Press Release

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Covestro AG
Communications
51365 Leverkusen
Germany

Contact
Dr. Frank Rothbarth
Telephone
+49 214 6009 2536
E-mail
frank.rothbarth
@covestro.com

Digitalization in appliance production

Covestro and Haier plan digitalization joint laboratory

Covestro, one of the world's leading polymer manufacturers, and the Haier Group, a major global brand for household appliances, have agreed to set up a joint laboratory in Qingdao, China, for the digitalization of appliance production. Both parties have signed an agreement thereon. The project will be supported by the Haier Institute of Industrial Intelligence.

The laboratory will develop digital solutions for using polyurethanes in appliance production – in line with Covestro's digitalization strategy. The objective is to set a new benchmark for digitalizing the chemical industry.

Best insulation with polyurethane
All over the world, polyurethane rigid foam is the material of choice for efficient refrigerator insulation. To insulate a refrigerator, a precisely dosed amount of polyurethane raw materials is injected into the outer cavity and fills it up completely during foam formation. Both this material and the related foaming process are crucial for the refrigerator industry.

Fully-automated, smart production depends primarily on a precise characterization of the polyurethane components – a complex task. With the development of digital solutions, Covestro hopes to open up new avenues for helping household appliance manufacturers overcome these challenges.

Process optimization through digitalization
In the new Haier – Covestro Digitalization Joint Laboratory, both partners want to develop innovative solutions for data collection and analysis, monitoring foam quality and process workflows and continuously optimizing processes. These innovative measures will continuously improve the polyurethane foaming and

manufacturing process, improve foam quality and reduce manufacturing costs. This will open up new opportunities for the domestic appliance industry in an increasingly digitalized world.

“With this collaboration, Covestro benefits from its comprehensive experience with polyurethane and foam technologies, while Haier brings in its expertise in industrial automation and the analysis of large volumes of data,” explains Dr. Ulrich Liman, global head of research and development in the Polyurethanes segment at Covestro. “This combination is bringing forth a new era of digital transformation in the chemical industry.”

Pioneers of intelligent production

Launched by Haier, COSMOPlat is the first industrial internet platform in the world to let users participate in the whole process. It can realize the transformation from mass manufacturing to mass customization, reshaping the industrial value chain and eco-chain, and further empower enterprises, users and suppliers to build a new manufacturing eco-system that can realize win-win cooperation.

Haier itself explains COSMOPlat “as an open multilateral interactive co-creation and sharing eco-platform. Our COSMOPlat user experience based mass customization model can be copied across industries, fields, and cultures. It is an industrial internet platform with global universalities. Our cooperation with Covestro will undoubtedly inject a key innovative force in chemical digitalization into Haier's path towards intelligent manufacturing.”

Mass customization solutions

In recent years, various industries in China have driven the digital transformation. For the traditional chemical industry, this also has an impact on the development of upstream and downstream value chains. Covestro and Haier want to enter into a long-term, mutually beneficial partnership, by continuously developing innovative digital solutions. Empowered by COSMOPlat, digital solutions can also be applied to the development of customized solutions for diversified polyurethane applications so as to achieve mass customization.

Dr. Michael Schmidt, head of Innovation Asia Pacific at Covestro, leading the R&D team, and John Dou, Vice president of Commercial Operation China, Polyurethanes segment at Covestro, leading the sales team, expect that this innovative coorperation model will further increase synergies between the two companies.

As an important initiative of Covestro's global digital strategy, the lab will focus on developing digital solutions related to polyurethane materials to push forward

smart manufacturing in domestic appliance and mass customization in the chemical industry.

About Covestro:
With 2017 sales of EUR 14.1 billion, Covestro is among the world's largest polymer companies. Business activities are focused on the manufacture of high-tech polymer materials and the development of innovative solutions for products used in many areas of daily life. The main segments served are the automotive, construction, wood processing and furniture, and electrical and electronics industries. Other sectors include sports and leisure, cosmetics, health and the chemical industry itself. Covestro has 30 production sites worldwide and employs approximately 16,200 people (calculated as full-time equivalents) at the end of 2017.

This press release is available for download from the Covestro press server at www.covestro.com. Photos are available there for download as well. Please acknowledge the source of any pictures used.

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