



Fast Detection of Defective Nanopillars in Large Arrays for Microprocessor Fabrication

The next generation of microprocessors will almost certainly be designed using three-dimensional structures such as nanopillar transistors with diameters on the scale of 100 nanometers or less. During the fabrication process, it will be necessary to have a reliable methodology to find defective nanopillars among billions of proper pillars in an integrated circuit. This task, due to the enormous number of nanostructures included in a single integrated circuit, poses a considerable challenge for the microelectronics industry.

Researchers at Colorado State University and the University of New Mexico are developing a promising technique to address this challenge. Utilizing a sophisticated mathematical algorithm and state-of-the-art extreme ultraviolet lasers, these researchers have devised a method that can identify and locate defective nanopillars with outstanding accuracy and sensitivity, regardless of whether the defects lie on the interior or exterior of the pillar. Unlike alternative strategies, this technique is well-suited to parallelization and high-throughput processing, making it the first commercially practical quality control strategy devised for this next-generation microprocessor design.

Please contact us for more information on commercial partnership and licensing opportunities.

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Patent Information

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Inventor Information

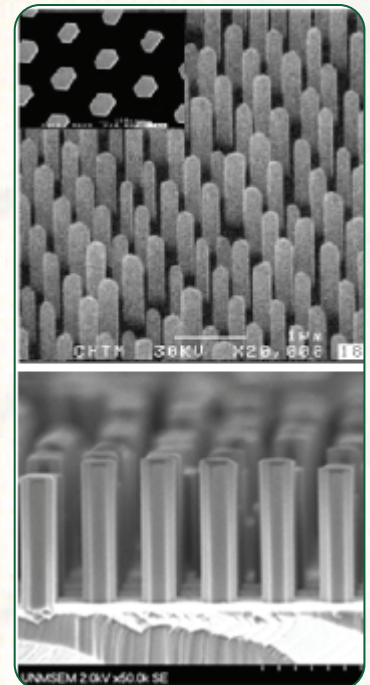
Vakhtang Putkaradze

Mario Marconi

Ganesh Balakrishnan

Features and Benefits

- Rapid, high-throughput characterization technique for the identification of defective nanopillar transistors.
- Identifies both visible and hidden defects in the nanopillar structure with excellent accuracy and sensitivity.
- Well-suited to parallelization and large scale, commercial processing.



Contact Information:

Jeremy Nelson

Phone: 970.491.7100

Email: jeremy.nelson@colostate.edu

www.csurf.org/tto