

HACKX 2025

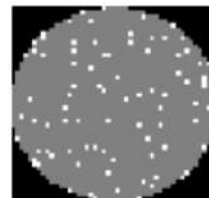
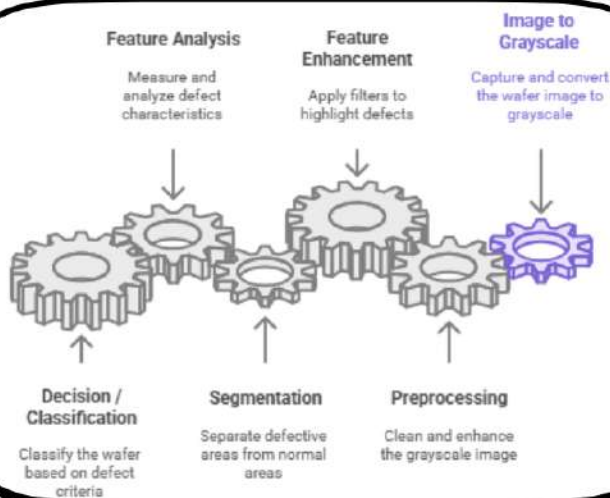
Dquad

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Member 1 : Diya Kalaria
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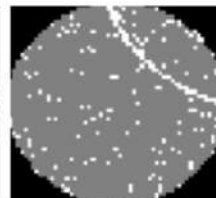
Presence of Undetected defects
??? (micro-cracks, dents) on the surface of
semiconductor wafers



Defects (Micro-Crack and Dents)
Detection of Semiconductor Wafers
using Grayscale Image Processing



Normal non-defected wafer surface



Detection of defects on the surface of wafer using grayscale analysis

- ✓ Grayscale Image-Based Defect Detection
- ✓ Automated Microcrack & Dent Identification
- ✓ Image Preprocessing & Edge Detection
- ✓ Feature Extraction

- Enhanced Quality control
- Increased Yield
- Reduced human dependencies
- Sustainability
- Scalability