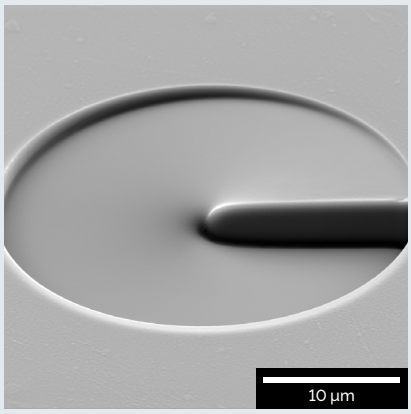
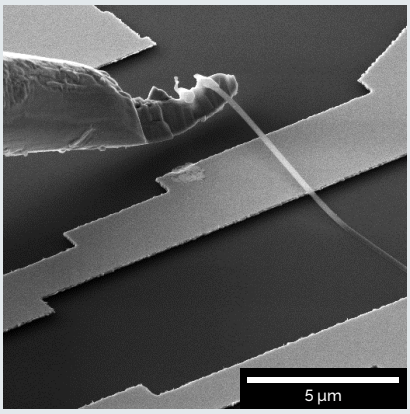
TESCAN SOLARIS
FOR MATERIALS SCIENCE

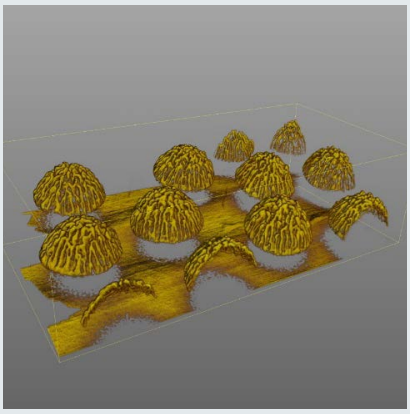
Ultimate resolution FIB-SEM workstation for advanced nanofabrication applications



▲ Nanoscale 3D optical vortex structure fabricated using Python scripting



▲ Nanowires prepared by selective wet etching, then transferred using a nanomanipulator onto electrical contacts prepared by EBL



▲ FIB-SEM nanotomography of SERS (Surface-enhanced Raman spectroscopy) substrate

Key benefits:

- ✓ **Perform ultra-high resolution low keV SEM imaging on beam sensitive samples** with SOLARIS' unique crossover-free immersion mode optimized for sample characterization at the FIB–SEM coincident point
- ✓ **Obtain maximum contrast from your specimens in 2D and 3D** by acquiring BSE images from three separate angles at the FIB-SEM coincident point
- ✓ **Fine-tune your BSE phase image and enhance BSE surface sensitivity** by implementing the selective energy filtering capabilities of the in-column detector
- ✓ **Prepare high quality ultra-thin TEM lamellae and prototype precisely defined nanostructures** with excellent Ga FIB resolution of SOLARIS - even at low keV
- ✓ **Create complex nanofabrication recipes** using our built-in DrawBeam™ nanopatterning engine for both electron and ion beams
- ✓ **Enhance nanofabrication possibilities** with multiple gas injection system options and a variety of precursor gases that can be used either for deposition or enhanced etching
- ✓ **Develop prototype sensors, photonics and MEMS, among other devices** by adding TESCAN's Essence™ EBL Kit to create micro- and nanostructures with specific shapes, dimensions and material composition on a variety of substrates
- ✓ **Customize applications and processes** with the open source Python scripting interface
- ✓ **Produce inverted, planar or 90° rotated TEM lamellae faster** with our unique below-the-FIB nanomanipulator position supporting lift-out and rotation
- ✓ **Prepare multiple TEM lamella specimens up to the lift out step automatically** without any need for operator interaction using TESCANs Autoslicer™ module
- ✓ **Enhance nanoanalytical sample characterization** with high sensitivity ToF-SIMS analysis of light elements and trace materials' concentrations
- ✓ **Make multimodal FIB-SEM nanotomography fast and effortless** for all users with easy-to-follow guided workflows in the fully integrated Essence™ Tomography module
- ✓ **Navigate to regions of interest quickly and safely** utilizing a photorealistic, wide field live SEM image and our unique 3D chamber model to prevent collisions
- ✓ **Streamline the operating experience for everyone in the lab** with modular, intuitive Essence™ software, which allows new users to achieve productivity quickly through guided workflows, and expert users to customize settings for specific investigations