

## The E-Nose Knows

An electronic nose developed for the food industry could save the lives of thousands of people by providing early warning of their diseases, as well as making pollution monitoring both more efficient and less arduous.

Work on the E-Nose began with the aim of monitoring food manufacturing, ensuring that food was fresh before it was sent for sale, as well as checking that substances did not go off before their stated shelf lives.

Experiments are also about to start to see whether the E-Nose can detect illnesses in sheep by analysing the smells they give off.

A further application is the detection of noxious gases from sewage farms. The E-Nose allows sewage works and abattoirs to assess air quality before it reaches a level that would trouble the Environment Protection Authority.

In order to be of use in this area, scientists at the universities of NSW and Sydney had to overcome the

problem of sensor overload. They did this by using metal oxide detectors like the first electronic odour detection systems. Unlike newer sensors, these can be run at a high temperature. This enables them to burn off molecules once they have been recorded, so the system does not have to stop for regular cleaning.

However, potentially the most significant application of the E-Nose lies in early detection of human illnesses. "In the 19th century medical practitioners used their own noses to tell what was wrong with patients," says Dr Graham Bell, Director of E-Nose research. "Liver diseases made the patient smell fetid, while diabetes gave off an acetone smell."

Currently most lung cancer patients are detected too late for successful treatment, but Bell believes that E-Noses may be able to provide early warning signs of damage to the lungs, potentially saving thousands of lives per year.

To Bell's disappointment, however,



Electronic noses may not look life-like, but they are proving useful across a range of industries.

it has proved very difficult to gain backing for work on lung cancer, with "only a small amount of feasibility study funding" secured so far. Bell notes that 8000 Australians die each year from lung cancer, which he describes as "50 Bali's – we should be worried".

## CSIRO Blunders on Name Change

CSIRO Forestry and Forest Products was subsumed last month in a joint venture with SCION Group of New Zealand, the new trading name of the New Zealand Forest Research Institute Ltd (FRI). The FRI was one of nine Crown Research Institutes that the New Zealand government established in the early 1990s as wholly owned commercial companies that are directed to make profits.

According to a CSIRO document obtained by *Australasian Science*, the name of the new venture, ensis, was chosen "because of the imagery of leadership, strength, focus and cutting-edge research. ensis is a Latin word for a sword" and was selected after a "long & structured" process as part of "our

branding strategy" even though its Latin meaning bears no relationship to the venture's interests in wood.

The document claims that for "the ensis brand we set out to be distinctive" and "we had to consider competitor names, trademark registration issues [and] URL strategies". Despite this a medical practice management consultancy named "ensis" already exists in Australia, while a simple Google search reveals several outfits overseas named "ensis". There is also inevitable confusion with "Sensis", the large information subsidiary of Telstra.

*Australasian Science* understands that the existing ensis consultancy was not consulted by CSIRO over the use of its name, which is also registered as its

web domain. CSIRO must now know this as the joint venture's website uses the bewildering "ensisjv" as its domain name.

While Mr Larry Little, CSIRO's former Chief of Manufacturing and Infrastructure Technology, was being appointed first Chief Executive of ensis, there have been at least 14 redundancies in CSIRO Forestry, leading to fears among staff about the fate of public good research.

CSIRO's document says ensis is a "50:50 unincorporated joint venture", but CSIRO Chief Executive, Dr Geoff Garrett, told *Australasian Science*: "ensis will become a company in due course" with 50% of shares owned by CSIRO. ensis thus exemplifies the significant shift towards private enterprise and profit-seeking that Garrett has wrought in CSIRO.

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