

Thermo Fisher Scientific Unveils Metrios AX - a Machine Learning S/TEM Generates repeatable, high-quality semiconductor analysis to accelerate device development and maximize yields

PORTLAND, Ore., Nov. 12, 2019 /PRNewswire/ -- Thermo Fisher Scientific, today at the International Symposium for Testing and Failure Analysis (ISTFA) 2019, announced the Thermo Scientific Metrios AX, the world's first commercially released scanning transmission electron microscope (S/TEM) to use machine learning to automate high-quality data collection. Designed exclusively for the semiconductor industry, the Metrios AX allows lab operators to quickly generate accurate and precise data, while minimizing the need for operator training.

The Metrios AX enables semiconductor labs to automatically acquire and measure critical dimensions on semiconductor devices during development or in support of manufacturing. Incorporating machine learning into the instrument helps minimize the time needed to develop automated recipes, allowing more productive utilization of the microscope. Built on Thermo Fisher's ultra-high resolution Spectra platform, the Metrios AX incorporates several advancements that make it easier to automate repetitive jobs, obtain sub-angstrom resolution images with higher contrast, and keep the microscope automatically aligned for peak performance, all at a lower cost-per-sample than traditional S/TEMs.

"The Metrios AX was specifically designed to improve failure analysis, process qualification and metrology by helping semiconductor labs easily create automated workflows that improve productivity," said Glyn Davies, vice president and general manager of semiconductor at Thermo Fisher. "This innovative S/TEM removes the barriers to automation, giving semiconductor manufacturers quick access to the trusted data they need so they can make highly informed decisions expeditiously."

Machine-learning technology is at the core of the "Smart Automation" included in the Metrios AX. This technology simplifies automation by coordinating all the necessary instructions to identify, align, and image regions of interest in a sample. Smart Automation significantly reduces the time required to create and maintain automated workflow scripts, or "recipes," while efficiently handling process variability. The enhanced automation enables semiconductor labs to acquire data on new sample jobs in less than four hours. The Metrios AX also features "Smart Alignment" software that automatically adjusts the column alignments, ensuring that the data collected meets stringent metrology accuracy specifications.

The Metrios AX inherits all the features of the Spectra product family, including new high sensitivity Panther S/TEM detector infrastructure and enhanced (SCORR) corrector technology, which together provide industry-leading low dose, high contrast, damage free imaging at sub-angstrom resolution.

More information on the Metrios AX can be found [here](#).

About Thermo Fisher Scientific

Thermo Fisher Scientific is the world leader in serving science, with revenues of more than \$24 billion and approximately 70,000 employees globally. Our mission is to enable our customers to make the world healthier, cleaner and safer. We help our customers accelerate life sciences research, solve complex analytical challenges, improve patient diagnostics, deliver medicines to market and increase laboratory productivity. Through our premier brands – Thermo Scientific, Applied Biosystems, Invitrogen, Fisher Scientific and Unity Lab Services – we offer an unmatched combination of innovative technologies, purchasing convenience and comprehensive services. For more information, please visit thermofisher.com.

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