

# Scanning Transmission Electron Microscope (STEM) system

For Hitachi Model HT7700 120kV Compact-Digital TEM

The HT7700 TEM, with a maximum acceleration voltage of 120kV, has been widely used to examine biological and soft-materials due to its superior resolution and high contrast performance.

To further enhance the analytical capabilities of the HT7700, we have developed an optional high performance Scanning Transmission Electron Microscope (STEM) system.



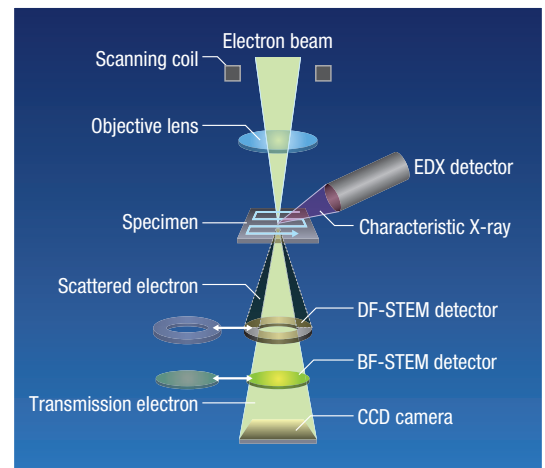
Outline (with STEM)  
Embedded STEM GUI

- High resolution STEM for nanoscale analysis.
- Low magnification and wide field of view image observation for specimen structure/orientation and particle size analysis.
- All necessary STEM operations are embedded in the HT7700 GUI.
- Bright Field (BF) and Dark Field (DF) detectors are available and display of BF-STEM and DF-STEM images is supported.
- By means of DF-STEM, Z-contrast imaging facilitates further chemical/structural analyses.
- All STEM images are archived and managed in the EMIP database software, the same as TEM images. Functions such as CD measurement, Line Profiling and Auto Drive are also supported for STEM images.
- Data are stored in TIFF (16 bit) or BMP or JPEG format.
- Combined with EDX, perform compositional analysis of small selected areas.

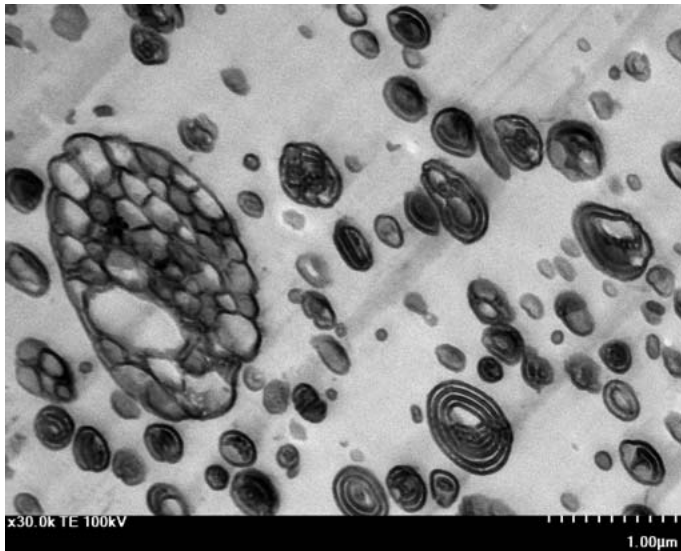
## Specifications

Image resolution	1.5nm (BF-STEM, 100kV, defined by measuring the gap of sputtered gold particles)
Detector	BF-STEM DF-STEM (Option)
Magnification	×1,000~×800,000 (High Mag mode) ×1,000~×100,000 (Normal mode) ×100~×2,000 (Low Mag mode)
Scanning mode	Normal scan Selected area scan Line scan Point scan Area analysis Digital scan (option)
Data format	TIFF, BMP, JPEG
Data bit	16 bits (TIFF)
Image recording resolution	640 × 480 pixel 1,280 × 960 pixel 2,560 × 1,920 pixel 5,120 × 3,840 pixel

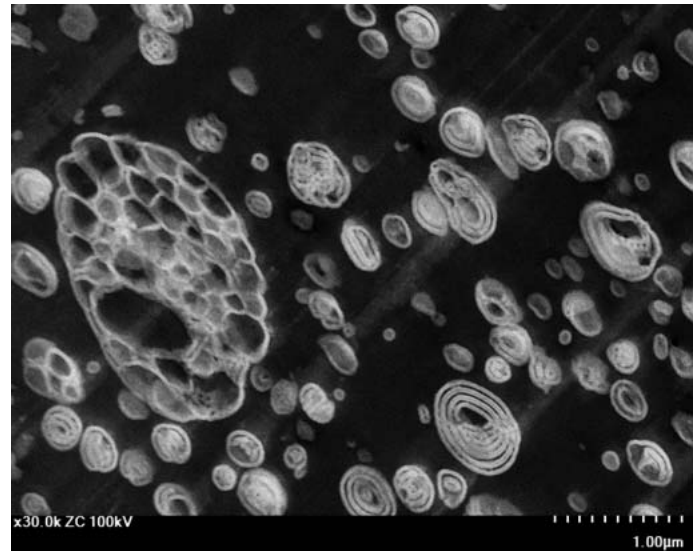
## Detectors



## Data examples



BF-STEM image



DF-STEM image

Specimen: HIPS (High Impact Polystyrene) Vacc: 100kV Magnification: ×30,000

Notice: For correct operation, follow the instruction manual when using the instrument.

Specifications in this catalog are subject to change with or without notice, as Hitachi High-Technologies Corporation continues to develop the latest technologies and products for our customers.

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