The New S/TEM Talos™ F200S

Highest imaging performance and precise compositional analysis for dynamic microscopy

FEI™

Talos™ F200S

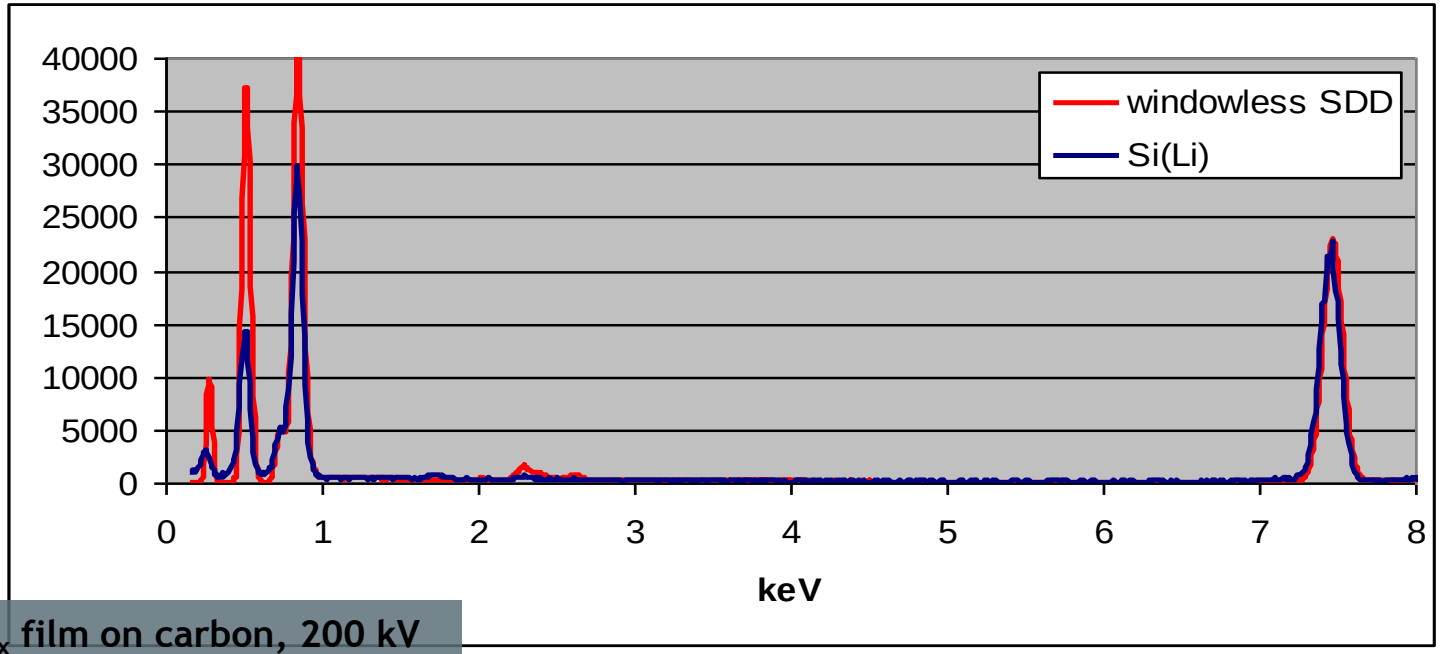
Core configuration

200kV S-FEG high stability FEG emitter
Condenser lens system with all automated apertures
Super-X: 2SDD EDX system; Analytical objective lens with constant power; Automated objective aperture;
New projector system; Automated SAD aperture; HAADF STEM detector
Fast Smart camera Remote control
New Fast 4kx4k CMOS camera Ceta 16M: Enclosure

Talos™ F200S: EDX Analysis

Super-X: 2SDD EDX system

- 2 **Windowless** Silicon Drift Detectors (SDD)
  Light elements detection

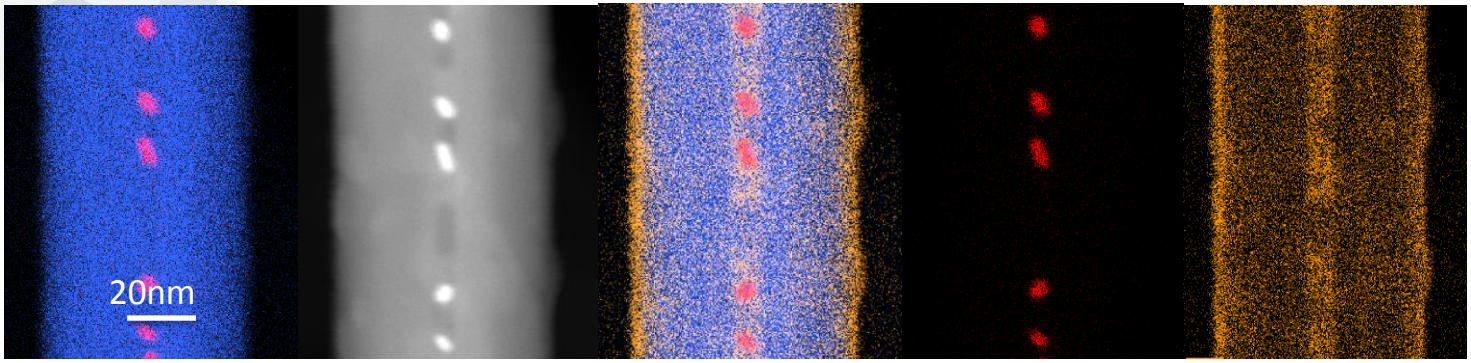


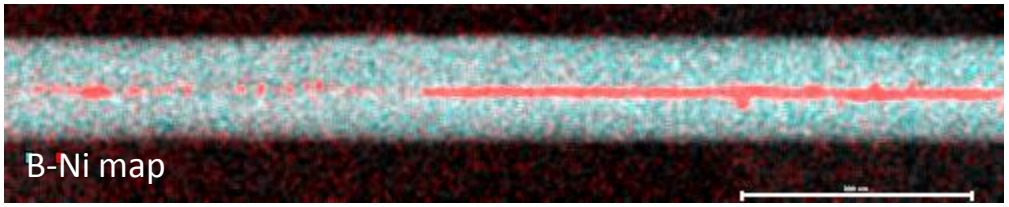
NiO_x film on carbon, 200 kV

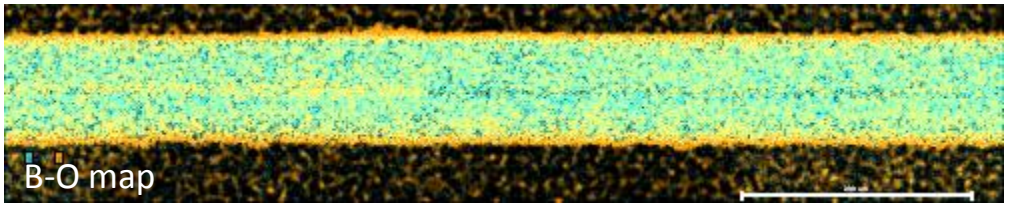
Windowless detector has more transmissivity for low-energy X-rays, e.g. 3x more signal for O-K than with Moxtek window

Talos™ F200S: EDX Analysis

Fast EDS compositional mapping for light elements







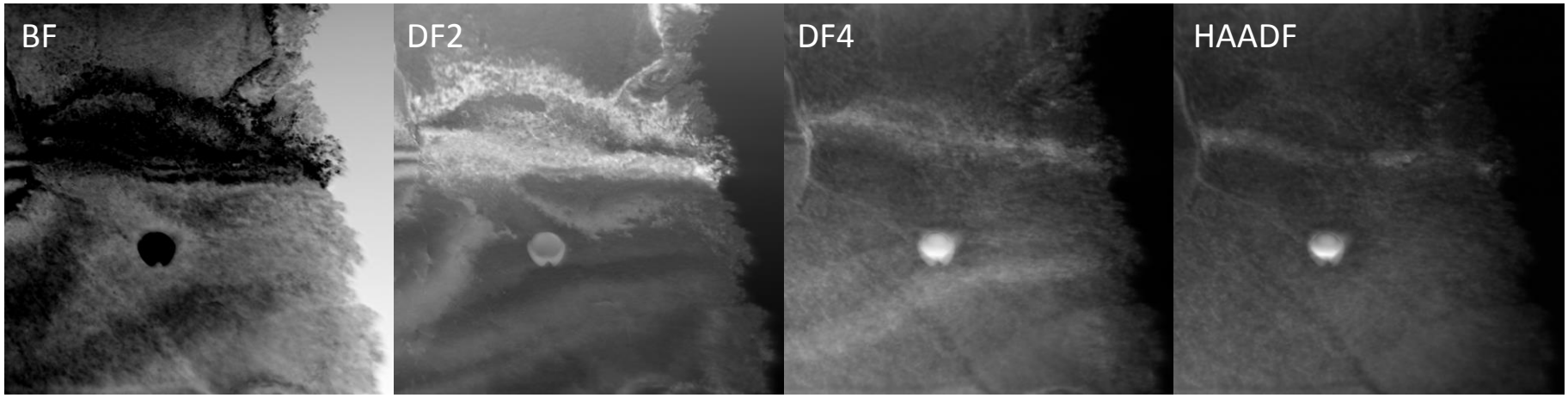
EDS compositional maps of 500x120px (top) and 300x250px (bottom) collected and quantified in 10 min.

Light elements such as Boron, Carbon and Oxygen are mapped in nanostructure of ~50nm in diameter.

Talos™ F200S: STEM

STEM Detection

- High Resolution and High Throughput STEM
- High stability Shottky FEG source
- Flexible HT range: 20-200 kV
- HRSTEM at < 0.16 nm
- Simultaneous readout of 4 FEI BF/DF detectors



STEM images of steel sample with a precipitate acquired with 4 different STEM detectors at the same time

Talos™ F200S: Digital Image

New Fast 4kx4k CMOS camera Ceta 16M

FEI Ceta 16M enables for first time in one camera both

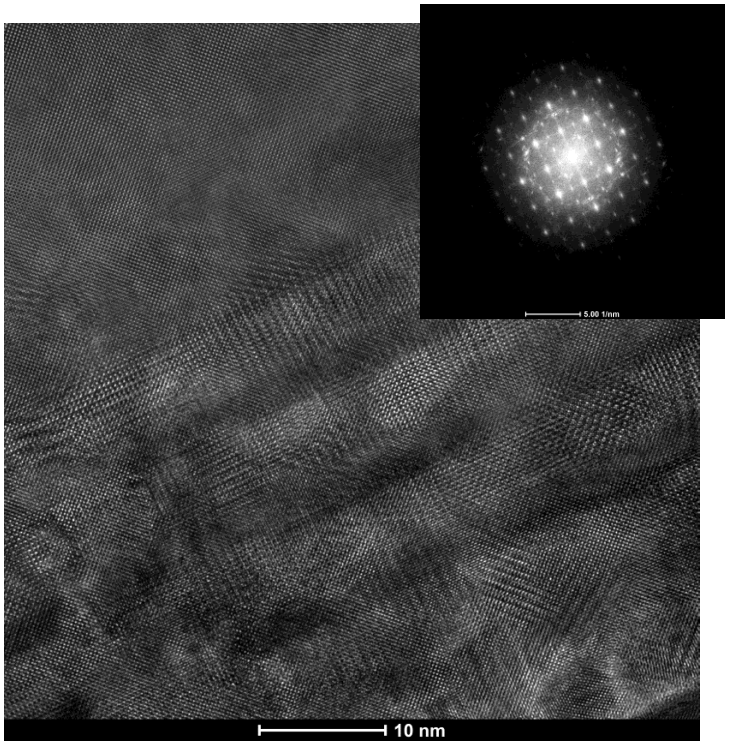
Sensitivity and Speed

Field of View and Speed

- ✓ High speed readout (CMOS sensor)
- ✓ High sensitivity (Phosphor Scintillator fiber optically coupled
- ✓ Big field of View (4Kx4K with 6cmx6cm sensor)

Applications:

- Dynamic imaging (speed)
- Mesoscopic imaging (FOV)
- Low electron dose imaging (14µm pixel)



HRTEM image of $SrTiO_3$ sample

Talos™ F200S: Enclosure

Enclosure

Talos™ F200S, short summary

- Best HRTEM imaging for dinamic microscopy
- Highest resolution and throughput in STEM imaging
- Precise EDS analysis
- Highest stability and uptime

Thank You