



FOR IMMEDIATE RELEASE: (11/12/09)

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SPE[®] NAMES CATEGORY, GRAND AWARD WINNERS OF 39TH- ANNUAL AUTOMOTIVE INNOVATION AWARDS COMPETITION

TROY, (DETROIT) MICH. – The Automotive Division of the Society of Plastics Engineers (SPE[®]) International today announced the category and Grand Award winners for its 39th-annual ***Automotive Innovation Awards Competition***, the oldest and largest recognition event in the automotive and plastics industries. Trophies were given to category finalists and winners, as well as the Grand Award, Hall of Fame, and Vehicle Engineering Team Award winners last evening, November 12, during the ***Automotive Innovation Awards Gala***, which was held at Burton Manor in the suburbs of Detroit.

“The theme of this year’s competition was ‘*Green Cars, Blue Skies*,’ in recognition of the auto industry’s intense focus on increasing fuel efficiency while lowering cost of ownership and tailpipe emissions,” explains Maria Ciliberti of Ticona Engineering Polymers, who was also the 2008 and 2009 ***Automotive Innovation Awards*** program chair. “Polymers play an important role in meeting those goals. Plastic materials are practical, proven, safe, and economical options that provide automakers with lightweighting opportunities while maintaining style, comfort, and safety. Then there are the added benefits to consumers of lower operating costs (thanks to lighter vehicles with better mileage), plus the planet is protected by lowering the industry’s carbon footprint. With all the innovation showcased this year, it’s clear that engineers and carmakers from around the world have come to understand that not only is it *possible* with plastics but also that plastics *make* it possible.” Winning nominations in this year’s competition were as follows.

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CATEGORY: Body Exterior

● **EXTERIOR SPOILER WITH INTEGRATED CHMSL ASSEMBLY**

- **OEM:** General Motors Co.
- **Make/Model:** 2009MY Cadillac® CTS® Sport Wagon
- **Tier Supplier/Processor:** ABC Group
- **Material Suppliers:** SABIC Innovative Plastics
- **Material:** PC/ABS (with proprietary nanofiller package)
- **Process:** Injection Molding
- **Description:** Highly dimensionally stable, this thermoplastic Class A horizontal body panel meets stringent gap requirements by managing a low coefficient of thermal expansion (3.9) while also maintaining heat, impact, and surface quality for a highly aesthetic application. The center-high-mounted stop light (CHMSL) is also integrated in this first-surface part.



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CATEGORY: Body Interior

- **PLASTIC POST-ISOLATION FOR AUTOMOTIVE HVAC BLOWER MOTORS**
 - **OEM:** General Motors Co.
 - **Make/Model:** 2010MY Chevrolet® Camaro® Sports Car
 - **Tier Supplier/Processor:** Delphi Corp.
 - **Material Supplier:** Spartech Polycom
 - **Material:** 20%-talc-filled PP
 - **Process:** Injection Molding
 - **Description:** This application uses an integrally molded plastic mount instead of multiple rubber isolators to soften and quiet HVAC fan-motor vibrations, resulting in significant reductions in cost and development time plus a quieter vehicle interior for consumers. A resonant frequency "tuning" feature allowed for noise/vibration/harshness (NVH) optimization even late in the vehicle-development cycle with minimum impact on mold tooling. Now bare motors can be purchased, allowing more motors to be shipped per container, and a quick snap-fit joins the plastic mount to motor, facilitating assembly.



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CATEGORY: Chassis & Hardware



ELECTRIC POWER-STEERING FLEXIBLE COUPLING

- **OEM:** Fiat S.p.A.
- **Make/Model:** 2010MY Fiat® 500 Compact Car
- **Tier Supplier/Processor:** Nexteer Automotive / Forteq
- **Material Supplier:** DSM
- **Material:** Heat-Stabilized, 50%-glass-reinforced PA 4/6-
- **Process:** Injection Molding
- **Description:** This flexible plastic coupling for the vehicle's electric power steering replaced a similar stainless-steel coupling with broached splines and grease. The part features ribs that connect and transfer torque from one rotating shaft to another, which in turn strokes axially and stretches and compresses the coupling. The fully compliant constant-velocity joint eliminates torsional lash, the need for grease, and all sliding interfaces at a cost savings, while reducing audible cabin noise and improving steering "feel." The system replaces traditional hydraulic systems, reducing weight 17%, cost 50%, and increasing fuel economy by 4%. System performance and customer satisfaction were also improved.



CATEGORY: Environmental



RADIATOR END TANK FROM RENEWABLY SOURCED MATERIAL

- **OEM:** Toyota Motor Co.
- **Make/Model:** 2010 Toyota® Camry® Sedan
- **Tier Supplier/Processor:** DENSO Corp.
- **Material Supplier:** DuPont Automotive
- **Material:** PA 6/10 (with monomer from castor bean oil)
- **Process:** Injection Molding
- **Description:** This is the first use of bio-plastic in a chemically aggressive and mechanically demanding application – in radiator end tanks. Roughly 40% of this new nylon 6/10 material is sourced from castor bean oil, reducing reliance on petroleum-based inputs and helping lower the vehicle's carbon footprint.



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CATEGORY: Materials

● **DOOR PANEL FROM NATURAL-FIBER PREG COMPOSITE**

- **OEM:** BMW
- **Make/Model:** 2008MY BMW® 7 Series Luxury Sedan
- **Tier Supplier/Processor:** Dräxlmaier Group
- **Material Supplier:** BASF AG (resin) / J. Dittlich & Söhne GmbH (needled fiber mat)
- **Material:** Acrylic Copolymer
- **Process:** Compression Molding
- **Description:** This lower door-panel inner was compression molded from a new, high-performance, lightweight, cost-effective, and green composite. The resin matrix is a unique acrylic polymer that is thermoplastic in its “B-stage,” allowing for production of prepreg/semi-finished rollstock or blanks, yet cross-linking at temperatures above 120C to produce a very durable thermoset. The resin’s high wetout of natural fibers and ability to form chemical as well as mechanical bonds to the reinforcement allows for production of composites with very-high fiber loadings – 70% in this application – yielding lightweight parts with high stiffness in thin walls. The resulting panel saves weight and cost, significantly reduces VOC emissions, and its rapidly renewable natural fiber mat reduces the vehicle’s carbon footprint without sacrificing performance.



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CATEGORY: Performance & Customization

- **ILLUMINATED DOOR-SILL INSERT USING SINGLE-LED LIGHT ENGINE**
 - **OEM:** Ford Motor Co.
 - **Make/Model:** 2010MY Ford® Mustang® Sports Car, Lincoln® MKZ & Ford® MKT Sedans
 - **Tier Supplier/Processor:** Innotec Group
 - **Material Supplier:** Altuglas, SABIC Innovative Plastics, Serigraph
 - **Material:** ABS Bi-Laminate, Polycarbonate, & Acrylic
 - **Process:** Multiple
 - **Description:** Combining several different plastic technologies to create highly efficient optics that require only one LED light source, this illuminated door-sill insert can easily be customizable (via laser etching) to produce high-impact illuminated graphics. The system's unique construction allows the design to be adapted to new vehicles in weeks, not months, significantly reducing development costs. In addition, the application is the auto industry's first to provide multi-color illumination from a single LED light engine.

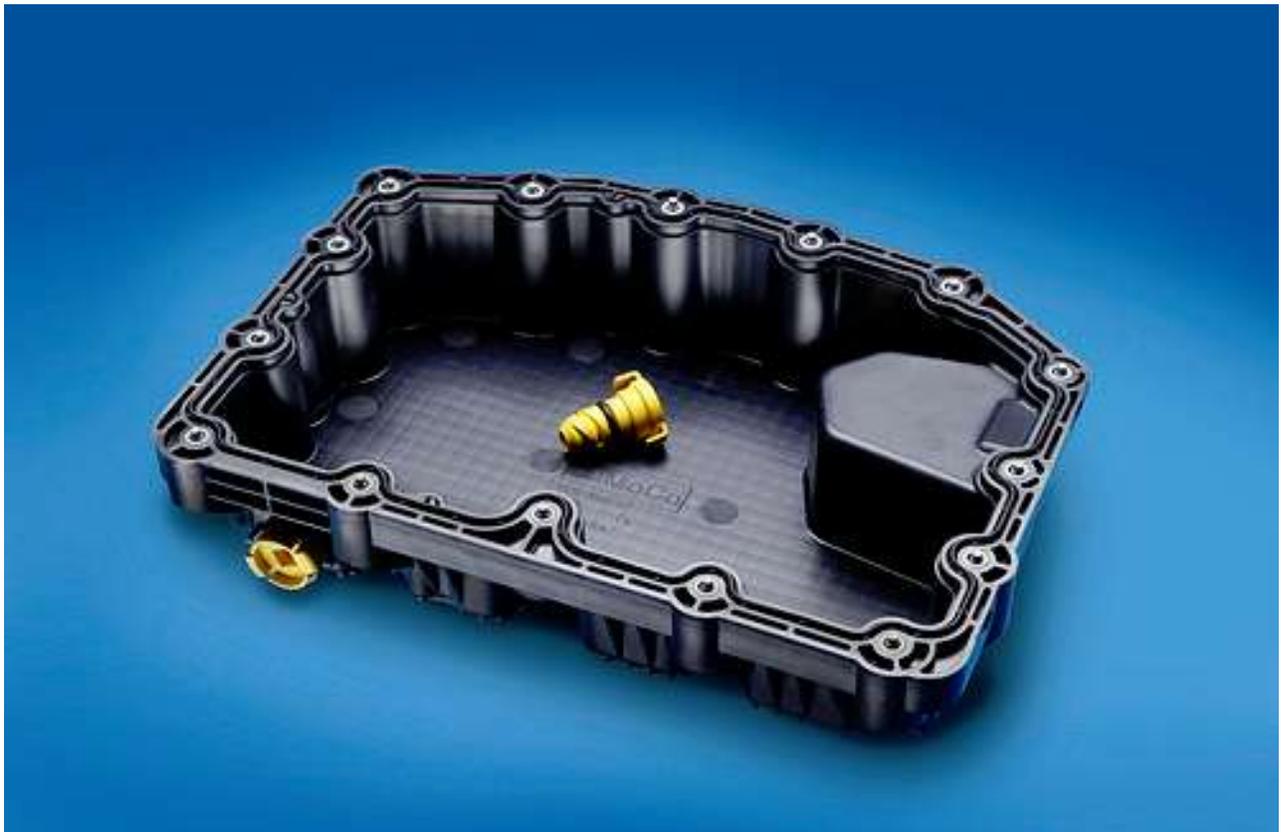


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CATEGORY: Powertrain

● **OIL PAN OPTIMIZED FOR STONE IMPACT**

- **OEM:** Ford Motor Co.
- **Make/Model:** 2010MY 6.7L Power-Stroke Turbo Diesel
- **Tier Supplier/Processor:** Dana
- **Material Supplier:** BASF
- **Material:** Impact-Modified, 35%-GR PA 6
- **Process:** Injection Molding
- **Description:** This is the first plastic oil pan designed for full exposure to the road environment and optimized to withstand road chemicals and stone impacts thanks to a new material / ribbing configuration. An impact-modified 35%-glass-reinforced nylon 6 provides excellent impact strength even at -40C and is not affected by calcium chloride thanks to a proprietary modification package. A special waffle-design ribbing pattern can handle multiple impacts (unlike earlier plastic designs with sacrificial ribs). Another unique aspect of this oil pan is that it features the first plastic drain plug, which sports a cam-lock design that makes it impossible to over-torque and break the plug's screw threads. The oil pan is 2.1-lb lighter than the steel pan it replaced and 30% less costly. It has an noise/vibration/harshness value similar to that of cast aluminum and quiet steel, yet will not rust or corrode and provides better protection against stone impact than metal designs.



CATEGORY: Process / Assembly / Enabling Technologies

- **AUTOMOTIVE PLASTIC-CASE RADIO WITH INSERT-MOLDED EMC SHIELDING**
 - **OEM:** General Motors Co.
 - **Make/Model:** 2009.5MY Chevrolet®Tahoe/GMT900 Family
 - **Tier Supplier/Processor:** Delphi E&S
 - **Material Supplier:** MRC
 - **Material:** Reprocessed 16%-glass-reinforced PC/ABS
 - **Process:** Insert Injection Molding
 - **Description:** This application features an innovative, patented method of embedding EMC shielding into an environmentally friendly plastic case, enabling significant reduction in weight and assembly time. A metallic-mesh Faraday cage is insert molded into the reprocessed 16% glass-reinforced PC/ABS material. The design also enables the use of slide lock & snap lock design features that speed assembly while, eliminating the previous sheet-metal case and 29 screws. The resulting unit provides significant weight reduction, assembly cost & time savings, with improved physical and EMC shielding and a more sustainable product.



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CATEGORY: Safety

● **PEDESTRIAN-PROTECTION-COMPLIANT FRONT FENDER**

- **OEM:** Ford Motor Co.
- **Make/Model:** 2008MY Ford® Kuga® Compact CUV
- **Tier Supplier/Processor:** Montaplast
- **Material Supplier:** SABIC Innovative Plastics
- **Material:** MPPE/PA
- **Process:** Injection Molding
- **Description:** This is the first SUV with thermoplastic fenders that meets tough European pedestrian-protection requirements for head impact in a single part, eliminating the need for secondary bracketry under the fender as in steel designs. The MPPE/PA material is online paintable, dent and corrosion resistant, a unique styling enabler, and reduces both weight and cost by 50% vs. steel. The vehicle was also able to qualify for a better insurance rating because of this innovation.



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CATEGORY: Hall of Fame

● **FIRST THERMOPLASTIC BODY PANELS**

- **OEM:** General Motors Corp.
- **Make/Model:** 1987MY Buick® LeSabre® T-Type Sports Coupe
- **Tier Supplier/Processor:** Buick Factory 8
- **Material Supplier:** GE Plastics (now SABIC Innovative Plastics)
- **Material:** MPPE/PA
- **Process:** Injection Molding
- **Description:** This was the first use of thermoplastic body panels (front fenders). Making the switch from steel to thermoplastic enabled GM to reduce part weight 40% (4 lb/1.8 kg vs. 7.3 lb/3.3 kg in steel) and eliminate denting and corrosion and the application was quickly translated into thermoplastic body panels on many other GM vehicles. In fact, over 45 platforms and 20-million vehicles globally have used or currently use this material. And thermoplastic body panels have since been translated beyond automotive to tractors and lawnmowers for home and agricultural use.



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12-12-12-12

In addition, the team responsible for the Process / Assembly / Enabling Technologies category winner – the automotive plastic-case radio with insert-molded EMC shielding – received the **Grand Award**, the most prestigious honor of the evening. Ford Motor Co. was honored with the **Vehicle Engineering Team Award (VETA)** for numerous plastics innovations on the 2010MY Ford® Taurus® sedan. And Irvin E. (Irv) Poston, who had a long and distinguished career at then General Motors Corp. where he was responsible for numerous automotive plastics “firsts,” received SPE’s **Lifetime Achievement Award**.

The mission of SPE International 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 about the **Automotive Innovation Awards Competition and Gala** or to find additional details about the 2009 winners, please visit the SPE Automotive Division’s website at www.speautomotive.com/inno.htm , or contact the group at +1.248.244.8993, or write SPE Automotive Division, 1800 Crooks Road, Suite A, Troy, MI 48084, USA. Photos of all nominations received for the 2009 Parts Competition are available for download at <http://www.flickr.com/photos/speautomotive/collections/72157622495835409/>.

For more information on the Society of Plastics Engineers International or other SPE events, visit the SPE website at www.4spe.org, or call +1.203.775.0471.

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