

## **Freudenberg Showcases E-Mobility Solutions at the 2017 Battery Show North America**

**Novi (US), Sept. 11, 2017. As the world races toward a future that promises new E-Mobility vehicle options, automotive manufacturers are focused on solving complex electric motor and battery challenges that impact the safety, quality and durability of their products. Freudenberg Sealing Technologies, a global leader in the development of engineered sealing solutions, will showcase a portfolio of innovative products developed to address E-Mobility challenges at this week's 2017 North American Battery Show in Novi (US).**

The company will display components that assist with thermal management, power efficiency, friction reduction, weight reduction and compact installation spaces, among others. Freudenberg engineers are analyzing customer needs in these areas and have developed material and design solutions that help optimize E-Mobility systems.

“Our job is to understand E-Mobility performance requirements and quickly develop safe, effective solutions,” said Michael Tercheck, Global Market Segment Manager Automotive, Freudenberg-NOK Sealing Technologies. “By applying our long-standing material and design expertise to challenges in the E-Mobility arena, we can offer automotive customers new sealing options that incorporate some of our most innovative, successful company technologies.”

Some of the company's solutions for lithium-ion batteries, for example, include the Curve Gasket, Offset Seals, O-Rings and Large Format Gaskets. As in standard internal combustion systems, these Freudenberg components help reduce friction, emissions and weight in the lithium-ion batteries used electric vehicles. They also offer easy handling and assembly. Careful consideration of the unique heat and pressure conditions these components face in E-Mobility applications has prompted Freudenberg to offer them in a wide range of materials; among them are elastomers that meet strict E-Mobility flammability standards.

Product demonstrators at the Freudenberg booth will highlight other E-Mobility component offerings including pouch cell fixation elements and the company's new DIAvent pressure management solution. DIAvent provides ideal pressure management in large-scale batteries used in electric and hybrid vehicles. DIAvent is made up of multiple layers of a nonwoven fabric and an umbrella membrane that provide extremely high gas permeation during normal operation

and a reversible, emergency degassing function in case of a cell malfunction. DIAvent is water tight and oil resistant, meets multiple protection category requirements for dust, water and particles contamination and can be quickly assembled and installed in the battery.

Freudenberg will also display a number of electric motor and inverter and charger solutions at the show. For electric powertrains, the company's Energy Saving Seal (ESS) can lower friction by up to 40 percent in uni-directional applications. Its Low Friction Simmerring® Shaft Seal (LFS) reduces friction by as much as 20 percent. A Simmerring Shaft Seal with a conductive nonwoven element saves weight and space, is cost efficient and reduces the risk of a shaft becoming electrically charged and damaging the gearbox. This seal is available in multiple primary sealing lip designs and materials. Freudenberg's 2K Plug & Seal offers multiple E-Mobility benefits including a reduction in system weight, a customizable design, complex sealing geometries and chemical bonding between the component's hard and soft materials that eliminates potential leakage. Encoders, Edge Bonded Seals, Plug and Seal components and Coated Embossed Gaskets round out the options for electric powertrain applications. Inverter and charger options include Press-in-Place Gaskets, sealing covers, Offset Seals and O-Rings.

"As manufacturers continue to pursue E-Mobility systems and designs, our goal is to deliver battery and powertrain solutions and expertise that help propel this industry forward," said Tercheck. "We are deeply involved in the emerging world of vehicle electrification and excited by the prospect of further collaboration with key industry players."

The 2017 North American Battery Show is being held at the Suburban Collection Showplace in Novi (Mich.) Sept. 12-14. Visitors can talk with Freudenberg E-Mobility experts and view products at the company's booth #1246.

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#### **About Freudenberg Sealing Technologies**

As the leading specialist in sealing applications and their markets, Freudenberg Sealing Technologies (FST) is a supplier as well as a development and service partner serving customers in a wide variety of sectors including the automotive industry, civil aviation, mechanical engineering, shipbuilding, the food and pharmaceuticals industries, and agricultural and construction machinery. In 2016, FST generated sales of about €2.3 billion and employed more than 15,000 people. Freudenberg-NOK Sealing Technologies runs the business operations for FST in the Americas. The company is headquartered in Plymouth, Mich. and operates more than 20 facilities across the Americas. For additional information, please visit [www.fst.com](http://www.fst.com).

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