



SUBSCRIBE  e-newsletter  magazines

SEARCH

Site Buy



TruPulse Lasers...

[Current Issues](#) | [Web Exclusives](#) | [Webcasts](#) | [Newsletters](#) | [White Papers](#) | [Events](#) | [Buyers Guide](#) | [SpecSearch](#) | [Microsites](#) | [Media](#)

Laser Focus World

Bacteriorhodopsin optically switches near-IR light



 [SAVE THIS](#)

 [EMAIL THIS](#)

 [PRINT THIS](#)

Bacteriorhodopsin (bR) is a photochromic biological molecule that has promise for use in all-optical switches and other photonic components; however, bR is transparent in the all-important telecom band (1310-1550 nm), which seemingly eliminates it from contention as a base for optical telecom devices. But researchers at the Rowland Institute, Harvard University (Cambridge, MA) have created a bR-based optical switch that routes a near-IR (1311 nm) beam with the application of a low-power green (532 nm) pump.

A 300 μm silica microsphere is coated with bR, suspended between two optical fibers, and optically coupled to them. When 200 μW of pump light is applied through one of the fibers, the evanescent waves in the sphere's whispering-gallery modes interact with the bR, causing a resonant-frequency shift in the cavity that switches the incoming near-IR probe light from one fiber port to another. Switching on is fast, but switching off is much slower (with a time constant of 11 s). Speedier switching is possible with other photochromic organic materials such as diarylethene. Contact Frank Vollmer at vollmer@rowland.harvard.edu.

Laser Focus World February, 2007

Introducing the
Lightning™
Digital Scanner Revolution
[Click Here for Details](#)



www.gs-scanners.com



Blue 4

Looking for more news and information? Search our archives. [Click Here!](#)

Interested in a subscription to Laser Focus World Magazine?
[Click here](#) to subscribe!

[Return to Previous Page](#)

Webcasts



Trade-offs in Spectrometer System Design
March 21, 2007



Multiphoton microscopy
February 28, 2007



Sponsored by: Instrument Systems and Veeco
High-Brightness LED Applications and Market Trends
Original broadcast on
January 18, 2007



[more](#)

Sponsored White Papers Library

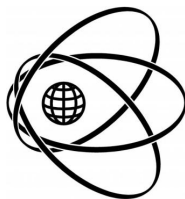
Recently Added White Papers

Light Management Solutions™ for Microdisplays (12/21/2006, Oerlikon Optics Balzers (Headquarter))

Predicting the performance of a photodetector (12/18/2006, Boston Electronics Corporation)

[more](#)

Featured White Papers



Predicting the performance of a photodetector
(12/18/2006)

[more](#)



avo)ph

LaserFo
Click h
FREE Su



LaserFo
Click h
FREE Su



Search Jobs:

Featured

**Engineers- H
Power**

World-wide Le
Power Compa

**Director of S
Business Dev**

Houston, Texa

**Combined Cy
Combustion
Technician**

Bartow, FL Pr

Mo



[Home](#) | [About Us](#) | [Contact Us](#) | [Corporate Website](#) | [Privacy Policy](#) | [Courage and Valor Foundation](#) | [Site |](#)
[View all PennWell sites](#) | [View all PennWell events](#)

Also Visit: [Lightwave](#) | [Vision Systems Design](#) | [Surface Mount Technology](#) | [Clean Rooms](#)

Copyright © 2007: PennWell Corporation, Tulsa, OK; All Rights Reserved. | [Terms & Conditions](#) | [Webmast](#)