



FIT-4-AMANDA

Future European Fuel Cell Technology: Fit for Automatic Manufacturing and Assembly

EUROPEAN COMMISSION

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Publishable Executive Summary

The production of fuel cells and stacks is currently on the way from manual laboratory production to industrial small batch production and later on mass production. For this purpose automatic production technologies and the associated system technology has to be developed and tested.

This phase is economically very critical for the companies, since high production costs and thus high prices make the sales more difficult and at the same time investments in new production technology have to be made. As a result, customers need scalable growing plant technology that allows tiered investments with reusability of the technology in the subsequent expansion stages.

As part of the project, the production technologies for two different stack concepts were developed. For the automatic assembly of the fuel cell stacks the functional units for the realization of the individual technology steps were developed as well as a scalable machine concept, with which start-up systems for the entry into the automatic stack assembly as well as complex plant systems for the mass production can be projected, built and operated.

The fuel cell stack design was adapted - parallel with development of assembly technology and equipment system - according to the process requirements of automated manufacturing, assembly, transportation, handling, image processing and testing.

The design of the assembly line with its stations, handlings and functional units is finalized. The experimental machine system is assembled, installed and putted into operation. The both technologies - with seal on MEA assembled of GDLs and CCM in the machine and with subgasket MEA supplied via stack box - have been realised, tested and qualified.

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Project partners:

#	Partner	Partner Full Name
1	UNR	Uniresearch BV
2	PM	Proton Motor Fuel Cell GmbH
3	EWII	EWII Fuel Cells A/S
4	AUMANN	AUMANN Limbach-Oberfrohna GmbH
5	Fraunhofer	Fraunhofer Gesellschaft zur Foerderung der angewandten Forschung E.V.
6	TUC	Technische Universitaet Chemnitz
7	UPS	UPS Europe SA



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