

APPLICATION BRIEF

SMI no.2**An Introduction to Cut & See Pro**

2006.4

1. Introduction

The existing Cut & See function involved the following procedure.

- (1) Create a cross section.
- (2) Manually set the position and focus for the SEM image of cross-section.
- (3) Set the FIB processing area again
- (4) Acquire the SEM image.

Cut & See Pro, the new automatic cross-section processing and observation function, automates this cumbersome process.

2. Main functions

The main functions of Cut & See Pro are position tracking and focus interlock during observation of cross-sections. These functions automatically correct the processing position and focus shift before acquiring the SEM image. There is also a View Editor function. This function extracts the necessary sections from sequential SEM images captured by the Cut & See program and corrects minute position variations.

Decreasing image sizes can reduce the work load of commercially-available 3D imaging software.

3. Other features

- The processing location can be specified using a fixed spot on a wafer or by linking to foreign material inspection unit.
- The use of sequential automatic processing software permits sequential and automatic Cut & See at multiple locations.

4. Summary

Cut & See Pro improves processing accuracy and throughput because the stage does not need to be tilted during observation of cross-sections. Furthermore, it reduces work time because cross-sectional SEM images can be captured automatically and sequentially by simply setting the parameters in the processing window. Finally, this revolutionary software can greatly reduce time required for failure analysis and other tasks because the acquired SEM images can be reviewed individually and even used for 3D imaging.

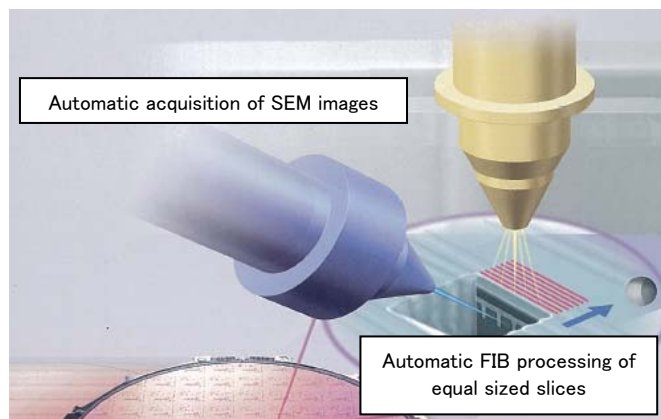


Figure 1. SMI Instrument and Cut & See Overview

Cut & See Pro Processing

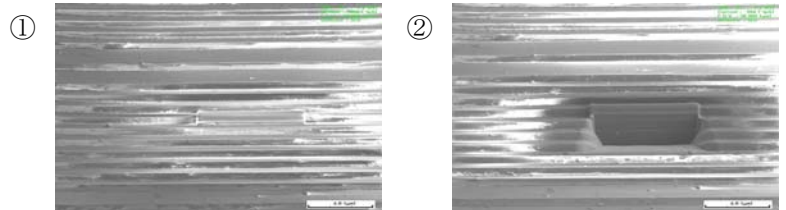
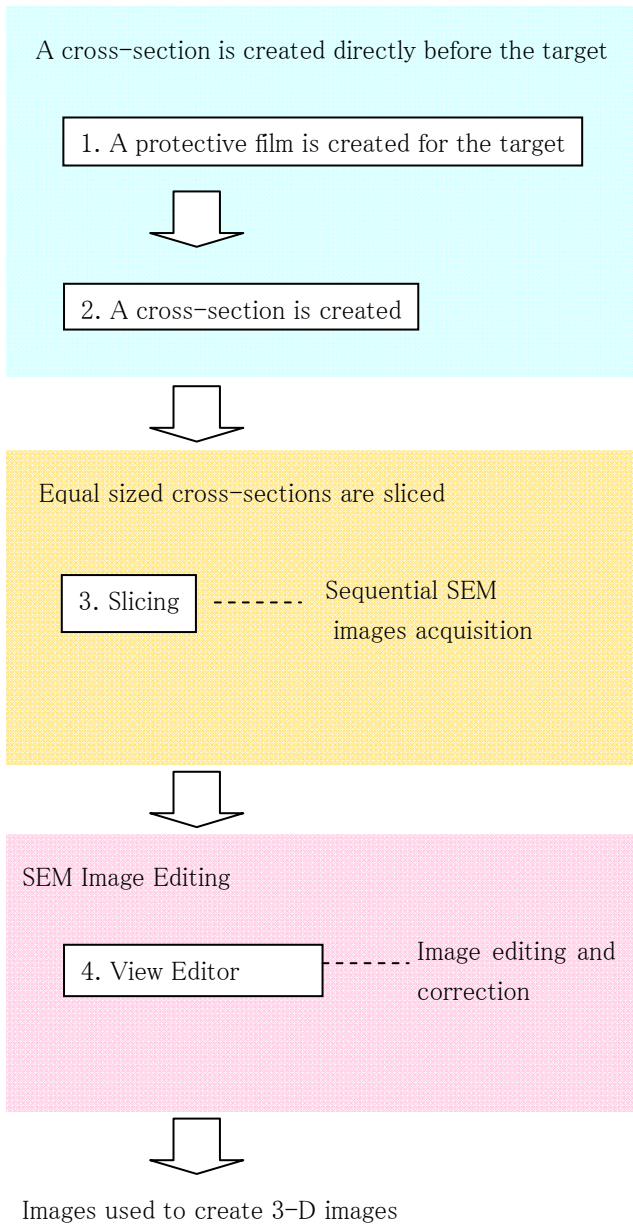


Figure 2. SEM images Acquired by Cut & See Pro
The cross-section process position is automatically detected by the differences in the two acquired SEM images

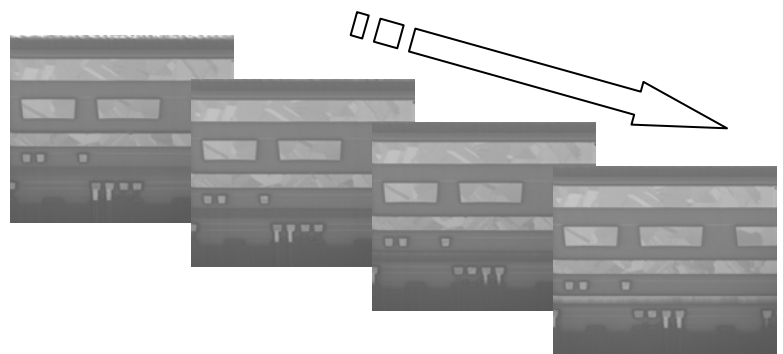


Figure 3. SEM Images Acquired During Slicing