



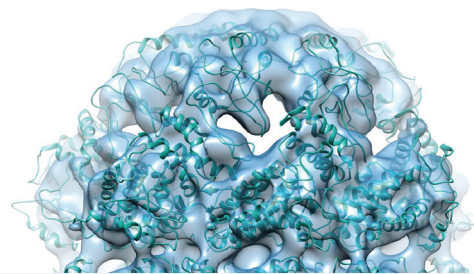
DIRECTVIEW2 CAMERA

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DIRECT DETECTION FOR TRANSMISSION ELECTRON MICROSCOPY

- Direct detection delivers (DDD®) delivers ultra-high speed, extraordinary resolution, and ultra-low noise.
- 4k × 4k (16.8 million) pixels.
- Ideal for a broad range of applications for both materials science (including in situ TEM, 4D-STEM, low-dose, etc.) and biological cryo-EM.
- Reach sub-nanometer resolution with cryo-EM on 120 kV LaB6 TEMs.
- High-speed continuous streaming for in situ TEM movies and motion-corrected imaging.
- Integrated Faraday plate.
- Based on our DE-Series platform which has a long track record of proven performance.
- Low total cost-of-ownership and exceptional support.
- The most impactful and cost-effective upgrade to a TEM's capabilities.

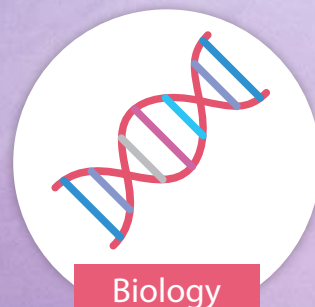


Cryo-EM of Mm-Cpn on a 120 kV LaB6 TEM, yielding ~10 Å resolution with about 1-hour data collection.

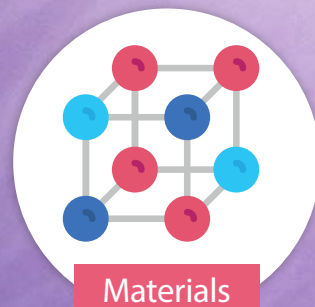


Frame from an in situ TEM movie at 57 fps.
Courtesy of Zhiwei Shan
(Xi'an Jiaotong University, China).

DETECTOR APPLICATIONS:



Biology



Materials

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TEM Electron Energy	Sensitive to 80 keV – 200 keV optimized for 120 - 200 keV
Pixel Array Specification	4096 × 4096 (16.8 million pixels) 6.5 μm pixel pitch
Single Electron SNR	~20:1 (200 kV)
Sensor Design	>3T pixel design with on-chip correlated double sampling (CDS) backthinned radiation hardened
Acquisition Frame Rate	42 fps max, unbinned full-framesubarray readout up to 1000 fps (4096 × 128) user-selectable hardware frame rate
Acquisition Modes	Integrating mode counting mode (optional)
Exposure Rate	Large dynamic range with consistent performance (e.g., >250 e-/pixel/s)
Mounting Position	Fully retractable mounted on-axis TEM bottom port or in JEOL film drawer
Exposure Measurement	Integrated Faraday plate for exposure measurement with each acquisition
Sensor Protection	Integrated sensor protection shutter TEM blanking/shuttering failsafe software
Computer System	High-performance computer Windows 11 NVidia GPU(s) up to 48 TB storage
Image Format	Non-proprietary to ensure broad compatibility TIFF, MRC, HDF5, etc.
Acquisition Software	DE-Mission Control (DE-MC)
Compatibility	SerialEM Legicon JADAS (JEOL) Panta Rhei (CEOS)
Customization	Open application programming interface (API) and software development kit (SDK) with examples in C, C++, C#, and Python



Microscopy
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