MORELIFE

MATERIAL, OPERATING STRATEGY AND RELIABILITY OPTIMISATION FOR LIFETIME IMPROVEMENTS IN HEAVY DUTY TRUCKS

Project ID	101007170
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Coordinator Beneficiary	AVL LIST GMBH, AT
Beneficiaries	EKPO FUEL CELL TECHNOLOGIES GMBH, MEBIUS, RAZISKOVALNO RAZVOJNA DEJAVNOST, ZASTOPANJE IN TRGOVINA, DOO, NEDSTACK FUEL CELL TECHNOLOGY BV, UNIVERZA V LJUBLJANI, TECHNISCHE UNIVERSITEIT EINDHOVEN, TECHNISCHE UNIVERSITAET MUENCHEN

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PROJECT AND GENERAL OBJECTIVES

MORELife addresses the need for highly efficient material utilisation, maximised durability and optimised matching of operation conditions for a proton-exchange membrane fuel cell in heavy-duty applications. The objectives are to:

- Perform accelerated stress tests for the shortened test duration for lifetime verification.
- Make improvements at material and operation strategy levels.
- Create advanced degradation models.
- Find the optimal operating conditions and validate them based on the improved materials.
- Achieve a predicted lifetime for fuel cells of 30 000 hours.

PROGRESS, MAIN ACHIEVEMENTS AND RESULTS

- Accelerated stress test and accelerated durability test protocols and after treatment systems for state-of-the-art and advanced catalyst material have been created.
- A third generation of novel catalyst material has been developed with promising first results of rotating disc electrode investigations.
- Post-mortem analysis on aged state-of-the-art material has been performed in order to improve mechanistic degradation models created in this project.

FUTURE STEPS AND PLANS

If proven sufficient, the third generation catalyst will be integrated in a 5 to 10 cell short stack for validation in order to prove its durability and performance.

Clean Hydrogen Partnership
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