



Evonik leads the race with Plexiglas

Automotive manufacturers join forces with engineered material companies to create sleeker, more efficient car models on the roads. APN looks at the latest on the race track.

Better, faster, stronger

The Evonik Plexiglas significantly reduces the weight of car screens. After testing new material concepts in racing cars, the successful technical concept is now on the way to be transferred to serial production. Every pound counts—not just at summery beaches, but also in cars at the race track. “A weight reduction by 40 to 50 percent in a single component makes the heart of every race car engineer beat faster,” says Martin Roos, owner of Red Motor Sports from the North-Rhine Westphalia town of Mettmann, about the significance of light-weight design in cars. The Lotus Exige race car, which is upgraded and weight-reduced with parts of Evonik Industries, one of the world’s largest specialty chemicals manufacturers, is no exception. The automotive specialists of the Group have made light-weight design one of their priorities. Thus, the front and side windows of the British race car are made of polymethyl methacrylate (PMMA), which Evonik sells under the brand name Plexiglas.

As a special feature, the side windows have a composite design made of Plexiglas with a soft inside layer. The result is that the composite windows weigh only half as much as conventional glass windows. Even though weight is of central importance in car racing, PMMA-based Plexiglas has “many additional impressive advantages,” notes Klaus Hedrich, the head of the Evonik Automotive Industry Team (AIT). The composite design is primarily characterized by high rigidity and transparency, excellent acoustics, and outstanding UV- and weather-resistance. Furthermore, “the material is highly resistant to ageing.” And the material is much more resistant to stone chipping than glass.

The multi layer polymer screens are lightweight and highly efficient. They have already passed the mandatory ball drop test and showed no splintering. Says Hedrich: “It goes without saying that the engineers at

Evonik are working hard and at top speed to make such composite solutions available for all vehicle screens.” This also opens up an opportunity to integrate additional functions into the window panes.

Giant leaps for Evonik’s automotive success

Even more recently, the success of Evonik was celebrated at one of the most important Chinese local automotive OEM’s research and engineering center, the Chery Automotive Research and Engineering Institute in Wuhu, Anhui Province.

An OEM Day was organized by the China members from Evonik’s Automotive Industry Team with the support of Chery. “This OEM Day is designed to build up the bridge between the Evonik solutions and the OEM requirements of the automotive industry,” says Mr. Sunny Liu, the AIT China coordinator, and sales & marketing director for Automotive Industry, High Performance Polymers. During the full day event, AIT China Team presented to the Chery engineers Evonik’s key competencies and expertise such as the Rohacell sandwich composites, ML Plexiglas glazing, ITO option for reducing heat in the car and Vestamid HTplus air duct application. These examples demonstrated Evonik’s focus on fuel savings and emission reduction, lightweight design, surface technologies and lighting technologies.

Mr. Li Zhong Bin, director of Material Department of Chery Automotive Research and Engineering Institute gave the opening speech and briefed the setup of Chery’s research and engineering organization as well as the material approval and validation process. As pointed out by Mr. Li, lightweight design will be one of the key success factors for compact metropolis car with less fuel consumption and even for the full electric ones. “We’d like to work with our materials suppliers for innovations, which will bring us opportunities to overcome the global economic crisis,” he said.

An exhibition of the auto parts from Evonik products was demonstrated at the entrance hall of Chery's main R&D building which generated a lot of interest. During discussions between Chery's engineers and Evonik sales and marketing team, both parties explored mutual interest in the automotive industry as well as opportunities to cooperate in the development projects of Chery Automobile. "China automotive OEM organisation and execution are very different from Europe and Japan. Chery reacts very fast to consumers' needs, current issues and welcomes new technologies. Evonik is proud to partner with you for success!" said Mr. Sven Augustin, project manager of Evonik Global Automotive Industry Team.

Business solutions

Sabic Innovative Plastics has launched its latest material solutions designed to help customers around the globe meet today's most pressing demands and challenges. In multiple sectors worldwide, Sabic's expansive product portfolio is helping to drive environmental responsibility, penetrate new markets and application areas, and enable customers to differentiate their products, all while increasing productivity and reducing manufacturing costs. Sabic continues to maintain an impressive array of new breakthrough end products from its co-development efforts with leading automotive manufacturers, such as Ford, Samsung, Motorola, and Toyota, underscoring how the company continues to be the supplier of choice among many of the world's top global brands.

Recently at the NPE 2009 show in June, Sabic impressed visitors with their technological innovations such as the new cutting-edge Ultem composites, and foam and fiber for new choices in ultra-high flame-smoke-toxicity (FST) performance, all leading to extreme toughness and lighter weight in automobiles. New LNP specialty compounds reinforced with natural fibers, as well as a new virtually unbreakable bus driver safety shield using Lexan polycarbonate glazing with Exatec E900 plasma coating were also featured. To top it all off, the world renowned, award-winning Hyundai QarmaQ Advanced Technology Demonstration Vehicle, sporting sustainable horizontal body panels made with Xenoy iQ resin and Valox iQ resin, was displayed proudly as well.

"Our commitment to the plastics industry and our customers is unshakeable; clearly evidenced by the aggressive steps we are taking to continue accelerating the development of newer and better sustainable, high-performance, top-quality materials," said Charlie Crew, Sabic's president and chief executive officer. "Our goal is to catapult our materials to greater technological excellence, creating the most innovative products on the market today to help our customers succeed and grow in both existing and new sectors."

"Our presence at NPE not only showcased our newest technologies, but also demonstrated how Sabic is

moving forward with a focused business strategy designed to help take our customers to new levels of success," said Khaled Al-Mana, vice president of Sabic Polymers. "Across the company, we are broadening the capabilities of our materials, up-engineering our polymers to deliver new-generation global solutions, and anticipating and addressing the next industry trends and customer needs. Our approach is solid, our vision is clear and our position will continue to grow."



Toyota and Ingeo collaborate on eco-floor mats

Breathable car interiors

A special floor mat available for the fully-remodeled third-generation Toyota Prius uses an advanced Ingeo based fiber.

Known as the world's most eco-conscious car, Toyota Prius features world-leading mileage (38km/L), a solar powered ventilation system, and environmentally friendly plant-derived plastics for seat cushion foam, cowl side trim, inner and outer scuff plates, and deck trim cover. Now, the new Prius offers optional floor mats (deluxe type) using an advanced Ingeo fiber system.

As a result of reducing the use of fossil resource as much as possible in its manufacturing process from feedstock to factory shipment, Ingeo reduces the fossil fuel use by 65% and cuts by 90% the CO2 emission when compared to the petroleum-derived nylon resin used in traditional floor mats. By adopting the Ingeo mat products, Toyota benefits from the unique environmental advantages of a fiber made from plants, not oil. This adoption of new floor mats exemplifies Toyota's belief that the use of environmentally friendly materials is as equally important as design and product performance.

"We have long looked at Japan as an 'innovation engine' for our Ingeo business," noted Marc Verbruggen, NatureWorks CEO. "With Toyota's latest development, we recognize their achievement in leading the automotive industry's efforts with excellence in biobased product performance and innovation".

New innovations for sleeker car models, such as the Hyundai QarmaQ

