

Press Release



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Covestro cooperates with GAC Group for electric concept car ENO.146

Innovative lightweight construction concept for seat backs

Covestro has partnered with the Research and Development Center of Guangzhou Automobile Group Co Ltd. (GAC R&D Center) to develop a lightweight composite seat back for the Chinese car manufacturer's latest electric concept car, the ENO.146. The vehicle recently made its debut at the Guangzhou International Automobile Exhibition.

GAC describes the ENO.146 as one of the most aerodynamically efficient vehicles in the world, thanks to a drag coefficient of only 0.146 (hence the name) and a NEDC (New European Driving Cycle) range of 1,000 kilometers. While a fully aerodynamic design is key to achieving such performance goals, the GAC R&D Center also uses lightweight and sustainable materials to reduce the weight of the car while raising the bar for sustainability. Covestro's Maezio™ thermoplastic composite material is one of them.

"Mobility trends such as electrification and autonomous driving are redefining the role and function of car interiors," says Zhang Fan, Vice President of the GAC R&D Center. "There is a growing need for material solutions that are lightweight and sustainable while opening up ways to create new user experiences ranging from visual to tactile feedback."

Beyond weight savings

The backrests of the two front seats of the concept car are made of Maezio™ CFRTP, the reinforced thermoplastic composite material from Covestro. It is estimated that the composite seat backrest can save up to 50 percent in weight compared to typical metal constructions.



“Seats in the passenger compartment are an ideal target for weight savings, as they are among the heaviest parts there,” says Lisa Ketelsen, head of Covestro's thermoplastic composites business. “Fibre reinforced composites are the ideal material for lightweight automotive construction, but Maezio™ can further simplify molding and streamline the manufacturing process.”

In the case of a seat with a metal backrest, fittings and other attachments add to the complexity of production and assembly. Since Maezio™ is a thermoplastic material, parts and functions can be consolidated by injection molding processing. Functional structures are incorporated into the mould for shaping the backrest, reducing the number of parts and materials.

Sustainable material

From the CMF (Colour, Material, Finish) perspective, the design of the vehicle interior in ENO.146 was inspired by nature. According to Stephen Chen, chief designer in Advanced Design, GAC R&D Center, the choice of green colour and various sustainable materials is intended to recreate the ambience of a lake with lotus flowers. The surface pattern of the front of the seat, for example, is designed to resemble that of lotus leaves.

“The backrest must fit into this design concept as a visible component, so the material must have a natural look and feel and high aesthetic value, and it must also be recyclable,” says Stephen Chen.

And this is exactly where Maezio™ comes in. This thermoplastic composite material can be cut and shaped at will to be reused at the end of its service life, giving it a unique marble-like appearance and a high quality look and feel, making it a sustainable material choice that fits perfectly into the design concept of the vehicle.

About Covestro:

With 2018 sales of EUR 14.6 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 16,800 people (calculated as full-time equivalents) at the end of 2018.



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