

★ 5 CARS THAT COULD SAVE DETROIT



Caddy Plug-In Hybrid Concept

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VOLUME 106 NO. 4 APRIL 2009 CMG 08638



GRIPPING MEDICAL NANOTECH

Doctors usually resort to invasive biopsies to fetch body tissues from patients. But engineers at Johns Hopkins University in Baltimore have developed a magnet-guided "microgripper," the size of a speck of dust, that can do the job gently. The six chromium-copper fingers of the gripper are kept open by a layer of plastic, which softens when doctors heat the surrounding tissue, closing the grabber's fingers around a sample.



0.1 mm

Avatars of Exercise

One of the trickiest parts of exercise is maintaining good form to activate the right muscles. A new system developed by Amsterdam-based Motek Medical displays a virtual body double showing exactly which muscles are being used and how much force they're generating—in real time. Users of the Human Body Model wear a suit with 47 reflective markers that are illuminated by infrared strobe lights that flash several hundred times a second. Eight high-speed cameras and force sensors in the floor capture data that is used to create models of the user's movements and the force that those motions generate. The system is being tested in Israel to help patients recover movement after a stroke; it could also provide an early diagnosis of conditions such as muscular dystrophy.



Experimental Eagle

NASA recently finished a program that may aid the return of supersonic commercial flights. During tests at NASA's Dryden Flight Research Center in Edwards, Calif., two uniquely modded F-15 Eagles flew as close as 100 ft apart to measure the leading aircraft's shock waves, while the lead pilot reconfigured the wings and direction of the engines' nozzles. Shock waves cause sonic booms that limit flights over populated areas. The NF-15B (above) is ideal for studying airplane geometry because its canards, borrowed from the horizontal stabilizers of an F-18, can be adjusted in flight.

THE FRIENDLY NEIGHBORHOOD WIND TURBINE

A new wind turbine promises to be a fit for any home. Michigan-based Cascade Engineering's 7-ft-dia. turbine has a ring around its blades that minimizes vibration and helps keep noise to less than 35 decibels—barely a whisper—no matter what the wind speed. The \$10,000 unit promises up to 2000 kilowatt-hours per year in high-wind areas, about 20 percent of the electricity used by a typical home.



NEWSBRIEFS

Reports From the Edge of Science
Compiled by Alex Hutchinson

FULL-SPECTRUM E-LITERACY

Reading devices with electronic paper, or e-books, are catching on, but so far they're still black-and-white. Researchers at the University of Toronto recently demonstrated a new photonic crystal screen whose pixels can each cover the entire spectrum, switching colors in about a tenth of a second.

Hard as Steel, Easy as Plastic

A new plastic that conducts electricity has been developed by German scientists at the Fraunhofer Institute for Manufacturing Technology and Applied Materials Research. The composite material combines the electrical and thermal properties of metal with the easy manufacturing of plastic. Researchers have developed conductive polymers suitable for wires and circuit boards, but the new, lightweight material could find wider use in vehicles. For example, aircraft could use lightweight, conductive fuselage panels that dissipate the charges from midair lightning strikes.



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