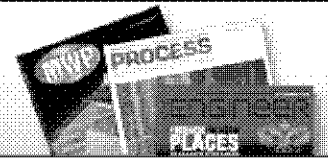


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The Engineer Online

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Bomb detector

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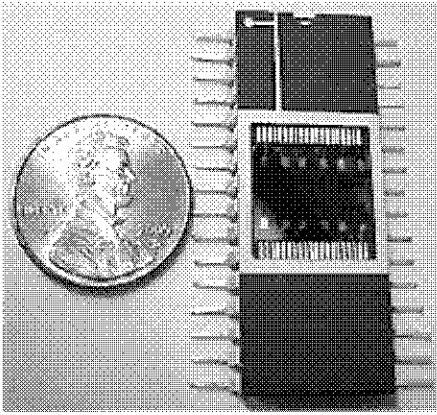
A team of chemists and physicists at the University of California, San Diego has developed a tiny, inexpensive sensor capable of detecting hydrogen peroxide, a chemical used in the most common form of homemade explosives, in the parts-per-billion range

In addition to detecting explosives, UC San Diego scientists say the sensor could have widespread applications in improving the health of industrial workers by providing a new tool to inexpensively monitor the toxic hydrogen peroxide vapours from bleached pulp and other products to which factory workers are exposed.

'The detection capability of the sensor is comparable to current instruments, which are large, bulky and cost thousands of dollars each,' said William Trogler, a professor of chemistry and biochemistry at UCSD and one of its inventors. 'If this device were mass produced, it's not inconceivable that it could be made for less than a dollar.'

The device was invented by a team led by Trogler, Andrew Kummel, a professor of chemistry and biochemistry, and Ivan Schuller, a professor of physics. Much of the work was done by UCSD chemistry and physics graduate students Forest Bohrer, Corneliu Colesniuc and Jeongwon Park.

The sensor is composed of thin films of both cobalt phthalocyanine and copper phthalocyanine. In the presence of tiny amounts of hydrogen peroxide, the conductivity of the films changes and the device produces a unique signature.



The university has applied for a patent on the invention, which has not yet been licensed. Funding for the research was provided by the US Air Force Office of Scientific Research.

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