QPTECHNOLOGIES

May 2022

Technology Spotlight:

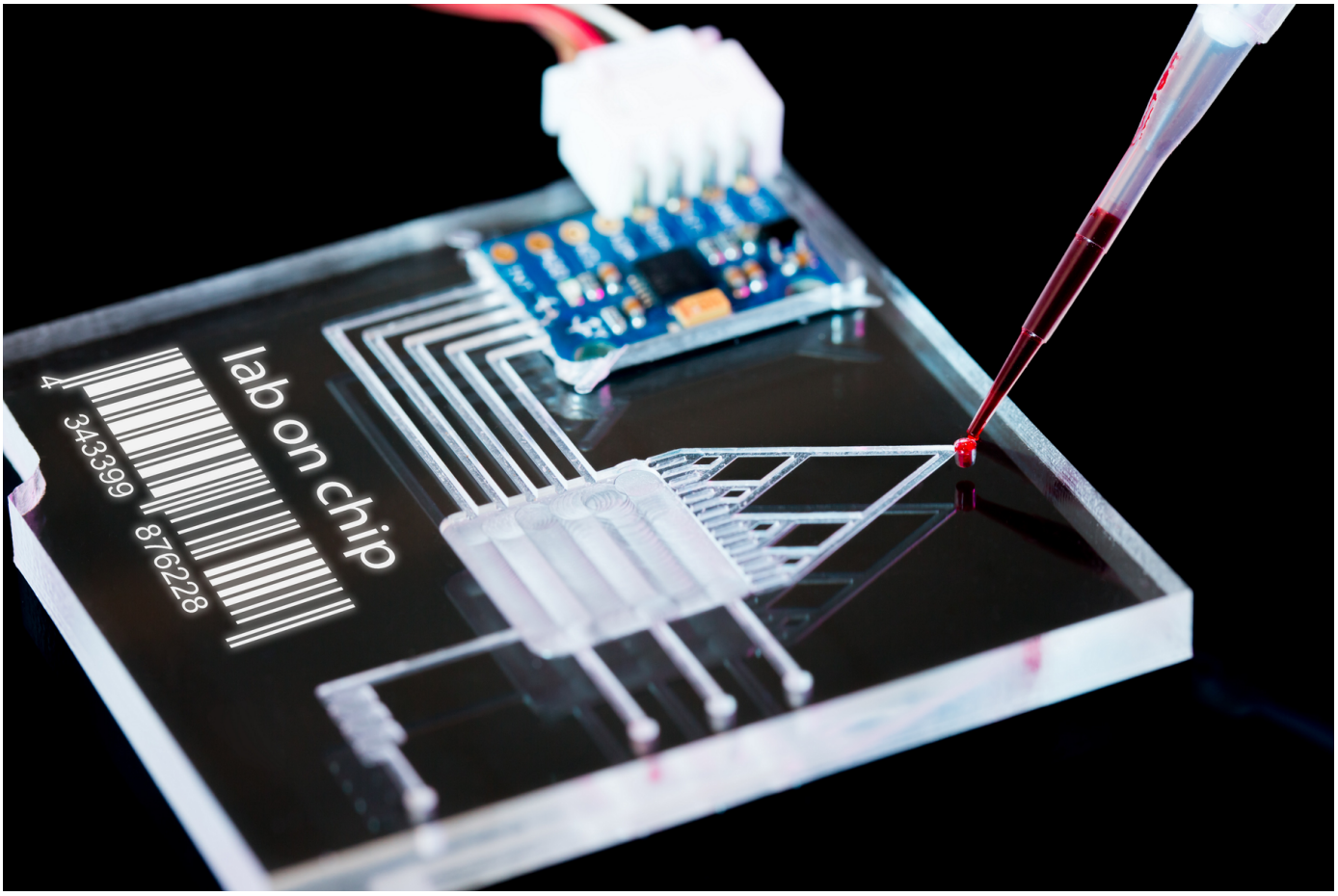
Packaging Solutions for Sensor Applications

Packaging for MEMS and sensors poses challenges for design engineers, who need flexible solutions that will allow them to achieve their final designs and get them to market in as timely a manner as possible. Many customers developing sensors and MEMS are taking advantage of our quickturn prototyping capability so that they can get their devices built in a week or less, make the necessary revisions and respin them for their next designs.

Some of the benefits of QP Technologies' off-the-shelf solutions include:

- Open-molded Plastic Packages (OmPP™) – come in a variety of sizes for prototype, mid-volume or small production-volume applications; they can be left open, or closed with optional glass, plastic or ceramic lids or optical transparent encapsulation.
- Open Cavity Plastic Packages (OCPP) – are the ideal platform for new IC prototypes, as they are mechanically and electrically identical to future transfer molded production parts.
- Ceramic IC packages – can be more costly, but are well suited to certain types of projects that require a robust package; available with variety of lids including taped-on, ceramic, combo, glass and can be hermetically sealed.

Sensors comprise a variety of different types. Common examples are temperature and pressure sensors, including smart sensors, as well as MEMS, each of which features unique manufacturing requirements. For example, drift can be a problem with temperature sensors – if the device isn't properly packaged or protected, temperature accuracy can be impacted. In this, a hermetically sealed ceramic package might be the best option. Any application in which environment has a key impact would influence the need for hermeticity. Thus, choosing the right materials and methodologies, e.g., die attach, sealing, is essential.



Case study: medical testing sensor

Sensors for the medical market are wide ranging and have distinct manufacturing challenges, as well. For example, at the start of the pandemic, a maker of CMOS image sensors for medical and scientific applications came to QP Technologies because their current manufacturer had shut down, and they needed parts assembled to develop a COVID-19 testing platform. Their design involved a biosensor using CMOS imaging and a temperature sensor. We built the biosensors using a glass lid with epoxy seal on a ceramic package, wirebonded, and performed wafer dicing through final package. We were able to build the parts quicker than their ceramic package vendor could deliver material, and this very fast ramp allowed them to make up for lost time caused by the shut-down.

We will be sharing more about our MEMS and sensor packaging capabilities and experience next month at Sensors Converge in San Jose, Calif. Please plan to come see us in Booth 1217. Or contact us if you need help with your sensor project today!

Contact Us

Employee Spotlight: Steve Swendrowski, Director of Engineering

QP Technologies is known for our packaging and assembly solutions, as well as our wafer preparation and custom substrate development expertise. Our team of engineers is constantly working to optimize and expand our offerings, led by our director of engineering, Steve Swendrowski. With 30-plus years of industry experience – 20 spent right here with us – Steve draws on his wealth of engineering background and know-how every day to continue advancing our technology capabilities.

Steve began working at QP Technologies (then Quik-Pak) as a contract engineer in 2001, became general manager in 2005, and, in 2020, was named director of engineering. In addition to managing our engineering team, he works with the sales team and customers on daily basis, as well as interacting with the management and manufacturing support side of the business.

One of his key accomplishments was retooling QP Technologies to transition us from a company solely known for package reclaiming to incorporate the breadth of assembly capabilities we now offer. “As the industry changed, we had to change as well,” he notes. “With the rise of fabless companies and dramatic shrinking in the market, we needed to deliver more of the services that chipmakers used to do in-house.” Steve’s efforts helped drive our broad line of pre-molded air-cavity QFNs, called our Open-molded Plastic Package (OmPP™) technology, which has grown to be a significant part of our business.

Steve’s began his career as a tool and die maker for an early digital watch maker, which built its own displays – first LED, then LCD. After that, he transitioned into the semiconductor industry, joining Texas Instruments’ mil-aero group in Dallas. Following TI, Steve developed DRAMs at Mostek (now part of STMicroelectronics), then spent some time at Intel before relocating to San Diego and eventually joining QP Technologies.

Steve has been married for more than 30 years and has five sons and several grandchildren. He enjoys auto sports and was involved with NHRA Jr. Drag Racing when his sons were younger. Steve’s experience, skills and great attitude are key contributors to QP Technologies’ ongoing success!

News Highlight:
Tradeshow Season in Full Swing

The year is speeding by, and with summer fast approaching, the industry conference and tradeshow season is also running at full speed. Once again, you can meet up in person with your peers and view the latest technology offerings from a range of companies. We will be exhibiting several events next month, and we look forward to sharing our latest developments and capabilities.

Below are upcoming exhibition dates when you can meet up with QP Technologies:
Electronic Components & Technology Conference (ECTC), San Diego, CA, June 1-3: Booth 508
International Microwave Symposium (IMS), Denver, CO, June 21-23: Booth 4009
Sensors Converge, San Jose, CA, June 28-29: Booth 1217
We're focusing on ECTC this issue, as the event is first up, in just a couple of weeks. We'll share further details in the June issue regarding IMS and Sensors Converge.

ECTC is the premier international event that brings together the best in packaging, components and microelectronic systems science, technology and education, with a technical program covering a broad range leading-edge developments and technical innovations in the packaging arena. It's a vital venue for QP Technologies, as we can address your needs across virtually all of the areas covered in the technical program, including packaging technologies, assembly and manufacturing technologies, materials, interconnections, photonics, and RF and high-speed components and systems.

We look forward to seeing you at the Sheraton San Diego Hotel – practically in our backyard! – in just a few weeks.

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U.S. Chip Packaging with Mil-Spec Precision

A reliable and affordable alternative to ceramic packaging – Open-Cavity Plastic Packages (OCPP).

Our latest white paper expands on the benefits of OCPP for the mil-aero market. Download the paper here to learn how QP Technologies' OCPP can save you time, space, and money.

DOWNLOAD OUR WHITE PAPER

About Us

QP Technologies is a leading provider of microelectronic packaging and assembly, wafer preparation, and substrate design and development services. We leverage proven technologies developed by our skilled staff, and we work closely with you to get your products to market quickly, with the highest quality prototype and production volumes.

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