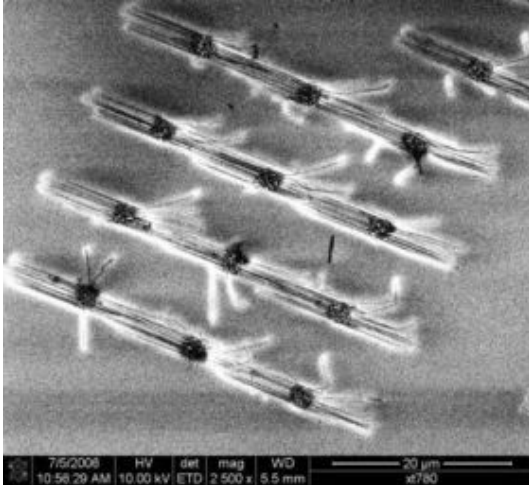


Breakthrough toward industrial-scale production of nanodevices



Researchers in Maryland report an advance toward making zinc oxide nanowires (shown) on an industrial scale. Credit: Courtesy of Babak Nikoobakht, National Institute of Standards and Technology

Scientists in Maryland are reporting an important advance toward the long-sought goal of industrial-scale fabrication of nanowire-based devices like ultra-sensitive sensors, light emitting diodes, and transistors for inexpensive, high-performance electronics products. The study is scheduled for the current issue of ACS' *Chemistry of Materials*.

In the report, Babak Nikoobakht points out that existing state-of-the-art assembly methods for nanowire-based devices require complicated, multi-step treatments, painstaking alignments steps, and other processing for nanowires, which are thousands of times smaller than the diameter of a human hair.

The goal is to electrically address the coordinates of millions of nanowires on a surface in order to produce the components of electronic circuits. The study describes a new method in which zinc oxide nanowires are grown in the exact positions where nanodevices later will be fabricated, in a way that involves a minimum number of fabrication steps and is suitable for industrial-scale applications.

“This method, due to its scalability and ease of device fabrication, goes beyond the current state-of-the-art assembly of nanowire-based devices,” the report states. “It is believed to be an attractive approach for mass fabrication of nanowire-based transistors and sensors and is expected to impact nanotechnology in fabrication of nonconventional nanodevices.”

Source: ACS

This document is subject to copyright. Apart from any fair dealing for the purpose of private study, research, no part may be reproduced without the written permission. The content is provided for information purposes only.