



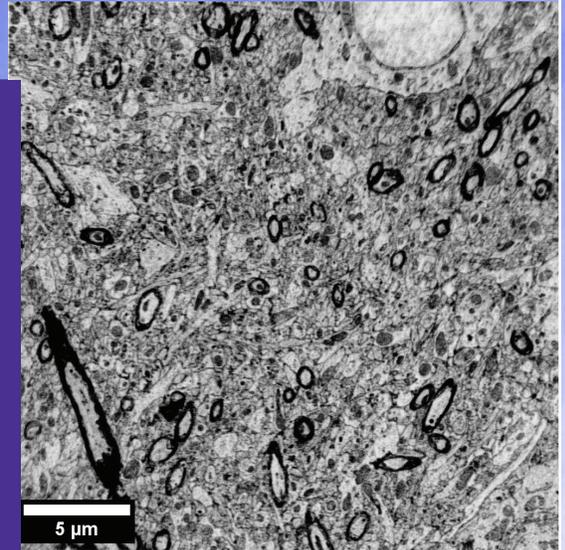
LV-16 CAMERA

Stunning Clarity for LEEM/PEEM

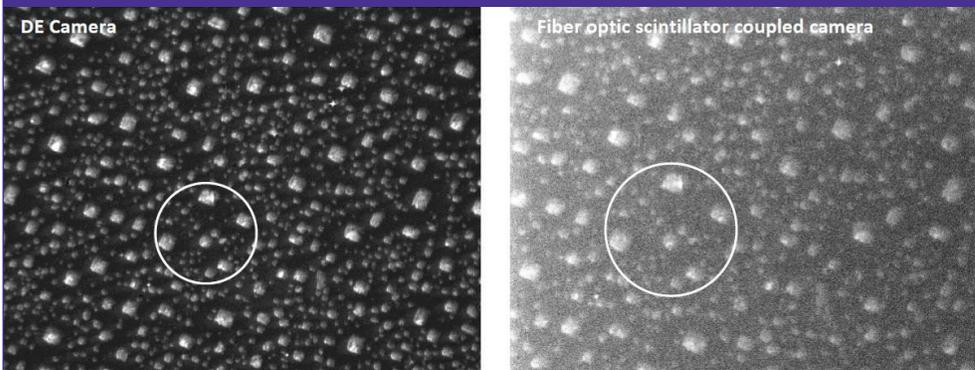
Delivering Bigger | Better | Faster | Cameras For Electron Microscopy

DIRECT DETECTION FOR LOW-ENERGY ELECTRON MICROSCOPY

- Direct detection of low-energy primary electrons—a revolutionary advancement for LEEM/PEEM.
- 4k x 4k (16.8 million) pixels.
- Movie-mode imaging of dynamic specimens with drift-correction.
- DE Mission Control software saves open data formats and is controllable by API.
- The largest impact hardware upgrade you can make per dollar.



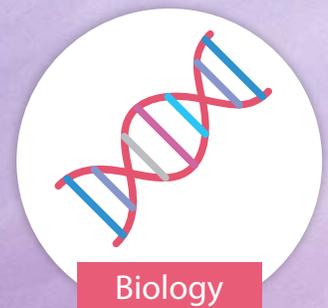
PEEM image of mouse brain. Sample was provided by Gregg Wildenberg (University of Chicago).



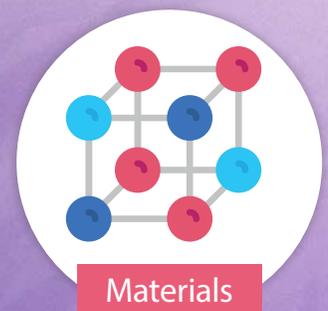
15keV comparison between the LV-16 (left) and a non-direct detection camera (right). The images show a silicon surface, collected in PEEM mode. The integration time was 300 seconds. The circle marks the same area in both images. The LV-16 was operated with 2x binning so that both images are 2k x 2k pixels.

Courtesy of Rudolf Tromp, (IBM, Yorktown Heights, NY, USA).

DETECTOR APPLICATIONS:



Biology



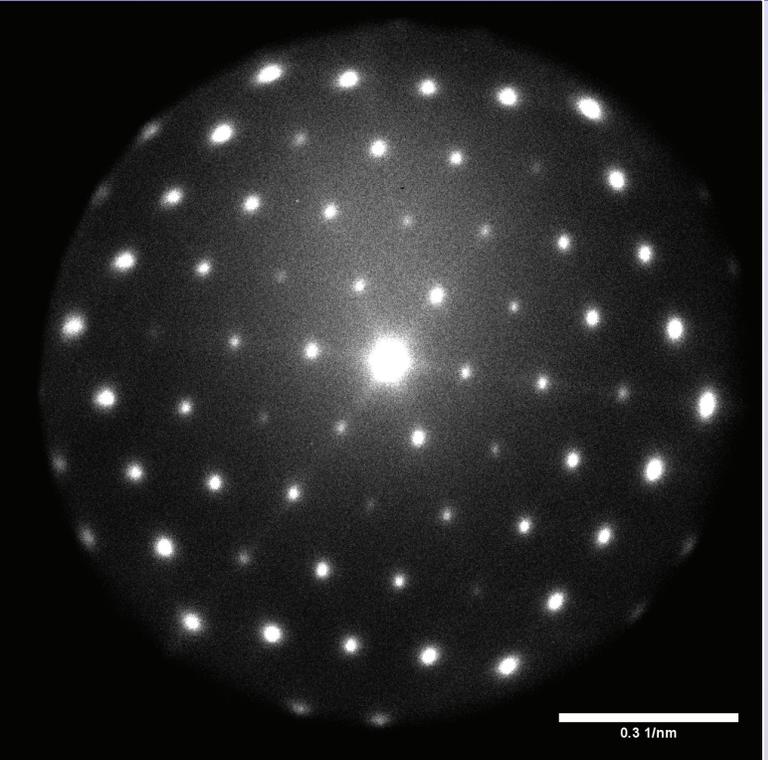
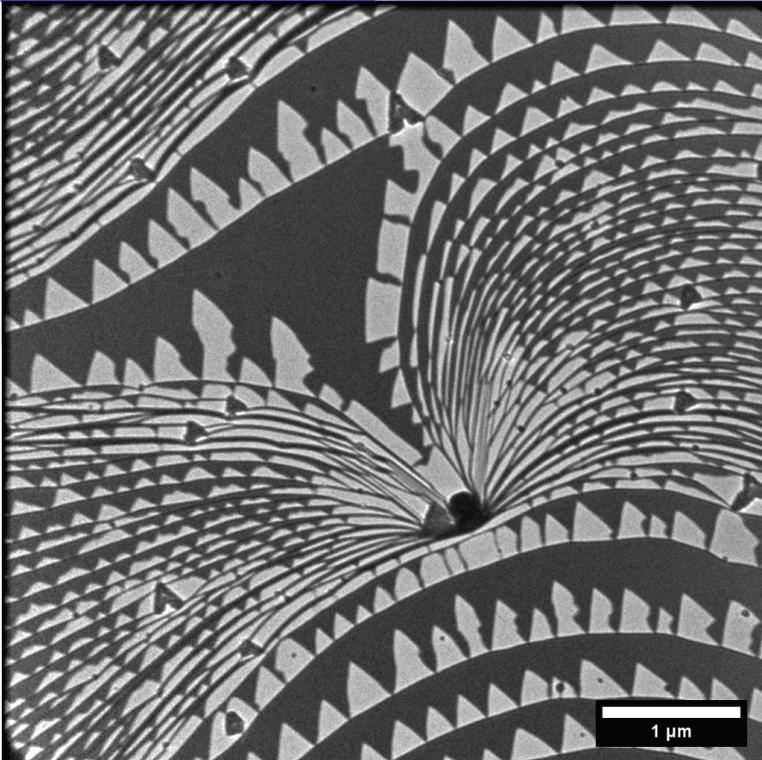
Materials

Direct Electron
INNOVATION PROPELLING DISCOVERY®

directelectron.com • sales@directelectron.com • (858) 384-0291

Email | info@directelectron.com Web | www.directelectron.com Phone | +1 858-384-0291

Electron Energy	Optimized for 10 - 40 keV
Pixel Array Specification	4096 × 4096 (16.8 million pixels) 6.5 μm pixel pitch
Single Electron SNR	~250:1 (15 kV)
Sensor Design	On-chip correlated double sampling (CDS) backthinned radiation hardened
Acquisition Frame Rate	92fps max, unbinned full-frame 281 fps max, binned-2× full-frame subarray readout up to 4,237 fps (2048 × 128) user-selectable hardware frame rate
Mounting Position	Optionally fully retractable CF (ConFlat) flange custom mounting options
Sensor Protection	Integrated sensor protection shutter TEM blanking/shuttering failsafe software
Computer System	High-performance computer Windows 10 NVidia GPU(s) up to 58 TB storage
Image Format	Non-proprietary to ensure broad compatibility TIFF, MRC, AVI, MP4, etc.
Acquisition Software	DE Mission Control software for advanced image/movie acquisition and analysis



Left: image of Si(111), with (7x7) (bright) and (1x1) (dark) co-existing at about 860 Celsius, imaged in LEEM mode at 10.7 eV. The dark spot is a carbide defect on the surface and the lines emanating from it are atomic steps.
Right: A LEED diffraction pattern of Si(111) acquired at 5.5 eV bounded by the edge of the Ewald sphere. Diffraction spots are due to the (7x7) reconstruction. *Courtesy of Rudolf Tromp, IBM.*