

Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

‘Lens’ Effect in Directed Assembly of Nanowires on Gradient Molecular Patterns MOON GYU SUNG, SUNG MYUNG, JIWOON IM, SEUNGHUN HONG, Department of Physics and Astronomy, Seoul National University, HND TEAM — We report a new phenomenon, named here as the *‘lens’* effect, in the directed-assembly process of nanowires (NWs) on self-assembled monolayer (SAM) patterns. In this process, the adsorption of NWs is focused in the nanoscale regions at the center of microscale SAM patterns with gradient surface molecular density just like an optical lens focuses light. As a proof of concepts, we successfully demonstrated the massive assembly of V_2O_5 NWs and single-walled carbon nanotubes (swCNTs) with a nanoscale resolution using only microscale molecular patterning methods. This work provides us with important insights about the directed-assembly process, and from a practical point of view, it allows us to generate nanoscale patterns of NWs over a large area for mass fabrication of NW-based devices.

Moon Gyu Sung
Department of Physics and Astronomy, Seoul National University

Date submitted: 23 Nov 2007

Electronic form version 1.4