

# Researchers Develop Nanoparticle Sensor

October 11 2006

---

(AP) -- New Mexico Tech researchers have developed a sensor that uses the light-emitting properties of some nanoparticles to analyze and identify individual components of single strands of DNA and RNA.

Chemistry assistant professor Peng Zhang said team members hope they can refine the emerging technology and eventually adapt the tiny sensors to detect cancer cells in their early stages and to target and destroy cancerous cells and tissue.

"I am very excited about the potential for this new application, especially since the preliminary phase of this study has shown that we can identify cancer cells," Zhang said. "The next step will be to modify these nanoparticle sensors ... and actually kill cancer cells with them."

The nucleotide sensor design, described in a technical paper to be published in the *Journal of the American Chemical Society*, is versatile and easy to implement in DNA and RNA research studies and analyses in molecular biology, genetics and molecular medicine, the researchers said. The co-authors are Zhang, biology professor Snezna Rogelj and Tech students Khoi Nguyen and Damon Wheeler.

The sensor is based on a type of nanomaterial - materials that are microscopic - with unique "photon upconversion" properties.

Zhang said it "displays high sensitivity and specificity" - attributes that will be important in studying and treating many genetic-based diseases, such as sickle cell anemia.

© 2006 The Associated Press. All rights reserved. This material may not be published, broadcast, rewritten or redistributed.

Citation: Researchers Develop Nanoparticle Sensor (2006, October 11) retrieved 25 April 2024 from <https://phys.org/news/2006-10-nanoparticle-sensor.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.