

Press release

Innovative solutions for the cars of tomorrow

Freudenberg Group develops leading technology

Weinheim, September 7, 2017. The IAA in Frankfurt opens its doors a few days from now. “Future now” is this year's motto for one of the biggest automotive fairs in the world, and one thing is certain: Tomorrow's mobility will not be today's mobility. This is the biggest change in mobility since cars were invented. The combustion engine, hybrid technology, fuel cells, vehicles operated purely by electricity or autonomous driving - when will these technologies emerge? At the technology company Freudenberg, experts from all over the world work on innovative solutions, to make new concepts suitable for the mass market.

Freudenberg Sealing Technologies, Freudenberg Performance Materials, Freudenberg Filtration Technologies, Freudenberg Chemical Specialties, Vibracoustic – these Business Groups are already solution providers for questions relating to the future of automobiles. “The world is changing and we already have these changes firmly in view. Therefore, ‘new mobility’ is also an important part of our strategy for the years 2018-2020” explains Dr. Mohsen Sohi, Freudenberg Group CEO.

The demands on the supply industry are many and the possibilities go beyond the classic automobile topics: Safety, infrastructure, range, costs, raw materials, energy production, speed of innovation. What can Freudenberg contribute? There are components in the battery, the engine, the charging unit and many other elements. Filters ensure [cleaner air](#) in vehicle interiors.

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Thanks to the latest vibration control systems, cars are quieter, more efficient because of specialty lubricants, and cleaner with the aid of high tech seals.

Innovative battery technology

A key to the success of electro-mobility is the provision of [more powerful batteries](#). These are the heart of new mobility. The focus is on thermal management and safety. Because of this, the Freudenberg Group has developed [a safety separator for lithium-ion batteries](#). This remains stable at temperatures of up to several hundred degrees Celsius and does not shrink. In addition, it is significantly less sensitive to mechanical stress than conventional products. A further plus: use of the safety separator reduces the production cost of lithium-ion batteries.

On the subject of thermal management, [new seals](#) from Freudenberg in traction batteries, contribute to making the production of electric vehicles more economical, even in small numbers. The patented concept was developed especially for numbers of up to 5,000 batteries per year. It complements existing seals that are designed for large scale production.

Fuel cells

The fuel cell automobile is the alternative to battery powered vehicles in the field of zero-emission vehicles. The [fuel cell](#) is already in use and is considered to be a significant source of energy for the future. Gas diffusion layers (GDL) from Freudenberg contribute to making this technology ready for series production and more economical. They are already being used successfully in the first mobility applications. [Special filter solutions](#) and technology-specific [humidity elements](#) from Freudenberg provide pre-treatment of the air for fuel cells and ensure optimal constant operation over their entire lifetime. In addition, precise [sealing solutions](#) are needed to provide efficient and safe energy.

Environmentally friendly solutions for combustion engines

There is no uniform opinion as to how quickly the market will change. There is a consensus that the combustion engine will continue to play a role for several years. Hybrid solutions are an important transitional technology, which will often be seen on the road in the medium term. Fuel cells and pure electric battery-operated vehicles are the future. Companies such as Freudenberg also face a double challenge: Combustion engines and [new mobility concepts](#) will remain equally relevant in the market for several years. Thus, it is even more important to offer environmentally friendly solutions.

Increasing fine dust pollution, especially in cities, can also be a burden on vehicle occupants if the air conditioning air is not adequately purified. With their innovative [filter concept](#) Freudenberg provides cleaner air, and therefore greater driving comfort and driving safety.

Sealing technology opens enormous potential, in order to make sustainable contributions to the mobility of today and tomorrow. With [LESS](#) – Low Emission Sealing Solutions – Freudenberg combines product innovations which reduce friction losses, interior space, weight, fuel consumption and emissions.

About the Freudenberg Group

Freudenberg is a global technology group that strengthens its customers and society long-term through forward-looking innovations. Together with its partners, customers and research institutions, the Freudenberg Group develops leading-edge technologies and excellent products and services for more than 30 markets and for thousands of applications: seals, vibration control components, nonwovens, filters, specialty chemicals, medical products, IT services and the most modern cleaning products.

Strength of innovation, strong customer orientation, diversity, and team spirit are the cornerstones of the Group. The 168-year-old company holds strong to its core values: a commitment to excellence, reliability and pro-active, responsible action. In 2016, the Freudenberg Group employed more than 48,000 people in almost 60 countries worldwide

and generated sales of approximately €8.6 billion. For more information, please visit www.freudenberg.com.