

UMF Equipment – Precision Ion Polishing System

Gatan 691

The Precision Ion Polishing System (PIPS) is used for thinning and/ or polishing of plan-view, cross-sectional ceramic or alloy samples for transmission electron microscopy (TEM) analysis. Since the ion polishing process is rather slow, it is important that the samples are pre-thinned less than 30 μm by e.g. mechanical grinding and polishing or chemical polishing. The instrument is equipped with two Penning ion guns (PIGs) using argon (Ar) ions for polishing. The operating angles of the guns are $\pm 10^\circ$, and the standard accelerating voltage is 5.0 kV. The PIPS can only accept the standard shape of the sample with a 3 mm diameter disc.

- Advantages:
- It is a universal applications for TEM specimen preparation of Materials: Semiconductors, Ceramics, Metals and their combinations.
 - It is a dry etching process, using normally an inert gas
 - The thinning process is more controllable

- Disadvantages:
- It is a slow process. However for adequately pre-thinned specimens, this is not very important.
 - Artifacts formation. This is basically the case with any other thinning techniques.

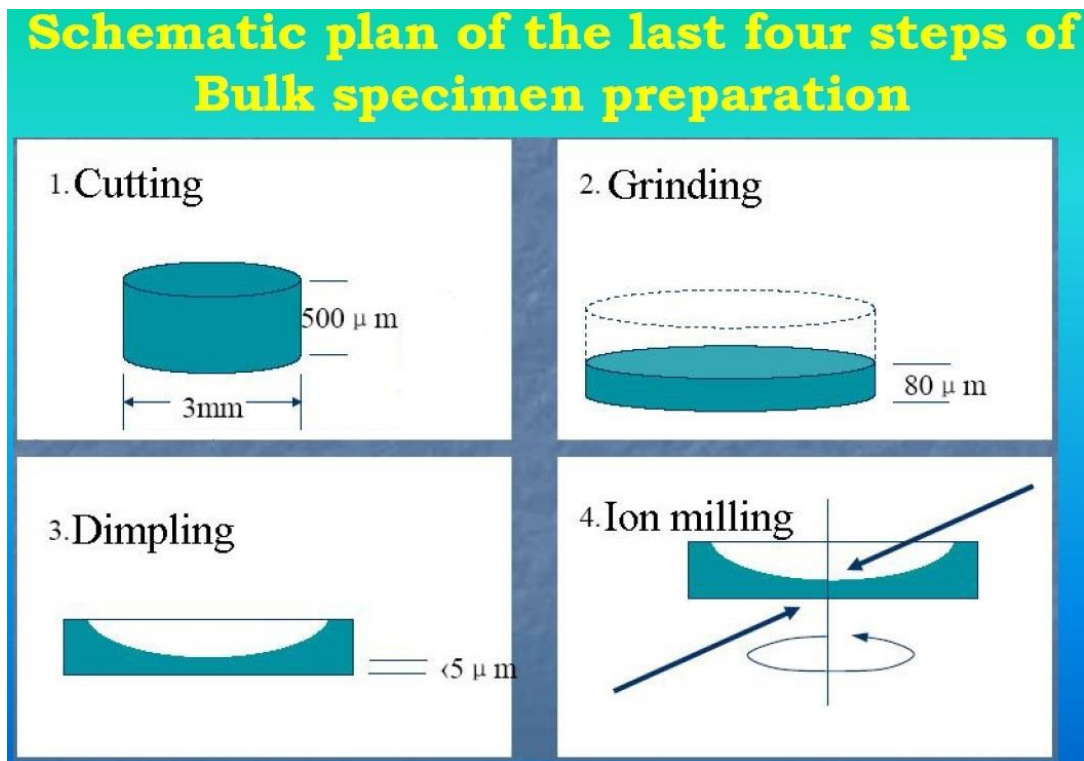
Please refer to <http://www.gatan.com/products/tem-specimen-preparation/pips-ii-system> for further details of PIPS system.

For any inquiry, please contact Dr. Wei Lu (Tel: 34002077; Email: wei.lu@polyu.edu.hk).



Applications:

Plan-view specimen:



Cross-sectional Specimen:

