

Evonik's debut at the Auto Shanghai 2011

Leading partner of advanced materials & technologies as tier II supplier for automotive industry

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- Introducing the key innovation clusters for the automotive industry: Lightweight Design, Fuel Savings and Emission Reduction, Surface Technologies, Lighting Technologies
- Evonik is committed to provide innovative material concepts based on special chemicals for advanced solutions for the automotive industry
- Booth number W4/D056, Shanghai New International Expo Center, April 21–28, 2011

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For the first time, Evonik Industries will demonstrate a wide range of applications for cars at the 14th Shanghai International Automobile Industry Exhibition (Auto Shanghai 2011) from April 21 to 28 in Shanghai, China.

The theme of Auto Shanghai 2011, "Innovation for Tomorrow", reflects that low-carbon, green economy and sustainable development will become trends of the high-aiming Chinese automotive industry. This concept fits perfectly with Evonik's four key innovation fields in the automotive industry, namely Lightweight Design, Fuel Savings and Emission Reduction, Surface Technologies, and Lighting Technologies.

China's overall auto sales rose 32.4% to 18.06 million units in 2010. The automotive industry is one of the most important and high growing markets for Evonik. As a global leader of specialty chemicals, Evonik is committed to develop our products and solution catering to the new demands of the automotive industry.

Lightweight design in the spotlight

As the largest auto manufacturer and market, China has to tackle the challenges from energy shortage and environmental pollution at the same time. Responsible individuals and organizations are thinking how to improve the living standard in a more sustainable way, such as driving our cars of higher energy efficiency while achieving lower carbon emission.

In order to capture the opportunities in an energy efficient automotive market, Evonik has set up the Lightweight Design Automotive project in China last October. "Our goal is to speed up the development and

application of Evonik’s innovative lightweight materials for the Chinese Automotive Industry,” said Xu Hang, Project Head of Lightweight Design.

Evonik’s products have been successfully used in the lightweight design of vehicles, such as ROHACELL® foam core for sandwich structure of hatch back, PLEXIGLAS® for automotive glazing, VESTAMELT® adhesion promoter for structural hybrid parts, etc. ROHACELL® foam core covered with fiber reinforced materials can lower the weight of a car body significantly by 60 percent compared to steel parts. Diamines marketed under the trade name VESTAMIN® are indispensable components in high performance fiber reinforced epoxy parts imparting high strength, light weight sandwich as well as monolithic composite structures. PMMA glazing by Evonik offers a weight savings potential for car screens by 40–50 percent, but still has excellent performance in acoustics, UV resistance and weathering. Structural hybrid parts incorporating VESTAMELT® adhesion promoter can reduce material consumption by about 25 percent but as strong as before or even higher in bond forces between steel and polymer.

Innovative and eco-friendly technologies

Global warming, growing oil prices and restricted crude oil resources claim new technologies which reduce the fuel consumption of vehicles. And Evonik provides intelligent answers for tires, tubing systems and power train.

For example, the use of silane additive Si 363® allows the tire’s rolling resistance to be reduced by about 10 percent compared with conventional tires, which leads to fuel savings of 3 to 8 percent. The product has already been applied in Aspire Low Rolling Resistance tire. Fuel lines made of Evonik’s special plastics are, by virtue of their durable properties, thinner and lighter and thus more easily formable than common systems of metal or elastomers. They are also able to lower weight considerably. Under the VISCOPLEX® trademark, Evonik RohMax develops high-performance components added to lubricants to make them more efficient and reliable, as well as to prolong the service life of engines and gears (transmission systems).

In addition, Evonik will also display a “Heat BuildUp” box with illumination, which demonstrates the concept of PLEXIGLAS® Heatstop® – a specialty molding compound. It is particularly suitable for dark-

coloured exterior applications; its special formulation enables it to reflect solar heat radiation. Car roofs made from PLEXIGLAS® Heatstop® “with cool touch effect” show up to 22 percent less heat build-up than components made from conventional materials. They therefore reduce the temperature inside the vehicle by an average of 5 °C, related to the solar radiation on a regular summer’s day in Central Europe. Light-stable polyurethanes based on VESTANAT di- and polyisocyanates find applications in premium quality automotive interior trim like e.g. skins for I-panels, domings for decorative parts and leather coatings as well as soft-feel-coatings.

Developing trends for cars of tomorrow

Vehicles of today offer a unique combination of advanced technologies and aesthetic, functionality and environmental awareness. That’s where high grade coatings are applied – specifically developed for the automotive industry. Moreover, a good illumination is an enormous factor to enhance safety. Improved vision for the driver and improved visibility of the vehicle are both important aspects of safety. Therefore, surface and lighting technologies will be the next further development fields for Evonik in the automotive industry.

Evonik provides plastics for both the interior and exterior parts of automobile, while they do not only feature excellent UV resistance and weatherability, but also lower fuel consumption and thus CO₂ emissions. PLEXIMID® TT70 gives headlamp lens and light guide manufacturers a material that can cope with the high heat loads and permits dynamic styling at the same time. PLEXIMID®, a grade of polymethylmethacrylimide (PMMI), is a further development of PLEXIGLAS® PMMA product and shows similarly high transparency and resistance to weathering and UV light as the other popular PMMA products from Evonik.

High speed for innovations: the Automotive Industry Team of Evonik

The Automotive Industry Team (AIT) of Evonik was founded in 2004 as a cut surface to the Original Equipment Manufacturers. This team bundles the competencies of four business units from Evonik as development partner for new technologies. The China AIT is established in 2006, with aims to provide localized and customized solutions for local OEMs, catering to the market trends and needs of Chinese automotive industry.

Leverage on this platform, we are determined to push on new material concepts in the automotive industries and boost the necessary innovation speed.

Detailed information on Evonik's products and innovations for the Automotive industry is available at www.evonik.com/automotive

About Evonik

Evonik is the creative industrial group from Germany. In our core business of specialty chemicals, we are a global leader. In addition, it has energy and residential real estate operations. Our performance is shaped by creativity, specialization, reliability and continuous self-renewal. Evonik is active in over 100 countries around the world. In fiscal 2010 more than 34,000 employees generated sales of around €13.3 billion and an operating profit (EBITDA) of about €2.4 billion.

Evonik Industries has been producing specialty chemical products in China since the early 1990's; with wide-ranging trading relations already in place prior to this. The Group now has a total of 18 companies and 15 production sites in the region. Evonik regards China as one of the driving forces of the global economy, and we consequently intend to increase our business in Greater China to around €2 billion by 2015.

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