



**FOR IMMEDIATE RELEASE: (11/30/05)
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SPE AUTOMOTIVE DIVISION ANNOUNCES 11 WINNERS OF 35TH-ANNIVERSARY INNOVATION AWARDS GALA

***SPE Presents More Awards than Ever Before at Gala; This Year's Nomination Pool is
Largest in a Decade & Most Diverse Yet in Terms of OEMs, Suppliers Represented***

TROY (DETROIT), MICH. – At its 35th anniversary *Innovation Awards Gala*, the Automotive Division of the Society of Plastics Engineers International (SPE¹) presented 11 awards for innovation in plastics for transportation applications and the teams of OEMs, tier suppliers, toolmakers, and materials suppliers that developed and commercialized them. The nominations pool for this year's judging process was the largest in at least a decade and more diverse – in terms of the number of OEMs and suppliers represented – than in any previous year since the event started in 1970. Over 800 automotive engineers, business executives, materials suppliers, and media attended the sold-out event, which took place November 16 at Burton Manor in Livonia.

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¹ SPE is a trademark of the Society of Plastics Engineers International.

The most prestigious prize of the evening – the *Grand Award* – was given to the team that developed the composite In-Bed Trunk² featured on the '05 MY Honda³ Ridgeline pickup truck. The integrated storage system molded from sheet-molding compound (SMC) composite provides 8.5 cubic feet of easily accessible, lockable, weather-tight stowage. It can hold toolboxes, luggage, or up to 3 sets of golf clubs, and doubles as an in-bed ice chest (with integral drainage plug). With an 1,100-pound carrying capacity and integral tie downs, the rugged trunk offers better durability and slip resistance than conventional systems and is rustproof. Additionally, the trunk offers a weight savings of 30% vs. steel, and its 7-piece construction replaced over 100 steel parts while greatly enhancing manufacturability, assembly, and durability. In fact, this truly innovative application achieves levels of component integration that would not be feasible in sheet metal for reasons of cost, mass, and manufacturability. Meridian Automotive Systems was the systems supplier for this application; tooling was supplied by Century and Global Tooling Systems; and the materials suppliers included Ashland Chemical, Saint-Gobain, and Rohm & Haas. In addition to the *Grand Award*, the application also won the top award in the *Body Exterior* category. Kevin Thelen of Honda Research of America accepted both trophies.

In the *Body Interior* category, the top award was presented to General Motors (GM) for the HVAC film valve featured on the '05 MY Pontiac Grand Prix⁴ sports sedan. In this application, a highly flexible, plastic film valve with apertures is moved within a housing to precisely meter airflow within a very confined space without stratification of hot and cold airstreams. The film valve offers 13 thermal settings for improved passenger comfort. Air-rush noise is reduced because the valve does not "rudder" through the air stream, which would otherwise create turbulence. A combination of polytetrafluoroethylene (PTFE), fiberglass, and silicone rubber is used to create the system. Delphi was the systems supplier for the application; Macauto Industrial was both the molder and toolmaker; and the film material was provided by Saint-Gobain. Frank Joo, engineering group manager at GM's HVAC and Powertrain Cooling, accepted the award.

In the *Chassis / Hardware* category, an all-plastic window-lift system on the '06 MY DaimlerChrysler PT Cruiser⁵ multipurpose vehicle was the winner. By converting from steel to plastic, numerous benefits were achieved, including improved crash performance and durability, 25% lower mass, and 15% less cost, and elimination of the need for external lubricant. With fewer attachment points to the vehicle, fewer assembly line workers were needed to install the window lift. Tier supplier, Dura Automotive Systems, developed the innovative yet simple design; Titan Plastics Group was both molder and tooling supplier; Michael Day Enterprises supplied the proprietary nylon 6/6 material; and Mertech Intellectual Properties holds the intellectual property. Jeff Tibbenham, supervisor, Body Hardware at DaimlerChrysler accepted the award.

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² *In-Bed Trunk* is a trademark of Honda Motor Co., Ltd.

³ *Honda* is a trademark of Honda Motor Co., Ltd.

⁴ *Pontiac* and *Grand Prix* are trademarks of General Motors Corporation.

⁵ *PT Cruiser* is a trademark of DaimlerChrysler.

The winner in the *Environmental* category was DaimlerChrysler for a composite spare-tire carrier on the 2-door, Mercedes-Benz A-Class⁶ mini-car. Here, abaca (banana) fiber replaced glass as reinforcement for the polypropylene matrix, making this application the first large-scale use of a natural-fiber-based composite for the exterior of an automobile. Rieter Automotive molded the part with fibers supplied by Manila Cordage. The application addresses a number of important social and environmental issues through reforestation of previously clear-cut rainforests, thereby reducing soil erosion and poverty for the local inhabitants, while enhancing biodiversity. Further, the component offers cost, mass, and occupational-safety benefits, reduces carbon dioxide emissions, saves 60% of the energy required to produce glass fiber, and demonstrates sustainability via the use of natural, renewable fibers. A 10-year public-private partnership between DaimlerChrysler, the German Investment and Development Foundation (DEG), Euronatur, the University of Hohenheim, the Technical College of Reutlingen, Leyte State University, the National Abaca Research Center of the Philippines, and Swiss systems supplier Rieter Automotive brought this concept to fruition. The award was accepted by Larry Williams, director of Materials Engineering, DaimlerChrysler, and Jeff VanBuskirk, vice-president, Rieter Business Group America.

The first molded-in color, reactor thermoplastic polyolefin (TPO) resin with Class-A appearance and excellent low-temperature impact strength was judged the most innovative application in the *Materials* category. The highly rubber-modified material is used for the side airbag covers of the '06 MY Buick Lucerne⁷ sedan from GM. The material met or exceeded all of the automaker's requirements for the application and offers significant cost savings vs. conventional painted covers. The systems supplier for this application was Autoliv; the molder and toolmaker was Key Plastics; and Basell supplied the material. GM's Dave Mattis, director of Materials & Appearance Engineering, accepted the award.

Introduced last year, the *Performance & Customization* category accommodates an ever-growing list of aftermarket or optional OEM accessories where plastics improve the appearance, functionality, and / or performance of vehicles. This year's winner was the cargo management system manufactured by Lear Corporation and SCA Packaging North America for the Ford Escape⁸, Mercury Mariner, and Mazda Tribute⁹ sport-utility vehicles. This application combines multiple plastic forming technologies and materials to create a lightweight system providing significant additional secure storage for vehicle users. A molded expanded-polypropylene (EPP) foam structure, with a blow-molded lid produced via Lear's patented blow-molding process, and a deep-draw thermoformed carpet create a system that meets Ford's tough load / deflection requirements. Steve Angus, engineering supervisor, and Jennifer Bremmer, design & release engineer accepted the award on behalf of Ford Motor Company.

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A water jacket spacer for the open-deck engine design of the '03 MY Toyota Crown¹⁰ sedan was the winner in the *Powertrain* category. This first-ever use of a plastic spacer in the cylinder block was inspired by high-performance racecar engines. The application provides significant benefits. It allows Toyota to deliver precisely tuned coolant flow to areas of the engine most in need. It provides longer engine life through uniform cylinder-bore temperature distribution. Moreover, it increases fuel economy by 1%. A high-performance aromatic polyamide (PPA (nylon)) material from DuPont was used for the application. The molder and systems supplier was Aisan. Yoshikatsu Nakamura, vice president of Powertrain & Chassis Engineering at Toyota's Technical Center USA accepted the award.

In the *Process / Assembly / Enabling Technologies* category, the world's first bonded hybrid metal / plastic automotive front-end carrier for the '05 MY Volkswagen (VW) Polo¹¹ A05GM compact car was the winner. The stiffness-to-weight ratio of the system was maximized by adhesive bonding a metal reinforcement to an injection-molded long-glass-fiber-reinforced polypropylene (LGF-PP) composite carrier while reducing stress concentrations (associated with mechanical fasteners) and spreading the load over the entire structure for higher load-bearing capabilities. A special 2-component acrylic adhesive bonds to the low-energy PP substrate without pre-treatment. Simoldes was the toolmaker and molder of this application and Dow Automotive supplied the adhesive and resin. Armin Prinke of VW accepted the award.

Safety is the newest nomination category added to the *Innovation Awards* judging process this year. The winning entry was for pedestrian protection systems used on the front-end of vehicles in Europe. The entry featured 2 different nominations and designs for complying with the European Union's Phase 1 Lower Leg requirements, which came into effect in July of this year. In both systems, the OEMs were able to meet requirements within an existing vehicle design. One system is featured on the '05 MY Suzuki Swift¹² compact car and makes use of a 2-piece polycarbonate / polybutylene terephthalate (PC / PBT) energy absorbing system, which fits in just a 45-mm packaging space. The molder and tooling supplier is Takagi Seiko and the materials supplier is GE - Plastics. The second system, featured on the '05 MY Volkswagen Golf¹³ hatchback, makes use of a textile-reinforced glass-mat thermoplastic (GMT) composite beam to meet requirements. The molder was AKsys GmbH; Eppinger WF supplied the tooling; and the materials supplier was Quadrant Plastic Composites AG. The award was accepted by Naruse Msam from Suzuki and by Armin Prinke from Volkswagen.

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Travis Meister, a Ford materials engineer, originally proposed the *Hall of Fame* award in 1983. The criteria for the award are simply that the application must have been implemented at least 10 years ago and it must have made a significant and lasting contribution to the use of plastics in the automotive industry. It has become increasingly difficult to name a single winner for this honor, since plastics use in vehicles has proliferated so successfully in the past 2-1/2 decades. Unlike the category awards, which only consider applications specifically nominated in a given year, this award considers all plastics applications that have been in continuous use for 10 years or more. The winner is selected from new submissions, a review of past submissions, and any other candidates that the panel deems worthy. This year's winner is the thermoplastic intake manifold first used on the 1972 Porsche 911¹⁴ sports car. That application was molded by IBS Brocke using nylon resin supplied by BASF. The original application has subsequently been translated for use on most production engines in the auto industry. Plastic intake manifolds have continued to evolve through the contributions of suppliers such as BASF, DuPont, Mann & Hummel, Siemens, Freudenberg-NOK, Delphi, and others. In fact, other thermoplastic intake manifolds have been *Innovation Awards* category winners in 1992, 1993, 1994, and 1999, and a finalist in this year's *Powertrain* category. Paul Ritchie, president and CEO of Porsche Engineering Services, and Jay Baker, group vice-president, BASF Engineering Plastics, accepted the trophy.

This year's nominations represented more automakers than ever before, including Audi, DaimlerChrysler, Ford, General Motors, Honda, Mercedes-Benz, Mitsubishi, Nissan, Porsche, Seat, Suzuki, Toyota, and Volkswagen. The 60 nominations that were accepted after initial review is the largest pool of applications submitted for *Innovation Awards* judging in over a decade. These 60 nominations were painstakingly pared down to a list of category finalists by an initial panel of judges made up of industry experts and SPE Automotive Division board members. Then a panel of 20 Blue Ribbon judges – comprised of media, technical, and industry experts – reviewed the finalists and selected category winners as well as the *Grand Award* winner.

SPE's *Innovation Awards Gala* is unofficially called the "Academy Awards¹⁵ of the plastics and automotive industries."

As is customary, proceeds raised from this event will be used to fund SPE educational efforts and technical seminars, which will help to secure the role of plastics in the advancement of the automobile.

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.

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¹⁵ Academy Awards is a trademark of the Academy of Motion Picture Arts and Sciences.

SPE Announces Winners of 35th Innovation Awards Gala
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For more information about the SPE *Innovation Awards Gala*, visit the SPE Automotive Division's website at www.speautomotive.com, or contact the group at +1.248.244.8993, or write SPE Automotive Division, 1800 Crooks Road, Suite A, Troy, MI 48084, USA.

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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Attn. Editors: For high-resolution JPG files of application photos, winning team photos, or any other available photography from this year's event, please e-mail us at p.malnati@sbcglobal.net and request a copy. We can provide a PDF "contact sheet" of available photography from which you can choose.



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TROY (DETROIT), MICH. – The most prestigious prize of the 35th-anniversary SPE¹⁶ *Innovation Awards Gala* – the *Grand Award* – was given to the team that developed the composite In-Bed Trunk¹⁷ featured on the '05 MY Honda¹⁸ Ridgeline pickup truck. The integrated storage system molded from sheet-molding compound (SMC) composite provides 8.5 cubic feet of easily accessible, lockable, weather-tight stowage. It can hold toolboxes, luggage, or up to 3 sets of golf clubs, and doubles as an in-bed ice chest (with integral drainage plug). With an 1,100-pound carrying capacity and integral tie downs, the rugged trunk offers better durability and slip resistance than conventional systems and is rustproof. Additionally, the trunk offers a weight savings of 30% vs. steel, and its 7-piece construction replaced over 100 steel parts while greatly enhancing manufacturability, assembly, and durability. In fact, this truly innovative application achieves levels of component integration that would not be feasible in sheet metal for reasons of cost, mass, and manufacturability. Meridian Automotive Systems was the systems supplier for this application; tooling was supplied by Century and Global Tooling Systems; and the materials suppliers included Ashland Chemical, Saint-Gobain, and Rohm & Haas. In addition to the *Grand Award*, the application also won the top award in the *Body Exterior* category.

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