

Tech Updates

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1. Detecting Uranium with a Pocket Kit

Chemists in the USA have made a device capable of detecting tiny amount of soluble uranium, which can be toxic inspite of the amount. It can spot very low-level contamination and also pick out uranium from the other heavy metals that look like it in solution : such as zinc, lead and cadmium. The device is mainly shaped as a pocket kit for instant on-site analyses.

2. Can Plastic conduct electricity ?

Plastic is known as a good insulator till today. But recently a group of three physicists in their Nobel Prize winning research proved that plastic can, with modifications be made to conduct electricity as well as insulate. The research says that a thin film of polyacetylene could be oxidised with iodine vapour, increasing its electrical conductivity a billion times.

3. Behind the dreams

A recent research, led by Dr. Robert Stickgold, a psychiatrist at Harvard Medical School in Boston, Shows that when the brain is filling away the memories it needs to keep, it has to go through a series of steps, and dreaming is a manifestation of one crucial step. Dreams are just the body's way of clearing out the mental "in-box", Stickgold said. "The trick is to move it to the file cabinet and to file it in the right place", he added.

4. Tutankhamun's DNA to solve the mystery

One of the most famous centuries old mysteries of world around whether one of Egypt's kings Tutankhamun had truly pharonic blood is expected to be resolved recently as the experts are going to organise the DNA tests on two mummies - one of Tutankhamun's and the other of another pharaoh. This experiment should resolve the

question as to whether the boy king known as "Tut" really was of royal stock and divulge more about his family background.

5. Gene Therapy for the cure of cancer

Researchers at cell therapeutics in seattle have discovered a gene linked to several cancers in humans including breast, lung, prostate, and ovarian. The company hopes to develop drugs to block the gene, called LPAAT-B in cancer patients who test positive for it. The researchers found that the gene is linked to the function of another gene called the Ras oncogene — which has been the subject of many cancer studies.

Good-bye, Graham Bell

Amidst the cacophony of internet revolution & entrepreneurship, the modern IP telephony stands erect involving use of Internet to transmit real time audio from one PC to another or a telephone. The technology involves digitisation of speech & splitting it into data packets that are transmitted over the Net. IP telephony involves three elements clients, servers and gateways. The client can be a suite of software. The receiving decoding & playing of inbound voice information can be done through speakers or headphones. IP telephony helps individuals save long distance costs. PSTN calls are charged by distance & duration, whereas there are only flat rates on the Net irrespective of destination or duration. With even VSNL finally seeing reason & given the world wide trend, it looks like the moment has come to pen an epitaph for Graham Bell's ubiquitous invention the black telephone.

Talking boots

Trevor Baylis & John Grantham are trekking 1000

miles across African desert to raise money for an anti-landmine charity. While Baylis is wearing a pair of experimental boots with soles made from piezoelectric material, which generates high voltages of electricity when it is compressed. Grantham is wearing one with a tiny dynamo built into the heel. Piezoelectric boots generate electrical charges under mechanical load which is sufficient to charge a cellphone battery. Baylis has launched the electric shoe company to bring power-generating footwear to the market.

Ocular Silicon Implants

Fading eyesight? Don't despair, the ubiquitous silicon microchip holds promise. Illinois scientists have implanted silicon microchips beneath human retina. Three patients who lost almost all their vision from retinitis pigmentosa—a hereditary condition in which retina gradually degenerates had an artificial silicon retina. The chip contains about 3500 microscopic solar cells that convert light into electrical impulses. It works by replacing damaged photoreceptors, the light-sensing cells of the eyes. Those cells convert light into electrical signals within the retina. The implants require no batteries or wires. The chip will not however help people with blindness caused by glaucoma or diabetes.

Paper Power

Japanese newspaper Yomiuri Shimbun, has come out with an innovative scheme of distributing software behind its newsprint. The software ranging from snippets of music today to a popular

chess program tomorrow, is encrypted as a binary code of tiny black dots in a light, uneven pattern using Intacta technology. Any scanner capable of reading at least 300 dpi can capture an Intacta-encoded file which can then be returned to its original state with the eye.

Vision of the future

Bulky displays & eye strain are commonly associated with computing, but that could soon be the thing of the past. Companies have begun addressing this need with what are called microdisplays. Among the three major technologies popular today, the most promising one — LCOS or Liquid Crystal on silicon works by switching liquid-crystal material from transparent to opaque & back by altering the voltage applied to it. In many ways LCOS is a magnified LCD. However there are problems to be solved before these products can be picked up off the shelf such as unwanted magnification of screen defects.

Network your PDA

Radio frequency communication devices are used in applications varying from TV remote to automatic car keys. Its latest use might include Bluetooth enabled PDAs. Bluetooth is a medium bandwidth short range wireless format that can link PDAs & other electronic devices to a PC or network, allowing users to move information easily between their main computer & their portable systems. The technology behind this is a two way RF device that integrates transmit & receive functions onto a single chip.