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Marelli wins Altair Enlighten Award for Advanced Sheet Compression Molded Suspension Knuckle



PRESS RELEASE

Global technology company **Altair** and the **Center for Automotive Research (CAR)**, both based in Michigan, US, named **Marelli** a **2020 Enlighten Award** winner for its **Advanced Sheet Compression Molded Suspension Steering Knuckle**. Created in 2013 to specifically acknowledge innovations in vehicle lightweighting, the program honors the world's greatest achievements in vehicle weight savings each year. Lightweighting is a crucial concept in the automotive industry, as it plays a fundamental role in helping to reduce fuel consumption and emissions. Marelli won in the "Future of Lightweighting" category; which is reserved for innovations that are not yet in production. The 2020 award ceremony was held online on August 4, as part of the CAR Management Briefing Seminars, an event focused on the future of the global automotive industry.

Marelli's winning entry is the result of years of research conducted by the company's Ride Dynamics team, the business unit responsible for design, engineering and production of shock absorbers and suspension components. The team has developed a steering knuckle, the part that contains the wheel and attaches to the suspension and steering components, made from chopped carbon fiber. This composite material is as strong as traditional carbon fiber, more resistant to cracking, is 25% lighter than aluminium and 50% lighter than cast iron. What makes it viable for automotive production is the manufacturing process; Advanced Sheet Molding Compression (ASMC) is a high-volume, high-

pressure method suitable for molding complex, high-strength materials.

Marelli's Ride Dynamics team has performed extensive testing, analysis and validation to ensure the feasibility of the suspension knuckle and has developed prototypes using a 1500-ton press. By combining chopped carbon fiber with ASMC, complex structural parts that meet performance requirements can be produced in a one-shot, net shape process, resulting in cycle times suitable for automotive production.

"We are honored to receive the 2020 Altair Enlighten Award and would like to thank the judges for recognizing our innovation," said Antonio Ferrara, CEO of Marelli's Ride Dynamics business unit.

"This award is further validation that the combination of lightweight materials with high-volume advanced manufacturing methods can disrupt the industry. Through extensive testing and analysis, our team has proven that significant mass savings can be realized without compromising cost, performance or volume targets."