

Presentation for EPIC's MEMBERS ONLINE NEW PRODUCT RELEASE MEETING, April 04th 2023

EVG[®]40 NT2

Breakthrough Metrology for Maskless Exposure Technology

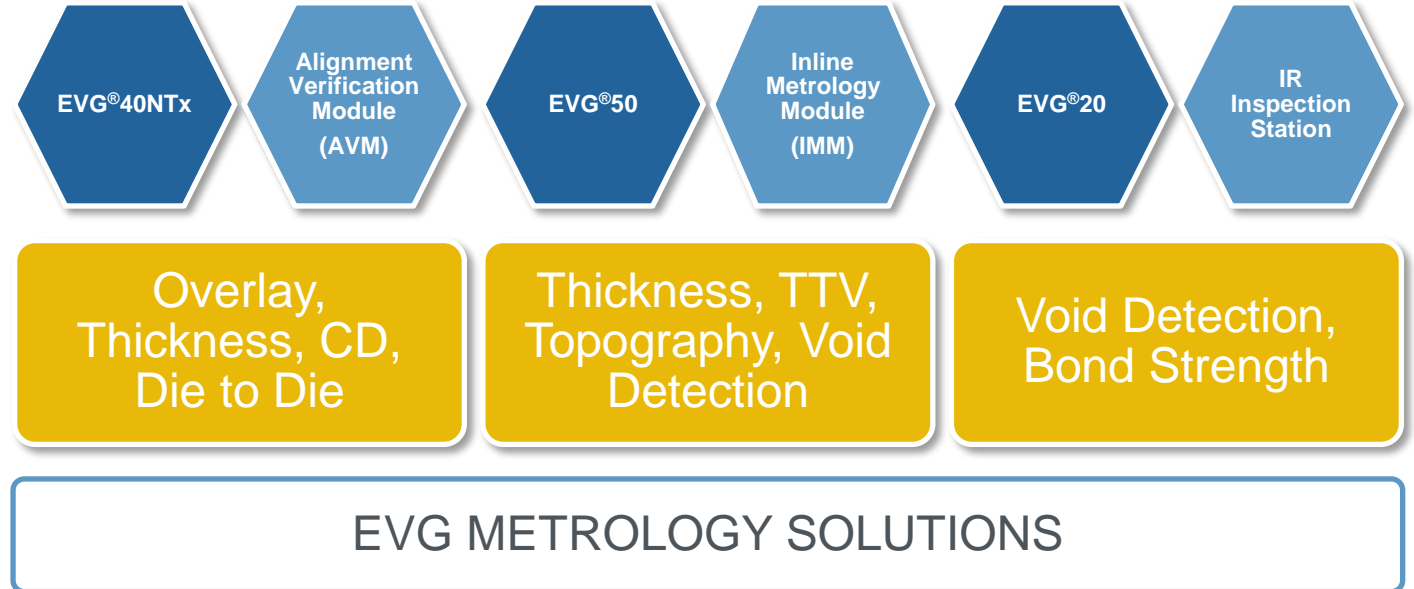
Dr. Ksenija Varga | Business Development Manager

Stand-Alone Metrology Systems with:

- Automated pass/fail criteria based on customer specifications
- Host controlled feedback loop to all relevant upstream process steps

Integrated Metrology in fully automated production systems with:

- Direct feedback
- Immediate correction of process parameters



EVG's metrology solutions for wafer inspection & evaluation optimized for lithography & all types of bonding applications!



- >120 systems of EVG[®]40 series installed world-wide.
- Operating in **HVM** environment & in **R&D** institutes.
- Wide field of applications in lithography, bonding & advanced packaging.



EVG[®]40

Metrology for LITHOGRAPHY



EVG[®]40 NT

Metrology for Bonding & LITHOGRAPHY



EVG[®]40 NT2

Metrology for Bonding & ADVANCED PACKAGING

2002



2007



2021

INTRODUCTION **EVG[®]40 NT2 FOCUS**

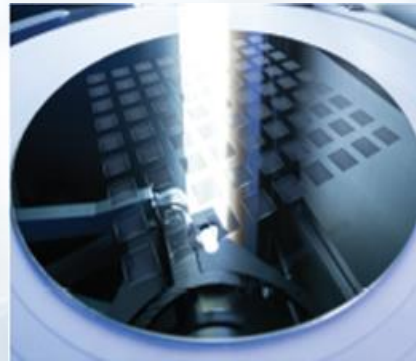


EVG[®]40 NT2 Focus

- Heterogeneous Integration
- 3D Integration



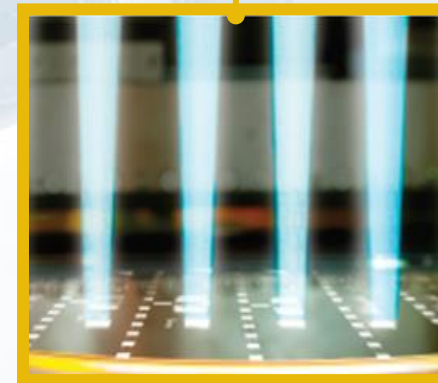
GEMINI[®] FB
Hybrid Bonding



EVG[®]850 DB
Laser Debonding



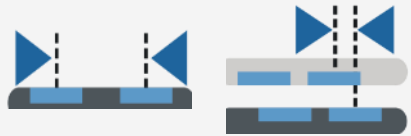

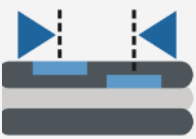

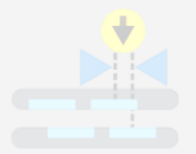
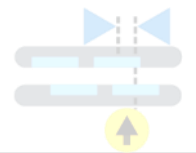
BONDSSCALE[®]
Fusion Bonding

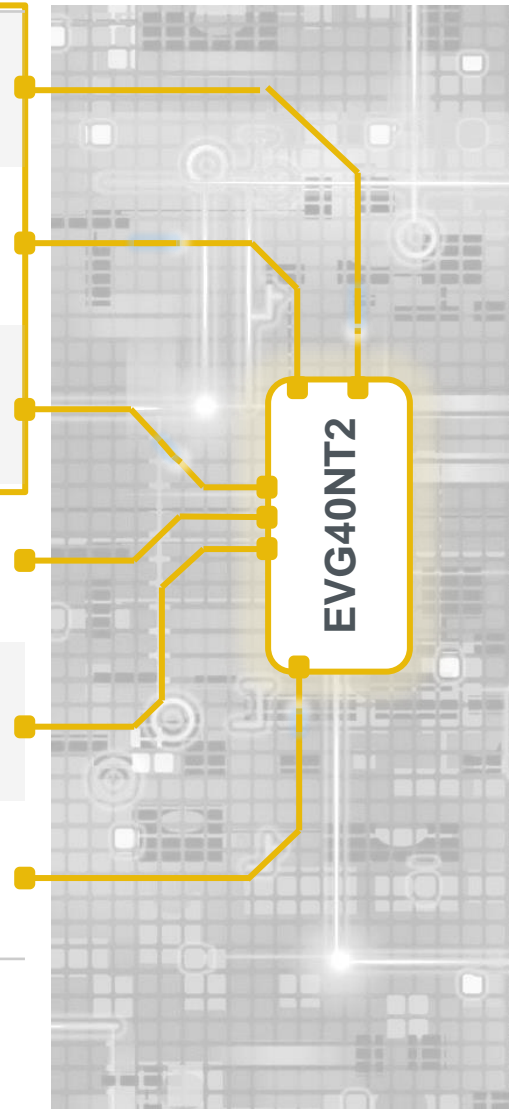


EVG[®] LITHOSCALE[®]
Maskless Exposure
Technology



EVG[®] HERCULES[®] NIL
SmartNIL[®] UV-NIL
Up to 300 mm

TOP SIDE ALIGNMENT		Visible Light	$3\sigma \leq 5 \text{ nm}$	Lithography Bonding
CRITICAL DIMENSION		Visible Light	$3\sigma \leq 10 \text{ nm}$	Lithography
DUAL LAYER ALIGNMENT		Visible / IR Light	$3\sigma \leq 40 \text{ nm}$	Lithography Bonding
Die to Die Alignment		Visible Light		Bonding
Bond Alignment		Reflective IR Light	$3\sigma \leq 6 \text{ nm}$	Bonding
Bond Alignment		Transmissive IR Light	$3\sigma \leq 2.8 \text{ nm}$	Bonding





CAMERAS

- CMOS camera for standard inspection
- SW-IR camera for enhanced IR sensitivity



ILLUMINATION

- White light LED
- IR light LED



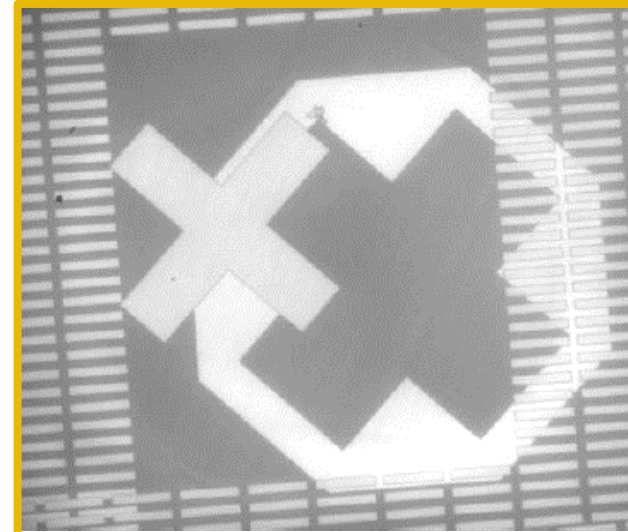
OBJECTIVE MANGIFICATION

- 5x – 20x
- 50X on request

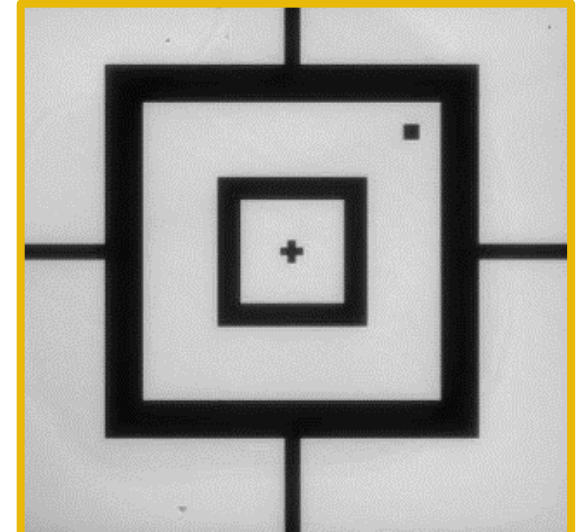


AUTOFOCUS FUNCTION

- Surface and feature based autofocus available for fast and precise image capturing
- Automatic search of focal place of alignment keys
- For optimized measurement performance and wafer-to-wafer repeatability
- Assisted focus search during initial recipe creation to reduce operator dependency



TRANSMISSIVE IR



REFLECTIVE IR

➔ MASKLESS EXPOSURE TECHNOLOGY LITHOSCALE®

- Next-generation metrology enables:
 - Individual die shift compensation
 - Critical dimension measurement
 - High-resolution digital mask alignment verification
 - Real-time process correction

➔ EVG®40NT2

- Helps accelerate introduction of new 3D/heterogenous integration applications for device manufacturers, foundries, and packaging houses.



THANK YOU!

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