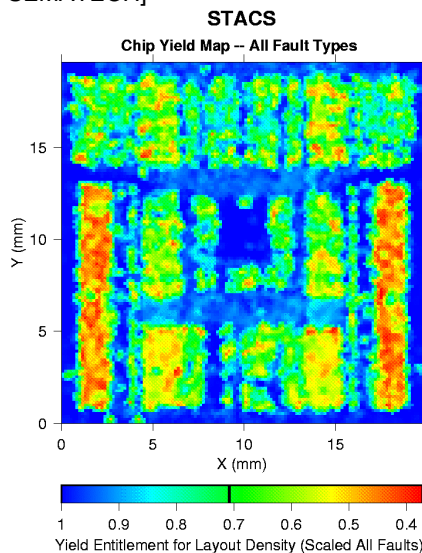


EYES - Semiconductor Chip Manufacturing Yield Estimator Critical Area Extraction (CAE) Software Tool

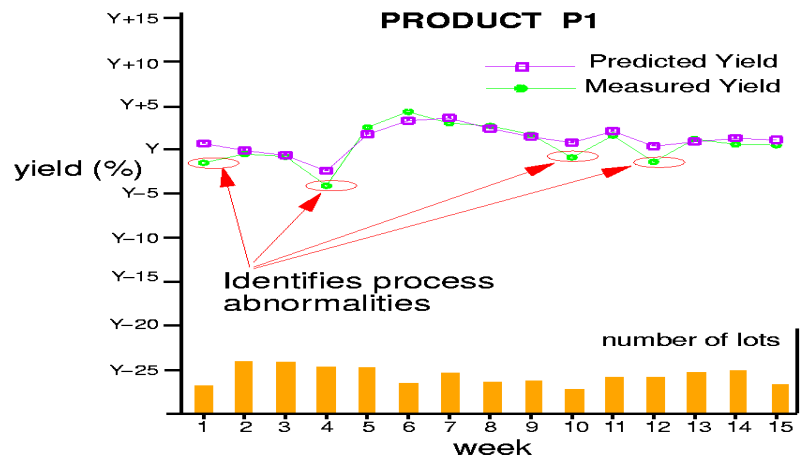
The ability to accurately model the impact of defects present in semiconductor manufacturing is critical to understanding and improving product yields. The University of Edinburgh's Critical Area Extraction (CAE) software is key to this predictive capability.

Summary of Technology

Edinburgh Yield Estimator - Sampling (EYES) is a state-of-the-art software package developed from its sister product EYE. It is aimed at large chip applications and uses a patented survey sampling technique to estimate critical area and other parameters. This is an extremely efficient technique and easily capable of providing extractions for state-of-the-art chips with extraction times an order of magnitude faster than alternative methods such as hierarchical or flat extraction. [Independently assessed by SEMATECH]



The EYES tool uses a simple script control language to make sizing and measurement operations with the software's internal polygon library. The results are combined with manufacturing defect data, or simple yield models, to predict production yield. These are also mapped onto the chip to highlight regions where faults are most likely to occur. The polygon library uses efficient $O(n \log n)$ algorithms including Boolean, polygon expansion/shrink and connectivity operations as well as critical area operations associated with shorts, breaks and dielectric pinholes.



Technology Highlights

- Fast – sampled extraction
- Flexible – script control file
- Very high accuracy of yield prediction
- Html output
- Easy to use – purpose-built
- Built-in library of fault algorithms
- Successfully used in industry by several licensees

Licensing Opportunity

The software is now offered for licence to key designers and manufacturers in the field of semiconductor manufacturing.

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