



— ATHANASSIOS KALIUDIS

## „LMD Grows Stronger in Additive Manufacturing“

**Dr. Antonio Candel-Ruiz explains why laser metal deposition is evolving into an additive manufacturing technique in its own right, and how even small and medium-sized businesses can benefit from the technology.**

### **Mr. Candel-Ruiz, how has interest in laser metal deposition (LMD) developed over the past few years?**

We've been working with this technique continuously at TRUMPF for almost 15 years, and interest in LMD has steadily grown over that entire period. For a long time people were primarily using LMD to coat parts – for example to protect them against wear and corrosion – and to repair damaged metal components. But around two years ago we saw a sudden spike in the number of people inquiring about LMD, including customers from industries which we hadn't seen in this field before, such as the automotive sector. And that's because this method is such a great choice for additive manufacturing (AM), too.

### **How is it used in AM?**

You can essentially pick out three main uses in additive manufacturing. First, we use LMD to modify or reinforce part geometries, basically adding defined three-dimensional structures to a base structure. That means we can make the base structure into a whole family of products which are based on this original part, but each of which have different characteristics. And that allows us to manufacture a wide range of variants. The second way of using LMD is to manufacture entire components.

At the moment, however, this technique is still limited in terms of how much geometrical complexity you can actually give the component. That's why we're currently developing ways of improving our systems to enable us to tackle more geometrically complex parts. In some cases LMD can also offer an alternative to conventional joining methods, for example in situations where you need to bridge gaps. This application of LMD is still in its early stages, but it shows a great deal of promise.

### **» LMD can be beneficial for smaller companies as well.**

Dr. Antonio Candel-Ruiz, Industry Management Surface and Macro



