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# **Clean Hydrogen Project BRAVA No. 101101409**

## **WP4.1 - Deliverable D4.4 – Report Catalyst and catalyst support R&D report 2**



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## Change History

<b>Version</b>	<b>Date</b>	<b>Changes</b>	<b>Done by</b>	<b>Approved by</b>
V1	13.05.2024	First Version	TUB	Peter Strasser



## List of Acronyms and Abbreviations

<b>Abbr.</b>	<b>Description</b>	<b>Abbr.</b>	<b>Description</b>
AST	Accelerated Stress Test	NH <sub>3</sub>	Ammonia
at%	Atomic Percentage	OCV	Open Circuit Voltage
bpy	Bipyridine	ORR	Oxygen Reduction Reaction
CCM	Catalytic Coated Membrane	PEIS	Potentiostatic Electrochemical Impedance Spectroscopy
CL	Catalyst Layer(s)	PEM	Proton Exchange Membrane
ECSA	Electrochemically Active Surface Area	PEMFC	Proton Exchange Membrane Fuel Cell
FC	Fuel Cell	RDE	Rotating Disc Electrode
FP	Flash Pyrolysis	SA	Specific Activity
GC	Glassy Carbon	STG	Sodium Thioglycolate
Hupd	Hydrogen underpotential deposition	TBD	To Be Determined
ICP-OES	Inductively Coupled Plasma Optical Emission Spectroscopy	TEM	Transmission Electron Microscopy
LA	Leached and Annealed	TF	Tube Furnace
MA	Mass Activity	WE	Working Electrode
MEA	Membrane Electrode Assembly	wt%	Weight Percentage
MTF	Movable Tube Furnace	XRD	X-Ray Diffraction
N/A	Not Applicable		



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## 1. Executive Public Summary

This deliverable report D4.4 is a status update on the work done in WP “Stack Technology Development” on the subtask WP4.1 “Catalyst Development” from M12 to M17 done by TUB. The carried-out work covers optimization of previously explored catalyst systems and down selection of candidates for scale up in WP4.1.2 and their use in aviation fuel cells.



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### Project partners:

#	Partner short name	Partner Full Name
1	A-D	AIRBUS OPERATIONS GMBH
2	A-E	AIRBUS OPERATIONS SL
3	AER	AEROSTACK GMBH
4	CNRS	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE
4.1	UM	UNIVERSITÉ DE MONTPELLIER
5	HER	HERAEUS DEUTSCHLAND GMBH & CO KG
6	LTS	LIEBHERR AEROSPACE TOULOUSE SAS
7	MAD	MADIT METAL S.L.
8	MOR	MORPHEUS DESIGNS S.L.
9	NLR	STICHTING KONINKLIJK NEDERLANDS LUCHT – EN RUIMTEVAARTCENTRUM
10	SOL	SOLVAY SPECIALTY POLYMERS ITALY SPA
10.1	RHOP	RHODIA OPERATIONS
10.2	RHLA	RHODIA LABORATOIRE DU FUTUR
11	TUB	TECHNISCHE UNIVERSITÄT BERLIN

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