

Nanowires as Fast Chemical Sensors

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BACKGROUND

Recent years have witnessed a significant interest in biological applications of novel solid-state nanomaterials. The unique physical properties of molecular or nanoscale solids when utilized in conjunction with the biomolecular recognition capabilities could lead to miniaturization of biological electronics and optical devices including sensors.

TECHNOLOGY DESCRIPTION

University researchers have developed a method of measuring the dynamic impedance of a nanowire such as, but not limited to, a carbon nanotube in order to determine if a molecule has bound to the wire. The method can measure molecular species fast, on a timescale of $1 / \text{measurement frequency}$ (potentially ns to ps range).

APPLICATIONS

This invention will be used as a biological and chemical hazard detection device, or in clinical diagnosis.

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OTHER INFORMATION

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