

## Sniffer dog wheeled out

Robot dogs on wheels could soon be replacing sniffer dogs in dangerous situations. An artificial dog that will have the capabilities of a real dog in sniffing out odours is under development in Europe.

The dog is part of the Nose project, which stands for Neuromimetic Olfactory SEnsing, under way at Sheffield Hallam University in the UK and funded by the French National Institute for Research in Computer Science and Automatic Control. It will be able to identify gas leaks, explosives and drugs in environments where it would be dangerous to send real dogs, will have wheels rather than legs and will have some visual capabilities, enabling it to be controlled by a remote operator.

The dog's smelling capabilities will be based on the complex system of nerves found in mammal noses.

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## Laser pulses track electrons

Freezing atoms in mid-reaction would allow chemists to see electrons as

they join and leave molecules – and allow a closer view of chemical processes than has ever been possible. A group of researchers at the Technical University of Vienna in Austria has achieved something approaching that.

Reporting on their work in today's edition of the scientific journal *Nature*, the researchers describe shining ultra-short laser pulses on to a cloud of krypton gas. The time delay between pulses can be controlled with extraordinary accuracy, giving a series of pictures that monitor electrons being ejected from the gas.

The pulses last for 650 attoseconds. An attosecond is to a second what a second is to 32 billion years. *Technical University of Vienna, Austria;*  
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## Birth of the nano-onion

Chemists have been able to make carbon nanotubes and balls in the laboratory for some years but the process requires expensive systems and is difficult to get right. A group of researchers at the University of Cambridge has found a new way to produce a special type of carbon ball, which they have dubbed a "nano-onion".

The researchers, who