In-situ analysis of FIB milled structures using AFM-in-SEM LiteScope™

Introduction

In-situ analysis of FIB/milled structures is one of the main applications of AFM-in-SEM LiteScope. This device can be mounted onto the SEM stage and operated in a tilted position. The sample surface can be modified by FIB and without breaking the vacuum analyzed by AFM, which makes the analysis more time efficient. Since the SEM is used for AFM tip navigation, it is easy to localize the region of interest for further analysis, even in nanoscale. Moreover, LiteScope is equipped with unique Correlative Probe and Electron Microscopy (CPEM™) technique for true correlative simultaneous measurement of AFM and SEM signals, which can provide additional information about the sample.

Surface structure dependence on ion dose

Cadmium Telluride (CdTe) is sensitive to the surface contamination and oxidation; therefore in-situ analysis after surface modification is the best procedure to use.

Main AFM-in-SEM advantages

Delayering of integrated circuits

Integration of AFM/SEM/FIB techniques significantly simplifies the delayering process used for failure analysis, quality control, and R&D of integrated circuits.