

Press Release

FEV and ITL Develop Innovative Battery Housing Demonstrator for E-Vehicles

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Aachen (Germany), May 2023 – FEV together with the production specialist for aluminum hot sheet forming, Impression Technologies (ITL) has presented a battery housing concept for electric vehicles. Utilizing HFQ® Technology, it makes optimum use of the space available for energy storage. For this purpose, the demanding structural requirements for this component are implemented in a novel way. By completely laying the structurally relevant components on the outside and at the same time an integration of the battery housing into the overall vehicle, installation space for additional battery cells is created. This leads to a longer range or a reduced installation space requirement while maintaining the same range. The concept developed as part of the joint project of FEV and ITL is to be manufactured and presented as a demonstrator in the coming months.

“With our latest battery housing development, we are once again showing that FEV is thinking in many directions when it comes to sustainable mobility. We offer solutions that the market demands – for example, to increase the range of e-mobility. With ITL, we have the ideal partner for lightweight construction on board for this project to make the concept tangible for our customers and partners in the form of a demonstrator in a timely manner,” said Professor Stefan Pischinger, President and CEO, FEV Group.

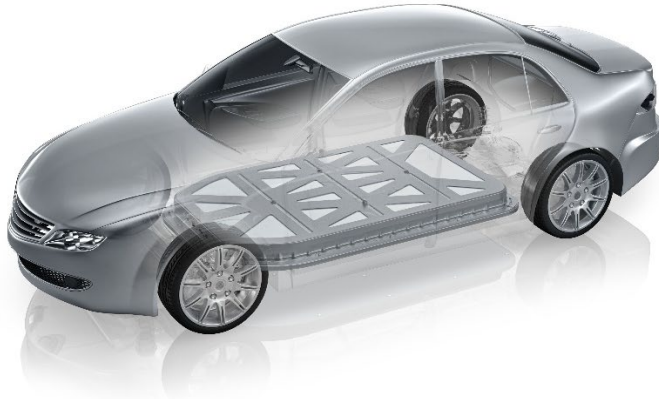
In the approach developed by FEV, the required structural performance is ensured by an “exoskeleton” concept, which realizes a power flow above and

below the battery pack. On the one hand, this keeps the loads occurring in the event of a crash away from the installation space used for the battery cells and at the same time optimizes the rigidity of the overall system (battery and bodyshell).

To achieve the required structural performance in a small installation space, the concept developed by FEV requires the implementation of complex structures with low radii and draft angles. A realization of these structures is possible with ITL's aluminium hot forming technology HFQ® ("Hot Form Quench"). "The HFQ technology expands our portfolio of possible manufacturing technologies for new developments and enables us to implement more complex structures compared to cold forming technologies," said Christian Kürten, Head of Vehicle Architecture at FEV Vehicle. "Added to this is the use of high-strength aluminum alloys, which, in conjunction with the HFQ process, ultimately deliver the required performance in optimized installation space."

"FEV's pioneering approach to design excellence and open-mindedness in developing new lightweight concepts and solutions for electric vehicles is a great fit for ITL and the benefits of HFQ's lightweighting technology," said Jonathan Watkins, CEO of Impression Technologies. "With our expertise in ultra-high strength aluminum alloy characterization, design-for-manufacture, forming simulation and production, and FEV's global network in the automotive industry, we complement each other perfectly and ensure that all automotive manufacturers can benefit from the novel battery housing concept."

Caption



FEV and ITL are developing an innovative battery housing demonstrator that offers numerous advantages due to the larger installation space.
Source: FEV

About FEV

FEV has always pushed the limits.

FEV is a globally leading engineering provider in the automotive industry and internationally recognized leader of innovation across different sectors and industries. Professor Franz Pischinger laid the foundations by combining his background in academia and engineering with a great vision for continual progress. The company has supplied solutions and strategy consulting to the world's largest automotive OEMs and has supported customers through the entire transportation and mobility ecosystem.

As the world continues to evolve, so does FEV.

That's why FEV is unleashing its technological and strategic expertise into other areas. It applies its forward thinking to the energy sector. And its software and system know-how will enable the company to lead the way making intelligent solutions available to everyone. FEV brings together the brightest minds from different backgrounds and specialties to find new solutions for both current and future challenges.

But FEV won't stop there.

Looking ahead, FEV continues to push the limits of innovation. With its highly qualified more than 7,300 employees at more than 40 locations globally, FEV imagines solutions that don't just meet today's needs but tomorrow's. Ultimately, FEV keeps evolving – to a better, cleaner future built on sustainable mobility, energy and software that drives everything. For the companies' partners, its people and the world. [#FeelEVolution](#)

About Impression Technologies

Impression Technologies (ITL) is a leading global provider of lightweight solutions for the automotive, aerospace and consumer goods industries.

With a unique combination of application engineering, metallurgy, hot forming process and simulation know-how, we offer a comprehensive service from part feasibility to design, prototyping and production. HFQ® technology aims to become a global standard for stronger, lighter and more cost-effective structures.

Our global technology centre and headquarters in Coventry, UK, has a full-size HFQ aluminum hot forming machine and material characterisation laboratory that provides prototyping, volume production, technology demonstration and technical support to OEMs and our global manufacturing partners.