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Change History

Version	Date	Changes	Done by	Approved by
V1	10.11.2023	First Version	TUB	Dirk Kastell

List of Acronyms and Abbreviations

Abbr.	Description	Abbr.	Description
AST	Accelerated Stress Test	OCV	Open Circuit Voltage
at%	Atomic Percentage	ORR	Oxygen Reduction Reaction
bpy	Bipyridine	PEIS	Potentiostatic Electrochemical Impedance Spectroscopy
CCM	Catalytic Coated Membrane	PEM	Proton Exchange Membrane
CL	Catalyst Layer(s)	PEMFC	Proton Exchange Membrane Fuel Cell
ECSA	Electrochemically Active Surface Area	RDE	Rotating Disc Electrode
FC	Fuel Cell	SA	Specific Activity
GC	Glassy Carbon	TBD	To Be Determined
Hupd	Hydrogen under potential deposition	TEM	Transmission Electron Microscopy
ICP-OES	Inductivly Coupled Plasma Optical Emission Spectroscopy	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		

1. Executive Public Summary

This deliverable report D4.1 is a status update on the work done in WP “Stack Technology Development” on the subtask WP4.1 “Catalyst Development” from M1 to M11 done by TUB. The carried-out work covers the definition of requirements on the catalyst and support, finding suitable synthesis methods and carrying out synthesis and characterizations of newly developed catalyst systems and evaluating their suitability for scale up in WP4.1.2 and their use in aviation fuel cells. Multiple synthesis methods for high loading PtCo intermetallic candidates with promising properties were found and optimized.

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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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