Chemical Engineering

Forty-Sixth Annual Report to the Alumni

1994
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Dear Alumni ...

I would like to take this opportunity to introduce myself as the new Chair of the Chemical Engineering Department. I succeeded Jacques Zakin on July 1, 1994. Dr. Zakin has made enormous contributions to the Department over the years and we will all miss him during this interim period while he is a Fulbright Fellow at the Technion in Israel. When he returns he will be a resource that we can tap into for his wisdom acquired through his experience as Chair. I am sure many of you remember his devotion to student welfare both as an advisor and by his efforts to obtain scholarship contributions. Many students would have gone without departmental support if it were not for his perseverance in maintaining contacts with alumni and our industrial friends. We will do our best to follow in his footsteps by encouraging alumni and friends of the Department to maintain their support. In recognition of his contribution to the Department of Chemical Engineering, Jack has been appointed the first holder of the Helen Kurtz Chair.

A little about myself. I joined the faculty in 1978, and I teach undergraduate fluid dynamics, mass transfer and chemical engineering economics. I also teach graduate courses in mass transfer, mathematical modeling and fluidization. Currently I am the U.S. Editor of the Powder Technology Journal and on the consulting editorial board of the AIChE Journal. I am also serving as Chair of AIChE's particle technology forum and will receive the 1994 Thomas Baron Award in Fluid-Particle Systems to be awarded at the annual AIChE meeting in San Francisco. I will also be the Keynote Speaker at the Institute of Australia Engineers Annual Conference (CHEMeca '94), taking place in September in Perth, Australia.

We will continue to use the Annual Report as a means of keeping in contact with our alumni. We wish to expand on this by also having an Alumni Newsletter, which will contain more up-to-date alumni information. Enclosed in this year’s annual report is an insert which contains a form we would like you to fill out and return to us. I ask that you please take advantage of this opportunity to let your "chemical engineering" friends know about your activities.

I also want to bring to your attention that the Department of Chemical Engineering will be hosting a reception in the hospitality suite of the San Francisco Hilton and Towers on Wednesday, November 16, 1994, at the annual AIChE meeting in San Francisco. Please check the information bulletin at the meeting for more specific details on the time and room number. We extend a hearty welcome to our alumni and friends to stop by the hospitality suite and attend the reception.
I accepted the Chair position envisioning the type of learning environment that would attract and retain highly accomplished students and scholars. This environment would provide an innovative curricula reflecting state-of-the-art issues and accommodate culture diversity. A necessary component would be a faculty and staff who exhibit total commitment to the profession and the department. We are working on building an environment that includes mutual respect, trust and collaboration, while mentoring each other and jointly nurturing young faculty. This will work toward another goal of collectively and individually achieving a national and international reputation for excellence.

Faculty Activities

This past year, 1993-94, has been a productive year for our faculty. We have three outstanding new additions who joined the faculty recently and all are doing well.

Professor Bhavik Bakshi joined us in October of 1993. Dr. Bakshi graduated from MIT with Prof. George Stephanopoulos as his advisor. He spent a year after his doctorate working at Aware, Inc., while continuing as a post-doctoral research associate at MIT. Bhavik’s research is in process systems engineering and involves the integration of techniques and concepts from electrical engineering, artificial intelligence, optimization and applied mathematics to solve problems in process design and control. He is modifying the traditional process design course to include environmental considerations using the paradigm of an industrial ecosystem. He will be working closely with Professor Jim Davis to rethink the traditional ways of teaching and doing research in process design and control.

Professor David (Dave) Tomasko joined the faculty in April of 1993. He graduated from the University of Illinois-Urbana. Professor Chuck Eckert, now at Georgia Tech, was his advisor, and he had a post-doc at the University of New South Wales. Dave is strongly into the teaching and education components of chemical engineering and enjoys undergraduate interaction. He is currently the lead person in the department for student policies, probation, and monitoring the progress of special-action probationary students. Dave’s strong background in traditional and non-traditional chemical engineering mass transfer and thermodynamics will be directed to solve environmental engineering problems. He is an expert on supercritical extraction.

Professor Kurt Koelling graduated from Princeton under Professor Robert (Bob) Prud’homme. He joined the faculty in January, 1993. Kurt believes successful teaching requires maintaining a high level of student interest, which can be achieved through addressing real-world examples in the classroom. His research goals include developing fundamental information such as rheological and transport properties necessary for the development and optimization of polymer processing operations. He is heavily involved in interdisciplinary research with the Engineering Research Center on gas injection molding and also in polymer recycling research. He is currently serving as the advisor for the student chapter of AIChe and hopes to increase student involvement in both professional and social activities.
Emeritus Professor Robert (Bob) Brodkey has been selected to receive the North American Mixing Forum (NAMF) at the 1994 San Francisco Annual AIChE meeting and will be honored by two dedicated sessions on Mixing at the meeting. This coming fall quarter, Professor Brodkey will be the Clyde Chair of Engineering at the University of Utah. We congratulate Bob on his success. Some of Bob’s ongoing research projects include image processing and analysis for a variety of applications. One project being worked on jointly with the Department of Mechanical Engineering colleagues and sponsored by Ford Motor Company is measuring the full-time resolved, velocity-vector field in a liquid experimental simulation of an internal combustion engine. Bob is working on an NSF-supported project that involved dispersion of non-buoyant large particles in a vertical liquid flow. The flow field is being resolved by a combined use of laser Doppler anemometry (LDA) and imaging methods. Bob is also working on an imaging concept to help analyze catalyst surfaces for use in reaction kinetics for polymer composite to use in optimizing polymer composites structures for structural elements. In addition he has just received an NSF grant (with F. Muzeio of Rutgers Univ.) on environmentally important chemical reactions and how to enhance conversion by dynamic, chaotic motions and turbulence.

Professor Jeffrey (Jeff) Chalmers was promoted to Associate Professor last year. He continues his research as an NSF National Young Investigator in the area of biochemical engineering, including studying the effects of hydrodynamic forces on cells. He has begun a major research collaboration with the Cleveland Clinic on magnetic separation of cells and his work on composting continues. Jeff, along with Professors S.T. Yang and Jack Zakin, received a major NSF Infrastructure Award to construct a Biochemical Engineering Laboratory in Room 103 (large lab near the elevator) and a processing pilot plant in the Unit Operations Lab.

Professor James (Jim) Davis has a large research group that is involved in intelligent systems in process operations. He continues to work closely with industry on a variety of projects involving integrated neural networks and knowledge-based systems, and is also active in the NSF Gateway Coalition for Engineering Curriculum Reform. Jim was recently elected to the Executive Committee of the CACHE Corporation board of trustees and is a co-organizer of ISPE'95 (Intelligent Systems Process Engineering) a major international conference to be held in July, 1995. He is also serving as Associate Director of Research Computing for the OSU Academic Technology Service. In this position he coordinates the University's key technology area on advanced computing research. He is part of the team developing the University-wide computing plan. Jim will be promoted to Full Professor on October 1, 1994.

Emeritus Professor Edward (Ed) Haering has moved up to Lake Erie where he can pursue his avid interests in sailing.

Professor Harry Hershey utilized the background he developed during his professional leave at Eli Lilly in offering a course in Air Pollution which we have not offered for many years. Harry has spearheaded our efforts to develop our environmental option in chemical engineering in conjunction with Civil Engineering and other departments. He is working in
further developing an environmental program including a co-op program with the EPA. Harry will serve as Associate Director of the Emissions Reduction Research Center when Jack Zakin is away on professional leave.

Professor James \textit{(Jim)} Lee also has a large research group and is working on reactive polymer processing research. Jim is Thrust Leader for Polymers for the College’s Engineering Research Center for Net Shape Manufacturing. He serves on the Editorial Boards of \textit{International Polymer Processing} and \textit{Science and Engineering of Composite Materials Journal}. He is an NSF Review Evaluator for the Case Western Reserve-Akron Center for Molecular-and-Microstructure of Composites. Jim was a leader of a research proposal team requesting major rheological equipment which was funded by NSF. Professors Koelling and Zakin complete the management team. Other Co-PI’s were Bob Brodkey, Jeff Chalmers, Jim Rathman, and several professors from other departments.

Professor Umit Ozkan will also be on professional leave next year working at a CNRS Laboratory in Lyons, France, on problems in heterogeneous catalysis. Umit was invited to be a Keynote Speaker at a major conference in Turkey in August. She also recently received the Keck Foundation Engineering Teaching Excellence Award. Umit will be promoted to Full Professor October 1, 1994.

Dr. James \textit{(Jim)} Rathman is beginning his fourth year at Ohio State. His research interests include reactions in aqueous surfactant solutions, thermodynamics of micelle fermentation, and effects of micelle structure on solution rheology. Last year Jim gave an invited lecture at a symposium on Surface Science and Engineering at the University of Oklahoma to recognize the appointment of Prof. John Scamehorn to the Asaki Glass Endowed Chair. This summer he offered a course in Colloids in the second term of the Summer Quarter which met a real need and was over subscribed.

Emeritus Professor H.C. \textit{(Slip)} Slider continues to conduct 5-day industry seminar/workshops on Gas Reservoir Engineering. He conducted one in Houston and another sponsored by Chevron in Calgary last year.

Emeritus Professor Ed Smith is active in fire testing and continues to be in demand as an expert witness in litigations involving major fires. Ed will be teaching ChE 761 this fall.

Professor Thomas \textit{(Tom)} Sweeney will be retiring from the University in December, 1995, to become a Professor of Chemical Engineering and head of Research for the University of Notre Dame.

Professor S. T. Yang has completed Phase I of his CMA de-icer production from cheese whey for the U.S. Department of Transportation. He is now preparing for the Phase II pilot plant study.

Professor Jacques \textit{(Jack)} Zakin was a Keynote Speaker at the Czech Academy of Sciences Institute of Hydrodynamics Conference in Castle Liblice near Prague, last September. His Agency for International Development collaborative project team conducted a field test of a friction-reducing additive in the secondary system of a small district heating system in a
suburb of Prague. The results last winter were promising and the test will be continued in 1994-95. Jack received the Ohio Society of Professional Engineers 1994 Engineering Educator of the Year Award. He also received a Fulbright Research Fellowship to do research on cationic surfactants at the Chemical Engineering Department of the Technion in Haifa, Israel.

Finally, we want to take this opportunity to thank those of you that contribute to the Department and let you know how important that support is to us. As the University budget shrinks further and further, our funds have been reduced significantly. There are many worthy students who need financial assistance. Much more than that, however, is the department’s need to stay up-to-date in order to provide our students with the kind of education that will be relevant to today’s job market. Without the continued support of our alumni and friends, we will not be able to stay abreast of current educational trends.

If you contribute to Ohio State through the Development Office, please be sure to designate Chemical Engineering or we will not receive it (or even be notified of it).

Finally, I am sorry to report that Emeritus Professor Duane Skidmore died on April 15, 1994. Duane was a witty and well liked teacher with strong interests in music, classical art and literature. His health had been poor for several years, which led to his early retirement. His colleagues and former students will miss him. We have included the resolution inscribed in the minutes of the University Board of Trustees meeting as a memorandum in this year’s Annual Report.

Sincerely,

Liang-Shih Fan
Professor and Chairman
In Memorium ...

Duane R. Skidmore
March 15, 1928 - April 15, 1994

Taken from the Official Minutes of University Board of Trustees Meeting

The Board of Trustees of The Ohio State University expresses its sorrow upon the death on April 15, 1994 of Duane R. Skidmore, Professor Emeritus in the Department of Chemical Engineering.

Dr. Skidmore was born on March 15, 1928, in Seattle, Washington. He received his B.S. degree in Chemical Engineering from the University of North Dakota in 1949 and his M.S. in chemical engineering from the University of Illinois in 1951. Pursuing other interests, he was awarding a Ph.L. in Philosophy by St. Louis University in 1956. Later he renewed his scientific studies at Fordham University where he completed his Ph.D. in Physical Chemistry in 1960. His dissertation was on the kinetics of some reactions involving ozone, and he stayed on at Fordham as a post-doc for one year.

In 1961 he accepted a position as Research Chemist with E.I. DuPont in Wilmington, Delaware, where he met and married his wife, Joann. They had four children, Carla, Lara, David and Richard and one grandchild, Timothy. Three years later he took his first academic position at the University of North Dakota where he became involved in coal conversion studies which became the focus of his scientific efforts for the rest of his career. In 1967-68 he was an American Council on Education Intern for Academic Administration at the University of Kansas. On his return to North Dakota, he served as Acting Dean of the College of Engineering in 1968-69. In 1972, Dr. Skidmore became Professor of Mineral Processing Engineering at West Virginia University, where he developed and chaired their Mineral Processing Engineering program.

Professor Skidmore joined the chemical engineering faculty at Ohio State in 1978 and retired in 1990 because of poor health. At Ohio State he introduced three courses on coal properties and coal processing, served as advisor to a number of M.S., Ph.D., and post-doctoral students, and was heavily involved in a variety of coal activities in the College of Engineering. He also served as Chair of the Department Graduate Studies Committee. His research focused on coal liquefaction and high temperature microbial desulfurization of high sulfur coal.

Endowed with a wry sense of humor, Dr. Skidmore's courses were popular and he took great interest in students, often volunteering for Summer Freshman Orientation sessions.

He was a member of the American Institute of Chemical Engineers, American Chemical Society, American Institute of Mining Engineers and American Association for the Advancement of Science. He was elected to membership in Sigma Xi and was a registered Professional Engineer in North Dakota and West Virginia. He was also a veteran of the United States Army.

On behalf of the University community, the Board of Trustees expresses its sympathy to Professor Skidmore's family. It is directed that this resolution be inscribed in the minutes of the Board of Trustees as an expression of the Board's heartfelt sympathy.
1993 Contributors

1921
Harold W. Baque

1923
Gordon H. Mutersbaugh

1927
James L. Collins

1928
W. Clare Barnett

1930
Parker S. Dunn

1932
Samuel S. Johnston

1933
John S. Eckert
Kermith K. Fligor

1935
Kenneth A. McDaniel
Dr. Linton E. Simerl
Frederick L. Thomas

1936
Richard A. Miller
Joseph G. Mravec
William A. Taylor
William P. Ward

1937
Donald C. Miller
Frederick R. Pullen
Dr. George H. Sheets
Dr. Charles E. Stoops
Robert T. Whitaker

1938
Edward J. Haven
George S. Tobias

1939
Robert H. Dewart
Ira J. Kail
Dillard W. Kuhlman
Robert S. Radow
Howard G. Rohrer
Dr. Charles A. Rohrmann

1940
Prof. Bernard R. Sarchet
Edward E. Slowter

1941
Dr. James R. Cameron
Dr. Harvey H. Grice
Charles A. Keller
H. Richard Unkel
Charles D. Young

1942
Randal E. Bailey
Dr. Dale B. Baker
Dr. Forrest R. Hurley
G. John Lambillotte

1943
Nicolee N. Bacaintan
Halvor S. Christianson
Walter E. Craw
+Dalton F. Drake
Glenn L. Gifford
Dr. Harry J. Green Jr.
Leonard A. Harris
Robert F. Lange
James R. Randall
Raymond K. Ritzert
Roy E. Schneider

1944
Clarence A. Haverly Jr.
George H. Montgomery
Edward W. Powell
Grover C. Strickler, Jr.

1946
Charles R. Hall

1947
Willard F. Andrews
William K. Fell
John M. Kolbas
Donald G. Schroeter

1948
Aloysius M. Sebian
Robert L. Bates
Dr. Richard E. Durst
J. Guilford Gerlach
Earl W. Goodman
Maurice E. Hatten
Max H. Humphrey
Henry B. Lange
Dr. Myrl E. Miller*UO
Manuel Ramos
George R. Secrist
Jack C. Stewart

1949
Dr. Donald S. Arnold
Paul E. Bates
Dr. Samuel S. Fok
Raymond D. Hammond
Frederick A. MacDougall
Dr. John B. Martin
Richard N. Miller
Donald R. Roberts
Charles R. Shepherd
Roland I. Spencer
Howard R. Steele
Edward W. Wiederhold

1950
Norman E. Ernstine
David W. Hardesty
Dr. Preston L. Hill
Richard H. Immel
Franklin A. Retzke
Verne R. Rinehart
Richard L. Scott
Paul L. Wells
Alfred E. Withrow

1951
Charles E. Breithaupt
Charles L. Dornbusch
Richard N. Eilerman
Denver V. Harris
Merle H. Ruff
Clarence J. Svooboda
Dr. Wade Wolfe Jr.

1952
Robert F. Aldrich
Donald E. Haupt

1953
Richard F. Hazelton
Dwight Jeffrey
Richard E. Saylor

1955
W.B. Hammond Jr.
John H. Hoge
Robert W. Serfass
Dr. David G. Stephan
Thomas J. Tibbitts

1956
Paul Alexander Jr.
Glenn F. Althouse
Robert A. Cody
William D. Coe
Dr. David A. Strang

1957
Walter R. Andrews Jr.
A. Leo Carter
Jon D. Helms
Paul J. Kienholz
Ronald P. Rowand

1958
John R. Kearns
Valdis E. Petritis
Richard M. Smith
James W. Stark

1959
James O. Albery
James H. Laughlin
Edward R. Purves
Darryl J. Von Lehmden

1960
Virgil L. Anderson
Orville W. Gruebmeier,
Jr.
James Kanyok

*Deceased
1993 Contributors

1961
Paul R. Bigley
Ronald D. Harris
Dr. James H. McMicking

1962
C. David Osburn
J. David
Porthouse
Dean Snider
Dr. Lawrence R. Steele
Michael D. Winfield

1963
Myers G. Hammond
Robert P. Kasper
Fred A. Shafferstall
Wilbur H. Sidner
Kay L. Snider

1964
Wayne O. Betz
Dr. Michael B. Cutlip
Girish D. Parikh

1965
Dr. Edward R. Corino
Oliver L. Davies
Frederick J. Rerkol
Michael C. Royer
Eugene N. Wheeler

1966
Erich L. Eggers
Thomas E. Fitz Sr.
William G. Lowrie
Dr. Gilbert E. Raines

1967
F. William Hauschildt Jr.
John M. Yacher

1968
Dr. Ronald M. Kovach
James W. Sebert
Dr. Gerald A. Wilcox

1969
Smith E. Howland
Dr. Kiu Hee Lee
Dr. M. Anandha Rao
Dr. Lawrence R. Steele

John W. Toussant
Karen T. Murphy
David M. Schilling
David J. Wasela
Ted K. Williams

1970
David R. Grove
Michael L. Nevin
John D. Rensel
Richard B. Strait
Dr. Rosa Uy
Dr. Harry H. Yich

1971
Kerry George Hertenstein
Dr. Stephen Zakanyez

1972
Dr. Jerome F. Beekman
Dr. David M. Koenig
David G. McCluskey

1973
John A. Douglas
Norman F. Lucas Jr.

1974
Bruce K. Dawson
John E. Myers
Michael A. Patterson
Dr. William M. Pekman
Barry A. Robinson

1975
John T. Erikson

1976
Dale F. Arnold

1977
Mary E. Lenz Rose
Philip M. Rose

1978
Janet Lyons Inkrott
Donald L. McDowell
Mike Moore
Dr. Neil P. Stubber
Thomas E. Winkler
Dr. Johnny O. Wright
Richard J. Yoch

1979
Dr. Donald W. Buchanan

1980
Dr. Frederick T. Clark
Philip A. Dalton
Matthew J. Galosi
Mark A. George
Sanford L. Philips
Daniel R. Schwaegerle

1981
Nancy Coultrip Dawes
Kimberly Arnold Lauza
James A. Telljohann
H. Charlie Wolf

1982
David B. Boyle
Debra Denio Funderburg
Victoria M. Green
Kathleen Applegate
Hogenson
Annette Hissong Taylor
James J. Toth
Dr. Andrew M. Weber III

1983
Dr. Lamont E. Beaver
Tracy F. Begland
Thomas D. Burns
Mark D. Dieringer
Linda Sue Evans
Edward Flinn
David J. Grigger
Ronald A. Howdyshell
Dr. Cheryl L. Kennedy
James A. Leonard
Gregory M. Masica
Julie Minderman Ockajik
Clark B. Wade

1984
Mark S. Bitto
Robert H. Kelch
Robert G. Larsen

1985
Becky Kiessling Bur
Roger G. Facer
Timothy A. Johnson
David J. Moonay
C. Douglas Moss
Sharyn A. Veley
Dr. David G. Vutetakis

1986
Dr. Chi-Yu Chen
Rajeev L. Gorowara
Isaac A. Robinson

1987
Denise Marie Burcham
Atty. Brigid Ellen Heid
Karen S. Johnson
Ens. Martin D. Legg

1988
+John A. Bohlmann
Amy Schmitt Doyt
Dr. Jyh-Dar Fan

1989
Stuart F. Doyt

1990
Craig M. Kehres
Darrin L. Lacheta
James V. Lombardi
Kara Blachowski Long
Dr. Derrick K. Rollins

1991
Krikor Malajikian
Robert M. Woltermann

1992
Julie E. Vander Meer

1993
Dr. Prasad P. Ramanathan
Friends
Robert S. Brodkey
Dr. Robert J. Chalmers
Lt. Russell F. Dubes
Dr. Liang-Shih Fan
Dorothy Joseph

*Deceased
1993 Contributors

Dorothy Joseph Fenburr**
Marilyn E. George*****
Joann Heywood Hoge****
Francis W. Kolbas
David A. Lauzau
Ruth Morgan Miller
Dr. Umit S. Ozkan
J. David Porthouse***
Alma Schneider Robinson*****
Elva C. Rohmann
Betty Dixon Schneider
Eleanor W. Syverson*
Mrs. Vesta M. Warner
Dr. Jacques L. Zakin

*Aldrich Syverson Scholarship Fund
**Herbert L. Feburr Scholarship Fund
****Hoge Chem Engr Fund
*****In Memory of Harold Reuben
*******In Memory of D.H. George
*******In Memory of T.D. Harris
*********Edward E. Slweter Fund
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Joseph H. Koffolt Fd.
Class of '41
Robert L. Bates Fund
Harris Scholars

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  Unica Carbide
  Unocal
  UOP
  Westvaco

Classmates reminiscing

Eating and Drinking

*Deceased
<table>
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<tr>
<th>Faculty and Staff Members</th>
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<tr>
<td>Professors</td>
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<tr>
<td>R.S. Brodkey (Emer.)</td>
<td>E. Abou-Zeidra</td>
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<td>L.S. Fan</td>
<td>R. Agnihotri</td>
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<td>M.H. Friedman (Biomed Eng.)</td>
<td>Y. Cai</td>
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<td>C.J. Geankoplis (Emer.)</td>
<td>D. Chattopadhyay</td>
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<td>E.R. Haering (Emer.)</td>
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<td>H.C. Hershey</td>
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<td>L.J. Lee</td>
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<td>W.B. Kay (Emer.)</td>
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<td>E.E. Smith (Emer.)</td>
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<td>T.L. Sweeney (Research Fdn.)</td>
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<td>Z. Jin</td>
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<td>Assoc. Professors</td>
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<td>B.R. Bakshi</td>
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<td>H. Zhu</td>
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<td>Administrative Associate</td>
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<td>P. Huzyak</td>
<td>GEM</td>
</tr>
<tr>
<td>R. Kaminski</td>
<td>National Science</td>
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<tr>
<td>M. Kinkelaar</td>
<td>Foundation</td>
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<tr>
<td>Exxon</td>
<td>J. Gates</td>
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<td>M. Elsass</td>
<td>E. Silva</td>
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<td>J. Yen</td>
<td>Presidential</td>
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<tr>
<td>G. Wheeler</td>
<td>Procter and Gamble</td>
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<td>J. Yen</td>
<td>J. Gates</td>
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<td>T. Schudt</td>
<td>Roberts</td>
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<td>L. Moore</td>
<td>B. Lu</td>
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<td>H. Zhu</td>
<td>G. Wheeler</td>
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<tr>
<td>Administrative Associate</td>
<td>J. Reese</td>
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<tr>
<td>T. Harris</td>
<td>Union Carbide</td>
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<td>Fellowships</td>
<td>University Fellows</td>
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<tr>
<td>Amoco</td>
<td>D. Gardner</td>
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<tr>
<td>J. Clay</td>
<td>V. Gauri</td>
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<tr>
<td>DuPont</td>
<td>P. Gupta</td>
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<tr>
<td>D. Gardner</td>
<td>D. Rosa</td>
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<td>M. Perry</td>
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<td>SCHOLARSHIPS</td>
<td>C. Lamoreaux</td>
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<td>Alcoa</td>
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<td>L. Apel</td>
<td>C. Siswanto</td>
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<tr>
<td>Harold Almen</td>
<td>David H. George</td>
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<tr>
<td>C. Foltz</td>
<td>A. Collins</td>
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<td>T. Wurster</td>
<td>B. Harbaugh</td>
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<td>Amoco</td>
<td>K. Matheou</td>
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<td>S. Johnson</td>
<td>Allan I. Gordon</td>
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<td>A. Kleman</td>
<td>C. Voight</td>
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<tr>
<td>T. Knuth</td>
<td>Raymond D. Hammond</td>
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<td>A. Moravek</td>
<td>S. Bohland</td>
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<td>M. Buzek</td>
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<tr>
<td>Ashland</td>
<td>D. Ferguson</td>
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<td>D. Klepak</td>
<td>J. Ibinson</td>
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<tr>
<td>L. Lander</td>
<td>M. Lewis</td>
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<td>C. Olwert</td>
<td>D. Lick</td>
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<td>M. Peterson</td>
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<td>G. Sturgill</td>
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<td>J. Topoly</td>
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<tr>
<th>Bayer-Mobay</th>
<th>William R. and Doris M. Harris</th>
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<tr>
<td>J. Galloway</td>
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<tr>
<td>T. Knuth</td>
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<td>H. Lee</td>
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<td>R. Scheehle</td>
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<td>Betz Metchem</td>
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<td>K. Doerfler</td>
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<td>T. Forsthoffer</td>
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<td>J. Sawyer</td>
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<td>T. Stringfield</td>
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<td>Class of 1941</td>
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<tr>
<td>M. DeWitt</td>
<td></td>
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<tr>
<td>T. Hoang</td>
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<td>C. Money</td>
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<td>T. Richmond</td>
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<tr>
<th>Dow Chemical</th>
<th>Procter &amp; Gamble Incentive</th>
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<tr>
<td>T. Wurster</td>
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<tr>
<td>Eli Lilly</td>
<td>S. Billingslea</td>
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<tr>
<td>K. Ferguson</td>
<td>T. Blankenship</td>
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<tr>
<td>M. Langdon</td>
<td>C. Burgin</td>
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<tr>
<td>P. Rancitelli</td>
<td>L. Burrell</td>
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<tr>
<td>Dorothy &amp; Herbert</td>
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<tr>
<td>Fenburr</td>
<td>J. Head</td>
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<tr>
<td>E. Brooker</td>
<td>J. Jackson</td>
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<tr>
<th>Salary Medium</th>
<th>B.S.</th>
<th>$41,000</th>
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<tr>
<td>M.S.</td>
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<td>$44,000</td>
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<tr>
<td>Ph.D.</td>
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<td>$54,000</td>
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</table>
Class of 1993

ROW 1: Eric Drescher, Dr. Robert Broadkey, Shannon Savage, Jill Horn, Angie LeFevre, Tiffany Kennedy, Jong Hyun Kim, Jeff Kanel

ROW 2: Dr. Shang-Tian Yang, Randy Reynolds, Cora Chu, Dr. Umit Ozkan, Samir Kumar, Duane Schroeder, Jim Toth, Ellen Silva

ROW 3: Dr. Jeff Chalmers, Jasper DeChristopher, Mark Clevry, Yeping Cai, Mark Perry, Linda Yeoman, Kay Ferguson, Dr. Liang-Shih Fan

ROW 4: Ron Kaminsky, Tim Harker, David Roberts, Tyler T. Newsom

ROW 5: Dr. Jim Davis, Max Macesich, Scott Blatter, Adam Brand, Karen Weaver, Dr. Jim Rathman, Rebecca Wirtz, Archie Jasmez, Dr. Jacques Zakin

ROW 6: Frank Seipel, Andrew Mauk, Jim Skipworth, Rich Stock, Susan Schudt, Brian Wright

ROW 7: Paul DeRoussel, David Seaman, Dr. Kurt Kociling, Dr. David Tomasko
AIChE Student Awards

Cora M. Chu
The AIChE Outstanding Senior Award
Presented by Dr. Jeffrey Chalmers

Laura E. Lander
The AIChE Outstanding Senior Award
Presented by Dr. Jeffrey Chalmers

T. Craig Olwert
The AIChE Outstanding Sophomore Award
Presented by Dr. Jeffrey Chalmers

Cincin Siswanto
Outstanding Junior Award
Presented by Dr. Jeffrey Chalmers

Mark Arlinghaus and Mark Sippola (not pictured)
The AIChE Outstanding Sophomore Award
Presented by Dr. Jeffrey Chalmers
Student Awards

Paul DeRoussel
The American Institute of Chemists Award
Presented by Dr. Umit S. Ozkan

Casandra L. Foltz
Hoechst-Celanese Outstanding Sophomore Award
Presented by Dr. Edward Glamkowski

Trent A. Wurster
Dow Outstanding Junior Award
Presented by Rich Brandon

Suhas K. Mahuli
Hoechst-Celanese Outstanding Teaching Assoc. Award
Presented by Dr. Edward Glamkowski
Placement of Chemical Engineering Graduates

June 1993

Doctor of Philosophy
Y.-C. Chou, Formica

Master of Science
R. Gaines, Jr., DuPont, Orange, TX
C.-M. Wang, Graduate School, OSU, Cols, OH

Bachelor of Science
C. M.-Y. Chu, Procter & Gamble, Cincinnati, OH
J.N. DeChristopher, Ashland Chemical, Cleveland, OH
P. DeRoussel, Graduate School, Northwestern Univ.
E.H. Drescher, Battelle Memorial Inst., Columbus, OH
M.A. Dugan, A. Myers & Assoc., Korea
J.K. Horn, Procter & Gamble, Cincinnati, OH
A.R. Howdysheil, Mead Paper, Chillicothe, OH
P.C. Huzyak, Graduate School, OSU, Cols, OH
A.P. Jaszcz, Ross Labs, Columbus, OH
R.C. Kaminski, Graduate School, OSU, Cols, OH
J.H. Kanel, Adsorption Research Inc., Dublin, OH
T.J. Kennedy, Kraft General Foods, Colveview, IL
J.-H. Kim, Graduate School, OSU, Columbus, OH
L.A. LaRue, No Information Available
A.M. LeFevre, Procter & Gamble, Cincinnati, OH
M.A. Miller, No Information Available
S.S. Murphy, Inland Steel, E. Chicago, IL
T.T. Newsom, No Information Available
S.N. Nguyen, Graduate School, OSU, Cols, OH
S.P. Savage, Franklin International, Columbus, OH
F.E. Seipel, Wiley Organics, OH
J.G. Skipworth, Aristech Chemical Corp., Haverhill, OH
J.J. Toth, Graduate School, OSU, Columbus, OH
B.S. Wright, Toyota Motor Mfg., Georgetown, KY
L.D. Yeoman, Adsorption Research Inc., Dublin, OH

D.K. Roberts, Concurrent Technologies, Jamestown, PA
D.D. Schroeder, Philips Display Components, Ottawa, OH
L. Trem, No Information Available
R.A. Wirtz, Chesapeake Paper Products Co., West Point, VA

December 1993

Doctor of Philosophy
Y. Cai, Post-Doc, Lehigh Univ., Bethlehem, PA
S.A. Driscoll, Asst. Prof., Univ. of Arkansas
A.Ghosh, Dastidar, Post-Doc, OSU, Cols., OH
M.R. Kinkelaar, Union Carbide, S. Charleston, WVa
S. Kumar, Xerox, Rochester, NY
R. Lee, International Paper, Mobile, AL
C.-J. Linn, Returned to Taiwan
M.J. Perry, Arco Chemical, S. Charleston, WVa

Master of Science
M.R. DeVries, Graduate School, University of Michigan
E.M. Silva, Graduate School, OSU, Columbus, OH

Bachelor of Science
A.J. Brand, Phillips Lab, Lancaster, CA
A.W.K. Kwok, Franklin Int'l., Columbus, OH
D.C. Seaman, No Information Available
J.L. Topoly, Cargill, Eddyville, Iowa
Y.L. Yarrington, No Information Available

March 1994

Master of Science
K.C. Hofacre, No Information Available
L.R. Moore, Cleveland Clinic, Cleveland, OH
S.E. Schudt, Graduate School, Notre Dame

Bachelor of Science
M.W. Cleary, Concurrent Technologies, Jamestown, PA
L.E. Goins, Environ. Sci. Dept., OSU, Cols, OH
L.E. Lander, Medical School, OSU, Cols, OH
R.S. Morgan, Franklin Int'l., Columbus, OH
L.R. Stock II, Graduate School, RPI, MA
T.A. Thompson, Capital Resin Corp., Cols, OH
K.I. Weaver, Battelle Mem., Columbus, OH

August 1993

Doctor of Philosophy
Illam Park

Bachelor of Science
S.D. Blatter, Toyota Motor Mfg., Georgetown, KY
T.T. Harker, No Information Available
M.P. Macesich, PPG Industries, Delaware, OH
A.W. Mauk, Graduate School, Georgia Tech, Atlanta, GA
R.S. Reynolds, Day-Lite Screen, OH
Dr. P. Chungmoo Auh is President of the Korea Institute of Energy Research. He received two Chemical Engineering degrees from Ohio State, the Master in 1970, and the Doctorate in 1975. While attending graduate school part-time, Dr. Auh held a position with Columbia Gas System Service Corporation in Columbus, where he designed gas equipment for residential and commercial applications. After receiving his Ph.D., he joined the Solar Technology group at Brookhaven National Laboratory and became a leader in formulating that laboratory's new solar energy program.

In 1980, Dr. Auh joined the Korea Solar Energy Research Institute as Director of the Solar Energy Research and Development Department. This institute was merged into the Korea Institute of Energy and Resources in 1981, and Dr. Auh continued his work in solar energy and other new and renewable energy sources. He was promoted to Vice President of the institute in 1988 and became President two years later. In 1991, he was appointed President of the Korea Institute of Energy Research.

Dr. Auh has received a wide array of awards for his work in energy research, including the Outstanding Researcher Award from the President of Korea in 1984 and Outstanding Research and Development Project Award from Korea's Ministry of Science and Technology in 1989. In addition, he has more than 145 publications and some 100 scientific and engineering presentations to his credit. He is active in a number of professional societies: he has served as President of the Korean Solar Energy Society and Vice President of the Korea Society for Energy Engineering, and he is a member of both the American and International Solar Energy Societies.
Dr. Gary B. Tatterson is a professor of Chemical Engineering at North Carolina A&T University in Greensboro. He received two Chemical Engineering degrees from Ohio State, the Master of Science in 1974 and the doctorate in 1977.

Dr. Tatterson began his academic career at the University of South Carolina after receiving his degree from Ohio State. In 1979, he joined the faculty of Texas A&M University, where he received early promotion to Associate Professor of Chemical Engineering. He transferred to the Department of Mechanical Engineering at Texas A&M in 1985, and he spent a year in industry at DuPont’s Savannah River Laboratory in 1988-89. He became a Professor of Chemical Engineering at North Carolina A&T in 1989.

Dr. Tatterson is internationally recognized for his innovative research in mixing processes and his development of new experimental techniques for the study of these phenomena. He is particularly well-known for his work in three-dimensional particle velocimetry and imaging techniques for turbulent mixing flows.

His work in turbulent mixing flows has resulted in the 1991 publication of one book, Fluid Mixing and Gas Dispersion in Agitated Tanks, and the imminent publication of a second, Scale-up and Design for Industrial Mixing Processes. Dr. Tatterson has also produced more than 40 journal publications and has given over 65 seminars and presentations at universities, companies, and special meetings.

An active member of the American Institute of Chemical Engineers, Dr. Tatterson has chaired sessions and edited proceedings for that organization. He recently received a grant from Merck for an undergraduate research program he is developing at North Carolina A&T.
BOOKS AND BOOK CHAPTERS


Davis, J.F., Co-Editor, CACHE monograph series on Artificial Intelligence in Process Engineering (1990-present).


REFEREED PAPERS:


PROCEEDINGS PUBLICATIONS


Publications and Presentations


Halvorsen, W., J. Grashel and J.F. Davis, "The Interpretation of Shape-Based Features using Neural Networks," Fall 1993 AIChE National Meeting, St. Louis, 1993.


TECHNICAL REPORTS

Publications and Presentations


PATENTS


Davis, J.F., Neural net development software generated as an expression of the theoretical approach developed has been licensed for specific applications to the following companies: BP Research and Universal Oil Products.


OTHER SCHOLARLY/CREATIVE CONTRIBUTIONS

A. INVITED LECTURES, SEMINARS AND SHORT COURSES


Brookley, R.S., "Image Processing and Analysis in Fluids and in Chemical Engineering Research," Rohm and Haas, March 4, 1993.

Brookley, R.S., "Image Processing and Analysis in Fluids and in Chemical Engineering Research," Technical University, Berlin, Germany, June 10, 1993.

Brookley, "Image Processing and Analysis in Fluids and in Chemical Engineering Research," Chemical Engineering Department, University Autonoma of San Louis Potosi, Mexico, Sept. 21, 1993.

Brookley, R.S., "Turbulent Motion, Mixing, and Kinetics," Chemical Engineering Department, University Autonoma of San Louis Potosi, SLP, Mexico, October 1, 1993.

Brookley, R.S., "Image Processing and Analysis in Fluids and in Chemical Engineering Research," Chemical Engineering Department, Celaya Technical University, Celaya, Mexico, October 8, 1993.

Brookley, R.S., "Image Processing and Analysis in Fluids and in Chemical Engineering Research," Chemical Engineering Department, Technical University of Mexico City, Mexico City, Mexico, October 31, 1993.


Brookley, R.S., "Image Processing and Analysis in Fluids and in Chemical Engineering Research," Applied Mechanics Department, University of Illinois, March 24, 1994.

Brookley, R.S., "Image Processing and Analysis in Fluids and in Chemical Engineering Research," Chemical Engineering Department, University of Kentucky, March 24, 1994.


Davis, J.F., "Knowledge-Based Systems in Process Control," Honeywell Advanced Control Symposium, Phoenix, AZ.


Davis, J.F., "Knowledge-Based Systems and Neural Networks in Processing and Manufacturing," DowElanco, Indianapolis, IN.

Davis, J.F., "Intelligent Systems in the Refining and Petrochemicals," Los Alamos National Laboratory, Los Alamos, NM.


Davis, J.F., "Neural Networks in Pattern Recognition and Control," Owens Corning, Granville, OH.


Fan, L.S., "Three-Phase Fluidization," University of Hannover, Germany, Sep. 9, 1993.

Publications and Presentations

Fan, L.S., "Three-Phase Fluidization," The Ohio State University, October 4, 1993.


Lee, L.J., Workshop for Polymer and Composite Processing, The Hong Kong University of Science and Technology, Hong Kong, March (1993).


Ozkan, U.S., You can Do It!, YWCA Bright Futures Award Ceremony Lecture, Columbus, OH, March 1993.


Ozkan, U.S., Investigation of the Reaction Network in SCR Reactions through Isotopic Labeling Studies, University of Notre Dame, Department of Chemical Engineering, South Bend, IN, November 1993.

Rathman, J.R., Symposium on Surfactant Science and Engineering, invited speaker for session organized to recognize the appointment of John Scamehorn to the Asahel Glass Endowed Chair of Chemical Engineering, University of Oklahoma, November 1993.

Rathman, J.R., American Chemical Society, Winter Meeting of the West Virginia Chapter of ACS, December 1993.

Slider, H.C., A five day short courses conducted for Chevron Canada Resources in Calgary, Canada, May 1994.

Slider, H.C., A five day short course conducted for open industry in Houston, Texas, June 1994.

Yang, S.T., Novel Continuous Bioreactor for Xanthan Gum Production from Corn Dextrose, Ohio Corn Growers Association, April, 1993.

Yang, S.T., Value-Added Products from Whey Fermentation Using a Novel Immobilized Cell Bioreactor, National Dairy Research Institute, Karnal, India, June 3, 1993.

Yang, S.T., Production of Value-Added Products from Agricultural and Food Processing Byproducts, Ninth National Convention of Chemical Engineers and International Symposium on Importance of Biotechnology in Coming Decades, The Institution of Engineers (India), Visakhapatnam, India, June 5-7, 1993.

Yang, S.T., Inaugural address for the International Symposium on Importance of Biotechnology in Coming Decades, The Institution of Engineers (India), Visakhapatnam, India, June 6, 1993.

Yang, Novel Multiphase Bioreactor for Fermentations and Cell Cultures, University of Akron, Department of Chemical Engineering, Akron, Ohio, October 28, 1993.


B. ADDITIONAL PAPER PRESENTATIONS


Chalmers, J.J., R. Venkat, R.S. Brookley, Y. Guezennec, "The Use of Three-Dimensional Particle Image Velocimetry (3D-PIV) to Characterize the Hydrodynamics Forces on Anchorage Dependent Mammalian Cells," Annual AIChE Meeting, St. Louis, MO, Nov. 7-12, 1993.


Publications and Presentations


Yang, S.T., "Production of Low-Cost CMA Deicer from Cheese Whey," DOT-NSERDA CMA Project Workshop for Industrial Committee members, Columbus, Ohio, July 22, 1993.


Publications and Presentations


Zhu, H. and S.T. Yang, "Production of Monoclonal Antibodies by Immobilized Hybridoma Cells in a Novel Continuous Bioreactor", AIChE Annual Meeting, St. Louis, Missouri, Nov. 7 - 12, 1993.


C. ORGANIZERS AND SESSION CHAIRS OF NATIONAL AND INTERNATIONAL MEETINGS

Brodkey, R.S., Session Chair for Symposium on Turbulent Mixing Phenomena at the AIChE Annual Meeting, St. Louis, Nov. 7-12, 1993.


Fan, L.S., Member of the Scientific Committee, First International Particle Technology Forum (3rd World Congress on Particle Technology), Denver, August 17-19 (1994); Repertoire for the Fluidization and Transport Phenomena program.

Fan, L.S., Co-Chairman, Particle Characterization and Transport Phenomena in Filtration and Separation session, American Filtration Society Annual Meeting, Chicago, May 3-6, 1993.


Fan, L.S., Member of the International Advisory Committee, The 1st International Symposium on Measuring Techniques for Multiphase Flow, Nanjing, P.R. China, May 7-10, 1995.

Fan, L.S., Member of the Scientific Committee, 2nd International Conference on Multiphase Flow '95 Kyoto, to be held on April 3-7, 1995 in Kyoto, Japan.


Lee, L.J., Session Co-Chairman, AIChE National Meeting, Seattle, WA.

Lee, L.J., Session Organizer and Chairman, 10th Int. Polymer Poroscing Society Conference, Akron, OH.

Ozkam, U.S., Chair Fundamentals of Oxide Catalysis Session, Annual Meeting of the American Institute of Chemical Engineers, St. Louis, MO, November 1993.


Zakin, J.L., Session Chair, Session on Optical Rheometry, Society of Rheology 64th Annual Meeting, Santa Barbara, February 1993.

Zakin, J.L., Session Co-Organizer and Co-Chair, Session on New Courses not Traditionally Taught in Chemical Engineering, ASEE 100th Conference, University of Illinois, Urbana, June 22, 1993.

D. EDITORIAL BOARDS, NATIONAL COMMITTEES AND OTHER PROFESSIONAL ACTIVITIES


Brodky, R.S., ABET/AIChE Chemical Engineering Visiting Accreditation Panel, 1984 - to date.

Brodky, R.S., Member North American Mixing Forum (NAMF, former Area 3s of AIChE).


Chalmers, J.I., NSF Review Panel 1993 SBIR.

Davis, J.F., Another offering of the OSU sponsored short course, "On-Line Expert Systems and Neural Nets in Process Operations," was held in Houston, TX.

Davis, J.F., Re-Elected to a three-year term, Board of Trustees, CACHE (Computer Aids in Chemical Engineering) Corporation. The Board of Trustees for CACHE consists of 21 academic and 7 industrial representatives from the United States and Canada.

Davis, J.F., Associate Director for Research Computing through the Office of Academic Computing (50% appointment).

Fan, L.S., Alexander von Humboldt Research Professor, University of Hannover, Germany.


Fan, L.S., AIChE National Program Committee: Group 3B - Fluidization and Fluid-Particles Systems.

Fan, L.S., AIChE National Program Committee: Group 3B - Fluidization and Fluid-Particles Systems, Member of Steering Committee.

Fan, L.S., AIChE National Program Committee: Group 3D - Powder Technology, Founder & Member.

Fan, L.S., AIChE National Program Committee: Group 7E - Chair, 1992-date.

Fan, L.S., AIChE National Program Committee: Group 2F - Particle Technology Forum Founding Member and Chairman, 1992-date.


Fan, L.S., Director, Ohio Coal Research Program.


Lee, L.J., Evaluator of NSF sponsored "Center for Molecular and Microstructure of Composites" at Case Western Reserve University and University of Akron.

Ozkan, U.S., Stanley E. Harrison Faculty Award, 1993.

Yang, S.T., Member of Board of Directors, The Ohio Chinese Academic and Professional Association (1992-1994).

Zakin, J.L., ABET/AIChE Chemical Engineering Accreditation Visiting Panel.

Zakin, J.L., Editorial Board, Chemical Engineering Research Conpendium.

Zakin, J.L., State of Ohio Alternative Fuels Advisory Board.

Zakin, J.L., Columbus Priorities '95 Technical Advisory Committee.

Zakin, J.L., Chemical Engineering Magazine, Kirkpatrick Award Selection Committee.

Zakin, J.L., American Chemical Society, Petroleum Chemistry Award canvassing Committee Professional Engineer.

Ch.E.'s come in all sizes
Theses

Ph.D. Theses

Y. Cai, B.S. (E. China Inst. Of Chem. Tech); M.S. (Ohio State University); Investigation Of The Reaction Network And Catalytic Sites In Selective Catalytic Reduction Of Nitric Oxide With Ammonia Over Vanadia Catalysts.

Y.-C. Chou, B.S. (National Taiwan University); M.S. (National Taiwan University); Structure Formation And Properties Of Polyurethane-Unsaturated Polyester Interpenetrating Polymer Networks.

S.A. Driscoll, B.S. (University of Washington); M.S. (Ohio State University); Oxidative Coupling of Methane Over Alkali-Promoted MnMoO4 Catalysts.

A. Ghosh-Dastidar, B.S. (Indian Institute of Technology - Kharagpur); M.S. (University of Akron); Ultrafast Kinetics Of SO2/Sorbert Reactions At. High Temperatures.

M.R. Kinkelaar, B.S. (Ohio State University); M.S. (Ohio State University); Dilatometric Study Of Low Profile Unsaturated Polyester Resins.

S. Kumar, B.S. (Banaras Hindu University); M.S. (University of Kentucky); Heat Transfer Characteristics In Bubble Columns And Three-Phase Fluidized Beds.

R. Lee, B.S. (Kansas State U. Ag. & App. Sci); M.S. (Ohio State University); Studies Of Solid-Solid Interaction Forces And The Pneumatic Handling Of Powders.

C.-J. Linn, B.S. (National Taiwan University); M.S. (National Taiwan University); Modelling, Dynamic Simulation And Adsorption-Reaction In Three-Phase Reactors.

I. Park, B.S. (Chonnam National University); M.S. (University of Missouri At Rolla); Adsorption And Sorbent Particle Dynamics In Packed Beds.

M. Perry, B.S. (University of Dayton); M.S. (Ohio State University); Analysis Of Resin Transfer Molding; Material Characterization, Molding And Simulation.

R. Gaines, B.S. (Howard University); Modeling Of The Ternary System Carbon Dioxide + Toluene 1,1,1-Trichloroethane.

K.C. Hofacre, B.S. (University of Akron); Effect Of Nozzle Design On The Dispersion Of Powders Using A Noninrusive, In Situ Particle-Imaging Technique.

L.R. Moore, B.S. (Middle Tennessee State University); Continuous Magnetic Cell Separation; A Technique For Measuring Magnetic Susceptibility.

S.E. Schudt, B.S. (St. Marys College); A Definitive Test Of Three Dimensional Imaging As A Method For Particle Surface Area Analysis.

E.M. Silva, B.S. (Ohio State University); Production Of Lactic Acid By Fermentation Of Acid Whey In A Novel Immobilised Cell Bioreactor.

C.-M. Wang, B.S. (National Tsing Hua University); On-Line Learning And Interpretation Of Multiple Sensor Traces In Chemical Process Plants-A Neural Network Approach.

Master's Theses

M. DeVries, B.S. (Univ. of Capetown); Symptoms Database and Knowledge Structure For An On-Line Allergyce Batch Diagnostic Knowledge-Based System.

Do you remember when...?
## Anniversary Classes

### 1924
- Rollin H. Cragg
- Andrew L. Andrews
- Tien L. Chen
- Charles C. Clark
- Folsom E. Drummond
- John M. Flikkema
- George F. Friau
- Glenn R. Hull
- William S. Jones
- Clifford F. Landin
- Toh Liu
- Albert Rotta
- James R. Wall

### 1929
- Frank L. Durr
- Julius L. Hoelscher
- Ming T. Hsieh
- Mary B. Junkin
- Elwood B. Layfield

### 1934
- Walter A. Barres
- Hsu-Yung Chao
- Charles W. Choi
- Edwin J. Corell
- Robert H. Crossley
- Walter C. Croysdale
- Clarence N. Fisher
- Olin D. Graff
- Edwin A. Harper
- Owen G. Howard
- Wei Chieh Hsieh
- Harold D. Kaufmann
- Humbert C. Lancia
- William J. Lawless, Jr.
- Charles T. Lewis
- Scott C. Lyon
- Theodore Marks
- William D. Martin, Sr.
- Lewis E. Michael
- Ivan A. Planck
- Edward E. Slowter
- William F. Swink
- Raymond H. Teng
- Hyman H. Weinberg
- Robert H. Work
- Fred Yenkin

### 1944
- Harold P. Connare
- G. Merlin Correll
- Robert H. Dewar
- Albert R. Downing
- Frederick Eastman
- Carl D. Fischer
- Charles L. Fletcher
- Robert R. Foltz
- Dwight A. Francis
- Allan L. Gordon
- John K. Harvey
- Keith S. Hoover
- John L. Hotz
- Glenn R. Hull
- Williams E. Jackson
- Ira J. Kail
- John S. King
- Lewis R. Kreig
- Dillard W. Kuhlman
- Gerhard F. Lamers
- Robert G. Lilley
- Milton F. Lindsley, Jr.
- James E. Manner
- John M. McEwen
- Robert P. Mitchell
- Ralph E. Quigley
- Robert S. Radow
- Merrill L. Riehl
- George E. Roose
- Howard G. Rohrer
- Charles A. Rohmann
- Leland F. Roy
- Bernard R. Sarchet
- Edward E. Slowter
- Randal E. Smith
- Joel S. Stahl
- Paul L. Suter
- Samuel Teplitz
- Richard P. Theado
- Arthur Thomas, Jr.
- Roy W. Thompson
- William R. Thompson
- George S. Tobias
- Harry B. Warner
- Clayton W. Weber
- Burton M. Wolf
- William D. Woodford

### 1949
- Marshall C. Kidd
- Theodoer E. Koprowski
- M. John Laituri
- Myrt E. Miller
- Richard D. Mitchell
- George H. Montgomery
- Edward W. Powell
- Mayer Schwartz
- Edwin E. Smith
- Charles E. Strahl
- Grover C. Strickler, Jr.
- Philip A. Yount

### 1954
- Donald S. Arnold
- William D. Arthur
- Paul E. Bates
- Clair W. Bemiss
- Harish C. Bijawat
- Bernard C. Booth
- Elmer J. Bradbury
- Lloyd T. Bunn
- John A. Burgbacher
- Lee B. Canfield
- Charles W. Conkin
- Joseph W. Connolly
- Gordon G. Cross
- Kurt M. Dubowski
- Robert G. Dunn
- John E. Egelhoff
- George W. Egger
- Samuel S.-M. Fok
- Dennis D. Foley
- Eugene F. Fowler
- Paul A. Fritsche
- Edward E. Galloway
- Raymond W. Garris
- Raymond D. Hammond
- Thomas A. Haverfield
- Allen C. Heidenreich
- Richard P. Heintz
- Maurice R. Heter
- Bruce E. Hilt
- William H. Hohe
- Wilbur C. Hoovers
- Huan Y. Hsing
- Walter D. Hunter
- James F. Irwin
- Theodore M. Jenney
- Robert A. Jones
- Emerson M. Jones, Jr.
- William E. Jurevic
- J. Howard Kerstetter, Jr.
- William K. Kinzer
- William G. Knapp
- Rudolph Knaus
- Rodney J. Koenig
- Robert E. Kraus
- Rine Kruger, Jr.
- Richard H. Layley
- George R. Lewis
- Ting Hung Ling
- Robert S. Long
- Freecierick A. MacDougall
- John B. Martin
- Herbert C. McKee
- Bryce H. McMullen
- Jack R. Metcalf
- Richard N. Miller
- Basil H. Minnich
- Ralph L. Mitchell
- John D. Mueller
- Stanley S.Y. Pai
- Chi Ti Pan
- Dean B. Plotts
- Morton Pollack
- Theodore A. Rado
- Roy E. Retzeck
- Samuel A. Riccardi
- Donald R. Roberts
- John D. Rogers, Jr.
- Aaron Rose
- John P. Rosser
- Glen D. Schaaf
- R. Ted Scharenberg
- Edgar A. Shawd
- Charles R. Sieperd
- Robert M. Shuster
- Edwin E. Smith
- Roland J. Spencer
- Howard R. Steele
- David F. Stewart
- Ralph F. Strige, Jr.
- Aaron J. Supowitz
- John W. Thompson
- Ohn Tin
- Augustus R. VanKleeck
- John M. Wallin
- Francis A. Warren
- George H. Whipple
- Edward W. Wiederhold
- Howard G. Wittmer
- Pel-Sin Yu
- Charles E. Ziants

### 1930
- Francis D. Beckel
- Robert S. Berg
- John E. Cheney
- Hsi-Chieh Cheng
- Robert W. Conaway
Anniversary Classes

David H. Gartner
Bruce Giles
Richard E. Harrington
Roland E. Johnson
Ralph L. Justice
Ivan Kania
William J. Kozel
William R. Lancaster
John O. Lott
Jack L. Mahaffey
Frank J. Maslyk
Peter A. Minderman
*L. Gilbert Moody
Gilbert E. Raines
John W. Roberts, Jr.
James E. Sherrard
Theodore R. Smith
William H. Sprout
Charles C. Thacker, Jr.
Abdul R. Uliman
Augustus R. VanKleeck
Floyd A. Veley
Douglas Weir
Robert B. Weiser
James A. Yerina

1959
Lee W. Addie
James O. Alberty
Thomas M. Bates
Cesar B. Bautista
Sanford G. Bloom
*Eugene M. Bond
Charles H. Brown
Sun W. Chun
Ronald E. Davis
Thomas O. Dobbs
Charles E. Drum
Dean W. Fisher
John C. Floyd
Julius Fortis, Jr.
James R. Godwin
Robert L. Halsey
Richard L. Hempy
Frederic E. Hoffmanns
Melvin E. Hoover
Lloyd G. Jones
Lawrence W. Jordan, Jr.
Ronald M. Kovach
John P. Kuhn
James W. Lacksonen
James H. Laughlin
Pleas F. Leverett
Arthur W. Liles
Roland G. Lindsey
James E. Long
David F. Macaruss

Brian L. Nyquist
*Chikatsu Okagawa
William S. Palmer
John T. Priddy
Edward R. Purves
*Ora L. Reedy
Prabhakar K. Sanghani
Donald H. Sharp
Francis E. Smith
Shashikant K. Sonawala
James L. Thompson
Foo Heng Tse
William B. VanSise
Darryl J. VonLehme
Richard E. Warkick
Joseph H. Weinberg
Gerald A. Wilcox

Edwin J. Wilson
*Benjamin Co Yao

1969
Yong Jun Ahn
Mazen Y. Anastas
Wayne E. Ballantyne
*Scott M. Barrick
Peter N. Bartram
Robert A. Baxter
John H. Becher
*John J. Curran

I have found memories of Unit Ops too.

Good idea, but...

*No current information available. If you know their address, please send it to us.
**INFORMATION COUPON FOR NEWSLETTER,**
**ALUMNI NEWS**

**Name**

**Home address**

*Street*

*City,* *State,* *Zip*

**If married, spouse name**

**Children's names**

**Occupation**

*(If retired, list last employment and company)*

**Company (and Dept.)**

**Special activities: (please use this space for any news you would like to pass on to your friends - work related, outside activities, family news, i.e., new additions, graduations, grandchildren, etc.)*

Do you have any suggestions as to the types of information you would like to see in your newsletter? *(please feel free to add additional pages)*

**Occupational** *(Professional only)*

yes _____ no _____

**Family news**

yes _____ no _____

**Other:** *(please explain)*

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