

SH₂APED

STORAGE OF HYDROGEN: ALTERNATIVE PRESSURE ENCLOSURE DEVELOPMENT



Project ID:	101007182
PRD 2023:	Panel 3 – H2 end uses – transport
Call topic:	FCH-01-1-2020: Development of hydrogen tanks for electric vehicle architectures
Project total costs:	EUR 2 146 925.00
Clean H₂ JU max. contribution:	EUR 1 993 550.00
Project period:	1.1.2021–31.12.2023
Coordinator:	Plastic Omnium Advanced Innovation and Research, Belgium
Beneficiaries:	Bundesanstalt für Materialforschung und -prüfung, Misal SRL, OMB Saleri SpA, Optimum CPV, University of Ulster

<https://sh2aped.eu/>

PROJECT AND OBJECTIVES

The goal of SH₂APED is to develop and test at technology readiness level 4 a conformable and cost-effective 70 MPa hydrogen storage system with increased efficiency and advanced safety performance.

NON-QUANTITATIVE OBJECTIVES

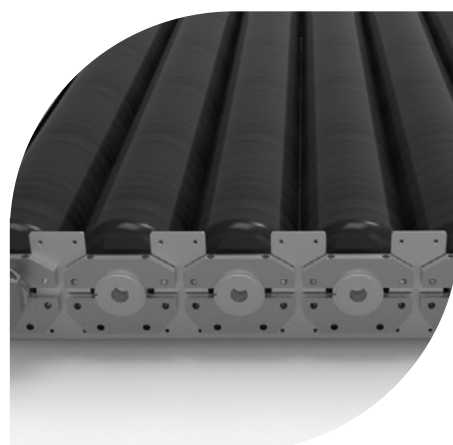
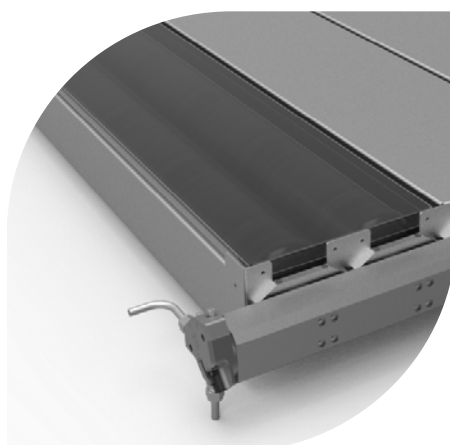
Regarding certification procedures, the project aims to contribute to the revision of regulations.

PROGRESS AND MAIN ACHIEVEMENTS

- The first assembly design – vessel design, and manifold and thermal pressure relief device design – has been finalised.
- Vessel prototypes are available.
- System testing of the model's reaction to fire is in progress.

FUTURE STEPS AND PLANS

Frame design is ongoing.



QUANTITATIVE TARGETS AND STATUS

Target source	Parameter	Unit	Target	Achieved to date by the project	Target achieved?	SoA result achieved to date (by others)	Year of SoA target
Project's own objectives	Cost of tank system	€/kg of H ₂	< 400	> 580		< 500	2022
	Permeation	Ncm ³ /l/h @ 55 °C	< 46	Not yet available		N/A	N/A
	Hydraulic pressure cycle test at 87.5 MPa, 20 °C	–	22 000	> 22 000	✓	Not published	Not published