

PRESS RELEASE

PARIS, FRANCE, March 5, 2018

SABIC SHOWCASES DISRUPTIVE INNOVATION IN THERMOPLASTIC COMPOSITE MATERIALS AND MANUFACTURING AT JEC WORLD 2018

SABIC, a global leader in the chemical industry, is featuring at JEC World 2018, several new breakthrough innovations in materials and manufacturing designed to drive broader adoption of strong, lightweight thermoplastic composites across the automotive, aerospace, consumer electronics and energy industries. Specifically, the company is displaying in stand L84, Hall 5, its growing portfolio of continuous fiber reinforced thermoplastic composite (CFRTC) tapes; releasing the results of an externally certified life cycle analysis of a passenger car side door using this material; and previewing a revolutionary, fully automated, large-scale production system for composite laminates that optimizes quality, speed, flexibility and cost-effectiveness. Moreover, SABIC will be exhibiting at JEC's Innovation Planet, a new application concept for the aircraft industry with a thermoplastic composite seatback featuring a hollow channel design.

At its stand, SABIC is launching a new UDMAX™ GPE 45-70 tape, a glass-filled high-density polyethylene composite suitable of applications used in the water distribution and oil and gas sectors. Additionally, SABIC is featuring a large roll sample of UDMAX™ GPP 45-70 tape, with a 4,000 meter running length, along with a variety of applications using this material, including an automotive bulkhead and an industrial pressure vessel.

SABIC is also giving a number of presentations. At the JEC Conference on Automotive and Transportation: Materials and Processes, Dave Brands, SABIC senior application engineering specialist, and Geert-Jan Doggen, SABIC senior business manager, will speak on Tuesday, March 8, from 10:25 to 10:50 a.m. on "Composite hybrid reinforcements in tailgates: a feasible solution for mass production". Additionally, SABIC will be presenting their new Digital Composites Manufacturing line, together with Airborne and Siemens, at the Siemens stand (G51, hall 6) on Tuesday, March 6 at 2 p.m., and on Wednesday and Thursday, March 7 and 8, at 10 a.m.

"Advanced thermoplastic composites are an emerging solution for applications that demand light weight and high strength to optimize sustainability, performance and design freedom," said Gino Francato, global business leader, Composites, SABIC. "Widespread adoption of thermoplastic composites depends on three enablers: new material technologies, efficient large-scale production processes and an accurate, scientific prediction of application performance. SABIC is investing heavily in all three areas.

Our growing portfolio of CFRTC offerings, our partnership with Airborne and Siemens on a digital composites large-scale production solution, and our expanding predictive engineering capabilities are three excellent examples of how we are doing this and underscore our unyielding commitment to our customers' success."

NEW UDMAX™ GPE Tape for Maximal Mechanical Performance

SABIC's new UDMAX™ GPE 46-70 tape is used to reinforce industrial pipes, boilers and storage tanks, to help customers significantly increase strength performance while reducing weight. "This new material is designed for use on industrial pipes and vessels and it can deliver excellent mechanical properties," said Hans Warmerdam, commercial director, SABIC FRT.

SABIC's UDMAX™ tapes are unidirectional CFRTCs that offer exceptionally lightweight and high strength as a replacement solution for metal, plywood and other traditional materials. They feature a proprietary high-pressure fiber impregnation technology (HPFIT™) that quickly and precisely enables the spread and combination of thousands of glass or carbon fibers with a thermoplastic matrix. "The result is a resin-rich surface containing a high density of continuous fibers, minimal void content and fewer broken fibers", added Joris Wismans, technology director, SABIC FRT. UDMAX™ tapes are available in different slitted sizes in rolls of up to 4,000 running meters.

Benefits to Several Industries

A superior replacement to traditional materials, CFRTC tapes can offer important benefits to many different industries. In automotive, UDMAX™ GPP 45-70 tape can help OEMs and designers reduce part weight to reduce fuel consumption and emissions to comply with current and upcoming regulatory requirements. To illustrate this, SABIC is featuring here the results of a life cycle assessment of a passenger car door that compared the performance of laminate parts made from UDMAX™ GPP tape with steel, aluminum and magnesium parts. The thermoplastic composite door achieved a lower carbon and energy footprint than the other materials.

For light commercial vehicles, UDMAX™ GPP tape can be used in sidewalls, floor and roof panels, replacing steel, wood or thermosets to provide lighter weight, toughness and durability.

Weight saving is of paramount importance to the aircraft industry. In order to demonstrate the potential of advanced CFRTCs, SABIC developed a seat back constructed from CFRTC of carbon fiber and ULTEM™ resin meeting Federal Aviation Regulation (FAR) compliance for flammability, smoke density and heat release. The prototype application – on display at the JEC Innovation Planet – features an integral, hollow channel design that delivers high strength-to-weight ratio and is lighter than aluminum.

The energy sector can also benefit from CFRTCs. Used to reinforce oil, gas and water pipes, UDMAX™ GPE 46-70 tape helps withstand high pressure and enables longer pipe sections to be produced compared to pipes made out of metal. SABIC is also displaying at its stand an industrial pressure vessel wrapped with UDMAX™ GPP 45-70 tape to demonstrate its resistance to pressure combined with lighter weight.

As consumer electronics devices become increasingly lighter and thinner, device covers made with thermoplastic composites can contribute to weight-out and design flexibility more effectively than aluminum and other materials.

The use of a carbon-fiber reinforced polycarbonate composite laminate in a smart tablet cover on display at the SABIC stand, is an example of SABIC's wide portfolio of material combinations that can be used for innovative applications in the consumer electronics industry.

Driving Efficiency and Predictability

Electronic device covers will be one of the initial focus areas for SABIC's upcoming Digital Composites Manufacturing system for large scale production, which is slated to open in the Netherlands in 2019. Through its partnership with Airborne featuring Siemens technology to create the new system – a fully automated and digitalized production line offering high speed and efficiency – SABIC aims to lower the system costs and streamline the production of applications made from thermoplastic composites.

To support its efforts in materials and manufacturing innovation, SABIC has expanded its predictive engineering capabilities at its Center of Excellence in Geleen, The Netherlands. The goal is to establish high confidence in the predicted performance of SABIC's materials in new applications using CFRTCs by employing tailored simulation software and proven methodologies.

“Customers have told us that they face three hurdles to the introduction of thermoplastic composites in their applications: cost, cycle time and design predictability,” concluded Francato. “Through materials innovation, disruptive automated digital manufacturing and sophisticated predictive engineering capabilities, SABIC intends to remove these hurdles and pave the way for broad adoption of advanced thermoplastic composites across industries and geographies.”

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ABOUT SABIC

SABIC is a global leader in diversified chemicals headquartered in Riyadh, Saudi Arabia. We manufacture on a global scale in the Americas, Europe, Middle East and Asia Pacific, making distinctly different kinds of products: chemicals, commodity and high performance plastics, agri-nutrients and metals.

We support our customers by identifying and developing opportunities in key end markets such as construction, medical devices, packaging, agri-nutrients, electrical and electronics, transportation and clean energy.

SABIC recorded a net profit of SR 17.8 billion (US\$ 4.8 billion) in 2016. Sales revenues for 2016 totalled SR 132.8 billion (US\$ 35.4 billion). Total assets stood at SR 316.9 billion (US\$ 84.5 billion) at the end of 2016. Production in 2016 stood at 72.7 million metric tons.

SABIC has more than 35,000 employees worldwide and operates in more than 50 countries. Fostering innovation and a spirit of ingenuity, we have 12,191 global patent filings, and have significant research resources with innovation hubs in five key geographies – USA, Europe, Middle East, South Asia and North Asia.

The Saudi Arabian government owns 70 percent of SABIC shares with the remaining 30 percent publicly traded on the Saudi stock exchange.

NOTE TO EDITORS ABOUT SABIC AT CHINAPLAS AND NPE 2018

SABIC will exhibit at Chinaplas 2018 (booth #6.2G51) in Shanghai, China, from April 24-27, 2018, and at NPE 2018 (booth #S19001) in Orlando, Fla., USA, from May 7 – 11, 2018. At both events, the company will share new developments and showcase a range of innovative solutions from both its petrochemicals and specialty plastics portfolios for end-use applications across multiple industries, including transportation, building & construction, healthcare, consumer, electronics & electrical, and packaging.

PHOTOS AND CAPTIONS



In order to accelerate the adoption of UDMAX™ tapes, SABIC is showcasing at JEC World 2018 disruptive innovation for the mass production of laminates, technical capabilities, application concepts and its new glass fiber high-density polyethylene tape.

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