



H₂-tank system B4S-SM/MM

nanostructured reactive complex metal hydride
single/multi module • solid-state > 8 wt.%



H₂ single-module tank B4S-SM

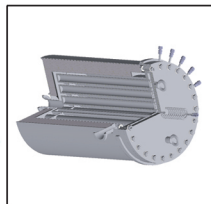


**Helmholtz-Zentrum
Geesthacht**
Centre for Materials and Coastal Research



consortium: www.bor4store.eu

EU-project FCH JU 303428 [2012-2015]



H₂ multi-module tank B4S-MM

high potential energy storage for the future



H₂-storage > 8 wt.%, > 80 kg H₂/m³ storage material

H₂-loading completely reversible, H₂-release thermally activated only !





H2-tank system B4S-SM outside ZTC at Olpe and inside at the Helmholtz HZG - Hydrogen Technology Centre in front of the complex metal hydride processing unit (Zoz-Simoloyer® CM100-s2)

The B4S-SM tank system (certified by German TÜEV, 2016-02) represents the single module version of the in objective multi-modular tank B4S-MM. The technological breakthrough in reactive hydride composites (RHC) provides the first ever semi-commercial, albeit not yet economic but available LiBH₄ storage system including all approvals.

Compared to the state of the art of RT-metal hydride H₂-storage represented by Zoz Hydrogen Technology (P2H®, P2G2F®, Hydrolium®, H2Tank2Go®, IronBird/Stromkoffer, Zoz ZEV-Fleet et al.), the storage capability of the B4S-storage-material is multiple times higher and impressive. However, compared to the net tank system and cost, the economics are not at all compete-able (yet). This may be the genesis of a new technology:

product	basics	solid state	temp [°C]	pressure [bar]	wt [kg]	H ₂ [g]	PT-cost [€]	wt-% H ₂
H2Tank2Go®	RTH	Hydrolium®	RT	<10 TP 30	4	60-100	175	2-4
IronBird/Stromkoffer					45	360-600	< 10.000	
H2Tank B4S-SM	RHC	LiBH ₄ +MgH ₂	400-650	3-100 TP 325	26	40-50	~ 50.000	9-18
H2Tank B4S-MM					365	960-1.200	~ 250.000	

Prof. Dr. Henning Zoz [09.06.2016] "We are here almost at the very beginning of a technology that for stationary and mobile energy storage does offer far higher potentials than room-temperature hydrides, H₂-pressure gas systems or electrochemical energy storage / battery - as for today's knowledge - could ever do".



H2Tank2Go®
Hydrolium®-RT-MH powder



Isigo® H2.0
2x H2Tank2Go®



IronBird / Stromkoffer
6x H2Tank2Go®, 2x PEMFC



IronBird / Stromkoffer
in the trunk of a Zoz-ZEV