Auto TPO: Chronicling Times of Change

SPE's 21st TPO Automotive Engineered Polyolefins Conference returns to the Detroit suburbs

By Peggy Malnati

The Troy, Mich.-based Detroit Section of the Society of Plastics Engineers (SPE) held its 21st annual TPO Automotive Engineered Polyolefins Conference (Auto TPO) in the Detroit suburbs between Oct. 6 and 9, 2019. This year's theme was TPOs Driving Innovation Forward, and keynotes and regular presentations alike chronicled disruptive technologies that are reshaping both the automotive and plastics industries, including autonomy, ride-sharing, vehicle electrification, smart materials, additive manufacturing/3D printing technologies, and more. The event also served as a tribute to Robert Morgan, senior vice president of Advanced Composites, Inc. of Sidney, Ohio, a supporter of the conference who passed away earlier in 2019.

The well-attended 21st-annual SPE Auto TPO Conference drew a global audience of 916—slightly less than last year's record-breaking 992 during the conference's 20th-anniversary celebrations. All photos courtesy of SPE Detroit Section/Jill Bahm

Broad Technical Reach

Auto TPO covers neat, filled, and reinforced rigid and elastomeric thermoplastic polyolefins (TPOs) for automotive and ground-transportation applications. However, it also covers thermoplastic elastomers (TPEs) and thermoplastic vulcanizates (TPVs) and, more recently, biobased polymers as well as additive manufacturing/3D printing technologies. This enables organizers to develop technical programs around a broad range of automotive plastic materials, processes, and components—not just for vehicle interiors and exteriors but also in underhood and chassis areas.

This year's technical program included 75 regular presentations and five keynotes. Additionally, two hour-long tutorials were held Sunday afternoon. The first program was titled *HP 3D Printing TPO Parts* by David Tucker, automotive strategy and production development manager, and Brent Ewald, applications engineer, both from HP Inc. of Palo Alto, Calif. The second tutorial was called *Impossible Objects, 3D Printing Fiber Reinforced Parts* by Jeff DeGrange, chief executive officer of Impossible Objects of Northbrook, Ill.

On Monday, after opening remarks, two keynotes were presented. Joel Morales, Jr., executive director-polyolefins North America at I.H.S. Markit of London gave the conference's first keynote titled *Global PP Update: What a Difference a Year Makes!* He compared and contrasted how much the global polyolefins market has changed since his keynote at the conference a year before. In 2018, Morales's recommendation was "be nice to your suppliers, as supplies are tight," he recalled. "However, in 2019, demand isn't as high, thanks to forces like trade wars, the GDP [gross-domestic product] in places like China, India, and Western Europe, sustainability pressures that reduce demand for virgin resin in certain locales, and 19 new plants coming online in China—often in less than half the time it takes to put up new plants in the West." These factors helped reverse 2018's situation, where demand was high and capacity was lower.

"The world needs China's production," Morales said at the 2018 conference, citing all the new capacity that was coming onstream in that country, which expected to achieve 90-percent self-sufficiency in polyolefins in 2019. "Asian supply and demand will be critical to meeting the global supply and demand balance, which is expected to be tighter in coming years," he predicted last year. In contrast, his 2019 predictions were, "For now, consume as much PP as you can and don't worry about supply, as markets are returning to balance after cyclical peak margins, but understand sustainability and its impact, which can pose a significant risk to sellers."

Morales was followed by an energetic keynote titled *Occupy Your Position on the 'Design Maturation Spectrum'* given by industrial designer Jeevak Badve, FIDSA, principal and director of strategic growth at Sundberg-Ferar, Inc. of Walled Lake, Mich.

"Truly enlightened businesses in the TPO and polymer industries position industrial design thinking at the very core of their strategic initiatives," explained Badve. "These businesses apply it as an integral management tool in the boardroom to guide their aspirational business growth in the automotive market and beyond." He subsequently gave examples of how a number of successful businesses leveraged industrial design fundamentals throughout their product-design cycle—even in mature markets and with mature products. "Once you understand how to blend the emotional attributes that are imperative for your end products to be truly successful, you can employ industrial design to create materials and plastic products that are sought-after—not only for their ability to generate larger profit margins, but ultimately for the betterment of the human condition," Badve added.

Each of SPE's Detroit-based conferences draws an engaged audience whose members aren't shy about asking questions. That makes for lively discussions and becomes an effective vehicle for communications.

After an overview of Monday's technical program, the audience split up to attend one morning and two afternoon technical sessions spread across three parallel technical tracks. Topics included materials development (three sessions), additive manufacturing/3D printing (two sessions), and interior applications and laminating adhesives (two sessions), plus single sessions on bio-based and recycled materials and the lightweighting of plastic parts.

On Tuesday, the conference again started with opening remarks and two keynotes. Kristin Dziczek, vice president of the Center for Automotive Research (CAR) of Ann Arbor, Mich., discussed trade negotiations and automotive rules

Discussions continued long after presentations ended. Multiple daily breaks made it easy to visit exhibits. Lunches were sponsored by Tokyo-based Sumitomo Chemical Co. (Monday), Palo Alto, Calif.-based H.P. Inc. (Tuesday), and Clifton, N.J.-based Alterra Holdings (Wednesday). Always popular with attendees, networking receptions were sponsored by Livingston, N.J.-based Formosa Plastics Group U.S.A. (Sunday), Sidney, Ohio-based Advanced Composites, Inc. (Monday, top photo), and Philadelphia-based Braskem U.S.A. (Tuesday, bottom photo)

of origin in the United States. She began with an overview of the then-current USMCA (U.S.-Mexico-Canada) trade negotiations on automobiles and automotive parts and the treaty's potential to impact North American supply chains.

"Global trade changes continue to be in flux," Dziczek noted. "Whether it be the USMCA, trade talks with China, Japan, the European Union, and the United Kingdom, or the national security trade investigations, policies aimed at improving the position of the U.S. automotive industry have been a primary focus of the current administration."

Dziczek was followed by Arash Kiani, chief executive officer of Alterra Holdings, on innovations and the outlook of global automotive elastomers. Kiani outlined the rapid change in the global automotive industry and how innovation in elastomer technologies provides an outlook for future products. "Automakers are going through a major transformation in their vehicle designs and capabilities," said Kiani. "Because of that, they need products that exceed current material properties at lower density and very-competitive costs. Elastomers are one family of plastic materials that are expected to play a larger role in the vehicles of the future."

Wednesday began with opening remarks and a keynote titled *Plastics Sustainability and State of Recycling* by Kim Holmes, vice president of sustainability at the Washington-based Plastics Industry Association. After sharing insights into current market conditions in the plastics recycling industry, Holmes gave an overview of important industry

responses designed to address issues like marine debris. She then discussed opportunities for every company in the plastics industry to engage in sustainability efforts. "Hopefully I challenged attendees to think critically about how they can competitively position their companies in what will be a new environment with regard to how we conduct business as an industry," added Holmes.

As before, audience members split up to attend morning technical session split across three parallel tracks on the topics of interior applications and laminating adhesives, process developments, and surface enhancements and coatings.

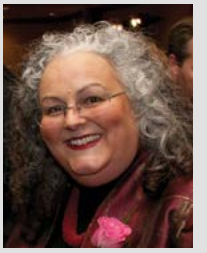
Exhibitors: Less Is More

With most conferences, certainly most SPE conferences, the pressure is on organizers to expand the number and size of exhibits, as sponsorship is critical to keeping attendance fees modest and to grant automakers and students free admission. In that context, it's interesting to note that Auto TPO organizers voluntarily cut back on exhibitors the past few years in direct response to attendee feedback that hallways were very crowded at the Detroit Marriott Troy in Troy, Mich., where the event is held.

For 2018's 20th-anniversary event, the number of exhibitors was cut from 80 to 64 to make room for so-called super-sessions. Not only did that change make it easier to move between sessions, but a side benefit was that it freed up space to allow for larger displays for platinum-level sponsors who also chose to exhibit. For this year's show, available booth space was further reduced to 57, which definitely improved accessibility. It also likely meant that companies that did exhibit were more committed and received more attention. One thing that had been cut last year was regular presentations (from 80 in 2017 to 60 in 2018), but the number was back up to 75 this year.

The 2020 SPE Auto TPO conference is scheduled for Oct. 4 to 7.

ABOUT THE AUTHOR



Peggy Malnati has more than 30 years' experience writing about the global plsatics and composites industries. She has organized technical conferences for SPI, SPE and SAE international, edited the 1994 book, "Structural Analysis of Thermoplastic Components" from McGraw-Hill, spent 15 years as board member and communications chair for the SPE Automotive Division, and has been a contributing writer covering automotive and composites beats for various trade publications, including Plastics Engineering. She also provides communications services for plastics-and composites-industry clients globally via her own Detroit-area firm. Contact her at peggy@malnatiandassociates.com.