**NEWS:**

At formnext 2017 trade fair (November 14-17 Frankfurt, Germany) SLM Solutions gave a live demonstration of its new SLM800 selective laser melting laser system, which features a large construction chamber with a docked removal and unpacking station. On the first day of the fair, the company confirmed an order of 20 SLM800 systems from a customer in the energy sector based in Asia. This is the largest recorded sale of 3D printing laser systems by any manufacturer. Earlier in the year, a Chinese interest purchased 50 SLM280 systems with a total value of €43 million. The attraction was the high level of productivity from the multi-laser system enabling the optimisation of production costs per manufactured component while still allowing for a fully scoped geometrical design.

**DEVELOPMENT:**

SLM Solutions Group continues product development to improve uptake in the manufacturing sector entering partnerships with Authentise, Rosswag and Cronimet Holdings. With expertise in software manufacturing solutions, Authentise will provide software that uses additive manufacturing machine data to solve automation challenges, automating order processing and tracking in a complete system adaptable to different work flow patterns. Rosswag and Cronimet are specialists in dealing with metallic materials, superalloys and ferroalloys. The objective of this collaboration is to develop and produce high performance alloys with an initial focus on steel alloys to be used in high temperature environments.

**UNIQUE FEATURES:**

Why SLM Solutions 3D printing systems are proving successful lies in a number of very competitive built-in features. Three are presented below:

3D scanning system within the build chamber

All SLM systems contain a sophisticated 3D scanning system within the build chamber for work-piece processing in 3 dimensions. A water-cooled (lessens heat damage) SCANLAB varioSCAN is installed ‘up-stream’ of the scanner, providing a highly dynamic motorized focusing unit, with exceptionally precise positioning enabling a step-less varying of image size, working distance and spot size. In this way the laser focus can be guided along the contours of the work piece being processed retaining the required small spot size with every pass. Additionally, as the part nears completion setting a large spot size for the final layers will speed up the process and provide a smoother finish.

Layer control system (LCS)

LCS monitors the layers of powder following each ‘recoater’ pass. To make sure the layers are correct the LCS carries out an automatic check. The LCS can be set to check a specified number of passes and warn the operator when an issue arises such as coating irregularities, compensating for excess height of a part or where the quantity of powder was set too low. The LCS is complimented by the sensors that monitor the powder level in the supply tank ensuring depletion does not occur at a critical time.

Correct process time:

A highly useful feature for production efficiencies is the correct indication of time to completion of the build, automatically set by the system when the build begins, providing workflow efficiencies.
HYPERFINE SPECTROMETER
Designed for LIBS or simultaneous Brillouin and Raman spectroscopy, the HyperFine series of spectrometers are based on LightMachinery’s patented VIPA technology.
• Designed for measuring hyperfine spectra and subtle spectral shifts, compact, low cost and capable of **1 picometer resolution**.
• Ideal for pulsed laser characterization and for measuring the small spectral shifts from Brillouin or Raman scattering
• Simple PC based software allows the user to review spectra in real time and save or export for more analysis.
• LabView drivers enable integration into automated experimental setups.

HORNET SPECTROMETER
Compact, Low Cost, <30pm Resolution in the visible or NIR
The Hornet spectrometers are based on LightMachinery’s high finesse etalons used to produce very high dispersion in the vertical axis with sub 30 picometer resolution.
• This is followed by a conventional grating to disperse overlapping orders in the horizontal direction, and produce a 2D spectrum of the input light.
• LightMachinery software unwraps the spectrum to produce an ultra high resolution wavelength in the input light.
• Primarily designed for measuring laser spectra in real time, for characterizing passive components, and for solar spectroscopy.

**WHAT’S ON!**
APICAM: RMIT - 4 – 6 December 2017
Organised by Materials Australia and RMIT this is the first Asia-Pacific International Conference on Additive Manufacturing for researchers and academics exploring the field of additive manufacturing and featuring international speakers presenting on a range of topics including how metals behave during AM, uses of AM in health science, impact on engineering degrees and etc. The leading researcher and promoter of AM in Australia, Professor Milan Brandt from the RMIT School of Engineering, Manufacturing, Materials and Mechatronics has played a key role in coordinating the conference. We look forward to the outcome of this conference and the continued promotion of research endeavors into AM in the Asia-Pacific region.

**WHAT’S ON?**
ANZCOP: NZ Queenstown 3-7 December
APICAM: RMIT 4 – 6 December

**WHAT’S IN MY INBOX?**
ANSTO awards in Nuclear Science and Technology 2017 have been announced celebrating researchers for their work in advancing nuclear science in Australia. Michael Druce whose work over 37 years has helped ensure nuclear medicine is available to all Australians; Jessica Veliscek-Carolan who won the Early Career award for looking at improvements in safe and sustainable management of radioactive waste; and Joseph Bevitt who has managed to ‘translate’ complex science ideas and concepts to the general public so that we can all understand the significance of nuclear medicine. Congratualtions!

labonline.com.au Friday, 24 November 2017

For any information on the products presented above please contact Raymax Applications on 02 9979 7646