

Conferences and publications

2022 End of the Year Sale

HOLO/OR's annual sale begins today, applying 15% on stock item orders placed before December 26st. The discount is limited to up to 3 units per part.

Take the opportunity to test & explore additional designs and get the full optimal performance from your shaped laser beam.

Place your order now and take advantage of this special sale!

[Please Visit Our Products Page](#)

OASIS8 Exhibition

HOLO/OR will participate in OASIS8 exhibition, Tel-Aviv, Israel!

Come and meet us- David InterContinental Hotel **booth number 27!**

Our staff of experienced application engineers will be glad to support your needs, and if you wish to schedule a meeting during the exhibition.



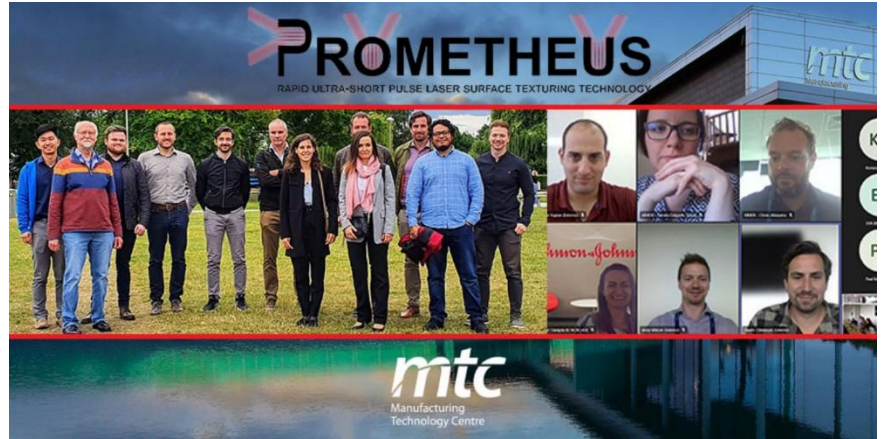
Prometheus Laser texturing machine demonstrator on it's way to our Partners

HOLO/OR is a partner in the [Prometheus project](#), which aims to demonstrate a high throughput laser surface texturing machine based on direct laser interference partnering. Such laser textured surfaces can be the inside

of engine cylinder liners (for better friction control), the inner panels of a dishwasher (to save energy on drying cycles) and even the chrome of external car parts (to make them easier to clean).

Following our July meeting, we are excited to announce that the Prometheus laser machine is now in final integration at our partner PRIMA power, and will soon be shipped to the Manufacturing Technologies Center (MTC) for the real-use demonstrations.

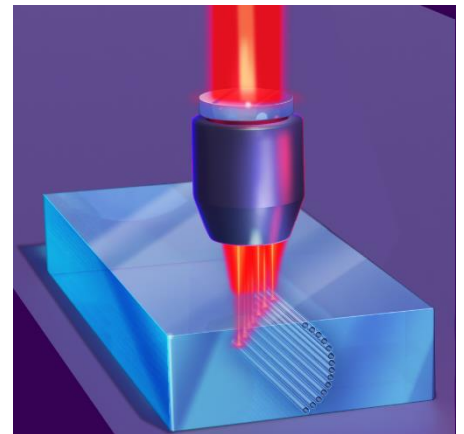
[Find out more on Prometheus here](#)



3D Beam Shaping Methods for Ultra Short pulses laser material processing

Holo/Or recently published an article at PhotonicsViews, where we discussed novel methods of diffractive beam shaping that is both focal and in-plane- what we call 3D beam shaping. Such methods are highly useful for many ultrashort pulse processes such as [laser glass cutting](#), laser texturing of non-flat surfaces, channel ablation of step-wise profiles on wafers and many others. The power of diffractive optics to enable such 3D shaping is immense, often a single element and a focus lens can give you the desired light distribution.

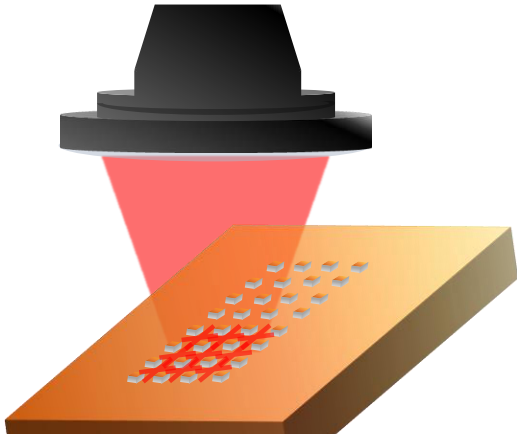
[Read more about it here](#)



Applications

Application spotlight: Laser texturing of battery current collectors to improve cycling performance

One of the most challenging aspects in electro-mobility and energy storage application is the deterioration of battery performance with repeated charge-discharge cycles. This limits battery lifetime, requiring the recycling/ disposal of large amounts of toxic and heavy materials. A promising approach to improve cycling performance in batteries, especially lithium-ion batteries, is to create textures on the current collector that transfer the current from the battery electrodes, increasing their effective surface area. This improves both adhesion to active battery materials, cycle stability and reversible capacity.



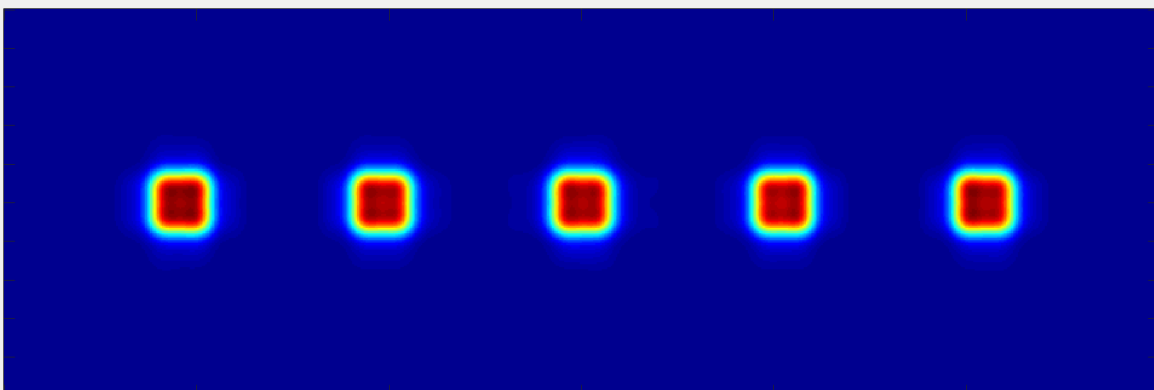
Texturing by grid like light pattern with generated by a single DOE

A promising, cost effective and fast method for surface texturing of Al and Cu foils used as current collectors is by ultra-short pulse lasers. However, the power must be spread over the area effectively to achieve industrial scale throughput. We at Holo/Or offer many shaping solutions that enable such texturing , including our unique [DLITE](#) beam shaper , that can be tailored to create multiple intensity levels, resulting in hierarchical structures with several height levels from the same laser pulse.

Application spotlight: Parallel Scribing with Multiple Flat Top spots

We at Holo/Or see an increasing interest in parallel laser scribing with extremely accurate line width, for processes such as solar panel scribing of electrodes, PCB scribing, wafer singulation and other precise micro-machining applications. This requirement for uniform scribe width is answered by our [Top Hat beam shapers](#), as a flat- top spot maintains it's width regardless of laser pulse energy, unlike a gaussian spot.

To enable parallel scribing of multiple channels, our Top Hats element can be combined with our [diffractive beam splitter elements](#) to create a single element that both splits the beam and shapes it to multiple flat top square/ rectangles, with precise dimensions and separations. Our parallel scribing elements are easy to integrate into an F-theta+ scanner setup, and are available from deep UV to MIR wavelengths. [Contact us](#) with your inquiry and we will be happy to help!



Technical tips

Our website FAQ section is live!

As promised, Holo/Or [new FAQ](#) page is now live. Here you can find the answers to many of the questions we get from you, our customers- all in one place and organised by relevant topics. If you could not find an answer in the FAQ or the application notes, or just want to talk with our experts on your complex optical challenge, feel free to [Contact us](#).



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