

New EU project investigates a scalable production line for fuel cells for forklifts and industrial vehicles

WELS. Hydrogen fuel cell driven vehicles will have a great potential in the future of post-fossil mobility. The rather complex fuel cell units are currently manufactured manually; thus, the production costs per unit are very high. In the EU project INLINE a consortium of 5 partners (Fronius, Profactor, ElringKlinger, KITwbk, OMB Saleri) develop a flexible, scalable, high quality pilot production line for hydrogen fuel cell manufacturing.

Fronius is a quality manufacturer of fuel cells for forklifts and industrial vehicles. In this field fuel cells are a promising alternative to internal combustion engine and battery powered drives due to fast refueling and zero emission capabilities. In the end the company expects a dynamic growing demand, requiring highly flexible manufacturing infrastructure and is not covered by using traditional methods. The EU project INLINE focuses on a scalable production pilot line from 5000 units in the early market stage up to 50.000 units per year if just a reasonable 5 % market share in the material handling sector is achieved in the medium term.

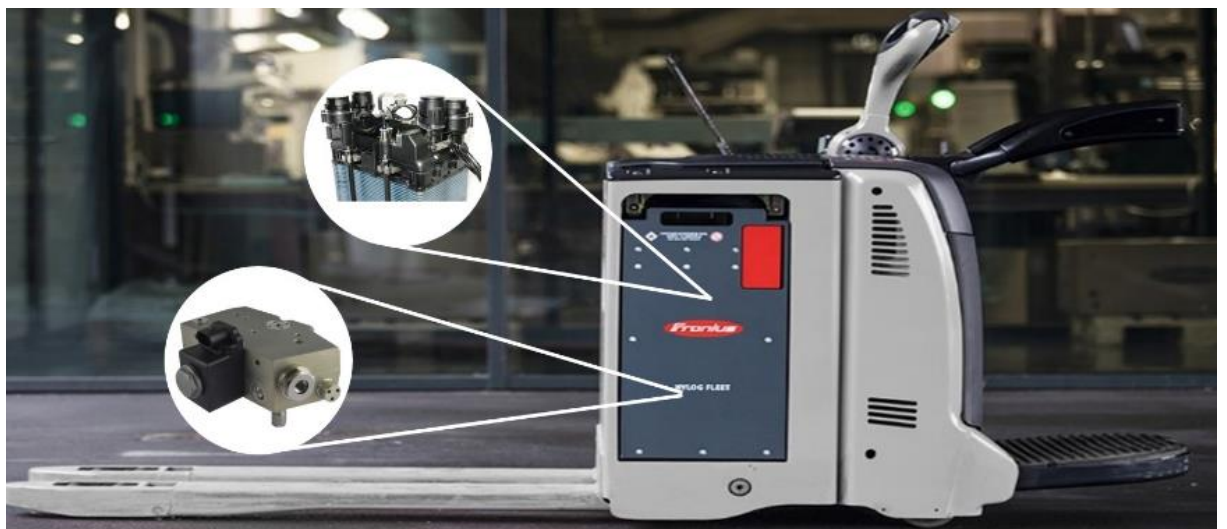
Complex components and time-consuming manufacturing slowdown the technology

The main parts in this 3.2 million Euro budget project are the development of new concepts for the manufacturing of key components and the assembly of the fuel cell. The tank valve regulator is a key component for safety requirements and therefore a relevant parameter of overall product quality. The media supply unit is a second crucial part and key for functional integration of the complex balance of plant system. These two components have been identified as bottlenecks in the production process of the fuel cell system and will be specially addressed and optimized. The end of line testing offers the greatest potential for cycle time reduction and is therefore key for overall cost reduction of the assembly process. Simulation models developed within the INLINE project will support planning and optimization of the pilot production line as easy and fast evaluation of different designs and production scenarios will be possible.

The optimized and scalable pilot production line will be implemented and commissioned at the Fronius Production Facility in Austria for practical evaluation of the simulation model.

Mathias Griesbaum, project manager at Fronius, states the importance of INLINE: “Flexibility through scalability is critical for ramping up production volume of an innovative product like the HyLOG Fleet system for which market uptake is difficult to predict”.

Bart Biebuck, executive director of FCH2 JU stated about INLINE: „Hydrogen is a forerunner in the material handling vehicles market and it has a bright horizon. Investigating the manufacturing of Fuel Cells systems used in material handling vehicles is critical to unlock the full potential of that clean technology. By increasing the automation and by improving the quality assurance in the production lines, it will bring the products to the next levels of higher performance for a lower cost. INLINE is gathering innovative companies from Europe, it will ensure growth, develop new markets and create jobs in Europe“.



Title: The components of the fuel cell system: lower circle: tank valve regulator; upper circle: media supply unit.

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project name:

INLINE – An innovative Design of a Flexible, Scalable, High Quality Production Line for PEMFC Manufacturing

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Duration:

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Webseite:

www.inline-project.eu

Partner

Profactor GmbH

ElringKlinger AG

Karlsruher Institut für Technologie (KIT) wbk Institut für Produktionstechnik

OMB Saleri S.p.A

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