EV GROUP®

Heterogeneous Integration Competence Center™

EVG Heterogeneous Integration Competence Center™ at a Glance

EVG's Heterogeneous Integration Competence Center is designed to assist customers in leveraging EVG's process solutions and expertise to enable new and enhanced products and applications driven by advances in system integration and packaging. These include solutions and applications for high-performance computing and data centers, the Internet of Things (IoT), autonomous vehicles, medical and wearable devices, photonics and advanced sensors.

EVG has an extensive background in heterogeneous integration, providing solutions for this key technology trend for more than 20 years. Among these are: permanent wafer bonding—including direct fusion and hybrid bonding for 3D packaging and metal bonding—and die-to-wafer bonding with and without collective carriers for integration of III-V compound semiconductors and silicon as well as high-density 3D packaging; temporary bonding and debonding, including mechanical, slide-off/lift-off, and UV laser assisted; thin-wafer handling; and innovative lithography technologies, including mask aligners, coaters and developers, and maskless exposure / digital lithography.

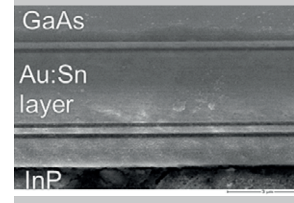
EVG's new HI Competence Center provides an open access innovation incubator for our customers and partners across the microelectronics supply chain to collaborate while pooling our solutions and process technology resources to shorten development cycles and time to market for innovative devices and applications enabled by heterogeneous integration.

Cleanroom at EVG headquarters

Direct Bonding

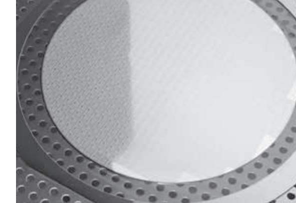
- Plasma Activated Bonding
- Anodic Bonding
- ComBond®
- Hybrid Bonding <100 nm overlay

Metal Bonding



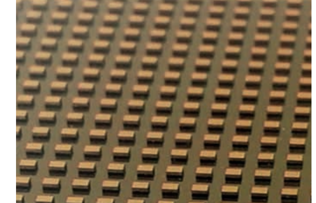
- Eutectic Bonding
- Solder Bonding
- Transient Liquid Face Bonding
- Metal Thermo Compression Bonding

Temporary Bonding



- Adhesives, Tapes Waxes
- Slide Off
- Mechanical Debonding (ZoneBond®)
- Laser Debonding

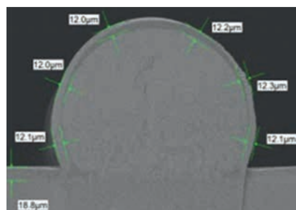
Heterogeneous Integration / C2W



- Process Integration
- Wafer Level Die Transfer
- Metrology

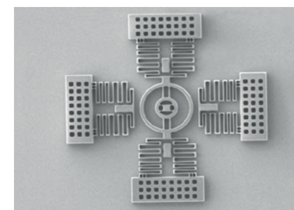
EVG Heterogeneous Integration Competence Center™ Open Access Innovation Incubator

Resist Processing



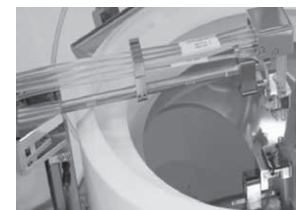
- Spin Coating
- Spray Coating
- Thin Film (down to 40 nm)
- Thick Film
- Edge Coating

Lithography



- Maskless Exposure
- Proximity Mask Aligner
- Fine Pitch Redistribution
- Bumping
- Customized Exposure Processes for Novel Device Requirements

Developing



- DI rinse, Solvents
- Spray
- Puddle
- Temperature Enhanced
- Megasonic Enhanced

Advanced Resist Coating

- NanoFill™ NanoSpray™
- Cover Spin
- Black Resists
- Quantum Dots
- Plasma Dicing

EV Group

EVG's equipment solutions and manufacturing process expertise are critical to supporting many applications within the semiconductor industry, with proven success in a variety of key markets, including:

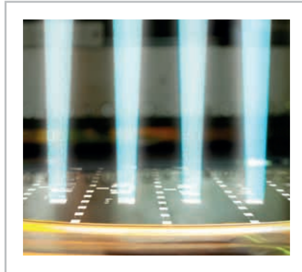
- Advanced Packaging, 3D Interconnect
- MEMS (MicroElectroMechanical Systems)
- SOI (Silicon-On-Insulator)
- Compound Semiconductor and Silicon-based Power Devices
- Nanotechnology

EVG's recent developments in maskless lithography, fusion and hybrid wafer bonding as well as other processes offer new capabilities to develop next generation heterogeneous and 3D integrated device solutions.

EV Group (EVG) offers equipment solutions for:

- Wafer Bonding
- Mask Aligner
- Coating and Development
- Temporary Bonding & Debonding
- Cleaning
- Metrology
- Maskless Exposure / Digital Lithography

GEMINI® FB XT Automated Production Wafer Bonding System up to 300 mm



MLE™ Maskless Exposure Technology Moving beyond traditional mask-based lithoghraphy toward digital lithography technology

EV Group Global Locations Application Laboratories

Headquarters
EV Group
E. Thallner GmbH
DI Erich Thallner Strasse 1
4782 St. Florian am Inn
+43 7712 5311 0
ProcessTechnologySD@EVGroup.com

Japan
EV Group Japan KK
Yokohama Business Park East Tower 1F
134, Godo-cho, Hodogaya-ku,
Yokohama-shi, Kanagawa, 240-0005
+81 45 348 0665
Technology@EVGroup.jp

North America
EV Group Inc.
7700 South River Parkway
Tempe, AZ 85284
+1 480 305 2400
ProcessUS@EVGroup.com

Contact

Companies and other parties interested in partnering with the Heterogeneous Integration Competence Center™ can contact EV Group by phone at +43 7712 5311 0 or e-mail.

Get in touch:

HeterogeneousIntegration@EVGroup.com

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