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# PRECISION 3D PRINTED INJECTION MOLDING TOOLS

ASIGA'S DESKTOP SOLUTION TAKES DESIGNS  
TO REAL PARTS IN HOURS

**ACCELERATING  
3D TECHNOLOGIES**

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# rapid + tct

## RAPID + TCT REVIEW



**T**HE FIRST EVER EDITION OF RAPID + TCT was the biggest in RAPID's 27-year history. The 2017 event, which took place in Pittsburgh back in May, marked the first for the partnership between TCT and the SME and welcomed over 6,000 attendees from 45 different countries.

With 70,000 square feet of space featuring 329 exhibiting companies, the floor was packed with new technologies and debuts from some of the most exciting startups around. It would be impossible to cram every launch that happened across those three days into one feature but over these next few pages we have compiled a round-up of some of the very biggest.

For more from RAPID + TCT including interviews and videos from the show floor, head to [www.tctmagazine.com](http://www.tctmagazine.com)

### PAXIS

WORDS : DANIEL O'CONNOR

We'll start with the launch shrouded in the most secrecy, at AMUG 2017, Mike Littrell, Present of multi-award winning service bureau Cideas approached TCT and asked "How do I go about getting you to sign an embargo so I can talk to you about something?"

At RAPID + TCT Mike was finally able to reveal "breadcrumbs" of information about a technology that those in the know are suggesting could be a breakthrough for resin-based 3D printing.

"I hired a programmer to develop a quoting engine that was able to look at all the different processes," Mike told TCT at the Pittsburgh event. "In the process of creating the dashboard back-end of the True-Quote software he (Fred Knecht, now Paxis CTO) called me into the office in regards to a problem we'd been having with regards to trapped volume parts within the resin based processes. He started describing it to me and within about ten seconds I said "Stop! That's it, we are starting a new company, we're developing this, here's my credit card, go out and buy what you need."

The technology is called WAV (Wave Applied Voxel) and although Mike and the team are still fairly tight lipped about the process he did tell us this:

"One of the unique features is that based on the way we deploy resins we think that resins that haven't been able to be used on current systems can be reengineered and utilized on this system. Based on the scalability of the process we'll be able to build much larger parts, much faster than any other current system on the market."

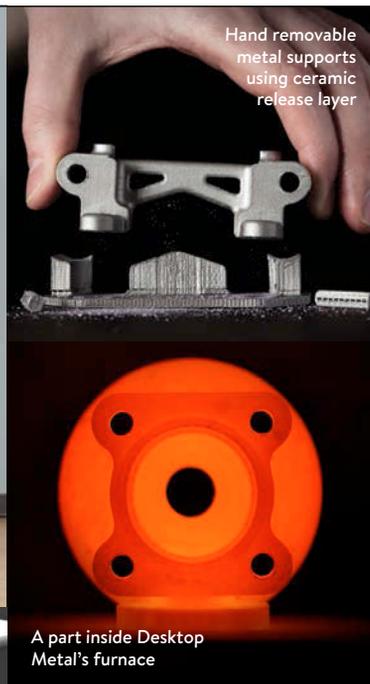
Usually, TCT would be of the opinion of believing it when we see it, but Mike's reputation precedes him, he's a celebrated and respected person in the industry. His excitement about this technology means we ought to be excited too. ■



Paxis are still keeping the technology under wraps



The Desktop Metal Studio System



Hand removable metal supports using ceramic release layer

A part inside Desktop Metal's furnace

# DESKTOP METAL

You simply could not miss Desktop Metal at RAPID + TCT. From its gargantuan stand down to the venue's WiFi interface, the Boston start-up left no stone unturned in ensuring that every person in that room knew exactly who the new metals player in town was.

We covered Desktop Metal's technology in depth in our last issue after Dan went along to visit its Boston HQ in April, but we caught up with the startup's, CEO, Ric Fulop and team during its official launch on the show floor.

"One of the really exciting things we're bringing is the ability for the first time to have metal printing in an office environment," Ric Fulop, told TCT. "So no need for furnace, safety equipment, the metal is all encapsulated in a polymer so it's very safe to use. You can print it in your office and sinter it right there and the next day, it's like Christmas, you've got parts."

Desktop Metal has launched two systems, a compact Studio System which uses a patented Bound Metal Deposition process akin to FDM printing, and a Production System which uses Single Pass Jetting to print parts over 100 times faster than current common metal technologies. Both systems benefit from a ceramic release layer that sits in between supports, bound with polymers, which when sintered turns to sand to leave no support marks.

"One of the exciting parts about this technology is the ability to eliminate the support removal process that has really plagued DMLS and SLM," Ric explained. "Our process allows you to remove the support by hand. That's a new thing that never existed before so it's a big deal."

One of the most interesting benefits of Desktop Metal's technology is that it uses common Metal Injection Molding (MIM) materials, which



Desktop Metal's production system

means users have access to a wide range of existing materials at a low cost. Both systems require the use of the proprietary microwave-enhanced sintering system which features a reducing atmosphere that makes it possible to use conventional MIM powders, safely in an office.

knows what was printed and knows how to sinter it."

Desktop Metal also took home the RAPID + TCT 2017 People's Choice Award voted for by show attendees. The Studio System is available to order now and the Studio System is set to follow next year. ■

## 3DEO

3DEO are, like Desktop Metal, aiming to make metal 3D printing more affordable. And like Desktop Metal and Markforged, they are using MIM powders and a secondary sintering step to achieve that. However the big difference comes in their process, 3DEO describes six steps to achieving a finished metal part that is more affordable and meets the high industry benchmark MPIF Standard 35 while still achieving tight tolerances. ■

