

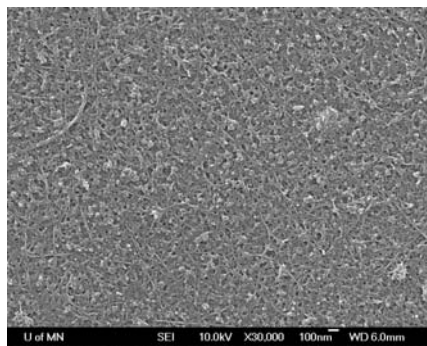
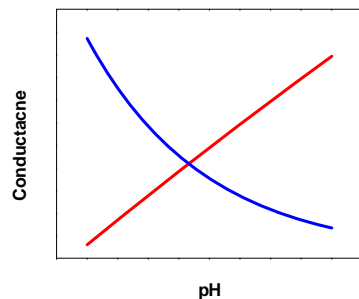
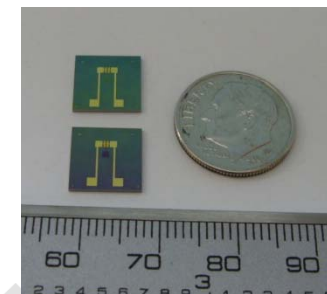
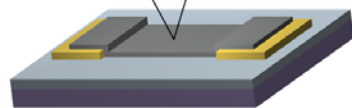
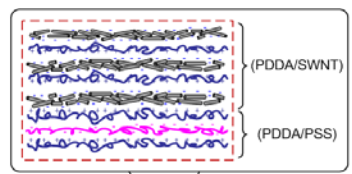
Self-Assembly of Chemical and Biological Sensors

Tianhong Cui (PI), Dongjin Lee and Miao Lu

Department of Mechanical Engineering, University of Minnesota

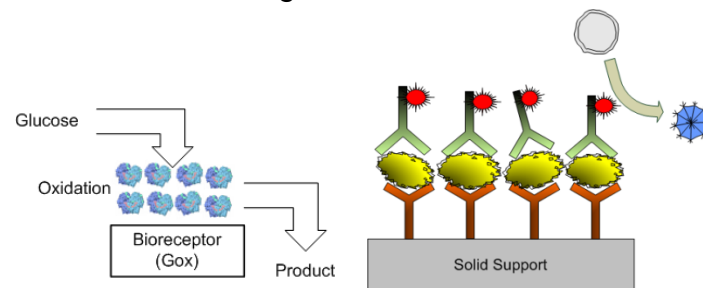
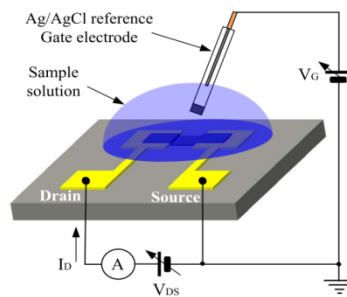
DESCRIPTION OF WORK

- ◆ Top-down microfabrication + bottom-up layer-by-layer assembly
- ◆ Low power consumption
- ◆ Miniaturization
- ◆ Nanomaterial transducers



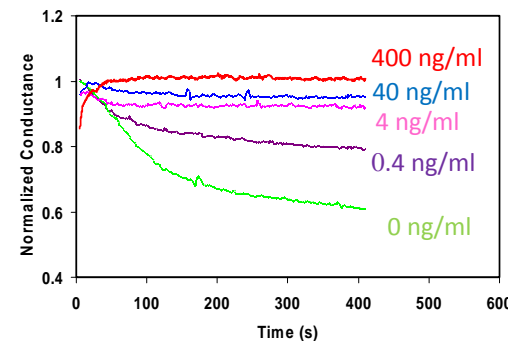
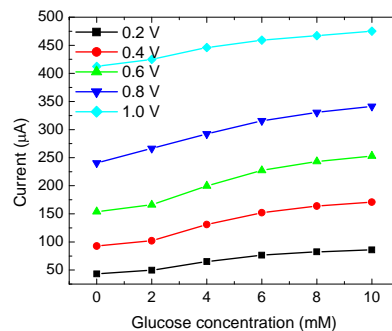
MAJOR OBSERVATIONS

- ◆ The electrochemical nature of LbL assembled SWNT film has been found
- ◆ Glucose and normal rabbit IgG has been detected



Glucose sensing

Immunosensing ELISA: Substrate → detectable product



Publications

- ◆ M. Lu, D. Lee, W. Xue, and T. Cui, IEEE MEMS 2008, p. 188
- ◆ D. Lee and T. Cui, ICN+T conference presentation, July 22, 2008