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Sodium-Ion and sodium Metal Batteries for efficient and sustainable  
next-generation energy storage

GRANT AGREEMENT No. 963542



SIMBA – Deliverable Report

<< D3.1 – Optimized protocol for evaluation of  
transport properties at the interface and testing results  
for all baseline cell components >>

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## Publishable summary

Deliverable 3.1 – Optimized protocol for evaluation of transport properties at the interface and testing results for all baseline cell components is part of the Work Package 3 “Ion transport and interface properties”, which focuses on transport and degradation mechanism with the Na-ion cell. Within this deliverable we provide an optimized protocol to evaluate charge transfer properties on the electrolyte-electrode interface. Within SIMBA two complementary experimental approaches are developed to describe the motion of Na<sup>+</sup> across the interface, namely <sup>23</sup>Na solid state nuclear magnetic resonance (SSNMR) and microelectrode technique, single particle measurement (SPM). The experimental findings will be supported by atomistic and mesoscopic modelling. This protocol will be applied to evaluate the transport, both for baseline cell components (liquid electrolyte) and for the SIMBA cell components (single-ion conducting polymer electrolyte).

Furthermore, in this deliverable we present the testing results for baseline cell components in a half-cell as well as preliminary results in the full-cell configuration.

## Appendix B - Acknowledgement

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Project partners:

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3	UBham	THE UNIVERSITY OF BIRMINGHAM
4	WMG	THE UNIVERSITY OF WARWICK
5	KIT	KARLSRUHER INSTITUT FUER TECHNOLOGIE
6	CEA	COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES
7	IFE	INSTITUTT FOR ENERGITEKNIKK
8	SAS	USTAV ANORGANICKEJ CHEMIE SLOVENSKA AKADEMIA VIED (Institute of Inorganic Chemistry, Slovak Academy of Sciences)
9	FHG	FRAUNHOFER GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V.
10	JM	JOHNSON MATTHEY PLC
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## Appendix C – Disclaimer/Acknowledgement



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