Webinar: AutoTEM 4: Automated, High-Quality S/TEM Sample Preparation in Less Than an Hour

Tuesday, May 8, 2018 11:00 EDT

Over the past 25 years, focused ion beam (FIB) and DualBeam™ FIB-SEM instrumentation has transformed scientists’ ability to investigate materials to develop new sample preparation methods to becoming the industry standard and “work-horse” for site-specific cross-section analysis, S/TEM sample preparation (cross-section or plan view) and nanoscale patterning/prototyping applications. Early FIBs allowed the researcher to generate TEM samples in conjunction with the tripod polishing method in a relatively short time frame (approximately 2 to 3 hours). Now, state-of-the-art FIBs and DualBeams provide many times more current density than 20 years ago and offer in-situ lift-out (INLO) techniques that allow the user to prepare a sample to S/TEM transparency in as little as 20-30 minute.

With demand for TEM sample preparation at an all-time high, electron microscopists and researchers require sample preparation to take much less than a day to prepare. There are many factors that enable a system’s ease-of-use and flexibility. However, automated the sample preparation process facilitates novice or occasional users of the DualBeam to generate high-quality samples often in less than an hour for non-site specific locations. With the introduction of AutoTEM 4, Thermo Fisher Scientific’s latest automation application, samples are automatically prepared for INLO, the user is guided by the microscope to move the sample from the bulk location to the TEM grid and finally the sample is automatically thinned to transparency. AutoTEM 4 also allows for automated low energy polishing of thin sections.

Key learning objectives:

• Learn about the general requirements for high quality TEM samples and the importance of low energy polishing
• Gain insight into the enabling technology for automated, guided sample preparation in a DualBeam
• Discover the automated sample preparation process with AutoTEM 4 software to
achieve repeatable, high quality results for users of any experience level

Who should attend:

• Materials Scientists who require high-quality S/TEM sample preparation
• Electron/Focused Ion Beam Microscopists interested in the latest technology for S/TEM sample preparation
• Researchers who infrequently use shared microscopy facilities and are looking to improve the throughput and obtain high quality results

Presenter

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