

Industrial Keynote

Pushing the limits of metal additive manufacturing

J. Wilkes^{1*}

¹ *SLM Solutions, Lübeck, Germany*

* *Corresponding author, email: Jan.Wilkes@slm-solutions.com*

© 2022 Jan Wilkes; licensee Infinite Science Publishing

This is an Open Access abstract distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited (<http://creativecommons.org/licenses/by/4.0>).

Selective Laser Melting is an additive manufacturing technique that allows for producing high quality metal parts by selectively melting metal powder with laser beams. First commercial selective laser melting machines were equipped with a single laser beam source of comparably low power. That resulted in very limited build-up rate and therefore long production time and high production cost even for small parts. In the last years, SLM Solutions has constantly worked on increasing the build-up rate and productivity of the machine systems and has increased the build envelope size, in order to enable customers to build parts faster and at lower cost per part.

The latest result of that effort is the NXG XII 600 machine, which includes 12 lasers with 1 kW output power each. This machine is moving the limits of achievable build-up rates and is the fastest SLM® / LPBF machine that is commercially available. Another example where current limitations of metal additive manufacturing can be overcome is multi-material SLM® technology. SLM Solutions works on developing a technology for producing parts out of two different materials at the same time. That way the specific properties of each of the two materials can be combined in one part.

AUTHOR'S STATEMENT

Conflict of interest: The Author is employee of SLM Solutions, Lübeck, Germany.