

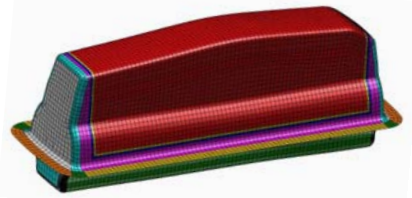
Hydrogen Storage Systems for Automotive Application (IP StorHy): Sub Project Cryo

Future system



- > Lightweight materials
- > Free-form geometry
- > Automotive design
- > Automotive production technologies

Outer tank



Technology implementation

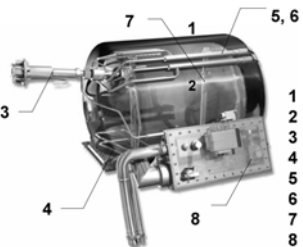
Combined outer and inner tank



Challenges

- > Vacuum stability
- > Reduced heat entry
- > Material properties
- > Thermal shock
- > Recycling

- > Stainless steel
- > Cylindrical vessels
- > Unique parts designed by MAGNA STEYR and partners
- > Prototype, microseries

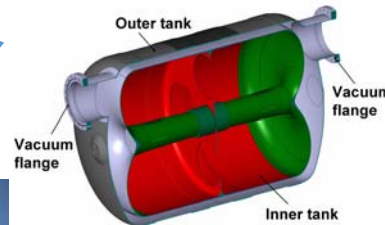


- 1 Outer tank
- 2 Inner tank
- 3 Refueling coupling
- 4 Heater
- 5 Cryogenic filling valve
- 6 Cryogenic refueling valve
- 7 Liquid level sensor
- 8 Auxiliary system box

State of the art



Outer tank



Combined outer and inner tank

Concept validation

Objectives

- > Development of a lightweight liquid hydrogen tank with increased storage density
- > Design of free-form tank geometries easily adaptable to car structure
- > Research on lightweight composite materials
- > Manufacturing and testing of prototype tanks
- > Optimized automotive production and recycling processes

Partners in SP Cryo



Acknowledgement

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