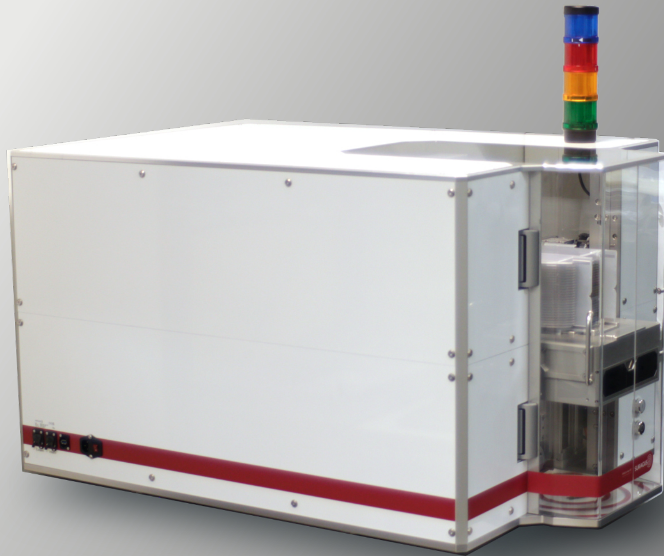
SURAGUS Sensors & Instruments

EddyCus® ResMapper – Automated Non-contact Wafer Imaging Device P_C2C_29



Highlights

- Non-contact
- Edge grip only
- Automated wafer handling
- Fast (one measurement within 60 seconds)
- High resolution (5 to 22,000 points/wafer)
- Repeatable and accurate
- Customized setups

Parameters

- Resistivity [mOhm·cm]
- 2D wafer thickness [µm]
- Sheet resistance [Ohm/sq]
- Metal layer thickness [nm, µm]
- Total thickness variation (TTV) [µm]
- Defect and integrity assessment
- 1D, 2D bow and warpage [µm]
- Wafer diameter [mm]

Applications

- Wafer characterization
- Layer deposition (PVD, CVD, plating ...)
- Epitaxy
- Implantation
- Doping
- Annealing
- Laser irradiation
- Etching
- Machining and polishing
- Wafer sorting
- (De)-oxidation
- Defect imaging
- Final inspection

Materials

- Semiconductors e.g.
  - Si
  - SiC
  - GaAs
  - GaN
- Metal films e.g.
  - Al
  - Au
  - Ti
  - Cu
- Other conductive films and materials

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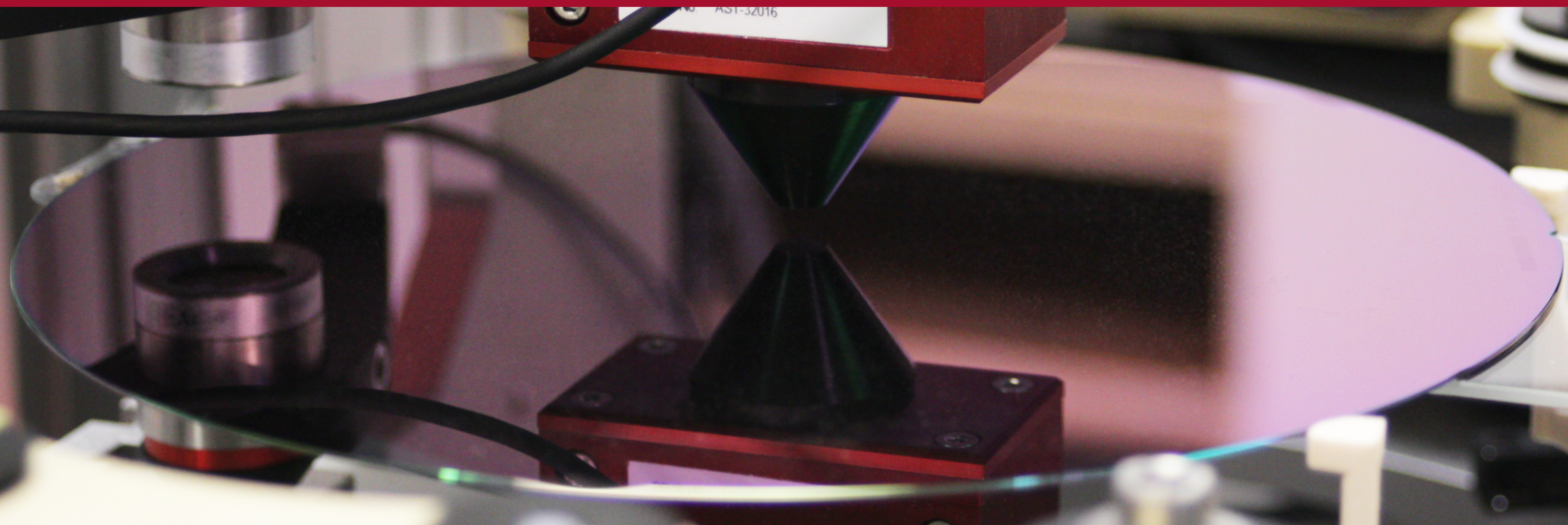
Engineered and Made in Germany

EddyCus® ResMapper – Automated Sheet Resistance/Resistivity/Metal Layer Thickness Imaging



Measurement technology	Non-contact high frequency eddy current sensor, Confocal sensor for TTV, warpage and bow
Substrates	150 and 200 mm wafer
Wafer thickness range	300 – 1,000 µm (other on request)
Cassettes	1
Edge effect correction / exclusion	2 – 10 mm (depending on size, range, setup and requirements)
Resistivity range	0.1 – 1,000 mOhm·cm < 1 – 3 % accuracy
Sheet resistance range	0.0001 – 100,000 Ohm/sq < 1 – 3 % accuracy
Metal layer thickness conversion	Range e. g. for Aluminum: 27 nm – 27 µm
Features	Total thickness variation, Warpage Carrier ID reader, customized data interface, API for customer software integration
Measurement patterns	Standard ~ 22 000 points Points 9 / 17 / 49 / 81 / 99 / 169 / 625 / …. / 100,000
Measurement time	30 – 90 s per wafer depending on measurement points
Throughput	45 wafers per hour (~ 22 000 measurement points per wafer)
Device dimensions (w/d/h)	785 mm x 1,170 mm x 666 mm / 30.91“ x 46.06“ x 26.22“

Software and Handling

- Web Interface
- Easy to use software
- Recipe Management to adjust thresholds, data processing pipelines, result export options and more
- Display of mapping with intuitive graphical analysis tools
- Access Level for user profiles
- Extensive Job Management
  - Creation of default jobs for 150 and 200mm
  - Freely customizable sequence Jobs
  - Single Wafer analysis
- Result download via Webpage / API / FTP (on request) / SECS-GEM (on request)
- Creation of statistics for mappings and thickness measurements