



**For Immediate Release: 18 September 2018**  
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## **Renault-Webasto-ARRK Shapers-Polyscope Team Wins 2018 SPE\* ACCE *People's Choice* Award for Composite Sunroof Rails**

**NOVI, Mich., U.S.** — At the 18<sup>th</sup>-annual Automotive Composites Conference & Exhibition (ACCE) sponsored by the Society of Plastics Engineers (SPE\*, Bethel, Conn., U.S.), a team comprised of automaker Groupe Renault (Boulogne-Billancourt, France), tier one Webasto SC (Les Châtelliers-Chateaurmur, France), toolmaker and molder ARRK-Shapers (La Séguinière, France), and resin supplier Polyscope Polymers B.V. (Geleen, The Netherlands) won the event's *People's Choice* award for the most innovative composite part chosen by conference attendees. The winning nomination was for the first composite guide rails on a rollerblind sunroof module for the panoramic roof on two models of multipurpose vehicles (MPVs) from Renault called the *Scenic* and the *Grand Scenic* and have been in commercial production since 2016. Representatives from Webasto and Polyscope accepted the award during closing ceremonies and also co-presented a technical paper on design and development of the guide rails during the first day of the conference, which ran from 5-7 September at the Suburban Collection Showplace in the Detroit suburbs (here).

The move from aluminium extrusions to thermoplastic composite lowered part weight and operating noise, simplified sunroof construction and installation on the vehicle assembly line, reduced costs, and increased headspace in the passenger compartment. Webasto engineered the injection molded rails to include a high level of functional integration while simultaneously reducing part count, assembly operations, and manufacturing time, cost, and complexity. XIRAN® SGH30EB — a fiberglass-reinforced copolymer of styrene maleic anhydride and acrylonitrile butadiene styrene (GR-SMA/ABS) from Polyscope — was optimized both to ensure high bond strength to the polyurethane adhesive used to mount the glass to the module and the module to the body-in-white (BIW) roof structure, and to ensure high dimensional stability critical for smooth operation of the rollerblind. Clever tooling by ARRK-Shapers enabled eight GR-SMA/ABS composite parts for the sunroof module to be molded in a family tool that also features modular blocks allowing both *Scenic* (five-seater) and *Grand Scenic* (seven-seater) rails to be molded in the same tool without using costly tooling action (slides) or separate tools. Each rail was molded in two pieces and ultrasonically welded after demolding.

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At Renault's assembly plant, the new sunroof system, including the rollerblind, arrives fully assembled and pretested as a one-piece unit that is robotically bonded to the roof, eliminating two-to-three assembly steps and allowing an operator to be reassigned. The initial system cost reduction is around 20%. However, the new module has fewer parts and is expected to reduce long-term warranty costs as indicated by lower parts/million (PPM) defects and higher quality already seen at Renault. Another benefit is that a Z-axis element-stack reduction of  $\approx 13$  mm was achieved because the whole module is adhesively bonded directly to the body-in-white (BIW) roof structure instead of the conventional two-to-three-step process where rails are fastened with screws to the BIW and the module is then fastened to the rails. This not only provides more working space on the assembly line for workers, but also gives taller vehicle occupants more headspace during vehicle use. Additionally, no grease was needed and noise/vibration/harshness (NVH) was reduced during sunshade operation. Like aluminium, the composite rails are fully recyclable, but less energy is needed to produce them initially and to recycle them at end of vehicle life.

The SPE ACCE, which bills itself as the world's leading automotive composites conference, typically attracts over 1,000 attendees from 15 countries to the Detroit suburbs for three days of technical sessions, panel discussions, keynote speeches, poster and part competitions, networking events, and an exhibition to discuss the latest innovations in thermoset and thermoplastic composites, nanocomposites, reinforcements, and process and machinery advances for ground transportation applications. The event is attended by members of the automotive, commercial truck, agricultural equipment, bus, rail, and aerospace industries.

### **About Polyscope**

Polyscope is the global leader in research, product development, production, and supply of styrene maleic anhydride (SMA) copolymers, compounds, and aqueous solutions and styrene maleic anhydride N-phenylmaleimide (SMANPMI) terpolymers. The company offers a broad range of SMA and SMANPMI co- and terpolymers and compounds for engineering plastic and specialty chemical applications under the trade names XIRAN® and XILOY™. Resins can be created with a very broad range of molar mass and levels of maleic anhydride. For engineering plastics, SMA/ABS-based compounds with a broad range of impact modification and glass-fiber loading levels can be produced. For specialty-chemical applications, low-molecular weight XIRAN-based resins and solutions are chemically modified to meet customer needs. A global customer base is supported from corporate headquarters by production and research & development conducted in Geleen, The Netherlands, and with local compounding, contract manufacturing facilities and sales and marketing support in Europe, North America, and Asia. For more information, see [www.polyscope.eu](http://www.polyscope.eu).

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**ATTENTION EDITORS: Medium-resolution digital photography available upon request.**



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**NOVI, Mich., U.S.** — At the 2018 SPE\* ACCE conference (here), the *People's Choice* award for most innovative composite part went to the first composite guide rails on a rollerblind sunroof module for the panoramic roof on two models of multipurpose vehicles (MPVs) from Groupe Renault (Boulogne-Billancourt, France). The move from aluminium extrusions to thermoplastic composite lowered part weight and operating noise, simplified sunroof construction and installation on the vehicle assembly line, reduced costs, and increased headspace in the passenger compartment. Webasto SC (Les Châtelliers-Chateaurmur, France) engineered the injection molded rails — produced using XIRAN® SGH30EB, a fiberglass-reinforced copolymer of styrene maleic anhydride and acrylonitrile butadiene styrene from Polyscope Polymers B.V. (Geleen, The Netherlands) — to include a high level of functional integration while simultaneously reducing part count, assembly operations, and manufacturing time, cost, and complexity. At Renault's assembly plant, the new sunroof system, including the rollerblind, arrives fully assembled and pretested as a one-piece unit, which is robotically bonded to the roof, eliminating two-to-three assembly steps and allowing an operator to be reassigned. The initial system cost reduction is around 20%, but the new module has fewer parts so is expected to reduce long-term warranty costs as indicated by lower parts/million (PPM) defects and higher quality already seen at Renault.

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