News from the world of Lasers

November 2014

Distributed by Raymax Lasers ® - Keeping our customers in the light!

In this edition: ***ANFF:*** *Conference report;* ***LightMachinery:*** *optical design tools;* ***HOLO Or:*** *The M-Shaper;* ***LINX:*** *New SL1 coder;* ***What's in my inbox!*** ***Upcoming Events***

ANFF Conference:

The annual conference of the Australian National Fabrication Facility (ANFF) was held at ANU in Canberra early in November. ANFF was established under the Australian government's National Collaborative Research Infrastructure Strategy and comprises some 500 facilities across 21 institutions nationally with 8 key Nodes. Each node offers both facilities and knowledge to researchers and industry providing a platform for innovation. Along with research presentations and an exhibition in ANU, in which Raymax participated, several significant cases from the Nodes were featured.

Case example #1

A Photonic Platform for the next generation optical astronomy. Australia is a leader in photonic technologies, and using ANFF capabilities astronomers are able to design, fabricate and test the next generation of astronomical instruments. OptoFab, an ANFF Node supports this work with the production of precision laser-cut aperture masks and optical assembly packaging facilities. A further capability is to act as a foundry to facilitate the transfer from R&D of future photonic chips into manufacturing for large scale instruments.

Case example #2

Creating new sustainable building materials such as 'pultrusions incorporating resins' to build a bridge in Queensland is another great ANFF achievement. Working in partnership with Wagners Composite Fibre Technologies, ANFF offered facilities and expertise support to enable the development of products suitable to address major emerging global markets.

Case example #3

The Victorian ANFF Node have developed 'electric skin' for home health monitoring by combining ultra-thin gold nanowires into a thin mesh layered between sheets of the inert, non-toxic silicon based organic polymer PDMS. The product is sensitive and fast enough to monitor radial artery blood pulses in real time!

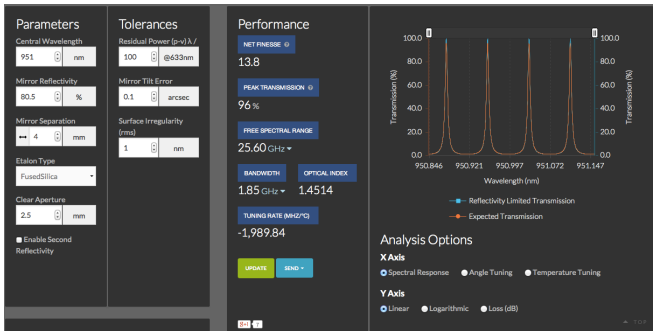
More information on the ANFF Nodes is available on http://www.anff.org.au

Optical Design Centre

Known for their expertise in optics, LightMachinery have launched a new web site containing freely available design tools. Holding US patented technology in fluid jet polishing, a wide variety of optical components can be polished to surface qualities exceeding Lambda/100 with very low surface roughness. Fluid jet polished substrate with a thickness uniformity of 10nm or less across 2" component, meeting extremely tight tolerances for thickness uniformity, or creating arbitrary shapes within surfaces, are all possible!

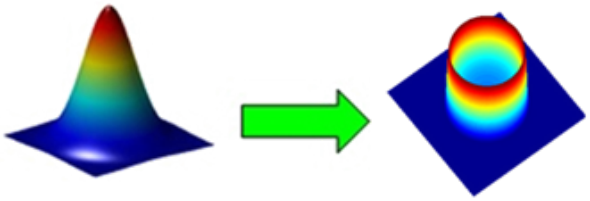
Contained on the web site is a powerful new set of optical design tools located in the cloud based **Optical Design Centre**. Available for free from lightmachinery.com the tools include advanced modeling software for the design of etalons, virtually imaged phase arrays (VIPAS), and fizeau wedges.

The online design software is already popular. From a decibel to percentage calculator, to a complex optimizing multi-layer thin film coating designer, the software is used daily by students and engineers all over the world. The software was released as part of an overall rebuild of LightMachinery's online presence which features multiple platform support to accommodate a growing segment of users on Android and iOS devices.



If you would like to know more about the optics available from Light Machinery contact: info@raymax.com.au.
If you'd like to use the design tools go to:
http://lightmachinery.com/optical-design-center/

M-Shape intensity distribution for scanning applications



HOLO/OR's M-Shaper, is a diffractive optical elements (DOE) used to transform a Gaussian laser beam (or other) into a unique 2D M-shaped intensity profile, with sharp edges in a specific work plane.

The M-Shaper optical function allows optimization of the intensity profile, and image size, without changing the laser, fiber cable and/or optic head. The intensity profile influences the heat distribution during laser material processing. The benefits of our optimized M-shaped intensity profile, in scanning applications (i.e., for the welding process) include:

- Uniform exposure over the scanned line
- Ensures a defined edge
- Enables very strong weld seams

FEATURES	APPLICATIONS
Round M-Shape output profile (before integration) Uniform output intensity profile when integrated over a scanned line Sharp beam edge High efficiency High power threshold Wavelengths from UV to IR Optional Ar/Ar coating	Laser materials processing: welding cutting scribing Strong weld seams (also in Plastics)

For more information contact us at info@raymax.com.au or go to http://www.holoor.com

November 2014 – *What's in my inbox!*

Horticulture Australia and AUSVEG have released a new consumer report by Colmar Brunton tracking four vegetables. Go to http://ausveg.com.au/ and search Project Harvest for inspiration from a growing sector of the Australian economy!

Lab+Life Scientist a great new magazine by Westwick-Farrow combines science and technology in a fresh new way. Check it out on http://www.lifescientist.com.au

New LINX SL1

LINX Printing Technologies have released a new one-box-system 10W C02 laser to its suite of coding and marking products. The SL1 is small and light-weight, with an outer box of stainless steel and will stand alone on a production line for efficient, quick, simple marking. Perfect as a cost effective alternative to ink-based coders with unknown variable costs, the SL1 will be supplied and supported by Raymax Applications in Australia.

A choice of configurations between down-shooter or straight shooter, along with a range of stands for optional installation and locations are available. Ideal for lower speed applications, intuitive and easy to operate the SL1 offers low operational costs and longer laser tube life.

Costings and shipment dates along with advice and support, are available on 02 9979 7646

Marking formats available in the NEW SL1 10W C02 laser:

- Standard fonts
- Machine readable bar codes, data matrix 2D, barcodes, and QR
- Logos and symbols both pixel and vector based
- Import graphic files in DFX, JPG and AI
- Mark serial numbers, text, date, time, shift code, GS1.

UPCOMING EVENTS

Australian Institute of Physics and Australian Optical Society Congress 7 – 11 December, Manning Clark Centre ANU
http://aip2014.org.au/index.asp?IntCatId=14