News Release

BASF presents innovative solutions for the automotive industry at IAA 2017

- **BASF materials enable less emissions, reduced weight and higher comfort**
- **Special polyamides open up new design perspectives for the car interior**

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At this year's Internationale Automobil Ausstellung (IAA) in Frankfurt BASF presents innovative catalysts, battery materials and plastics to shows how automotive manufacturers can reduce emissions, save weight and improve safety, comfort and design of their vehicles. From September 12 to 15, trade show visitors have the possibility to see for themselves in hall 4.1, booth E28, the variety of functional materials and solutions by BASF for the mobility of the present and the future. Visitors will be able to see components for chassis, powertrain, interior and exterior.

Catalysts and battery materials for clean air

New catalysts and battery materials by BASF enable vehicles to have a lower environmental impact, whatever powertrain technology they use. Since September 1, 2017, the new European emissions legislation Euro 6d is in place. This includes strict emissions limits for cars which have to be met – not only in test cycles but also in real-life driving patterns. With catalysts by BASF for gasoline- and diesel-powered vehicles automotive manufacturers can meet the Euro 6d legislation and realize the necessary improvement of air quality.

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At IAA, BASF showcases the compact **EMPRO™ Four-Way Conversion catalyst (FWC™)** for gasoline-powered vehicles for example. It is a single component in which the internal walls of a particulate filter are coated with catalytically active materials. This not only converts carbon monoxide, non-combusted hydrocarbons and nitrogen oxides into water, nitrogen and carbon dioxide, but also removes harmful particulate matter from the engine exhaust. This enables automotive manufacturers compliance with the new, strict emissions regulations, while reducing complexity and costs.

The patented **EMPRO™ SCR.2F (Selective Catalytic Reduction on Filter)** combines SCR technology with a diesel particulate filter to control nitrogen oxides and particulate matter emissions on a single component, saving weight and space.

Ground-level ozone, the main component of smog, is particularly common in city centers. **EMPRO™ PremAir® NXT** is a catalytic coating that is applied to automotive radiators. As air passes over the radiator while the car is moving, the coating converts harmful ozone molecules into oxygen.

For applications such as full-electric, plug-in and hybrid vehicles new generations of battery materials are needed. BASF presents its broad portfolio of **battery materials** at the IAA booth. BASF develops and produces customized cathode materials such as Nickel Cobalt Manganese (NCM) oxides and Nickel Cobalt Aluminum (NCA) oxides for lithium-ion batteries contributing to higher energy density, safety and increased performance.

Vibration-reducing components for more driving comfort

With the microcellular polyurethane elastomer **Cellasto®** and new, innovative hybrid mounts in combination with compact polyurethane, BASF offers customized solutions that lower noise and vibration in vehicles. At the same time, weight reductions of up to 30 percent per part can be achieved and the high power-density of the materials enables not only space reduction but also better durability.

The automotive megatrends are set to significantly increase requirements for the NVH comfort (NVH: Noise, Vibration and Harshness) again. E-mobility and autonomous driving lead to changed frequency specifications in the simulation, new modes of operation and demand for lightweight. BASF offers the right solutions with new materials and innovative products. At the booth, top mounts, coil-spring-isolators as well as elastic mounts for motor and chassis with different material combination will be featured. The **Cellasto® motors mounts** fulfill also the special requirements of electric and hybrid vehicles with their lightweight, compact design and extraordinary acoustic isolation.

For the first time, BASF presents **subframe mounts made of a new, low stiffening and compact polyurethane** to a broader public at IAA. They help to improve driving safety, driving dynamics and driving comfort.

In addition to that, the **new recipe LS24 of Cellasto®** from microcellular polyurethane elastomers will be featured. It displays lower dynamic stiffening performance than conventional recipes, making it an ideal choice for top mounts, NVH powertrain and chassis applications.

Engineering plastics for car interior and body

At the IAA, BASF will be presenting engineering plastics for the car interior, the chassis and the powertrain. For the first time, **two unique special polyamides** for the car interior will be presented to the public: They open up new design perspectives for high-gloss surfaces, back-lit structural and functional elements as well as designs which are pleasant to the touch. Both plastics are cost-efficient material solutions for visually and chemically demanding applications. These materials fulfill the strict requirements of the automotive industry regarding emissions and odor in car interiors.

BASF will also be displaying structural components that were developed together with leading automotive suppliers and optimized with the help of the simulation tool **Ultrasim®**: The engine mounts,

transmission crossbeams and transmission adapters made from glass-fiber reinforced **Ultramid®** meet the growing customer requirements for crash and NVH behavior in the powertrain. They also demonstrate the excellent correlation between Ultrasim® simulation and component behavior and thus point to potential cost savings.

The stand will furthermore feature an overview of the expanded **Ultramid® range** for the charge-air duct in combustion engines of today and the future. The tailored range of PA6 and PA66 grades meets the increased requirements on the materials, their mechanical properties and temperature resistance. This means the part developer can choose the optimum material for the respective component in the charge-air duct that offers the best value for money. Selected grades are based on global specifications.

In addition, BASF presents the thermally stable **Basotect® TG** melamine resin foam. It is now being used for the acoustic layers in the Volkswagen EA888 engine for the Jetta, Golf, Passat, Tiguan, and Beetle models produced in North America. The use of Basotect® provides not only superior noise absorption, but also flame retardance and high weight reduction due to its component weight of under 20kg/m³. Basotect® TG is the only thermoset melamine foam, which is specially manufactured for thermoforming to make sophisticated three-dimensional components also for tight spaces.

More information:

www.plasticsportal.eu
www.polyurethanes.basf.eu
www.catalysts.basf.com

Visit BASF at IAA

Hall 4.1, booth E28
Trade press days: September 12 and 13, 2017
Trade visitor days: September 14 and 15, 2017

About BASF and the automotive industry

The automotive industry is one of BASF's key customer industries. In 2016, BASF's automotive driven sales totaled €10 billion – representing approximately 17 percent of BASF Group's sales. BASF supplies and develops functional materials and solutions that enable vehicles to be built more efficiently and have a lower environmental impact, whatever powertrain technology they use. BASF's product range includes for example plastics, coatings, catalysts, automotive fluids as well as battery materials. With such an extensive range of products, BASF is the world's leading chemical supplier to the automotive industry. BASF cooperates closely with customers all over the world through a network embracing Europe, Asia-Pacific, North and South America as well as Africa. Further information on BASF's solutions for the automotive industry is available on the internet at **automotive.basf.com.**

About BASF

At BASF, we create chemistry for a sustainable future. We combine economic success with environmental protection and social responsibility. The approximately 114,000 employees in the BASF Group work on contributing to the success of our customers in nearly all sectors and almost every country in the world. Our portfolio is organized into five segments: Chemicals, Performance Products, Functional Materials & Solutions, Agricultural Solutions and Oil & Gas. BASF generated sales of about €58 billion in 2016. BASF shares are traded on the stock exchanges in Frankfurt (BAS), London (BFA) and Zurich (BAS). Further information at: **www.basf.com**.