



**The Technology Forum of the
SPECTROSCOPY SOCIETY OF PITTSBURGH**

APRIL MEETING
TECHNOLOGY FORUM - 5:30 PM

Wednesday – April 16, 2008

Duquesne University
Mellon Hall of Science (Laura Falk Hall)



Dr. Volker Hartkopf - Carnegie Mellon University
Professor of Architecture
Director, Center for Building Performance & Diagnostics (CBPD)

“The Intelligent Workplace”

Abstract

"The Intelligent Workplace"

For comprehensive contextual set of arguments please see the Cisco Chapter Website: <http://www.cisco.com/web/about/ac79/wp/ctd/> and the ABSIC website: <http://cmu.edu/iwess/>. Go to the workshop list on the left of the page and choose it the choose ABSIC. Attached is also a paper that gives a more complete point of view.

Presentation by Volker Hartkopf will focus on the experience with the Robert L. Preger Intelligent Workplace (IW), the first living and lived in laboratory in the building industry which celebrated its 10th anniversary last December 2007.

The IW achieved four goals:

1. It provides thermal, visual, spatial, ergonomic and air quality for each occupant (we still have acoustic challenges)
2. It enables complete organizational flexibility, allowing the location and density of people and equipment to be changed on the fly including the amount of internal enclosure without compromising interior qualities as listed under number 1.
3. The IW provides complete technological adaptability that is advanced technology materials; components and systems can be added or installed through out its modular and open system without generating waste.
4. Throughout the lifecycle of all materials, components and systems the IW achieves high level of energy and environmental performances.

Beyond focusing on the IW, the presentation will show the current status of the energy supply system including enthalpy recovery/ desiccant dehumidification ventilation system, steam and solar driven absorption chillers, bio diesel generator with reject heat recovery and under floor fan coil heating and cooling systems.

In closing, brief references will be made to applications of systems deployed in the IW in buildings in China, Europe and North America.

Biography

Since 1972, Professor Hartkopf has been teaching and conducting research at Carnegie Mellon University. His work covers a broad range of activities: international initiatives, funded research and professional consulting on building systems integration, advanced technology, building performance, energy conservation, urban revitalization, third-world housing and disaster prevention. He is realized as an architect building projects in Germany, Bangladesh, Peru and the USA. He also led masterplanning efforts for Volkswagen A.G. and the City of Wolfsburg, Germany; EXPO 2000 Hanover and Berlin-Lichtenberg, Germany.

In 1975, Prof. Hartkopf co-initiated and subsequently directed the first multi-disciplinary program in Architecture, Engineering and Planning in the USA with grants from the National Science Foundation and the building industry. In 1981, he co-founded the Center for Building Performance and Diagnostics (CBPD) at Carnegie Mellon. Between 1981-1985, Prof. Hartkopf developed jointly with Vivian Loftness and Peter A.D. Mill, the Total Building Performance Evaluation Method at Public Works Canada whilst on an Executive Interchange Program. Based on the R & D needs in building performance, Prof. Hartkopf has created and directs the Advanced Building Systems Integration Consortium (ABSIC), comprising leading building industries, six U.S. government agencies, two foreign governmental agencies and Carnegie Mellon. In operation since 1988, the consortium's research and demonstration effort focuses on the impact of advanced technology on the physical, environmental, and social settings in office buildings, towards creating high performance work environments. ABSIC, in cooperation with Carnegie Mellon, has designed, constructed and maintained the Robert L. Preger Intelligent Workplace, officially opened in the winter of 1997. Currently, a second 10-year strategic plan is being pursued by ABSIC through three long-term R&D projects: the Productivity Protocol, the Building Investment Decision Support Tool and the Building as Power Plant.

Currently, Prof. Hartkopf is leading the Building as Power Plant (BAPP) project. The BAPP has been selected by the US Congress as the National Test-bed for Advanced Technology in Building. The 6,500 m² project will be realized on the Carnegie Mellon Campus. The BAPP will integrate advanced energy-effective building technologies with innovative energy generation systems, such that all of the buildings energy needs for heating, cooling, ventilating and lighting, as well as equipment are met on-site, maximizing the use of renewable energies. Broader implementation of its concepts in industry and government here and abroad are expected.

THE TECHNOLOGY FORUM PROGRAM IS FREE AND OPEN TO THE PUBLIC.

*For further information concerning this presentation, please send an email to
Maggie Hall at mahall@state.pa.us*



Specks



SPECTROSCOPY SOCIETY OF PITTSBURGH

APRIL MEETING

Wednesday – April 16, 2008

TECHNICAL PROGRAM - 8:15PM

DUQUESNE UNIVERSITY
Mellon Hall of Science (Laura Falk Hall)



Dr. D. Bruce Chase

E.I. DuPont de Nemours
Recipient of the 2007 Maurice Hasler Award

*"Industrial Analytical Research:
Innovation Driven by Utility"*



6:00 p.m. - Social Hour
6:30 p.m. - Dinner (City View Cafe - 6th Floor)
8:00 p.m. - Business Meeting (Laura Falk Auditorium)
8:15 p.m. - Speaker's Presentation (Laura Falk Auditorium)

Abstract

"Industrial Analytical Research: Innovation Driven by Utility"

Development or introduction of new instrumentation and techniques is not always an integral part of the industrial analytical scientist's charge. However, when integrated into the analytical services organization it can provide significant new capabilities and dramatically increase the organization's ability to respond to the characterization needs of the customers. Successful innovation in industrial analytical science requires both a focusing problem and a defined need so that the development will have ongoing utility. Without the defined need, the new technique will ultimately "wither on the vine". The past thirty years have provided me with examples of both successful developments and "withered fruit". The following four examples will be discussed with respect to ultimate utility; infrared emission, FT-Raman, polarized Raman, and vibrational sum frequency generation.

Biography

Dr. D. Bruce Chase received the 2007 Maurice F. Hasler Award, presented and administered by the Spectroscopy Society of Pittsburgh (SSP), a shareholder of the Pittsburgh Conference. The Hasler Award, sponsored by Thermo Electron Corporation, is given at the Pittsburgh Conference every 2 years, recognizing notable achievements in spectroscopy that have resulted in significant applications of broad utility.

Dr. Chase was honored for his contributions to the field of vibrational spectroscopy. Dr. Chase was one of the developers (with the late Tomas Hirschfeld) of near-IR Fourier transform Raman spectroscopy, and he is a top authority in the application of FT vibrational spectroscopy to industrial analytical applications. His work in applying complex vibrational spectroscopies to polymer dynamics and materials science remain a gold standard the field. Recent research interests include near field Raman spectroscopy and the development (with John Rabolt) of focal plane array detectors for mid-IR spectrometers.

Dr. Chase received his B.A. with Honors from Williams College in 1970 and his Ph.D. in Physical Chemistry from Princeton University in 1975 under the guidance of Professor Donald McClure. He has been a member of the Central Research Department at DuPont Experimental Station since 1975, and since 1995 he has had the distinction of being a Senior Research Fellow. He is also an Adjunct Research Professor at the University of Delaware Department of Materials Science. Dr. Chase has published over 70 research articles and book chapters, including several now-classic works.

Dr. Chase has been a very active citizen in the spectroscopy community, having organized numerous symposia, chaired national conferences, served as editor of Applied Spectroscopy, and, most recently, chaired the ACS Analytical Division. Dr. Chase has been recognized numerous times for his contributions; among many others, recent awards include the Bomem-Michelson Award (1998), the 1999 ACS Analytical Division Award in Spectrochemical Analysis, and the 2002 Anachem Award.

Dinner Reservations:

This month's entrée will be Veal with Pearl Onions & Mushrooms, Potatoes Anna, and Spring Peas. A Smoked Salmon Crepe and Fresh Fruit with Cointreau will start the meal. Profiteroles filled with Ice Cream Topped with Hot Chocolate Sauce will be served for dessert.

Please email Carolyn Benga at dinners@ssp-pgh.org or call (412) 487-0915 to make dinner reservations NO LATER THAN FRIDAY, April 11, 2008. Dinner will cost \$8 and checks can be made out to the SSP. If you have dietary restrictions, please let Carolyn know when you RSVP.

Parking Instructions:

The Duquesne University Parking Garage is located on Forbes Avenue. Upon entering the garage, receive parking ticket and drive to upper floors. Pick up a parking chit at the dinner or meeting. If any difficulties arise, contact Dr. Mitch Johnson at Duquesne University.