Sintec Optronics

SINTEC NEWSLETTER

Laser Expert in Singapore

July 2018 Issue www.Sintec.sg www.SintecOptronics.com

Quality and Excellence, presented by Sintec Optronics

NEW Diffractive Optical Elements (DOE) for Surface treatment (hardening & remelting)

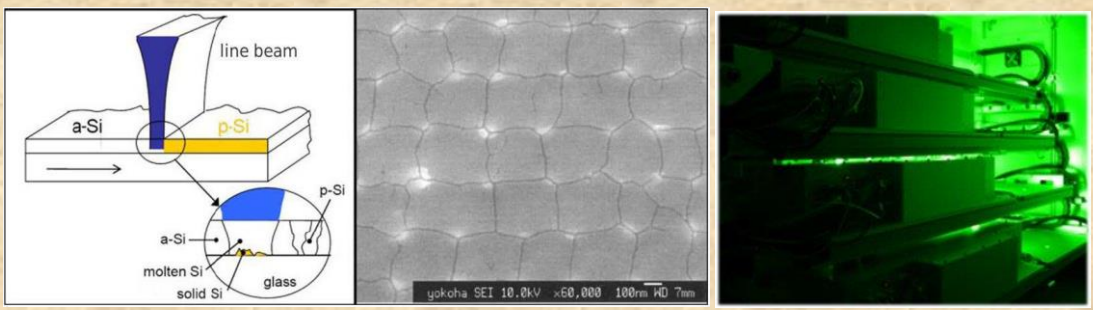
The principle of laser surface treatment is the modification of a surface as a result of interaction between a beam of high power density coherent light and the surface within a specified atmosphere (vacuum, protective or processing gases). Some of the typical uses of laser surface treatment are laser hardening and laser re-melting.

Laser hardening is a thermal surface hardening process in which the material is heated up for a short time above the critical temperature and is then rapidly cooled down, preventing the metal lattice from returning to its original structure and producing a very hard metal structure.

Laser re-melting is another thermal method of surface treatment. The component surface is briefly heated above the melting temperature. The melt then solidifies and re-crystalizes without major changes in the chemical composition.
Relevant products: Homogenizer/Diffuser, Top Hat

NEW Green laser Silicon Annealing

Due to the good absorption of 532 nm wavelength on silicon and the significantly lower cost of ownership of 532 nm DPSS lasers, We can offer the STPL-P-g2000 laser system. The system produces multiple beams with total power of 2000W, which are then arranged into a line focus of scalable line width of 750 to 1300 mm. The line focus is traversed cross the surface of silicon and anneals the amorphous silicon into polycrystalline silicon (Figure below). The beam is actually nanosecond pulsed so that it maintains pulse fluence to necessary levels, and all pulses are synchronised within 1 ns trigger variation.



NEW Lens for ultrashort Pulsed Laser applications

Because of the multi photon absorption caused by internal back reflections and the resulting dielectric breakdown, a ghost free design is most important for the use of ultrashort pulsed lasers. We offer a new special series of F-Theta lenses for applications with ultrashort pulsed lasers. Three different types are optimized for wavelengths of 355 nm, 532 nm and 1064 nm. Of course the lenses are ghost free and only with fused silica elements. The focal length (125 mm) is relatively short, which is a quality characteristic for laser material processing. Short focal lengths mean a small spot sizes at the working surface. Our portfolio of f-theta lens consists of much more fused silica F-Theta lenses for ultrashort pulsed lasers. We also offer custom solutions specially designed to your requirements.

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NEW Spatial Light Modulators (SLM)

KEY FEATURES
High speed
Pure analog phase control
High bit-depth controllers (high phase resolution)
High power handling
Synchronization / Triggering
Wavelengths from 400 – 1650 nm, customization for MWIR or LWIR

DESCRIPTION
Our Liquid Crystal on Silicon (LCoS) Spatial Light Modulators (SLMs) are uniquely designed for pure phase applications and incorporate analog data addressing with high refresh rates. This combination provides user's with the fastest response times and highest phase stabilities commercially available. Meadowlark offers both transmissive and reflective SLMs in either one or two dimensions. Phase-only SLMs can also be used for amplitude-only or a combination of both. The 512 x 512 SLM is good for applications requiring high speed, with synchronization / triggering capabilities. The optional dielectric mirror coating provides users with 100% fill factor, which increases optical efficiency.

NEW Scanning Probe Microscopes

The SPMs (Scanning Probe Microscopes) represent the basic instrumentations for Nanotechnologies.
The SPMs are particular types of microscopes that exploit physical variables in order to construct an image with very high magnification (resolution up to atomic resolution).

In these microscopy techniques a very sharp probe is positioned close to the sample surface (a few nanometers), and it runs scanning the surface and measuring the interaction between the probe and the sample at each point. The image obtained is the result of signals acquisition in xyz axis: these techniques provide an accurate real three-dimensional image of the sample surface (3D Topography).

It is possible to acquire different physical properties (electric, magnetic, optical, …) of the sample, obtaining different images of the sample, using different type of probe. STM, AFM and SNOM represent different type of SPM Microscopes that are characterized by a different measuring probe.

Promotional items!

We are currently overstocked on items such as Q-switch drivers, laser lamps, CO2 focusing lens and CO2 f-theta lens, high power fiber cable, ceramic reflectors, Optical galvanometers that supports 12-30mm apertures, and galvo drivers. Inquire about our stock items now and receive large discount! Our LSLC-DIGI self-tuning scanheads are on offer too!

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