Products

Visit Gatan to see how our leading technologies for electron microscopy can move your research forward.

Booth #A01

K3 IS

- The premiere camera for low-dose, *in-situ* material science
- Capture dynamic reactions with an unmatched field of view and temporal resolution
  - 24- and 14-megapixel versions available
  - Acquire 150 fps, full sensor to >3,500 fps with sub-area readout
- Real-time data management with Gatan Microscopy Suite® and integrated Python environment

Continuum

- The next generation of advanced systems for EELS & EFTEM
- >8,000 spectra per second at >95% duty cycle
- >10x faster system tuning
- Streamlined, workflow-based user interface

Monarc

- Acquire CL data with unmatched spatial (<10 nm), angular (1°), and wavelength (0.1 nm) resolutions
- Simultaneously capture angle- and wavelength-resolved CL data
- Collect hyperspectral data up to 30 times faster than other CL detectors

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AMETEK®

Invited Lecture

Booth #A01

We invite you to attend this special presentation by our imaging expert on breakthrough direct detection technology for the most demanding material and life science applications.

The Future of Imaging for Transmission Electron Microscopy

Session: Advances in Transmission Electron Microscopy and Related Techniques
Wednesday, 5 February, 11:50 – 12:10, Room MG-5, HICC *(check program for final location)*

Ming Pan, Ph.D., Gatan

Traditionally, high energy electrons could not be directly exposed to a sensor without excessively damaging the detector. As a consequence, conventional transmission electron microscopy (TEM) cameras first expose the incoming electron beam to a scintillating film that converts the electrons into light (photons). These photons are then transferred to the sensor, either through a series of optical lenses or a coupled fiber optic plate. Finally, the light is collected by a sensor where the image is created pixel-by-pixel based on the amount of light detected at each position in the sensor.

The latest TEM imaging technology is direct detection. Unlike conventional technologies, direct detection uses a custom CMOS sensor that utilizes the only radiation-hard architecture that can tolerate direct exposure to high energy particles. Additionally, extremely high-speed electronics for data transfer and processing enable low-dose counting and super-resolution capabilities. Combined, this allows frame rate (5.7k x 4k) of >1500 frames per second (fps) to be processed in real-time to achieve optimal results.

Gatan has revolutionized direct detection technology with real-time, single-electron counting direct detection cameras offering unprecedented performance and results for the most demanding low-dose electron microscopy (EM) applications in both life science and materials science research. We will review the utilities and advantages of Gatan direct detection technology for key TEM applications, including single-electron counting for electron energy loss spectroscopy (EELS) and energy-filtered transmission electron microscopy (EFTEM) – www.gatan.com/products/tem-imaging-spectroscopy.

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