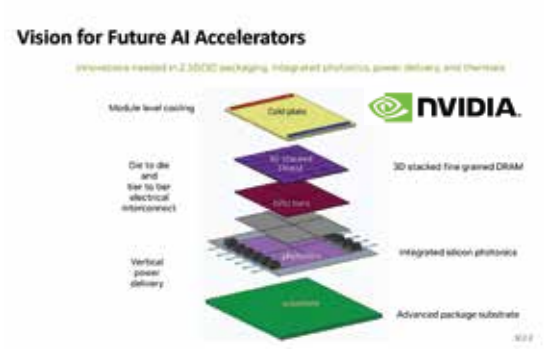
PHOTONICS ASSEMBLY
LASER CLEANING SOLUTION

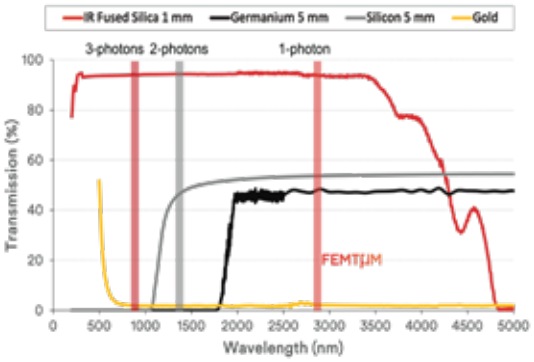
FEMTUM

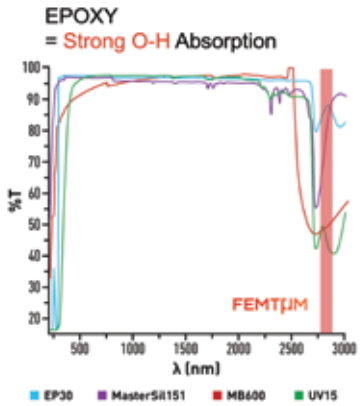
The growing demand for AI-driven applications has intensified the need for scalable, high-performance computing and networking solutions. As co-packaged optics (CPO) technology becomes critical in meeting these demands, there is an urgent need for more efficient and cost-effective manufacturing of CPO components. Enhancing production processes and improving yield rates are paramount to ensure scalability, reduce costs, and meet the increasing performance requirements of AI-driven systems.



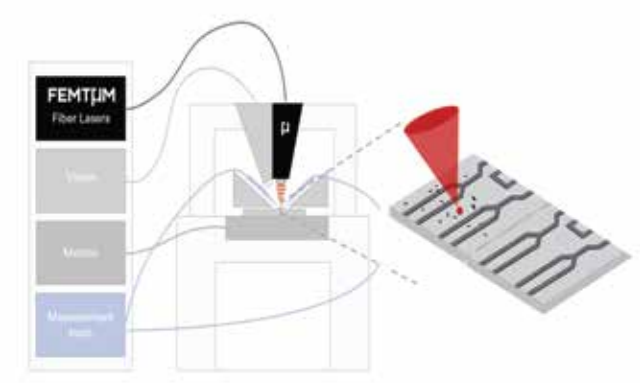
Source:
https://www.techpowerup.com/329651/nvidia-shows-future-ai-accelerator-design-silicon-photonics-and-dram-on-top-of-compute

WHY 3 µm ?

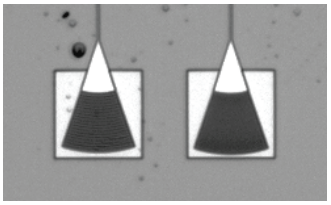




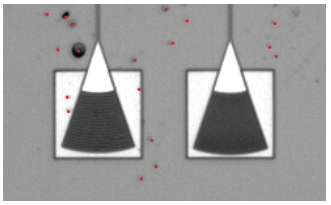
Laser cleaning is an efficient and precise method to selectively remove residues and contaminants from a substrate without damaging the underlying surface. At 2.8 µm, many organic materials, such as oils and certain polymers, exhibit high contrast peak absorption between the contaminant and the substrate. This allows for precise energy delivery to the targeted residues, enabling their ablation while preserving the substrate intact.



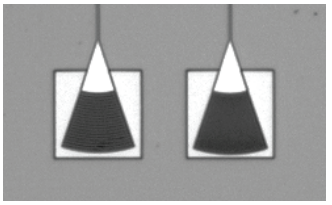
AN EFFICIENT AND PRECISE PROCESS



STEP 1: Image acquisition of the components



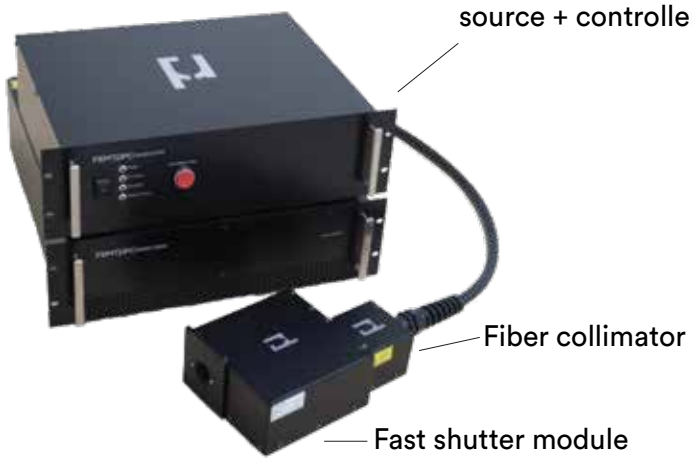
STEP 2: Locate contaminants to be removed



STEP 3: Laser cleaning. Image acquisiton for final inspection

LASER CLEANING SOLUTION:

Femtum has introduced the NANO-2800, its first pulsed fiber laser designed specifically for industrial applications. Paired with its advanced cleaning head, this innovative solution excels at removing residues, such as grease and other contaminants, from semiconductors (Si, SiN, InP, SiC) or glasses (fused silica).



KEY FEATURES

Laser Source:

Single-mode output

Beam quality (M^2) < 1.3

High repetition rate and pulse energy

Fast shutter module:

Robust opto-mechanical module

Very low pulse-to-pulse noise

KEY FEATURES

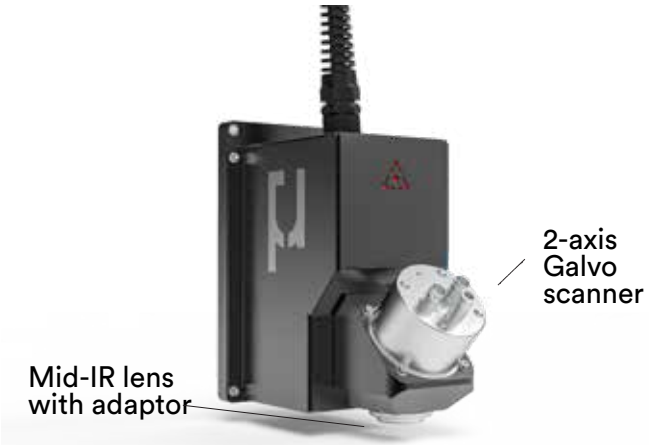
Laser Head:

Large field of view

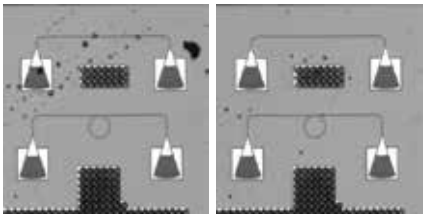
Various spot sizes

Precise scanning

Tailored to customer's integration

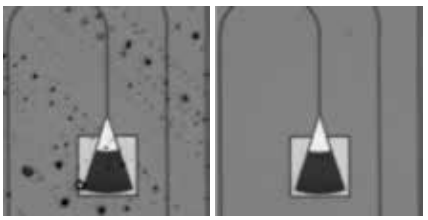


EFFECTIVE FOR VARIOUS CONTAMINANTS



Dust particles

Gold pads



Isopropanol

KEY FEATURES

No damages to substrate

Selective laser processing

High precision

Non abrasive and dry process

Environmentally friendly

KEY BENEFITS

Efficient and accurate

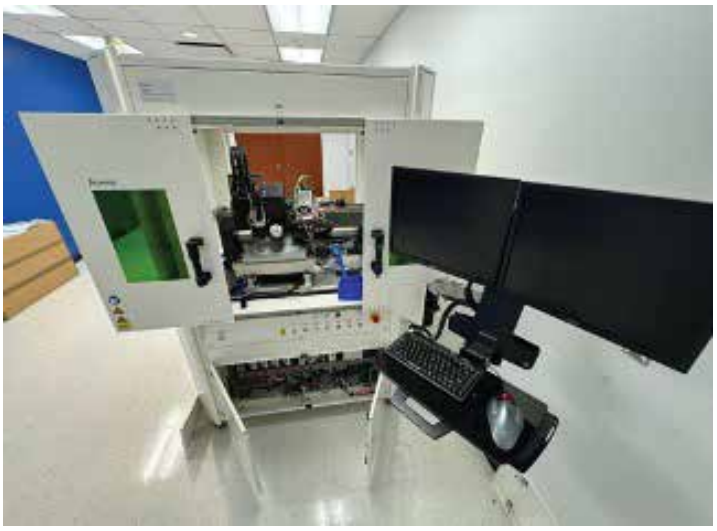
Automated process

Improve yield of production

Can be integrated into current or existing semiconductor manufacturing system

ficontec

OUR PROCESS DEVELOPMENT EXPERTISE:



Femtum has dedicated application labs equipped with different moving platform and metrology equipment to thoroughly test and showcase targeted applications at our location. These labs are designed to replicate real-world conditions, allowing us to evaluate performance, refine solutions, and demonstrate how the application can meet specific needs effectively.

We collaborate with customers to optimize their manufacturing processes by integrating our laser cleaning solutions. Our expertise ensures seamless integration, enhancing efficiency, and addressing specific operational challenges.

For more information about this application, please visit www.femtum.ai.

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