Real-time Nanomanipulation Using AFM

Published date: Sept. 24, 2010

Technology description

Introduction
An efficient system for manipulation of nano-sized objects would be greatly aided by the ability of an operator to "feel" the objects he/she is manipulating.
Description of Technology
The invention proposes an atomic force microscope (AFM) based Augmented Reality System consisting of an AFM connected to a haptic device allowing the operator to feel the nano-objects he is manipulating in real-time. By using this system, the operator can manipulate nano-sized objects in real-time by controlling the 3D motion of the AFM tip through the haptic device and at the same time receive real-time visual and 3D force feedback.

Application area

Add-ons to AFMs for research and industrial applications.

Advantages

More efficient nanoassembly of NEMS:Enabled by the ability to "feel" nano-objects under construction.
More effective investigation of biological processes at the molecular level:Ability to manipulate proteins, DNA and other bio-molecules, cells, etc.
Improved characterization:Resolution of various properties of novel materials and structures at the nanoscale level.

Institution

Michigan State University

Inventors

Ning Xi
Professor
Electrical & Computer Engineering
Guangyong Li

Student

Electrical & Computer Engineering

联系我们

叶先生

电 话：021-65679356

手 机：13414935137

邮 箱：yeyingsheng@zf-ym.com