

# Nanosys Announces Issued Patent Covering Fundamental Nanowire Heterostructures

May 6 2005

---

Nanosys have announced the issuance of U.S. Patent No. 6,882,051 (the '051 patent) entitled "Nanowires, nanostructures and devices fabricated therefrom," by the U.S. Patent and Trademark Office. This patent, exclusively licensed from the Regents of the University of California, covers fundamental compositions of matter and methods for creating novel nanowire heterostructures in which the composition changes longitudinally along a wire's length and/or coaxially about its width. This technology covers a broad variety of devices including Field Effect Transistors (FET), light emitting devices including Light Emitting Diodes (LEDs) and nanolasers, solar cells, thermoelectric devices, optical detectors, and chemical and biological sensors.

Nanowire heterostructures are nanoscopic wires which have their composition controlled along their length and/or width to create junctions between materials of different composition. These junctions can be made atomically sharp and defect free, allowing for the production of high performance electronics integrated within each single nanostructure.

The following Scanning Electron Microscope (SEM) image is an example of heterostructure nanowires, a few nanometers in diameter, synthesized with alternating segments of Silicon and Silicon Germanium.

"The technology to integrate different materials at the nanoscale enables us to create nanostructures that perform as devices with multiple functions rather than just materials," said Calvin Chow, Nanosys' Chief

Executive Officer. "This significantly increases the value of our nanostructures while simplifying their incorporation into products."

Citation: Nanosys Announces Issued Patent Covering Fundamental Nanowire Heterostructures (2005, May 6) retrieved 18 April 2024 from <https://phys.org/news/2005-05-nanosys-issued-patent-fundamental-nanowire.html>

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