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### **SPE® AUTOMOTIVE NAMES FINALISTS FOR 52<sup>nd</sup> ANNUAL AUTOMOTIVE INNOVATION AWARDS COMPETITION**

**TROY, (DETROIT) MICH.** – The Automotive Division of the Society of Plastics Engineers (SPE®) today announced the Finalists for its 52<sup>nd</sup> annual ***Automotive Innovation Awards Gala***, the oldest and largest recognition event (established in 1970) in the automotive and plastics industries. Nominations were first subjected to a pre-qualification review and then were presented before a panel of industry experts on September 21-22, 2023. That panel sent forward the most innovative nominations (category finalists) to the Blue Ribbon judging round, which was held September 29, 2023. Category and Grand Award winners selected during the Blue Ribbon judging round will be announced on the evening of November 8, 2023, during the 52<sup>nd</sup> SPE Automotive Innovation Awards Gala. Finalists from this year's competition are listed below in category and submission order.

#### **CATEGORY: Aftermarket and Limited Edition/Specialty Vehicles**

##### **Hybrid Battery Interconnect Board**

- **OEM Make & Model:** 2024 General Motors Co. Chevrolet Corvette E-Ray
- **Tier Supplier/Processor:** Sun Microstamping Technologies
- **Material Supplier/Toolmaker:** BASF Corp. / Sun Microstamping Technologies
- **Material /Process:** Ultramid B3UG4 PA 6 / Vertical Clamp Parting Line Injection Rotary Molded – Insert Overmolding
- This patented hybrid battery interconnect board features small and delicate metal current collectors, bus bars, and sensing lines in a very compact design to fit in limited packaging space. The 20% GF/PA6 grade was selected for its ability to offer high levels of functional integration in limited space plus be compatible with snapfits, heat staking, ultrasonic welding, and adhesive bonding. The material also is heat stabilized and flame retardant. Laminated core-block inserts are used in rotary injection tooling for venting and to control stampings during overmolding.

## **CATEGORY: Aftermarket and Limited Edition/Specialty Vehicles**

### **Plastic Oil Cooling Lines**

- **OEM Make & Model:** 2024 General Motors Co. Chevrolet Corvette E-Ray
- **Tier Supplier/Processor:** Automotive Veritas de México, S.A. de C.V.
- **Material Supplier/Toolmaker:** EMS-Grivory / Automotive Veritas de México, S.A. de C.V.
- **Material /Process:** Grilamid XE 3975 PA6 & Grilamid 2S25WHLX / 10-HIP / Plastic Pipe Oven Forming
- Replacing aluminum with flexible rubber hose, for the first time an injected plastic fitting is laser welded to plastic tubing and assembled to an aluminum block with a steel plate for structural rigidity while permitting the current system interfaces to be used in limited packaging space. Mass was reduced 30% and direct cost 23% while improving the oil cooling circuit pressure drop by 51% vs. benchmark technology. The neat, semi-flexible PA6/10 polymer contains 62% bio-based monomer and offers good cold-temperature impact, chemical resistance, and short-term temperature peaks.

## **CATEGORY: Aftermarket and Limited Edition/Specialty Vehicles**

### **Swappable Battery Cell Holder**

- **OEM Make & Model:** 2024 Sun Mobility Pvt. Ltd. GEN 2 Ph II
- **Tier Supplier/Processor:** Sun Mobility Pvt. Ltd. / Sanko Gosei
- **Material Supplier/Toolmaker:** SABIC / Sanko Gosei
- **Material /Process:** Stamax 30YH570 FR PP 30% LGF / Injection Molding
- This swappable battery-cell holder meets stringent regulatory standards and requirements. It features an injection molded LFT-PP with an intumescent, halogen-free flame-retardant package selected for safety, mechanical performance, and compliance with environmental regulations.

## **CATEGORY: Body Exterior**

### **Composite Cross-Members**

- **OEM Make & Model:** 2022 Hyundai Motor Group Genesis GV70 & G80
- **Tier Supplier/Processor:** Sungwoo Hitech / Shinsung Composite Materials
- **Material Supplier/Toolmaker:** Hyosung Advanced Materials Corp. /Kukdo Chemical Co. Ltd./ NA
- **Material /Process:** KFR5121& KFH9581LV Epoxy / Injection Box-Based Pultrusion
- A novel hybrid pultrusion process can cost effectively produce up to 20-million load-bearing and e-coat-capable structural composite beams annually thanks to a fully automated process. Beams provide the primary load path to pass IIHS Side & Pole Impact tests, protecting occupants and on onboard battery packs while achieving a 30% increase in impact resistance vs. roll-formed steel. An injection box added to the pultrusion line infuses high-performance epoxy into unidirectional carbon fiber and woven fiberglass reinforcements, reducing mass/vehicle 12 kg and tool cost 30% vs. metallic benchmarks. Beams are attached to the BIW via structural adhesives and blind rivets.

## **CATEGORY: Body Exterior**

### **Flush Sealing System**

- **OEM Make & Model:** 2024 NIO Ltd. NIO EC7, ES8, EC6 and ES6
- **Tier Supplier/Processor:** Cooper Standard
- **Material Supplier/Toolmaker:** Celanese Corp. & Shin-Etsu & EMS Grivory / Cooper Standard
- **Material /Process:** Santoprene 123-50W175 TPV & Exelast SX553 (TPO) & Grilon® TSG-50/4 (PA66+PA6,GF50)  
Rails: Co-extrusion with overmolding for finishing ends, Sliders: Injection Molding
- This patented sealing system enables separation of the glass guidance rails/sliders from the weatherstrip/seal on framed doors, permitting improved aesthetics similar to frameless doors at lower mass, better NVH, reduced complexity, faster assembly. The cost-neutral system also permits window regulators on framed doors and some competitive flush-glazing options to be converted from dual to single rails for both front and rear doors. A combination of injection molding and extrusion are used to produce the thermoplastic system, which maintains  $\pm 0.1$  mm tolerances. Virtual validation technology was used to eliminate the need for physical prototypes.

## **CATEGORY: Body Exterior**

### **Thermoplastic Splitgate**

- **OEM Make & Model:** 2023 Rivian LLC Rivian R1S
- **Tier Supplier/Processor:** Magna International
- **Material Supplier/Toolmaker:** Advanced Composites, Inc. / Tycos Tool & Die Co.
- **Material /Process:** LGF-PP & TPO / Injection Molding
- This is the world's first all-thermoplastic split gate rear-closure system, which is delivered to the assembly line as a ready-to-install module. The complex, deep draw (>80 mm) design offers improved perceived quality at lower mass, NVH, and cost vs. metals, and is offered in a 2-tone execution. By commonizing grades between the liftgate and the benchgate and focusing on sustainability, parts were reduced from 9 to 3 and just 2 materials are used (injection molded LFT-PP and TPO). The CHMSL and taillamps were carried over from the pickup model.

## **CATEGORY: Body Exterior**

### **Uniformly Lit Animated Tail Lamps**

- **OEM Make & Model:** 2023 General Motors Co. GMC Sierra & Chevrolet Silverado HD 2500/3500
- **Tier Supplier/Processor:** Magna Lighting
- **Material Supplier/Toolmaker:** Trinseo PLC / DBM Reflex
- **Material /Process:** Plexiglass V825-100 PMMA / Injection Molding
- Key to the crisp and uniformly lit appearance of these animated taillamps are micro-optical features on injection molded light guides produced via a specialized manufacturing technique. Using an algorithm, the process starts by generating a pseudo-randomized topology that is machined into a master that is then used to create an electroform nickel insert. The technology produces a smooth appearance with far fewer LEDs, eliminates hot spots from point light sources, and permits crisper animation in tighter packaging depths vs. traditional approaches.

## **CATEGORY: Body Interior**

### **Back-Lit Wrapped Interior Trim**

- **OEM Make & Model:** 2023 SAIC General Motor Corp. Ltd. Buick Century
- **Tier Supplier/Processor:** Yanfeng Automotive Interior Systems Co. Ltd.
- **Material Supplier/Toolmaker:** Benecke Changshun Auto Trim (Zhangjiagang) Co., Ltd., / Yanfeng Automotive Interior Systems Co., Ltd
- **Material /Process:** BB2CAC-ZZZZ TPO / Translucent TPO Extrusion Molding
- This interior trim lighting system is hidden until lit, yet provides these backlit wrapped interior parts with the feel of leather and vibrant special lighting effects in limited design space. Key to the execution is a special translucent TPO extrusion molding process and a precise ink coating layer between surface and translucent 3D mesh backing fabric. Light transmission and emitted colors are controlled by colorant concentration. Versus TPE injection molding and PVC with punched holes filled with adhesive, cost and weight are reduced, while recyclability is improved vs. PVC.

## **CATEGORY: Body Interior**

### **Foamed Door Panel**

- **OEM Make & Model:** 2024 Renault Group Renault Espace
- **Tier Supplier/Processor:** Antolin
- **Material Supplier/Toolmaker:** LyondellBasell & Avient Corp. / Antolin
- **Material /Process:** TPO / Chemical Foaming Injection Molding with Core-Back Molding
- Up to a 25% weight reduction with no loss of stiffness and 25% CO2 reduction were achieved in this MIC, Class A TPO door panel (carrier + map pocket) by combining core-back molding and chemical foaming in a multicavity tool with significant volumetric differences between cavities. A key enabler was use of a proprietary pressure regulation system with in-mold sensors, a TPO material specially developed for core-back/foaming, and a chemical foaming technology that achieved uniform and well-defined cell structure in both parts.

## **CATEGORY: Body Interior**

### **Mega Bin / Frunk**

- **OEM Make & Model:** 2024 Ford Motor Co. Ford F-150 Lightning
- **Tier Supplier/Processor:** Cascade Engineering
- **Material Supplier/Toolmaker:** Celanese Corp. / Commercial Tool Group
- **Material /Process:** Celstran PP-GF40 AD3004 (PP-LFT 40%) / Injection Molding
- By converting from compression molded painted SMC to injection molded MIC LFT-PP to produce this large Class A composite frunk — currently the industry's largest — mass was reduced 48%, productivity was increased owing to a 37% cycle time reduction, the cost and environmental burden of paint were eliminated, seal interfaces were improved, secondary routing of holes is no longer needed, and the frunk is fully recyclable at end of life. A 4,000 ton injection press and a tool equipped with a 16-drop hot runner system are used to mold parts.

## **CATEGORY: Electric & Autonomous Vehicle Systems**

### **Battery Disconnect Unit**

- **OEM Make & Model:** 2023 General Motors Co. GMC Hummer EV
- **Tier Supplier/Processor:** Lear Corporation
- **Material Supplier/Toolmaker:** BASF Corp. / Lear Corporation
- **Material /Process:** Ultramid 66 H2 G25 V0KB1 and Ultradur B4450G5 HR / Injection Molding
- Two BDUs have been integrated into a single system supporting two 400V systems, which enable fast and safe recharging of EVs and disconnects power in an over-current situation to protect passengers. The meter-long parts feature a complex design that offers improved thermal management and reduced component mass. Two UL94 V0 halogen-free materials—one with very-high CTI—replaced die-cast aluminum while maintaining superior physical properties and ease of processing. Complex simulation and process optimization were also key to success.

## **CATEGORY: Electric & Autonomous Vehicle Systems**

### **Interconnect Board**

- **OEM Make & Model:** 2023 General Motors Co. Cadillac Lyriq & GMC Hummer EV
- **Tier Supplier/Processor:** Korea Electric Terminal Co., Ltd.
- **Material Supplier/Toolmaker:** LG Chem Ltd./ NA
- **Material /Process:** Lumid GN2251BF PA66-GF25 / Injection Molding
- This patented interconnect board (ICB) design supports, cools, and isolates cell tabs/busbars, provides support and structure to the module between the top cover and cold plates, and aids assembly by guiding, supporting and constraining cell tabs. The overmolded busbar design, which reduces copper usage ~25%, allows cooling through the frames from the cold plate. Honeycomb and rib features on the back reduce mass, increase clearance to cells, improving structure, especially during critical manufacturing processes, and contribute to finger-proofing requirements. Additionally, the hinged ICB ships flat, reducing shipping space 78%, then folds for assembly.

## **CATEGORY: Electric & Autonomous Vehicle Systems**

### **Battery Module Component**

- **OEM Make & Model:** 2023 Hyundai Motor Group Ioniq 6
- **Tier Supplier/Processor:** Hyundai Mobis Co., Ltd./ Infac Corp.
- **Material Supplier/Toolmaker:** SABIC Korea / NA
- **Material /Process:** SABIC PPc H1030 PP-SGF30 / Injection Molding
- Use of a 30% GR/PP material with intumescent FR package reduces weight 10% and cost 20% while improving fire safety vs. FR 30% GR/PA6. This is also the first thermoplastic to pass China's GB/T 41467.3-2015 fire safety regulation for EVs surviving 5 minutes at 1,000°C. Improved flow properties vs. PA6 permitted higher cavitation tooling to be used, doubling productivity in the same cycle time, while also lowering molding temperatures for energy and CO2 improvements. Versus metals, mass reduction of 18 kg/vehicle is achieved. The design also features an integral overmolded busbar.

## **CATEGORY: Materials**

### **Console Hinge Bracket**

- **OEM Make & Model:** 2024 Ford Motor Co. Lincoln Corsair
- **Tier Supplier/Processor:** IAC Group
- **Material Supplier/Toolmaker:** The Materials Group / NA
- **Material /Process:** Optilon N6 50BFM HSL PA6 / Injection Molding
- This high-fiber, MIC, injection molded, Class A console hinge bracket features more sustainable basalt rather than E-glass fiber reinforcement. No reduction in performance or durability was seen in these color-matched 50% basalt/PA6 parts, but the switch addressed fiberglass shortages, reduced costs, and improved CO2 footprint.

## **CATEGORY: Materials**

### **Battery Module Side Plates**

- **OEM Make & Model:** 2024 General Motors Co. Chevrolet Corvette E-Ray
- **Tier Supplier/Processor:** Novares Group
- **Material Supplier/Toolmaker:** RTP Co. / Liberty Molds, Inc.
- **Material /Process:** RTP 299 K X 138337 E BLACK / Injection Molding
- By replacing metals with RTP 299 K X 138337 E BLACK PARA material to injection mold the side plates for this battery module, extremely flat parts with high dimensional accuracy, stiffness, and strength were achieved in a complex geometry. The high-modulus, creep-resistant FR polymer eliminated the need for compression limiters and electrical isolation films, yet withstands extreme pressures from cell expansion and met all mechanical requirements. Additionally, 4 components were reduced to 1 and many functional features were incorporated in the patented side plates that would not have been possible in metals. Mass was reduced 37% and cost 55%.

## **CATEGORY: Materials**

### **Roof Vent Cover**

- **OEM Make & Model:** 2023 Rivian LLC RSV / RCV
- **Tier Supplier/Processor:** SRG Global
- **Material Supplier/Toolmaker:** SABIC / NA
- **Material /Process:** LEXAN SLX2271T PC / Injection Molding
- This high-gloss, MIC PC block copolymer with self-healing capabilities offers better UV stability, scratch resistance, and thermal performance than painted ABS or PC/ABS, while reducing cost significantly owing to elimination of paint. No tooling changes were required, the CO2 footprint was reduced, parts are now recyclable at end of life (owing to elimination of paint), and multiple color options are available.

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

### **Seat Module**

- **OEM Make & Model:** 2024 Toyota Motor Corp. Toyota Grand Highlander
- **Tier Supplier/Processor:** Hi-Lex Corp.
- **Material Supplier/Toolmaker:** NA / Hi-Lex Corp.
- **Material /Process:** NA / Injection Molding
- This patented injection molded module for seats incorporates both temporary and permanent holding features to control cables and dramatically reduce both components and labor at the seat manufacturer. Cables are delivered to the Tier 1 pre-routed on the module plate, eliminating the brackets, cable ties, and clips typically used to control seat cables, and greatly reducing labor for an assembly operator. The module also reduces rework and scrap due to cable misalignments. Additionally, lever pull effort for consumers is reduced since direct cable routing enables use of shorter cables.

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

### **Laser Welded xEV Spray Bars**

- **OEM Make & Model:** 2023 Ford Motor Co. Ford Edge
- **Tier Supplier/Processor:** Nifco America Corp. / NA
- **Material Supplier/Toolmaker:** Celanese Corp. / NA
- **Material /Process:** Zytel 45HSB PA 6/6 / Injection Molding and Laser Welding
- Moving from drilled metal to molded plastic tubes on spray bars can reduce mass and cost and reduce contamination concerns involving the presence of metal shavings from drilling operations. To create an enclosed structure with the holes needed to spray fluid via injection molding, parts must be molded in 2 complex, contoured halves and joined. The cleanest joining process proved to be laser welding. The high-flow, heat-stabilized PA6/6 grade was selected for its high thermal resistance, low contamination, consistent quality and resistance to automatic transmission fluid.

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

### **Compressor Housing**

- **OEM Make & Model:** 2022 General Motors Co. Cruise Origin
- **Tier Supplier/Processor:** HP Inc. & Carbon, Inc. / GKN Additive (Forecast3D)
- **Material Supplier/Toolmaker:** HP Inc. & Carbon, Inc. / NA
- **Material /Process:** HP PA12 HR & Carbon EPX82 Epoxy / HP MJF 5100 Series + Carbon M2
- To meet application specifications and very-tight timing requirements, 2 different polymer additive manufacturing processes (MJF and SLA) and 2 different polymers (PA12 and epoxy) were combined to produce the compressor housing for this low-volume, autonomous vehicle. MJF offered high throughput and cost effectiveness for the bulk of the compressor housing while SLA offered higher dimensional tolerances and smoother surface finish on the connector, which facilitated passing USCAR push/pull requirements. By using each process' strength and bonding parts together, cost and performance were optimized, tooling was eliminated, and program delays were avoided.

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

### **Battery Module Structure**

- **OEM Make & Model:** 2024 General Motors Co. Chevrolet Corvette E-Ray
- **Tier Supplier/Processor:** General Motors Co. / Novares Group
- **Material Supplier/Toolmaker:** RTP Co. & Solvay SA / Liberty Molds, Inc.
- **Material /Process:** RTP 299 KX133837E PARA & Amodel A-1145 HS BK 324 PPA / Injection Molding
- This all-thermoplastic battery structure combines 2 side plates and 45 repeating spacers bolted together to hold pouch-style batteries. The patented, volumetrically efficient design withstands high cell expansion forces during battery use while eliminating the need for 55 compression limiters plus isolation countermeasures necessary with metals. Side plates are injection molded with 50% GR/PARA while spacers are injection molded with 45% GR/PPA. Both materials required high molding precision, dimensional accuracy, flame retardance and the ability to integrate a variety of functional features that facilitate assembly. Versus aluminum, both mass and cost are reduced.

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

### **Console Structural Carrier Tooling**

- **OEM Make & Model:** 2024 General Motors Co. Cadillac Lyriq
- **Tier Supplier/Processor:** ABC Technologies, Inc.
- **Material Supplier/Toolmaker:** Celanese Corp. / Integrity Tool and Mold, Inc.
- **Material /Process:** Celstran PP-GF40-0453 (40% LFT PP) / Injection Molding
- Very-tight packaging space and the for space for an HVAC outlet in the console meant a traditional through-pin-type hinge could not be used on the armrest to keep it latched during a crash. A friction hinge with inertial lock — previously only used in the furniture industry — solved the problem, but required unique tooling innovation to be feasible. The first triple-action, two-stage slide featuring a horn-pin driven slide with collapsible lifters on top of a hydraulic main bottom slide was developed, enabling direct edge gating on top of the slide to optimize filling conditions.

## **CATEGORY: Safety**

### **Battery Disconnect Unit Finger-Safe Covers**

- **OEM Make & Model:** 2023 General Motors Co. GMC Hummer
- **Tier Supplier/Processor:** Grand Traverse Plastics Corp.
- **Material Supplier/Toolmaker:** RTP Co. / Quest Industries, Inc.
- **Material /Process:** RTP 199 X 137777 D S-481951 Safety Orange FR PP / Injection Molding
- To increase safety and prevent accidental contact with high voltage connections during assembly and service, and to reduce warpage that could cause manufacturing concerns, the component was redesigned to include alternating coring patterns along the top and bottom surfaces, which reduced warpage 81%. The component also features slots to permit use of forward-looking infrared (FLIR) cameras to view busbar connections below the component surface. The FR UL94 V0 material is supplied in safety orange.



## **CATEGORY: Safety**

### **Intumescent Terminal Covers**

- **OEM Make & Model:** 2023 General Motors Co. Cadillac Lyriq & GMC Hummer
- **Tier Supplier/Processor:** Auto-Kabel Group/ Molded Precision Components
- **Material Supplier/Toolmaker:** Pyrophobic Systems Ltd. / NA
- **Material /Process:** Lithium Prevent 200 PVC / Injection Molding
- A specially formulated flexible and intumescent PVC is designed to prevent arcing during thermal runaway events in high-voltage EV batteries. The high-temperature, high-voltage insulator is used to injection mold various terminal caps and barriers. Safety is increased during thermal runaway since the material maintains high dielectric strength, reducing arcing risk and ignition of gases and forms a structured char barrier, helping reduce spread of fire from one module to another.

## **CATEGORY: Safety**

### **PAB Hybrid 'U/Y' Door**

- **OEM Make & Model:** 2024 Ford Motor Co. Ford Mustang
- **Tier Supplier/Processor:** Detroit Manufacturing Systems LLC/ Forvia
- **Material Supplier/Toolmaker:** Mitsubishi Chemical Performance Polymers, Inc. / King Mold
- **Material /Process:** Thermorun TT850N TPE / Injection Molding, Vibration Welding, IMGL, Laser Score
- Owing to the vehicle's shallow sloped windshield, it was necessary to modify the typical U or Y design on the PAB chute door and hinge design to facilitate proper airbag deployment and prevent inadvertent cracking of the windshield. A combination of injection molding, vibration welding, in-mold grain lamination and laser scoring are used to create a modified U/Y door/hinge design that opens as a U shape and then folds during windshield contact. After opening, momentum of the door is slowed via the hinge design.

## **CATEGORY: Sustainability**

### **Basalt Fiber-Reinforced ADAS Bracket**

- **OEM Make & Model:** 2024 Ford Motor Co. Ford F-150
- **Tier Supplier/Processor:** Yazaki Corp. / HellermannTyton
- **Material Supplier/Toolmaker:** The Materials Group / HS Mold Ltd.
- **Material /Process:** Optilon N6-30B HSBK 30% basalt fiber-reinforced PA6 / Injection Molding
- By replacing E-glass with basalt fiber in this injection molded ADAS bracket, which also contained 60% PIR PA6, cost and weight were neutral, the part met all performance requirements, no tooling changes were needed, but a CO2 reduction of 74% was achieved and 180,000 kg of material annually is kept from landfills. The drop-in change is more sustainable, addresses issues with glass shortage and provides the same performance as virgin.

## **CATEGORY: Sustainability**

### **Bracket from Recycled BMC**

- **OEM Make & Model:** 2023 General Motors Co. Chevrolet Silverado LD
- **Tier Supplier/Processor:** Valeo Lighting Systems / Techniplas
- **Material Supplier/Toolmaker:** LyondellBasell / Chicago Mold Engineering Co., Inc.
- **Material /Process:** Dura 304 UP BMC / Injection Molding
- Replacing magnesium with unsaturated polyester BMC yielded structural brackets meeting high dimensional requirements at comparable or improved mechanical performance — especially toughness. The bracket was made more sustainable with inclusion of 6% PIR PMMA and 5% PIR BMC scrap, which replaced calcium carbonate filler. It took 2 years of work to develop the process to recover and reclaim thermoset BMC scrap and reuse it in new parts with a lower CO2 footprint. Key to the success of the program were grinding, sizing and formulation strategies. No tooling changes were required vs. virgin BMC.

## **CATEGORY: Sustainability**

### **One-Piece Thermoplastic Frunk**

- **OEM Make & Model:** 2024 Ford Motor Co. Ford Mustang Mach E
- **Tier Supplier/Processor:** IAC Group
- **Material Supplier/Toolmaker:** Advanced Composites, Inc. / HS Inc.
- **Material /Process:** ADX8327 20% PCR TPO / Injection Molding
- This is the first time a 20% PCR recycled material has been used in a color-matched, MIC, Class A structural frunk application. Versus virgin TPO, the more sustainable grade lowered density slightly and offered better impact at -15°C. Concurrent redesign reduced component count from 6 to 1, including eliminating 2 metal brackets, saving 3 kg of mass, increasing cargo volume and functionality, improving water management, reducing cost and labor and saving an estimated 1,125 tons of CO2 annually. PCR content is sourced from yogurt cups and packaging materials.

## **CATEGORY: Sustainability**

### **Eco-Friendly Cable Control**

- **OEM Make & Model:** 2024 Ford Motor Co. Ford Mustang
- **Tier Supplier/Processor:** Aptiv PLC/ HellermannTyton
- **Material Supplier/Toolmaker:** Ascend Performance Materials/ NA
- **Material /Process:** Redefyne IA12H BK0858 PA66 / Injection Molding
- This is the first broad-scale shift from virgin to PIR PA66 in cable management parts, a drop-in-change offering comparable performance, aesthetics and processing at lower cost and 35% lower carbon footprint without any part design or tooling changes. Although the parts are small, they are produced in high-cavitation injection tooling and offer best-in-class mechanical, thermal and chemical performance. In just the first year, the change removed 138,000 kg of CO2 and saved 70,000 kg of coal and 144 billion barrels of crude oil from being used.

**Category** and **Grand Award** winners will be selected from these finalists during the Blue Ribbon judging by a group of journalists, academics and retired industry chief engineers and announced on November 8, 2023 during the 52<sup>nd</sup> annual SPE Automotive Innovation Awards Gala at the Burton Manor in Livonia, Michigan. A **Vehicle Engineering Team Award (VETA)** will be presented to recognize automotive designers and engineers, tier integrators, materials suppliers, toolmakers and others – whose work in research, design, engineering, and/or manufacturing has led to significant integration of polymeric materials on a notable vehicle. A **Hall of Fame Award** will be presented for an innovative application that has been in use for 15 years or longer making a significant impact in the industry with increased applications. A **Lifetime Achievement Award** will also be presented to honor a person who has made significant contributions to the industry.

Sponsors of the 2023 SPE Automotive Innovation Awards Gala include: Celanese, Ascend Performance Materials, American Chemistry Council – Plastics Division, BASF, Cascade Engineering, Hi-Lex North America, LyondellBasell, Magna, Trinseo, Sabic, INEOS Styrolution America and Pyrophobic Systems.

Since 1970, the **SPE Automotive Innovation Awards Competition** has highlighted the positive changes that polymeric materials have brought to automotive and ground-transportation industries, such as weight and cost reduction, parts consolidation, increased safety, and enhanced aesthetics and design freedom. At the time the competition started, in 1970, many OEM designers and engineers thought of plastics as inexpensive replacements for more “traditional” materials. To help communicate that plastics were capable of far more functionality than their typical use as decorative knobs and ashtrays indicated, members of the board of directors of SPE’s Automotive Division created the competition to recognize successful and innovative plastics applications and to communicate their benefits to OEMs, media, and the public.

Over the years, the competition drew attention to plastics as an underutilized design tool and made industry aware of more progressive ways of designing, engineering, and manufacturing automotive components. From its humble beginnings, the competition has grown to be one of the most fiercely contested recognition events in the automotive and plastics industries. Today, polymeric materials are no longer substitutes for more expensive materials, but rather are the materials of choice in hundreds of different applications throughout the vehicle. Without plastics, many of the auto industry’s most common comfort, control, and safety applications would not be possible.

During the competition phase of the event, dozens of teams made up of OEMs and suppliers work for months to hone submission forms and presentations describing their part, system, or complete vehicle module to support claims that it is the year’s **“Most Innovative Use of Plastics.”** To win, teams must survive a pre-competition review and two rounds of presentations before industry and media judges.

There is no cost to nominate parts, however, nominations that are accepted into the competition need to be presented (in person or via webinar) by their nominating teams during the first round of **Automotive Innovation Awards Competition** judging. Finalists from that round advance to a second presentation before a panel of Blue Ribbon judges made up of media, retired chief engineers, and other industry experts.

This annual event usually draws over 800 OEM engineers, automotive and plastics industry executives, and media. Funds raised from the event are used to support SPE educational programs including technical seminars and conferences, 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 in 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 SPE Automotive Div., see <https://speautomotive.com/>. For more information on the Society of Plastics Engineers, see [www.4spe.org](http://www.4spe.org).

For more info on the SPE Automotive Innovation Awards, see <https://speautomotive.com/spe-automotive-div-innovation-awards-2023/>

Attn: Editors: Photos of the Finalists, as well as a large collection of SPE Automotive Division digital photography, is available for download at: <https://www.flickr.com/photos/speautomotive/albums/with/72157673717033072>  
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