Progress beyond

Solvay and Airborne receive funding for a composite alternative to metal battery enclosures

Collaboration is targeted at maximizing the energy capacity of lightweight and compact next-generation battery packs for e-mobility

Alpharetta, March 1, 2023

Solvay has announced that its Battery Enclosure Materials Automation (BEMA) project for developing an all-composite solution for energy efficient battery packs has won major funding by Innovate UK as part of UK Research and Innovation, the United Kingdom's national innovation agency.

This collaboration with Airborne, a technology leader in advanced composites manufacturing using automation and digitalization, has already received letters of support from Jaguar Land Rover and Vertical Aerospace. They see great potential in the design of more compact and lightweight enclosures for high-energy batteries in future electric cars and aircraft, and are interested in the sustainability aspect of this project which aims to reuse composite waste.

"There is a pressing need to meet net-zero emission regulations and targets with more energy efficient electric powertrain and propulsion solutions." says Mark Wright, EMEA Sales manager, Automotive, at Solvay Materials. "While already lending structural and weight saving advantages over metals in existing EVs and aircraft, fully composite battery designs for larger production volumes have yet to show their technical and manufacturing feasibility. BEMA seeks to deliver on these challenges by combining the benefits of Solvay's advanced thermosetting material technology with Airborne's expertise in flexible automated composite manufacturing systems to create lightweight next-generation battery packs. This will provide a significant step-change towards higher energy efficiency at reduced size."

"As the demand for industrial quantities of composite battery enclosures grows, the challenge is to shorten the design phase, and provide Design-for-Automation guidance" says Joe Summers, Commercial Director of Airborne. "Working with Solvay will build material characteristics into Design-for-Manufacture rules for our multi-material automated ply placement technology, and subsequently allow us to connect our adaptable automation platform with intelligent planning and optimization".

BEMA is currently in a pre-industrial testing and evaluation stage. Mechanical impact, shielding, thermal and fire performance tests are underway at Solvay's Composite Materials Application Centre in Heanor, UK, and at external service providers. In a next project phase, prototypes will be produced to validate the new composite battery enclosure solutions in field trials and obtain proof

of concept for industrialization. The project will also address rate capability, cost and sustainability challenges. Tangible and dependable results are expected within an overall project time of two years.

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About Solvay

Solvay is a science company whose technologies bring benefits to many aspects of daily life. With more than 22,000 employees in 63 countries, Solvay bonds people, ideas and elements to reinvent progress. The Group seeks to create sustainable shared value for all, notably through its Solvay One Planet roadmap crafted around three pillars: protecting the climate, preserving resources and fostering a better life. The Group's innovative solutions contribute to safer, cleaner, and more sustainable products found in homes, food and consumer goods, planes, cars, batteries, smart devices, health care applications, water and air purification systems. Founded in 1863, Solvay today ranks among the world's top three companies for the vast majority of its activities and delivered net sales of €13.4 billion in 2022. Solvay is listed on Euronext Brussels and Paris (SOLB). Learn more at www.solvay.com.

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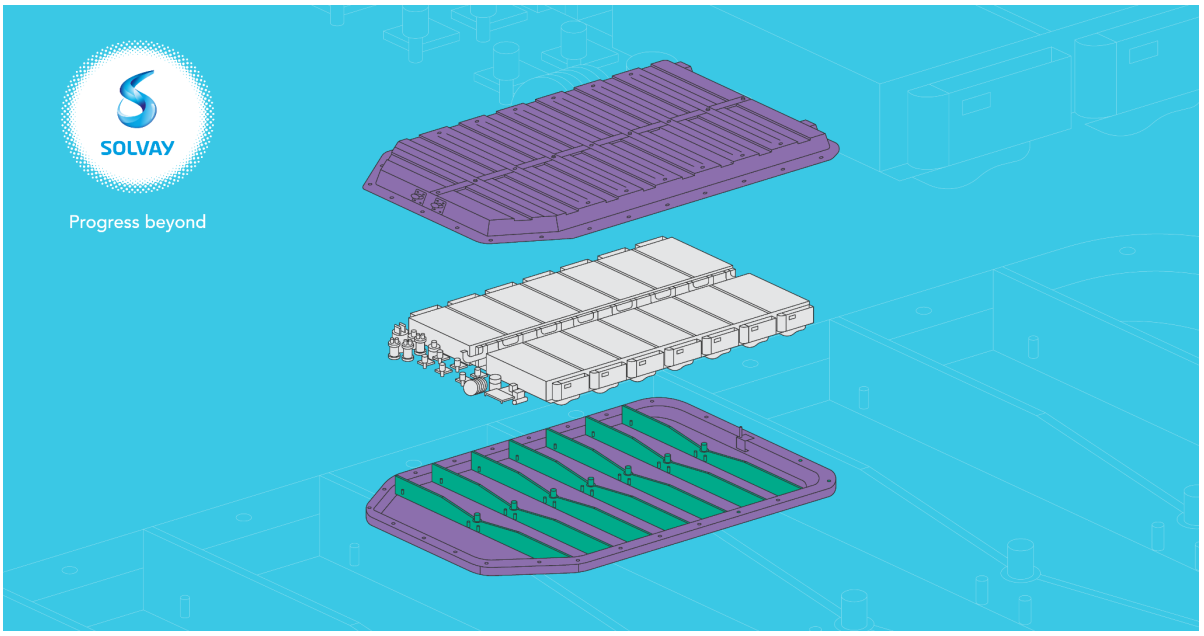
About Airborne

At Airborne we believe that innovation in manufacturing through automation, digitalisation and advanced analytics is the catalyst for the significant increase in productivity companies need to stay competitive. Today, we leverage our legacy in advanced composites manufacturing to develop and deliver automated solutions to the composites industry that enable our customers to achieve high production rates and radically low conversion costs. Innovation is achieved by combining in-house Research and Development with partnerships and collaborations with leading academic and industrial specialists. Airborne's reputation as a true innovator in the automation and digitalisation of the composites manufacturing processes is based on its automated solutions. These combine off-the-shelf industrial components with purpose-built sub-systems, end effectors and in-house developed software, resulting in cost effective, highly flexible, and modular automated solutions. Learn more at www.airborne.com



[Solvay's Composite Material Battery Enclosure Design Concept]. (Photo: Solvay)