

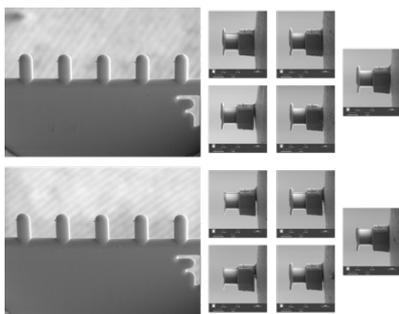
# Tescan AMBER 2

## Fully automated Ga<sup>+</sup> FIB-SEM for routine sample preparation, nanoscale characterization, and comprehensive prototyping applications

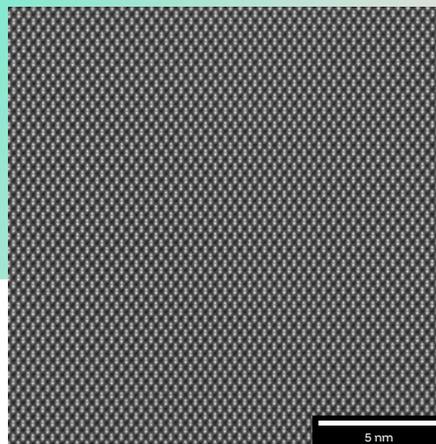
The Tescan AMBER series opens a new era of productivity with innovative features and automated enhancements. It ensures a quick start to work through automatic SEM and FIB alignments, allowing users to fully utilize their microscope time. For those requiring more control over processes, the system provides advanced settings for advanced workflows.

Tescan AMBER 2, now powered by the new Orage™ 2 Ga<sup>+</sup> FIB column, delivers even higher productivity, faster milling performance, and improved resolution. High-quality TEM samples can be prepared rapidly and reliably using fully automated workflows, and of better quality. The ultimate TEM sample quality can be achieved with the support of an integrated broad ion beam Tescan AURA™ Gentle Ion Beam for final polishing.

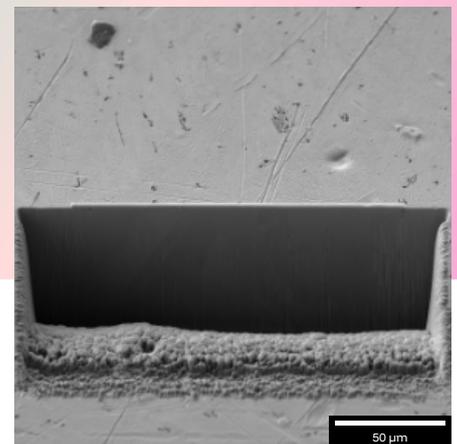
Tescan AMBER 2 is the optimal solution for producing high-quality TEM samples with ease, speed, and reliability.



↑ 10 standard Si TEM samples prepared automatically, including the low keV polishing step on a TEM grid prepared within 5 hours



↑ High-resolution HAADF TEM image of GaAs multilayer sample, polished by an integrated broad ion beam to minimize sample damage



↑ Large cross section (190×100×50 μm) from a Ni superalloy prepared in less than 3 hours and 20 minutes.

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## Key Benefits

**Prepare high-quality TEM samples with minimal damage** using the new Orage™ 2 Ga<sup>+</sup> FIB column, whose improved low-keV resolution enables a precise final low-energy polishing step necessary for TEM sample thicknesses down to 30 nm.

**Increase TEM sample preparation** throughput using the integrated Tescan TEM AutoPrep™ module for fully automated preparation of multiple TEM samples from various locations on the sample.

**Work faster and obtain more information from a single microscope session** thanks to the Orage™ 2 column's improved beam profiles with higher current density up to 100 nA ion beam currents, enabling final cross section polishing up to 2x faster and allowing users to expand larger areas or prepare multiple cross-sections within one session.

**Minimize sample cost and save up to 40 % of TEM preparation time** by utilizing higher beam currents within automated workflows, making the entire TEM sample preparation process faster and more economical.

**Boost user confidence and shorten training time** through automated column alignments and easy-to-use workflows for typical FIB-SEM applications such as TEM sample preparation, cross-sectioning, and 2D/3D characterization.

**Speed time to data** with the intuitive Tescan Essence™ software interface, which automates SEM and FIB alignments and provides advanced stage-collision protection, allowing even non-expert users to confidently perform FIB-SEM operations.

**Create TEM samples from the widest range of materials and with optimal properties for (S)TEM analysis** by leveraging the intuitive TEM AutoPrep™ templates with editable parameters such as material type and milling rate.

**Free operators for other tasks and maximize microscope throughput** through unattended, multi-site batch TEM sample preparation at different locations and on multiple samples – even overnight.

**Extend the detail and insights available from a single characterization session with AMBER's multimodal detection system** that acquires multiple signals simultaneously alongside analytical methods such as EDS, EBSD, ToF-SIMS, or RAMAN.

**Characterize materials at the nanoscale using advanced analytical techniques** such as unique 3D ToF-SIMS tomography, accessible thanks to advantageous sample geometry.

**Perform ultra-high-resolution imaging and nano-analysis on the widest range of materials** with the BrightBeam™ field-free UHR-SEM column, which features low landing energies for sensitive materials.