

**NICHOLAS P. CHEREMISINOFF, PH.D.**

**EDUCATION**

**1977:** Ph.D. in Chemical Engineering, Clarkson College of Technology, Potsdam, NY

**1975:** M.Sc. in Chemical Engineering, Clarkson College of Technology, Potsdam, NY

**1974:** B.Sc. in Chemical Engineering, Clarkson College of Technology, Potsdam, NY

**HONORARY AWARDS & PROFESSIONAL MEMBERSHIPS**

American Institute of Chemical Engineers

American Chemical Society

American Wood Preserver's Association

American Water Works Association

Society of Plastics Engineers

National Fire Prevention Association

Who's Who of American Men and Women of Science

Who's Who of American Authors

Honorary Academician of the Ukrainian Academy of Sciences

AICHE Pablo-Gutman Memorial Scholar

Tau Beta Pi B National Chemical Engineer's Honorary Society

Omega Chi Epsilon B National Engineering Honorary Society

Sigma Xi B National Scholars Honorary Society

**EMPLOYMENT HISTORY**

**2014 – Present:** Member of Board of Directors of ThermoChem Recovery International, Inc., Baltimore, MD

**2002 – Present:** Vice President overseas projects, Princeton Energy Resources, International, LLC, Rockville, MD

**1992 – Present:** N&P Ltd, Charles Town, WV, Co-founder and Principal of No-Pollution Enterprises, LLC, Charles Town, WV.

**1980 – Present:** Invited lecturer at University of Missouri-Rolla, University of Maryland, University of South Carolina, Texas A&M University, Russian Academy of Sciences, Ukrainian Academy of Sciences, Farleigh Dickenson University, University of Michigan, East Coast Hazmat Conferences, and Guest Speaker on Canadian Radio Broadcast Corp.

**1979 – 1992:** Exxon Chemical Co. and Exxon Research and Engineering Co., USA, Brussels

**1977 – 1992:** Adjunct Professor at Dept. of Civil & Environmental Engineering, New Jersey Institute of Technology, Newark, NJ.

**1977 – 1979:** Union Camp Corp., Lawrenceville, NJ.

**SELECT CAREER ACCOMPLISHMENTS**

**U.S. Agency for International Development (USAID)** – Senior technical advisor on design of industrial wastewater treatment and cogeneration plant for the Greater Amman Municipality slaughterhouse project, Jordan.

**U.S. Trade & Development Agency (USTDA)** – Project Manager and senior technical advisor on development of National Electricity Health and Safety Codes, Nigeria.

**USAID** – Chief of Party and Senior Advisor for Jordan Industrial Waste Manifest project, a multi-year project aimed at developing industrial waste regulations for the Gov. of Jordan, Amman, Jordan.

**USAID** – Task 3 Project Manager for RIAL Phase I & II (Reuse for Industry, Agriculture & Landscaping) – Responsible for developing national strategy for industry water reuse and recycling. Technical to ministries of Environment, Health, Water Authority, Trade, international lending institutions, and U.S. Mission on pollution prevention and environmental impacts from water conservations infrastructure investments.

**USAID** – (Romania) Training and pilot demonstration programs at industrial and municipal water treatment and drinking water supply plants on improved operational efficiency and quality, P2 (Pollution Prevention) and alternative waste management practices. Established a national program for zero sewer discharge standards for priority pollutants.

**USAID** – P2 specialist on Samara, Russia Regional Investment Initiative Program - Environmental Component under USAID, dealing with pollution prevention and regional environmental action plan development to attract US investment opportunities. Focused on water quality and management improvements at various industrial facilities including slaughtering and meat rendering plants, machine building operations, refineries.

**USAID** – (Bulgaria) Training and consulting on P2 and EMS (Environmental Management Systems) to industry with a focus given to water and power generation. Facilities included tanneries, slaughtering and meat rendering plants, machine building operations, refineries, wood making.

**USAID** – (Macedonia) Training and consulting on EMS/P2, conducted P2 audits; Assisted in defining/structuring Environmental Funds program. Developed engineering basis for recycling options at pharmaceutical and cosmetics plants, textile manufacturing plants, beverage and food production facilities, meat rendering and slaughtering facilities, and tanneries.

**USAID/USEPA** – (Ukraine) Under K&M Engineering and CH2MHILL served as in- Country Industrial Waste Management Project Manager, Ukraine. Responsibilities included Resident Project Manager on Institutional Strengthening of Environmental Enforcement; establishment of a Regional Environmental Center; trained Ukrainian enterprises on Pollution Prevention (P2) and Waste Minimization; developed national legislation on industrial hazardous wastes, developed pesticide registration program; implemented fate and transport models for environmental impact assessments at coke- chemical, wood preserving, iron and steel, machine building, munitions manufacturing sites, farm and slaughtering operations; developed regional infrastructure among environmental enforcement agency and industry.

**USAID** – (Balkans) Under DAI developed case studies and designed P2 Forum and Web site for P2 programs to assist industry.

**USDOE/USDOD (U.S. Depts. of Energy and Defense)** – Numerous assignments. Highlights include: (1) Prepared Congressional Report for Subcommittee on Energy Budgets for Worldwide Projected Market Growth of Advanced Turbines for the Utility Industry and Impediments to Market Growth; (2) Technology Survey and R&D Projection Needs for Small-scale Coal Gasification Technologies; (3) Technology Survey and R&D Projection Needs for Fuel Cell Technologies for Power Generation; (4) Environmental Impact Assessment of Tritium Extraction plant for SALT 2 Armaments Treaty; (5) Emergency Cooling System Design Review for Point Pleasant Power Plant, NJ.

**U.S. Export Import Bank** – (Uzbekistan) Under Eurasia Environmental Services serves as technical and business consultant on the Shurtan Gas Processing Plant modernization project, Uzbekistan. Responsible for evaluating low NO<sub>X</sub> compressor technology for gas transfer stations as proposed by General Electric Corp of U.S. Led team in developing environmental impact statement and assessing project-financing options for 9 million U.S. dollar loan.

**USTDA** – (Balkans) Definitional Missions to define project opportunities and environmental impact assessments in the Balkans (Romania, Bulgaria, Macedonia, Bosnia-Herzegovina, Croatia, Albania). Implemented regional rationalization study on the debundling of INA (oil and gas monopoly-producer of Balkans) oil, gas and downstream chemical manufacturing businesses, including chlor-alkalis, agro-chemicals and coal-tars.

**USTDA** – (Latin America) Definitional Missions to define project opportunities in oil, gas and renewable energy.

**World Bank Organization (WBO)** – (Ukraine) Developed national legislation on European Union IPPC (Integrated Pollution Prevention and Control) permitting. Established model permits for the Power Generation, Coke Chemicals, and Steel Making industry sectors.

**WBO** – (Ukraine) Under the Donetsk Pollution Abatement Loan Program, responsible for conducting environmental impact studies and technical feasibility assessments of industrial enterprise projects aimed at pollution prevention/abatement and energy savings.

**WBO** – (Russia) Conducted business evaluations and technical feasibility studies for oil field expansions by Tyumen Oil in Siberia.

**WBO** – (Turkmenistan) Under Eurasia Environmental Services assessed technology options and costs for mercury cleanup on Nura River. Developed detailed remediation plans and emergency response plans for cleanup operations.

**WBO/USTDA** – (Russia) Assisted in feasibility assessment for wind power generation farm to provide electrification to St. Petersburg grid. Assessment extended to assess feasibility for providing wind-powered electricity to rural towns and villages to replace diesel generator technology.

**Exxon Research & Engineering Co. and Exxon Chemical Co.** – Numerous assignments ranging from refinery and chemical plant expansions, pollution and health & safety, synthetic elastomer manufacturing/product development. Positions ranged from technical, group and section manager to product development manager.

**International Business and Engineering Consultants, Caracas, Venezuela** – Technical expert assigned to refinery modernization projects in Maricaibo, Curacil, and Aruba. Conducted plant wide energy efficient and environmental audits at four refineries and one light ends manufacturing plant. Assisted design teams in debottlenecking fluid catalytic cracker operations, lube oils distillation plant, and paramins refining.

**KBR-Halliburton** – Prepared environmental impact statement for Nizhnekamsk Refinery polyolefins plant expansion, Republic of Tatarstan.

**Madison Gas & Electric Corp.** – Developed preliminary design basis and technical feasibility assessment for conversion of oil fired boilers power generating boilers to biomass feed systems.

**U.S. Private Sector Clients** – Environmental, waste and health & safety consultant to various clients including Public Service Gas & Electric Corp., New Jersey, Chase and Sanborn Food Corp., Becton Dickenson Pharmaceutical Co., Gates Wire and Cable Co., Goodyear Tire and Rubber Co., Merola Hazardous Waste Transporters Corp., Safety Clean Corp., Municipalities.

**OECD (Organisation for Economic Co-operation and Development)** – (Ukraine) Studies and special reports on development of environmental management systems and application of economic instruments for waste management.

**TACIS (Technical Assistance to the Commonwealth of Independent States, European Commission)** –European Union Project Manager on Institutional Strengthening of the State Environmental Inspectorate of Ukraine. Responsible for managing project dealing with restructuring of the Environmental Inspectorate of Ukraine as prerequisite to becoming a European Union member. Tasks included development of pollution fees restructuring, personnel training and qualifications for inspectorates, financing schemes for regional laboratories, communications improvement between regional inspectorates, developing long-term budget forecasting for the inspectorate, agro-chemicals (pesticides) registration program.

**Yukong Chemical Corporation** – (Seoul, South Korea) Technical advisor on Japan Synthetic Rubber technology for EPDM manufacture. Conducted plant wide audit; assisted technical design team in design modifications to polymerization reactors, rubber finishing (drying) and packaging stages, hexane recycling streams, and modernization of integrated systems controls. Assisted Product Development Group in developing TPO elastomers and soft sponge products for European automotive markets. Additionally assisted in redesign of on-site combined municipal and industrial wastewater treatment plant facility.

## **PUBLICATIONS**

*Book publications authored, co-authored or edited*

1. Hydraulic Fracturing Operations: Handbook of Environmental Management Practices, Wiley-Scrivener Publishers, UK (*in press*)
2. Industrial Dust Explosion Guidebook, Wiley Publishers, United Kingdom (2014).
3. Industrial Gas Flaring Practices, Wiley Publishers, NJ (2013).
4. Handbook of Pollution Prevention and Cleaner Production: Volume 4 - Clean Electricity through Advanced Coal Technologies, Elsevier, UK (2012).
5. Handbook of Pollution Prevention and Cleaner Production: Volume 3 - Best Practices in the Agrochemical Industry, Elsevier, UK (2011).
6. Emergency Response to Offshore Oil Spills, Wiley & Sons, NJ (2011).
7. Handbook of Pollution Prevention and Cleaner Production: Volume 2 - Best Practices in the Wood and Paper Industries, Elsevier, UK (2010).
8. Handbook of Pollution Prevention and Cleaner Production: Volume 1 - Best Practices in the Petroleum Industry, Elsevier, UK (2009).
9. Economic Study of Bioenergy Production from Digesters at Dairies in California, Princeton Energy Resources International, LLC, Rockville, MD (December, 2008).
10. Responsible Care: A New Strategy for Pollution Prevention and Waste Reduction through Environmental Management, Gulf Publishing Co., Houston, TX (2008).
11. Refinery Manager's Guide to ISO 14001 Implementation, Gulf Publishing Co., Houston, TX (2006).
12. Environmental Management Systems Handbook for Refineries: Pollution Prevention through ISO 14001, Gulf Publishing Co., Houston, TX (2006).
13. Gasification Technologies: A Primer for Engineers and Scientists, CRC Press, Taylor & Francis Group, Boca Raton, FL (2005).
14. Environmental Technologies Handbook, editor, Government Institutes, Oxford, UK (2005).

15. Achieving Environmental Excellence: Integrating P2 and EMS for Improved Profitability, Government Institutes, Washington, D.C. (2003).
16. Assessment of the Commercial Potential for Small Gasification Combined Cycled and Fuel Cell Systems, HM Associates, Princeton Energy Resources International, LLC, and TFB Consulting (March, 2003)
17. Wastewater and Biosolids Treatment Technologies, Government Institutes, Washington, D.C. (2003).
18. Handbook of Solid Waste Management and Waste Minimization Technologies, Butterworth-Heinemann Publishers, United Kingdom, (2003).
19. Industrial Solvents Handbook, 2<sup>nd</sup> Edition, Marcel Dekker Publishers, NY and Basel (2003).
20. Handbook of Air Pollution Prevention and Control, Butterworth-Heinemann Publishers, United Kingdom, (2002).
21. Handbook of Water and Wastewater Treatment Technologies, Butterworth Heinemann Publishers, United Kingdom, (2002).
22. Green Profits: A Manager's Handbook to ISO 14001 and Pollution Prevention, Butterworth-Heinemann Publishers, United Kingdom, (2001).
23. Pollution Prevention Practice Handbook, Marcel Dekker Publishers, NY and Basel, (2001).
24. Environmental and Health & Safety Management, Noyes Publications, Park Ridge, NJ, (1995).
25. Handbook of Chemical Process Equipment, Butterworth-Heinemann, Oxford, UK (2000).
26. Handbook of Hazardous Chemical Properties, Butterworth-Heinemann, Oxford, UK (2000).
27. Chemical Engineer's Condensed Encyclopedia of Process Equipment, Gulf Publishing Co., Houston, TX (2000).
28. Handbook of Industrial Toxicology and Hazardous Materials, Marcel Dekker Publishers, Basel, (1999).
29. Liquid Filtration, 2<sup>nd</sup> Edition, Butterworth-Heinemann, Oxford, United Kingdom (1998).
30. Fire and Explosion Hazards Handbook of Industrial Chemicals, Noyes Publications, Westwood, NJ (1998).
31. Guide to Wastewater Treatment Technologies, Noyes Publications, Westwood, NJ (1998).
32. Advanced Polymer Processing Operations, Noyes Publications, Westwood, NJ (1998).
33. Pressure Safety Design Practices for Refineries and Chemical Plants, Noyes Publications, Westwood, NJ (1998).
34. Handbook of Engineering Polymeric Materials, Editor, Marcel Dekker Publishers, Inc., NY and Basel (1997).
35. Guide to Ground Water Remediation, Noyes Publications, Park Ridge, NJ (1997).
36. Electrotechnology: Industrial and Environmental Applications, Noyes Publications, Park Ridge, NJ (1996).
37. Biotechnology for Waste and Wastewater Treatment, Noyes Publications, Park Ridge, NJ (1996).
38. Handbook of Pollution and Hazardous Materials Compliance, Noyes Publications, Park Ridge, NJ (1996).

39. Pollution Prevention Software Systems Handbook, Noyes Publications, Park Ridge, NJ (1996).
40. Noise Control in Industry, Noyes Publications, Park Ridge, NJ (1996).
41. Materials Selection Deskbook, Noyes Publications, Park Ridge, NJ (1996).
42. Guide to Fiberglass Reinforced Plastics, Noyes Publications, Westwood, NJ (1996).
43. Safety Management Practices for Hazardous Materials, Marcel Dekker Publishers, NY (1996).
44. Laboratory Guide for Polymer Characterization, Noyes Publications, Westwood, NJ (1996).
45. Multiphase Reactor and Polymerization Systems Hydrodynamics - Advances in Engineering Fluid Mechanics Series, Editor, Gulf Publishing Co. Houston, TX (1996).
46. Mixed-Flow Hydrodynamics: Advances in Engineering Fluid Mechanics Series, Editor, Gulf Publishing Co., Houston, TX (1996).
47. Process Engineering Data Book, Technomic Publishing Co., Lancaster, PA (1995).
48. Pesticide Registration Handbook, Marcel Dekker Publishers, NY and Basel (1995).
49. Handbook of Emergency Response to Toxic Chemical Releases: A Guide to Compliance, Noyes Publications, Park Ridge, NJ (1995).
50. Environmental and Health & Safety Management: A Guide to Compliance, Noyes Publications, Park Ridge, NJ (1995).
51. Hazardous Materials and Waste Management: A Guide for the Professional Hazards Manager, Noyes Publications, Park Ridge, NJ (1995).
52. Certified Transportation Specialist Training Manual, National Assoc. of Safety & Health Professionals, Washington, D.C. (1994).
53. Transportation of Hazardous Materials: A Guide to Compliance, Noyes Publications, Park Ridge, NJ (1994).
54. Dangerous and Toxic Properties of Industrial and Consumer Products, Marcel Dekker Publishers, Inc., NY (1994).
55. Toxic Properties of Pesticides, Marcel Dekker Publishers, Inc., NY (1994).
56. Encyclopedia of Fluid Mechanics: Supplement 4 - Advances in Flow Dynamics, Editor, Gulf Publishing Co., Houston, TX (1994).
57. Dangerous and Toxic Properties of Polymer Chemical Additives, Marcel Dekker Publishers, Inc., New York City (1994).
58. Compressors and Fans, Prentice Hall Publishers, Englewood, NJ (1993).
59. Materials and Components for Pollution and Process Equipment, Prentice Hall Publishers, Englewood, NJ (1993).
60. Heat Transfer Equipment, Prentice Hall Publishing, Englewood, NJ (1993).
61. Carbon Adsorption for Pollution Control, Prentice Hall Publishers, Inc., Englewood, NJ (1993).
62. Filtration Equipment for Wastewater Treatment, Prentice Hall Publishers, Inc., Englewood, NJ (1993).
63. Lead: A Guidebook to Detection, Remediation and Control, Prentice Hall Publishers, Inc., Englewood, NJ (1993).
64. Encyclopedia of Fluid Mechanics: Supplement 1 - Applied Mathematics in Fluid Dynamics, Editor, Gulf Publishing Co., Houston, TX (1993).
65. Encyclopedia of Fluid Mechanics: Supplement 3 - Advances in Multi-phase Flows, Editor, Gulf Publishing Co., Houston, TX (1993).

66. An Introduction to Polymer Rheology and Processing, CRC Press, Boca Raton, FL (1993).
67. Elastomer Technology Handbook, Editor, CRC Press, Boca Raton, FL (1993).
68. Professional Environmental Auditors' Guidebook, Noyes Publications, Park Ridge, NJ (1993).
69. Lead Remediation Manual. Hazardous Lead Worker Training, SciTech Publishers, Inc., Morganville, NJ (1992).
70. Guidebook to Commercial Polymers: Properties and Applications, Polymer Process Engineering Series, PTP Prentice Hall, Englewood Cliffs, NJ (1993).
71. Guidebook to Extrusion Technology, Polymer Process Engineering Series, PTP Prentice Hall, Englewood Cliffs, NJ (1993).
72. Pumps and Pumping Operations, Prentice Hall Publishers, Englewood, NJ (1992).
73. Emergency Response Handbook, National Association of Safety & Health, Washington, D.C. (1992).
74. Trainers Guide to Emergency Response & Toxic Chemical Releases, SciTech Publishers, Inc., Morganville, NJ (1992).
75. Handbook of Emergency Response and Toxic Chemical Release, SciTech Publishers, Inc. Morganville, NJ (1992).
76. Handbook of Ceramics and Composites - Volume 1, Editor, Marcel Dekker Publishers, Inc., NY (1990).
77. Handbook of Ceramics and Composites - Volume 2, Editor, Marcel Dekker Publishers, Inc., NY (1991).
78. Encyclopedia of Fluid Mechanics: Volume 10 - Surface and Groundwater Flow Phenomena, Gulf Publishing Co., Houston, TX (1990).
79. Handbook of Heat and Mass Transfer Operations: Volume 4 - Advances in Reactor Design and Combustion Science, Gulf Publishing Co., Houston, TX (1990).
80. Encyclopedia of Fluid Mechanics: Volume 9 - Polymer Flow Engineering, Editor, Gulf Publishing Co., Houston, TX (1990).
81. Polymer-Plastics Test Methods, SciTech Publishers, Inc., Morganville, NJ (1990).
82. Practical Fluid Mechanics for Engineers and Scientists, Technomic Publishers, Lancaster, PA (1990).
83. Encyclopedia of Civil Engineering Practice - Volume 1, co-editor, Technomic Publishing Co., Lancaster, PA (1988).
84. Encyclopedia of Civil Engineering Practice - Volume 2, co-editor, Technomic Publishing Co., Lancaster, PA (1989).
85. Encyclopedia of Civil Engineering Practice - Volume 3, co-editor, Technomic Publishing Co., Lancaster, PA (1989).
86. Encyclopedia of Civil Engineering Practice - Volume 4, co-editor, Technomic Publishing Co., Lancaster, PA (1990).
87. Encyclopedia of Civil Engineering Practice - Volume 5, co-editor, Technomic Publishing Co., Lancaster, PA (1990).
88. Handbook of Polymer Science and Technology - Volume 1, Editor, Marcel Dekker Publishers, Inc., NY (1988).
89. Handbook of Polymer Science and Technology - Volume 2, Editor, Marcel Dekker Publishers, Inc., NY (1988).

90. Handbook of Polymer Science and Technology - Volume 3, Editor, Marcel Dekker Publishers, Inc., NY (1989).
91. Handbook of Polymer Science and Technology - Volume 4, Editor, Marcel Dekker Publishers, Inc., NY (1990).
92. Liquid Filtration for Process & Pollution Control, SciTech Publishers, Inc., Morganville, NJ (1989).
93. Handbook of Heat and Mass Transfer Operations: Volume 3 - Catalysis, Kinetics and Reactor Engineering, Editor, Gulf Publishing Co., Houston, TX (1989).
94. Respiratory Protection Guidebook, SciTech Publishers, Inc., Morganville, NJ (1989).
95. Pumps, Compressors and Fans Pocket Handbook, Technomic Publishers, Lancaster, PA (1989).
96. Encyclopedia of Fluid Mechanics: Volume 8 - Aerodynamics and Compressible Flows, Editor, Gulf Publishing Co., Houston, TX (1989).
97. Flow Measurement for Engineers and Scientists, Marcel Dekker, Inc., NY (1988).
98. Encyclopedia of Fluid Mechanics: Volume 7 - Rheology and Non-Newtonian Flows, Editor, Gulf Publishing Co., Houston, TX (1988).
99. Polymer Mixing and Extrusion Technology, Marcel Dekker Publishers, NY (1987).
100. Industrial Radiation Hazards Deskbook, Technomic Publishing Company, Lancaster, PA (1987).
101. Practical Statistics for Engineers and Scientists (includes software package- DATA FIT), Technomic Publishing Company, Lancaster, PA (1987).
102. Encyclopedia of Fluid Mechanics: Volume 6 - Complex Flow Phenomena and Modeling, Editor, Gulf Publishing Co., Houston, TX (1987).
103. Handbook of Heat and Mass Transfer Operations: Volume 1 - Heat Transfer Operations, Editor, Gulf Publishing Co., Houston, TX (1986).
104. Handbook of Heat and Mass Transfer Operations: Volume 2 - Mass Transfer and Reactor Design, Editor, Gulf Publishing Co., Houston, TX (1986).
105. Instrumentation for Process Flow Engineering, Technomic Publishing Company, Lancaster, PA (1986).
106. Instrumentation for Complex Fluid Flows, Technomic Publishing Company, Lancaster, PA (1986).
107. Encyclopedia of Fluid Mechanics: Volume 1 - Flow Phenomena and Measurement, Editor, Gulf Publishing Co., Houston, TX (1986).
108. Encyclopedia of Fluid Mechanics: Volume 2 - Dynamics of Single Fluid Flows and Mixing, Editor, Gulf Publishing Co., Houston, TX (1986).
109. Encyclopedia of Fluid Mechanics: Volume 3 - Gas-Liquid Flows, Editor, Gulf Publishing Co., Houston, TX (1986).
110. Encyclopedia of Fluid Mechanics: Volume 4 - Solids and Gas-Solid Flows, Editor, Gulf Publishing Co., Houston, TX (1986).
111. Encyclopedia of Fluid Mechanics: Volume 5 - Slurry Flow Technology, Editor, Gulf Publishing Co., Houston, TX (1986).
112. Fluid Flow Pocket Handbook, Gulf Publishing Co., Houston, TX (1984).
113. Heat Transfer Pocket Handbook, Gulf Publishing Co., Houston, TX (1984).
114. Liquid Filtration Pocket Handbook, Gulf Publishing Co., Houston, TX (1984).
115. Hydrodynamics of Gas-Solids Fluidization, Gulf Publishing Co., Houston, TX (1984).
116. Fluid Mechanics and Unit Operations, Butterworth Publishers, Ann Arbor, MI (1983).

117. Liquid Filtration, Ann Arbor Science/Butterworth Publishers, Ann Arbor, MI (1983).
118. Fluid Flow: Pumps, Pipes and Channels, Ann Arbor Science/Butterworth Publishers, Ann Arbor, MI (1982).
119. Handbook of Fluid in Motion, Editor, Ann Arbor Science/Butterworth Publishers, Ann Arbor, MI (1982).
120. Chemical and Process Equipment Design, Ann Arbor Science/Butterworth Publishers, Ann Arbor, MI (1982).
121. Gasohol Sourcebook, Ann Arbor Science Publishers, Ann Arbor, MI (1981).
122. Unit Conversions and Formulas Manual, Ann Arbor Science/Butterworth Publishers, Ann Arbor, MI (1981).
123. Chemical and Nonchemical Disinfection, Ann Arbor Science Publishers, Ann Arbor, MI (1981).
124. Process Level Instrumentation and Control, Marcel Dekker, Inc., NY (1981).
125. Cooling Towers: Selection, Design and Practice, Ann Arbor Science/Butterworth Publishers, Ann Arbor, MI (1981).
126. Biomass: Applications, Technology and Production, Marcel Dekker, NY (1980).
127. Wood for Energy Production, Ann Arbor Science Publishers, Ann Arbor, MI (1980).
128. Applied Fluid Flow Measurement: Fundamentals and Technology, Marcel Dekker Publishers, Inc., NY (1979).
129. Fiberglass Reinforced Plastics Deskbook, Ann Arbor Science Publishers, Ann Arbor, MI (1978).
130. Fluid Mechanics and Unit Operations, Ann Arbor Science/Butterworth Publishers, Ann Arbor, MI (1978).
131. Industrial and Hazardous Wastes Impoundment, Ann Arbor Science Publishers, Ann Arbor, MI (1978).
132. Gasohol for Energy Production, Ann Arbor Science Publishers, Ann Arbor, MI (1978).
133. Fundamentals of Wind Energy, Ann Arbor Science Publishers, Ann Arbor, MI (1978).

*Select Journal and Book Chapter Publications*

134. Regulatory and Business Strategies for Industrial Water Recycle and Reuse, First Regional Water-Reuse Conference, Amman, Jordan, December 2003
135. The Application of Economic Instruments to Promote Water Recycling and Reuse, First Regional Water-Reuse Conference, Amman, Jordan, December 2003
136. Methodology for Conducting Pollution Prevention Audits, Pollution Engineering Magazine, September 2002.
137. Spotlight on Chlorinated Hydrocarbons, Pollution Engineering Magazine, November 2001.
138. National Defense Programs Lead to Groundwater Contamination: The Perchlorate Story, Pollution Engineering Magazine, September 2001.
139. OECD Technical Report - Developing Environmental Action Plans in the Donetsk Oblast Region of Ukraine, OECD Publication, Paris, France (1997).
140. Lead Remediation, Chapter 14 in Encyclopedia of Environmental Control Technology, P.N. Cheremisinoff - Editor, Gulf Publishing Co., Houston, TX (1995).
141. OSHA and OSHA Regulations, Chapter 7 in Encyclopedia of Environmental Control Technology, P.N. Cheremisinoff - Editor, Gulf Publishing Co., Houston, TX (1995).

142. Training Your Hazmat Employees, The National Environmental Journal Magazine, Atlanta, GA, (1994).
143. Emerging Technologies and Applications for Polymers, Journal of Polymer - Plastics Technology and Engineering, V. 30, N. 1 (1991).
144. Study of Hydrodynamic and Viscoelastic Parameters Effecting the Skin Properties of Extruded Elastomers, Journal of Macromolecular Science and Chemistry, Academic Press, NY (1990).
145. Principles of Polymer Mixing and Extrusion, Chapter 26 in Encyclopedia of Fluid Mechanics - Vol. 7, Gulf Publishing Co., Houston, TX (1990).
146. Techniques for Polymer Property Characterization, Chapter 13 in Encyclopedia of Engineering Materials, Marcel Dekker Publishers, NY (1990).
147. Rheological Characterization and Processability Testing, Chapter 32 in Encyclopedia of Fluid Mechanics - Vol. 7, Gulf Publishing Co., Houston, TX (1989).
148. Predicting the Extrusion Performance of EPDMs, Journal of Polymer-Plastics Technology and Engineering, V. 27, N. 1 (1988).
149. Developments in Ethylene-Propylene Elastomers for Extruded Applications, Automotive Polymers and Design, V. 6, N. 3 (March 1987).
150. Spotlight on Environmental Software, Pollution Engineering Magazine, (Jan. 1987).
151. Statistical Regression Routines on Spreadsheet Software, Chemical Engineering Magazine, (August 17, 1987).
152. Fundamentals of Momentum and Heat Transfer, Chapter I in Handbook of Heat and Mass Transfer, Vol. 1, pp. 3-82, Gulf Publishing Co., Houston, TX (1986).
153. Application of Magnetic Stabilization to Fluidized Beds, Chapter 37 in Encyclopedia of Fluid Mechanics - Vol. 4, pp. 1145-1160, Gulf Publishing Co., Houston, TX (1986).
154. Overview of Industrial Fluidized Bed Reactors, Chapter 27 in Encyclopedia of Fluid Mechanics - Vol. 4, pp. 853-928, Gulf Publishing Co., Houston, TX (1986).
155. Entrainment Correlations, Chapter 32 in Encyclopedia of Fluid Mechanics - Vol. 4, pp. 1043-1062, Gulf Publishing Co., Houston, TX (1986).
156. Particle Properties and Characterization, Chapter I in Encyclopedia of Fluid Mechanics - Vol. 4, pp. 3-38, Gulf Publishing Co., Houston, TX (1986).
157. Design Guidelines for Flare Gas Practices, Chapter 43 in Handbook of Heat and Mass Transfer - V. 1, pp. 1401-1433, Gulf Publishing Co., Houston, TX (1986).
158. Design Practices in Combustion and Incineration, Chapter 42 in Handbook of Heat and Mass Transfer, V. 1, pp. 1351-1400, Gulf Publishing Co., Houston, TX (1986).
159. Cooling Tower Operations, Chapter 34 in Handbook of Heat and Mass Transfer - V. 1, pp. 1065-1102, Gulf Publishing Co., Houston, TX (1986).
160. Unit Operations of Wastewater Treatment, Chapter 31 in Encyclopedia of Fluid Mechanics - V. 5, pp. 1267-1368, Gulf Publishing Co., Houston, TX (1986).
161. Industrial Centrifuging Practices, Chapter 29 in Encyclopedia of Fluid Mechanics V. 5, pp. 1231 - 1246, Gulf Publishing Co., Houston, TX (1986).
162. Industrial Filtration Equipment, Chapter 17 in Encyclopedia of Fluid Mechanics V. 5, pp. 717- 790, Gulf Publishing Co., Houston, TX (1986).
163. Industrial Sedimentation Practices, Chapter 16 in Encyclopedia of Fluid Mechanics, V. 5, pp. 685-716, Gulf Publishing Co., Houston, TX (1986).
164. Particulate Capture from Process Gas Streams, Chapter 40 in Encyclopedia of Fluid Mechanics - V. 5, pp. 685-716, Gulf Publishing Co., Houston, TX (1986).

165. Flow of Solids Through Bins and Pipes, Chapter 5 in Encyclopedia of Fluid Mechanics - V. 4, pp. 145- 194, Gulf Publishing Co., Houston, TX (1986).
166. Mixing of Granular and Loose Solids, Chapter 3, in Encyclopedia of Fluid Mechanics - V. 4, pp. 61 - 108, Gulf Publishing Co., Houston, TX (1986).
167. Design Features of Fans, Blowers and Compressors, Chapter 42 in Encyclopedia of Fluid Mechanics - V. 2, pp.1208-1334, Gulf Publishing Co., Houston, TX (1986).
168. Pump Classifications and Design Features, Chapter 34 in Encyclopedia of Fluid Mechanics - V. 2, pp. 95 1 - 1000, Gulf Publishing Co., Houston, TX (1986).
169. Industrial Flow Measuring Devices, Chapter 39 in Encyclopedia of Fluid Mechanics - V. 1, pp. 1339- 1407, Gulf Publishing Co., Houston, TX (1986).
170. Measurement Techniques for Multiphase Flows, Chapter 38 in Encyclopedia of Fluid Mechanics - V. 1, pp. 1280-1338. Gulf Publishing Co., Houston, TX (1986).
171. Spotlight on Environmental Software, Pollution Engineering Magazine, Vol. 27, No. 3 (1986).
172. Properties and Concepts of Single Fluid Flows, Chapter 10 in Encyclopedia of Fluid Mechanics - V. 1, pp. 277-352, Gulf Publishing Co., Houston, TX (1986).
173. Experimental Methods for Studying the Hydrodynamics of Gas-Solid Fluidized Beds, I&EC Process Design and Development, (April 1986).
174. Hydrodynamic Mixing of Dispersed and Atomized Flows, Chapter 13 in Encyclopedia of Fluid Mechanics - Vol. 3, pp. 301-364, Gulf Publishing Co., Houston, TX (1986).
175. Fluid Mechanics of Crossflow Magnetically Stabilized Fluidized Beds, I&E Process Design & Development, V. 24, pp. 719-725 (July 1985).
176. Plant Site Selection Factors, Chapter 30 in Industrial Odor Technology Assessment Handbook, pp. 457-467, Ann Arbor Science Publishing, Ann Arbor, MI (1985).
177. Measurement Techniques for Industrial Wasteflows, in French language, Eau DuOuebe V. 14, N. 3, (Aug. 1981).
178. Wastewater Flow Measuring Devices, Pollution Engineering Magazine, V. 12, N. 9, (1980).
179. Assessing Fluid Flow Measurements, Water & Sewage Works Journal, V. 127, N. 7, (1980).
180. Heat Transfer with Stratified Gas-Liquid Flow, AIChE Journ. V. 25, N. 6 (Dec. 1979).
181. Stratified Turbulent-Turbulent Gas-Liquid Flow, AIChE Journ. V. 25, N. 1 (Nov. 1979).
182. Annular Two Phase Flow: Film Height and Heat Transfer, AIChE-DIMP Report #6 (April 1978).
183. Gravity Settling Chambers, Chap. 9 in Air Pollution Control & Design Handbook, Ann Arbor Science Publishing, Ann Arbor, MI (1977).
184. Ventilating System Noise Control, Chap. 15 in Industrial Noise Pollution Control Handbook, Ann Arbor Science Publishing, Ann Arbor, MI (1977).
185. Report on the Lamella Gravity Settler, Pollution Engineering Magazine, V. 9, N. 3, (1977).
186. Estimating Noise from Control Valves, Pollution Engineering Magazine, V. 9, N. 6, (1977).
187. Stratified Two-Phase Flow: Pressure Drop and Holdup, AIChE - DIMP Report # 5 (June 1977).
188. Heat Transfer to Two Phase Stratified Gas-Liquid Flows, AIChE - DIMP Report (June 1977).

189. Heat and Momentum Transfer Analogies for Horizontal, Stratified Two-Phase Flow, A Report on Results and State-of-the-Art Design for AIChE-DIMP (June, 1976).
190. Heat and Momentum Transfer Analogies for Stratified and Annular Flows, Proceedings of Two Phase Flow and Heat Transfer Symposium, Cincinnati, OH (1976).
191. Basic Pointers on Selecting and Installing Pipe Insulation, Pollution Engineering Magazine, V. 30, N. 10, (1976).
192. Calculating Air Flow Requirements for Fume Exhaust Hoods - Total and Partial Enclosure Types, Plant Engineering Magazine, V. 30, N. 5, (1976).
193. Liquid Level Control Devices, Pollution Engineering Magazine, V. 7, N. 7, (1975).
194. Pumps: Application & Design Basics - Parts I and II, Water & Sewage Works Journal, V. 122, Nos. 9, 10, (1975).
195. Survey of Fluid Flow Measurement Techniques & Fundamentals, Water & Sewage Works Journal, V. 122, N. 12, (1975).
196. Electrostatic Precipitators - Fundamentals and Applications, Plant Engineering Magazine, V. 28, Nos. 9, 11, (1974).
197. Cyclone Separators - Fundamentals, Applications & Designs - Parts 1 and 2, Plant Engineering Magazine, V. 28, Nos. 103. 14-15, (1974).
198. Pollution Engineering Noise Glossary, Pollution Engineering Magazine, V. 5, N. 5, (1973).
199. Corrosion Resistance of Piping and Construction Materials, Pollution Engineering Magazine, V. 5, N. 8, (1973).
200. Fabric Filtration for Dust Collection, Plant Engineering Magazine, in four parts, V. 27, Nos. 11-15, (1973).
201. Understanding Packed Tower Wet Scrubbers - Part 1, Plant Engineering Magazine, V. 27, N. 23, (1973).
202. Understanding Packed Tower Wet Scrubbers - Part 2, Plant Engineering Magazine, V. 27, N. 25, (1973).

*Reports to U.S. Congress*

203. Technology Assessment and Environmental Impact of the USDOE Tritium Extraction Process for Meeting Nuclear Armaments Production under SALT II Treaty Guidelines; subcontract under K&M Engineering & Consulting Co. (Washington, D.C.) for the Department of Defense, January, 1998.
204. Impact of USEPA NO<sub>x</sub> Emission Standards on Combined Cycle Natural Gas Turbines and Its Implications to the U.S. Department of Energy's Advance Turbine Systems Program, subcontract under The PERI Group, Washington, D.C., 2000.
205. State of the Environment and Sustainable Development of Ukraine, U.S. Agency for International Development and Gore-Kuchma subcommittee on Sustainable Development in Newly Independent States of the Former Soviet Union – Environmental Policy & Technology Program, Washington, D.C. and Kyiv, 1997.

*Sessions Chaired and Conference Deliveries*

206. AIChE Houston National Conference Presentation – Paper 1: Pollution Prevention and Waste Management Practices in the Wood Preserving Industry, Dallas, TX, 2005
207. AIChE Houston National Conference Presentation – Paper 2: Pollution Prevention Case Study at the Jordan Oil Refinery, Dallas, TX, 2005

208. State Department Delegation Program to Samara, Russia—*Impact on Pollution Prevention to Promoting Foreign Investment Strategies into the Samara Region*, Environmental Action Programme, under the U.S. State Department initiative to promote sustainable development and growth to the Samara Region of Russia, 1998.
209. Chair Person - Session on Integration of Newly Independent States Environmental Legislation with International Community - USEPA-Ukrainian Roundtable Pittsburgh Conference, June 1997.
210. National Environmental Work Group Coordinator for Ukrainian Environmental Policy and Legislation Development, Gore-Kuchma Committee for Sustainability of Ukraine - Sept. 1996 – 1998.
211. Keynote Lecturer on Modern Refinery Design Practices and Environmental Management, Venezuelan Oil Refiners Association, Caracas, Venezuela, March 1996 Conference.
212. Invited Lecturer - Academy of Sciences of the Former USSR, Environmental Liability and Policy Development In NIS Countries, Moscow, Spring 1996.
213. Lead Instructor on Workshop for Refinery Flare Gas Operations and Environmental Technologies, Venezuelan Oil Refiners Association, Maracaibo, Venezuela, March 1995 Conference.
214. Designing EPDM for Production Efficiency, Paper delivered to International Conference Program, The Plastics and Rubber Institute, Katholieke Universiteit, Leuven, Belgium, April 16-17, 1991.
215. Designing EPDM Products for Extrusion Application, 2nd Paper delivered to International Conference Program, The Plastics and Rubber Institute, Katholieke Universiteit, Leuven, Belgium, April 16-17, 1991.
216. International Rubber Conference, Paper Presentation – Design Technology Advancements for EPDM Sponge Seals, Paris, France, June 12-14, 1990.
217. Study of the Hydrodynamic and Viscoelastic Properties Affecting the Surface Appearance of the Extruded EPDM Compounds, Paper presented to International Congress and Exposition – SAE (Engineering Society for Advanced Mobility Land, Sea, Air and Space) Detroit, MI (Feb. 27-Mar. 3, 1989).
218. International Rubber Conference, Paper Presentation - Designing EPDMs for Production Efficiency, Melbourne, Australia, 1988.
219. RUBBEREX 86, Australian Rubber Conference, Paper Presented - New Developments in Ethylene - Propylene Elastomers for Extruded Applications, Melbourne, Australia, April, 1986.
220. Zurich International Conference of Mathematical Modeling, Paper Presentation - Mathematical Model for Freely Bubbling Fluidized Beds, Zurich, Switzerland, 1983.
221. Invited Lectures - Department of Chemical Engineering, University of Missouri-Rolla, 1983.
222. Invited Lecturer - AIChE Engineering Series, Northeast Conference, Winter 1982.
223. AIChE International Conference on Fluid Bed Reactor Design Advancements, - Presented Two Paper - Applications of Fluidized Bed Reactors to Synthetic Fuels and Development of Magnetically Stabilized Fluid Bed, Mexico City, Spring 1982.

#### *Journal Editorships*

Served as Senior Editor for the following Research and Scientific Journals:

1. Journal of Polymer-Plastics Technology and Engineering, published bi-monthly, Marcel Dekker Publishers, Inc., Basel Switzerland (1988-1998).
2. International Journal of Engineering Fluid Mechanics, published quarterly, Gulf Publishing Co., Houston, TX (1988-1991).

#### **EXPERT WITNESS EXPERIENCE WITHIN PAST 4 YEARS**

1. Abarca, et al. v. Merck & Co., Inc., et al., United States District Court Eastern District of California, Docket # 1:07-CV-0388 DOC-BLB
2. Adelino Acosta, et al. v. Shell Oil Company, et al., Superior Court of California County of Los Angeles, Case No. NC 053643
3. Amy Turner v. Dr. Miracles, United States District Court, M.D. Louisiana Docket # 11-779-BAJ-SCR
4. Anderson, et al. vs. Estate of P. Sauget, Cerro Flow Products, Pharmacia Corp., and Monsanto AG Products, LLC, Sauget, IL, Docket # 09/73
5. Arabie, et al. v. Citgo Petroleum Corp., Calcasieu LA, Docket # 06-3967-H
6. Auchard v. Tennessee Valley Authority, United States District Court, E.D. Tennessee, Knoxville, Docket # 3:09-cv-00054
7. Barbara Campbell Ramsey, as Trustee of Allen T. Campbell Trust/Campbell Decedents Trust, v. Pacific Quartz, Inc., MBH Electronics, Inc., Case No. 30-2008-00078246-CU-TTCXC
8. Behr Dayton Thermal Products, LLC Litigation. Case No. 03:08-cv-00326 (WHR-MJN)
9. Beverly Diane Dorman v. Ciba Geigy Corporation, Circuit Court of Washington County, AL, Docket # 65-CV-2004-000038.00
10. Bristol-Myers Squibb Environmental Contamination Litigation, Superior Court of New Jersey, Master Docket No. ATL-1-3517-08MT, Case No. 281, New Brunswick, NJ
11. Carolyn Baker, et al. v. Chevron USA, Inc., et al., United States District Court for the Southern District of Ohio Western Division, Docket # 1:05-CV-227 cons. With 1:09-CV-656
12. Control Solutions Inc. v. Gharda USA Inc., et al., Court Of Appeals Of Texas, First District, Houston, Docket # 2004-67993
13. Cynthia Paige, et al. v. Dura-Wood, LLC, et al., 9th Judicial District Court Parish of Rapides, LA, Docket # 214,913-F
14. D. Bollum, et al. v. BNSF Railway Co., Dallas, TX, Docket # 27-CV-08-28882
15. Dennis and Gail Davis v. BNSF Railway Co., Dallas, TX, Docket #25, 151
16. Don Adams, et al. v. ALON USA, LP, et al., District Court of Howard County, TX 118th Judicial, Docket # 2009-CV-46548
17. Doug Pauls, et al. v. Richard Warren, et al., Case No. LALA 105144-Division C, Iowa District Court in and for Wapello County, Eldon, IA

18. Douglas & Deborah Shukers v. Triumph Aerostructures, LLC., d/b/a Triumph Aerostructures Vought Commercial Division, U.S. District Court, Western District of Arkansas, El Dorado Division, Case No. 1:13-cv-1002
19. Elk River Chemical Spill, Freedom Industries, Charleston, WV
20. Edward Ardoin, et al. v. Hartford Accident & Indemnity co., et al., 14<sup>th</sup> JDC, Calcasieu Parish, LA, Case No. 2002-3665
21. Franco, et al. v. Coronet Industries Inc. et al., Pensacola, FL, Docket # 04-CA-002576
22. Fred Beck, et al. v. Koppers Inc., Mississippi, Docket # 3:03V60-P-D
23. Freeman, et al. v. Grain Processing Corp., Muscatine IA, Docket # LACV021232
24. Gateway Energy and Coke (SunCoke Energy) Coke Facility, Granite City, IL
25. Gracie Hartle, et al. v. First Energy Generation Corp., Shippingport PA, Docket # 08-1019
26. Harry Stephens Farms, INC. and Harry Stephens, individually and as managing partner of Stephens Partnership, v. Helena Chemical Co., Inc., and Exxon Mobil Corporation, Successor to Mobil Chemical Co., United States District Court Eastern District of Arkansas Eastern Division, Docket # 2:06-CV-00166 JMM cons. With 4:07-CV-00278 JMM
27. Invista B.V., et al. v. E.I. Du Pont De Nemours and Company, United States District Court Southern District of New York, Docket # 1:08-CV-03063-SHS
28. James Benefield v. International Paper Co., Docket # 2:09 cv232-WHA
29. Jeanette Moss Anthony, et al. v. Drummond Company, Inc., et al., United States District Court for the Middle District of Alabama Northern Division, Docket # CV 2008-2067
30. Jerry Dovico, et al. v. Valley View Swine, LLC, et al., Case No. LALA105144 – Division A, Iowa District Court in and for Wapello County, Batavia and Eldon, IA
31. John Williams & Monica Harris-Williams, and Ramona Sykes, et al. v. Magnesium Elektron North America, Inc., Case No. 11-L-001163
32. Kerr-McGee Wood Treating Facility, Avoca, PA
33. L. Hensley and R. Hensley v. Plains Exploration & Production Corp., Los Angeles, Docket # SC094173
34. Linda Faust v. BNSF Railway Co., Tarrant County, 9th Judicial District, Docket # 153-212928-05
35. Louisiana Pacific and PACTIV Wood Treatment Litigation, Docket # 2:06-CV-00083-LES-CSC, Florella, FL
36. Marianne Nelson-Rayburn, et al. v The Boeing Company, Case No. BC491145, Los Angeles, CA
37. Patty Brady, et al. v. International Paper Company, et al., CV-2012-900138.00, Selma AL
38. R. E. Price, et al. v. Roy O. Martin Lumber Co., LP, et al., Alexandria, LA
39. Rainer v. Valero Energy Corp., Tenn., Docket # ALJ No. 2013-CAAA-00001
40. Rivetta v. U.S. Steel Corp, et al., PA, Civil Div. GD10-1445.

41. Redlands Tort Litigation, Docket # RCV 31496, Redlands, California
42. Rhonda Brasel, et al. v. Weyerhaeuser Co., Docket # 07-0437, Texarkana, TX
43. Robert Andrews, et al. v. Antero Resources Corp., Antero Resources Bluestone LLC & Hall Drilling LLC, Civil Action No. 13-C-434-3, Circuit Court of Harrison County WV
44. Robinson v. Columbian Chemical Carbon Black Corp., Docket # 04-C-293 K, Wheeling, WV
45. Russell Winburn, et al. v. Doug Hoksbergen, PSL, Inc., and Cargill Pork, LLC, Case No. LALA002187, Iowa District Court in and for Poweshiek County, Grinnell & Lynnville, IA
46. Shayne Lambert, et al. v. Mettiki Coal, LLC, et al., Civil Action No. 11-C-013140 OC Circuit Court of Garrett County, MD
47. Shutes, et al. v. Platte Chemical, IL, Docket # C12002-272
48. Scott D. McClurg, et al. v. Mallinckrodt, Inc., et al., Case No. 4:12-CV-00361-AGF, Hazelwood, MO
49. Sink Float Litigation, Docket # 11-C-5000000, Wheeling, WV
50. Smith, et al. v Honeywell Industries, et al., Civil Action No. 2:10-cv-3345
51. Thomas L. Brantley, et al. v. International Paper Company, United States District Court for the District of Columbia, Docket # 2:09-CV-230-WHA-TFM
52. United States Steel v. Witherup Fabrication & Erection, Civil Division No. GD10-1445
53. Virginia Asselin v. BNSF Railway Company, 96th Judicial District Court of Tarrant County, Texas, Docket # 96-223182-07
54. Virginia Brooks, et al. v. International Paper Company, United States District Court for the District of Columbia, 2:09-CV-946-WHA-TFM
55. Willie Buard, et al. v. Colfax Treating Co. LLC et al., Docket # 214915, Alexandria, LA