

Smart Materials from Freudenberg Discussed at Rubber in Automotive Conference

Freudenberg's Joseph Walker chairs the event on June 13-14 in Troy, Mich.

Plymouth (USA), June 12, 2017. Elastomeric seals, long the unsung heroes of efficient powertrain technology, will evolve in the future to monitor their own wear, measure forces and perform other crucial functions thanks to the introduction of advanced polymers and smart materials from Freudenberg Sealing Technologies.

While the primary function of seals – sealing media against leakage – cannot be compromised, rising demands for reliability, data mining and digitalization are driving new interest in seals that act as sensors and actuators in vehicle systems, said Dr. Boris Traber, Global Director, Advanced Material Development, Freudenberg Sealing Technologies. The company has developed a portfolio of unique smart materials that combine different material properties to achieve sensor and actuator functions in seals.

Traber is one of 23 industry experts who will explore the role that elastomers are playing in a changing automotive industry at the “Rubber in Automotive” Conference June 13 and 14 in Troy, Mich. The conference, co-sponsored by Freudenberg and Crain's Rubber & Plastics News newspaper, is being chaired by F. Joseph Walker, Global Technology Director, Materials and Laboratories Development for Freudenberg-NOK Sealing Technologies. Freudenberg-NOK runs the business operations for Freudenberg Sealing Technologies in the Americas.

“The rubber industry is challenged to constantly create disruptive technologies that are presented to the customer to stimulate innovation and drive the introduction of advanced designs,” Walker said. “This push toward continuous creation of disruptive rubber technology will insure the long-term health of the rubber industry. This conference will open up a dialogue about the need to embrace innovation and new technologies among industry participants.”

Speakers at the conference will present on a variety of topics including

economic forecasts; manufacturing best practices; risk mitigation through advanced modeling; examination of emerging technologies in polymers, materials and lubricants; and issues surrounding sustainability.

Traber's presentation will look at Freudenberg materials that incorporate electrically-conductive or magnetic material fillers as well as intelligent coating systems to facilitate rubber seals to process electrical signals emitted by various vehicle systems. The company has conducted extensive research on how to introduce these unique fillers into elastomer mixtures to ensure that high elasticity, good setting behavior, high tolerance for temperature fluctuations and good media resistance are preserved while facilitating additional seal functionality. The company is also researching how the use of smart materials in dynamic sealing applications such as diaphragms can track the movement, force and position of entire systems and components.

Freudenberg will highlight how its smart materials work in a demonstrator at its conference display. The company will also showcase a variety of other advanced elastomeric materials including its patented FluoroXprene® fluoroelastomer, Simriz498, bio-based ethylene propylene diene monomer (EPDM), and high temperature polyacrylate rubber (ACM).

Additionally, Freudenberg will present unique material applications at the show, including FluoroXprene coated components, high-temperature Fluoro Rubber (FKM) seals, low temperature shaft seals, low friction coated components, low hardness FKM valve cover gaskets, diesel exhaust treatment seals and continuously extruded and curved FKM samples.

Additional information on Freudenberg's material expertise can be found at:

<https://www.fst.com/products/materials>. For additional information on the Rubber in Automotive conference, go to: <http://www.cvent.com/events/rubber-in-automotive-conference/event-summary-e8d8dbf13edb475685f010b4808c6969.aspx>

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About Freudenberg Sealing Technologies

As the leading specialist in sealing applications and their markets, Freudenberg Sealing Technologies 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, Freudenberg Sealing Technologies generated sales of more than €2.3 billion and employed approximately 15,000 people.

Freudenberg-NOK Sealing Technologies runs the business operations of Freudenberg Sealing Technologies (FST) in the Americas. Being part of the global Freudenberg Group, the company is a leading producer of advanced sealing technologies for a variety of markets including: aerospace; agriculture; appliance; automotive; construction; diesel engine; energy; food and beverage; heavy industry; and pharmaceutical. Freudenberg-NOK Sealing Technologies is a joint venture between Freudenberg and NOK Corp. in Japan, is headquartered in Plymouth, Mich. and operates more than 20 facilities across the Americas. More information at www.fst.com