

Success Story

3D printing for the depths of the sea

Adam Rumjahn started his first company while still in high school. After studying mechanical engineering in Calgary and working in Montreal and Colombia, the multilingual Canadian has called Berlin home since 2018. This is not a coincidence. For several years Rumjahn has been fascinated by the increasing potential of 3D printing, also known as additive manufacturing. He then founded a company that manufactures such printers. One day, a customer from the medical sector asked him whether his printers could also produce bone substitutes for implants using the high-performance polymer PEEK, which is intended to replace titanium, as it is lighter and more elastic. Rumjahn saw the opportunities, but the young entrepreneur could not do the necessary research and development work alone. He looked for support and came across the "Advanced Material Competition" or "AdMaCom" for short, which is organised by the "Innovation Network for Advanced Materials (INAM)" in Berlin. Humboldt University, Berlin Partner, OSRAM, IRIS Adlershof and Fab Lab Berlin launched the network in 2016. The INAM closes the gap between research and industry in Berlin within the field of material science. This is precisely the challenge that drives the Canadian.



The doors opened in Berlin

Rumjahn won the AdMaCom competition in October 2017 and thus entered a two-week "Accelerator" programme: "During this time many doors opened for me, both to industry and to other researchers and start-ups. It was then, that the contact to Berlin Partner and the Enterprise Europe Network was established, from which I have benefited greatly ever since," Rumjahn says. That's why he has chosen the German capital as his new home. In the fall of 2018, he founded a new company, Orion Additive Manufacturing. It deals with additive manufacturing and high-performance polymers such as PEEK, but above all with special thermal management of the printers the company builds. It ensures that the printing layers fuse together better. This results in considerably more stable workpieces than those produced by many competitors.

Aerospace and brick buildings

And the workpieces need to be stable, since Rumjahn dreams of contributing to the highly developed industrial use of polymers that are used in the aerospace industry. "Orion" as the company's name alludes to, not only refers to the constellation of stars but also to the founder's ambitions.



But back to earth and the path the Canadian walks in Berlin. For his new company, he found a place in the "Start-A-Factory" of Fraunhofer IZM. A unique concept of device infrastructure and working environment, specifically designed to meet the needs of hardware start-ups, and built on historic ground - the former AEG site at Humboldthain, a heart of the early industrial metropolis of Berlin.

With the support of the consultants at Berlin Partner/Enterprise Europe Network (EEN), the start-up company accessed various sources of funding, as well as contacts with people who are at home in the highly developed research environment. "I really enjoy being in Berlin and meeting so many inspiring people who are well versed in my field of research. I have never had such an environment before," Rumjahn emphasizes.

In May 2019, EEN recommended the company to participate in the 2nd "AMable funding call" and subsequently helped to develop the project. AMable aims to create a new ecosystem for the development of additive manufacturing in Europe. The consortium is supported by the European Commission.

Submerged in the depths of the sea

Orion Additive Manufacturing's application was approved, and the start-up company began working with a cash injection of 50,500.00 Euros to further develop the project, and work towards market launch. Inspired by the Fraunhofer Institute and by inquiries from industry and potential customers, Rumjahn developed a new idea: They want to use the 3D printer to produce housings for cameras that will be used deep underwater in order to observe fish farms. The conditions underwater and in space are similarly demanding. The EEN can also continue to further help with development of the company. Numerous countries with coasts and sea access are also in the network, good prospects to find business and research partners or potential customers for just such an offer.