

Tokyo smelling-screen demo lets scents go virtual

March 31 2013, by Nancy Owano



Smelling Screen: Presenting a Virtual Odor Source on a LCD Screen

(Phys.org) —"Scent-delivery" technologies continue to interest marketers, who are always looking for ideas on how to deliver an enhanced shopper experience. Scent stimulation related to targeted products is one way to go. Now, a "smelling screen" has been developed by researchers at Tokyo University of Agriculture and Technology

(TUAT) and it makes smells appear to come from the exact spot on any LCD screen that is displaying the image of a food item. A peach or a steaming cup of coffee, for example, would lend the illusion that their respective smells were coming from the images on the screen direct to the viewer. The smelling screen was shown at the IEEE Virtual Reality conference in Orlando, Florida, which ran from March 16 to March 23.

The TUAT [demo](#) was titled, "Smelling Screen: Presenting a Virtual Odor Source on a [LCD Screen](#)," by Haruka Matsukura, Tatsuhiro Yoneda, and Hiroshi Ishida.

"The smelling screen is a new olfactory display that can generate a localized odor distribution on a two-dimensional display screen," they stated. While the user perceives the odor as coming from a specific region of the screen, the position of the virtual odor source can be shifted to an arbitrary position on the screen. In fact, they said, the viewer can freely move his or her head to sniff at various locations on the screen, and can experience "realistic changes in the odor intensity with respect to the sniffing location."

New Scientist's explanation of how the technology works said that odors from vaporizing gel pellets were fed into four air streams, one in each corner of the screen. The streams are blown out by fans, and they can be varied in strength and direction.

Matsukura said a next step in their research will be incorporating a cartridge where smells can be changed easily.

In another undertaking, Hiroshi Ishida, Associate Professor, Division of Advanced Mechanical Systems Engineering, had discussed "Olfactory display that presents a virtual odor source by manipulating airflow," in which he relayed practical applications of smelling-screen research.

Although attempts have been made to promote sales in supermarkets by releasing appetizing smells, he wrote, in most cases the airflows and odors are simply blown from motorized fans. He said the attempt to lure customers toward foods through scent delivery could be more effective through another approach:

"If we can provide users or customers with a sensation that the odor and airflow are coming from the image on the monitor or screen, we can draw their attention with some surprise." Beyond food sales, he said he thought that this device could also be used in museums and art galleries to create unique exhibitions and artwork.

More information: ieeetr.org/2013/program/activities/researchdemos
[www.computer.org/csdl/trans/tg ... g2013040606-abs.html](http://www.computer.org/csdl/trans/tg...g2013040606-abs.html)
[www.tuat.ac.jp/~h-ishida/proje ... lfactorydisplay.html](http://www.tuat.ac.jp/~h-ishida/proje...lfactorydisplay.html)

via [Newscientist](#)

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