Measurement of the Mechanical Properties of Thin Films By Microbeam Bending

- Micromachined cantilever beam structures for mechanical testing
- Mechanical testing highlights
  - Deposited Cu film on Si beam
  - Use nanoindenter to deflect bi-layer beams to extract mechanical behavior of the film
  - Use method to determine the effect of processing conditions on film’s yield stress
- Pictures on right
  - SEM photo of triangular Si microbeam
  - Comparison of a Cu film before and after a 400 °C anneal.

User: Jeffrey Florando, MSE, Stanford
Principal Investigator: Prof. William D. Nix, MSE, Stanford
Funding: Intel Corp., Dept. of Energy
NNUN Site: Stanford University