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## Artificial nose sniffs out colour of odours.

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A new sort of artificial nose can identify the vapours produced by spoilt food, illegal drugs, environmental pollutants, poisonous gases or deadly toxins.

Developed by chemists at the University of Illinois, US, the nose works by detecting colour changes that occur in an array of vapour-sensitive dyes, known as metalloporphyrins -- doughnut-shaped molecules that can bind metal atoms.

The array is created by painting a series of tiny coloured dots -- each of which is a different dye -- on an inert backing, such as paper, plastic or glass. The array is then scanned with an ordinary flatbed scanner or an inexpensive electronic camera before and after being exposed to an odour-producing substance.

'By subtracting the "before" image from the "after" image, it is possible to obtain a colour pattern for the odour,' reports Kenneth Suslick in *Nature* (2000, 406, 710-3). 'By comparing the fingerprints to a library of colour fingerprints, we can quickly identify and quantify the chemical compounds present.'

Suslick says that the nose is 10-100 times more sensitive than the human nose for many compounds. It also differs from similar technologies in that its efficacy is not affected by the presence of water vapour.

He predicts that this technology will be used in the food and perfume industries, as well as at customs checkpoints.

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