Surface Heterostructure Nanomechanical Actuators with Atomic Scale Resolution
Joseph J. Talghader (PI), Jan D. Makowski
Electrical & Computer Engineering, University of Minnesota

Illustration of the heterostructure used in the project. Surface forces cause the cantilever to collapse over an 125 nm thick air gap.

- Decrease in temperature increases the surface forces
- Length of unadhered part decreases
- Every point on the cantilever undergoes vertical translation

A micrograph of the actual actuators

Maximum translation along the cantilever as a function of temperature