Suspending SWNT Membrane as a New NEMS Material

Miao Lu ¹, MinWoo jang ², Steven Campbell (PI) ² and Tianhong Cui (PI) ¹
¹Mechanical Engineering, ²Electrical and Computer Engineering, University of Minnesota

- SWNT membrane was Layer-by-layer self assembled with controlled dielectrophotic process
- Suspending SWNT membrane was realized by SWNT oriented deposition
- The above SWNT membrane was patterned by Focus Ion Beam or lithography and oxygen dry etching to be submicron beams
- The resistivity of the SWNT film was measured to be 7.68 mΩ·cm, and the contact resistance in unit area was 0.459Ω/μm²
- The SWNT membrane has potential applications to NEMS, nanoelectronics and biosensors