

## NANO 703/703L

Lab: TEM Sample Prep – Polishing, Dimpling, Ion Milling

Due: Following Lab Session

### GOAL

A common approach for thinning materials to electron transparency for TEM is based on mechanical polishing, dimpling, and Ar-ion milling. The goal of this lab is to become familiar with these techniques for preparing wafer Si, which has previously been cut into circular discs having the standard 3-mm diameter needed for TEM.

### PROCEDURE

You should strive to complete the following tasks:

- 1) Polish one face of a Si disc;
- 2) Glue the disc to a Cu grid;
- 3) Grind the disc to roughly 100- $\mu\text{m}$  thickness;
- 4) Dimple the disc;
- 5) Ion mill the disc.

### REPORT

Describe a procedure for preparing Si TEM samples from 3-mm discs by polishing, dimpling, and ion milling. The procedure should be adequately detailed to guide you or another researcher at a later session.