verbundwerkstoffe GmbH <div style="text-align: right;">    </div>
------------------------	---

<p>Website</p>	<p>www.storhy.net</p>
-----------------------	---

 The project partners wish to thank the European Commission for financial support of the Integrated Project StorHy– Hydrogen Storage Systems for Automotive Application (Contract No.: SES6-CT-2004-502667) within the 6th RTD Framework Programme.