TEM (Titan)

투과전자현미경

Titan 80-300™ microscope transfers information deep into sub-Å resolution making way for the highest performance available in both TEM and STEM. Titan obtains a better lateral resolution than 1 Å and energy resolution down to 0.1 eV. This presents new information of the electronic properties of materials such as bonding states or band gaps with unprecedented spatial resolution.

Model

FEI (Titan™ 80-300)

Specifications

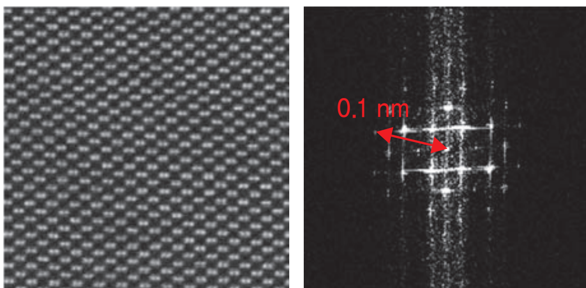
- Ultra-stable Schottky field emitter gun (XFEG)
- Accelerating voltage : 80 ~ 300 kV
- Image resolution : < 0.1 nm
- Electron probe size : < 0.09 nm
- Magnification : 25 ~ 1,250,000 X
- Probe Cs corrector
- Mono chromater

Applications

- BF/DF/STEM/HAADF/SADP/CBED/NBD
- High resolution structure analysis
- EDS
- HREELS
- Lorentz microscopy

Location L5117D Tel.02-958-5986

HR-STEM with Titan probe Cs corrector

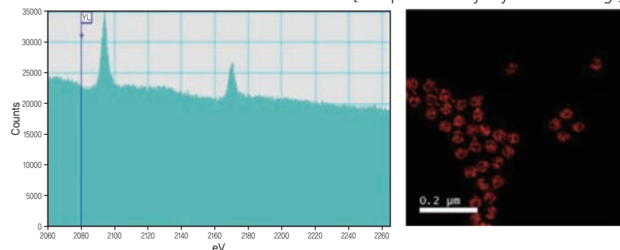


- HR-STEM image of silicon dumbbell structure in a <110> direction

EFTEM mapping

- Distinguishable spectrum at high loss energy range

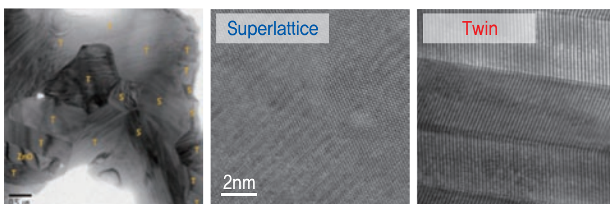
[Sample courtesy by. Dr. H.S. Jang]

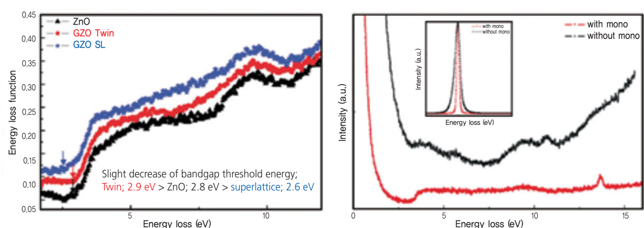


- Y L edge (2080 eV) EELS spectrum and EFTEM mapping.

Band gap analysis using monochromated EELS

- ZnO target material consisted of normal, twinned, and superlatticed ZnO grains





[H.J.Chang. et. al. Microsc.U, 17 (Suppl2), 2011, 1722]