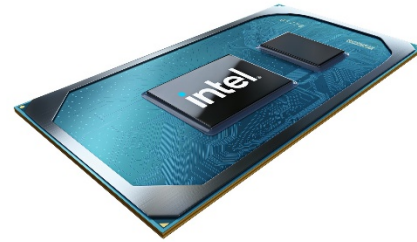


Member Profile

Intel: when the ‘outside’ matters as much as the ‘inside’



Corporate member Intel may be famed for its ‘Intel inside’ tagline, but the company ensures that its Transport Media and Materials Engineering (TMME) group pays just as much attention to what is ‘outside’ in the form of packaging – and remains hopeful that IAPRI’s live events will soon provide valuable support to its research, design and testing.



At Intel’s Chandler, Arizona facility in the US, Ryan Parrott is a senior mechanical engineer on the TMME team. He explains: “We design and qualify media (plastics thermoformed trays, wafer carriers and clamshells) that hold various Intel products, along with the outer packaging to ship those goods to our customers.” System-level products and integration with automated warehouse handling also come under its remit.

“One of the biggest projects for our team is the JEDEC (microelectronics industry body) standard thermoformed trays that hold around 95% of our finished goods, computer processing units (CPUs) and chipsets,” says Parrott. These trays are produced in different dimensions.



The team has grown over the last few years, bringing along new changes. “We are continuously evaluating the equipment capabilities of our lab, from prototypes with 3D printing, small-scale thermoforming and creating samples on our table from Kongsberg to iterate our packaging designs,” he says. There has also been investment in computer modelling and computer-aided engineering (CAE), allowing simulation of specific events and conditions, such as shocks and temperature fluctuations, anywhere in the world.

In this connection, Parrott says: “We’ve recently seen some temperature-related issues in regard to some of our plastics shipping materials. We’re trying to understand more about this and if it’s related to higher temperatures worldwide, or something common to the lanes we’re shipping today.”

CAE and other digital technology can shorten development times while at the same time ensuring quality goals are met, says Intel.

Packaging development needs are surprisingly dynamic. There is constant pressure to reduce materials and, as ever, this combines the incentives of cost-reduction and – increasingly – environmental responsibility.

But as Parrott explains, sustainability is just one consideration among many. “We do see a rapid change in the semiconductor industry, moving towards flexible products with new designs,” he says. “This drives changes at our end to ensure the media and packaging meet our standards.”

Most of Intel's research and development projects are completed internally. Nonetheless, the company sees great value in its new membership of IAPRI.

For Parrott, it was the Cal Poly connection which first led him to the association. "I have been a member of Cal Poly's Packaging Advisory Board for the last three years or so," he says. "As an alumnus, I was looking for an opportunity to give back and help. During these meetings, I would hear current IAPRI President Jay Singh talk about IAPRI, presentations he was working on or things that had come out of a previous conference. It seemed interesting and something I felt Intel should connect with."

A Chinese colleague William Hong was also familiar with IAPRI, and the two of them joined forces to persuade management that corporate membership was a good idea.

"We were really looking forward to attending the live IAPRI 2020 Conference, meeting others in the industry to share knowledge and see what other tools we can bring back to Intel, as well," says Parrott.

"We were hoping to present a recent study we did using small parcel shipments through FedEx, and measuring the impact of those sorting facilities on the packages, in comparison to our testing requirements," he explains. "We're collecting some additional data and hoping to share at a future IAPRI Conference, virtual or in-person."

