

Shot Meister

§ Outlines

“Everyone can take good pictures by directing a digital camera toward subjects and releasing the shutter.” It is a matter of common sense now, but we could not imagine it before the popularization of digital imaging devices and computers. This application was based on the idea of making “TEM more usable by featuring computer-assisted operations because the image capture in TEM” is mainly in digitized format. We named this application *Shot Meister* wishing for the “Meister technique for everyone.”

§ Features

○ Anti Drift System(ADS)

Everyone may have experienced sample drift that disturbed the capture of sharp images. Sample drift poses serious problems in highly magnified shots. The Shot Meister features two functions to obtain clear images by cancelling drift.

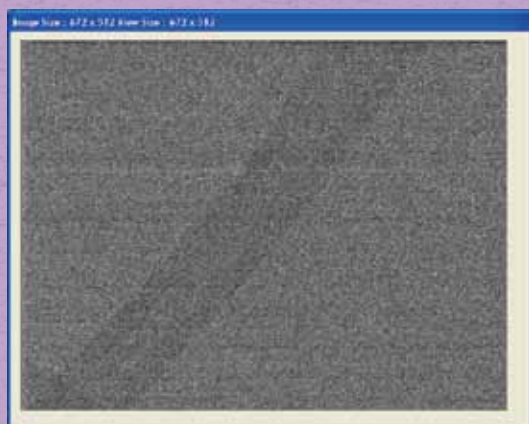
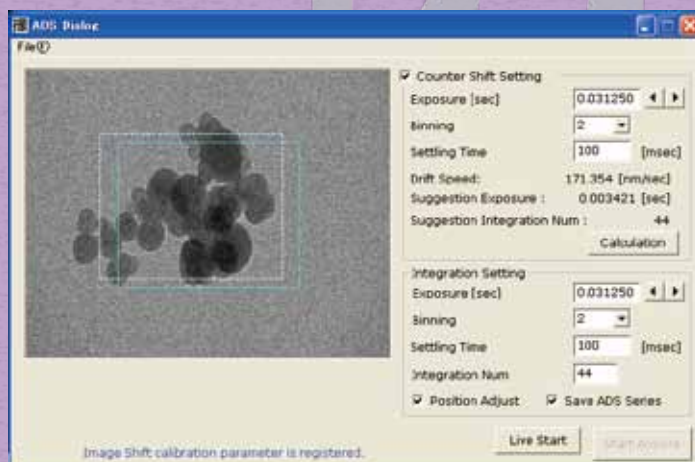
1. Counter Shift

The Shot Meister automatically measures the drift vectors and controls the deviation system of TEM to cancel the drift.

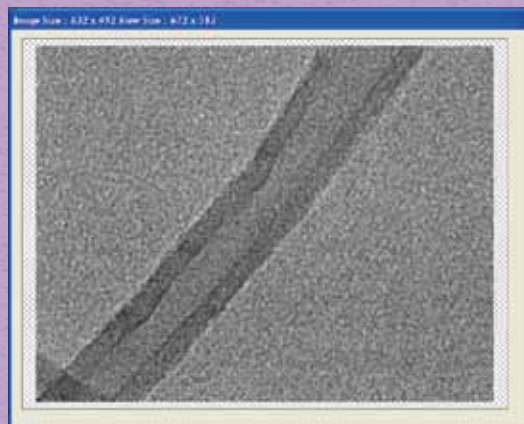
This control holds samples perfectly still during shots. You can obtain frozen images even when long exposure times are needed.

2. Automatic Integration

In the process of capturing images, Shot Meister repeatedly uses a short enough exposure time to be able to ignore the influence of drift. Although each captured image shows low contrast and appears very noisy because of the short time exposure, you can obtain a high contrast image by overlaying them. Simply overlaying the images results in a non-frozen image. The Shot Meister produces a sharp, high-contrast image by applying high precision alignment technology developed by TEMography.



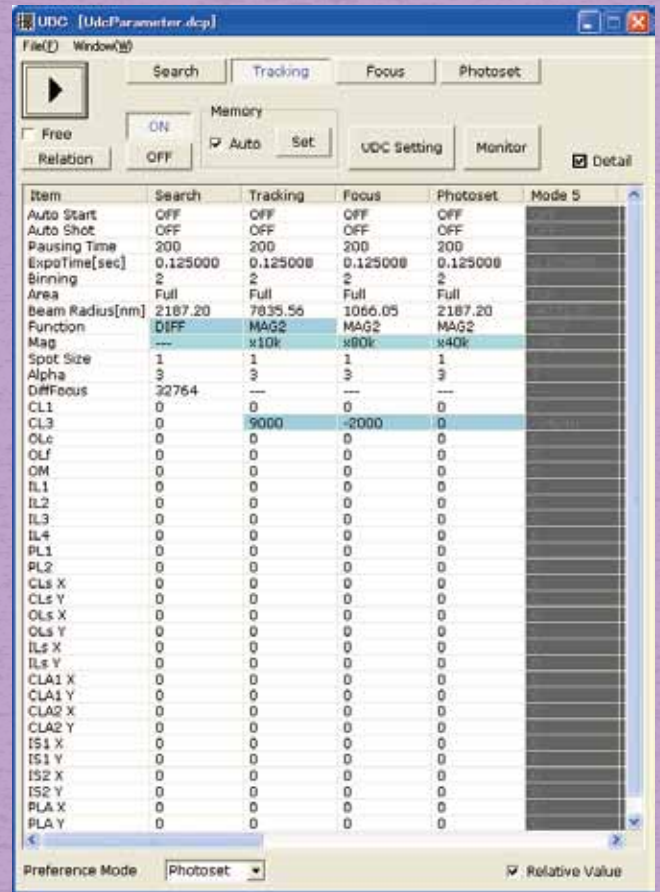
Before overlaying images



After location adjustment and the overlay of 30 images

○ Ultimate Dose Control(UDC)

The essential function for shooting beam-sensitive samples(e.g. cryo) is the Minimum Dose System (MDS). This technology was first developed by JEOL about 30 years ago, at the request of users in the biological field. The Shot Meister greatly advanced traditional MDS technology. Not only the deflectors of TEM, but almost all of the functions for TEM (including Free Lens Control) and the camera are controllable by the program, so you can easily adjust the settings, such as “assignment of user defined lens condition for each mode”, “sample relocation by moving the stage a given distance after each shot”, and “automatic capture by changing the magnification ratio or the focus”. You can also utilize this system beyond the intended MDS use as a programmable automatic shooting system because you can add up to 10 modes in a cycle.



○ for Digital Photography

This system also features functions specialized for digital image capture. Practical functions are provided with an intuitive and straightforward user interface: auto focus, auto contrast, an Around View Map function to cover the narrow field of vision, and a “real time filter” function that is convenient for searching the field of vision within low contrast images.

§ Specifications

Controllable electron microscope	JEM-1400, JEM-ARM200F, JEM-2100, JEM-2100F, JEM-2200FS, JEM-2500SE, JEM-2800, JEM-3100F, JEM-3200FS, JEM-1230(*1), JEM-2010(*1), JEM-2010F(*1), JEM-3000F(*1), JEM-3010(*1), JEM-4010(*1)
Controllable camera	JEOL, GATAN, TVIPS, AMT, OLYMPUS SIS
Output imaging format	TIFF(8bit), TIFF (16bit), Bitmap, JPEG
Major features	Anti Drift System(ADS), Ultimate Dose Control(UDC), Around View Map, Real time filter, Live FFT, metering function

*1 The specifications are partially different.

The content here is as of Aug. 2010. Features or specifications for this product may be subject to change without notice. Please refer to the current information. Proper names, such as company names or product names, are either registered trademarks or the trademarks of each company.

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