

Webinar Q&A Report: Achieve Higher Performance with your Microscope with Minimal Effort Using Automated Alignments



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1. Could the software programmes be used for any brand SEM?

Alice S. : No, our solutions are available only for Thermo Scientific SEMs, desktop SEMs and TEMs and, depending on the specific software routines, they are available only on certain product lines (i.e. SEMs software routines are not available for TEMs)

2. Does automatic alignment centers STEM aperture in the ronchigram?

Alice S. : The automatic routine does not center the C2 aperture on the ronchigram. The aperture is aligned as such that, when changing the C2 lens focus, the aperture stays centered. The reason is that the C2 aperture centering is a prerequisite to come to a good alignment of the rotation center in STEM. The ronchigram is only in the correct position or clearly observable if STEM is already aligned.

3. What kind of sample is used to correct coma in STEM: amorphous or something else, ex. nanoparticles?

Alice S. : Anything with clear features can be used to correct coma in STEM. The auto routine uses the features in the image to minimize the image shift as function of focus

4. How to get these automated functions in the SEM we already have? Just request a software update?

Alice S. : Depending on the automated functions, they are available for certain UI software versions so, purchasing a software update will provide them. The possibility for specific user interface's software versions is also directly linked to the tool (i.e. 2020 software's' releases may not be available for 10 years old tools)

5. Is it possible to implement your software to the existing suites for example smart SEM as is given by ZEISS?

Alice S. : It may be possible depending on the suite version.

6. Would FLASH work in STEM mode?

Alice S. : Yes, it works in any possible mode available in the SEM.

7. Can I schedule alignments with Align Genie? How often do I have to run these alignments?

Alice S. : Yes, the alignments can be scheduled in advance and since not all the alignments within align genie require the same frequency, the user can selectively decide what to run. Typically, it's run once a day for the most frequent ones

8. How reliable are the autofocus functions both in floor model SEMs and desktop SEMs?

Alice S. : There are several factors affecting the reliability of the autofocus algorithms. As we saw in the presentation, the area where the function is run clearly affects the result: the algorithm is going to maximize the sharpness of the edges of a feature so the more features the area has, the better is. Additionally, the result from the autofocus is affected also from the signal to noise ratio which is directly dependent from the acc voltage and beam current: this doesn't mean that the auto function is not going to work with low beam currents or low kV but it may take more seconds than the 2-5 seconds that it may take when working with 15-20 kV

9. What are the customizable parameters when using Flash?

Alice S. : There are 3 main parameters that can be customized: The number of steps during which the auto function tunes focus, lens alignment and stigmation. This number has to be balanced between the accuracy of the result and the time required if many steps are selected. The second parameter is the dwell time, that is important for the overall signal to noise ration of the image which can impact of course on the quality of the focus. Last parameters that can be adjusted is the resolution of the image.

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