

Advanced Multimaterial Technologies applied in body in white win Innovation Award

**Carbon fibre, aluminium and magnesium – the AMG GT R, the new spearhead of the sports car and performance brand Mercedes-AMG, employs an especially smart material mix. In recognition of its intelligent combination of high-tech materials, the AMG GT R has now won the Innovation Award at Experience Composites 2016, a new trade fair for fibre composite materials, lightweight design and carbon fibre.**

While the chassis and body of the Mercedes AMG GT R utilise a variety of aluminium alloys, the boot lid made of steel and the front deck of magnesium. For the wheel catch struts, the lightweight design experts at AMG opted for a glass fiber material making them around 50 percent lighter than their steel counterparts. However, unlike carbon fibre, the steel versions are deformable.

Weighing just 13.9 kilograms, the carbon-fibre torque tube is 40 percent lighter than the already weight-optimised aluminium component in the AMG GT. In addition, a newly designed lightweight carbon-fibre tunnel cross replaces three other aluminium components in the GT. This structural element has not only enabled weight reduction, but has also significantly increased torsional stiffness by 7.5 percent.

### Innovation Award

Tobias Moers, CEO of Mercedes-AMG GmbH, on the award: "We have systematically geared the entire structure of the new AMG GT R for performance using our expertise in composite materials."

Implementing carbon fibre, a light yet very strong material from the field of motorsports, has been essential to achieving these challenging goals. Carbon fibre is used as a material for such components as the front wings, the fender, the roof and the carbon-fibre torque tube for an exceptionally torsionally stiff connection between engine and transmission.

The high strength and torsional stiffness of the entire structure allows the transmission to withstand the extreme longitudinal and transverse forces from the powertrain and chassis. This reduces undesired elasticities enabling the vehicle to respond pre-



*Close look at component parts*

cisely and directly. In recognition of this intelligent combination of high-tech materials, the AMG GT R has now won the Innovation Award at the Experience Composites 2016, the new trade fair for fibre composite materials, lightweight design and carbon fibre.

Further information:

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*Awards show: The Innovation Award in the category "Automotive and Transport" is accepted by Dr. Karl-Heinz Füller (Manager Hybrid Materials, Concepts, AMG, Daimler AG), Fabio Utzeri (Component design CFK/CFRP, Daimler AG), and Ralf Bernhardt (Manager Composites Development, Carcass, Mercedes-AMG GmbH) (f.l.t.r.)*