

## PRESS RELEASE

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### **SABIC FEATURES DIFFERENTIATED MATERIAL SOLUTIONS TO ADVANCE ADDITIVE MANUFACTURING PROCESSES AND SPARK APPLICATION INNOVATION AT FORMNEXT**

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SABIC, a global leader in the chemical industry, is reaffirming, through a multi-faceted exhibition here at Formnext 2018 (stand #3.1-G80), its determination to further the evolution of additive manufacturing technology and promote application innovation. By leveraging its unique, high-performance resin technologies and process capabilities to develop differentiated material solutions for various additive manufacturing processes, SABIC is creating significant value for customers and the industry as a whole.

Among its exhibit highlights, SABIC is featuring its newest filaments for fused deposition modeling, including a tough filament made from its high impact EXL resin. Addressing industry needs for greater choice, SABIC is also demonstrating the use of its filaments in open architecture printers from a range of equipment manufacturers. Another focus area at the show is large format additive manufacturing (LFAM): SABIC is highlighting various tooling applications, as well as parts printed from its LNP™ THERMOCOMP™ AM portfolio of specialty compounds. The company is also highlighting recent breakthroughs in the use of its amorphous resins with standard selective laser sintering (SLS) equipment to provide a range of sinterable materials that extends beyond currently available semi-crystalline powders.

“Today, additive manufacturing delivers unique value to customers through its ability to produce personalized, complex parts without the need for traditional production tooling,” said Keith Cox, senior business manager, Additive Manufacturing, SABIC. “Expanding additive manufacturing beyond its current capabilities requires advancements in material technologies. SABIC is contributing to this effort by developing differentiated products, innovating to increase production efficiency and supporting design optimization with robust material performance data. Through our proactive engagement across the value chain, we are helping the industry realize the full potential of additive manufacturing.”

#### **Expanding the Range of Material Solutions**

Differentiated resin capabilities, a broad portfolio and deep expertise empower SABIC to offer material solutions such as high heat ULTEM™ resins, specialty copolymers and reinforced

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compounds to customers throughout the additive manufacturing value chain. Additionally, SABIC is able to provide materials in printable form when this brings value to the industry.

For example, at Formnext, SABIC is highlighting its award-winning\* EXL AMHI240F filament, a high impact material now available in white, as well as black. Its formulation, which includes a proprietary composition coupled with optimized colorant technology, provides up to four times the impact strength of standard polycarbonate (PC) and a more ductile failure mode in printed parts, as confirmed by SABIC's material performance validation partner, RP+M. SABIC is showing several printed parts that demonstrate the versatility of EXL AMHI240F filament.

SABIC is involved in the research and development of new materials to help address the evolving needs of the industry. Featured at the stand are several developmental solutions that can provide improved performance versus options currently available in the market today. SABIC's FST filament offers ease of processing along with low smoke and toxicity properties, and is capable of meeting OSU 55/55 requirements for aerospace applications. A second concept material featured at the stand is EXTEM™ filament for potential applications requiring higher-temperature performance than ULTEM™ filament. SABIC is also developing an advanced breakaway support material to complement its aerospace grade ULTEM™ AM9085F filament. The new support filament offers faster removal of the scaffold structure from parts with complex geometries, and can help reduce the cost of post-processing operations.

Also on display are several parts printed with SABIC's high-performance filaments on a variety of open architecture printers, offering customers greater choice and the opportunity to pursue new application areas.

### **Optimizing Tooling with Large Format Additive Manufacturing**

SABIC's portfolio of THERMOCOMP™ AM reinforced compounds, which includes materials based on ULTEM™ resin, is helping to encourage the use of LFAM for specialized applications, such as high-temperature autoclave tooling for the aerospace industry, reusable tooling for the cast concrete industry and a wide range of lower-temperature large part thermoforming tooling. Printed tools can help to reduce cost, construction time, inventory and weight vs. traditional steel tools. SABIC is featuring a thermoforming tool for an aircraft interior panel printed on a Thermwood LSAM® machine using THERMOCOMP™ AM EC004XXAR1 compound, a SABIC material based on ULTEM™ resin with 20 percent carbon fiber reinforcement.

In addition to its development of tooling applications, SABIC is working closely with LM Industries Group Inc., parent company of Local Motors, to validate various large format materials for printing finished components of its next iteration of Olli, the world's first co-created, self-driving electric shuttle. On display in the stand is a fender from Olli, printed on a BAAM® machine from Cincinnati Inc. using one of SABIC's THERMOCOMP™ AM compounds.

### **Advancing Selective Laser Sintering Powder Technology**

To expand the scope of SLS, SABIC is developing innovative technology to help overcome some of the traditional drawbacks of amorphous resins in this process – including incomplete layer consolidation and parts with lower density, dimensional inconsistencies and sub-optimal physical properties. Using SABIC's proprietary technologies, the company has demonstrated the ability to produce fully amorphous parts with part densities above 96 percent, good dimensional stability and low refresh rates.

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SABIC representatives are available at Formnext to elaborate on the technical aspects of the company's recently announced materials and those still in development.

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- \* 2018 TCT Materials Award, Plastics category, <https://www.tctmagazine.com/tct-awards/tct-awards-2018-celebrates-best-of-industry>

## 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 18.4 billion (US\$ 4.9 billion) in 2017. Sales revenues for 2017 totaled SR 149.8 billion (US\$ 39.9 billion). Total assets stood at SR 322.5 billion (US\$ 86 billion) at the end of 2017. Production in 2017 stood at 71.2 million metric tons.

SABIC has more than 34,000 employees worldwide and operates in more than 50 countries. Fostering innovation and a spirit of ingenuity, we have 11,534 global patent filings, and have significant research resources with innovation hubs in five key geographies – USA, Europe, Middle East, South Asia and North Asia.

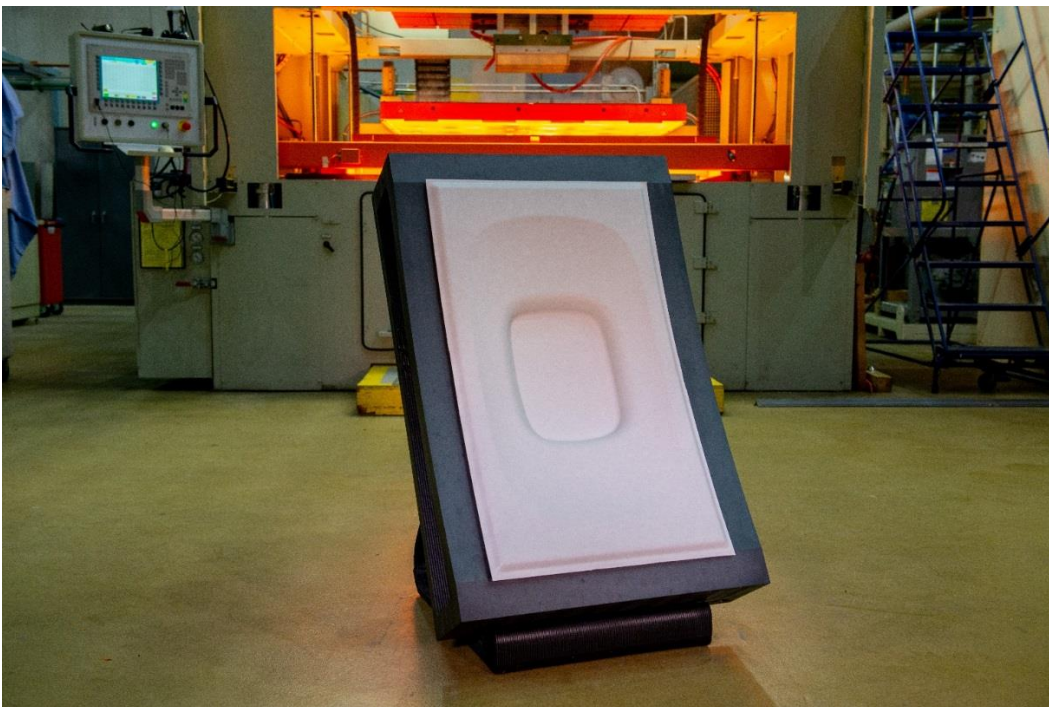
The Saudi Arabian government owns 70 percent of SABIC shares with the remaining 30 percent publicly traded on the Saudi stock exchange.

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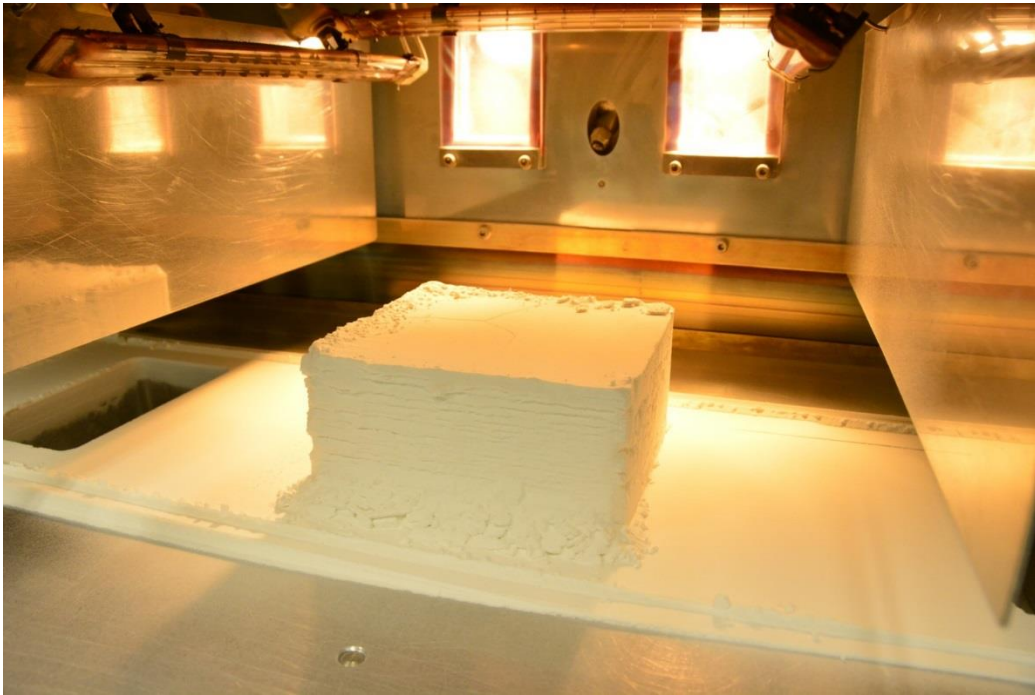
## PHOTOS AND CAPTIONS



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