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### Media Contacts:

Maria Ciliberti, '09 SPE Innovation Awards Chair  
Ticona Engineering Polymers  
Phone: +1.248.252.4421  
eMail: [awards-chair@speautomotive.com](mailto:awards-chair@speautomotive.com)

Peggy Malnati, SPE Auto. Div. Comm. Chair  
Malnati & Associates  
Phone: +1.248.592.0765  
eMail: [media@speautomotive.com](mailto:media@speautomotive.com)

## **SPE<sup>®</sup> NAMES FINALISTS FOR 39<sup>TH</sup>-ANNUAL AUTOMOTIVE INNOVATION AWARDS COMPETITION**

**TROY, (DETROIT) MICH.** – The Automotive Division of the Society of Plastics Engineers (SPE<sup>®</sup>) International today announced the finalists for its 39th-annual **Automotive Innovation Awards Competition**, the oldest and largest recognition event in the automotive and plastics industries. After a pre-qualification round, surviving nomination teams presented their applications before a panel of automotive and plastics industry experts during two days of judging on Oct. 8 and 9. Finalists selected from each category advanced to the Blue Ribbon Judging on Oct. 14. Category and the event's *Grand Award Winner* will be announced on Nov. 12 during the **Automotive Innovation Awards Gala**, which will be held at Burton Manor in the suburbs of Detroit.

According to the 2008 and 2009 **Automotive Innovation Awards** program chair, Maria Ciliberti of Ticona Engineering Polymers, "When we began planning for this year's competition, we were concerned about how many nominations we'd actually receive given four consecutive years of downward automotive sales, continual reductions in engineering staff at most OEMs, and the global economic crisis. However, despite this being one of the most challenging years on record for the global automotive industry, we were extremely pleased to find that we received the same number of nominations as last year – just over 50 of them. Even better, this year's nominations can be found on commercial vehicles produced on four continents – North America, Europe, Asia, and Australia – making this a truly *international* competition." Finalists selected from this year's pool of nominations include the following:

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**CATEGORY: Body Exterior**

● **LOW-PROFILE OUTER-BELT WEATHERSTRIP DESIGN**

- **OEM:** Ford Motor Co.
- **Make/Model:** 2010MY Ford® Taurus® Sedan
- **Tier Supplier/Processor:** Cooper Standard
- **Material Supplier:** ExxonMobil
- **Material:** TPV
- **Process:** Tri-Layer Extrusion
- **Description:** These outer-belt weatherstrips are the first to provide a low-profile, tri-extrusion with stainless steel, TPV, and a high-gloss vinyl ionomer. The manufacturing process envelop was pushed to the maximum to satisfy the Taurus design theme, achieving a functional component that offers three different textures (low-gloss, high-gloss, and stainless) in the same part.

● **GLASS-RUN WEATHERSTRIP CORNER MOLD OVERLAYS**

- **OEM:** Ford Motor Co.
- **Make/Model:** 2010MY Ford® Taurus® Sedan
- **Tier Supplier/Processor:** Henniges Automotive / ITW
- **Material Supplier:** DuPont Automotive
- **Material:** 16.5%-GR PA 6/6
- **Process:** Injection Molding
- **Description:** These door glass-run weatherstrip corner mold overlays are an industry first, providing gloss and appearance differences to the glass seals while helping guide the glass properly into the top seal. A simple part that solves a big problem in an elegant way, the plastic glass-run corner mold overlays offer improved appearance and customized craftsmanship for window surroundings while ensuring a good seal.

● **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.

● **HEADLAMP BEZEL**

- **OEM:** Ford Motor Co.
- **Make/Model:** 2010MY Ford® Taurus® Sedan
- **Tier Supplier/Processor:** Ford ACH Lighting - Sandusky
- **Material Suppliers:** SABIC Innovative Plastics
- **Material:** PC (with metallic-pigment package)
- **Process:** Injection Molding
- **Description:** The inclusion of a special metallic-flake pigment package in the resin matrix for this application eliminated the need for paint while delivering improved styling aesthetics in an as-molded part.

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**CATEGORY: Body Interior**

● **TUFTED PET AUTOMOTIVE CARPET - BODY INTERIOR**

- **OEM:** GM Holden
- **Make/Model:** 2010MY VE Commodore® Sedan
- **Tier Supplier/Processor:** Futuris Automotive Interiors
- **Material Supplier:** Not stated
- **Material:** Recycled PET
- **Process:** Fiber Spinning
- **Description:** For the first time, tufted PET carpeting has been used in an automobile. Containing 20 - 80% post consumer recycled content, and with the option to use 100% recycled PET, this tufted carpet meets or exceeds all major OEM carpet performance specifications, is 12-15% less expensive than traditional tufted nylon, and provides a sustainable solution.

● **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 that softens and quiets 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.

● **MOLD & FOLD CLUSTER ATTACHMENT BRACKET**

- **OEM:** Ford Motor Co.
- **Make/Model:** 2009MY Ford® F-Series® Pickup Truck
- **Tier Supplier/Processor:** Automotive Components Holdings
- **Material Supplier:** Advanced Composites
- **Material:** 20%-Talc-Filled PP
- **Process:** Injection Molding
- **Description:** Using "negative space" in the tool, this mold-&-fold cluster attachment bracket provides a mounting surface for the instrument panel's cluster without the necessity of adding an additional part. Cluster attachment locations are integrated into the IP substrate tool and the "molded-in hinge" is then folded into place. This allowed the styling team to maximize the size of register openings and the cluster lens by minimizing the design space between them.

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**CATEGORY: Body Interior (continued)**

- **LIGHTWEIGHT ACOUSTICAL HEADLINER BASED ON SOY FOAM**
  - **OEM:** Ford Motor Co.
  - **Make/Model:** 2010MY Ford® Escape HEV & Ford Edge® and Lincoln® MKX CUVs
  - **Tier Supplier/Processor:** Magna (Escape) & International Automotive Components (Edge)
  - **Material Supplier:** Woodbridge Group
  - **Material:** Polyurethane (with 10%-Bio-Based Polyol)
  - **Process:** Not stated
  - **Description:** Lightweight, open-cell acoustic foam based on polyurethane chemistry with some soy-based polyols (replacing petroleum-based polyols) were used in this application, which also featured permeable thermoplastic adhesives and permeable felt fabrics in the headliner construction. The result is industry-leading noise/vibration/harshness (NVH) performance and lower weight

**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%-GR 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 interior 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.

- **LOAD-MANAGEMENT STRIKER CAP (LMSC)**
  - **OEM:** General Motors Co.
  - **Make/Model:** 2009MY Cadillac® CTS V-Series Luxury Sedan
  - **Tier Supplier/Processor:** Delphi / Ammex Plastics
  - **Material Supplier:** BASF
  - **Material:** TPU
  - **Process:** Injection Molding
  - **Description:** When styling opted to add larger wheels/tires well into program development, this small thermoplastic urethane (TPU) load-management striker cap was designed to increase energy absorption by 74% and reduce loads on shock towers by 14%. This improved vehicle ride without the need to add extra structure to the body/chassis vs. standard nylon striker caps with a metal ring alone. The 43-g, high-elongation TPU part has a "springboard" effect designed in so it improves vertical impact management, leading to lower trim capability, better structural survivability, better energy management (via ride and handling), and enabling additional content (new wheels/tires) without adding significant cost or mass.

**CATEGORY: Chassis & Hardware (continued)**

● **BELOW-BELT DOOR-GLASS RETAINING BRACKET**

- **OEM:** Ford Motor Co.
- **Make/Model:** 2010MY Ford® Taurus® Sedan
- **Tier Supplier/Processor:** Henniges Automotive
- **Material Supplier:** A. Schulman
- **Material:** 30%-GR PA 6
- **Process:** Injection Molding
- **Description:** These nylon 6/6 below-belt door brackets are an industry first, replacing steel channels. The plastic channels will not ding the door outer panel during installation and provide quiet window-system operation, while also reducing weight 50% and cost 20%.

**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.

● **WHEAT-FILLED PP FOR QUARTER TRIM BIN**

- **OEM:** Ford Motor Co.
- **Make/Model:** 2010 Ford® Flex® CUV
- **Tier Supplier/Processor:** International Automotive Components
- **Material Supplier:** A. Schulman
- **Material:** Wheat-Straw-Reinforced PP
- **Process:** Injection Molding
- **Description:** This is the auto industry's first use of renewable (and locally sourced) wheat-straw filler for storage-bin components. This natural-fiber-reinforced PP offers greater dimensional stability than unfilled resin and is more sustainable than talc-filled PP.

● **HALOGEN-FREE WIRE COATING**

- **OEM:** General Motors Co.
- **Make/Model:** 2008MY GMC® Yukon®, Chevrolet® Tahoe®, & Cadillac® Escalade® SUVs
- **Tier Supplier/Processor:** Delphi Corp.
- **Material Supplier:** SABIC Innovative Plastics
- **Material:** MPPE
- **Process:** Extrusion
- **Description:** Flexible, halogen-free, MPPE resin for wire insulation provides an environmentally friendly alternative to PVC and cross-linked HDPE. The durability and low specific gravity of the material enables thinner insulation and jacketing, allowing comparable performance to be achieved in less packaging space and at lower weight.

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**CATEGORY: Materials**

● **MOLDED-IN-COLOR METALLIC INTERIOR-FINISH PANELS**

- **OEM:** Ford Motor Co.
- **Make/Model:** 2010MY Ford® Mustang® Sports Car
- **Tier Supplier/Processor:** Summit Polymers
- **Material Supplier:** SABIC Innovative Plastics
- **Material:** PC/ASA
- **Process:** Injection Molding
- **Description:** Molded-in-color metallic finish PC/ASA replaced painted PC/ABS in this Injection-molded application, eliminating paint for greater sustainability while meeting tough weathering, scratch/mar, and low-gloss requirements. Optimized gating strategies and a modified pigment package were essential to minimize flow disruptions that can lead to dark streaks in molded metallic parts where flow-fronts converge. The result is the industry's first metallic-finish interior-trim panel, which is greener, increases customer satisfaction (by eliminating paint-related defects), and provides a \$2.30 USD/vehicle cost savings

● **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. Dittrich & Söhne GmbH (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 needled mat reduces the vehicle's carbon footprint without sacrificing performance.

● **LONG-GLASS-PP FIRST-SURFACE CONSOLE SIDE PANELS**

- **OEM:** Ford Motor Co.
- **Make/Model:** 2010MY Lincoln® MKT CUV
- **Tier Supplier/Processor:** Automotive Components Holdings
- **Material Supplier:** Ticona Engineering Polymers
- **Material:** 20%-Long-Glass PP (Pelletized)
- **Process:** Injection Molding
- **Description:** This is the largest molded-in-color, long-glass PP part with a Class A surface out of the tool for a premium vehicle to date. The precolored and textured part is 100% color-matched, has no glass read-through, and offers higher stiffness than talc-filled PP and lower cost than ABS, while also eliminating the need for squeak & rattle countermeasures, saving \$6.00 USD/vehicle.

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**CATEGORY: Performance & Customization**

- **THERMOFORMED FULL-SIZE CARGO VAN PARTITION & CONSOLE**
  - **OEM:** Various
  - **Make/Model:** 1985-2010MY Ford® Astra® & E-Series, Chevrolet® Express® & GMC® Savana® Cargo Vans
  - **Tier Supplier/Processor:** Chameleon 2000 / Advantage Plastics
  - **Material Supplier:** Primex Plastics
  - **Material:** Reprocessed ABS
  - **Process:** Thermoforming
  - **Description:** This large, thermoformed ABS partition and console closes off space between front and back of cargo vans, reducing workload on HVAC units, keeping exhaust fumes from the passenger compartment, and protecting passengers from flying or falling objects that could enter the passenger compartment from rear cargo space. The console provides a work surface between front seats, holding laptops, phones, and paperwork, and rear-accessible storage allows large parts to project into the underside of the console from the rear cargo hold. This application saves 100 lb vs. steel partitions while eliminating rust, quieting the passenger compartment, adding more functionality, and allowing significantly faster installation, making it ideal for fleet vans. The unit is fully recyclable and uses recycled material.
  
- **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.
  
- **HIGH-TEMPERATURE CORED-CARBON COMPOSITE AIR SPLITTER & DIVE PLANES**
  - **OEM:** Chrysler Group LLC
  - **Make/Model:** 2010MY Dodge® Viper® ACR Supercar
  - **Tier Supplier/Processor:** Prefix / Plasan Carbon Composites
  - **Material Supplier:** Evonik
  - **Material:** High-Temperature Epoxy
  - **Process:** Hand Layup / Autoclave Cure
  - **Description:** A unique carbon composite with a special high-density, high-temperature core capable of surviving autoclave temperatures and pressures was used to produce an extremely thin, lightweight, precision air splitter and set of dive planes for the 2010MY Viper ACR supercar. The splitter is adjustable and produces extremely high downforce resistance of 1,000 lb without deflecting more than 0.25 mm at 180+ mph. A fast-cure, UV-stabilized grade of clear epoxy resin (with visible carbon fiber weave on the surface) brings autoclave cycles down to an average of 10 min. The aerodynamic package went from concept to production in just 12 month.

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**CATEGORY: Powertrain**

● **BLOWMOLDED INTERCOOLER AIR DUCT IN PPS WITH JECTBONDING**

- **OEM:** Volkswagen AG
- **Make/Model:** 2008MY Volkswagen® PQ35 Platform
- **Tier Supplier/Processor:** Röchling Automotive Leifers GmbH
- **Material Supplier:** Ticona Engineering Polymers
- **Material:** Glass-Reinforced PPS
- **Process:** Hybrid Injection/Blow Molding
- **Description:** This is the first time glass-reinforced PPS has successfully been blow molded. The complex part was formed by a unique patented hybrid injection/blow molding process called Jectbonding™, which allows functional elements to be injected against the parison during expansion, forming a chemical bond and yielding a robust part with a clean joint vs. welding the element to the part in a secondary step. Two different grades of glass-reinforced PPS were used. The process eliminates two previous production steps and provides extremely high repeat accuracy; high-performance PPS resin provides dimensional stability and outstanding mechanicals in high-temperature, chemically aggressive environments with cost and weight reductions.

● **PLASTICS-INTENSIVE FLUID FILTER MODULE**

- **OEM:** Daimler AG, Mercedes Car Group
- **Make/Model:** 2010MY Mercedes® C-Class Compact Executive Sedan
- **Tier Supplier/Processor:** Mahle Filtersysteme GmbH
- **Material Supplier:** Lanxess
- **Material:** 35%-GR PA 6/6
- **Process:** Injection Molding
- **Description:** This fluid module filters engine oil and cools it via cooling liquid. The cooling unit is fully integrated into a new plastic housing that provides 38% weight and 16% cost reduction and reduces pressure losses for higher engine efficiencies. The 35%-glass-reinforced nylon 6/6 shell covering the cooling unit serves to stiffen the filter housing against oscillation. A plastic hose replaces rubber for further cost savings.

● **OIL PAN OPTIMIZED FOR STONE IMPACT**

- **OEM:** Ford Motor Co.
- **Make/Model:** 2010MY 6.7L Power-Stroke Turbo Diesel
- **Tier Supplier/Processor:** Dana Corp.
- **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

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**CATEGORY: Powertrain (continued)**

● **HIGH-FEATURE V6 RIGHT & LEFT-BANK TIMING-CHAIN TENSIONER ARMS**

- **OEM:** General Motors Co.
- **Make/Model:** GM HFV6 Engines
- **Tier Supplier/Processor:** Cloyes / Mayfair Plastics
- **Material Supplier:** DSM
- **Material:** Unfilled & 50%-GR PA 4/6
- **Process:** Injection Molding
- **Description:** This application features the first thermoplastic timing-tensioner arms for a high-performance engine. The parts meet high-performance engine dynamics and sustain chain tensions up to 3,000 N. A heat-stabilized, 50%-glass-reinforced grade of nylon 4/6 provides high strength and stiffness at 140C. It also offers extremely high fatigue resistance at elevated temperatures, extreme wear resistance at pivot and tensioner piston interfaces, long-term property retention in oil, impact strength, dimensional stability, and a low coefficient of linear expansion, plus high knitline strength at the pivot. A separate unfilled nylon 4/6 wear surface is also used. The system provides 30% cost and 20% mass savings vs. previous metal designs, eliminates the need for a hardened-metal wear pin, eliminates 5 machining operations/part, provides tooling savings of \$200,000 USD/year, and is quieter.

**CATEGORY: Process / Assembly / Enabling Technologies**

● **TWO-SHOT INVISIBLE PASSENGER-SIDE AIRBAG DOOR**

- **OEM:** Hyundai Motor Co.
- **Make/Model:** 2009MY Hyundai® i20 Supermini Car
- **Tier Supplier/Processor:** Hyundai-Mobis / Hyundai-Motor Co.
- **Material Supplier:** Multibase Co.
- **Material:** TPO (door) & Talc-Filled PP (IP substrate)
- **Process:** Twin-Shot Injection Molding
- **Description:** This soft, seamless passenger airbag (PAB) door is integrally molded into a hard instrument panel substrate using a simultaneous twin-shot molding process and two grades of olefins: talc-filled PP for the IP and a TPO grade for the door itself. This system provides a simple, uncluttered appearance and color harmony while eliminating fit & finish issues and providing improved cold-temperature impact strength. Both design and materials optimization was required for success and the final system – which is covered by seven tooling and materials patents – provides better performance at a \$5.00 USD cost and 500-g weight reduction, while significantly reducing molding and assembly operations.

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**CATEGORY: Process / Assembly / Enabling Technologies (continued)**

- **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%-GR 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.
  
- **MOLDED IN FAUX STITCHING WITH NEAR-PERFECT APPEARANCE**
  - **OEM:** Ford Motor Co.
  - **Make/Model:** 2010MY Ford® Taurus® Sedan
  - **Tier Supplier/Processor:** Automotive Components Holdings
  - **Material Supplier:** BASF (resin) & Red Spot Paint (in-mold protective coating)
  - **Material:** Polyurethane
  - **Process:** Spray Polyurethane
  - **Description:** The realistic appearance of a hand-wrapped leather insert with French and Coach seams was achieved on this door panel using a single-piece molded spray polyurethane part without need for separate operations. The realistic appearance of leather stretching, bunching, and stitching is achieved via a silicone mold cast from leather originals. Each of the vehicle's four door panels retains its own unique bunching and stretching pattern, yet each panel is absolutely repeatable vehicle-to-vehicle. The result is a \$50 USD/vehicle cost savings, better quality, perfect repeatability, and greater durability.

**CATEGORY: Safety**

- **GENUS® FOLDING HEAD RESTRAINT**
  - **OEM:** Kia Motors
  - **Make/Model:** 2010 MY Kia® Sorento® CUV
  - **Tier Supplier/Processor:** Gill Industries / Sturgis Molded Products
  - **Material Supplier:** BASF
  - **Material:** PA 6
  - **Process:** Insert Injection Molding
  - **Description:** This is the first folding-headrest system for stowable rear seats that is fully compliant with new FMVSS 202A and EC standards. The integrated system makes use of toughened, glass-reinforced nylon 6 to reduce overall part count by 50%, lowering weight by 2.5 kg, and simplifying manufacturing and installation.

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**CATEGORY: Safety (continued)**

● **PEDESTRIAN PROTECTION BUMPER-REINFORCEMENT EA SYSTEM**

- **OEM:** Ford Motor Co.
- **Make/Model:** 2009MY Ford® Kuga® Compact CUV
- **Tier Supplier/Processor:** Plastal Germany
- **Material Supplier:** SABIC Innovative Plastics
- **Material:** PC/PBT
- **Process:** Injection Molding
- **Description:** An innovative energy absorber (EA) design mounted on the grille-opening reinforcement instead of cross-car beam enabled this vehicle to be the first in the SUV class to meet tough European pedestrian-protection requirements for lower-leg impacts, eliminating the need for a separate EA in front of the bumper beam. An unfilled PC/PBT resin was used to injection mold this EA/upper reinforcement, providing best-in-class performance and allowing for the vehicle's aggressive styling due to a reduction in packaging space.

● **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.

Adds Ciliberti, "Clearly, there is no shortage of innovative automotive-plastics applications being commercialized right now. Polymeric materials continue to bring value to molders, tier integrators, OEMs, and the ultimate customer – the consumer."

This year's ***SPE Automotive Innovation Awards*** gala will be held at Burton Manor ([www.Burtonmanor.net](http://www.Burtonmanor.net)) in Livonia, Mich. on Nov. 12. All nominations accepted for this year's competition will be on display at the event with signage explaining their innovations.

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*SPE Announces 2009 Automotive Innovation Awards Finalists*  
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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 download nomination forms and rules, visit the SPE Automotive Division's website at [www.speautomotive.com/inno.htm](http://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.

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