

# PRESS RELEASE

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## SABIC PREVIEWES BREAKTHROUGH MASS PRODUCTION TECHNOLOGY FOR THERMOPLASTIC COMPOSITE LAMINATES

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Thermoplastic composites are prized for their light weight and exceptional strength. However, mainstream adoption has lagged due to shortcomings in existing production processes, which are slow, costly, and labor- and waste-intensive. To drive broader use of these advanced materials across multiple industries, SABIC, a global leader in the chemical industry, has invested in the composites industry's first automated, digital system for the large-scale manufacturing of laminates made with its continuous fiber reinforced thermoplastic composite (CFRTC) tapes.

Exhibiting at JEC World 2018 in stand L84, hall 5, SABIC is previewing the Digital Composites Manufacturing system, an automated and digitized production line developed with [Airborne](#) and powered by Siemens. The new line, slated to go live in early 2019, will aim to offer customization capabilities – using sophisticated technologies and processes that can drive down cycle times and system costs. Click here to learn more: [video Digital Composites Manufacturing system](#).

At JEC World SABIC, Airborne and Siemens are presenting the Digital Composites Manufacturing line together at the Siemens stand G51, in Hall 6, on Tuesday, March 6 at 2 p.m., Wednesday, March 7 at 10 a.m. and Thursday, March 8, at 10 a.m.

“Rapid mass production of high-quality, fully customized thermoplastic composite parts at an affordable cost will soon be a reality,” said Gino Francato, global business leader, Composites, SABIC. “The upcoming launch of our Digital Composites Manufacturing line – the composites industry's first large-scale production solution – is a major step toward that goal.”

Arno van Mourik, chief executive officer of Airborne, added: “With Airborne's ingenuity and more than 20 years of experience in composites manufacturing processes, we are developing this line using Industry 4.0 automation and data exchange principles. This will enable SABIC's customers to develop, prototype and produce unique, differentiated products that leverage the strength and light weight of SABIC's continuous fiber reinforced thermoplastic composites.”

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## **Fast and Fully Automated**

The new large-scale manufacturing line, built by Airborne at its facility in The Netherlands using Siemens factory automation and digital control software, can produce multiple thermoplastic composite laminates every minute, achieving over a million parts annually.

"To achieve such fast and reliable production performance for composites, intensive collaboration between Airborne, SABIC and Siemens is a must," said John O'Connor, director of Product & Market Strategy, Specialized Engineering Software at Siemens. "Our joint ambition is to strengthen the competitiveness of Airborne and SABIC by increasing flexibility, productivity and speed of innovation. To this end, digitization is key when it comes to a breakthrough in the production process."

For ultimate flexibility, this system can be remotely operated, and can run multiple laminate sizes simultaneously. Machine learning concepts will be used to fine-tune quality and adaptive process control will allow settings to be modified on the fly.

The Digital Composites Manufacturing line will be supported by predictive engineering capabilities at SABIC's Center of Excellence in The Netherlands. Predictive engineering for UDMAX™ tapes is based on computer-aided engineering (CAE) software that uses material data and material modeling (such as elastic properties and damage initiation/rupture behavior) to create simulations of how the composite material will perform in an application during its use, taking into account the influence of manufacturing processes.

## **A Breakthrough for Thermoplastic Composites in Consumer Electronics**

The Digital Composites Manufacturing line will premiere its first-generation technology to meet immediate needs in the consumer electronics industry.

The Digital Composites Manufacturing line will be able to mass-produce lightweight, high modulus and low warpage, custom-engineered laminates as per thickness, dimensions, lay-up preferences and desired performance. Made with carbon-fiber reinforced polycarbonate composite, these SABIC laminates will be used for laptop covers.

"By responding to our customers' needs for increasingly lighter, yet stronger and thinner products in large scale, we will soon be enabling our customers to leverage the advantages of SABIC's laminates to achieve not only weight-out, but also design flexibility and shorter production cycle times for device covers – more effectively than ever before," concluded Francato.

Access to mass-produced thermoplastic composite parts can potentially benefit customers across a wide range of industries as well. To learn more about SABIC's thermoplastic composites, other markets and potential applications using these materials, and how SABIC is helping to advance the composites industry, click [here](#) to go to SABIC's JEC World 2018 Show press release.

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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.

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## PHOTOS AND CAPTIONS



As consumer electronics devices become increasingly lighter and thinner, SABIC is investing in the full digitalization and automation of mass production of composite laminates that can contribute to weight-out and design flexibility of device covers.

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