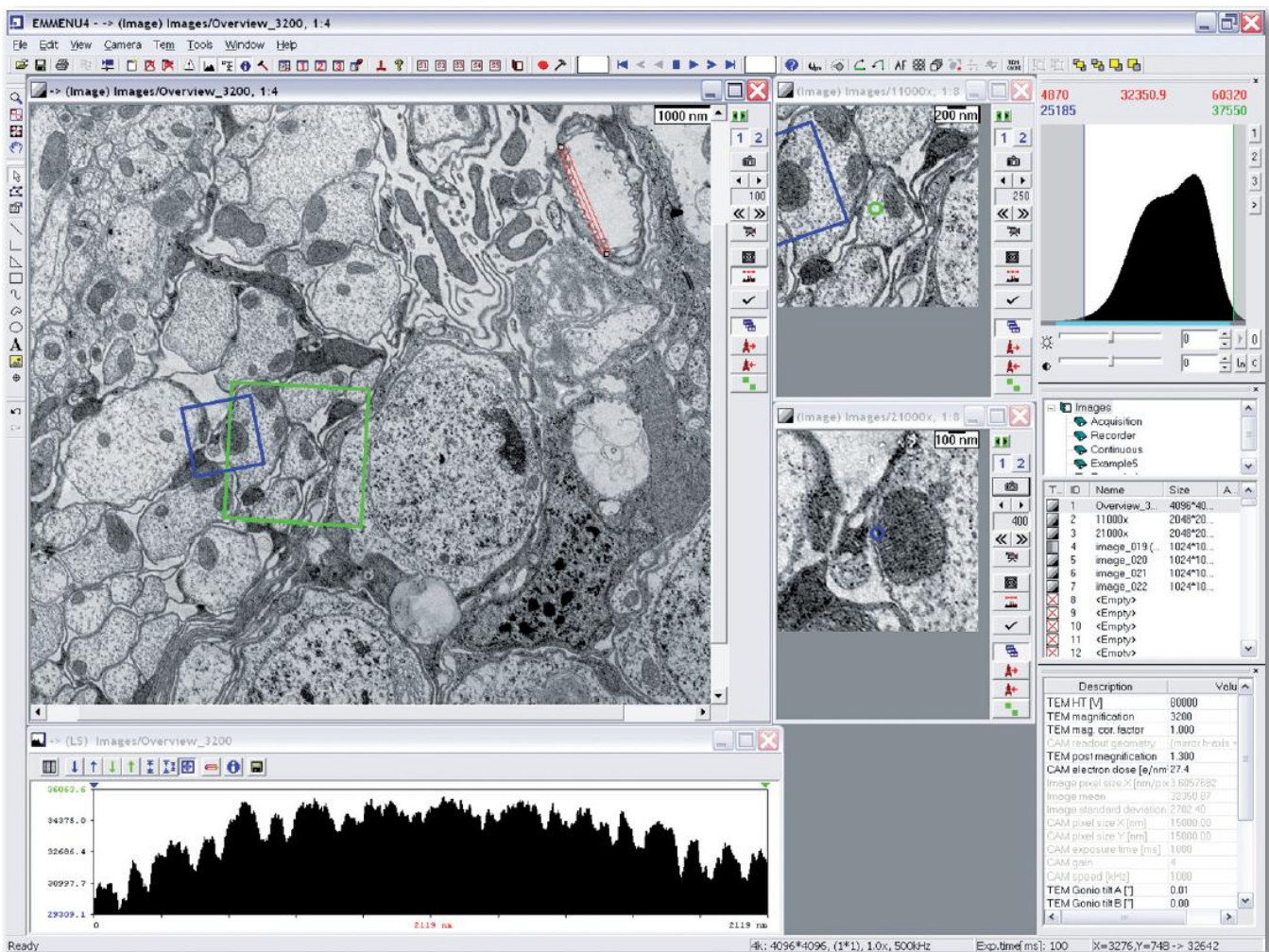


EM-Menu 4

Advanced TEM image processing package

EM-Menu 4 is a powerful image acquisition and processing software package for the specific tasks in electron microscopy such as supporting different remote controls for reading the TEM parameters and controlling the TEM in its main functions. The versatile and flexible user interface developed for Windows XP allows efficient data acquisition.



Camera Configuration Manger:

The Camera Configuration Manager links all selectable camera settings (e.g. size, binning exposure time, shutter settings) to a logical camera. Assigning them to different buttons or viewports offers a rapid change between settings for search and acquisition.

Image Manager:

The Image Manager organizes the acquired images in tree-like directories.

They can be moved, copied, renamed or deleted to prepare optimal structures before saving them to hard disk.

Navigation:

The module NAVIGATION was specially developed for low-dose applications, so as to avoid any unnecessary exposure during searching or focusing. It allows the collection of an automatically acquired tiled image of the complete grid. The size of the image is typically

10 000 x 10 000 pixels or even more.

Using this image, the stage can be moved with a typical precision of around 1 μm (depending on the stage type).

For defining the various areas, e.g. for tomography or single particles data acquisition, further navigation at higher magnifications is done with image shift.

Features and benefits

EM-Menu 4:

- The modern solution for TEM image acquisition, processing and analysis
- Multiple viewports with zooming/panning function
- Main controls on the dialog bar or freely placeable
- Image manager supports tree and series structures
- Layout manager

Camera configuration:

- Logical cameras
- Flatfield database

Image acquisition:

- Single snapshot
- Continuous readout with live flat-fielding, FFT calculation and/or linescan
- Video recorder*

Image processing & analysis:

- Single and average line-scans in arbitrary directions
- Image statistics
- Histogram

Operations in Fourier space:

- Power spectra
- Split scaling
- Zooming and panning
- Linescan
- Low-/high-/band-pass*

File input/output:

- 8 bit and 16 bit TIFF images
- mrc format
- em format

Scripting and TEM control:

- Scripting in VisualBasicScript or JavaScript via standard software interface
- Passive remote control interfaces for automated readout of image relevant

TEM parameters

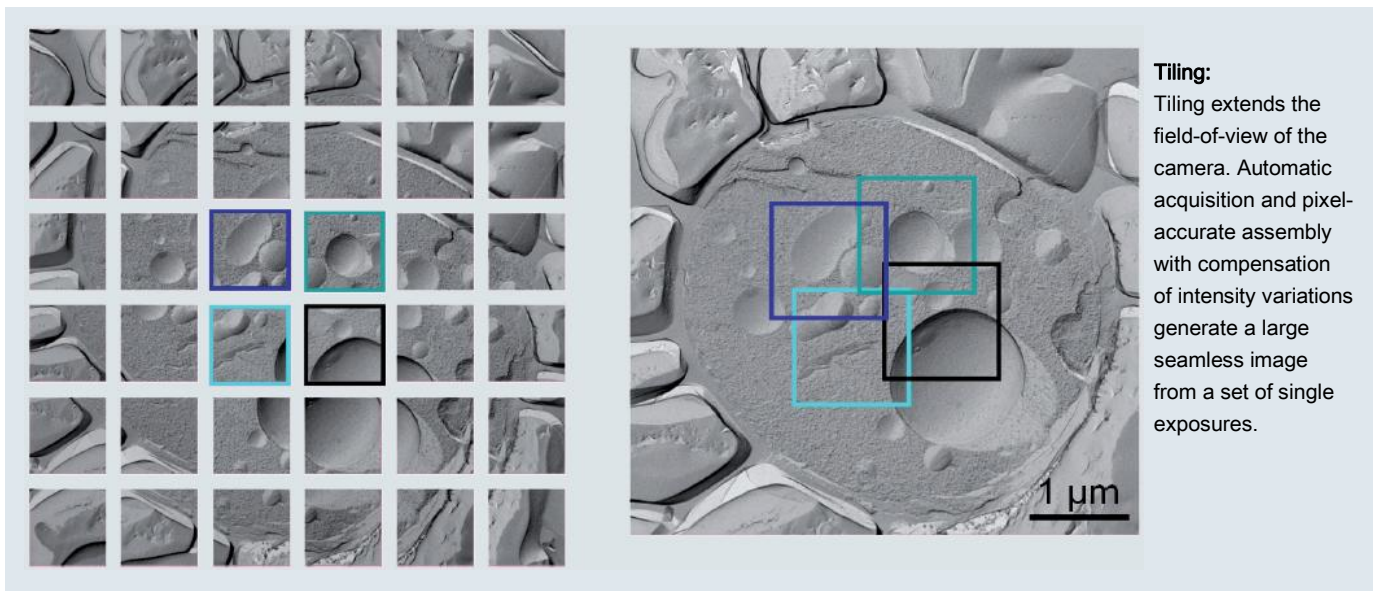
- Electron dose calculation
- Magnification Selector for TEMs without remote control
- Active remote control*
- Spot scan and tiling*
- Autofocus*
- Navigation*
- Tomographic acquisition of tilt series*
- Single Particle Data Collection*

Shutterbox II:

- Interface between cameras and TEM
- Supports pre-specimen and postspecimen shutter (beam blanker and exposure shutter)
- Variable pre-exposure time: 1 ms - 65 sec
- Minimum opening time for mechanical shutters: 100 ms - 2 sec

System requirements:

- PC workstation
 - Min. 1 GB memory (2 GB recommended)
 - Monitor with min. 1280 x 1024 pixels, 1600 x 1200 pixels recommended
 - Windows XP
- * = option



Tiled image (4563 x 4431 pixel), composed of 36 images (1024 x 1024 pixel each) of a freeze fractured yeast cell (courtesy of Reinhard Rachel, University Regensburg)

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