### H. Michael Cheung, Ph.D., P.E.

The University of Akron, Department of Chemical, Biomolecular, and Corrosion Engineering, Akron, OH 44325-3906 330/972-7282 phone, email: cheung@uakron.edu

#### **Personal Data**

Date of Birth 8 July 1957

Place of Birth Buffalo, New York (U.S. Born Citizen)

Marital Status Married with three children and five grandchildren

#### **Education**

B.S. (Ch.E.) Case Institute of Technology (22 May 1979)

M.S. (Ch.E.) Case Western Reserve University (14 January 1982)

Ph.D. (Ch.E.) Case Western Reserve University (17 January 1985)

Professional Engineer (Ohio, E-52254)

M.S. Thesis "Measurement of Electrophoretic Mobilities Using Laser Velocimetry" under Prof. Robert Edwards

Ph.D. Dissertation "A Laser Light Scattering Investigation of Oil-in-Water Microemulsions" under Profs. Robert Edwards and J. Adin Mann, Jr.

#### **Research Interests**

Engineering education
Environmental applications of sonochemistry
Materials synthesis applications of sonochemistry
Materials synthesis in nanostructured fluids
Solubilization and materials synthesis in supercritical fluids

### **Employment**

10/13 - *	Professor and Chair Department of Chemical, Biomolecular, and Corrosion Engineering, The University of Akron, Akron, Ohio 44325-3906
8/98 – *	Professor Department of Chemical and Biomolecular Engineering, The University of Akron, Akron, Ohio 44325-3906
8/89 - 8/98	Assoc. Professor, Dept. of Chem. Engineering, The University of Akron
9/84 - 8/89	Assistant Professor, Dept. of Chem. Engineering, The University of Akron
5/81 - 8/81	Summer Research Asst, Diamond Shamrock Corporation, Painesville, OH

1/76 - 5/79 Research Assistant (Part-time), Chemical Engineering Department, Case Western Reserve Univ., Cleveland, Ohio 44106

#### Related appointments

2006 Adjunct Professor of Chemical Engineering, University of Arkansas

#### Scientific and Professional Societies

American Institute of Chemical Engineers American Chemical Society Order of the Engineer Tau Beta Pi Sigma Xi

Program Committee Member, ACS Colloid and Surface Science Division, 2005-2011

Co-Chair, 84th ACS Colloid and Surface Science Symposium, June 2010, The University of Akron, Akron, Ohio.

Chair, Symposium on Fundamentals of Interfacial Phenomena I, AIChE 2008 Annual Meeting, Nov. 2008, Philadelphia, PA.

Chair, Symposium on Fundamentals of Interfacial Phenomena II, AIChE 2007 Annual Meeting, Nov. 2008, Philadelphia, PA.

Chair, Symposium on Fundamentals of Interfacial Phenomena III, AIChE 2007 Annual Meeting, 7 Nov. 2007, Salt Lake City, UT.

Chair, Symposium on Interfacial Phenomena in Environmental and Alternative Energy Systems, AIChE 2007 Annual Meeting, 8 Nov. 2007, Salt Lake City, UT.

Chair, Symposium on Interfacial Phenomena in Environmental Systems, AIChE 2006 Annual Meeting, 13 Nov. 2006, San Francisco, CA.

Vice-Chair, Symposium on Colloidal Phenomena in Supercritical Fluids, AIChE 2005 Annual Meeting, Nov. 2005, Cincinnati, Ohio.

Chair, Symposium on Interfacial Phenomena in High Pressure Systems, AIChE 2005 Annual Meeting, Nov. 2005, Cincinnati, Ohio.

Vice-Chair, Symposium on Colloidal Phenomena in Supercritical Fluids, AIChE 2004 Annual Meeting, Nov. 2004, Austin, TX.

Programming Chair for AIChE Area 1c Interfacial Phenomena for 2002 – 2005

Chair, Interfacial Phenomena Poster Session, AIChE 2004 Annual Meeting, Nov. 2004, Austin, TX.

Chair, Symposium on Interfacial Phenomena in High Pressure Systems, AIChE 2004 Annual Meeting, Nov. 2004, Austin, TX.

Co-Chair, Self-Assembling Systems: Surface and Interfacial Phenomena, 78<sup>th</sup> ACS Colloid and Surface Science Symposium, Yale University, New Haven, CT, June 20, 2004.

Co-Chair, Symposium on Applications of Nanostructured Fluids, AIChE 2003 Annual Meeting, San Francisco, CA, Nov. 19, 2003.

Chair, Interfacial Phenomena Poster Session, AIChE 2003 Annual Meeting, San Francisco, CA, Nov. 17, 2003.

Programming Vice Chair for AIChE Area 1c Interfacial Phenomena for 1999 – 2002

Co-Chair, Symposium on Nanostructured Fluids: Fundamentals and Applications, AIChE 2002 Annual Meeting, Indianapolis, IN, Nov. 2002.

Chair, Symposium on Interfacial Phenomena in Materials Synthesis, 76th ACS Colloid and Surface Science Symposium, June 2002, The University of Michigan, Ann Arbor, Michigan.

Co-Chair, Symposium on Microemulsions: Fundamentals and Applications, AIChE 2001 Annual Meeting, Reno, NV, Nov. 2001.

Co-Chair, Symposium on Applications of Microstructured Fluids, AIChE 2000 Annual Meeting, Los Angeles, CA, Nov. 2000.

Co-Chair, Symposium on Interfacial Phenomena in Materials Processing, AIChE 2000 Annual Meeting, Los Angeles, CA, Nov. 2000.

Co-Chair, Symposium on Interfacial Phenomena in Materials Processing, AIChE 1999 Annual Meeting, Dallas, TX, Nov. 1999.

Host, Symposium on High Temperature Gel Permeation Chromotography, held 22 & 23 September 1999 at The University of Akron, sponsored by Polymer Laboratories, Inc.

Co-Chair, Symposium on Sol-Gel Processing, AIChE 1998 Annual Meeting, Miami, Nov. 1998.

Committee Associate, Council Committee on Public Relations, American Chemical Society, 1998

Co-Chair, Symposium on Interfacial Phenomena in Materials Processing, AIChE 1997 Annual Meeting, Los Angeles, Nov. 1997.

Technical Program Committee, 26th Annual Meeting of the Fine Particle Society, Chicago, IL, 22-25 August 1995.

Organizer, Symposium on Colloids/Polymer Science and Engineering, 26th Annual Meeting of the Fine Particle Society, Chicago, IL, 24-25 August 1995.

Organizer and Session Chair, Session on Polymer Colloids and Polymeric Surface Active Materials, Symposium on Colloids/Polymer Science and Engineering, 26th Annual Meeting of the Fine Particle Society, Chicago, IL, 25 August 1995.

Chair, Electrohydraulic Cavitation and Sonolysis Session, The First International Conference on Advanced Oxidation Technologies for Water and Air Remediation, London, Ontario, Canada, 26 June 1994.

Co-Chair, Symposium on Polymeric Surface Active Materials, 205th American Chemical Society National Meeting, Denver, Colorado, April 1&2, 1993.

Chairman, Akron Local Section of the American Institute of Chemical Engineers, 1991.

Vice-Chairman, Akron Local Section of the American Institute of Chemical Engineers, 1990.

Treasurer, Akron Local Section of the American Institute of Chemical Engineers, 1989.

### **University Service**

2016 - *	Interim Director, National Center for Education and Research in Corrosion and Materials Reliability
2017 - *	Past Chair of Chairs (Department Chairs & School Directors Caucus)
2016 - 2017	Chair of Chairs (Department Chairs & School Directors Caucus)
2016	"Tiger Team" member (Governance subcommittee convener, Enrollment subcommittee member)
2015 - 2016	Vice Chair & Chair Elect of Chairs (University of Akron Chairs Caucus)
2003 - 2013	Chief Negotiator for the Akron-AAUP (negotiated the first three contracts
	between the Akron-AAUP and The University of Akron Administration)
2004 - 2007	Faculty Senate
	- Reference Committee of Faculty Senate
1995 - 2004	Computer and Communications Technology Committee (Chair for
	2001/2002 AY)
2002 - 2003	Decision Making Entities and Recommending Bodies Task Force (chair)
1999 - 2000	Engineering Representative to the President's Advisory Committee
1999	Search Committee for the Vice President for Information and Instructional
	Technologies, Libraries, and Institutional Planning
1993 - 1999	Faculty Senate (elected to 2 consecutive three year terms)
	- 1997 Elected to serve as a Senate Presidential Search Representative
	- 1996 – 1998 Planning & Budgeting Committee

1997/98	Evaluation	Subcommittee,	Chair
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- Elected Chair for 1994/95 & 1995 to 1997
- Elected to Executive Committee for 1993/94
- Budget, Planning, and Coordination Committee 1993 to 1996 (elected by Faculty Senate and elected vice chair by BPCC for 93/94)
- Computer and Communications Technology Committee 1995/96, 96/97 & 97/98 & 1999/2000
- University Library Committee 1993 to 1995 (chair for 1993/94)
- 1997 2000 World Wide Web Policy Committee
- 1996 1997 Pew Roundtable / Knight Collaborative Team
- 1996 1997 Provost's ad hoc Committee on Incentive Based Budgeting
- 1995 1997 World Wide Web Committee (appointed by the Provost)

Access Subcommittee

- 1994 1997 Honorary Degree Review Committee
- 1996 Presidential Investiture Planning Committee
- 1996 Executive Director of University Relations and Communications Search Committee
- 1995 1996 Associate Provost for Information Services Search Committee
- 1995 1996 Vice President for Business & Finance Search Committee
- 1994 1995 Student Success Task Force (co-chair with Provost & Student Services Vice President)
- 1994 1995 University Review Committee for the University Honors Program
- 1994 Corporate Challenge Swim Coach
- 1994 1995 Pew Roundtable Campus Leadership Team
- 1992 1993 University Council (elected)
  - University Library Committee
- 1991 1992 Graduate Faculty Membership Committee
- 1989 1990 University Safety Committee
- 1986 1989 Campus Facilities and Planning Committee
- 1986 1988 University Council (elected)

### **College of Engineering Service**

- 2013 \* Department Chair Chemical & Biomolecular Engineering
- 2004 2013 Deans Advisory Committee
- 1994 2003 College Library Committee
- 2000, '01,'03 Louis A. Hill, Jr. Award Committee, Chair
- 1999 2000 Engineering Dean's search committee, Chair
- 1996 1997 Coordinator for Polymer Engineering Research Interest Group
- Ad Hoc Review Committee for Environmental Engineering proposals
- 1996 Chemical Engineering Coordinator for Engineering Design Expo at
  - Inventure Place
- 1994 1995 Task Force for Enhancing the Undergraduate Program (Chair)
- 1989 1992 Graduate Curriculum Committee
- 1990 Ad Hoc Committee for RTP Criteria and Procedures (Chair)
- 1989 College of Engineering 75th Anniversary Committee
- 1986 1990 Safety Committee

# **Department of Chemical Engineering Service**

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2013 - *	Department Chair
1986 - *	Honors Preceptor (co w/ Drs. Newby and Liu)
2012 - 2013	Chair, Faculty Search Committee
2011 - 2012	Faculty Search Committee
2002 - 2004	Department Tenure and Promotion Committee Chairman (2 years)
1997 - 2000	Department Graduate Committee
1999 - 2000	Department Full Professor Promotion Committee, chair
1998 - 1999	Faculty Search Committee
1998 - 1999	Department Full Professor Promotion Committee, chair
1996 - 1997	Faculty Search Committee, Chair
1996 - 1997	Department Resource Committee (chair)
1984 - 1996	Department Graduate Committee
1986 - 1993	Department Safety Officer
1990	Department Tenure and Promotion Committee Chairman
1986 - 1990	Department Software Advisory Committee
1986 - 1990	HP GC/MS Faculty supervisor
1986 - 1987	Department Head Search Committee
1985 - 1986	Coordinator, Department Seminar Series
1984 - 1985	Co-coordinator, Department Seminar Series

# **Community Involvement and Service**

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1985 - *	St. Marys Mens Club, misc. service to the church community 2000 - 2002 Board member & Service Chair	
	2002 – 2004 Board member	
1995 - *	Lector for St. Mary Roman Catholic Church, Hudson OH	
2003 - *	Volunteer Pilot, Angel Flight, Charitable Medical Airlifts	
1989 - 2003	Volunteer Pilot, AirLifeLine, Charitable Medical Airlifts, 2002 – 2003	
	Team AirLifeLine Coordinator for Ohio; AirLifeLine merged with Angel	
	Flight in 2003	
2005 - *	First Responder Pilot, Homeland Security Emergency Air Transportation	
	System	
2010 - *	Extraordinary Minister of Holy Communion, St. Mary Roman Catholic	
	Church, Hudson OH	
1994 - 2010	Boys Scouts of America, Merit Badge Counselor (Aviation,	
	Backpacking, Chemistry, Energy, Engineering, and Hiking)	
1997 - 2009	Elected Council Member for the Village of Boston Heights	
	2005-2009 Council President, Finance Committee (chair), Safety II	
	Committee (fire), Planning Commission, Board of Zoning Appeals,	
	Zoning Committee (chair)	
1994 - 2004	Assistant Scoutmaster, Troop 320, Hudson, Ohio	
2002 - 2004	Troop Committee, Troop 326, St. Mary, Hudson, Ohio	
1995 - 1998	Hospitality Minister for St. Mary Roman Catholic Church	
1994 - 1997	Village of Boston Heights Planning Commission member	

1995 - 1996	St. Mary Building Fund Committee
1994	Assistant Coach, Hudson Girls Softball
1994 - 1995	Team Manager, Hudson Soccer Association
1993 - 1994	Village of Boston Heights Zoning Appeals Board member
1992 - 1994	Cubmaster, Pack 3327, Hudson, Ohio
1990 - 1992	Assistant Cubmaster, Pack 3327, Hudson, Ohio
1990 - 1992	Pack 3327 Committee Chairman, Hudson, Ohio

### **Deposition and Trial Testimony Record**

The Ohio Willow Wood Company v. ALPS South Corp. Case No. 2:04-cv-01223 Alps South, LLC v. The Ohio Willow Wood Company, Case No. 8:08-cv-01893 Alps South, LLC v. The Ohio Willow Wood Company, Case No. 8:09-cv-00386-EAK-MAP

#### **Honors and Awards**

2013 Outstanding Honors Advisor, University of Akron

2007 NASA Glenn Summer Faculty Fellowship

2006 NASA/ASEE Summer Faculty Fellowship

2005 NASA/ASEE Summer Faculty Fellowship

2004 NASA Space Act/Board Action Award for your Technology; LEW-17373-1

"Particle Image Velocimetry Data Software (PIVACQ)".

2004 NASA Patent Application award

2003 NASA Technical Innovation award

2002 Honored as one of nine "Ohioans of the Year" by the Cleveland Plain Dealer

2002 NASA Glenn Summer Faculty Fellowship

2001 NASA/ASEE Summer Faculty Fellowship

2000 NASA/ASEE Summer Faculty Fellowship

AirLifeLine President's Award 2000

Louis A. Hill, Jr. Award 1999

Elected to Omicron Delta Kappa 1999

1996 NASA/ASEE Summer Faculty Fellowship

Honorable Mention for the Tau Beta Pi 1996 Outstanding Professor Award

1995 NASA/ASEE Summer Faculty Fellowship

Akron Local AIChE Section "Chemical Engineer of the Year" in 1994

Work on Light Scattering featured in NASA Tech Briefs, 1994

1993 NASA/ASEE Summer Faculty Fellowship

1992 NASA/ASEE Summer Faculty Fellowship

1991 NASA/ASEE Summer Faculty Fellowship

Case Western Reserve University Presidential Scholarship (1975 - 1979)

William H. Schuette Memorial Award in Chemical Engineering (CWRU '79)

Case Alumni Scholarship (1975 - 1979)

Carl F. Prutton Chemical Engineering Award (CWRU '79)

Cleveland AIChE Section 1979 Outstanding Senior Design Award

Eagle Scout, Boy Scouts of America, 1973

#### **Refereed Publications**

- 38. Oliaee, SN; Zhang, CL; Hwang, SY; Cheung, HM; Peng, ZM "Hydrogen Production via Hydrazine Decomposition on Model Platinum-Nickel Nanocatalyst with a single (111) Facet" J. Phys. Chem. C 2016, 120 (18), 9764-9772.
- 37. Oliaee, SN; Zhang, CL; Hwang, SY; Cheung, HM; Peng, ZM "Synthesis and property of a Helwingia-structured nickel nitride/nickel hydroxide nanocatalyst in hydrazine decomposition" RSC Advances 2016, 6(44), 38494-39498.
- 36. Jiang Wu, Chao Zhao, Rundong Hu, Weifeng Lin, Qiuming Wang, Jun Zhao, Stephanie M. Bilinovich, Thomas C. Leeper, Lingyan Li, Harry M. Cheung, Shengfu Chen, and Jie Zheng; "Probing the Weak Interaction of Proteins with Neutral and Zwitterionic Antifouling Polymers" Acta Biomaterialia 2014, 10(2), 751-760.
- 35. Romey,N.; Schwartz,R.M.; Behrend,D.; Miao,P.; Cheung,H.M.; Beitle,R. "Circumventing Graphical User Interfaces in Chemical Engineering Plant Design" Advances in Engineering Education 2007, 1 (1); inaugural issue of ASEE's online journal; URL <a href="http://advances.asee.org/vol01/issue01/index.cfm">http://advances.asee.org/vol01/issue01/index.cfm</a>
- 34. Wang,R.; Cheung,H.M. "Ultrasound Assisted Polymerization of MMA and Styrene in near critical CO2" Journal of Supercritical Fluids 2005, 33 (3): 271-276.
- 33. Wang,R.; Cheung,H.M. "A New PDMS Macromonomer Stabilizer for Dispersion Polymerization of Styrene in Supercritical Carbon Dioxide" J. Applied Polymer Science, 2004, 93, 2, 545-549.
- 32. Challa, V.; Kuta, K.; Lopina, S.; Cheung, H.M.; von Meerwall, E. "Microporosity of Bicontinuous Nanoporous Polymeric Materials, Characterized with Restricted Diffusion" Langmuir 2003, 19, 4154-4161.
- 31. Gaddam, K.; Cheung, H.M. "Effects of Pressure, Temperature, and pH on the Sonochemical Destruction of 1,1,1-trichloroethane in Dilute Aqueous Solution" Ultrasonics Sonochemistry 2001, 8, 103-109.
- 30. Gaddam, K.; Cheung, H.M. "Ultrasound Assisted Emulsion Polymerization of Methyl Methacrylate and Styrene" Journal of Applied Polymer Science 2000, 76, 1, 101-104.
- 29. Davis, E.W.; Mukkamala, R.; Cheung, H.M. "Effects of precursor composition on pore morphology for thermally polymerized acrylic acid, methyl methacrylate based microemulsions" Langmuir 1998, 14(4), 762-767.
- 28. Schmuhl, N.; Davis, E.W.; Cheung, H.M. "Morphology of thermally polymerized microporous polymer materials prepared from methyl methacrylate and 2-hydroxethyl methacrylate microemulsions" Langmuir 1998, 14(4), 757-761.

- 27. Meyer, W.V.; Lock, J.A.; Cheung, H.M.; Taylor, T.W.; Mann, Jr., J.A. "A Hybrid Reflection Transmission Surface Light Scattering Instrument with Reduced Sensitivity to Surface Sloshing" Applied Optics 1997, 36, 30, 7605.
- 26. Mukkamala,R.; Cheung,H.M. "Acid and Base Effects on the Morphology of Composites Formed from Microemulsion Polymerization and Sol-gel Processing" Journal of Materials Science 1997, 32, 4687-4692.
- 25. Mukkamala,R.; Cheung,H.M. "Polymer Composites Obtained by Polymerization of Microemulsions Formed with Inorganic and Organic Monomers" Langmuir 1997, 13, 617-622.
- 24. Palani Raj, W.R.; Cheung, H.M. "Porous Polymeric Membranes Synthesized from Microemulsions", chapter in The Polymeric Materials Encyclopedia: Synthesis, Properties and Applications, v.6 p.4082-4088; J.C. Salamone, Ed.; CRC Press; Boca Raton FL; 1996. Also in CD by same title (ISBN 0849326516).
- 23. Palani Raj, W.R.; Sasthav, M.; Cheung, H.M. "Polymerization of Single Phase Microemulsions: Dependence of Polymer Morphology on Microemulsion Structure" Polymer 1995, 36, 13, 2637-2646.
- 22. Sasthav, M.; Palani Raj, W.R.; Cheung, H.M. "Microstructured Polymers via Photopolymerization of Non-aqueous Organized Solutions", Polymer 1994, 35, 19, 4072-4078.
- 21. Cheung,H.M.; Kurup,S. "Sonochemical Destruction of CFC 11 and CFC 113 in Dilute Aqueous Solution", Environmental Science & Technology, 1994, 28, 1619-1622.
- 20. Bhatnagar, A.; Cheung, H.M. "Sonochemical Destruction of Chlorinated C1 and C2 Volatile Organic Compounds in Dilute Aqueous Solution", Environmental Science & Technology 1994, 28, 8, 1481-1486.
- 19. Clouse, D.J.; Cheung, H.M. "Effects of Aerosol OT on the Phase Separation Temperatures of Methanol/Hydrocarbon/Water Blends" Fuel Science and Technology International 1994, 12, 9, 1271-1279...
- 18. Ansari,R.R.;Dhadwal,H.S.;Cheung,H.M.;Meyer,W.V. "Microemulsion Characterization Using a Fiber Optic Probe" Journal of Applied Optics 1993, 32, 21, 3822-3827.
- 17. Palani Raj, W.R.; Sasthav, M.; Cheung, H.M. "Synthesis of Porous Polymeric Membranes by Polymerization of Microemulsions" Polymer 1993, 34, 15, 3305-3311.
- 16. Palani Raj, W.R.; Sasthav, M.; Cheung, H.M. "Formation of Polymeric Foams from Aqueous Foams Stabilized using a Polymerizable Surfactant" Journal of Applied

- Polymer Science 1993, 49, 1453-1470.
- 15. Palani Raj, W.R.; Sasthav, M.; Cheung, H.M. "Microcellular Polymeric Materials from Microemulsions: Control of Microstructure and Morphology" J. Appl. Poly. Sci. 1993, 47, 499-511.
- 14. Cheung, H.M. "Sonochemical Destruction of Aqueous Contaminants" Chapter One The AIChE Magazine for Students, Winter 1992-93 Issue, Vol. 7, Number 1, p.20-22.
- 13. Elliott, Jr., J.R.; Cheung, H.M. "Light Scattering Study of Polymer Network Formation in a Supercritical Diluent" ACS Symposium Series #514, p.271-280, Supercritical Fluid Engineering Science, E. Kiran & J. Brennecke, Ed., American Chemical Society, 1992.
- 12. Palani Raj, W.R.; Sasthav, M.; Cheung, H.M. "Polymerization of Microstructured Aqueous Systems formed using Methyl Methacrylate and Potassium Undeceneoate" Langmuir 1992, 8, 8, 1931-1936.
- 11. Sasthav,M.;Palani Raj,W.R.;Cheung,H.M. "Characterization of Microporous Polymeric Materials: Pore Continuity and Size Distribution via Thermal Analysis" J. Colloid and Interface Science 1992, 152, 2, 376-385.
- 10. Pfeiffer,R.M.;Bunge,A.L.;Shere,A.J.;Cheung,H.M. "Corrected Analysis of the Effect of Preparation Parameters on Leakage in Liquid Surfactant Membrane Systems" Separation Science and Technology 1992, 27, 6, 753-763.
- 9. Palani Raj, W.R.; Sasthav, M.; Cheung, H.M. "Formation of Porous Polymeric Structures by the Polymerization of Single Phase Microemulsions Formulated with Methyl Methacrylate/Acrylic Acid" Langmuir 1991, 7, 11, 2586-2591.
- 8. Bhatnager, A.; Jansen, G.; Cheung, H.M. "Sonochemical Destruction of Chlorinated Hydrocarbons in Dilute Aqueous Solution" Environmental Science and Technology 1991, 25, 8, 1510-1512.
- 7. Sasthav,M.;Cheung,H.M. "Characterization and Polymerization of Middle Phase Microemulsions in Styrene/Water Systems" Langmuir 1991, 7, 7, 1378-1382.
- 6. Nitirahardjo,S.;Cheung,H.M. "Effect of Surfactants and Cosurfactants on the Phase Separation Temperature and Volatility of Methanol/Hydrocarbon/Water Blends" Energy and Fuels 1990, 4, 3, 303-307.
- 5. Patel,R.;Cheung,H.M. "Effects of Heptanoic and Oleic Acid on the Phase Separation Temperatures of Methanol/hydrocarbon/water Mixtures" Energy and Fuels 1989, 3, 1, 76-79.
- 4. Shere, A.; Cheung, H.M. "Effect of Preparation Parameters on Leakage in Liquid Surfactant Membrane Systems" Separation Science and Technology 1988, 23, 6 & 7,

- 3. Shere, A.; Cheung, H.M. "Modeling of Leakage in Liquid Surfactant Membrane Systems" Chem. Engineering Communications 1988, 68, 143-164.
- 2. Cheung,H.M.;Qutubuddin,S.;Mann,Jr.,J.A.;Edwards,R.V. "Light Scattering Study of Oil-in-Water Microemulsions: Corrections for Interactions" Langmuir 1987, 3, 5, 744-752.
- 1. Mann, Jr., J.A.; Edwards, R.V.; Gall, T.; Cheung, H.M.; Coffield, F.; Havens, C.; Wagner, P. "APL Level Languages in Analysis: A Host-Microcomputer-Instrument Hierarchy in Light Scattering Spectroscopy" ACS Symposium Series #57, 1977 (ed. Peter Lykos).

### Patents (6 issued)

- 6. Beitle, R.R.; Romey, N.; Setzer, S.; Cheung, H.M. "User Interface for Software Applications" U.S. Patent# 8,201,080 B2; issued 6/12/2012.
- 5. Meyer, W.V.; Cannell, D.; Tin, P.; Cheung, H.M.; Mann, J.A., Jr.; Taylor, T.; Zhu, J.; Smart, A.E. "Cross-Correlation Method and Apparatus for Suppressing the Effects of Multiple Scattering"; U.S. Patent# 5,956,139, issued 9/21/99.
- 4. Cheung,H.M. "Combined Optical Train for Laser Spectroscopy"; U.S. Patent# 5,298,969 (same title as #3, but different technology was patented, original application was divided by the patent office), issued 3/29/94.
- 3. Cheung, H.M. "Combined Optical Train for Laser Spectroscopy" U.S. Patent# 5,298,968, issued 3/29/94.
- 2. Greene,H.L.; Cheung,H.M.; Danals,R.S.; Vimiwala,S.V. "Catalyst for Destruction of Hazardous Chlorinated Wastes and Process for Preparing the Catalyst" U.S. Patent #5,075,273 issued 12/24/91.
- 1. Cheung,H.M. "Combined High Spatial Resolution and High K-Vector Selection Optical Train for Laser Spectroscopy", U.S. Patent #5,028,135 issued 7/2/91.

### **Other Publications**

- 14. H. K. Qammar, H. M. Cheung, E. A. Evans, S. Prettyman Spickard, F. S. Broadway, and R. D. Ramsier, "Impact of Vertically Integrated Team Design Projects on First Year Engineering Students", Proceedings of 2004 ASEE Annual Conference (2004). Nominated for best paper.
- 13. S. Prettyman Spickard, H. K. Qammar, F. S. Broadway, H. M. Cheung, and E. A. Evans, "The Impact of Vertically Integrated Design Teams on the Chemical Engineering Program", Proceedings of 34th ASEE/IEEE Frontiers in Education Conference (2004).

- 12. "University Physics: A Hybrid Approach", R.D. Ramsier, F.S. Broadway, H.M. Cheung, E.A. Evans and H.K. Qammar, Peer-Reviewed Proc. ASEE, paper # 1970, (2003).
- 11. "Focusing on Teamwork Versus Technical Skills in the Evaluation of an Integrated Design Project", H.K. Qammar, H.M. Cheung, E.A. Evans, F.S. Broadway and R.D. Ramsier, Peer-Reviewed Proc. ASEE, paper # 1433, (2003).
- 10. "Reflective Journals: An Assessment of a Vertically Integrated Design Team Project", F.S. Broadway, H.K. Qammar, H.M. Cheung, E.A. Evans and R.D. Ramsier, Peer-Reviewed Proc. ASEE, paper # 2210, (2003).
- 9. Taylor, T.W.; Meyer, W.V.; Tin, P.; Mann, J.A.; Cheung, H.M.; Rogers, R.B.; Lading, L. "A New Surface Light Scattering Instrument with Autotracking Optics" Photon Correlation & Scattering, Volume 14, 1996 OSA Technical Digest Series (Optical Society of America, Washington, DC), pp. 114-116.
- 8. Meyer, W.V.; Lock, J.; Cannell, D.S.; Taylor, T.W.; Tin, P.; Smart, A.E.; Zhu, J.; Cheung, H.M.; Mann, J.A. "A Single Wavelength Cross-Correlation Technique Which Suppresses Multiple Scattering" Photon Correlation & Scattering, Volume 14, 1996 OSA Technical Digest Series (Optical Society of America, Washington, DC), pp. 104-107.
- 7. Cheung,H.M.; Meyer,W.V.; Taylor,T.; Tin,P.; Barmatz,M.; Biswas,A.; Mann,J.A. "Hardware and Software Modification of a Commercial Laser Vibrometer for Investigation of High Amplitude Surface Fluctuations with Optical Tracking" Photon Correlation & Scattering, Volume 14, 1996 OSA Technical Digest Series (Optical Society of America, Washington, DC), pp. 97-99.
- 6. Tin,P.; Meyer,W.V.; Rogers,R.; Cheung,H.M.; Mann,J.A.; Taylor,T. "Fiber Optics Surface Light Scattering Spectrometer (FOSLSS)" Photon Correlation & Scattering, Volume 14, 1996 OSA Technical Digest Series (Optical Society of America, Washington, DC), pp. 40-42.
- 5. Meyer, W.V.; Tin, P.; Lading, L.; Mann, Jr., J.A.; Cheung, H.M. "Surface light scattering: an advanced instrument design with autotracking optics" Proceedings of the International Symposium on Space Optics, Conference on Optical Instrumentation in Manned Space Stations, Paper #2210-29, 1995.
- 4. Cheung, H.M. Review of the book Chemistry with Ultrasound, Vol. 28, Critical Reports on Applied Chemistry, Society of Chemical Industry written by T.J. Mason, published by Elsevier Applied Science, New York, 1990, ISBN # 1-85166-422-X, review published in Environmental Science and Technology 1992.
- 3. Ansari,R.R.;Dhadwal,H.S.;Cheung,H.M.;Meyer,W.V. "Microemulsion Characterization using a Fiber Optic Probe" Photon Correlation and Scattering: Theory and Applications Technical Digest 1992, Optical Society of America, Washington, D.C.,

- 2. Cheung,H.M. "Improved Optics for Laser Light Scattering", NASA Laser Light Scattering Advanced Technology Development Workshop 1988, Proceedings, W.V. Meyer, Ed., p.119-134.
- 1. Edwards, R.V.; Cheung, H.M.; Mann, Jr., J.A. "Rational Method of Comparing QELS Analysis Schemes for Polydispersity" Proceedings of the ACS Division of Polymeric Materials: Science and Engineering 1985, 53, 62-67.

### **Funded Research Proposals**

- 29. 6/2008 The University of Akron, Faculty Research Grant, FRG# 1700; "Supercritial Carbon Dioxide as a Green Solvent for Fischer-Tropsch Synthesis of Hydrocarbon Liquids from Carbon Monoxide and Hydrogen"; Amount: \$10,000; Period: 6/01/2008 to 8/31/2008.
- 28. 9/2005 NSF: RDE-DEI "Opening chemical engineering design to the visually impaired", \$99,998 (\$10,203 U. Akron subcontract); co-PI with Robert R. Beitle (PI) and Douglas A. Behrend (co-PI); both of The University of Arkansas.
- 27. 4/2004 NSF: "SGER: Team-Based, Challenge Learning in Chemical Engineering with Atypical Students", \$78,714 (\$13,126 U. Akron subcontract); co-PI with Robert R. Beitle (PI) and Douglas A. Behrend (co-PI); both of The University of Arkansas.
- 26. 8/2003 UA-ITL-FYE "Team Design Impact on Engineering Freshmen Performance, Motivation, and Retention", \$6,000; PI with co-PI's: Rex Ramsier (PI, Physics), Ed Evans, Helen Qammar, Dan Sheffer, Bruce Taylor and Francis Broadway (Education).
- 25. 8/2003 UA-ITL-FYE "Team Based Learning for General Education Courses", \$5,500; co-PI with Rex Ramsier (PI, Physics), Ed Evans, Helen Qammar, and Francis Broadway (Education).
- 24. 9/2002 OBR matching grant for NSF: "A Planning Grant to Establish the Center for Engineering Learning", \$20,000; co-PI with Ed Evans (PI), Francis Broadway (Education), and Rex Ramsier (Physics)
- 23. 9/2002 OBR matching grant for NSF: "Use of a Vertically Integrated Team Design Project as an Adjunct to and Change Instrument for the Chemical Engineering Curriculum at The University of Akron", \$20,000; PI with co-PI Ed Evans.
- 22. 9/2002, NSF: "Use of a Vertically Integrated Team Design Project as an Adjunct to and Change Instrument for the Chemical Engineering Curriculum at The University of Akron", \$99,948; PI with co-PI Ed Evans.
- 21. 9/2002, NSF: "A Planning Grant to Establish the Center for Engineering Learning", \$100,000; co-PI with Ed Evans (PI), Francis Broadway (Education), and Rex Ramsier

#### (Physics)

- 20. 10/98: Hankison International, Inc.; "Filter Oil Droplet Capture Efficiency"; Amount: \$2,400; Period: 12/98 3/99
- 19. 6/97: Formtech Enterprises, Inc.; "PVC / Wood Flour Composite Compatibilization"; Amount: \$35,000; Period: 6/97 to 12/97
- 18. 6/95: C & C, Inc.; "Unrestricted Research Grant"; Amount: \$3,000; Period: 6/95 to 6/96
- 17. 4/95: The University of Akron, Faculty Research Grant, FRG# 1313; "Emulsion Polymerization in Supercritical Fluids"; Amount: \$3,000; Period: 3/10/95 to 1/31/96
- 16. 4/94: C & C, Inc.; "Unrestricted Research Grant"; Amount: \$20,000; Period: 4/94 to 12/95
- 15. 5/93: NASA Lewis Research Center, Environmental Durability Branch; "Microemulsion Route to Modified Microporous Ceramic Materials: Proof of Principle Experiments"; Amount: \$10,000; Period: 6/1/93 to 10/31/94
- 14. 2/93 Westinghouse Hanford Company; "Sonochemical Destruction of Carbon Tetrachloride" continuation of EDTA work; Amount: \$66,694; Period: 2/93 to 8/30/94
- 13. 3/93: Royal Plastics, Inc.; "Unrestricted Research Grant"; Amount: \$2,500; Period: 3/1/93 to 3/31/94
- 12. 2/93: EPIC/Air Products; "Performance Study of Water Based Coatings"; Amount: \$25,000; Period: 2/15/93 to 2/28/94
- 11. 1/93: Westinghouse Hanford Company; Supplement to "Sonochemical Destruction of EDTA, HEDTA, and Citric Acid"; Amount: \$4,000; Period: NA
- 10. 10/92: American Chemical Society, Petroleum Research Fund; "Support for Symposium on Polymeric Surface Active Materials at the 205th ACS Nat'l Mtg."; Amount: \$2,000; Period: 12/1/92 to 8/31/93
- 9. 4/92: Westinghouse Hanford Company; "Sonochemical Destruction of EDTA, HEDTA, and Citric Acid"; Amount: \$76,500; Period: 5/1/92 10/31/93
- 8. 10/91: NASA Lewis Research Center, Microgravity Laboratory; "Evaluating an Improved Method for Determining the Shapes of Small Dispersed Particles using Dynamic Depolarized Laser Light Scattering"; Amount: \$35,000; Period: 11/1/91 to 10/31/93; NCC3-240
- 7. 3/90: The Ohio Board of Regents, Research Challenge Enhancement Program;

- "Heterogeneous Ultrasonic Destruction of Organic Groundwater Contaminants"; Amount: \$8500; Period: 3/6/90 to 12/31/91
- 6. 3/89: NASA Lewis Research Center, Microgravity Laboratory; "Multi-Angle QELS Measurements"; Amount: \$47,997; Period: 6/89 to 5/91
- 5. 4/88: NASA Lewis Research Center, Microgravity Laboratory; "Advanced Optics for Light Scattering Instrumentation"; Amount: \$44,342; Period: 6/88 to 5/89
- 4. 10/87: The University of Akron, Faculty Research Committee; "A Group Contribution Approach to Surfactant Selection for Protein Solubilization in Inverse Micelles"; Amount: \$2850; Period: 10/87 1/89; (FRG 996)
- 3. 2/86: Ohio Board of Regents (Research Challenge); "Investigation of Water-in-Oil Microemulsions as Stabilizers for Methanol/Hydrocarbon Fuel Blends"; Amount: \$13,000; Period: 4/11/86 to 4/10/88
- 2. 12/84: National Science Foundation, Engineering Research Equipment Grant "Morphological Analysis of Fine Particulates"; Co-PI: Dr. Max S. Willis and Dr. Robert F. Savinell; Amount: \$40,000; CBT-8506899
- 1. 10/84: The University of Akron, Faculty Research Grant; "Investigation and Characterization of Droplet/Droplet Interactions in Microemulsions"; Amount: \$2,600; Period: 11/1/84 to 1/31/86; FRG #857

### **Other Research Funding**

\$2,233,100 (joint with OSU, \$1,337,000 at Akron) Co-PI (with Prof. J. Richard Elliott, Jr.) of "Consortium for Commercialization and Development of Supercritical Fluid Technologies" funded by the Ohio Board of Regents 1996-2005

### **Courses Taught**

Spring '19	4200:442 Process Design II
Fall '19	4200:101 Tools for Chemical Engineering
Spring '18	4200:442 Process Design II
Spring '17	4200:442 Process Design II
Fall '16	4200:200 Material and Energy Balances
Spring '16	4200:121 Chemical Engineering Computations
Fall '15	4200:101 Tools for Chemical Engineering
	4200:200 Material and Energy Balances
Spring '15	4200:121 Chemical Engineering Computations
Fall '14	4200:101 Tools for Chemical Engineering
	4200:200 Material and Energy Balances
Spring '14	4200:121 Chemical Engineering Computations
Fall '13	4200:200 Material and Energy Balances
Spring '13	4200:121 Chemical Engineering Computations & 4200:360 Chemical

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E 11.110	Engineering Laboratory
Fall '12	4200:200 Material and Energy Balances
Spring '12	4200:121 Chemical Engineering Computations & 4200:634 Applied
E 11 14 1	Surfactant Science & 4200:360 Chemical Engineering Laboratory
Fall '11	4200:200 Material and Energy Balances
Spring '11	4200:442 Process Design II & 4200:121 Chemical Engineering
	Computations (2 sections)
Fall '10	4200:200 Material and Energy Balances
Spring '10	4200:442 Process Design II & 4200:121 Chemical Engineering
	Computations (2 sections)
Fall '09	4200:200 Material and Energy Balances
Spring '09	4200:442 Process Design II
Fall '08	4200:200 Material and Energy Balances & 4200:110,210,310,410 Project
	Management and Teamwork
Spring '08	4200:442 Process Design II & 4200:633 Applied Colloid and Surface Sci.
Fall '07	4200:200 Material and Energy Balances & 4200:110,210,310,410 Project
	Management and Teamwork
Spring '06	on Faculty Improvement Leave
Fall '06	4200:441 Process Design I & 4200:110,210,310,410 Project Management
	and Teamwork
Spring '06	4200:634 Applied Surfactant Science (taught as grad/undergrad)
Fall '05	4200:441 Process Design I, 4200:353 Mass Transfer Operations &
	4200:110,210,310,410 Project Management and Teamwork
Spring '05	4200:442 Process Design II & 4200:633 Applied Colloid and Surface Sci.
Fall '04	4200:353 Mass Transfer Operations & 4200:110,210,310,410 Project
	Management and Teamwork
Spring '04	4200:442 Process Design II & 4200:360 Chemical Engineering
~p.mg v.	Laboratory
Fall '03	4200:353 Mass Transfer Operations & 4200:110,210,310,410 Project
1411 03	Management and Teamwork
Spring '03	4200:442 Process Design II & 4200:360 Chemical Engineering
Spring 03	Laboratory
Fall '02	4200:353 Mass Transfer Operations
Spring '02	4200:442 Plant Design
Fall '01	4200:353 Mass Transfer Operations & 4200:101 Tools for Chemical
ran or	Engineering
Spring '01	4200:442 Plant Design
Fall '00	4200:353 Mass Transfer Operations & 4200:101 Tools for Chemical
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Carrier ~ 200	Engineering
Spring '00	4200:442 Plant Design & 4200:360 Chemical Engineering Laboratory
Fall '99	4200:353 Mass Transfer Operations & 4200:634 Applied Surfactant
G.,	Science
Spring '99	4200:442 Plant Design & 4200:360 Chemical Engineering Laboratory
Fall '98	4200:353 Mass Transfer Operations
Spring '98	4200:442 Plant Design
Fall '97	on Faculty Improvement Leave

Spring '97	4200:442 Plant Design
Fall '96	4200:322 Transport Phenomena II
Spring '96	4200:442 Plant Design
Fall '95	4200:200 Material and Energy Balances (Honors) & 4200:696 Applied
	Colloid and Surface Sci.
Spring '95	4200:442 Plant Design
Fall '94	4200:200 Material and Energy Balances (Honors) & 4200:696 Applied
	Surfactant Science
Spring '94	4200:442 Plant Design & 4200:696 Energy Integration
Fall '93	4200:200 Material and Energy Balances (Honors) & 4200:725 Mass
	Transfer
Spring '93	4200:442 Plant Design
Fall '92	4200:200 Material and Energy Balances (Honors) & 4200:696 Applied
	Surfactant Science
Spring '92	4200:442 Plant Design
Fall '91	4200:200 Material and Energy Balances & 4200:640 Advanced Plant
	Design
Spring '91	4200:442 Plant Design
Fall '90	4200:200 Material and Energy Balances & 4200:701 Adv. Transport
	Phenomena
Spring '90	4200:442 Plant Design & 4200:696 Applied Colloid and Surface Science
Fall '89	4200:200 Material and Energy Balances & 4200:725 Mass Transfer
Spring '89	4200:442 Plant Design & 4200:631 Chemical Engineering Analysis
Fall '88	4200:200 Material and Energy Balances
Spring '88	4200:701 Advanced Transport Phenomena
Fall '87	4200:200 Material and Energy Balances
Spring '87	4200:725 Mass Transfer
Fall '86	4200:631 Chem. Engr. Analysis & 4200:696 Applied Colloid and
	Surface Sci.
Spring '86	4200:701 Advanced Transport Phenomena
Fall '85	4200:200 Material and Energy Balances & 4200:631 Chem. Engr.
	Analysis
Spring '85	4200:725 Mass Transfer & 4200:696 Applied Colloid and Surface
	Science
Fall '84	4200:200 Material and Energy Balances

## **Graduate Research**

No graduate students currently

### Ph.D. Dissertations Directed

- 9. Li Chen, "Hydrogel/Polymer Micellar Composites derived from Polymerization of Microemulsions for Oral Drug Delivery", 2013.
- 8. Ruolei Wang, "Materials Synthesis in Supercritical Fluids", 2005.

- 7. Krishnamohan Gaddam, "Ultrasonic Assisted Emulsion Polymerization of Methyl Methacrylate and Styrene", 2000.
- 6. Arunkumar Venkatesan, "Activated Microporous Materials through Polymerization of Microemulsion Precursors", 1999
- 5. Jaclyn C. Laurich, "Crosslink Polymerization of Styrene and Methyl Methacrylate in Supercritical Carbon Dioxide", 1998
- 4. Ramachandra Mukkamala, "Microemulsion Route to Porous Modified Ceramic Materials", 1997
- 3. Edward Wayne Davis, "Polymerized Bicontinuous Microemulsions as Controlled Release Devices", 1996.
- 2. Palani Raj Wallajapet, "Characterization and Polymerization of Microemulsions", 1994.
- 1. Mohan Sasthav, "Characterization and Polymerization of Organized Solutions", 1993.

#### M.S. Thesis Directed

- 24. Sreevalli Bokka, "Controlled Release of the Cytarabine and Colchicine using Hyrdogel derived from the Polymerized Microemulsion", 2015
- 23. Oluyomi Sodunke, "Polymeric Micellar Network derived from the Polymerization of Bicontinuous Microemulsion for Oral Drug Delivery Application", 2015
- 22. Sangsoo Kim, "Synthesis and Characterization of Cobalt Nanoparticles Stabilized with Alkanethiols", 2010
- 21. Fen Ye, "Porous Polymeric Materials Derived From Bicontinuous Microemulsions for Drug Delivery" 2007
- 20. Rita Vickerman, "Microporous Nanoparticles derived from Microemulsions" 2004
- 19. Ramana Reddy Sama, "Microemulsion derived Nanocomposites" 2003
- 18. Sachin Chandran, "A Novel Nanoporous Microparticle as a Potential Controlled Release Device", 2002
- 17. Qi Li, MS, "Microemulsion polymerization derived nanocomposites", 2001
- 16. Sudipto Naskar, "Ultrasound assisted emulsion polymerization", 2000
- 15. Vidyullatha Challa, "Controlled release applications of polymerized microemulsions", 1999

- 14. Shreekumar Kurup, "Sonochemical Destruction of Aqueous Hydrocarbons", 1996
- 13. Bhavin Patel, "Characterization and polymerization of microemulsions formulated using commercial polymerizable surfactant" 1996
- 12. Greg Jansen, "Sonochemical Destruction of UV Refractory Compounds", 1995
- 11. Sunil Jinandra, "Sonochemical Destruction of Aqueous Perchloroethylene", 1995.
- 10. Krishnamohan Gaddam, "Sonochemical Destruction of 1,1,1-Trichloroethane in Dilute Aqueous Solutions", 1995.
- 9. Gautami Chitta, "Sonochemical Destruction of Carbon Tetrachloride", 1995.
- 8. Venkata R.K. Khandavalli, "Dynamic Depolarized Light Scattering", 1994.
- 7. Ashish Bhatnagar, "Sonochemical Destruction of Chlorinated Hydrocarbons", 1992.
- 6. Palani Raj R. Wallajapet, "Development of a Microemulsion Route to Microporous Polymeric Materials", 1992.
- 5. Mohan Sasthav, "Characterization and Polymerization of Middle Phase Microemulsions in Styrene/Water Systems", 1990.
- 4. Singgih Nitirahardjo, "Effects of Surfactants / Co-surfactants on the Phase Separation Temperature and Volatility of Methanol/hydrocarbon/water Blends", 1989.
- 3. Rathin Patel, "Effects of Heptanoic and Oleic Acid on the Phase Separation Temperatures of Methanol/Hydrocarbon/Water Mixtures", 1988
- 2. Aniruddha Shere, "Modeling of Leakage in Liquid Membrane Systems", 1987
- 1. Abenasser Frej, "Perturbed Quasi-elastic Light Scattering: A New Approach to the Measurement of Electrophoretic Mobility", 1987

# M.S. Projects Directed (non-thesis)

- 6. Sarah Roth, "Visual Defects in Blown Thin Film Extrusions of Linear Low Density Polyethylene and the Effects on Balloon Manufacturing", 2016.
- 5. Prerak Shah, "Modification of Hollow Fibers by Polymerized Microemulsion Coatings", 1996
- 4. Chris Goebl, "Batch Process Energy Integration using Pinch Analysis", 1994.
- 3. Ashish Sodhi, "Microemulsion Polymerization of Methyl Methacrylate", 1992.

- 2. Rick Taylor, "A Comparison of Current Groundwater Cleanup Technologies with Sonochemical Based Processes", 1990
- 1. Abhijit Joshi, "Unsteady State Electrophoresis Modeling", 1987

#### **Presentations**

- 136. "Climate Change An Engineering Perspective" presented to the Franklin Society, 9 April 2018, Akron, Ohio.
- 135. "Controlled drug release using hydrogels derived from polymerized microemulsions" with Sreevalli Bokka; presented at the 89<sup>th</sup> Colloid and Surface Science Symposium, Pittsburgh, PA, 15 June 2015.
- 134. "Collective Bargaining Contracts with Performance Metrics" with Eric Mintz (KSU), Sue Averill (KSU), and Mike Sherman (UA); presented at the 39<sup>th</sup> Annual Conference: Academic Collective Bargaining Under Siege Implications for a Public Good, National Center for the Study of Collective Bargaining in Higher Education and the Professions, Hunter College CUNY, New York, 2 April 2012.
- 133. "Microemulsion derived nanostructured polymeric materials" invited lecture, presented at the AOCS National Meeting, Cincinnati, OH, 2 May 2011.
- 132. "Controlled Release in the Lower GI using Polymerized Microemulsions" with Li Chen; presented at the 84<sup>th</sup> Colloid and Surface Science Symposium, Akron, OH, 21 June 2010.
- 131. "Ultrasound assisted polymerization in Liquid CO<sub>2</sub>", invited seminar presented at Ohio State University, Department of Chemical Engineering, 11 January 2007.
- 130. "pH-Sensitive Drug Delivery System Formulated by Polymerized Bicontinuous Microemulsions for Sustained Enzyme Release" with Fen Ye and Ping Wang; presented at the AIChE Annual Meeting, San Francisco, CA; 15 November 2006.
- 129. "Tactile/Audible Representations as Aides to Students with Limited Vision" with Noel Romey, Robert R. Beitle, and Peter Miao; presented at the AIChE Annual Meeting, San Francisco, CA; 13 November 2006.
- 128. "Enzyme encapsulation and release from polymerized bicontinuous microemulsions" with Fen Ye and Ping Wang; presented at the 80<sup>th</sup> Colloid and Surface Science Symposium; University of Colorado, Boulder, CO; 19 June 2006.
- 127. "Ultrasound Assisted Polymerization of MMA and Styrene in Liquid CO<sub>2</sub>", invited seminar presented at Case Western Reserve University, Department of Chemical Engineering, Cleveland, Ohio, 2 March 2006.

- 126. "Preparation and Characterization of Nanoporous Materials from Microemulsions Formulated with a Biocompatible Surfactant" with Fen Ye and Stephanie Lopina; paper 109c presented at the AIChE Annual Meeting, Cincinnati, OH; 31 October 2005.
- 125. "Microstructure of Bicontinuous Nanoporous Materials Prepared from Methyl Methacrylate/Hydroxyethyl Methacrylate Microemulsions Formulated with Biocompatible Surfactant", with F. Ye, R.T. Vickerman, S. Lopina, E. Von Meerwall paper 11-28, presented at the 79<sup>th</sup> Colloid and Surface Science Symposium, June 15, 2005; Clarkson University, Potsdam, NY.
- 124. "Ultrasound Assisted Polymerization of MMA and Styrene in Liquid CO<sub>2</sub>", invited seminar presented at the 2005 Sink or Swim Conference, Cleveland Society for Coatings Technology, The University of Akron, Akron, OH, 24 May 2005.
- 123. "Design instruction with vision impaired chemical engineering students challenges and synergies" with Robert R Beitle, Noel Romey, Doug Behrend, Brian Mattingly, Rugkiat Perkins, Cassie Liverance, paper 317c presented at the AIChE Annual Meeting, Austin, TX, November 11, 2004.
- 122. "Ultrasound Assisted Microemulsion Synthesis of Nanoporous Polymer Particles" with Ruolei Wang, paper 176b presented at the AIChE Annual Meeting, Austin, TX, November 10, 2004.
- 121. "Bicontinuous Nanoporous Polymeric Materials Characterized with Restricted Diffusion by PGSE NMR" with R.T. Vickerman, F.Ye, S.T. Lopina, and E. von Meerwall; paper 340, presented at the 78<sup>th</sup> Colloid and Surface Science Symposium, June 22, 2004; Yale University, New Haven, CT.
- 120. "Synthesis of Nanoparticles by Ultrasound Microemulsion Polymerization" with R. Wang and F. Ye; poster 264, presented at the 78<sup>th</sup> Colloid and Surface Science Symposium, June 21, 2004; Yale University, New Haven, CT.
- 119. "Assessment Tools for Developing Teamwork Skills" with E.A.Evans, H.K. Qammar, R.D. Ramsier, and F.S. Broadway, poster 346t presented at the AIChE Annual Meeting, San Francisco, CA, 11/2003.
- 118. "Use of Process Simulation in a Mass Transfer Operations Course" paper 340g presented at the AIChE Annual Meeting, San Francisco, CA, 11/2003.
- 117. "Polymerization of Methyl Methacrylate Initiated By High Intensity Ultrasonic Irradiation in Liquid Carbon Dioxide" with R. Wang, poster 283g presented at the AIChE Annual Meeting, San Francisco, CA, 11/2003.
- 116. "Ultrasound Assisted Stabilizer-free Polymerization of Methyl Methacrylate in Liquid Carbon Dioxide" with R. Wang, paper 285f presented at the AIChE Annual Meeting, San Francisco, CA, 11/2003.

- 115. "Synthesis and Characterization of Disperse Nanostructured Polymer Microparticles via Microemulsion Polymerization for Potential Drug Delivery" with S.T. Lopina and R.T. Vickerman, paper 377g presented at the AIChE Annual Meeting, San Francisco, CA, 11/2003.
- 114. "Polymerized Microemulsions of HEMA and MMA as potential Controlled Drug Delivery Devices" invited seminar, SUNY University at Buffalo, Chemical Engineering Department, Buffalo, NY, 24 September 2003.
- 113. "Polymerized microemulsions for nanocomposite synthesis" with R.R.V. Sama; paper 323, presented at the 77<sup>th</sup> Colloid and Surface Science Symposium, June 17, 2003; Georgia Institute of Technology, Atlanta, GA.
- 112. "Polymerized Microemulsions of HEMA and MMA as potential Controlled Drug Delivery Devices" invited seminar, The University of Arkansas, Chemical Engineering Department, Fayetteville, AR, 15 April 2003.
- 111. "Polymerized Microemulsions of HEMA and MMA as Potential Controlled Drug Delivery Devices" with S.S. Chandran, E. von Meerwall, and S.T. Lopina, paper 307e presented in the Controlled Release Membranes for Phamaceutical Applications symposium at the AIChE Annual Meeting, November 8, 2002, Indianapolis, IN.
- 110. "Polymerized Microemulsions for Nano-Composite Synthesis" with R.R.V. Sama, poster 10b in the Nanoscale Science and Engineering symposium, at the AIChE Annual Meeting, November 6, 2002, Indianapolis, IN.
- 109. "Dispersion Polymerization of MMA and Styrene in Supercritical Carbon Dioxide Utilizing PDMS Macromonomer" with R. Wang, poster 74c presented in the Supercritical and Compressed Fluids poster session, at the AIChE Annual Meeting, November 4, 2002, Indianapolis, IN.
- 108. "Diffusion Studies on Polymerized HEMA:MMA Systems using Pulsed-Gradient NMR" with S.S. Chandran, J. Kuminski, and S.T. Lopina, poster 300bz presented in the Food, Pharmaceutical and Bioengineering Division poster session at the AIChE Annual Meeting, Reno, NV, 11/06/2001.
- 107. "Polymerized Microemulsions as Potential Controlled Drug Delivery Devices" with S.S. Chandran, V. Challa, K. Fletcher, D. Weber, and S.T. Lopina, poster 300by, presented in the Food, Pharmaceutical and Bioengineering Division poster session at the AIChE Annual Meeting, Reno, NV, 11/06/2001.
- 106. "Microscopy as one of a 'suite' of characterization tools for microemulsions and materials produced via microemulsions" invited seminar given to the Microscopy Society of Northeastern Ohio, Ricerca Research Center, Painesville, OH 10/23/2001.

- 105. "A Vertically Integrated Team Chemical Engineering Design Experience" with H.K. Qammar, paper 63a presented in Design in the Chemical Engineering Curriculum session at the AIChE Annual Meeting, Los Angeles, CA, 11/16/2000.
- 104. "Freshman Through Senior Design Teams in the Core Chemical Engineering Curriculum" with H.K. Qammar, paper 62f presented in Design in the Chemical Engineering Curriculum session at the AIChE Annual Meeting, Los Angeles, CA, 11/16/2000.
- 103. "Synthesis of PMMA using Ultrasound and Novel Initiators" with S. Naskar, poster 361a1 in the Kinetics, Catalysis & Reaction Engineering poster session at the 2000 AIChE Annual Meeting, Los Angeles, CA., 11/15/00.
- 102. "Microporosity of Bicontinuous Polymer Composites: Diffusion of Water and Surfactant" with K. Kuta, V. Challa, S. Lopina, and E. von Meerwall, presented in the Molecular Physics Symposium at the Ohio Fall Section Meeting of the American Physical Society, 14 October 2000.
- 101. "Nanostructured Particles derived from Bicontinuous Microemulsions For Controlled Drug Release" with Vidyullatha Challa and Stephanie Lopina; presented at the 74nd ACS Colloid and Surface Science Symposium, Lehigh University, 6/12/00.
- 100. "Ultrasound Assisted Emulsion Polymerization of MMA and Styrene" with Krishnamohan Gaddam; presented in the Materials Engineering and Science II poster session at the AIChE 1999 Annual Meeting, Dallas, TX, 11/3/99.
- 99. "Microemulsion based Microporous separations media for Metal Removal" with Arunkumar Venkatesan; presented in the New Developments in Adsorbents and Ion Exchange Processes poster session at the AIChE 1999 Annual Meeting, Dallas, TX, 11/1/99.
- 98. "Bicontinuous Microemulsion Polymers For Controlled Drug Release" with Vidyullatha Challa and Stephanie Lopina; paper 181c presented in the Biomaterials I session at the AIChE 1999 Annual Meeting, Dallas, TX, 11/1/99.
- 97. "Nanocomposite Materials Produced via Microemulsion Sol Gel Polymerization", invited seminar, The University of Arkansas, Chemical Engineering Department, Fayetteville, AR, 26 March 1999
- 96. "Flame Retardant Polymeric Materials Formed via Microemulsion Sol Gel Polymerization" with Nathan Schmuhl, paper 203c, presented in the Symposium on Nanostructured Materials at the AIChE 1998 Annual Meeting, Miami, FL, 19 November 1998.
- 95. "Effects of Pressure, pH, and Temperature on the Sonochemical Destruction of Carbon Tetrachloride, 1,1,1-Trichloroethane, and Perchloroethylene" with Krishnamohan

- Gaddam, poster presented in General Topics in Environmental Reaction Engineering at the AIChE 1998 Annual Meeting, Miami, FL, 18 November 1998.
- 94. "Microporous Separations Media Formed via Microemulsion Polymerization" with Arunkumar Venkatesan, presented in the Symposium on Applications of Microstructured Fluids at the AIChE 1998 Annual Meeting, Miami, FL, 17 November 1998.
- 93. "Congo Red Incorporation onto Microporous Polymeric Materials" with A. Venkatesan and N. Schmuhl, paper 310, presented at the 72nd ACS Colloid and Surface Science Symposium, Pennsylvania State University, 23 June 1998.
- 92. "Polymerized Microemulsions Containing Organic and Inorganic Components as Flame Resistant and Flame Retardant Materials" with N. W. Schmuhl and A. Venkatesan, paper 308, presented at the 72nd ACS Colloid and Surface Science Symposium, Pennsylvania State University, 23 June 1998.
- 91. "Microemulsions as Polymerization Media" invited lecture, Department of Polymer Engineering, The University of Akron, Akron, OH, 24 January 1997.
- 90. "Comparison of Membranes Cast from Microemulsions Formulated with Polymerizable and Conventional Surfactant" with R. Mukkamala, B. Patel, W.R. Palani Raj, M. Sasthav, paper 147b presented in the Symposium on Interfacial Phenomena in Membrane Processes at the AIChE 1996 Annual Meeting, Chicago, IL, 14 November 1996.
- 89. "Microemulsion Copolymerization: Effect of Microemulsion Structure on Copolymer Composition" with W.R. Palani Raj, paper 48j presented in the Symposium on Interfacial Phenomena in Polymer Processing at the AIChE 1996 Annual Meeting, Chicago, IL, 12 November 1996.
- 88. "Organometallic Transformations and Fiber Coating Applicability of Composites obtained through Sol-gel Process and Microemulsion Polymerization" with R. Mukkamala, paper 38g presented in the Symposium on Synthesis, Processing and Applications of Sol-Gel Materials at the AIChE 1996 Annual Meeting, Chicago, IL, 11 November 1996.
- 87. "Applications of Composites Obtained from Polymerization of Precursors Coupling Sol-gel Process and Microemulsion Technology: An Overview" with R. Mukkamala, poster presented at 150th Fall Technical Meeting of the ACS Rubber Division, 8-11 October 1996, Louisville, KY.
- 86. "Novel Microemulsion Precursors for Arresting Crack Propagation in Fiber Modules" with R. Mukkamala, paper #26 presented at 150th Fall Technical Meeting of the ACS Rubber Division, 8-11 October 1996, Louisville, KY.

- 85. "Organometallic Transformations in Composites Obtained Using Sol-gel Process and Microemulsion Polymerization Technology" with R. Mukkamala, paper #25 presented at 150th Fall Technical Meeting of the ACS Rubber Division, 8-11 October 1996, Louisville, KY.
- 84. "Fiber optics surface light scattering spectrometer (FOSLSS)" with Padetha Tin, William V. Meyer, R. Rogers, Ohio Aerospace Institute/NASA Lewis Research Center; J. A. Mann, Case Western Reserve Univ.; T. Taylor, Cleveland State Univ., presented at the Optical Society of America Topical Meeting: Photon Correlation & Scattering, Capri, Italy, 21-24 August 1996.
- 83. "Hardware and software modification of a commercial laser vibrometer for investigation of high amplitude surface fluctuations with optical tracking" with William V. Meyer, Padetha Tin, NASA/Ohio Aerospace Institute; Thomas W. Taylor, Cleveland State Univ.; M. Barmatz, Abhijit Biswas, Jet Propulsion Laboratory; J. A. Mann Jr., Case Western Reserve Univ., presented at the Optical Society of America Topical Meeting: Photon Correlation & Scattering, Capri, Italy, 21-24 August 1996.
- 82. "A single wavelength cross-correlation technique that suppresses multiple scattering" with William V. Meyer, Padetha Tin, NASA/Ohio Aerospace Institute; James A. Lock, Thomas W. Taylor, Cleveland State Univ.; David S. Cannell, Univ. California-Santa Barbara; Anthony E. Smart, USA; Jixiang Zhu, Princeton Univ.; J. A. Mann Jr., Case Western Reserve Univ., presented at the Optical Society of America Topical Meeting: Photon Correlation & Scattering, Capri, Italy, 21-24 August 1996.
- 81. "A new surface light scattering instrument with autotracking optics" with Thomas W. Taylor, Cleveland State Univ.; William V. Meyer, Padetha Tin, Richard B. Rogers, NASA Lewis Research Center; J. Adin Mann, Case Western Reserve Univ.; Lars Lading, Riso National Laboratory, Denmark, presented at the Optical Society of America Topical Meeting: Photon Correlation & Scattering, Capri, Italy, 21-24 August 1996.
- 80. "Microemulsions A Unique and Useful Polymerization Environment" invited lecture presented to the Proctor & Gamble Company, Cincinatti, Ohio, 16 August 1996.
- 79. "Organic/Inorganic Polymer Composites From Microemulsions" with R. Mukkamala and P. Shah, presented at the 70th Colloid and Surface Science Symposium, Clarkson University, Potsdam, NY, 19 June 1996.
- 78. "Polymerized Microemulsions As Controlled Release Materials: Effects Of The Release Environment" with E. Davis, poster presented at the 70th Colloid and Surface Science Symposium, Clarkson University, Potsdam, NY, 17 June 1996.
- 77. "Polymerized Microemulsions As Controlled Release Materials: Effects Of Precursor Microemulsion Composition" with E. Davis, poster presented at the 70th

- Colloid and Surface Science Symposium, Clarkson University, Potsdam, NY, 17 June 1996.
- 76. "Polymer Composites Obtained by Polymerization of Microemulsions formed with Inorganic and Organic Monomers" with R. Mukkamala, paper 64c presented in the Polymer Blends and Compatibility Session at the AIChE 1996 Spring National Meeting, New Orleans, LA, 26 February 1996.
- 75. "Polymeric Materials formed by Polymerization of Microemulsions Containing Both Organic and Inorganic Monomer Species" with R. Mukkamala, B. Patel, P. Shah, poster presented in the Interfacial Phenomena Session at the AIChE 1995 Annual Meeting, Miami Beach, FL, 15 November 1995.
- 74. "Microporous Membranes Derived from Microemulsions Formulated with Sodium Acrylamido Undecenoate, a Polymerizable Surfactant" with R. Mukkamala and B. Patel, presented at the Session on Polymer Colloids and Polymeric Surface Active Materials, Symposium on Colloids/Polymer Science and Engineering, 26th Annual Meeting of the Fine Particle Society, Chicago, IL, 25 August 1995.
- 73. "Microporous Polymeric Materials Derived from Microemulsions Formulated with a Commercial Polymerizable Surfactant" with Bhavin Patel, presented at the Session on Polymer Colloids and Polymeric Surface Active Materials, Symposium on Colloids/Polymer Science and Engineering, 26th Annual Meeting of the Fine Particle Society, Chicago, IL, 25 August 1995.
- 72. "Characterization of Microemulsions via Dynamic Depolarized Light Scattering" with Kishore Khandavalli, presented at the Session on Polymer Colloids and Polymeric Surface Active Materials, Symposium on Colloids/Polymer Science and Engineering, 26th Annual Meeting of the Fine Particle Society, Chicago, IL, 25 August 1995.
- 71. "Microlatex Particles with Controlled Features via Microemulsion Polymerization" with E. Davis and W.R. Palani Raj, presented at the Session on Polymer Colloids and Polymeric Surface Active Materials, Symposium on Colloids/Polymer Science and Engineering, 26th Annual Meeting of the Fine Particle Society, Chicago, IL, 25 August 1995.
- 70. "Porous Polymeric Materials derived from Microemulsion Polymerization", invited paper (#52) presented at the Polymer Modeling, Colloid and Surface Science Symposium, 27th ACS Central Regional Meeting and the 26th Akron Polymer Conference (joint meeting), Akron, Ohio, 1 June 1995.
- 69. "Sonochemical Destruction of Chlorocarbons: Optimization of pH, Pressure and Temperature Conditions", invited seminar, presented to the Chemical Engineering Department, Case School of Engineering, Cleveland, Ohio, 23 March 1995.

- 68. "Cetylpyridinium Chloride Release from Polymerized Microemulsions" with E. Davis and T. Lehman; poster 32ax presented at the AIChE Annual Meeting, Group 15: Food, Pharmaceutical & Bioengineering Division Poster Session, San Francisco, CA, 16 November 1994.
- 67. "Formation and Polymerization of Microemulsions Formed Using Both Inorganic and Organic Monomer Species" with R. Mukkamala and S. Meda; poster 202z presented at the AIChE Annual Meeting, Group 8, Materials Engineering & Science Poster Session, San Francisco, CA, 15 November 1994.
- 66. "Formation and Polymerization of Microemulsions Formed Using Both Inorganic and Organic Monomer Species" with R. Mukkamala and S. Meda; paper 200d presented at the AIChE Annual Meeting, Inorganic Polymerization Session, San Francisco, CA, 14 November 1994.
- 65. "Microemulsions A Class of Fascinating and Useful Colloidal Systems", invited seminar, presented to the Cleveland Section of the AIChE, 22 September 1994.
- 64. "Sonochemical Destruction of Aqueous Carbon Tetrachloride: Pressure and pH Optimization" with S.Kurup, S. Jinandra, G. Chitta, K. Gaddam, G. Jansen, poster and paper presented at the First International Conference on Advanced Oxidation Technologies for Water and Air Remediation, London, Ontario, 26 June 1994.
- 63. "Surface light scattering: an advanced instrument design with autotracking optics" with W.V. Meyer, P. Tin (NASA LeRC), L. Lading (RISO Research Center, Roskilde DK), and J. A. Mann, Jr. (CWRU), Paper #2210-29, presented at the International Symposium on Space Optics, Conference on Optical Instrumentation in Manned Space Stations, Garmisch-Partenkirchen, FRG, 21 April 1994.
- 62. "Polymerization in Bicontinuous Microemulsions", invited seminar, The University of Toledo, Chemical Engineering Department, Toledo, OH, 9 February 1994.
- 61. "Sonochemical Destruction of Aqueous Contaminants", invited seminar, The University of Arkansas, Chemical Engineering Department, Fayetteville, AR, 17 January 1994.
- 60. "Careers in Chemical Engineering" presented to the physics and chemistry classes at Springfield High School, Springfield, OH, 18 November 1993.
- 59. "Sonochemical Destruction of Aqueous Hazardous Contaminants", invited seminar, Westinghouse-Hanford Company & Battelle Pacific Northwest Laboratories, Richland, WA, 15 November 1993.
- 58. "Investigation of Physicochemical Transformations During Polymerization of Microemulsions" with W.R. Palani Raj, paper 41d, presented at the AIChE 1993 Annual Meeting, St. Louis, Missouri, 11 November 1993.

- 57. "Microemulsion Route to Superabsorbent Polymeric Materials" with W.R. Palani Raj, poster 40p, presented at the AIChE 1993 Annual Meeting, St. Louis, Missouri, 11 November 1993.
- 56. "Sonochemical Destruction of Aqueous Citric Acid: Effects of Peroxide Addition" with S. Kurup, S. Jinandra, G. Chitta, K. Gaddam, G. Jansen, and J.J. Wong (Westinghouse-Hanford Co.), paper 160e, presented at the AIChE 1993 Annual Meeting, St. Louis, Missouri, 10 November 1993.
- 55. "Controlled Release Systems by the Polymerization of Microemulsions" with W.R. Palani Raj, paper 76b, presented at the AIChE 1993 Annual Meeting, St. Louis, Missouri, 10 November 1993.
- 54. "Microemulsions and Microemulsion Polymerization" invited lecture, Department of Polymer Engineering, The University of Akron, Akron, OH, 17 September 1993.
- 53. "Sonochemical Destruction of Fluorotrichloromethane (CFC11) and Trifluorotrichloroethane (CFC113) in Dilute Aqueous Solution" with S. Kurup, S. Jinandra, & K. Gaddam, paper 66e, presented at the AIChE 1993 Summer National Meeting, Seattle, WA, 16 August 1993.
- 52. "Polymeric Microlatices Formed Using Polymerizable Surfactants" with W.R. Palani Raj, paper 173, presented at the American Chemical Society, 205th National Meeting, Denver, CO., 2 April 1993.
- 51. "Porous Polymeric Solids by Heterophase Polymerization using Polymerizable Surfactants" with W.R. Palani Raj, paper 170, presented at the American Chemical Society, 205th National Meeting, Denver, CO., 1 April 1993.
- 50. "Polymerization in Microemulsions: Microlatexes, Microporous Solids, Membranes, Foams, and "Super" Absorbents" invited lecture, Gillette Company, Boston, MA, 2 February 1993.
- 49. "Formation and Characterization of Microporous Polymeric Materials from Microemulsions" invited lecture, Department of Chemistry, Kent State University, Kent, OH, 19 November 1992.
- 48. "Light Scattering Study of Solvent/Solute Effects in Polymer Network Formation" with J.R. Elliott, paper 39i presented at the AIChE 1992 Annual Meeting, Miami, FL, November 1992.
- 47. "Destruction of Aqueous Chlorocarbons in a Sonochemical Reactor" with A. Bhatnagar and S. Kurup, poster 211h presented at the AIChE 1992 Annual Meeting, Miami, FL, November 1992.

- 46. "Microemulsion Route to Polymer Blends using Polymerizable Surfactants" with W.R. Palani Raj and Mohan Sasthav, poster 99m presented at the AIChE 1992 Annual Meeting, Miami, FL, November 1992.
- 45. "Synthesis of Interpenetrating Polymer Networks by Microemulsion Polymerization" with W.R. Palani Raj and Mohan Sasthav, paper 97j presented at the AIChE 1992 Annual Meeting, Miami, FL, November 1992.
- 44. "Polymerization and Characterization of Styrene, Polybutadiene, and Acrylic Acid" with Mohan Sasthav and W.R. Palani Raj, paper 181c presented at the AIChE 1992 Annual Meeting, Miami, FL, November 1992.
- 43. "Experimental and Prediction Analytical Study of Multiangle QELS" with W.V. Meyer and Rafat R. Ansari, paper 101f presented at the AIChE 1992 Annual Meeting, Miami, FL, November 1992.
- 42. "An Easy to Use Zero Angle Dynamic Depolarized Light Scattering System" with W.V. Meyer, paper 100a presented at the AIChE 1992 Annual Meeting, Miami, FL, November 1992.
- 41. "Sonochemical Destruction of Aqueous Organic Contaminants", invited seminar, Union Carbide Corporation, Charleston, WV, 22 October 1992.
- 40. "Formation and Characterization of Polymerized Microemulsions", invited seminar, Union Carbide Corporation, Charleston, WV, 22 October 1992.
- 39. "Sonochemical Destruction of Chlorinated Hydrocarbons", invited seminar, Columbia Valley Section of the American Institute of Chemical Engineers, Pasco, WA, 23 September 1992.
- 38. "Sonochemical Destruction of Aqueous Hazardous Contaminants", invited seminar, Westinghouse-Hanford Company & Battelle Pacific Northwest Laboratories, Richland, WA, 22 September 1992.
- 37. "Potential Applications of Sonochemistry at Hanford Nuclear Reservation", invited lecture, Westinghouse-Hanford Company Technical Advisory Committee, Richland, WA, 21 September 1992.
- 36. "Sonochemical Destruction of Aqueous Carbon Tetrachloride", invited lecture, Westinghouse-Hanford Company Environmental Remediation Division, Richland, WA, 21 September 1992.
- 35. "Microemulsion Characterization using a Fiber Optic Probe" with Rafat R. Ansari, Harbans S. Dhadwal, and William V. Meyer, Eighth Topical Meeting: Photon Correlation and Scattering Theory and Applications, Optical Society of America, Boulder, CO, 24 August 1992.

- 34. "Sonochemical Destruction of Organics in Water: Pressure and Temperature Effects" with A. Bhatnagar, A. Brenner, S. Kurup and J. Wong, Paper 58a, presented at the AIChE 1992 Summer Meeting, Minneapolis, MN, August 1992.
- 33. "A Fiber Optic Probe for the Characterization of Microemulsions" with Rafat R. Ansari, Harbans S. Dhadwal and William V. Meyer, 9th International Symposium on Surfactants in Solution, Varna, Bulgaria, 14 June 1992.
- 32. "Formation of Polymeric Foams by Polymerization of Organized Surfactant Media", with W.R. Palani Raj & M. Sasthav, 66th Colloid and Surface Science Symposium, Morgantown, WV, June 1992.
- 31. "Synthesis and Characterization of Membranes formed by Polymerization of Bicontinuous Microemulsions", with W.R. Palani Raj & M. Sasthav, 66th Colloid and Surface Science Symposium, Morgantown, WV, June 1992.
- 30. "Microemulsion Pathways to Polymer Blends", with M. Sasthav & W.R. Palani Raj, 66th Colloid and Surface Science Symposium, Morgantown, WV, June 1992.
- 29. "Elastomeric Blends from the Photopolymerization of Glycol Containing Microemulsions", with M. Sasthav & W.R. Palani Raj, 66th Colloid and Surface Science Symposium, Morgantown, WV, June 1992.
- 28. "Use of a Fiber Optic Probe for Quasielastic Light Scattering Measurements in Microemulsions" with Rafat R. Ansari, Harbans S. Dhadwhal, and William V. Meyer, 66th Colloid and Surface Science Symposium, Morgantown, WV, 15 June 1992.
- 27. "Porous Elastomeric Materials Formed by Polymerization of Microemulsions" with Palani Raj Wallajapet, poster presented at the 141st ACS Rubber Division Meeting, Louisville, KY, 20 May 1992.
- 26. "Polymerization in Microemulsions" presented at the "Emulsion Polymerization: Mechanism and Kinetics, Surfactant Effects, Latex Characterization, and Uses" Short Course sponsored by The Institute of Materials Science, New Orleans, LA, 5 May 1992.
- 25. "Emulsions and Microemulsions" presented at the "Emulsion Polymerization: Mechanism and Kinetics, Surfactant Effects, Latex Characterization, and Uses" Short Course sponsored by The Institute of Materials Science, New Orleans, LA, 5 May 1992.
- 24. "Sonochemical Destruction of Aqueous Chlorocarbons", with A. Bhatnagar, Paper 97b, AIChE Annual Meeting, Los Angeles, California, 19 November 1991.
- 23. "Light Scattering Study of Network Formation and Gelation in Supercritical Fluids", with J.R. Elliott, AIChE Annual Meeting, Los Angeles, California, 20 November 1991.

- 22. "Formation of Porous Polymeric Solids by Polymerization in Single Phase Microemulsions of Methyl Methacrylate and Acrylic Acid", with M. Sasthav and W.R. Palani Raj, AIChE Summer National Meeting, Pittsburgh, 20 August 1991.
- 21. "Destruction of Aqueous Chloromethanes in a Sonochemical Reactor", with A. Bhatnagar, Paper 28i, AIChE Summer National Meeting, Pittsburgh, 19 August 1991.
- 20. "Characterization and Photopolymerization of Microemulsions containing Methyl Methacrylate and Acrylic Acid Homologs", with M. Sasthav and W.R. Palani Raj, 65th Colloid and Surface Science Symposium, The University of Oklahoma, 19 June 1991.
- 19. "Formation of Porous Polymeric Solids by Polymerization in Single Phase Microemulsions of Methyl Methacrylate/Acrylic Acid", with M. Sasthav and W.R. Palani Raj, 65th Colloid and Surface Science Symposium, The University of Oklahoma, 19 June 1991.
- 18. "Microstructure of Porous Polymeric Solids Formed by the Polymerization of Bicontinuous Single Phase Microemulsions", with M. Sasthav and W.R. Palani Raj, poster, 65th Colloid and Surface Science Symposium, The University of Oklahoma, 17 June 1991.
- 17. "Phase Behavior and Polymerization of Methyl Methacrylate and Styrene containing Middle Phase Microemulsions", with M. Sasthav and W.R. Palani Raj, poster, AIChE Annual Meeting, Chicago, 14&15 November 1990.
- 16. "Recent Developments in Quasielastic Light Scattering: Improved Particle Size Distribution Resolution from Simultaneous Regression using Multiple Angle Measurements", The Ohio State University, Department of Chemical Engineering Seminar Series, 22 May 1990.
- 15. "Multiple Angle Quasielastic Light Scattering for Characterization of Polydisperse Systems", poster, AIChE Annual Meeting, San Francisco, California, 7 November 1989.
- 14. "Multicomponent Modeling of the Catalytic Oxidation of Chlorinated Hydrocarbons in a Laminar Flow, Tubular Reactor", with S. Vimawala and H.L. Greene, AIChE Spring National Meeting, Houston, Texas, 5 April 1989.
- 13. "Catalytic Oxidation of Methylene Chloride and Trichloroethylene", with H.L. Greene, R.S. Danals, and S. Vimiwala, Paper 87D, AIChE Spring National Meeting, Houston, Texas, 3 April 1989.
- 12. "Phase Behavior of Styrene and Methyl Methacrylate Microemulsions", Case Western Reserve University, Dept. of Chemical Engineering Seminar Series, 10 November 1988.

- 11. "Improved Optics for Laser Light Scattering", Invited Lecture at the NASA Laser Light Scattering Advanced Technology Development Workshop held September 7-8, 1988 (NASA Lewis Research Center).
- 10. "A Stochastic Model for Correlating Unsteady State Leakage in Liquid Surfactant Membranes", with A. Shere, AIChE National Meeting, New York, New York, November 1987.
- 9. "Diffusion Coefficient Perturbation: A Means of Probing Colloidal Particle Charge using QELS", with A. Frej, 61st Colloid and Surface Science Symposium, Ann Arbor, Michigan, 23 June 1987.
- 8. "Stabilization of Methanol/Hydrocarbon Blends using Carboxylic Acid Surfactants", with R. Patel, 61st Colloid and Surface Science Symposium, Ann Arbor, Michigan, 24 June 1987.
- 7. "Correction of Quasielastic Light Scattering Results for Interparticle Interactions", NASA JIAPP Workshop held 13 February 1987 at NASA Lewis Research Center.
- 6. "Brief Introduction to Interfacial Tension: Measurement and Modification", Invited presentation for the Applied Sciences Division, U.S. Army Armament Research and Development Center, Large Caliber Weapons Laboratory, Dover, New Jersey, 2 February 1986.
- 5. "Rational Method of Comparing QELS Analysis Schemes for Polydispersity", with R.V. Edwards and J.A. Mann, Jr. of the Chemical Engineering Department at CWRU, Symposium on Polymeric Materials at the ACS 1985 Annual Meeting, Chicago, Illinois, September 1985.
- 4. "Electrophoretic Light Scattering in Microemulsions", H.M. Cheung, R.V. Edwards, J.A. Mann, and S. Qutubuddin; Symposium on Phoretic Phenomena at the AIChE 1984 National Meeting, San Francisco, California, 27 November 1984.
- 3. "Phase Behavior and Light Scattering Studies of Microemulsions", H.M. Cheung R.V. Edwards, J.A. Mann, and S. Qutubuddin; 58th Colloid and Surface Science Symposium, Pittsburgh, Pennsylvania, 13 June 1984.
- 2. "A Light Scattering Investigation of Polydispersity and Interactions in O/W Microemulsions", H.M. Cheung, R.V. Edwards, J.A. Mann, and S. Qutubuddin; 57th Colloid and Surface Science Symposium, Toronto, Canada, 14 June 1983.
- 1. "Electrodynamic Studies of Brownian Particles", H.M. Cheung, R.V. Edwards, and J.A. Mann; 179th ACS National Conference, Houston, Texas, 24 March 1980.