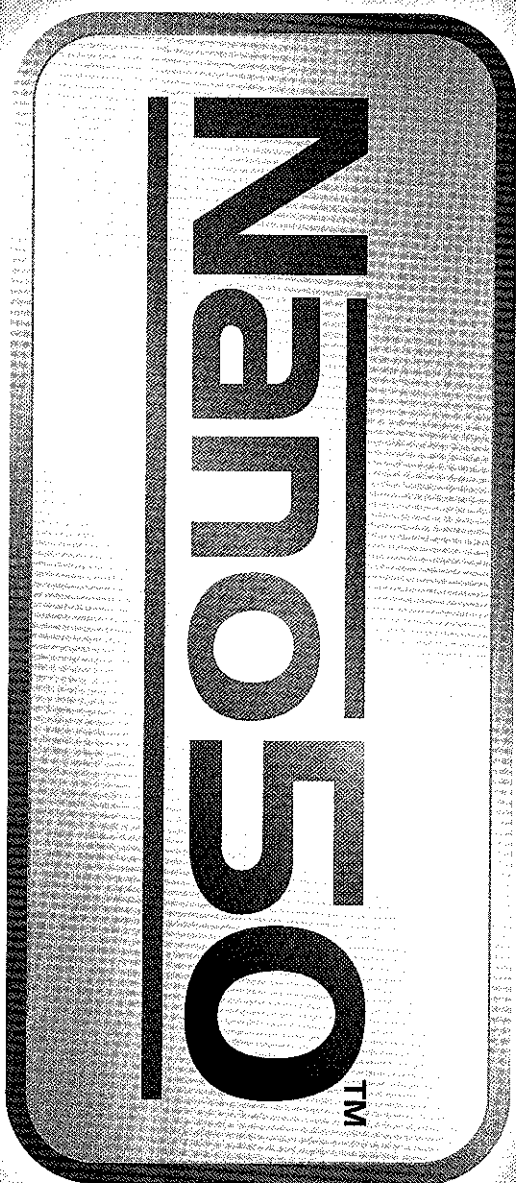


Nanotech Briefs®

Engineering Breakthroughs in Nanotechnology & MEMS

November 2006 • Vol. 3 / No. 11
www.nanotechbriefs.com

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SPECIAL AWARDS ISSUE

TECHNOLOGY AWARD

Purdue University

West Lafayette, IN

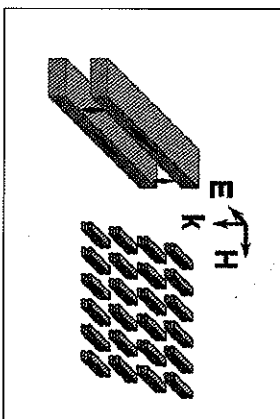
Nanorod Material

Engineers at Purdue University have created a material that has "negative index of refraction" in the wavelength of light used for telecommunications, a step that could lead to better communications and imaging technologies. The material consists of tiny parallel "nanorods" of gold that conduct clouds of electrons called "plasmons," with a frequency of light referred to as the near infrared.

The nanorods are an example of materials that are able to reverse a phenomenon called refraction, which occurs as electromagnetic waves that bend when passing from one material into another, and is caused by a change in the speed of light as it passes from one medium into another. Scientists measure this bending of radiation by its "index of refraction."

Harnessing materials that have a negative index of refraction could make it possible to take optical images of objects that are smaller than the wavelength of visible light, including molecules such as DNA, for research and medical imaging; the development of "photo-nanolithography," which would make it possible to etch smaller electronic devices and circuits, resulting in more powerful computers; and new types of antennas, computer components, and consumer electronics.

Visit www.purdue.edu.



A schematic for the array of parallel nanorods; the H-field-induced current in the rods (black arrows) is closed by displacement current (blue arrows).

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November 13, 2006

Dear Mr. Vladimir Shalaev,

Congratulations on Purdue University being named a 2006 Nano 50™ Award Winner in the Technology category! Enclosed is your Nano 50 Award as well as a copy of the November issue of *Nanotech Briefs* dedicated entirely to our 2006 award winners.

Your company's presence at the 2006 Nano 50 Awards dinner during the *NASA Tech Briefs* National Nano Engineering Conference in Boston this past month was greatly missed; however, I am pleased to announce that the awards ceremony was an unequivocal success. The Nano Rod Materials are among the "best of the best" in nanotech. Please visit www.nanotechbriefs.com to view photos and to find additional information about the 2006 Nano 50 Awards dinner.

Congratulations again on your Nano 50 Award. I look forward to continuing to hear great things from Purdue University.

Sincerely,

A handwritten signature in cursive script that reads "Cathleen Lambertson".

Cathleen Lambertson
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