CMM
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IN THIS ISSUE

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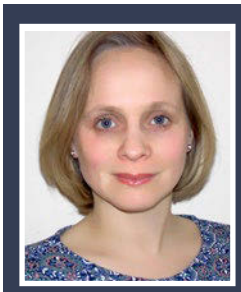

from the EDITOR

The penultimate yearly issue has soon come around again, accompanied by dropping temperatures here in the UK but not content submissions thankfully. In fact, my inbox is testament to the fact there has been an increase in micromanufacturing development announcements. Reading the ensuing pages, there can be little doubt that miniaturisation is the future across multiple markets but most notably medical technology and semiconductor.

A company spotlight focuses on Anderson Europe, a provider of high-precision HSC milling, die production and multi-axis CNC machines. In the early days, the company produced microdrillings in printed circuit boards (PCBs) for the semiconductor industry, but today caters for a variety of applications. One of these is the microengraving of date stamps for injection moulds. A microengraved date stamp is integrated in the injection mould and responsible for the embossed date of manufacture found on the resulting part. Producing microengraved date stamps is becoming more challenging, owing to the fact that increasingly smaller ones, with diameters of less than 2.6 mm, are required by industries such as medical technology and semiconductor. The piece features a case study where Anderson Europe's expertise was sought to produce a 2 mm-diameter state stamp with engraved line markings representing the digits 1-12.

Moving on, in his comment, first-time contributor Chetan Arvind Patil of NXP USA contemplates the way forward for system-on-a-chip (SoC) manufacture, comparing the cost of burgeoning non-aggregated, chiplet and conventional aggregated, non-chiplet methods. Larger semiconductor fabricators are turning to the chiplet method to develop more advanced, smaller (2 nm and lower) SoC technology nodes, since these are required for the creation of new architectures that can accommodate the complex workloads of and speeds demanded by artificial intelligence (AI). An initial like-for-like summary shows the non-chiplet method to be cost favourable, however Chetan suggests there are ways the chiplet method can be rethought in order to make it more competitive.

Lastly, an article from Paul Runyan of Accumold details the company's development of a method for injection micromoulding thin-walled cannulas at high volumes. Paul highlights the advantages of injection micromoulding over traditional methods such as extrusion, tipping and gluing, e.g., the creation of intricate and consistent designs with precise wall thickness control, and the elimination of separate process steps by producing the entire cannula in a single mould, thus reducing the risk of defects. He then goes on to explain the significant role material choice played in establishing viability and optimising outcomes of the micromoulding method, as specific properties are demanded by both the method and the application.

So concludes my summary of this issue, although there are of course more pieces on a host of other micro-related topics, including a comment from editorial advisory board (EAB) member David Tolfree on AI and announcements for human tissue-based 3D bioprinting inks and 3D printed cosmetic dental veneers.

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