FOR IMMEDIATE RELEASE: November 12, 2014

Media Contact:

Peggy Malnati, SPE Auto. Div. Comm. Chair
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SPE® AUTOMOTIVE DIV. NAMES WINNERS OF THE 44TH-ANNUAL *AUTOMOTIVE INNOVATION AWARDS COMPETITION*

TROY, (DETROIT) MICH. – The Automotive Division of the Society of Plastics Engineers (SPE®) tonight announced the category and Grand Award winners of its 44th-annual ***Automotive Innovation Awards Competition***, the oldest and largest recognition event in the automotive and plastics industries. Winners were honored at the group's 44th-annual ***Automotive Innovation Awards Gala*** held at Burton Manor in Livonia, Mich. in the Detroit suburbs. The Safety category winner also was the event's Grand Award winner selected by a panel of Blue Ribbon judges as the year's *Most Innovative use Plastics*.

CATEGORY WINNER: Body Exterior

- **PANORAMIC SUNROOF FRAME**
  - **OEM Make & Model**: 2015 Hyundai Motor Group Kia* Sorento* cross-over utility vehicle (CUV)
  - **Tier Supplier/Processor**: Inalfa Roof Systems Korea
  - **Material Supplier / Toolmaker:** GS Caltex Corp./ Hyundai Motor Group
  - **Material / Process**: Hiprene* ALC12B polyamide 6 (PA 6) / injection molding
  - **Description:** This large but very light panoramic sunroof frame utilizes carbon fiber-reinforced thermoplastic, which has been optimized for density, mechanical properties, and reasonable cost. This is the first carbon fiber-reinforced thermoplastic application in a sunroof frame. It allowed 33 steel parts to be integrated into just four reinforced plastic ones.

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CATEGORY WINNER: Body Interior

- **SECOND-ROW SEAT BACK**
  - **OEM Make & Model**: 2015 Ford Motor Co. Ford* Mustang* sports car
  - **Tier Supplier/Processor**: Continental Structural Plastics Inc.
  - **Material Supplier / Toolmaker:** Hanwha L&C / Century Tool & Gage
  - **Material / Process**: glass-mat thermoplastic (GMT) composite 45% GF unidirectional / compression molding
  - **Description:** This second-row seat back successfully meets the extremely challenging European safety regulations ECE luggage-retention load case through the use of unidirectional glass-reinforced GMT composite rather than typical steel. The compression-molded design, which required over 100 iterations of FEA to finalize, eliminates five parts from the earlier steel design and saves 3.1 kg/car in a thinner construction that also is easier to install.

CATEGORY WINNER: Chassis & Hardware

- **CO-EXTRUDED THERMOPLASTIC COOLANT TUBE**
  - **OEM Make & Model**: 2015 Renault Group Renault* Twingo* city car
  - **Tier Supplier/Processor**: Tristone Flowtech
  - **Material Supplier / Toolmaker:** DuPont Automotive / not stated
  - **Material / Process**: Zytel* LC6200 PA 6/12 / co-extrusion
  - **Description:** This co-extruded coolant tube with patented bellows design replaced aluminum tubing and rubber hose while meeting all the high-temperature and high-pressure demands of the coolant system. The co-ex tube uses functionalized high-temperature PP with hydrolysis-resistant PA 6/12 to withstand internal temperatures to 125°C and external temperatures to 150°C. The application delivers a 60% weight reduction and enhanced flexibility and formability vs. previous technology.

CATEGORY WINNER: Environmental

- **CELLULOSE FIBER COMPOSITE CONSOLE ARMREST**
  - **OEM Make & Model**: 2013 Ford Motor Co. Lincoln* MKX* luxury CUV
  - **Tier Supplier/Processor**: Johnson Controls, Inc.
  - **Material Supplier / Toolmaker:** Weyerhaeuser NR Co./ not stated
  - **Material / Process**: Thrive* 20DX235 PP / injection molding
  - **Description:** This application represents the first time glass fiber-reinforced PP has been replaced by a natural fiber-reinforced PP with equivalent performance but improved environmental impact. This armrest console uses 20% renewably sourced cellulose fiber obtained from sustainably harvested forestry by-products. The resulting part is cost neutral but 6% lighter, reduces tool abrasion, and lowers process energy 10% thanks to lower temperature and faster process cycles. From a lifecycle analysis standpoint, it reduces CO2 emissions by 11% and saves 2,500 gal of fuel over the vehicle's life.

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CATEGORY WINNER: Materials

- **METALLIC APPEARANCE FINISH PANELS**
  - **OEM Make & Model**: 2015 Ford Motor Co. Ford* Mondeo* sedan
  - **Tier Supplier/Processor**: International Automotive Components Group (IAC) / Key Plastics Löhne GmbH
  - **Material Supplier / Toolmaker:** Samsung Chemical / Michael Tool & Mold Ltd.
  - **Material / Process**: Luminous* LX-1098 PC/ABS / injection molding
  - **Description:** This MIC metallic-look part features a weldline-free surface around holes (despite complex geometry), and sports a lush gloss surface (without grain to hide surface imperfections) and eliminates the need for paint. Additionally, special gate/runner designs and a special tool finish technique were used in combination with the eMold process (to elevate resin temperature in key areas) with continuous venting. A new high-flow material with optimum flake size and amount was developed specifically for the parts. The result is improved part appearance that also reduces warranty claims vs. previous painted parts, plus a direct $13 USD / vehicle cost savings with further indirect cost savings and environmental benefits owing to paint line avoidance.

CATEGORY WINNER: Powertrain

- **CRANKSHAFT COVER WITH INTEGRATED OIL SEAL**
  - **OEM Make & Model**: 2014 Volkswagen AG MDB engine platform
  - **Tier Supplier/Processor**: Kaco GmbH + Co. KG / Engel Austria GmbH
  - **Material Supplier / Toolmaker:** DSM Engineering Plastics B.V. / Elmet GmbH
  - **Material / Process**: EcoPaXX* Q-HG10 PA 4/10 50% GF / injection molding
  - **Description:** This is the world's first sustainable crankshaft cover, which is molded in a PA 4/10 formulated from 70% renewable resources and certified to be 100% carbon neutral from cradle to grave. The design itself features a friction-optimized dynamic seal in polytetrafluoroethylene (PTFE), which replaced a wet chemistry surface treatment and is activated via a vacuum-plasma process. The entire production process is eco-driven with no net waste. The CAE-optimized design enables a plastic flange to be used as a torque support for assembly operations during vehicle manufacture. The resulting part is 40% lighter than the incumbent aluminum part it replaced.

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CATEGORY WINNER: Process, Assembly & Enabling Technologies

- **SINGLE-COLLIMATOR MOLDED LED LENS**
  - **OEM Make & Model**: 2015 Ford Motor Co. Ford* F-150* pickup
  - **Tier Supplier/Processor**: Ventra Plastics Div. of Ventra Group Inc. & Flex-N-Gate Corp. / DBM Reflex
  - **Material Supplier / Toolmaker:** Bayer MaterialScience / DBM Reflex
  - **Material / Process**: Makrolon* LED 22.4.5 PC / multi-shot injection molding
  - **Description:** This is the first application of a single-collimator, all-plastic molded lens for both low and high beam LED headlamp applications replacing glass. The efficient optical lens provides stylists with a new level of design freedom and vs. multi-lens designs save approximately $5 USD/vehicle. A special optical grade of PC material was used for optical efficiency; a multi-shot injection molding process forms the 45-mm thick lens, whose surface tolerances must be held within 40 microns. Cycle times vs. glass are significantly reduced as well.

CATEGORY & GRAND AWARD WINNER: Safety

- **ACTIVE GLOVE BOX**
  - **OEM Make & Model**: 2015 Ford Motor Co. Ford* Mustang* sports car
  - **Tier Supplier/Processor**: Faurecia
  - **Material Supplier / Toolmaker:** Mitsubishi Chemical Corp. & Advanced Composites, Inc. / Extol, Inc.
  - **Material / Process**: TP850N / ADX5028 / ADX5017 TPO / injection molding
  - **Description:** This patented application is an industry first where an injection-molded knee airbag is integrated with the glove-box door, reducing weight 65% and space 75% vs. separate traditional knee airbags plus glove-box doors. Instead of a woven textile airbag, a special bladder is hot-plate welded to the door and then checked with a hydrostatic burst tester to ensure the strength of the resulting hermetic seal. This saves $5-10 USD/car while providing consumers with more interior space and decreasing vehicle mass for better fuel efficiency.

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 Y*ear's Most Innovative Use of Plastics*. This annual event typically draws over 700 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.

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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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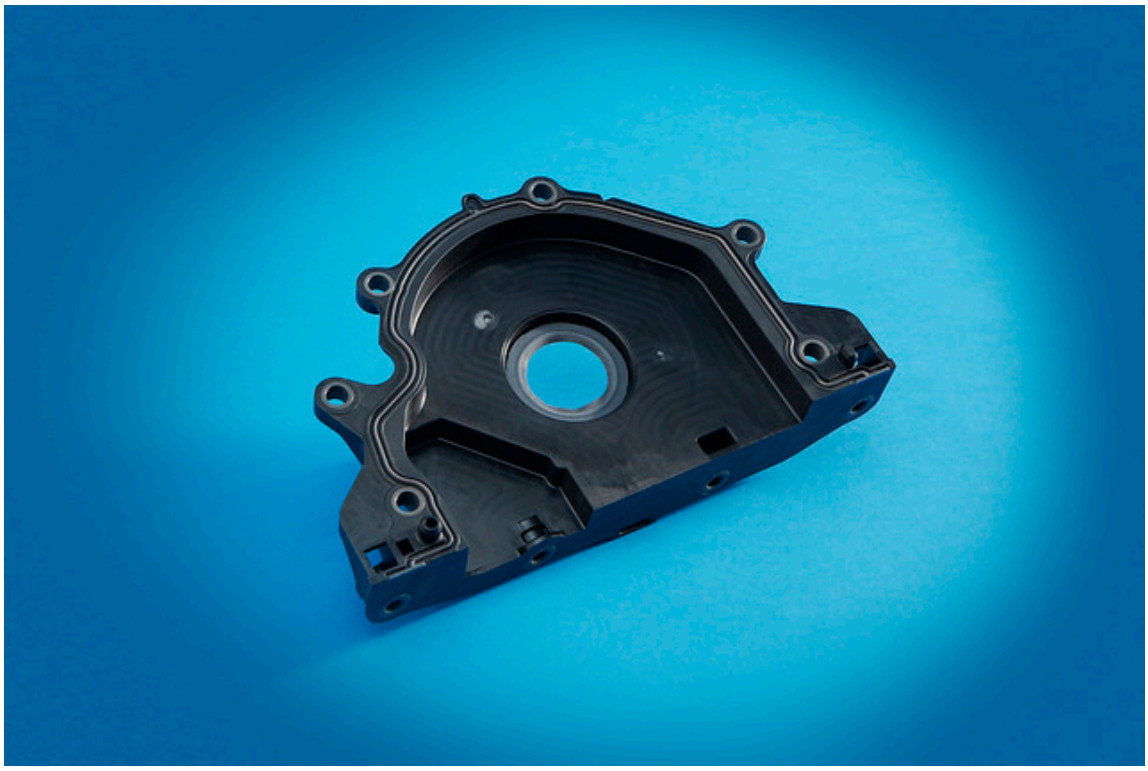

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