

Silicon Valley Chemist

Santa Clara Valley Section

American Chemical Society

Volume 22 No. 11

Combinatorial Approaches to Catalyst Research

Howard W. Turner Catalyst Research Symyx Technologies, Inc.

Abstract

The chemical industry is rapidly changing. Chemical industries in countries with high labor costs have to focus more and more on knowledge-intensive products while lowering costs. As competition increases, life spans of products shorten and new products need to be brought rapidly to the marketplace. This brings enormous pressure to decrease research and development times and to lower research per product.

This problem was first encountered in the pharmaceutical industry, where long development times and high research costs forced researchers to develop new techniques to dramatically accelerate the research process.

This set of techniques referred to as "combinatorial chemistry" represents a powerful research strategy when applied to problems where a large parameter space controls the properties of a product. In combinato-

rial chemistry, large libraries of structurally or compositionally diverse compounds are rapidly synthesized and processed and then screened for desired characteristics (e.g. activity or selectivity) in high-through fashion.

This lecture will review recent advances in the development and application of combinatorial methods to the discovery and optimization of homogeneous and heterogeneous catalysts. Specific applications to be discussed include catalytic olefin polymerization, carbon monoxide oxidation, and hydrocarbon oxidation.

Biography

Dr. Turner received his BS in chemistry/chemical engineering from UC Berkeley in 1979 and his PhD. from MIT in 1982 in inorganic chemistry. From 1982 to 1996 he was a Research Scientist at Exxon Chemical Company working on the development of single sited olefin polymerization catalysts. *continued on next page*

November Dinner Meeting

Date: Thursday, November 16, 2000

Time: Social hour: 6:00 pm

Dinner: 7:00 pm

Presentation: 8:00 pm

Speaker: Dr. Howard Turner
Vice President, Catalysis
Symyx Technologies

Location: Biltmore Hotel & Suites
2151 Laurelwood Road
Santa Clara, California
(408) 988-8411
North of 101 off the
Montague Expressway

Reservations: Shirley Radding
(408) 246-2564
(408) 296-8625 FAX

Reservations should be made by November 12 stating name, company affiliation, number of people in the party and meal preference. People can also register using our web site:

www.scvacs.org/Local_Folder/din_mtg.html

Cost: \$25.00 with choice of Roast Pork Loin, stuffed Chicken or Pasta Primavera

CHAIR'S MESSAGE

The Nobel Prize (www.nobel.se) in chemistry was announced in October. Alan J. Heeger, Alan G. MacDiarmid and Hideki Shirakawa won the prize for their discovery and development of conducting polymers. I always look forward to the announcement by the Nobel committee since it gives me an opportunity to learn about seminal developments in different fields of chemistry. The interesting thing about the Nobel Prizes is they have not only captured the attention of scientists, but the imagination of the public as well. Even those people who are not familiar with science and scientific research know that winning a Nobel Prize means something big. The prizes are a fantastic opportunity to educate the public on the contributions of chemistry and science to society. And in

reviewing news articles, they have done just that: the articles present a description of the scientific breakthrough and why it is important.

This year, eight awardees are from the US, and one each from Sweden, Russia, and Japan. (As of this writing, the awardees of the Literature and Peace Prizes have not been announced.) The Bay Area usually has a prizewinner or two in medicine, physics, or chemistry but not this year. Oddly enough, with the exception of Daniel McFadden of UC Berkeley (Economics), no other Bay Area science researchers were recognized by the Nobel Committee this year. I know we have world-class, cutting-edge research here and this must have been an off year. After all, we

continued on next page

Chair's Message, continued from front page
can't win all the time. To recognize top-notch researchers in the Bay Area, including Monterey Bay, I would like to hear your nominations for Nobel-quality research. If you were to nominate a person or people for a prize, who would it be, what is their research topic and why is it important? Who do you think will get a Nobel Prize in the future? Who do you think deserves a Nobel, but may not get one? Send in your nominations and I will print the best ones next month.

Remember to vote in the ACS National Elections by November 13.

Ean Warren



Combinatorial, continued from front page

In 1996 he became the Vice President of Catalyst Research at Symyx Technologies.

Dr. Turner will also comment about the life of a chemist in the fast paced Silicon Valley startup, Symyx.



Editor's Corner

Please note that my e-mail address has changed to scolby@carr-ferrell.com. This address should be used for correspondence regarding this newsletter.

The new address reflects a change in employment. I have taken a new position at Carr & Ferrell, LLP a law firm specializing in high technology intellectual property.

6th SJSU Lecture on Natural Products Drug Discovery *"Bioorganic Studies on Vision"*

Speaker: Professor Koji Nakanishi
Department of Chemistry, Columbia University

Date: Friday, November 10, 2000

Time: 3:30 pm

Place: Room 109, Washington Square Hall, San Jose State University

***Sponsored by Northern California Section
of the American Society of Pharmacognosy***

Directions and a campus map may be found on www.sjsu.edu
Parking is available at the Seventh Street Garage for \$2. For questions, contact **Roy Okuda** at (408) 924-2525, or okuda@sjsu.edu

ACS Food Drive

As many of you know, National Chemistry Week is November 5-11. The theme this year is Kitchen Chemistry and the unifying event is "Chemists Reacting to Hunger". So the Santa Clara Valley Section, in cooperation with Second Harvest, would like to encourage you to participate in a food drive during National Chemistry Week. It's easy! All you have to do is fill out a simple form. Then contact Arlene Ruffat at Second Harvest (650) 610-0800 ext. 215 or e-mail aruffat@shfoodbank.com. Second Harvest will arrange to drop off food barrels and then pick them up at the end of the week. In order to gauge the success of this food drive, please let me know by e-mail ncw@scvacs.org or phone (650) 329-4554 if you plan to participate.

Go to Second Harvest's web site www.2ndharvest.net/a_bowbelp/drive_forms.html for the enrollment form and more complete information on how to running a food drive. Please contact Ean Warren if you have any questions.

Second Harvest Food Bank is a central clearing house that collects and distributes more than 21.2 million pounds of donated, surplus and purchased food each year. The Food Bank serves an average of 119,500 low income individuals each month; nearly 50% are children.



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NOVEMBER 2000 NEWSLETTER TOPICS:

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Urgent: We Still Need Volunteers for Intel
Carver Scholars

CHEMPLOYMENT ABSTRACTS



<http://www.scvacs.org>

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2000-02	Lance Wong	650-829-1148

Newsletter Editor

Steven Colby
e-mail: scolby@carr-ferrell.com

FUTURE MEETINGS

2000

Nov 5-11 National Chemistry Week
Nov 16 Symyx Technologies
Dr. Howard Turner

Nov 29 New Tricks in the Old
Chemistry of Photography,
California Section
Professor William Jolly

2001

Jan 25 SCV Mosher Award Meeting

CHEMPLOYMENT ABSTRACTS

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