Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Massive Nano-Assembly Method for Integrated Device Structures Based on Nanotubes and Nanowires MINBAEK LEE, SEONG MYUNG, JIWOON IM, SUN NAMKUNG, KYUNG-EUN BYUN, SEUNGHUN HONG, Physics and NANO Systems Institute, Seoul National University, Seoul, Korea — Recent dramatic progress of nanotechnology allows us to combine carbon nanotubes and nanowires with conventional microelectronic devices to build a generation of new nanoscale devices. However, a major stumbling block holding back their industrial applications is a lack of massive assembly method for integrated device fabrication. One promising nano-manufacturing method is the 'surface-programmed assembly' process. In this strategy, surface molecular patterns are utilized to direct the assembly of nanowires onto specific locations of general substrates with precise orientations [1]. This talk will discuss how one can utilize surface-programmed assembly strategy to position and align a large number of 1D nanostructures (e.g. carbon nanotubes, metal oxide nanowires, etc) on general substrates (e.g. gold, silicon oxide, Al, etc) to build large-scale integrated device structures. Future prospect and possible applications of this strategy also will be discussed. [1] S. Rao, L. Huang, W. Setyawan, and S. Hong Nature 425, 36-37 (2003)

Seunghun Hong
Physics and NANO Systems Institute, Seoul National University

Date submitted: 01 Dec 2004 Electronic form version 1.4