

# Nanotechnology and materials

How will nanotech impact the future of materials?

# **DISTINGUISHED SPEAKERS**

Prof. Alex Zettl, (U. C. Berkeley) Prof. Jack Howard (MIT) Dr. David Soane (Alnis Biosciences) Dr. Mark Ellsworth (Tyco Electronics)

# MODERATOR/EVENT CHAIR

Dr. Fred Lam (Molecular Diamond Technologies)

## **VENUE**

Bishop auditorium, Stanford University Jan 29, 2004 6:00-9:00 pm

# **SPONSORS**







PRICEWATERHOUSE COOPERS OF GUEVAN

BURNS DOANE Quantum Insight.

www.mitstanfordberkeleynano.org

#### **AGENDA**

6:00 – 6:50 pm	Registration, Refreshments and Networking
7:00 – 7:10 pm	Introduction <b>Dr. Wasiq Bokhari</b> , Chair, MIT Stanford UC Berkeley  Nanotechnology Forum <b>Dr. Fred Lam</b> , Moderator/Event Chair, MIT Stanford  UC Berkeley Nanotechnology Forum
7:10 – 8:45 pm	Speaker presentations
8:45 – 9:00 pm	Q&A session
9:00 pm	Session close by the Chair

## SPEAKER BIOS

# Prof. Alex Zettl Professor of Physics, UC Berkeley Senior Scientist, LBNL

Alex Zettl received his B.A. from UC Berkeley in 1978 and his Ph.D. from UCLA in 1983. He joined the Physics Department faculty at UC Berkeley in 1983. Awards and Honors include Presidential Young Investigator Award (1984-89), Sloan Foundation Fellowship (1984-86), IBM Faculty Development Award (1985-87), and Miller Professorship (1995). Professor Zettl is also a founding scientist of Nanomix Inc. and also leads the Superconductivity and the sp<sup>2</sup> Nanoscience Programs at the Lawrence Berkeley National Laboratory. He is a Fellow of the American Physical Society. Professor Zettl's primary expertise is in the synthesis and characterization of novel materials and nanostructures.

# Prof. Jack B. Howard Department of Chemical Engineering, MIT, Cambridge, MA Nano-C, Inc., Westwood, MA

Jack B. Howard is Professor Emeritus of Chemical Engineering at the Massachusetts Institute of Technology and Chairman and CTO of Nano-C, Inc. of Westwood, Massachusetts. He joined MIT in 1965 as Assistant Professor and became Professor in 1975, Hoyt C. Hottel Professor in 1995, and Professor Emeritus in 2002. He founded Nano-C in 2001 to commercialize the MIT combustion synthesis method for fullerenes production. His research has been in areas of high temperature chemistry including combustion, formation of fullerenes, nanotubes and other carbon nanostructures in flames, pyrolysis,

waste destruction, and environmental emissions control. He is author or coauthor of over 200 papers, fifteen patents and one book. He has been awarded honorary doctor degrees by University of Haute Alsace (Mulhouse, France) and Colorado School of Mines, the Silver Medal and Lewis Gold Medal of the Combustion Institute, the Hosler Distinguished Alumnus Medal of Pennsylvania State University, the Engineering Hall of Distinction Award of the University of Kentucky, the Henry H. Storch Award of the American Chemical Society, the Wilhelm Lectureship of Princeton University and the Oblad Distinguished Lectureship of the University of Utah. He received B.S.(1960) and M.S.(1961) degrees at the University of Kentucky, and the Ph.D. (1965) at the Pennsylvania State University.

# David Soane Chairman and Founder Alnis CSO and Founder NanoTex

David Soane received a B.S. (1973) in chemistry from the National Taiwan University and his Ph.D. (1978) in chemical engineering from the University of California, Berkeley. From 1979 to 1994, he was a full-time member of the faculty at the Department of Chemical Engineering, University of California, Berkeley, where he published approximately 200 technical papers and two books (Polymers in Microelectronics and Polymer Applications for Biotechnology). His academic research spanned a wide range of topics, including rheology and polymer processing, membrane science and technology, polymerization reaction engineering, photolithography and interlayer dielectrics, polymer matrices for electrophoresis, non-linear optics of macromolecules, and novel microstructures/micro-sensors/micro-actuators. Since his departure from Berkeley in 1994, Soane has focused his energy on several high-technology startups including Soane Biosciences (now Aclara Biosciences), Alnis, and recently, Nanotex. These ventures share a common theme: applying leading scientific discoveries to mature industries with ready, mass markets.

# **Mark Ellsworth**

# **Director of Research, Tyco Electronics**

Dr. Ellsworth leads Tyco's research efforts in nanotechnology at their Menlo Park facility. Mark originally joined Raychem Corp. in 1993 as a Staff Scientist in Corporate Technology and became Director of Research for Tyco Electronics in 2001 after the acquisition of Raychem by Tyco International. He received his Ph.D. in Chemistry in 1993 from the University of California, Berkeley. His thesis advisor was Prof. Bruce M. Novak and his research was focused on sol-gel derived polymer-ceramic nanocomposites. He received his B.S. in Chemistry in1989 from the University of Illinois, Urbana and conducted undergraduate research with Prof. William H. Pirkle in separation of chiral compounds by liquid chromatography.

# MIT • Stanford • UC Berkeley Nanotechnology Forum

#### **Introduction and Mission Statement**

The MIT Stanford UC Berkeley Nanotechnology Forum is the largest and premier nanotechnology forum in the Bay Area. The Forum is dedicated to providing a credible analysis and promotion of the burgeoning field of nanotechnology by connecting ideas, technology and people.

The Nanotechnology Forum is a unique organization, run entirely by unpaid volunteers under the umbrella of the alumni associations of the three universities. It primarily serves the alumni communities of MIT, Stanford and the University of California, Berkeley, but its events are open to anyone interested or active in the field of nanotechnology.

We provide opportunities for industry experts, policy makers, researchers, entrepreneurs, venture capitalists, private investors, technologists and the interested public to discuss, understand and evaluate the state-of-the art in nanotechnology.

Our events feature leading researchers, business leaders, investors, policy makers and entrepreneurs active or interested in the field of nanotechnology.

### **Future event topics**

Nanotech in Memory and Data Storage Ethical, Social and Environmental issues in Nanotechnology Emerging tools and instrumentation

# **Steering Committee**

Kitu Bindra, Dr. Wasiq Bokhari (Chair), Elizabeth Curran, Dr. Klaudyne Hong, Ed Korczynski, Dr. Fred Lam, Dr. Arun Mehta, Vivek Nadkarni, Camille Olufsson, Gina Reiger, Dr. Jane Scheiber, Anthony Waitz, Qian Wu.

#### Contact

Email: <u>info@mitstanfordberkeleynano.org</u> URL: <u>www.mitstanfordberkeleynano.org</u>

If you would like to volunteer, please contact info@mitstanfordberkeleynano.org

## **SPONSORS**



#### Price Waterhouse Coopers

PricewaterhouseCoopers (www.pwc.com) is the world's largest

professional services organization. Drawing on the knowledge and skills of more than 125,000 people in 142 countries, we build relationships by providing services based on quality and integrity.



### Girvan Institute of Technology, NASA

The Girvan Institute of Technology is a non-profit corporation focused on research, technology development, technology transfer, and technology commercialization at the NASA Research Park, Moffett Field, California. Girvan's primary mission is to accelerate

the convergence of commercial markets and government-developed technologies, and to spur the use of innovative commercial technology for NASA missions. Girvan identifies commercially developed technologies of interest to NASA, and assists small companies in accessing technology developed by US government agencies for eventual application in commercial markets.



#### **Quantum Insight**

Quantum Insight is a pioneering business strategy services firm in the field of emerging new materials and nanotechnology. Our customers include Fortune 500 companies as well as venture and corporate funds. We provide strategic

business and market development services to companies active or interested in the fields of emerging new materials and nanotechnology. We also provide investment research and targeted deal sourcing services to venture and corporate funds seeking to build new technology startups.



#### **Burns Doane**

We at Burns Doane are proud to say that among our 100 plus scientists and attorneys from all the major scientific

disciplines we have some of the pioneers in the field of nanotechnology. Our attorneys have developed patent portfolios around some of the fundamental building blocks of this emerging area, including carbon nanotubes, photo-voltaics, MEMS, NEMS, and fuel cells. Our attorneys have founded some of the most successful nanotechnology networking organizations across the country and are well positioned to introduce clients to venture capitalists, industry leaders, and others who can help establish successful businesses.

If you would like to sponsor our events, please contact info@mitstanfordberkeleynano.org

## **NEXT EVENT**

# Nanotechnology in Memory and Data Storage

LOCATION
Stanford University
Feb. 26, 2004
6:00-9:00 pm

# STAY INFORMED

To be put on the forum's mailing list to learn about this and future events, please send an email to info@mitstanfordberkeleynano.org