

SEM 3D Imaging Guide

3D SEM Imaging Guide

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This guide is intended to assist to provide a brief overview of using 3D SEM software package included with the TM3000 SEM microscope.

1. In the TM3000 software, display the specimen to be scanned as you would for collecting 2D images. To collect the set of four images and text files for generating a 3D image:

File > 3D- Image Capture...

Four obliquely illuminated images will be collected at the cardinal quadrants (N, E, S, W). You will be prompted to save this in a particular folder. To organize your files, follow a filing and naming convention as in acquiring 2D SEM images (i.e. Expedition > Site > Hole > Core > Section > Interval > Sample).

1. Open 3D-Viewer
 - a. Import the obliquely illuminated images collected in Step 1.

File > Automatic Import > (select the folder images and text files)

Once the images are imported, you can explore the available functions and buttons to extract 3D parameters of the model. You can define vertical, horizontal or free-hand transects across the image, and the relief profile will be displayed in the sub-window at the bottom. Parameters such as surface roughness will also be displayed.

1. a. To create a 3D model:

Analyze > Open 3D view

Notes:

1. Attempts to create 3D models of sputter coated specimens were unsuccessful, possibly due to the distortion in the apparent contrast of the obliquely illuminated images.
2. In step 1, when acquiring the 3D images, the TM3000 software often complains of the specimen being out of focus. We did not have time to investigate the optimum distance ideal for this 3D imaging routine.