



Automotive Lightweighting Innovators Honored with 2018 Altair Enlighten Awards

July 30, 2018

GM, BMW, Asahi Kasei and Mazda, Sika Automotive, United States Steel and American Axle & Manufacturing take top honors at the 2018 CAR Management Briefing Seminars

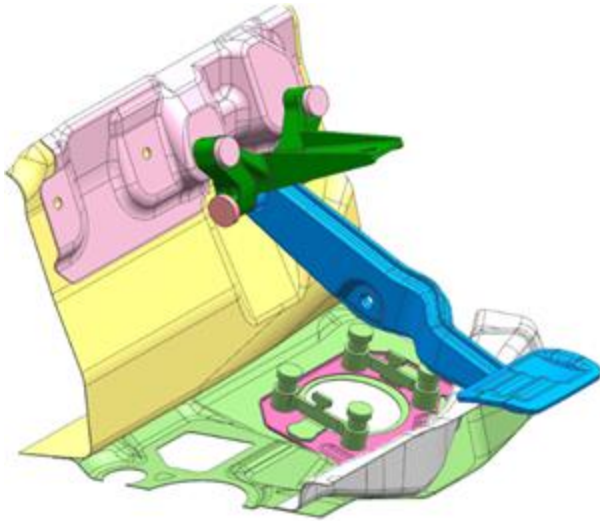
TROY, Mich., July 30, 2018 (GLOBE NEWSWIRE) -- [Altair](#) (Nasdaq: ALTR) and the Center for Automotive Research (CAR) have announced the winners of the 6th annual [Altair Enlighten Award](#) today at the [2018 CAR Management Briefing Seminars \(MBS\)](#) in Traverse City, Michigan. The Altair Enlighten Award honors the greatest achievements in vehicle weight savings each year. Inspiring interest from industry, policymakers, educators, students and the public, the award incentivizes automotive lightweighting advancements and provides a global platform to recognize and share technological achievements. The award is judged by an independent panel of automotive industry experts, academia and the engineering media who selected 6 winners from a field of 57 finalists this year.



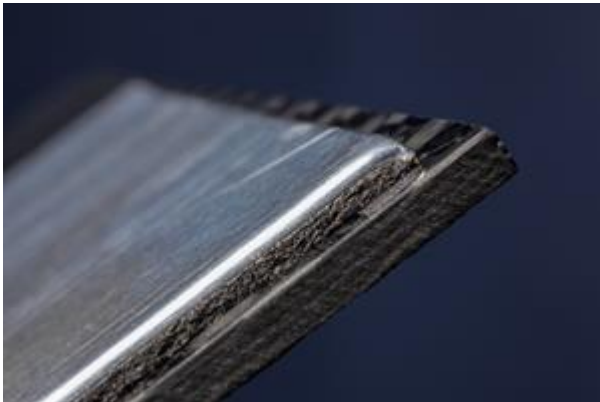
General Motors 2019 Chevrolet Silverado



BMW Metal 3D Printed Convertible Roof Bracket



Asahi Kasei and Mazda Lightweight Brake Pedal Bracket



Sika Automotive Ultra Lightweight Constrained Layer Material System



U.S. Steel Corporation Martensitic Advanced High Strength Steel (Mart-Ten™ 1500)



AAM Quantum Driveline Architecture

The winner in the Full Vehicle category was General Motors' 2019 Chevrolet Silverado, which weighed in at an impressive 450 pounds (204.5 kilograms) lighter than its predecessor. BMW Group claimed the Module category with the first 3D printed metal component used in a production series vehicle, which captured a 44% component weight savings on the 2018 BMW i8 Roadster. Asahi Kasei Corporation's Super Lightweight Pedal Bracket for the Mazda MX-5, Sika Automotive's Ultra Lightweight Constrained Layer Material System, and United States Steel Corporation's Martensitic Advanced High Strength Steel, Mart-Ten™ 1500 took the top honors in the Enabling Technology category. The award for the new Future of Lightweighting category, chosen by MBS attendees, went to American Axle & Manufacturing, Inc. (AAM) for its Quantum Driveline Architecture program.

"It was impressive to see the high quality of this year's Altair Enlighten Award applications. Nominations from OEMs, suppliers, materials technology companies, start-ups and academia demonstrate the tremendous and varied weight reduction effort being achieved across the global automotive industry," said judging chair Carla Bailo, President and CEO of CAR. "We were also thrilled at the response to the new Future of Lightweighting category introduced this year, which highlighted some highly innovative solutions holding great promise to advance fuel efficiency and automotive sustainability."

The General Motors team applied a multi-disciplinary optimization CAE approach, a higher percentage of advanced high strength steels, and new assembly methods in the development of the 2019 Chevrolet Silverado cab and frame to win the Full Vehicle award. In addition to the 450 pounds (204.5 kilograms) overall weight savings, General Motors achieved 23% more storage space, greater dynamic stiffness, improved corrosion prevention, better NVH performance, and increased impact protection on the 2019 Silverado.

A photo accompanying this announcement is available at <http://www.globenewswire.com/NewsRoom/AttachmentNg/774ce401-9a2c-45b0-a021-1dd2e3a0719d>

The Module category, which focuses on vehicle systems, subsystems and components, was claimed by BMW Group for its 2018 BMW i8 Roadster metal 3D printed convertible roof bracket. This innovative component marks the first time a metal 3D-printed part has been used in a series production vehicle. Produced with Selective Laser Melting (SLM) technology without needing any support structures, it was also the first time a topology-optimized design has been translated nearly 1:1 into a series production vehicle to capture a 44% weight savings and tenfold stiffness increase.

"We were honored to receive the Altair Enlighten Award this year and would like to thank the judges for recognizing the efforts of the team that worked on the i8," said Maximilian Meixlsperger, Head of Additive Manufacturing Metal at BMW Group. "It's clear that additive manufacturing has huge lightweight potential for vehicle designers when combined with the power of optimization technologies. Getting a 3D printed part onto a mass produced vehicle would have been unheard of until very recently but with this success, we have an opportunity to make the process part of our standard design and manufacturing approach."

A photo accompanying this announcement is available at <http://www.globenewswire.com/NewsRoom/AttachmentNg/02c5075d-64e1-41e4-b735-a71fb3fe31b1>

For the Enabling Technology category, which focuses on technological advances enabling manufacturers to save weight, the independent judging panel found the competition too tight and elected to recognize three category award winners: Asahi Kasei Corporation and Mazda Corporation, Sika Automotive, and United States Steel Corporation.

Asahi Kasei Corporation's winning entry was a novel production brake pedal bracket for the Mazda MX-5 that was designed using glass fiber reinforced polyamide 66. The new injection molded design required the Asahi Kasei and Mazda team to withdraw from conventional thinking allowing for the removal of unnecessary metal parts to realize a weight savings of 83%.

A photo accompanying this announcement is available at <http://www.globenewswire.com/NewsRoom/AttachmentNg/0be81ddb-36ff-4b94-b652-1d29ea3ea486>

Sika Automotive's winning entry was an ultra lightweight constrained layer material system for structure-borne noise damping. Typical materials for structure-borne noise damping have an area weight of 5 kg/sqm, which was reduced by up to 80% in midsized sedans, such as the BMW i8, Audi Q7, and Daimler A-Class, when using Sika's new ultra lightweight material system.

A photo accompanying this announcement is available at <http://www.globenewswire.com/NewsRoom/AttachmentNg/9812fe01-d6f3-4ebe-9db5-58c01fa9331a>

U.S. Steel's winning entry of Martensitic Advanced High Strength Steels for Low Mass Structural Components, Mart-Ten™ 1500 have recently been

introduced to the automotive market with ultimate tensile strengths exceeding 1,500 MPa. U.S. Steel's advances in continuous annealing technology have enabled the Gigapascal strength to be achieved consistently and repeatedly in mass production to offer more than 10% in weight savings.

A photo accompanying this announcement is available at <http://www.globenewswire.com/NewsRoom/AttachmentNg/b90f667c-e0de-4fd3-8903-2eedef664d0c>

The Future of Lightweighting category was introduced this year to recognize innovative ideas, processes, materials and technologies that have significant potential to support lightweighting initiatives, but have yet to be leveraged on a production vehicle platform. American Axle & Manufacturing was the inaugural award winner in this category for its Quantum Driveline Architecture. Quantum is a unique integration of proven materials and technologies to radically reduce the mass of light duty pickup rear axle systems by 35%, increase transmitted power efficiency, and deliver robust NVH performance.

A photo accompanying this announcement is available at <http://www.globenewswire.com/NewsRoom/AttachmentNg/d4eb285f-b8e0-4a79-906a-2adc6f74970b>

"Our judging panel had a very difficult task selecting this year's award winners among so many high quality entries," said Richard Yen, Senior Vice President of Global Automotive and Industry Verticals at Altair. "I would like to personally congratulate our award winners and thank all of our finalists and applicants for participating. It's a rewarding experience each year to witness how simulation-driven design strategies, new materials and advanced manufacturing processes are advancing automotive lightweighting by offering new opportunities to innovate weight efficient products from the start."

About Altair (Nasdaq: ALTR)

Altair transforms design and decision making by applying simulation, machine learning and optimization throughout product life cycles. Our broad portfolio of simulation technology and patented units-based software licensing model enable Simulation-Driven Innovation for our customers. With more than 2,000 employees, Altair is headquartered in Troy, Michigan, USA and operates 71 offices throughout 24 countries. Altair serves more than 5,000 customers across broad industry segments. To learn more, please visit www.altair.com.

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