

For Immediate Release

TESCAN Brings New Dimension to Micro-CT Imaging With the Introduction of the World's First Spectral CT Analytical Composition Capability

Micro-CT users now have the best of both worlds: non-destructive in-situ imaging and material composition information of the entire sample, inside & out

Brno, Czech Republic, June 1, 2022—TESCAN ORSAY HOLDING a.s. announces the first and only Spectral CT analytical capability for micro-CT systems. Spectral CT provides chemical information at any point inside a sample, complementing TESCAN's state-of-the-art structural imaging capabilities. With Spectral CT materials scientists can now see the most subtle changes in material composition and purity, and low contrast materials, such as polymers, can be differentiated from each other, which is not possible using micro-CT alone.

"Spectral CT is TESCAN's unique, cutting-edge technology that greatly expands the capabilities of our micro-CT product portfolio," said Dr. Wesley De Boever, product marketing manager, TESCAN.

"Micro-CT provides excellent structural information, and now, using Spectral CT, our customers can understand what is in their samples, identify and differentiate chemical compounds and understand their concentration and density. It is not possible to absolutely identify chemical composition with traditional, absorption-based micro-CT."

Spectral CT is unique in that it not only measures how many x-rays are stopped by a sample, but it also counts the individual x-ray photons. By dividing these photons based on their energy in different bins, the spectrum can be analyzed, enabling the attenuation coefficient of the sample to be precisely calculated. This allows the user to calculate densities and see contrast between different materials that are invisible using traditional micro-CT. The user can also identify unknown minerals based on k-edge imaging, remove artefacts from traditional CT scans, or calculate concentrations of different substances in a sample.

Spectral CT is an option that is available with TESCAN's UniTOM XL, a versatile, multi-scale micro-CT system for high-throughput experiments on a diverse range of samples, and CoreTOM, for multi-scale micro-CT investigations in earth sciences. It can be added to existing TESCAN UniTOM XL or CoreTOM instruments without compromising any of the system's features. It is a complete hardware/software solution that is integrated into the micro-CT system for extreme ease-of-use, with only one click needed to switch between structural and spectral information. A full software suite features acquisition, reconstruction and analysis of spectral data.

For more information about TESCAN's micro-CT solutions, visit:

<https://info.tescan.com/micro-ct>.

About TESCAN

TESCAN enables nanoscale investigation and analysis within the geosciences, materials science, life sciences and semiconductor industries. The company has a 30-year history of developing innovative electron microscopy, micro-computed tomography, and related software solutions for customers in

TESCAN ORSAY HOLDING, a.s.

Libušina tř. 21, 623 00 Brno,
Czech Republic, EU

IČO: 41600240

(phone) +420 530 353 411
(email) sales@tescan.com

www.tescan.com

www.tescan-orsay.eu

research and industry worldwide. As a result, TESCAN has earned a leading position in micro- and nanotechnology. For more information visit: www.tescan.com.

TESCAN ORSAY HOLDING was established in 2013 as a result of long-term expansion and establishment of subsidiaries worldwide, including France-based ORSAY PHYSICS, a world leader in customized focused ion and electron beam technology. TESCAN ORSAY HOLDING maintains its headquarters, production and R&D in Brno, Czech Republic. Every TESCAN microscope is expertly produced in Brno and shipped to customers worldwide.

MEDIA CONTACT:

Sandy Fewkes, Global Public Relations for TESCAN, +1 408.529.9685, sandylfewkes@gmail.com

COMPANY CONTACT: marketing@tescan.com

TESCAN ORSAY HOLDING, a.s.

Libušina tř. 21, 623 00 Brno,
Czech Republic, EU

IČO: 41600240

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(email) sales@tescan.com

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