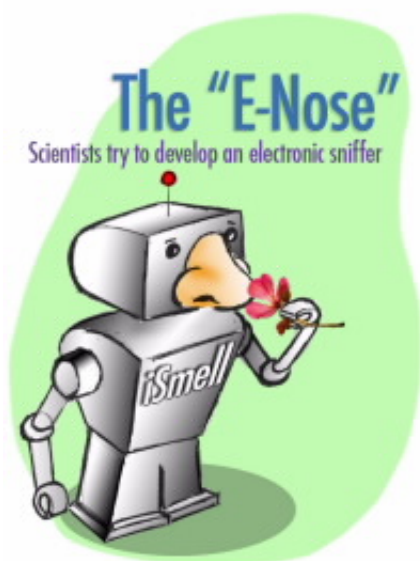


The 'e-Nose': Scientists try to develop an electronic sniffer

November 2 2009



Credit: American Chemical Society

Sniff, sniff, sniff -- Yum! Sniff, sniff, sniff -- Oh, yuck!!! For almost 25 years, chemists and other scientists have tried to build a machine that can do exactly that.

They want an “electronic nose” that can take a whiff of the air, food or other objects and say whether the odor is nasty or nice. Such a machine could work in factories, and help tell whether food is fresh. An [electronic nose](#) also could sniff for harmful [air pollutants](#). And unlike people, it could work 24 hours a day and 7 days a week without getting

tired.

A German scientist named Udo Weimar and his team decided to check up on how much progress has been made toward an e-nose in those 25 years. It is not an easy task - odors are really complicated!

Next time you eat, notice the aroma arising off your plate. That smell is made up of hundreds or thousands of chemicals that float through the air and into your nose. For example, it takes more than 1,000 chemicals to make up the rich, deep aroma of coffee. Those chemicals land on millions of special cells in your nose. Those cells have the amazing ability to change the chemicals into nerve signals. They send a message to the brain, which figures out whether your food smells fantastic - or funky.

Dr. Weimar found that electronic noses are pretty good at detecting a few odors, including some that people cannot smell. [Carbon monoxide](#) is an important example. Since humans cannot smell this [poisonous gas](#), electronic noses could warn people before they become ill. E-noses could also help sniff out bombs by detecting certain explosive chemicals.

However, present-day e-noses cannot detect nearly as many important smells as humans, dogs, and other animals. So while today's electronic snouts can't stop and smell the roses like we do, they may help keep us safer.

This fragrant study appeared in ACS' *Chemical Reviews*, a monthly scientific journal.

More information: Listen to the audio version of this story on ACS' Bytesize Science, an educational, entertaining podcast for young listeners. [Click here to listen to Bytesize Science in iTunes.](#)

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