



TECHNOLOGY WORTH WATCHING

Recovery program

When computers crash, they need to be rebooted to regain access to all the software, from internet browsers to e-mail systems and word processors, that is held on them. However, new technology from Phoenix, which manufactures personal computer Bios systems, could make it possible to continue using the web and other functions on Windows machines even when the operating system has crashed.

Computer enthusiasts of old were familiar with the PC Bios but most of today's users catch only a glimpse of the Bios on start-up. It stands for basic input output system and it determines what a computer can do without accessing software from a disc. It holds all the code necessary to control the keyboard, display screen, disc drives and other basic functions. For instance, it is the Bios that allows a computer to reboot using the "control-alt-delete" command.

Phoenix's new product, cME, extends the Bios so that when the operating system fails, some functions remain intact. This also means that users can gain access to "instant-on" applications such as e-mail, calendar and web browsing, without waiting for Windows to start up.

It may also make life easier for information technology departments, as engineers will be able to contact and reactivate computers remotely through the Bios, even when the operating system has gone down. Some personal computer manufacturers are considering using the technology to add a "panic button" to their machines that would allow users to call up a list of the available facilities in the event of a system crash.

The new Bios will also assume responsibility from the operating system for running functions such as anti-virus software and

back-up, so users can recover data after a crash.

The technology will be used in PCs and on other consumer electronic devices, such as the Sony PlayStation, digital TV set-top boxes and bank ATMs.

Phoenix Technologies, California, US; tel: +1 408 570 1000; www.phoenix.com

Robots gain a sense of touch

Artificial skin that could be used in robots has come a step closer, thanks to advances made in the US.

If robots are to assist people in dangerous or delicate situations, such as military reconnaissance, microsurgery or planetary probes, they will need sensory abilities comparable to those of human beings. They will need to be able to interpret the feel of objects in order to carry out delicate manoeuvres. But providing artificial devices with that essential sense of touch has proved difficult. The harsh environment such robots would need to operate in has inhibited the development of the necessary sensors.

The work of scientists at the University of Illinois in the US, published this week in the UK's *Institute of Physics Journal of Micromechanics and Microengineering*, may be the solution. The scientists have developed a novel way to build a polymer "skin" containing embedded metal wire and sensors on to a specially treated surface mould.

Using this artificial skin, the researchers were able to make the device grip objects and to generate an image of the object being gripped. If used in robots, this would allow the robot to apply a delicate grip, recognise shapes and detect slippage. The sensors are robust enough to be used in contact with everyday objects and contaminants.

University of Illinois, Urbana, Champaign; tel: +1 217 265 0808; www.uiuc.edu

Radiation remedy

Researchers trying to work out how our bodies would respond to radiation exposure in a nuclear attack have made a breakthrough with the discovery of a molecule that protects cells from radiation.

A protein molecule known as MDC1 seems to play a vital role in helping cells to detect and repair radiation damage, by patching up mutated genes and killing cells that have suffered irreparable damage. When the molecule was knocked out, cells lost their ability to respond to radiation.

The discovery, described in today's edition of the journal *Nature*, suggests that further work may show how the effects of radiation may be curtailed following a nuclear attack, according to scientists involved in the research.

Wellcome Trust/Cancer Research UK Institute, London, UK; tel: +44 020 7242 0200; www.cancerresearchuk.org

Going with the current

A new fuel-efficient car developed in the UK uses both a conventional petrol engine and electric batteries.

The design has been optimised for urban journeys, where typically nine out of 10 journeys are of less than 50 miles. As 50 miles represents the maximum range of a fully charged battery, most journeys will be completed without the petrol engine.

The design allows drivers to undertake longer journeys, though, as the petrol engine simply cuts in automatically when required.

The car is now being displayed at exhibitions. *University of Southampton, Southampton, UK; tel: +44 (0)23 8059 5000; www.soton.ac.uk*

Fiona Harvey

fiona.harvey@ft.com