



# TECHNO

THE BIG IDEAS THAT  
ARE CHANGING EVERYTHING

# TRENDS

## SOLVING THE REAL PROBLEM

BY DANIEL BURRUS, CEO OF BURRUS RESEARCH



As we all painfully know, the media is filled with stories about whether the government should spend billions of dollars to bail the big three automakers out of their financial problems.

The problem for GM, Chrysler and soon Ford, is that they are running out of money and may be forced into bankruptcy. The problem for the U.S. economy and our government is that if we don't spend billions to bailout the automakers, millions of autoworkers, not to mention car dealers and auto parts suppliers, will lose their jobs. This will cause more unemployment, less tax revenue to our troubled states, more foreclosures, and the list goes on.

Unfortunately, the proposed bailout does not address the real problem!

This billion-dollar bailout solution does not solve the real problem! The real problem is people are not buying cars. If people were buying cars, the automakers would have the money they need to continue operating. Giving billions of dollars to the automakers will not dramatically increase car sales. They will still have to close plants and layoff millions of workers because their cars are not selling.

Why have car sales for the big three declined so dramatically? After all, other manufacturers (such as Toyota) have not *continued on page 2*

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- 3D Snapshots
- Global Mobile Internet
- Laser "Breathalyzer"
- Unicycling Robot
- Brightest Light On Earth
- Pocket Projector
- Bio-Plaster Bandage
- Organic Solar Panels
- Saltwater Plants
- Fuel Efficiency Made Simple
- Finger Vein I.D.
- Tricky Nano-Particles

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## SOLVING THE REAL PROBLEM *(continued from page 1)*

asked for a bailout; they have been hiring and planning to open new plants.

For 2007 and the majority of 2008, the answer to poor automobile sales was high fuel costs and a lack of fuel-efficient vehicles to choose from. As the credit crisis hit and the word recession entered the news, declining fuel costs were not enough to bring buyers back to the big three. And for people who want a new car, getting a loan is now a major barrier for all automakers. Giving the big three money will not solve the credit crisis, it won't make loans easier to get, it won't give them economical, fuel-efficient cars to sell for quite some time, and it will not make people feel the economy has improved. If the government does feel it is important to save the millions of jobs the auto industry represents, we should ask ourselves: What would it take to increase car sales?

One answer is for the government to provide a \$5,000 to \$10,000 subsidy, depending on the price of the car, to anyone wanting to buy a new car. This would cost less than the \$25+ Billion rescue plan, stimulate car sales, keep autoworkers in their jobs, stop plants from closing, provide needed revenue to the manufacturers, increase confidence in lending money to the manufacturers, and keep the car dealers and parts suppliers employed. In addition, this would make car loans smaller and easier to obtain. Another answer is to require banks receiving Federal bail out money to use a portion of that money to make loans for qualified buyers. We already know giving banks billions of dollars with no requirements will not ease the credit crisis.

These are just a few ideas. The key is to make sure we solve the real problem.

### **TECHNOLOGY NEWS HIGHLIGHTS**

#### 3D SNAPSHOTS

Microsoft Live Labs recently introduced Photosynth, an application that turns a series of ordinary photos into a 3-dimensional viewing experience. For example, you can create a 3D room by spinning around and taking overlapping pictures to create a panorama. Or you can synthesize a 3D object by photographing it as you walk around it. The program then analyzes the shots and pieces them together to generate high-resolution graphics that you navigate like a video game. Best of all, Photosynth is accessible for free by visiting their Web site.

*For information: Microsoft Live Labs; Web site: [www.photosynth.net](http://www.photosynth.net)*

#### GLOBAL MOBILE INTERNET

Until now, if you wanted to buy a laptop with built-in mobile broadband, it had to be hardwired for a single service provider. But a new chip that recently debuted in HP notebooks unites 3G wireless technologies to support multiple carriers. Called Gobi, the new embedded solution goes beyond WiFi, so there's no more need to search for hot spots when you're traveling with your computer. And it encodes network standards in software as opposed to hardware, so you can upgrade or switch carriers with a simple download.

*For information: Qualcomm, 5775 Morehouse Dr., San Diego, CA 92121; phone: 858-587-1121; fax: 858-658-2100; Web site: [www.qualcomm.com](http://www.qualcomm.com) or [www.gobianywhere.com](http://www.gobianywhere.com)*

#### LASER "BREATHALYZER"

A new device is being developed that uses lasers to diagnose a variety of diseases by analyzing a person's breath. The air we exhale normally contains a mixture of thousands of compounds in trace amounts, but excess levels may signal an imbalance in the body. For instance, high levels of methylamine could indicate kidney disease; ammonia may be a sign of renal failure; abnormally high levels of acetone can be a warning sign of diabetes; and nitric oxide in the breath could suggest asthma. The device uses an optical frequency "comb", each "tooth" of which is tuned to the distinct frequency of a particular molecule. When a breath sample is exposed to the laser, these compounds absorb specific frequencies of light which can be measured. A computer then analyzes the results and compares them to a library of "chemical fingerprints," which indicate the presence or absence of certain diseases. The technology is fast, reliable and low-cost,

making it ideal for screening large numbers of patients.

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## UNICYCLING ROBOT

A new robot, called Murata Girl, was unveiled last month that is capable of maintaining its balance on a unicycle. The 50 cm tall humanoid can cycle backward and forward, detect objects in its path using an ultrasonic sensor, transmit live motion video, and receive commands or send data via Bluetooth®. The developer plans to showcase the robot at exhibitions throughout Japan and the world in hopes of cultivating an increased interest in science among students.

*For information: Murata Manufacturing Co., Ltd., 10-1, Higashikotari 1-chome, Nagaokakyo-shi, Kyoto 617-8555, Japan; Web site: [www.murata.com](http://www.murata.com)*

## BRIGHTEST LIGHT ON EARTH

The High Intensity Laser Science Group at the University of Texas recently demonstrated the world's most powerful laser with an output of 1.1 petawatts (a petawatt is equal to a quadrillion watts - that's 1 followed by 15 zeroes). Although the pulse only lasts one-tenth of one-trillionth of a second, it's brighter than the light on the surface of the sun and puts out more than 2,000 times as much power as all of the power plants in the U.S. combined. The discovery will allow scientists to create astronomical phenomena, such as supernovas and stars, in miniature so they can be studied in a lab. The technology may also someday be used to spark a fusion reactor.

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## POCKET PROJECTOR

Portable gadgets, such as cell phones and MP3 players, can only get so small before their screens become unusable. But a new product from 3M makes it possible to separate the display from the device and project images or video in formats up to 50-inch diagonal virtually anywhere. The MPro110 uses a series of rounded prisms to direct light onto an imaging chip. The one-watt LED light source minimizes power consumption and provides up to 10,000 hours of operation, while a special lens concentrates the light beam to optimize brightness. The mini-projector connects to video cell phones, digital media players, digital cameras, camcorders or computers. At only 4.5 inches long, 2 inches wide and .9 inches high, it fits easily in the palm of your hand, and its built-in rechargeable lithium ion battery will power the unit for up to 60 minutes. The device sells for only \$360.

*For information: 3M Corporation, 3M Center, St. Paul, MN 55144; phone: 888-364-3577; Web site: [www.3m.com](http://www.3m.com)*

## BIO-PLASTER BANDAGE

Researchers in Japan have developed a new way to regenerate skin that has been damaged due to burns or diabetic ulcers. The concept relies on the fact that human skin cells secrete a variety of compounds, which aid in their own growth. The product is a kind of biological plaster made from cultured skin cells. It can be grown in sheets, freeze-dried and stored at room temperature until needed. Then the sheets are bathed in saline and attached to the wound using a tape adhesive to promote healing.

*For information: Two Cells Co., Ltd., 4-5-17-501 Danbara, Minami-ku, Hiroshima 732-0811, Japan; Web site: [www.twocells.com/English/home/e\\_home.htm](http://www.twocells.com/English/home/e_home.htm)*

## ORGANIC SOLAR PANELS

A breakthrough in photovoltaic design may soon make solar more competitive with traditional methods of generating electricity. Unlike many of the large-scale solar systems in use today, which are expensive to produce and require cooling systems to keep them from overheating, the new design uses ordinary glass panels and converts light more efficiently so that they generate less heat. Thin films of organic dyes are applied to the surface of the glass, where they absorb sunlight and re-

emit it at varying wavelengths to solar cells positioned around the edges of the panes. The panes can be stacked to optimize the power output and minimize size. Plus, they can gather light energy without needing to track the sun's movements, and still improve efficiency by up to 50 percent. The next step will be to increase the stability of the dyes so that the product can be commercialized with a minimum 20-year guarantee. If all goes as planned, it could be available in as little as three years.

*For information: Marc Baldo, Massachusetts Institute of Technology, 77 Massachusetts Avenue, Cambridge, MA 02139; phone: 617-452-5132; email: baldo@mit.edu; Web site: <http://softsemi.mit.edu/>*

## SALTWATER PLANTS

Using a species of mangrove plant as a model, scientists have identified a set of four genes that are instrumental in helping plants to survive in salty conditions. They believe that the genes work by changing osmotic pressure and water content inside the cells of the plant to protect them from high salinity environments. In experiments, a plant called *Arabidopsis thaliana* was genetically modified with one of the genes. When grown in a solution equivalent to about one-third the salinity of seawater, the plants grew and thrived. Further experiments will aim to identify different combinations of the genes that can be used to develop crops that could survive in conditions as salty as seawater.

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## FUEL EFFICIENCY MADE SIMPLE

A team of researchers has come up with a simple way to increase the fuel efficiency of gasoline or diesel powered vehicles. The \$200 device, which consists of an electrically charged tube, is attached to the fuel line near the fuel-injection system. Using power from the vehicle's battery, it creates an electric field that reduces the viscosity of the fuel so that smaller droplets are created. The smaller particles burn more completely when injected into the engine. The device can increase efficiency by up to 19 percent.

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## FINGER VEIN I.D.

Within the coming year, shoppers in Japan may be able to make credit card purchases without plastic cards, using a biometric system of vein patterns in the finger. Although similar devices have been used in financial institutions, this will be the first system of its kind to be launched for retail markets. Hitachi has been using the system in its factory cafeteria for about three months and has plans to conduct a wider-scale test in conjunction with a major credit card company before releasing it for general distribution in 2009. The readers are expected to retail for less than \$350.

*For information: Hitachi Ltd., 6-6, Marunouchi 1-chome, Chiyoda-ku, Tokyo 100-8280, Japan; phone: +81-3-3258-1111; Web site: [www.hitachi.com](http://www.hitachi.com)*

## TRICKY NANO-PARTICLES

A new development in nanotechnology could lead to improved drug delivery by creating new ways for particles to enter cells. By placing hydrophilic (water-loving) molecules and hydrophobic (water-repelling) molecules together on a metallic nanosized sphere, researchers at MIT noticed that the molecules organized themselves into alternating stripes, similar to latitude lines on a globe. This arrangement gives them a special property, allowing them to "trick" the security system that would normally cause a cell to reject a foreign body when it enters. Although the mechanism is not totally understood, it may provide a more effective way to deliver drugs directly into targeted cells.

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