



FOR IMMEDIATE RELEASE: 7 November 2012

Media Contact:

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SPE® AUTOMOTIVE DIV. NAMES WINNERS OF 42ND-ANNUAL AUTOMOTIVE INNOVATION AWARDS COMPETITION

TROY, (DETROIT) MICH. – For the 42nd year in a row, members of the SPE® Automotive Division's board of directors and their guests joined to honor the year's *most innovative use of plastics* in ground transportation at the ***SPE Automotive Innovation Awards Gala***. Over 700 people attended the annual gala on **November 7, 2012**, at **Burton Manor** in Livonia, Mich. to learn which applications in this year's ***Automotive Innovation Awards Competition*** won awards in eight categories and which category winner was also named the Grand Award winner, the most prestigious honor of the evening.

Winners survived a prequalification round as well as presentations before a panel of industry of experts on September 27th or 28th, and finalists from that round presented before a Blue Ribbon panel of judges on October 8th, where category and Grand Award winners were selected. This year's ***Body Interior*** category winner was also voted the ***Grand Award*** winner. Other winners were as follows. Details on all this year's nominations will be found at <http://speautomotive.com/Awards%20Modules/2012Awards/Home.html>.

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CATEGORY: Body Exterior

• **CARBON COMPOSITE HOOD ASSEMBLY**

- **OEM Make & Model:** Chrysler Group LLC 2013 model year (MY) SRT Viper® supercar
- **Tier Supplier/Processor:** Plasan Carbon Composites
- **Material Supplier / Toolmaker:** Umeco plc/Cytec Industries (carbon fiber weave prepreg); Toray Carbon Fibers Americas, Inc. (unidirectional carbon fiber prepreg); Ashland, Inc. (structural polyurethane adhesive) / Weber Manufacturing Technologies Inc.
- **Material / Process:** G83C T700S-24K carbon composite / Vacuum bag, autoclave cure
- **Description:** This hood assembly is a Class A CFRP part with a very large complex clamshell geometry. The painted Class A outer panel is complemented by an exposed weave inner panel. The part represents the largest Class A carbon fiber composite part provided to a mainstream OEM at volumes up to 3,000 vehicle sets/year. Design, tooling, and fabrication technologies from both marine and aerospace were employed for the first time in automotive to facilitate layup of the complex geometry with severe undercuts. Integrated mounting points using riv-nuts and studs are molded into the inner hood panel. Local section thickness was varied to meet structural requirements. The final part, incorporating fenders as well as hood is 44% lighter than the previous hood-only assembly in SMC, helping improve weight distribution and lower the vehicle's center of gravity, for better vehicle dynamics and power-to-weight ratio.

GRAND AWARD & CATEGORY: Body Interior

• **ALL-OLEFIN, SOFT SKIN, STITCHED FULL IP SYSTEM**

- **OEM Make & Model:** General Motors Co. 2013 MY Buick® Enclave®, Chevrolet® Traverse®, GMC® Acadia® SUVs
- **Tier Supplier/Processor:** Inteva Products, LLC
- **Material Supplier / Toolmaker:** Adell Plastics, Stahl, Ticona Engineering Polymers / KTX
- **Material / Process:** TPO-631 SSXT Soft TPO, Celstran® LFT-PP / multiple processes
- **Description:** These midsize crossover vehicles demonstrate the use of contour stitching on an all-olefin, multi-grained full instrument panel (IP) surface with complex geometry. Advanced robotic sewing technology provides an "up-level" appearance while saving 15-25% costs vs. non-cut/sew applications and up to 50% vs. cut/sew leather plus 15% weight.

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SPE Announces Winners of 42nd Auto Innovation Awards Competition
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CATEGORY: Chassis / Hardware

• **DUAL-RATE AIR EXTRACTOR**

- **OEM Make & Model:** Ford Motor Co. 2012MY Ford® Escape® & Edge® CUVs
- **Tier Supplier/Processor:** Wegu Manufacturing Inc.
- **Material Supplier / Toolmaker:** Rhotech / Anfe-Moulds Inc.
- **Material / Process:** 40% talc-filled PP / Injection molding
- **Description:** Two-shot molding is used to produce this 1-piece air extractor formed of rigid polypropylene and overmolded with TPE. The unit features plastic living hinges and plastic torsional springs that function as a 1-way pneumatic valve, allowing air to exit through flaps but reducing the amount of outside noise that can enter the passenger compartment through the extractor.

CATEGORY: Materials

• **CONTROLLED CRYSTALLIZATION RATE TO ELIMINATE PAINT**

- **OEM Make & Model:** Ford Motor Co. 2013MY Ford Escape CUV & Fusion® sedan, & Lincoln® MKZ® luxury sedan
- **Tier Supplier/Processor:** TRW Automotive, Key Plastics LLC
- **Material Supplier / Toolmaker:** Asahi Kasei Plastics North America / Liberty Molds, Inc., J&J Tool & Mold Ltd.
- **Material / Process:** Leona® 90G60 B3374 PA 6/6 / 6I / injection molding
- **Description:** In order to support greater design freedom for any shape and length register vanes while meeting stiffness, durability, and perceived quality requirements, a partially aromatic injection-molded PA 6/6 / 6I resin was used to boost modulus without increasing wall thickness or adding glass reinforcement to achieve a high-quality, MIC Class A surface without paint. Owing to the "kinked" crystalline structure of the semi-aromatic PA resin, crystallization rate can be better controlled, so parts fully pack out before skins freeze off, leading to a resin-rich surface with a smoother surface and better appearance, eliminating the need to paint.

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CATEGORY: Performance & Customization

• **CARBON COMPOSITE AIR EXTRACTOR**

- **OEM Make & Model:** General Motors Co. 2012MY Chevrolet Camaro® ZL1 sportscar
- **Tier Supplier/Processor:** TransGlobal LLC / deBotech, Inc.
- **Material Supplier / Toolmaker:** Umeco plc/Cytec Industries, BASF Corp., SABIC / deBotech, Inc.
- **Material / Process:** MTM Prepreg 57 Series epoxy/carbon fiber prepreg / Vacuum-bag/autoclave cure
- **Description:** This single-piece CFRP composite construction with exposed fabric weave provides a lightweight, functional component that increases downforce at high speeds while providing an aesthetically pleasing appearance. The air extractor makes extensive use of adhesive bonding to join additional components in alternative materials (a polyamide vent screen and a thermoplastic polyester deflector). Adhesive bonding also isolates the carbon composite panel from the rest of the aluminum hood, preventing galvanic corrosion.

CATEGORY: Powertrain

• **WATER OUTLET ASSEMBLY**

- **OEM Make & Model:** Nissan Motor Co. Ltd. 2012MY Nissan® Altima® sedan
- **Tier Supplier/Processor:** MPC, Inc.
- **Material Supplier / Toolmaker:** Solvay Specialty Polymers / Industrial Molds Group
- **Material / Process:** AMODEL® AS-1933HS PPA-GF33 / Injection molding
- **Description:** The combination of sequencing, precision timing, multi-slide actions, scientific molding, and robotics resulted in a world-class water-outlet assembly injection molded in glass-reinforced PPA. This metal-to-plastic conversion, whose main function is to act as a manifold for the cooling system, integrated 2 components into 1 assembly, which features 10 seamless barb ports that feed coolant to and from the transmission cooler, throttle cooler, heater core, oil cooler, and provides coolant to the radiator. The outlet also includes a press-in-place seal, sealed threaded insert, a wire harness bracket, an oil drip rail, plus it houses the thermostat. The 10 male ports are created without a parting line, which is usually required with conventional injection molding, and are made possible through precision timing of multiple valve gates and multiple slide actions to properly form this complex product.

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CATEGORY: Process / Assembly / Enabling Technologies

• **DIRECT EXTRUSION OF BULB SEAL ON COWLS**

- **OEM Make & Model:** Ford Motor Co. 2013MY Ford C-MAX® HEV
- **Tier Supplier/Processor:** Windsor Mold Group
- **Material Supplier / Toolmaker:** ExxonMobil Chemical / Reis Extrusion GmbH
- **Material / Process:** Santoprene® 121 50E500 TPV
- **Description:** By directly extruding a bulb seal onto an air-inlet panel (cowl), the application's functional requirements are met and time-consuming manual installation of the seal is eliminated as a secondary operation. An extrusion die, mounted to a flexible, heated hose and guided by a robot, quickly and efficiently lays down a TPV profile along the edge of the injection-molded substrate. The fully automated process creates an easily tunable and functional seal that can be handled immediately after extrusion without need for post cure (as with thermoset rubber). The operation is cost-effective, eliminates a secondary operation, maximizes sealing to the hood interface with excellent dimensional stability, reduces scrap, and provides high design freedom and process flexibility.

CATEGORY: Safety

• **INTEGRATED HEADLAMP/HOOD BUMP-STOP BRACKET**

- **OEM Make & Model:** Ford Motor Co. 2013MY Ford Fusion sedan
- **Tier Supplier/Processor:** Magna Exterior & Interior
- **Material Supplier / Toolmaker:** Styron LLC/ Advantage Mold, Inc.
- **Material / Process:** PP / injection molding
- **Description:** Hood bump stops, together with headlamps, provide stiff resistance to the hood structure when impacted, leading to high HIC values during pedestrian-protection testing. Hood material, shape, and packaging space can also affect HIC performance. Traditionally, the hood bump stop and headlamp attachment bracket are designed as separate components. However, a new integrated 1-piece plastic bracket combines the function of the hood bump stop and headlamp attachment and offers a more efficient way to meet new pending ped-pro requirements. The injection-molded 30% GR-PP patented part is tunable for a wide range of breakaway load levels, can be used on other vehicles, reduces assembly complexity, and lowered HIC values by ~30%.

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SPE Announces Winners of 42nd Auto Innovation Awards Competition
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SPE's Automotive Innovation Awards Program is the oldest and largest competition of its kind in the world. Dozens of teams made up of OEMs, tier suppliers, and polymer producers submit nominations describing their part, system, or complete vehicle and why it merits the claim as the *Year's Most Innovative Use of Plastics*. This annual event typically draws 700 to 800 OEM engineers, automotive and plastics industry executives, and media. As is customary, funds raised from this event are used to support SPE educational efforts and technical seminars, which help educate and secure the role of plastics in the advancement of the automobile.

The mission of SPE is to promote scientific and engineering knowledge relating to plastics worldwide and to educate industry, academia, and the public about these advances. SPE's Automotive Division is active in educating, promoting, recognizing, and communicating technical accomplishments for all phases of plastics and plastic-based-composite developments in the global transportation industry. Topic areas include applications, materials, processing, equipment, tooling, design, and development.

For more information, see <http://speautomotive.com/inno> and <http://speautomotive.com/awa> .

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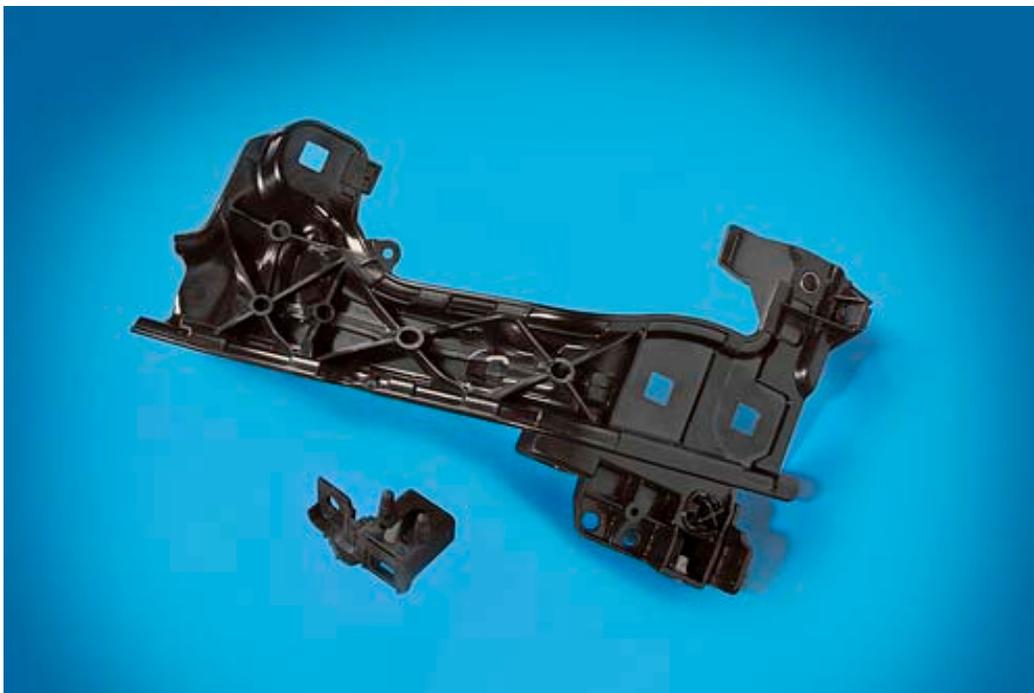
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