

Indian American's Bloom Box Churns Out Power From Sand

Washington: (IANS) An India-born rocket scientist has lifted the veil off Bloom Box fuel-cell, a revolutionary new technology that holds the promise to supply the world with abundant clean, cheap energy.

"The core of our technology is simply sand," said K.R. Sridhar, 49, founder of the Silicon Valley clean tech start-up Bloom Energy at Wednesday's unveiling of his invention in San Jose, California on the campus of eBay, one of Bloom's first customers.

The sand is the raw material used to make wafers that can make electricity. Sridhar has persuaded some big names that by making them out of sand he can make fuel cells that are efficient and inexpensive.

Whereas other fuel cells contain polymers and platinum that make them prohibitively expensive, Sridhar said Bloom's consist of specially coated ceramic squares made from a common sand-like substance.

Bloom's fuel cell works like this: Oxygen is pumped in on one side and natural gas on the other. The two combine inside the cell to create a chemical reaction that produces electricity. No burning, no combustion, no power lines from outside, as CBS puts it.



"The proof of the pudding is the reaction from the business people," said former US Secretary of State Colin Powell, who joined Bloom's board last year, said at Wednesday's event that also included an appearance by California Governor Arnold Schwarzenegger.

"Will it work for 10 or 20 years without something going wrong? We'll find out," he added.

Bloom Energy says the best proof that its fuel cells work is in the ones already working like those at eBay's headquarters.

A half-dozen big companies have already bought Bloom Boxes at a cost of \$700,000 to \$800,000. But Sridhar's goal is

a \$3,000 box that anybody can use to power their home though he says home use is 10 years away.

"Don't start signing up for orders yet," said Sridhar. "This is a product of the future."

"We believe that we can have the same kind of impact on energy that the mobile phone had on communications. Just as cell phones circumvented landlines to proliferate telephony, Bloom Energy will enable the adoption of distributed power as a smarter, localised energy source," Sridhar said.

It will allow customers, he said, to "lower their energy costs, reduce their carbon footprint, improve their energy security".

'Malicious Software Can Invade Smart Phones'

Washington: (IANS) Malicious software can now invade new generations of smart mobile phones, potentially with more serious consequences, says an Indian American computer scientist.

"Smart phones are essentially becoming regular computers," said Vinod Ganapathy, assistant professor of computer science at the Rutgers University School of Arts and Sciences.

Ganapathy, who did his B.Tech. in Computer Science and Engineering from IIT Bombay in 2001, said: "They run the same class of operating systems as desktop and laptop computers, so they are just as vulnerable to attack by malicious software, or malware."

Researchers, led by Ganapathy and Liviu Iftode, Rutgers' professor, demonstrated how such a software attack could cause a smart phone to eavesdrop on a meeting, track its owner's travels, or rapidly drain its battery to render the phone useless.

These actions could happen without the owner being aware of what happened or what caused them. Smart phones are cellular phones that also offer Internet accessibility, SMS and e-mail capabilities and a variety of programmes commonly called "apps" or applications.

Ganapathy and Iftode worked with three students to study a nefarious type of malware known as "rootkits". Unlike viruses, rootkits

attack the heart of a computer's software - its operating system.

They can only be detected from outside a corrupted operating system with a specialised tool known as a virtual machine monitor, which can examine every system operation and data structure.

Virtual machine monitors exist for desktop computers, but in current form, they demand more processing resources and energy than a portable phone can support.

Rootkit attacks on smart phones or upcoming tablet computers could be more devastating because smart phone owners tend to carry their phones with them all the time.

This creates opportunities for potential attackers to eavesdrop, extract personal information from phone directories, or just pinpoint a user's whereabouts by querying the phone's Global Positioning System (GPS) receiver.

Smart phones also have new ways for malware to enter the system, such as through a Bluetooth radio channel or via text message, says a Rutgers' release.

"What we're doing today is raising a warning flag," Iftode said. "We're showing that people with general computer proficiency can create rootkit malware for smart phones. The next step is to work on defences."



'Milk Drops' Under The Tongue Can Treat Milk Allergies



Washington: (IANS) Is your child allergic to milk? Here's a simple but effective way to cure it. Just put a few drops of milk protein under the tongue and it will help the child overcome the problem.

The approach, known as SLIT (sublingual immune therapy), involves giving children small but increasingly higher doses of the food they are allergic to until their immune systems learn to tolerate the food without triggering allergic reactions or symptoms.

Previous research from Hopkins Children's Centre showed that a similar approach known as oral immunotherapy (consuming milk directly) can successfully treat children with milk allergies.

The current study suggests that both approaches could be effective in treating milk allergies in most patients, authors say, but that oral immunotherapy appears to be slightly more effective than SLIT. While both approaches work by exposing the patient to progressively higher doses of the allergenic food, SLIT is done with lower doses — and therefore with lower risk for a severe allergic reaction.

Researchers caution that both therapies can lead to violent allergic reactions in some patients and should be always done under a doctor's supervision.

"We are very excited to see that both approaches can achieve significant improvement in children with milk allergies...", says lead investigator Robert Wood, director of Allergy and Immunology at Hopkins Children's.

Husbands' Hostility Worsens Depression



Washington: (IANS) Husbands' hostile and anti-social behavior exacerbates symptoms of depression among their wives, says new research. Nearly 10 percent of the US population suffers from a depressive disorder, according to the National Institute of Mental Health.

Christine Proulx, professor at Michigan University (MU), who led the study, attributes some of it to marital hostility.

"In the study, husbands' marital hostility was significantly related to increases in wives' symptoms of depression," said Proulx.

"The more hostile and anti-social behaviour exhibited by husbands, the more depressed their wives were after three years," added Proulx.

These findings suggest that husbands' treatment of their wives significantly impacts their psychological well-being and that hostile behavior has a lasting effect on couples that continues throughout their marriages.

In contrast, warm, positive behavior from husbands lessened the negative impact of their hostile behavior. Anti-social behaviors are those that are self-centred, defiant or show a lack of constraint; hostile behaviors are those that are angry, critical or rejecting.

Oat Extract Likely To Boost Brain Power



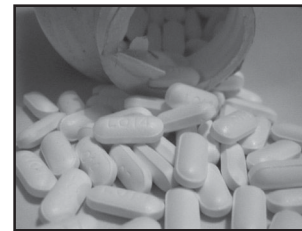
Sydney: (IANS) An oat extract could boost your brain power and maintain it even unto old age, says a new study. Researchers at the University of South Australia (USA) Nutritional Physiology Research Centre are investigating whether an oat extract can improve mental health in older adults.

Peter Howe, USA research professor, said while the physical health benefits of oats were well known, there was growing interest in how oats could improve mental health.

"With the proportion of ageing population set to increase over the next several decades, mental disability through age-related cognitive decline looms as a major public health problem with enormous economic and social impact," he said.

"Oats and oat extracts have long been recognised for their health properties. Green oat preparations have been used to combat fatigue, irritable mood and poor concentration for hundreds of years," added Bryan. "Wild green oats contain certain bioactive nutrients which may assist in improving blood flow in the brain, which in turn may help with attention and concentration," Bryan said.

Magnesium Can Stave Off Memory Loss



Washington: (IANS) Magnesium, a key nutrient for a good memory, may be even more critical than previously thought for the development of neurons (nerve cell) of children and healthy brain cells in adults, says a new study.

Begun at MIT, the research by Inna Slutsky of Tel Aviv University's (TAU) Sackler School of Medicine evolved to become a multi-centre experiment focused on a new magnesium supplement, magnesium-L-threonate (MgT) that effectively crosses the blood-brain barrier to inhibit calcium flux in brain neurons. The new study found that the synthetic magnesium compound works on both young and ageing animals to enhance memory or prevent its impairment.