Instead of having to take a greenfield approach and build new factories, we can establish AM plants at existing facilities.
an area where GKN Additive benefits from its parent company’s global network. Instead of having to take a greenfield approach and build new factories, we can establish AM plants at existing facilities, Degen says. He goes on to describe how GKN’s production site in Bonn has already provided the template for three AM plants in Detroit, Philadelphia, and Danyang (near Shanghai).

As the next step in its development, GKN Additive is planning to assemble an innovative additive production line in cooperation with BMW and other project partners. It will be based on laser sintering technology and offer outstanding cost efficiency thanks to digitalization and the way it largely automates production and post-processing. The first pilot lines are expected to commence operations at GKN (Bonn) and BMW (Munich) in 2021.

«STILL NOT ENOUGH APPLICATIONS»

For two years, Degen and a team of around 50 employees who work on metals within GKN Additive have been striving to find new applications for AM technology or develop them along with customers. «We’re well

situated here, but unfortunately, there still aren’t enough specific applications», Degen reports. He believes one of the most important reasons why has to do with the additive mindset, which has yet to reach a sufficient number of designers and engineers. Even though GKN has been shaped by AM as much as it has, Degen says only around 20% of its engineers take the technology into account as a solution process – and that figure is even quite a bit lower at other companies. «There’s still a lot that needs to be done. After all, additive manufacturing only makes sense when it offers added value», he continues. «If we don’t optimize our components, all the efficiency gains in the world won’t make AM affordable enough when it comes to laser sintering.»

Degen nevertheless sees a large amount of potential in laser sintering, thanks in part to the automotive industry’s focus on electric drive systems. VW alone wants to bring 80 new electric models to market by 2025. Since the initial stages of this trend are requiring rather small quantities of designs that are often complex, Degen is predicting strong growth in the share of 3D-printed components. Furthermore, running on batteries generates a massive amount of heat that needs to be dissipated by intelligent heat management systems. «This will lead to a lot more copper and aluminum being built into vehicles», Degen points out. These materials are highly compatible with powder bed production processes. Meanwhile, Degen thinks that many new applications of AM technology are on the way with respect to vehicle interiors and chassis.

To tap into further additive potential, GKN has been developing binder jetting technology along with HP since 2018. Here, GKN is mainly contributing its expertise in powders and sintering. When HP begins marketing 3D printers equipped with this technology, its partner will not only gain access to an intriguing area of business for its specialized powders, it will already know a great deal about a technology capable of additive mass production, as well.

In October 2019, GKN Additive took another significant step in expanding its business activities in AM in acquiring the service provider Forecast 3D. The Californian company has been 3D-printing plastics for 25 years, and the addition of its 150 employees quadrupled the division’s workforce in one fell swoop. «The idea of an organization with our metal DNA buying up a company focused on plastics probably seems unusual at first glance, but it definitely makes strategic sense», Degen says.

For one thing, he points out, the move has enabled GKN Additive to tap into an extensive portfolio of customers that are mainly based on the west coast of the United States, which is presenting cross-selling opportunities in metals. «On top of that, we’ve secured new expertise in plastics that we’ll be gradually transferring to our other production sites around the world», Degen adds.

FURTHER INFORMATION:

- gknpm.com
- fon-mag.com