

[Chemical & Engineering News](#)

Serving the chemical, life sciences and laboratory worlds

[Science & Technology](#)[Home](#) » [July 13, 2009 Issue](#) » [Science & Technology](#) » [Concentrates](#) » Chemical Taste Bud Reveals Sweet Truth

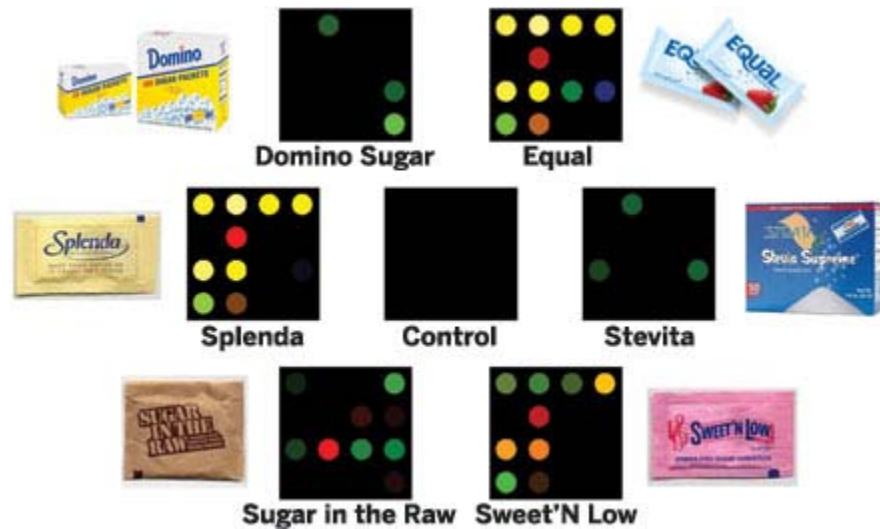
July 13, 2009

Volume 87, Number 28

p. 27

## Chemical Taste Bud Reveals Sweet Truth

### Nanoporous pigments arrayed in a disposable colorimetric sensor can identify different sugar and artificial sweetener products

[Aaron Rowe](#)*Anal. Chem.*

An array of nanoporous pigments can identify different sugars and artificial sweeteners.

Nanoporous pigments laid out in a grid can help researchers identify 14 different sugar and artificial sweetener products, according to Christopher J. Musto, Sung H. Lim, and [Kenneth S. Suslick](#), of the University of Illinois, Urbana-Champaign, who created the disposable colorimetric sensor device (*Anal. Chem.*, DOI: [10.1021/ac901019g](#)). Each sensor contains one of 16 indicator molecules trapped in a nanostructured organically modified silane (ormosil). When a drop of sugar or sweetener solution is placed on the array, some of the indicators change color, and the overall color pattern serves as a fingerprint to identify each sweet substance. "Think of our sensor device as a digital two-dimensional extension of litmus paper," Suslick says. Previously, his team developed sensors that can detect hydrophobic analytes in solution, but sensing hydrophilic compounds proved to be difficult. Embedding the pigments in the ormosil solved that problem by giving each indicator enough contact with the solution to interact with a sweetener but not enough leeway to leech out. The researchers found that their chemical taste bud works well enough to tell whether iced tea is diet or regular. They suggest that it could be used for food quality control or in flavor chemistry.

Chemical &amp; Engineering News

ISSN 0009-2347

Copyright © 2009 American Chemical Society