

## **TESCAN Announces a fully integrated hardware and software solution for adding electron beam lithography capability to TESCAN SEM and FIB-SEM instruments**

Brno, Czech Republic, January 29, 2021

**TESCAN Essence™ EBL Kit features a software module that controls the electron beam lithography (EBL) process from within the Essence™ microscope control software to enable efficient prototyping of micro- and nanoscale structures and devices.**

TESCAN ORSAY HOLDING a.s. announces the release of their Essence™ EBL Kit, a fully integrated, dedicated solution that adds electron beam lithography capabilities to TESCAN SEM and FIB-SEM instruments. Working in conjunction with TESCAN's fast electrostatic beam blanker, the Essence™ EBL Kit offers a pathway for multi-user research labs to fulfill requirements for prototyping micro- and nanoscale structures and devices while also providing access to the imaging and analysis capabilities of SEM and FIB-SEM.

Electron beam lithography is a technique that uses a focused beam of electrons to draw patterns on a surface covered with an electron-sensitive film (resist). This technique is common in prototyping for preparation of micro- and nanostructures with specific shapes, dimensions and material composition on various substrates, such as sensors, photonics, plasmonics, spintronics, MEMS, microfluidics, and surfaces for cell growth.

“Within small scientific research groups at a university or other institution, instruments often are shared by multiple groups so versatility, ease of use and reliability are major concerns when acquiring new equipment,” states Tomáš Šamořil, Product Manager Special Applications – NanoPrototyping, ToF-SIMS. “By expanding the capabilities of SEM or FIB-SEM to include intermediate-level electron beam lithography applications, TESCAN SEM and FIB-SEM instruments are able to fulfill the needs for both characterization and prototyping.” Adding electron beam lithography to a SEM or FIB-SEM allows researchers to capitalize on the analytical capabilities of either platform after completing the lithography process to validate structures, dimensions or material composition. EBL together with precision material removal provided by focused ion beam (FIB) and gas injection system (GIS) technology is proven to be a powerful combination for fast prototyping of micro- and nanodevices within photonics, optics, plasmonics, magnetism, biology, and electronics.

TESCAN Essence™ EBL Kit includes a software module that is fully integrated with TESCAN's Essence™ microscope control software and uses the open source, third party pattern editor KLayout to execute all the required lithography steps. This makes operation easy as well as streamlining mixed-technology design processes without complicated data handling.

Learn more about the new TESCAN Essence™ EBL Kit [here](#).

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## About TESCAN

TESCAN is a Czech producer of electron microscopes. The company was established in 1991 by R&D employees and service engineers of TESLA Company with the aim to continue in traditional production of electron microscopes in Brno. TESCAN presented its first instrument PROXIMA in 1996. This and other model ranges booked TESCAN its place among renowned world producers. Long-term expansion and establishment of subsidiaries worldwide culminated in 2013 with establishment of a holding with a French company ORSAY PHYSICS. This gave rise to TESCAN ORSAY HOLDING, which still keeps its headquarters, production and R&D in Brno-Kohoutovice. Every TESCAN microscope is produced in Brno, even though roughly 95 % of the production travel to customers worldwide. The biggest customers include universities, research centers and industrial and production companies in various sectors. More than 500 TESCAN ORSAY HOLDING employees produce nearly 300 microscopes every year, which constitutes the annual turnover of approx. CZK 2 billion.

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