



Broad Argon beam sample preparation for SEM and TEM

Today's SEMs are using lower voltages and becoming much more surface sensitive. Techniques such as EBSD and CL are advancing rapidly and are increasingly intolerant of poor, mechanically polished samples. Gatan offers a choice of sample preparation tools based on low energy Argon ion beams. The Ilion II is intended for cross-sectional or planar polishing on small samples, whilst the PECS II can take larger, mounted samples and offers coating and options for vacuum transfer. In all cases, the automation, reproducibility and, especially, the availability of low energy final finishing enable the routine preparation of high quality samples. We will show a selection of sample types and geometries.

The vital importance of sample preparation for TEM has always been appreciated, but has risen to a new level with the arrival of aberration corrected TEMs, more work in STEM mode and at lower kV. The development of the PIPS II has brought low energy final finishing as routine for all samples; it is critical especially for FIB lamellae which are inherently damaged by the Ga⁺ beam and must be improved to achieve TEM imaging objectives. Cooling, imaging, automation and new workflows for TEM be discussed.