



New Plastic Heroes: AIM3D

When We Break through Material Boundaries

The pathways to plastics can be many – even metalworking in the case of AIM3D. That is what first got this start-up up and running. Fast forward to now and the young Rostock company can cover both bases.



CTO Clemens Lieberwirth (pictured), who founded the company in 2017 together with Dr. Vincent Morrison. © AIM3D

Facts on the Start-up

- Name: AIM3D GmbH
- Founded: 2017 in Rostock, Germany
- Number of customers: around 50
- Number of employees: 17
- Homepage: www.aim3d.de

AIM3D is making material limits in additive manufacturing a thing of the past – in fact the Rostock start-up has now rolled out a metal- and plastic-compatible 3D printer. And the groundbreaking progress goes even beyond glass fiber-reinforcements. We got the inside view from founder and Chief Technology Officer (CTO) Clemens Lieberwirth about the company, its process and the current 3D printer challenges as part of our New Plastic Heroes series.

Kunststoffe: *Could you give us a brief overview of the company?*

Clemens Lieberwirth: AIM3D is a machine manufacturer, which develops and sells 3D printing equipment, develops material profiles and supports customers in application development.

Kunststoffe: *What sets AIM3D systems apart from the competing systems?*

Lieberwirth: First of all, our patented print head technology. This is how we process high-filled thermoplastics economically and efficiently, while also ensuring for visually appealing component qualities and high repeatability.

Kunststoffe: *What sparked the idea?*

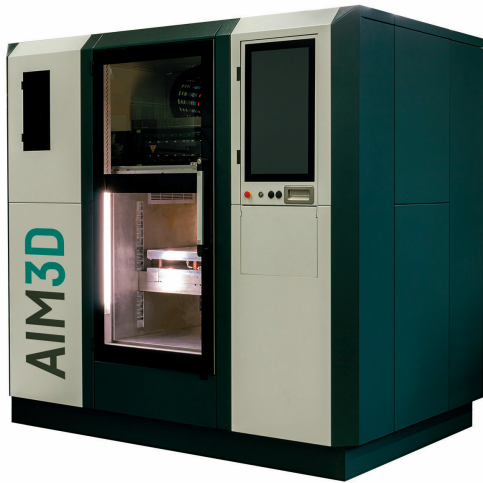
Lieberwirth: It was the private 3D printing component, which made up part of my master's thesis in 2014 at the University of Rostock. However, the inaugural topic for AIM3D was "3D printing with metal injection molding pellets".

Kunststoffe: *How did you ultimately start handling plastic?*

Lieberwirth: Right from day one, we tailored our extruders to optimally handle this very demanding high-filled thermoplastic compound, which also put us on the radar of car-makers. Most of the interest here was focused on glass-fiber-filled polyamides with at least 40 % fiber filling. Things picked up speed and once Brose International decided to invest in us, our contacts in the plastics processing industry spiraled. Today, around two thirds of all our inquiries are about plastics and one third about metal.

Kunststoffe: *What are the key challenges you face in 3D printing with glass fiber-reinforced polyamides and how can you leverage your technology to solve them?*

Lieberwirth: Nothing is more challenging than extruding the material as gently yet reliably as possible. The glass fibers



Versatile: the 3D printer developed by this young company can process virtually all fusible materials. © AIM3D

should remain as long as possible during extrusion and the material feed and melt zone must be designed such as to preclude any risk of the material clogging, degrading or becoming separated in the extruder. We solve these issues by minimizing the length/diameter ratio of the screw and the interplay between different actuators when feeding the material.

Kunststoffe: Regardless, where do you currently see the greatest need for development in the additive manufacturing industry?

Lieberwirth: The key issues in this context are technical suitability (strengths and material selection) and affordability (machine costs, material costs, post-processing costs and scrap). We can offer competitive advantages in many such areas by using series material, since strength and anisotropy in particular remain priorities for 3D-printed components. I can't reveal too much at this point – but anyone who visits us at Formnext this year will see that we are also approaching a major milestone achievement in the AM area too. ■

Melanie Ehrhardt, editor

Info

- AIM3D at K 2022: hall 4, booth A08
- AIM3D at Formnext 2022: hall 12.1, booth E81

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A PDF file of the article can be found at www.kunststoffe-international.com/archive

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