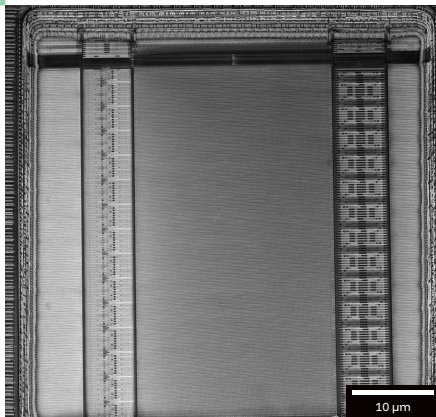
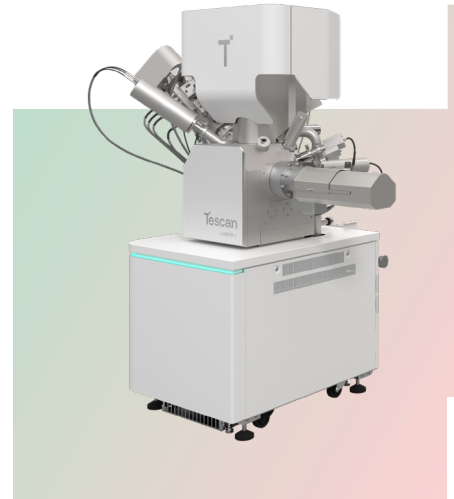


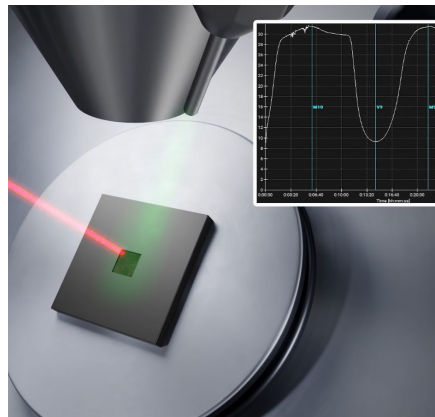
Tescan AMBER X 2

for Semiconductors

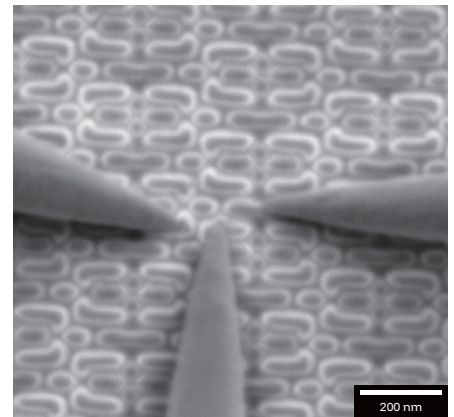
An optimized Plasma FIB-SEM platform with proprietary gas chemistries for high-quality delayering of the most current semiconductor devices



↑ **Fig. 1:** 50x50 μm² window delayering on M1 of 7 nm logic IC device using Nanoflat – our proprietary delayering gas suitable for delayering logic, memory and I/O areas of the chip.



↑ **Fig. 2:** Delayering process geometry inside Tescan AMBER X 2 including live peak detection on FIB end-point signal during delayering process. Peaks and valleys correspond to via and metal layers of the delayered device.



↑ **Fig. 3:** 500 eV SEM image showing electrical nanoprobings of NMOS transistor on 5 nm SRAM die. Nanoprobings platform is installed inside Tescan AMBER X 2 Plasma FIB-SEM.

Key Benefits

Perform artifact-free, uniform delayering using our Nanoflat, Chase and C-maze gas chemistries formulated specifically for today's sub-10 nm technology nodes

Reduce risk of altering device electrical properties with gentle, low kV Plasma FIB milling and inert Xe ions, plus the low penetration depth provided by BrightBeam™ UHR SEM column and chamber-mounted Everhart-Thornley Secondary Electron Detector imaging

Develop unique recipes to create customized delayering processes using factory-defined templates as the starting point, thus assuring consistent application of all delayering parameters with Tescan Delayering™ software module

Localize failures quickly and efficiently using optimized in-lens detection for passive voltage contrast imaging

Perform automated delayering with the assurance that the delayering process will stop before reaching the target layer

Verify or characterize electrical failures in-situ with industry-standard 3rd party nanoprobings solutions

Maximize sample processing throughput and system readiness with fully automated electron column and Xe Plasma FIB column alignments to ensure consistent results and reduce set-up times