

2015

Innovation in Composite Design | **Winner: Far-UK**

A super lightweight carbon fibre-reinforced polymer Axontex™ 3D beam car chassis design

Overview

Far-UK won Innovation in Composite Design for its super lightweight carbon fibre-reinforced polymer (CFRP) Axontex™ 3D beam car chassis design, developed by Axon Automotive (part of Far-UK). This innovative composite technology is used for the new Hyundai Intrado hydrogen powered crossover concept car.

The super lightweight CFRP chassis prototypes were produced in the UK for Hyundai by Axon Automotive at its factory in Northamptonshire. The central carbon frame structure is constructed using Axontex™, an innovative carbon fibre solution that is cost comparable with aluminium when used in vehicle structures. Its combination of lightness, strength and cost effectiveness, together have the potential to change the ways cars are made. The strength and rigidity of this central structure also allows body panels to be constructed from any material, giving designers greater flexibility and aiding reparability.

The major development is using the hoop structures made from carbon fibre bonded together to form stiff, strong and very light complete structure. Utilising braided carbon fibre, multicellular tubes, the components can be made with very low waste and efficiently manufactured to give cost effective structures. The automobile industry is seeking cost effective low weight solutions. To meet EU emissions regulations post 2020, the Automotive Council has calculated that C sized vehicles need to be 300kg lighter than today.

Partners & collaborators

Hyundai Motor Company
Created the vision for the vehicle that was shown at the Geneva Motor Show.

Hyosung Carbon Fibre
Making samples and developing its Tansome product which was in pilot stage at the time.

Lotte Chemicals
Contributed resin knowledge to the project.



“Winning the award validated the company’s position within the UK composites industry.

Far is committed to innovation, especially in the automotive sector. The Hyundai Intrado demonstrated what the company can do internationally but such a prestigious UK award is important to the company in its home market.”

Lyndon Sanders, Director and General Manager, Far Composites

The Composites UK Industry Awards are presented at the black-tie dinner on the first Wednesday in November. The event is aligned with the Composites Engineering Show in Birmingham.

Keep an eye out for our annual nomination process each May for your chance to apply.