Increase your FAB Yield with BPT's A*i* Technology

Sherlock
BPT CLARITY PRO ™

Wafer Metrology: 2D & 3D Inspection

Artificial Intelligence

Tag and train images to classify and quantify defects.

First system in the world to do wafer 3D & 2D analysis simultaneously

- Increase your yield with the most advanced A.I. in semiconductor metrology.
- BPT's Clarity Pro Sherlock System detects and quantifies process defects.
- Wafer metrology is the key to process control and yield enhancement.

BrighTex Bio-Photonics Technologies
AI Metrology Company

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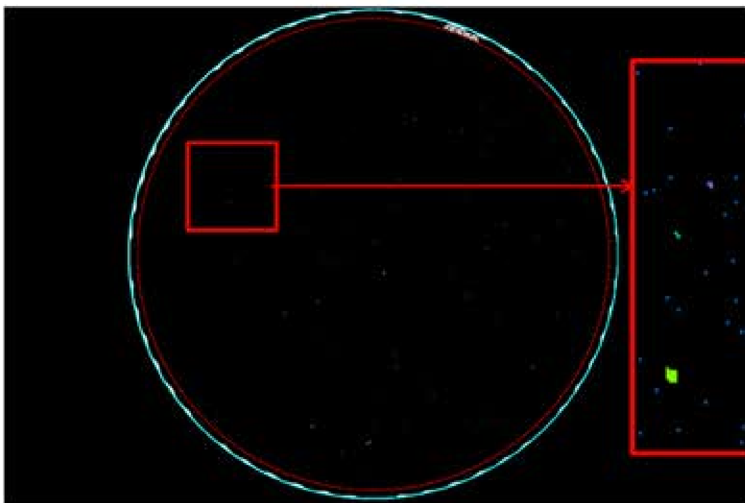
Your AI Metrology Company

Train the AI model to automatically detect, measure and classify with the optional AI module

- **Data Preparation:** Use annotated images of wafer defects to train the AI model.
- **Model Training:** Automated routines assist in training models to identify specific defects such as particles, Scratches and Haze.
- **Real-Time Detection:** As Wafer images are captured, the AI module can assess images simultaneously to speed up detection and classification of defects without any overhead on processing time.
- **Custom Defect Categories:** Tailor the AI logic to meet your unique compliance standards and requirements
- **Continuous Improvement:** As more images are processed over time, the AI model continuously improves the accuracy and reliability of the analysis.



Selected Object Information:	
ID:	36008
ObjectX-Center	1840
ObjectY-Center	1292
Binning Range	1
Particle Intensity	1549.5
Size (µ)	0.3
X (µ)	50746.3132
Y (µ)	95445.8006
Polar Radius (µ)	51291.5004
Polar Theta	351

DETECTION CAPABILITY

- Particles, Scratches, Defects & Haze
- Surface Roughness
- Bare or Patterned Wafers (100 – 300mm)
- Wafer Edge & Notch Integrity

PERFORMANCE SPECIFICATIONS

- Particle Sensitivity 0.2 – 1,000 microns
- Z-height Resolution ~ 10nm
- Scan Time <20 seconds

THROUGHPUT > 120 WPH

PARTICLE DETECTION FOR RECOGNITION OF PARTICLES VERSUS SCRATCHES

3D CAPABILITY

- Topography Map
- Bump Measurements

PARTICLES DETECTED & BINNED INTO UNLIMITED CATEGORIES (AI)

DATA REPORTED IN KLARF FILE OUTPUT (CLARITYRF)

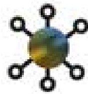
Your AI Metrology Company

How it works

- Load & scan the wafer.
- Capture the full wafer for 2D and 3D analysis.
- Recipe setup and binning capability.
- Classify wafer defects and generate highest resolution 3D models for quantitative measurements.
- Detect & display defects like particles, scratches, missing patterns & bumps.

Application Features

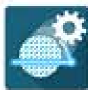
Follows SEMI Standards for Job Handling



Recipe Management

User and Role Management

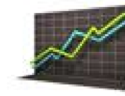
Access Control Based on Login



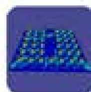
Defect/Particle Map in Standard Format

AI Available for Classifying Defects.

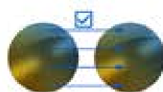
Signature Analysis



Charting Package for Professional Reporting

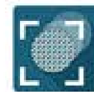


3D Viewer with Measurements



Die-to-Die Matching

2D and 3D Analysis

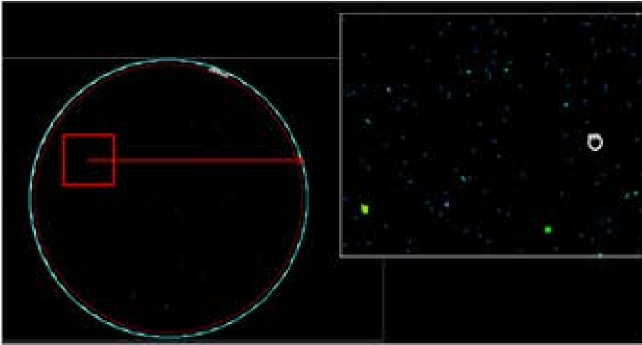


HDR Imaging

Edge Inspection

Automatic Notch Detection

Highlights

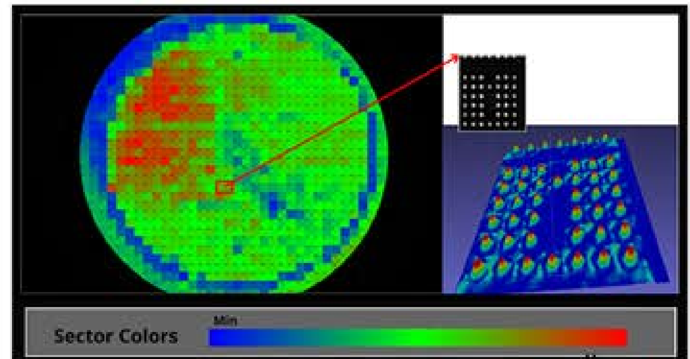


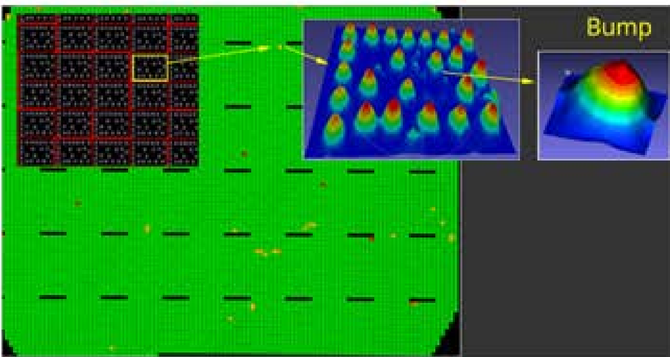
PARTICLES ON THE WAFER:

- Features capable of detecting the presence of particles, residues, damaged wafers, wafer edges, hard & soft defects with their locations, count and size with high binning accuracy.
- **High Dynamic Range Process of Scanning:** Provides a wide range of intensity's for detecting sub micron particles(0.25 microns) to very large particles (many millimeters) with a single scan for front and back of the wafer.
- Automatic classification of defects though our computer algorithm process of deep learning(AI).

BINNING CAPABILITY :

- Missing bumps can be identified.
- High quality imaging providing a greater detail of intensities for detecting even floor variations & the height of bumps more accurately.





DETECTING THE DEFECTS

Bumps on the wafer:

- Identifying X,Y location(relative to notch), minimum height, maximum height, average height and diameter of the bump on a wafer.
- Information is saved in the industry standard KLARF format.