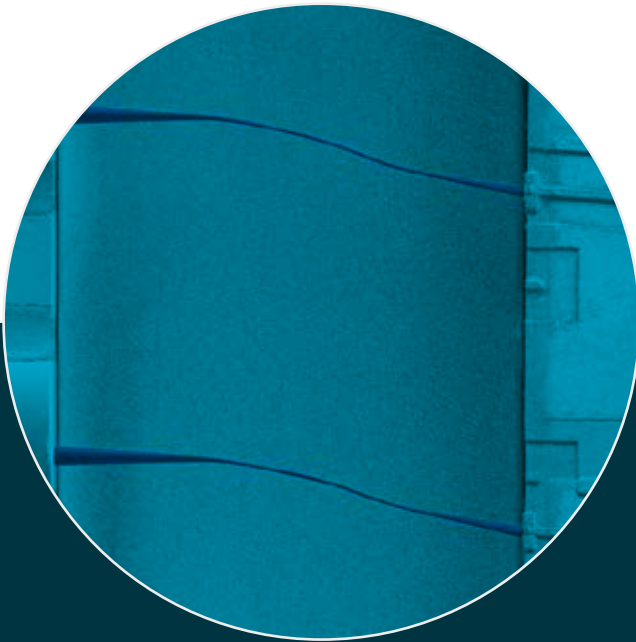


connect the world by lighting the way
THE ESSENTIAL LINK IN NEXT-GENERATION OPTICAL CONNECTIVITY



LEARN MORE

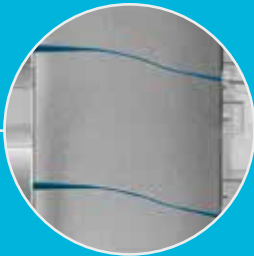
Photonic Integration

WITH PASSIVE ALIGNMENT AND 3D LITHOGRAPHY

- **Scalable manufacturing solutions** with fully automated machines
- **Simplified photonic integration, no active alignment & no additional optics**
- **Compatible** with silicon photonics and more, improving coupling efficiency and increasing yield. Passes reliability testing

„ Powering the new era of photonic devices with passive photonic integration and fully automated processes “

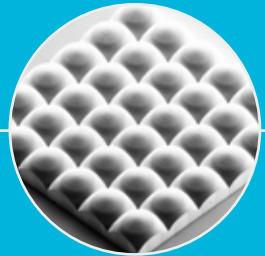
Our Product Areas



PHOTONIC WIRE BONDS



MICRO-LENSES



MICRO-LENS-ARRAYS

“ Our optical interposer together with Vanguard Automation’s facet-attached micro-lenses create a powerful platform for electro-optical engines for transceivers, co-packaged optics, light engines and sensing devices ”

Suresh Venkatesan, CEO of POET Technologies

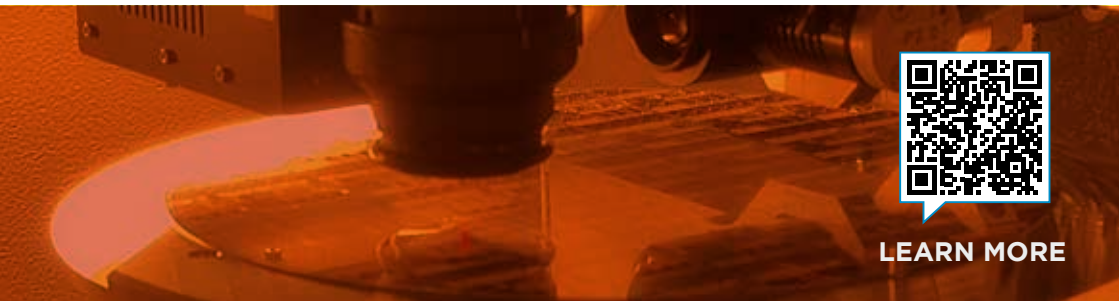
vanguard SONATA1000

 AUTOMATED LITHOGRAPHY BASED 3D NANO-PRINTING

High-precision manufacturing of low-loss photonic interconnects



- ✓ Scalable production of Photonic Wire Bonds and facet-attached micro-optics
- ✓ Industry-grade opto-mechanical design, suitable for processing small batches up to 12" wafers
- ✓ Suitable for use with silicon photonics, silicon nitride, indium phosphide and other material platforms.
- ✓ Compatible with single mode fibers, multi-core fibers and fiber arrays



" Photonic Wire Bonding will be a fundamental packaging technology for next generation highly integrated photonic subassemblies offering not only compact form factors but also low optical loss "

Gordon Morrison, VP of Luminar Semi

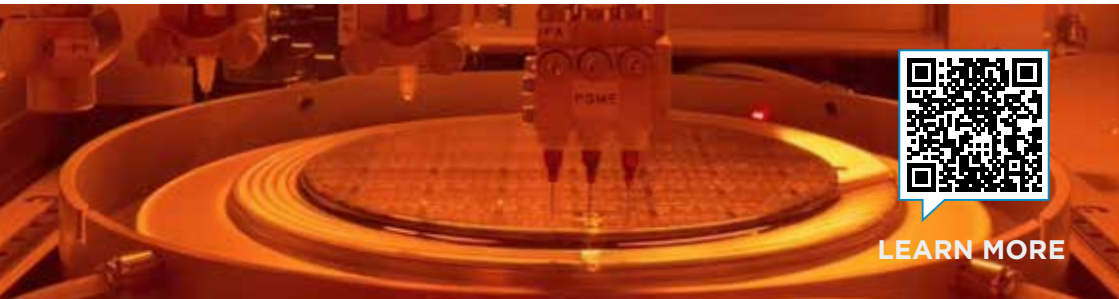
vanguard REPRISE1000

AUTOMATED PRE- AND POST-PROCESSING

Complete post-processing tool for development at high volume



- ✓ Providing reliable manufacturing with high yield and high reliability
- ✓ Designed for processing small batches up to 12" wafers
- ✓ High-speed, high-precision XYZ-gantry system. UV flood light unit and nitrogen inlets for curing and drying
- ✓ Suitable for use with fibers, silicon-photonics, silicon nitride, indium phosphide & other material platform



LEARN MORE

" This is a significant expansion of our capabilities, offering interesting technological avenues. We are already working in collaboration with customers and partners on Photonic Wire Bonding concepts with great commercialization potential. "

Marie-Josée Turgeon, President & General Manager of MiQro Innovation Collaborative Centre (C2MI)

Complete Process Solution



SUITABLE FROM PROTOTYPING TO VOLUME PRODUCTION

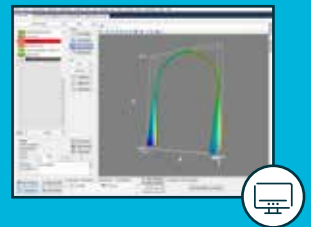
vanguard SONATA1000 automatically fabricates photonic interconnects

Assemblies and wafers are loaded into the **vanguard SONATA1000** for photonic interconnect fabrication (Photonic Wire Bonds and facet-attached micro-lenses).



VanCore photoresist, our proprietary material series designed for high-yield 3D lithography and reliability compliance, is precisely drop-placed onto the assemblies.

In-house developed software **BrightWire3D** detects the waveguide positions and calculates the optimum trajectory for low-loss photonic interconnects.



Post-processing and final curing are completed in the **vanguard REPRIZE1000**

Fully Automated Manufacturing Solutions



DESIGN AND MANUFACTURE NEXT-GENERATION OPTICAL DEVICES

Headquartered in Karlsruhe, Germany, we empower industry and research to design and manufacture next-generation optical devices through automated interconnect solutions that overcome design, performance, and scalability challenges. Since April 2024, Vanguard Automation joined Mycronic, a Swedish high-tech group, listed on NASDAQ OMX Stockholm.



vanguard
AUTOMATION
MYCRONIC

Vanguard Automation GmbH
Gablonzer Strasse 10, 76185 Karlsruhe, Germany
sales.vanguard@mycronic.com