

8th of August 2024





GRADEL Lightweight supplied the GRAM structure for the **BMW M Visionary Material Seat,** which was awarded on 6th of August 2024 with the **Altair ENLIGHTEN AWARD 2024** in the **"Sustainable Process**" category during the "Centre for Automotive Research" seminar in Michigan USA.



Source: BMW M GmbH - BMW M Visionary Material Seat



Falco Hollmann, Innovation and Sustainability Manager BMW M GmbH during the Altair Enlighten Award ceremony

Key themes in development:

design for circularity, lightweight construction and attractive product with 90% CO₂e footprint reduction.

Realisation in collaboration with AMC GmbH, LASSO GmbH & BCOMP GmbH for BMW M GmbH



GRADEL was responsible in the project for validating the design accordingly the feasibility rules of the GRAM process technology and for robotic winding of the pre-series of 8 seat structures.



Winding in GRADEL Sustainable Lightweight Design & Production Centre

Statement by BMW M GmbH:

The seat's CO₂e footprint is 90 percent lower than a BMW M carbon bucket seat made today, thanks to the use of ultralight, robotically-wound fiber composite



GRAM winding equipment

seat support structures and materials of natural origin as well as the high recycling rate. In addition, lower module complexity and the use of materials grouped by type make it easier to recycle the seat at the end of its The additive manufacturing processes lifecycle. used are also groundbreaking: A new technology made it possible to completely eliminate support structures, chemical post-treatment and finishing from the M BMW Visionary Materials Seat. Other priorities included a flat value creation chain and a minimum of finishing steps to save energy and conserve resources.