

UCSD stories at the American Chemical Society National meeting in San Diego, March 13-17

March 13, 1994

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LUMINESCENCE QUENCHING OF POROUS SILICON BY ADSORBED MOLECULAR OXYGEN

Thursday, March 17, Hold for P.M. release, Convention Center Jessica Harper and Michael Sailor

A luminescent silicon chip has been developed by UCSD chemists capable of sensing how much oxygen is present in a gas. Although the results suggest the possibility of using porous silicon in low-cost miniature air quality monitors, the sensors are not yet specific enough for such an application. Using a similar "organic tongue," the chemists led by Michael Sailor already have developed the capability of differentiating alcohol from water, a response that could lead to the development of inexpensive breath analyzers.

QUANTUM CONTROL OF CHEMICAL PROCESSES

Bern Kohler, Jeffrey L. Krause, Ferenc Raksi, Robert M. Whitnell, Kent Wilson, Vladislav V. Yakovlev and YiJing Yan

Tuesday, March 15, Hold for A.M. release, Hyatt Cunningham, Room 8

Rapid pulses of laser light, used by chemists as ultrafast cameras to observe the motion of molecules, are now being adapted by UCSD chemists to control the behavior of molecules. The outcome, or target, might be to break a selected bond in a molecule; to control the nature of the products of a chemical reaction; to initiate a desired motion in a biologically interesting molecule; or even build tiny nanomachines. A digital multimedia show--featuring a mix of words, images, video, computer animation and even music--will highlight the presentation.

ILLUDOFULVENES, A NEW CLASS OF POTENT ANTITUMOR AGENTS

Trevor McMorris, Michael J. Reiner, Wen Wang, Marco A. Diaz, Leita A. Estes, and Raymond Taetle

Sunday, March 13, Hold for A.M. release, Convention Center

A new class of potent anti-tumor agents, derived from a chemical found in the jack 'o lantern mushroom, is being evaluated by a team of UCSD chemists led by Trevor McMorris, in collaboration with Ray Taetle, a researcher at the University of Arizona Cancer Center. The new agents are derived from illuden, an extremely toxic chemical that has shown antitumor activity in laboratory animals. The research team is testing chemical analogs called illudofulvenes that have shown antitumor activity without the toxic side effects of illudens.

FROM THE PREBIOTIC SOUP TO CYANOBACTERIA: IT MAY HAVE TAKEN LESS THAN 10 MILLION YEARS

Antonio Lazcano, Stanley L Miller

Sunday, March 13, Hold for P.M. release, Hyatt Cunningham

Contrary to tradition beliefs that life is so complex that it took many hundreds of millions of years to begin on earth, a new theory suggests the whole process could have taken less than 10 million years. As outlined by Antonio Lazcano of the University of Mexico and Stanley Miller of UCSD, the theory is based roughly on what is known about the geological record of blue-green algae (cyanobacteria), and a mathematical model that considers the rate at which the organism's enzymes evolved.

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(March 13, 1994)