Laser Micromachining

nScrypt provides complete laser micromachining solutions for difficult applications. We incorporate picosecond lasers on our standard, precision motion platforms to deliver high quality micromachining capability to the semiconductor industry. When speed is more important, the nScrypt motion platform can be configured with other laser alternatives such as nanosecond and CO_2 solutions.

We understand that the right laser is only part of the solution. Having the proper optics for your process is equally important. With our deep experience in specialized optics, we will specify and integrate the optics your process requires; from beam shaping to spot size, we will precisely design for you.

Have Performance and Precision with nScrypt's Picosecond Laser

With repetition rates up to 100KHz and high average power, solid state picoseconds lasers are able to achieve cost effective, high quality micromachining. With picosecond pulses there is little to no heat affected zone when machining. This benefit eliminates micro cracking of sensitive substrates.

Compared to femtosecond lasers, picosecond lasers produce similar ablation characteristics, are easier to maintain, and can perform similar operations 5 times faster. Being able to obtain a power density in the TW/cm^2 regime allows for the micromachining of most materials.

Our team of laser experts is available for you to discuss the micromachining system right for you.

Laser Micromachining Applications

- Wafer Scribing
- Micro-Vias
- Surface Structuring
- Dicing
- Blind Vias
- Quality Ablation
- Laser Milling
- Micro-Fluidics

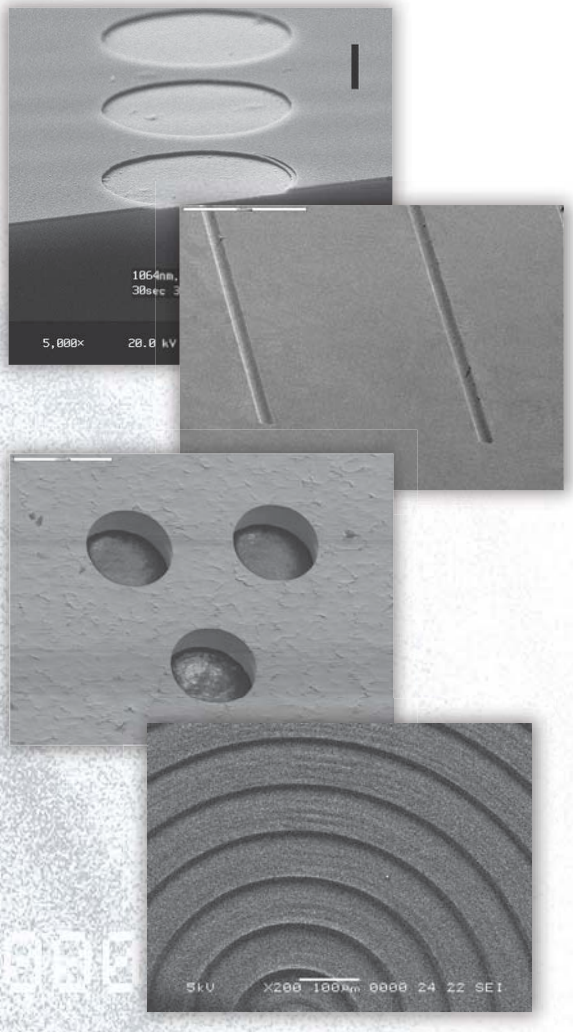
Picosecond Laser Applications

- Surface structuring
- Quality ablation
- 50μm drilling
- Cutting

Picosecond Laser Materials

- Silicon
- GaAs
- Copper
- Steel
- Glass
- Alumina
- PZT ceramics

Images, from top to bottom: Insulator on semiconductor 70 nm layer 1064 nm 200 kHz 300mW; SOMETHING; Molybdenum 100 µm thick 180 µm holes; Sapphire.



Nd:YV04 Specifications

Fundamental Wavelength	1064nm
Pulse Width	<15ps
Repetition Rate	Adjustable from single pulse to > 50KHz
Average Power	10W between 50 – 100KHz
Pulse Energy	Up to 40μJ
Beam Quality	M2 < 1.5
Spot Size	20μm @ 1064nm
Half Angle Taper	2 degrees
Removal Rate	0.5 – 8mm^3/min (material dependent)

Precise. Conformal. Reconfigurable.

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