

The Electronic Nose
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Presentation 2

The human nose can sense chemical compounds at about 50 parts per million. In 1982, Persaud and Dodd introduced the concept of an electronic nose. The Persaud and Dodd system comprised of an array of essentially non-selective sensors and an appropriate pattern recognition system. The most advanced developments and applications have been by NASA over the last 10 years. NASA has used the E-Nose as a protective measure for astronauts in space to detect excess amounts of chemicals, especially ammonia, in breathing air.



The E-Nose is amazingly versatile, yet it's much more

sensitive than the human nose. Current models can detect an electronic change as low as 1 part per million!



The electronic nose consists of two components an array of chemical sensors (usually gas sensors) and a pattern-recognition algorithm. The sensor array "sniffs" the vapors from a sample by taking samples of the chemical composition and provides a set of measurements and the pattern-recognizer compares the pattern of the measurements to stored patterns for known materials. The E-Nose is useful for numerous tasks concerning sensing the presence of chemicals.

http://science.nasa.gov/headlines/y2004/06oct_enose.htm

<http://www.iit.edu/~jrsteach/enose.html>

<http://cns->

[web.bu.edu/pub/laliden/WWW/Papers/nose.html](http://www.bu.edu/pub/laliden/WWW/Papers/nose.html)

<http://www.nose-network.org/>

<http://www.spacedaily.com/news/future-02a.html>

<http://www.aaai.org/AITopics/html/nose.html>

http://www.inapg.inra.fr/ens_rech/siab/asteq/elba/elenki.nd.htm