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## New Worlds: Nanotechnology and organic COWS

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Structures made up of "bricks" one billionth of a meter long are even stronger than those made of conventional materials.

Structures made up of "bricks" one billionth of a meter long are even stronger than those made of conventional materials. This was the conclusion of researchers at the Technion's faculty of mechanical engineering and the Russell Berrie for Nanotechnology Research, recently published in *Nature Nanotechnology*. Under a certain diameter, said Prof. Eyal Zussman and Dr. Oleg Gendelman, materials are drastically more sturdy than those with larger diameters. "For years, researchers around the world have been involved with finding the answer to the question of whether physical properties of nano structures are similar to or different from those of conventional structures. We studied nanometer constructions with tiny fibers that looked like spider's webs." When the diameter is very small, the molecules don't have the ability to freely locate themselves within the fiber, so their movement is limited and they are forced to create sturdier structures." The researchers, who worked with Dr. Arcady Arinstein and Ph.D. student Michael Burman, believe they will be able to create nanometer structures with excellent mechanical properties using less material. The applications have much potential as light flak jackets or very strong string. **'LIGHT' SUBJECTS ARE HOT** "Hot" research topics including inorganic LEDs, micro new solid-state laser materials, fiber lasers, spectroscopy and luminescence phenomena, nano-materials and the use of laser spectroscopy for homeland security were discussed at the recent Binational Israeli-French Workshop outside Jerusalem. Called "Advances in Optical and Laser Materials: Crystals, Amorphous Materials Photonic Crystals and Nano-Particles," it was held at the Ma'aleh Hachamisha Hotel. Novel approaches to non-linear optical materials and beam-shaping technologies were presented to participants from Israel, France and a few other countries. Several mutual research projects were formed between the participants. The workshop attracted many leading Israeli scientists from major Israeli universities, students, researchers from national labs, researchers from leading industries, as well as scientists from France, Poland and Romania. The workshop was chaired by Dr. Yehoshua Kalisky of Beersheba, Prof. Renata Reisfeld of The Hebrew University of Jerusalem and Prof. Georges Boulon (University of Lyon in France), and supported by both governments. **MORE WOOF, LESS MEOW** A lost dog is more likely to be reunited with its owner than a lost cat, according to two new studies. In one city in southwestern Ohio, researchers found that 71 percent of lost dogs were found, compared to only 53% of lost cats. More than a third of the recovered dogs were found by a call or visit to an animal shelter. More than one in four dogs were found because the animal wore a dog license or identification tag. "The animal control system is a key component in the recovery of lost dogs, but owners have to be vigilant about calling and visiting these agencies," said Linda Lord, an assistant professor of veterinary preventive medicine. "Some form of visual identification is also critical to the recovery of a pet." Although Ohio law requires that dogs be licensed, just 41% of the lost dogs in the study wore a license at the time of their disappearance. Less than half had an identification tag or microchip. Microchips implanted under the skin provide permanent identification of a pet. Cat owners aren't required to identify their pet, and only 19% of lost cats had a tag or microchip at the time they were lost. More than half of the cats returned on their own, but less than one in 10 dogs did. The results of the two studies appear in a recent issue of the *Journal of the American Veterinary Medical Association*. More than one in three owners found their lost dogs at a shelter. Just seven percent of cat owners who recovered their pet found it at a shelter. One of the best ways to locate a pet may be to post a sign in the neighborhood, the study showed. Posted signs resulted in the

return of 15% of recovered dogs and 11% of found cats. **MOOORGANIC COW** The University of New Hampshire's research dairy farm has proudly announced the birth of its first organic female calf. The Jersey heifer, born on December 12, is the first-born to its Jersey cow mother May. "She's a beautiful, healthy calf, and May handled the birth like a pro," said "Uncle" Charles Schwab, professor of animal and nutritional science at UNH. "We're anticipating a busy month ahead, as 46 cows in the herd give birth and begin producing organic milk." The calf will be named by the highest bidder on an auction on eBay, with proceeds from the auction funding the UNH organic dairy project (Item number 160063587039 or <http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=160063587039>). A registry for baby gifts for the new heifer will be established online at [www.organicdairy.unh.edu](http://www.organicdairy.unh.edu). In lieu of diapers and strollers, the cows request contributions toward farm equipment and facilities for their calves. A maternity barn has been renovated, and a farm equipment building has been constructed. Planning and fundraising are in progress for a state-of-the-art milking parlor and educational center, and UNH is already shipping organic milk to the American public.



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