



Center for Nanoscale
Chemical-Electrical-Mechanical
Manufacturing Systems

Single Molecule Views of Nature's Nano-Machines

At the most fundamental level, virtually all biological reactions occur between individual biomolecules. Recent developments in new physical approaches, namely single-molecule imaging and manipulations, began to provide us with previously unattainable data that deepen our understanding of molecular mechanisms and help formulate new paradigms. Basic understanding will ultimately guide us in controlling serious human diseases and lead to the construction of man-made nano-machines via 'reverse engineering' of what Nature has optimized over billions of years. Several different approaches in developing and using single molecule fluorescence imaging technologies to probe fundamental questions in biology will be discussed.



Wednesday, November 30, 2005
4:00 pm
B02 Coordinated Science Lab

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Professor Taekjip Ha received a B.S. in physics from Seoul National University in Korea and an M.A. and Ph.D. in physics from the University of California, Berkeley. He is Associate Professor of Physics at the University of Illinois at Urbana-Champaign. He was awarded an Alfred P. Sloan Fellowship, an NSF CAREER Award, a Cottrell Scholars Award, and a Searle Scholars Award. He also received the Fluorescence Young Investigator Award of the Biophysical Society. In 2005, he was named a Howard Hughes Medical Institute Investigator.