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I. Education

B.Tech.: Chemical Engineering, Indian Institute of Technology (IIT), Kanpur, India, 1970

MS: Chemical Engineering, Wayne State University, Detroit, Michigan, 1972

Ph.D.: Chemical Engineering, Wayne State University, Detroit, Michigan, 1978

II. Research and Teaching Interests

Chemical and Environmental Engineering – Hazardous Waste Treatment, Air & Water Pollution Control, Mass and Energy Balances, Separation Processes and Reaction Kinetics

III. Fellowships, Honors and Awards

1. Fellow of the American Institute of Chemical Engineers, 2013
2. Exemplary Teaching Award, HU Faculty Senate 2006
3. Nunn-Perry Award of Excellence, U.S. Air Force, Air Force Mentor-Protégé Program (HGL-Howard University-MicroPact Team). 2001-02; 2002-03
4. Distinguished Teacher-Scholar Award, Howard University, 1995-96.
5. Distinguished Teacher Award, School of Engineering, Howard University, 1995-96.
6. AIChE Outstanding Student Chapter Award from National AIChE, 1992-93 (R. C. Chawla, Chapter Advisor).
7. AIChE Marx Isaacs (National AIChE) Outstanding Student Chapter Newsletter Award, (R. C. Chawla, Chapter Advisor), 1992-93.
8. AT&T Outstanding Teacher Award, School of Engineering, Howard University, 1987-88.
9. Omega Chi Epsilon, Ch.E. Honor Society, 1987-Present.
10. AIChE Student Chapter Award of Appreciation, 1986-87.
11. Howard University Graduate School Nomination, 1992 Amoco Outstanding Teacher Award.
12. Exxon Incentive Award for Outstanding Teaching, School of Engineering, Howard University (Co-recipient), 1982-83, 1986-87.
13. Tau Beta Pi Outstanding Engineering Instructor Award 1985-86.
14. Ralph R. Teetor Educational Award, Society of Automotive Engineers, 1981-82.
15. Leadership and Professional Achievement Award, AIChE, Howard University, 1980-81.
16. Listed, Directory of World Researchers' Subjects 1980.

17. Outstanding Instructor Award, AIChE Student Chapter, Howard University, 1978-79.
18. Sigma-Xi, Scientific Research Society, 1973-Present.
19. Graduate Fellowship, Wayne State University, 1972-73, 1973-74.
20. Graduate Professional Scholarship, Wayne State University, 1971-72, 1974-75.

IV. Professional Positions

A. ACADEMIC

- 1990 – Present: Professor, Chemical Engineering, Howard University
- 1982 – 1990: Associate Professor of Chemical Engineering, Howard University
- 1977 – 1982: Assistant Professor of Chemical Engineering, Howard University
- 2005-2009, 2010-2019: Chair of Chemical Engineering, Howard University
- 2009-10: Interim Associate Dean, College of Engineering, Architecture & Computer Sciences, Howard University
- 2009-10: Interim Director, School of Engineering & Computer Science, Howard University
- 1983-1988, 1994-97, 2002-05: Director of Graduate Studies, Chemical Engineering, Howard University
- 1975–1977: Part-time Faculty, College of Lifelong Learning, Wayne State University
- 1971–1975: Research/Teaching Assistant, Chemical Engineering Department, Wayne State University

B. INDUSTRIAL

- Summer 1984, Technical Consultant, Stone & Webster Engineering Corp., Boston, MA
- Summers 1979 & 1980, Technical Consultant, AT&T Corporation, Allentown PA
- 1969 – 1970, Student Trainee Engineer, Synthetics and Chemicals Corp., Bareilly, India
- Summer 1969, Student Trainee Engineer, Herdillia Chemicals Corp., Bombay, India

V. Publications (Students are underlined)

A. Books and Book Chapters

1. Mostafa, M.K., Ighere, J., Chawla, R.C. and Peters, R. W. (2017), “Groundwater Protection and Remediation,” Chapter 3, pp: 53-78, in Sustainable Water Management and Technologies, Sustainable Water Technologies, Volume II; edited by Daniel H. Chen; published by CRC Press; [ISBN No.: 978-1-4822-1510-6. 2.
2. Mostafa, M.K., Chawla, R.C. and Peters, R. W. (2017), “Wastewater Treatment, Reuse and Disposal,” Chapter 7, pp: 199-238, in Sustainable Water Management and

Technologies, Sustainable Water Technologies, Volume II; edited by Daniel H. Chen; published by CRC Press in 2017; [ISBN No.: 978-1-4822-1510-6. 3.

3. Matute, W. G., Attoh, D., Chawla R.C. and Peters, R.W. (2017), "Sustainable Urban Water Management," Chapter 6, pp: 161-174, in Sustainable Water Management and Technologies, Sustainable Water Management, Volume I; edited by Daniel H. Chen; published by CRC Press in 2017; [ISBN No.: 978-1-4822-1518-2.
4. Martin, E. J., Chawla, R.C. and Swartzbaugh, J. T. (2004), "Hazardous Waste Site Remediation Technology Selection," Chapter 10, Solid Waste: Assessment, Monitoring and Remediation, Elsevier Press, 2004 (ISBN: 0-08-044321-4).
5. Chawla, R.C., Liou, R., Johnson, J.H. and Tharakan, J.P. (2000), "Biodegradation of PCBs in Aqueous and Soil Systems," Chapter 16 in Remediation of Hazardous Waste Contaminated Soils (Eds.: Wise, D.L., Trantolo, D.J., Inyang, H.I. and Cichon, E.J.) 2nd Ed., Marcel Dekker, New York, N.Y., pp: 237-264, April 2000.
6. Chawla, R.C., Porzucek C., Cannon, J.N. and Johnson, J.H. (1991), "Importance of Soil-Contaminant-Surfactant Interactions for In Situ Soil Washing". In Emerging Technologies for Hazardous Waste Management II (Tedder, D.W. & Pohland, F.G. Eds.), ACS Symposium Series 468, pp: 316-341, American Chemical Society.
7. Diallo, M.S., Johnson, J.H., Chawla R.C., Cannon, J.N. and Senftle, F.E. (1990), "Recovery of Organic Compounds from Sewage Sludge by Proton Transfer", In Emerging Technologies in Hazardous Waste Management (Tedder, D.W. & Pohland, F.G. Eds.), ACS Symposium Series 422, Chapter 18, pp: 311-327, American Chemical Society, ISBN13: 9780841217478
8. Chawla, R.C., Diallo, M.S., Cannon, J.N., Johnson, J.H. and Porzucek C. (1989), "In-Situ Treatment of Soils Contaminated with Hazardous Organic Wastes using Surfactants: A Critical Analysis". In Solid/Liquid Separation: Waste Management and Productivity Enhancement, (Muralidhara, H., Ed.), pp: 355-367, Battelle Press.
9. Johnson, J.H., Chawla, R.C., Diallo, M.S., Wan, L., Cannon, J.N. and Henley, K.G., (1988), "Fuel from Municipal Sludge," Separations Innovative Concepts: Project Summaries, Chapter 7, Department of Energy, Battelle, PNL-6552/UC-311.
10. Varma, M.M., Torrence, G., Chawla, R.C., and Okrend, H. (1985), "Relative Disinfection Efficiencies of Chlorine and Chlorine Dioxide in Drinking Water," In Water Chlorination: Chemistry, Environmental Impact and Health Effects, Vol. 5, Jolley, R.L. et al. (Eds.), Ann Arbor Science Pub., Ann Arbor, MI, Chapter 50, PP: 635-650.
11. Takacs, L. and Chawla, R.C. (1973), "Air Quality Measurement Techniques," Teaching Monograph for an Introductory Laboratory Course in Air Monitoring, Wayne State University, Prepared for National Science Foundation.
12. Chawla, R.C., "Hi-Vol, Electrostatic Precipitator (1972)," Chapter in Air Quality Monitoring Lab Instruction Manual for Junior College Teachers, Prepared for National Science Foundation.
13. Chawla, R.C. (1972), "Temperature Inversion Chamber," Chapter in Air Quality Monitoring Lab Instruction Manual for Junior College Teachers, Prepared for National

Science Foundation.

B. Refereed Journal Articles

Refereed Articles

1. Chawla, R.C., Hossain, M.A. and Lee, B.D., "Chemical-Biological Cyclic Process for Hexavalent Chromium Reduction to Trivalent Chromium in Aqueous Medium," *Proceedings, WM 2020 Conference*, Paper 20224, Phoenix, AZ (To be published in *Waste Management Journal*).
2. Attoh, D., Shah, A. and Chawla, R., "Hexavalent Chromium Transformation to Trivalent Chromium Using Ferrous Iron in Aqueous System," Submitted to *Journal of Applied Sciences*, May 2020.
3. Benson, T., Paudel, D. and Chawla, R., "Use of Cosolvents for solubility Enhancement of Hazardous Wastes and Their Effect on the Relative Mass Transfer and Reaction Rates," Submitted to *Journal of Applied Sciences*, May 2020.
4. Chawla, R.C., Shah, A.J., Hossain, M.A., Cole, M. T. and Lee, B.D., "Chemical and Biological Transformation of Hexavalent Chromium to Trivalent Chromium in A Sustainable Reaction System," In Preparation for submission to *Environmental Progress and Sustainability*, 2020.
5. Attoh, D., Shah, A. and Chawla, R., "Simultaneous Transformation of Mixed Contaminant Media of Cr(VI) and TCE Using Zero Valent Iron (ZVI)," Under Preparation for submission to *Environ. Science and Technology*, 2020.
6. Chawla, R.C., Shah, A.J., Hossain, M.A., Cole, M.T. and Lee, B.D., "Laboratory Treatment of Combined Chemical-Biological Treatment of Hexavalent Chromium, Carbon Tetrachloride and Trichloroethylene in Aqueous Medium," *Proceedings, 2019 AIChE Annual Meeting*, Orlando, FL.
7. Benson, T., Paudel, D. and Chawla, R.C., "Solubility Increase of Chlorinated Organics Using Cosolvents with Application to Site Remediation," *Proceedings, WM 2018 Conference*, Paper 18431, Phoenix, AZ, April 2018.
8. Attoh D., Shah, A. and Chawla, R.C., "Hexavalent Chromium Reduction by Zero Valent Iron in the Presence and Absence of TCE and CCl₄," *Proceedings, WM 2018 Conference*, Paper 18445, Phoenix, AZ, April 2018.
9. Allen, W. H., Rubaai, A. and Chawla, R. (2016), "Fuzzy Neural Network-Based Health Monitoring for HVAC System Variable-Air-Volume Unit," *IEEE Transactions on Industry Applications*, Vol. 51, no.3, May/June 2016.
10. Ighere, Jude O. Honjoya, Karina and Chawla, Ramesh C., (2015) "Applications of Potassium Permanganate in the Oxidative Degradation of Trichloroethylene," *Journal of Materials Science and Chemical Engineering*, May 2015.

11. Ighere, J. and Chawla, R.C. (2015), "Using Ferrous Ion for the Reductive Degradation of Hexavalent Chromium," *Advances in Chemical Engineering and Science*, Vol.5 No.1, Jan. 2015.
12. Ighere, J. and Chawla, R.C. (2014), "Controlled-Release Analysis of Potassium Permanganate Using PMMA Matrix," *Journal of Minerals and Materials Characterization and Engineering*, Vol. 2, No. 6: 539-544, Nov. 2014.
13. Farrell, A. and Chawla, R.C. (2009), "Solubility and Mass Transfer Studies in Aqueous and Soil Systems of TCE Using Isopropanol and Tide® as Cosolvents," *Proceedings, International Conference on Contaminated Site Management*, Niagara Falls, New York, October 2009.
14. Rubaai, A.A. and Chawla, R.C. (2009), "Laboratory Experimentation and Real-Time Computing: An Integrated Environment," *Proceedings, 2009 American Society for Engineering Education Annual Conference & Exposition, AC 2009-278*, Austin, TX June 2009.
15. Rubaai, A.A., Chawla, R.C. and Cannon, J.N. (2008), "Laboratory Implementation of Bang-Bang Controller-Based Motor Drive Module for Modeling and Controls Courses," *Proceedings, 2008 American Society for Engineering Education Annual Conference & Exposition*, Pittsburgh, PA June 2008
16. Chawla, R.C. and Pourhashemi, S.A. (2006), "Contaminant Removal from Dry and Wet Sands by Thermal Desorption," *International Journal for Environment and Waste Management*, 1, (2006), pp 39-47.
17. Chawla, R.C. (2005), "Use of News Stories as Case Studies for Teaching Engineering Analysis," *Proceedings, 2005 American Society for Engineering Education Annual Conference & Exposition*, Portland, OR, June 2005.
18. Chawla, R.C. and Pourhashemi, S.A. (2004), "Contaminated Sand Remediation by Thermal Desorption/Oxidation," *Proceedings, 7th International Symposium on Environmental Geotechnology*, Helsinki, Finland, June 2004
19. Chawla, R.C. and Pourhashemi, S.A. (2004), "A Mass Transfer Experiment Using Deoxygenation and Aeration of Water," *Proceedings, 2004 American Society for Engineering Education Annual Conference & Exposition*, Salt Lake City, UT, June 2004
20. Chawla, R.C. (2004), "One-Week Design Projects for Chemical Engineering Freshmen," *Proceedings, 2004 American Society for Engineering Education Annual Conference & Exposition*, Salt Lake City, UT, June 2004
21. Chawla, R.C., Doura, K.F. and McKay, D. (2002), "Solubility Enhancement of TCE using Alcohols as Cosolvents," *Proceedings, Environmental Research Conference*, Kansas State University, Manhattan, KS.
22. Chawla, R.C., Doura, K.F. and McKay, D. (2001), "Extraction of TCE From Soil Using

Organic Solvents”, Paper was nominated for the Best Paper Award, *Proceedings*, 2001 Environmental Research Conference, Kansas State Univ., Manhattan, KS, May 2001.

23. Doura, K.F., Chawla, R.C. and McKay, D. (2000), “Extraction of Trichloroethylene from Soil using Organic Solvents,” Abstract, *Proceedings, First Annual HBCU Undergraduate Science and Engineering Conference*, Tuskegee University, Tuskegee, AL, Nov. 2000.
24. Chawla, R.C., Adebona, B., Shafagati, A., Martin, E. and Wheeler, J. (2000), "Thermal Destruction of Used and Unused Agricultural Product Bags: Characterization of Products of Incomplete Combustion (PICs), *Proceedings, 7th Cairo International Conf. on Energy and Environment*, Vol. II: 927-935, March 2000.
25. Chawla, R.C., Pourhashemi, S.A. and Hao, O.J. (2000), " Temperature Modeling and Experimental Studies in Dry and Wet Sand Matrices Using a Laboratory Scale Infrared Incineration System, *Proceedings, 7th Cairo International Conference on Energy and Environment*, Vol. II, PP 937-946, March 2000.
26. Pourhashemi, S.A., Hao, O.J. and Chawla, R.C. (1999), "Experimental and Theoretical Study of the Non-Linear Heat Conduction in Dry Porous Media," *Int. Journal of Energy Research*, 23, 389-401.
27. Hoyett, J. and Chawla, R.C. (1999), "Effect of Biosurfactants on the Biodegradation of Hydrophobic Organic Compounds (Hoc's)," *McNair Journal of Research*, Howard University.
28. Tharakan, J.P., Sada, E., Liou R. and Chawla, R.C. (1999), “Transformation of Aroclor by Indigenous and Inoculated Microbes in Slurry Reactors,” in Alleman and Leason (Eds.) *In Situ and On-Site Bioremediation: The Fifth International Symposium Proceedings*, Battelle, Columbus OH, April 1999.
29. Pourhashemi, S. and Chawla, R.C. (1998), "Mass Transfer in Recirculated Bubble Tanks: Deoxygenation and Aeration of Water," *Proceedings, ASEE Mid-Atlantic Fall Regional Conference*, pp: 39-45, Nov 1998.
30. Adebona, B., Chawla, R.C., Martin, E.J., and Wheeler, J.W. (1998), "Organic Byproducts of Incomplete Combustion of Colored Bags and Inks,” *Journal of Hazardous Materials*, 60: 57-72.
31. Sada, E., Liou, R., Tharakan, J.P. and Chawla, R.C., “Cometabolic Biotransformation of PCBs in Soil-Slurry Reactors Using Terpenes and Biphenyl as Cosubstrates with *C. testosteroni* and *R. erythropolis*,” Hazardous and Industrial Wastes, *Proceedings, 30th Mid-Atlantic Industrial and Hazardous Waste Conference* (Suri, R. and Christensen, G., Eds.), Technomic Publishing Company, Inc., Lancaster, PA, pp: 167-176, July 1998.
32. Philpot, B., Chawla, R.C. and Tharakan, J.P., “Biphenyl Supported Cometabolic Biodegradation of PCBs by *Comomonas Testosteroni*,” Hazardous and Industrial Wastes, *Proceedings, 29th Mid-Atlantic Industrial and Hazardous Waste Conference* (Boardman, G.D., Editor), Technomic Publishing Company, Inc., Lancaster, PA, p.p. 434-443, July 1997.

33. Reis, B., Tharakan, J. and Chawla, R.C., "Investigation of the Use of Terpenes as Cosubstrates in the Cometabolic Biodegradation of PCBs by *Comomonas Testosteroni*," Hazardous and Industrial Wastes, *Proceedings, 29th Mid-Atlantic Industrial and Hazardous Waste Conference* (Boardman, G.D., Editor), Technomic Publishing Company, Inc., Lancaster, PA, p.p. 444-451, July 1997.
34. Chawla, R.C., Tharakan, J.P., Kizito S. and Johnson, J.H., "Biphenyl Assisted Co-metabolic Biodegradation of Polychlorinated Biphenyls - Individual Congener and Mixture Studies," *Proceedings, Environ. Remediation, Environmental Toxicology and Microbial Ecology Forum*, pp: 156-157, Sept 1996.
35. Chawla, R.C. (Founding Editor), *Literature Watch*, Published monthly by the Hazardous Materials Control Resources Institute (HMCRI), Rockville, MD, Jan'95 - July'95
36. Tharakan, J.P., Kizito S. and Chawla, R.C. (1995)," The Use of Cosubstrates in the Biological Degradation of PCBs," *Environmental Restoration and Technology Forum: Research Findings*, MSU Center for Microbial Ecology Publication, Spring 1995.
37. Cannon, J.N., Chawla, R.C., and Etienne, D. (1993), "Ch.E. Department at Howard University," *Chemical Engineering Education*, 27(2), 72-76, 1993.
38. Adebona, B., Shafagati, A., Martin, E.J., and Chawla, R.C. (1992), "Laboratory Evaluation of Products of Incomplete Combustion Formed from Burning of Agricultural Product Bags," In *Pesticide Waste Management-Technology and Regulation*, (Bourke, J.B., et al., Eds.), American Chemical Society, Washington, DC, ACS Symposium Series 510 Chapter 6, pp: 63-77.
39. Pourhashemi, S.A., Chawla, R.C. and Rao, M.G. (1991), "Oxygen Removal from Water by Inert Gas Stripping", *Proceedings, Hazardous and Industrial Wastes, 23rd Mid-Atlantic Industrial Waste Conference* (Neufeld, R.D. & Casson, L.W. Eds.) pp: 317-328, Technomic Publishing Co.
40. Redmon, K. and Chawla, R. C. (1987), "Chemiluminescent Reactions of Oxygen Atoms with Selected Compounds of Importance in Hazardous Waste Incineration Systems." *Proceedings, 14th Annual NOBCCHE Conference*, San Francisco, April 1987.
41. Chawla, R.C., Hossain, M.A., and Varma, M.M. (1986), "Environmental Influences, Waste Disposal, etc.", *AIChEMI*, Series G, Vol.1, pages 58-71, American Institute of Chemical Engineers, New York.
42. Chawla, R.C. and Varma, M.M. (1986),"Inflation and Relevant Indices", *AIChEMI*, Series G, Vol.1, pages 72-84, American Institute of Chemical Engineers, New York.
43. King, F.G. and Chawla, R.C. (1984), "Introducing the Regulatory Process in to the Chemical Engineering Curriculum: A Painless Method", *Chemical Engineering Education*, 18:30-33, Winter 1984.
44. King, F.G. and Chawla, R.C. (1984), "Steady State Material Balances on Multiple Unit Processes," *AIChEMI*, Series F, Vol.5, pp: 10-16, American Institute of Chemical

Engineers, New York.

45. Chawla, R.C. and King, F.G. (1984), "Enthalpy-Computation, Applications, Tables & Charts", *AIChEMI*, Series F, Vol.4, pp: 21-34, American Institute of Chemical Engineers, New York.
46. King, F.G. and Chawla, R.C. (1984), "Enthalpy for Phase Change", *AIChEMI*, Series F, Vol.4, pages 35-46, American Institute of Chemical Engineers, New York.
47. Chawla, R.C. and King, F.G. (1984), "Heat of Solutions and Mixing", *AIChEMI*, Series F, Vol.4, pages 47-56, American Institute of Chemical Engineers, New York.
48. Chawla, R.C. and Kummler, R.H. (1984), "Gaseous Organic Waste Monitoring in Hazardous Waste Incineration - Problems and Opportunities", *Proceedings, Second Conference on Municipal, Hazardous and Coal Waste Management*, Miami, FL DOE/METC/84-34.
49. Varma, M.M. and Chawla, R.C. (1984), "Bioconversion of Whey to Alcohol", *Proceedings, BioEnergy '84 World Conference*, Sweden, June 1984.
50. Chawla, R.C. and Varma, M.M. (1981-82), "Pollutant Transfer between Air, Water, and Soil - Criteria for Comprehensive Pollution Control Strategy," *Journal, Environmental Systems*, 11(4): 363-374.
51. Varma, M.M. and Chawla, R.C. (1981), "Dairy Industry Waste--Options and Economics," *Proceedings, Industrial Waste - Thirteenth Mid-Atlantic Conference*, C.P. Huang (Ed.), Ann Arbor Science, pages 554-562, 1981.
52. Varma, M.M., Chawla, R.C., Balram, A., and Katz, H.M. (1981), "Kinetics of Trihalomethane Formation in Lyophilized Potomac Water", *AIChE Symposium Series*, 77(209), pages 220-226.
53. Chawla, R.C., Varma, M.M. and Doty, K. (1981), "Environmental Pollution - Checks and Balances", *Proceedings, 8th Annual NOBCCHE Meeting*, pages 421-436, Chicago, IL, April 1981.
54. Krieger, B.B., Chawla, R.C., and Kummler, R.H. (1978), "Chemiluminescent Reactions of Oxygen Atoms with Reactive Hydrocarbons (HC). II. Basis for Reactive HC Monitor at 3064-A," *Environmental Science & Technology*, 12, p.p. 810-816.
55. Chawla, R.C., Kummler, R.H., Krieger, B.B., and Jamshidi, E. (1977), "Monitoring Reactive Hydrocarbons in the PPB Range Via Chemiluminescent Reaction with Oxygen Atoms", *Proceedings, the Third Iranian Congress*, Shiraz, Iran, Nov. 6-10, 1977.

Presentations

1. Chawla, R.C., Hossain, M.A. and Lee, B.D., "Chemical-Biological Cyclic Process for Hexavalent Chromium Reduction to Trivalent Chromium in Aqueous Medium," WM 2020 Conference, Phoenix, AZ, March 2020.

2. Hossain, M.A., Chawla, R.C. and Lee, B.D., “Cr(VI) Reduction by Fe(II) and Subsequent Regeneration of Fe(II) by *Shewanella oneidensis* MR-1,” Presented at the 2019 Annual AIChE Meeting, Orlando, FL, November 2019.
3. Shah, A.J., Chawla, R.C. and Lee, B., “Simultaneous Transformation of Hexavalent Chromium and Carbon Tetrachloride using Atomized Zerovalent Iron in Co-contaminant Aqueous Medium,” Presented at the 2019 Annual AIChE Meeting, Orlando, FL, November 2019.
4. Cole, M.T., Chawla, R.C. and Lee, B.D., “Biological Transformation of Hexavalent Chromium and Carbon Tetrachloride in Aqueous Medium by *Shewanella Oneidensis* Strain MR1 and *Cellulomonas* Strain ES6,” Presented at the 2019 Annual AIChE Meeting, Orlando, FL, November 2019.
5. Chawla, R.C., Shah, A.J., Hossain, M.A., Cole, M.T. and Lee, B.D., “Laboratory Treatment of Combined Chemical-Biological Treatment of Hexavalent Chromium, Carbon Tetrachloride and Trichloroethylene in Aqueous Medium,” Presented at the 2019 Annual AIChE Meeting, Orlando, FL, November 2019.
6. Shah, A., Chawla, R. and Lee, B., “Kinetics and Degradation of Simultaneous transformation of Hexavalent Chromium and Carbon Tetrachloride in Aqueous Medium using Atomized Zerovalent Iron,” Presented at the Howard University Research Symposium, April 2019.
7. Hossain, M.A., Chawla, R. and Lee, B., “Quantitative Analysis of Ferric Ion Reduction by *Shewanella oneidensis* MR-1 Bacteria,” Presented at the Howard University Research Symp., April 2019.
8. Cole, M., Chawla, R. and Lee, B., “Biological Transformation of Hexavalent Chromium to Trivalent Chromium in the Presence of Carbon Tetrachloride,” Presented at the Howard University Research Symposium, April 2019.
9. Chawla, R.C., “Invited Presentation at the Future Engineering Faculty and Professionals Workshop Series,” Purdue University, West Lafayette, IN, October 11, 2018.
10. Benson, T. Paudel, D. and Chawla, R.C., “Solubility Increase of Chlorinated Organics Using Cosolvents with Application to Site Remediation,” Presented at the WM 2018 Conference, Paper 18431, Phoenix, AZ, April 2018.
11. Attoh, D., Shah, A. and Chawla, R.C., “Hexavalent Chromium Reduction by Zero Valent Iron in the Presence and Absence of TCE and CCl₄,” Presented at the WM 2018 Conference, Paper 18445, Phoenix, AZ, April 2018.
12. Benson, T., Paudel, D. and Chawla, R. (2017), “Effects of Household Co-Solvents on the Solubility and Oxidation of Trichloroethylene (TCE),” Presented at the AIChE Annual Meeting, Minneapolis, MN, Oct. 2017, (Abstract# 500289).
13. Attoh, D., Shah, A. and Chawla, R. (2017), “Reductive Degradation of Co-Contaminant Medium of TCE and Cr(VI) Using Atomized Iron Powder,” Presented at the AIChE Annual Meeting, Minneapolis, MN, Oct. 2017, (Abstract# 500121).
14. Benson, T., Paudel, D. and Chawla, R., “Use of Cosolvents for Remediation of Hazardous Waste Sites and Their Effect on the Relative Mass Transfer and Reaction Kinetic Rates,” Presentation at the AIChE Annual Meeting, San Francisco, Nov. 2016 (Abstract# 472942).

15. Attoh, D., Shah, A. and Chawla, R., "Kinetics of Simultaneous Transformation of Co-Existing Mixed Contaminant Media of Cr (VI) and TCE Using Nanoscale Zero Valent Iron (nZVI), Presentation at the AIChE Annual Meeting, San Francisco, Nov. 2016 (Abstract# 472311).
16. Ighere, J., Attoh, D. and Chawla, R., "Controlled Oxidation of Trichloroethylene Using Polymer-Encapsulated Potassium Permanganate in the Presence of Hexavalent Chromium," AIChE Annual Meeting, Salt Lake City, UT, Nov. 8-13, 2015.
17. Chawla, R.C., "Environmental Research on the DOE Chair of Excellence Professorship grant, Presented at the, MSI Technical Meeting, Tallahassee, FL, November 6-7, 2014.
18. Ighere, J., Honjoya, K. and Chawla, R.C., "Trichloroethylene Oxidation and Hexavalent Chromium Reduction via Redox Reactions Using KMnO₄ and FeSO₄ in Aqueous and Soil Systems," AIChE Annual Meeting, Atlanta, GA, Nov. 2014.
19. Ighere, J., Mlusu, J., Farrell, A. and Chawla, R.C., "Mass Transfer and Reaction Kinetics Limitations in Hazardous Waste (Organic and Metals) Treatment," AIChE Annual meeting, San Francisco, CA, Nov. 2013
20. Ighere, J., Reed, L. and Chawla, R.C., "Application and Kinetics of the Chelation of Hexavalent Chromium in Chelsea Soil," Paper Presented at IFPAC® - 2013: Twenty-Seventh International Forum, Process Analytical Technology, January 2013.
21. Ighere, J. and Chawla, R.C., "Extent and Kinetics of Hexavalent Chromium Removal by Selected Chelating Agents," AIChE Annual Meeting, Pittsburg, PA, Oct. 2012.
22. Mlusu, J., Chawla, R.C., "Kinetics of Redox Reactions of Hexavalent Chromium and Trichloroethylene In Wastes Containing Both Contaminants," AIChE Annual Meeting, Minneapolis, MN, Oct. 2011.
23. Mlusu, J., Chawla, R.C., "Effect of Hexavalent Chromium on the Oxidation of Trichloroethylene by Potassium Permanganate," AIChE Annual Meeting, Minneapolis, MN, Oct. 2011.
24. Hunter, T., Mlusu, J., Chawla, R.C., "Kinetic Study of TCE Oxidation by KMnO₄ in Aqueous and Soil Systems." AIChE Annual Meeting, Minneapolis, MN, Oct. 2011.
25. Farrell, A. and Chawla, R.C., "Solubility and Mass Transfer Studies in Aqueous and Soil Systems of TCE Using Isoprpanol and Tide® as Cosolvents," Paper Presented at the International Conference on Contaminated Site Management, Niagara Falls, New York, October 5-7, 2009.
26. Rubaai, A.A. and Chawla, R.C., "Laboratory Experimentation and Real-Time Computing: An Integrated Environment," Paper Presented at the 2009 American Society for Engineering Education Annual Conference & Exposition, AC 2009-278, Austin, TX June 2009.
27. Rubaai, A.A., Chawla, R.C. and Cannon, J.N., "Laboratory Implementation of Bang-Bang Controller-Based Motor Drive Module for Modeling and Controls Courses," Paper Presented at the 2008 American Society for Engineering Education Annual Conference & Exposition, Pittsburgh, PA June 2008.

28. Chawla, R.C., "Use of News Stories as Case Studies for Teaching Engineering Analysis," Paper Presented at the 2005 American Society for Engineering Education Annual Conference & Exposition, Portland, OR, June 2005.
29. Chawla, R.C. and Pourhashemi, S.A., "Contaminated Sand Remediation by Thermal Desorption/Oxidation," Presented at the 7th International Symposium on Environmental Geotechnology, Helsinki, Finland, June 2004.
30. Chawla, R.C. and Pourhashemi, S.A., "A Mass Transfer Experiment Using Deoxygenation and Aeration of Water," Presented at the 2004 American Society for Engineering Education Annual Conference & Exposition, Salt Lake City, UT, June 2004
31. Chawla, R.C., "One-Week Design Projects for Chemical Engineering Freshmen," Presented at the 2004 American Society for Engineering Education Annual Conference & Exposition, Salt Lake City, UT, June 2004
32. Pourhashemi, S.A. and Chawla, R.C., "Contaminant Removal from Contaminated Sand – Exposed to High Temperature," Presented at the 6th Annual Memphis Area Engineering and Sciences Conference (MAESC 2004), Christian Brothers University, Memphis, TN, May 2004
33. Chawla, R.C., Doura, K.F. and McKay, D., "Solubility Enhancement of TCE using Alcohols as Cosolvents," Presented at the Environmental Research Conference, Kansas State University, Manhattan, KS, 2002.
34. Pourhashemi, S.A. and Chawla, R.C., "Thermal Studies of the Dry and Wet Inert Porous Media," Presented at the 4th Annual Memphis Area Engineering and Sciences Conference (MAESC 2002), Christian Brothers University, Memphis, TN, May 10, 2002.
35. Doura, K., "TCE Solubility Enhancement Using Alcohol Cosolvents," 2nd Place, Student Competition, Chesapeake Water Environment Association, 2002 Meeting (Chawla, R.C., Advisor)
36. Chawla, R.C., "Hazardous Waste Treatment," Invited Seminar Presented at the Department of Environmental Sciences & Civil Engineering, Colorado School of Mines, Golden, CO, Nov. 2001.
37. Chawla, R.C., "Mass Transfer and Kinetics Aspects of Chemical Oxidation Treatment of TCE-Contaminated Soils," Presented to the Scientists at the U.S. Army Cold Regions Research and Engineering Laboratory, Hanover, NH, Oct. 2000.
38. Chawla, R.C., "Interaction of Scientific, Legal and Policy Issues in Environmental Arena," A Seminar-Discussion Presented to the Howard University Law School Students in the Environmental Law Course (Instructor: Professor Richard Thornell), Fall 2000.
39. Chawla, R.C., "Hazardous Waste Treatment Research Efforts in Chemical Engineering," Presented to Research Team from U.S. Army Cold Regions Research and Engineering Laboratory, May 2000.
40. Chawla, R.C., Doura, K.F. and McKay, D., "Extraction of TCE from Soil Using Organic Solvents", Paper was nominated for the Best Paper Award, 2001 Environmental Research Conference, Kansas State University, Manhattan, KS. May 2000.

41. Sada, E. (Chawla, R.C., Co-Advisor), "Cometabolic Biotransformation of PCBs in Soil-Slurry Reactors Using Terpenes and Biphenyl as Cosubstrates with *C. testosteroni* and *R. erythropolis*," Presented at the Graduate Research Symposium, Howard University, Washington, DC, April 1999.
42. Sada, E., Liou, R., Tharakan, J.P. and Chawla, R.C., "Cometabolic Biotransformation of PCBs in Soil-Slurry Reactors Using Terpenes and Biphenyl as Cosubstrates with *C. testosteroni* and *R. erythropolis*," Presented at the Hazardous and Industrial Wastes, 30th Mid-Atlantic Industrial and Hazardous Waste Conference (Suri, R. and Christensen, G., Eds.), Technomic Publishing Company, Inc., Lancaster, PA, pp: 167-176, July 1998.
43. Philpot, B., Chawla, R.C. and Tharakan, J.P., "Biphenyl Supported Cometabolic Biodegradation of PCBs by *Comomonas Testosteroni*," Presented at the Hazardous and Industrial Wastes, 29th Mid-Atlantic Industrial and Hazardous Waste Conference (Boardman, G.D., Editor), Technomic Publishing Company, Inc., Lancaster, PA, p.p. 434-443, July 1997.
44. Reis, B., Tharakan, J. and Chawla, R.C., "Investigation of the Use of Terpenes as Cosubstrates in the Cometabolic Biodegradation of PCBs by *Comomonas Testosteroni*," Presented at the Hazardous and Industrial Wastes, 29th Mid-Atlantic Industrial and Hazardous Waste Conference (Boardman, G.D., Editor), Technomic Publishing Company, Inc., Lancaster, PA, p.p. 444-451, July 1997.
45. Chawla, R.C., Tharakan, J.P., Kizito S. and Johnson, J.H., "Biphenyl Assisted Cometabolic Biodegradation of Polychlorinated Biphenyls - Individual Congener and Mixture Studies," Presented at the Environ. Remediation and Environmental Toxicology and Microbial Ecology Forum, Sept 1996
46. Johnson, J.H. and Chawla, R.C., "Establishment of Dr. Samuel P. Massie Chair in Environmental Engineering," Presented to the Department of Energy, Prairie View University, TX, Mar. 1995.
47. Tharakan, J.P., Kizito S. and Chawla, R.C., "Cometabolic Biotransformation of Polychlorinated biphenyls", Paper 195b, Presented at the AIChE Annual meeting, Miami Beach, FL, November 1995.
48. Chawla, R.C., "Hazardous Waste Treatment, and Environmental Research at Howard University," A Seminar Presented at Cornell University, Ithaca, New York, June 1994.
49. Chawla, R.C., "Graduate School: How to Get There and What to Expect," A Seminar/Panel Discussion Presented at Cornell University, Ithaca, New York, June 1994.
50. Chawla, R.C., "Reaction Engineering Concepts and Their Applications to Incineration Process", Invited Seminar, Presented at the Eli Lilly and Company, Indianapolis, IN, May 18, 1995.
51. Tharakan, J.P., Kizito S. and Chawla, R.C., "Cometabolic transformation of Polychlorinated Biphenyls," AIChE Paper 195b, AIChE Annual Meeting, Miami FL, Nov 1995 Forum: Research Findings, MSU Center for Microbial Ecology Publication, Spring 1995.
52. Tharakan, J.P. and Chawla, R.C., "Overcoming the Barriers to In Situ Bioremediation: Characterization and Optimization of conditions for Co-metabolism," Presented to the

Science Advisory Committee, U.S. EPA Great Lakes & Mid Atlantic Hazardous Substance Research Center: (a) November 1994, (b) May 1995.

53. Kizito, S., Tharakan, J.P. and Chawla, R.C., "Cometabolic Biotransformation of Polychlorinated Biphenyls," Presented at the Annual Graduate Research Symposium, Howard University, Washington, DC, April 1995.
54. Maduka H. and Chawla, R.C., "Thermal Desorption of Gasoline Constituents in an Infrared Combustor," Presented at the Annual Graduate Research Symposium, Howard University, Washington, DC, April 1995.
55. Kanaria, K., Johnson, J.H. and Chawla, R.C., "An Investigation to Determine the Feasibility of Remediating BTEX Contaminated Groundwater by Using Continuous Flow Fluidized Bed Reactors," Presented at the Annual Graduate Research Symposium, Howard University, Washington, DC, April 19, 1995.
56. Kizito, S., Tharakan, J.P. and Chawla, R.C., "Effect of Biphenyl and Naphthalene on the co-metabolic Transformation of PCBs," Presented at the U.S. EPA Great Lakes & Mid Atlantic Haz. Substance Research Center Advisory Committees Meeting, May 1995.
57. Kanaria, K., Johnson, J.H. and Chawla, R.C., "A Fluidized Bed Laboratory Study for the Treatment of BTEX Compounds Using Biological Granulated Activated Carbon," Presented at the U.S. EPA Great Lakes & Mid Atlantic Hazardous Substance Research Center Advisory Committees Meeting, May 1995.
58. Helou, A.E. and Chawla, R.C., "Aging Effects in the Adsorption/Desorption of Trichloroethylene," Presented at the ACS/I&EC 5th Annual Symposium on Emerging Technologies for Hazardous Waste Management, Atlanta, GA, Sept. 27-29, 1993.
59. Egbe, M.E. and Chawla, R.C., "Do Surfactants Help or Hinder Biodegradation of TCE in Soils," Presented at the ACS/I&EC 5th Annual Symposium on Emerging Technologies for Hazardous Waste Management, Atlanta, GA, Sept. 1993.
60. Chawla, R.C., Helou, A.E. and Cannon, J.N., "Adsorption and Desorption of Trichloroethylene on Silty Loam Soil", Poster Presentation at the 4th AAEP Research Needs and Opportunities Conference, Ann Arbor, MI, Sept. 1993.
61. Chawla, R.C., Egbe, M.E. and Cannon, J.N., "Role of Surfactants in the Biodegradation of TCE in Soils," Poster Presentation at the 4th AAEP Research Needs and Opportunities Conference, Ann Arbor, MI, Sept. 1993.
62. Chawla, R.C., Instructor, "Chemical and Environmental Engineering for the Non-Engineer," Workshop, Hazmat'93 International: 11th Annual Environmental Management and Technology Conference and Exhibition/ International, Atlantic City, NJ, June 9-11, 1993.
63. Chawla, R.C., Instructor, "Fundamentals of Physical, Chemical and Biological Methods for Hazardous Waste Treatment", Continuing Education Course at the 1993 HMCRI Federal Environmental Restoration Conference, Washington DC, May 1993.
64. Chawla, R.C., Instructor, "Applications of Physical, Chemical and Biological Methods for Hazardous Waste Treatment", Continuing Education Course at the 1993 HMCRI Federal Environmental Restoration Conference, Washington DC, May 1993.

65. Chawla, R.C., "Open Burning of Pesticide Bags - A Dilemma for the Farmer" Seminar Presented at the Indian Institute of Technology, Delhi, India, January 6, 1993.
66. Chawla, R.C., Instructor, "Fundamentals of Physical, Chemical and Biological Methods for Hazardous Waste Treatment", Continuing Education Course at the 1992 HMCRI Superfund Conference, Washington, DC, December 1992.
67. Chawla, R.C., Instructor, "Applications of Physical, Chemical and Biological Methods for Hazardous Waste Treatment", Continuing Education Course at the 1992 HMCRI Superfund Conference, Washington, DC, December 1992.
68. Adebona, B., Chawla, R.C., Martin, E.J., Wheeler, J.W. and Shafagati, A., "Emissions from Burning Pesticide Bag Components", Presented at the ACS/ I&EC Special Symposium on Emerging Technologies for Hazardous Waste Management, Atlanta, GA, Sept. 21-23, 1992.
69. Helou, A.E., Chawla, R.C. and Cannon, J.N., "Adsorption/Desorption of Trichloroethylene over Complete Solubility Range in Silty Loam Soil", Presented at the ACS 3rd Annual Symposium on Emerging Technologies for Hazardous Waste Management, Atlanta, GA, Oct.1-3, 1991.
70. Adebona, B., Shafagati, A., Martin, E.J. and Chawla, R.C.," Laboratory Evaluation of PIC Formation in Agricultural Product Bag Burns", Presented at The 204th Annual Meeting of the American Chemical Society and Fourth Chemical Congress of North America, New York, August 25-30, 1991.
71. Egbe, M.E., Chenet, B.P., Chawla, R.C., Buckmire, F.L. and Cannon, J.N., "Effect of Surfactants on Biodegradation of TCE Contaminated Soil", Presented at the AIChE Summer National Meeting, Pittsburgh, PA, August 18-21, 1991.
72. Chawla, R.C., Cannon, J.N., Buckmire, F.L., Chenet, B.P. and Egbe, M.E.," Surfactant Assisted Biodegradation of TCE in Aqueous and Soil Systems" Presented at the EPA Five-Center Bioremediation Conference, Gull Lake, Michigan, April 19-22,1991.
73. Helou, A.E., Chawla, R.C. and Cannon, J.N., "Adsorption/Desorption of TCE in Silty Loam Soil", Presented at the Annual Howard University Graduate Research Symposium, April 1991.
74. Egbe, M.E., Chawla, R.C., Cannon, J.N. and Buckmire, F.L., "Effect of Surfactants on the Biodegradation of TCE in Soils," Presented at the Annual Howard University Graduate Research Symposium, April 1991.
75. Chawla, R.C. and Cannon, J.N., "Use of Surfactants and Microorganisms for In Situ Biodegradation of Hazardous Wastes", Presented to the Science Advisory Committee, EPA/GLMAC HSRC, Oct. 1990.
76. Chawla, R.C., Helou, A., Cannon, J. and Shafagati, A., "Adsorption/Desorption Characteristics of Soil-TCE-Surfactant Systems," Presented at the AIChE Summer National Meeting, San Diego, CA, Aug 1990.
77. Chenet, B.P., Egbe, M.E., Chawla, R.C., Cannon, J.N. and Buckmire, F.L., "A Laboratory Assessment of Surfactant Assisted Biodegradation of Hazardous Wastes in

Soils", Presented at the AIChE Summer National Meeting, San Diego, CA, August 19-22, 1990.

78. Randle, M.F., Helou, A.E. and Chawla, R.C., "Enhancing the Removal of Trichloroethylene from Soil Using Surfactants", Presented at the 1990 Howard University Summer Research Festival, July 1990.
79. Martin, T., Egbe, M.E. and Chawla, R.C., "A Laboratory Investigation of the Use of Gasoline-Induced Pseudomonas Putida ATCC 17484 for the Biodegradation of TCE in the Presence of Surfactants", Presented at the 1990 Howard Univ. Summer Research Festival, July, 1990.
80. Short, L.G., Chawla, R.C., Diallo, M.S. and Henley, K.G., "Extraction of Trichloroethylene from Contaminated Soils Using Soxhlet Extraction Method", Presented at the National NIS Brookhaven Conference, Jackson, MS, June 1990.
81. Chawla, R.C. and Cannon, J.N., "Use of Surfactants and Microorganisms for In Situ Biodegradation of Hazardous Wastes," Presented to the Science Advisory Committee, EPA/GLMAC HSRC, May 1990.
82. Chawla, R.C. and Cannon, J.N., "Use of Surfactants and Microorganisms for In Situ Biodegradation of Hazardous Wastes," Presented to the Science Advisory Committee, EPA/GLMAC HSRC, Oct. 1989.
83. Short, L.G., Henley, K.G. and Chawla, R.C., "Extraction of Trichloroethylene from Contaminated Soils Using Soxhlet Extraction Method," Presented at the 1989 Howard University Summer Research Festival, July 1989.
84. Chawla, R.C. and Cannon, J.N., "Use of Surfactants and Microorganisms for In Situ Biodegradation of Hazardous Wastes," Presented to the Science Advisory Committee, EPA/GLMAC HSRC, May 1989.
85. Diallo, M.S., Johnson, J.H., Chawla R.C., Cannon, J.N. and Senftle, F.E., "Municipal Sludge Treatment Accompanied by Energy Production," Presented at the ACS Symposium on Emerging Technologies for Hazardous Waste Management, Atlanta, GA, Oct. 1991.
86. Pourhashemi, S.A., Chawla, R.C. and Rao, M.G., "Dissolved Oxygen Removal from Water by Gas Stripping," Presented at the 16th Annual NOBCChE Meeting, Chicago, IL, March 1989.
87. Macek, A., Spears, N.O. and Chawla, R.C., "Combustion of Chlorinated Hydrocarbons in Fluidized Beds," Presented at the 81st Annual AIChE Meeting, Washington, DC, Nov. 1988.
88. Johnson, J.H., Chawla, R.C., Diallo, M.S., Wan, L., Cannon, J.N. and Henley, K.G., "Fuel from Municipal Sludge," Presented at DOE Separations Innovative Concepts Fair, Arlington, VA, May 1988.
89. Chawla, R. C., "Chemical Engineering Applications in Hazardous Waste Treatment," Presented at the 15th Annual NOBCChE Conference, Philadelphia, PA, April 1988.

90. Pourhashemi, S.A., Chawla, R.C., Rao, M.G. and Katz, H.M., "Oxygen Removal from Tap Water by Nitrogen Stripping," Presented at the Third Annual Howard University Research Symposium, April 1987.
91. Chawla, R.C., "Hazardous Waste Incineration - The Ultimate Solution," Seminar Presented at the Indian Institute of Technology, Kanpur, India, November 1984.
92. Kummeler, R.H., Krieger, B.B., Chawla, R.C., and Malki, M., "Gas Phase Chemiluminescence in Oxygen Atom Reactions with Ethylene," Presented at the ACS National Meeting, Philadelphia, PA, August 1984.
93. Chawla, R.C. and Lee, C.C., "Chemistry of Hazardous Waste Incineration," Presented at the 11th Annual Meeting of NOBCCChE, Houston, TX, April 1984.
94. Chawla, R.C., Varma, M.M., Okrend, H., and Natarajan, P., "Influence of Particulate Matter On Chlorine Demand in Water," Presented at the 9th Annual Meeting of NOBCCChE, New York, May 1982.
95. Chawla, R.C., and Cowan, L., "Theoretical Developments in the Reactor Design for Reversible, Catalytic Reactions," Presented at the 90th National AIChE Meeting, Houston, TX, April 1981.
96. Chawla, R.C., "Opportunities in Chemical Engineering," Seminar Presented at Ballou Senior High School, Washington, DC, January 1981.
97. Varma, M.M., Chawla, R.C., Balram, A., and Katz, H.M., "Trihalomethane Formation in Lyophilized Water," Paper 79b, Presented at the 73rd Annual AIChE Meeting, Chicago, IL, November 1980.
98. Chawla, R.C., "Water Management-Distribution, Usage and Conservation Potential at Western Electric (Allentown Works)," Presented at Western Electric Division, AT&T Corp., August 1979.
99. Chawla, R.C., and Kummeler, R.H., "Determination of Smog Potential of Hydrocarbons in the Ambient Air," Paper 83, Presented at the Fourth Annual Meeting of the Federation of Analytical Chemistry and Spectroscopy Societies (FACSS, IV), Detroit, MI, Nov. 1977.
100. Chawla, R.C., and Kummeler, R.H., "Reactive Hydrocarbon Measurement in the Ambient Air," Presented at the 34th Annual Meeting of the East Central Section, Air Pollution Control Association, Akron, Ohio, Sept. 21-23, 1977.
101. Chawla, R.C., "Oxygen Atom - Hydrocarbon Molecular Reactions - Basis for Reactive HC Monitor in Ambient Air," Seminar Presented at Lafayette College, Easton, PA, July 1977.
102. Kummeler, R.H., Krieger, B.B., and Chawla, R.C., "Hydrocarbon Detection by Chemiluminescence, the Mechanism and Instrumental Response for Selected Hydrocarbons," Paper 9, presented at the Third Annual Detroit AnaChem Symposium, Association of Analytical Chemists, Troy, MI, Oct. 14-15, 1975.

C. Non-refereed Publications

1. Mlusu, J., Chawla, R.C., (2011) "Kinetics of reductive reactions of hexavalent chromium

in waste containing TCE.” Proceedings, Industrial and Engineering Chemistry Division. American Chemical Society National Meeting and Exposition: Denver, CO, Aug 2011.

D. Other Reports

1. Delivered a workshop for future faculty at Purdue University, October, 2018.
2. Quarterly reports submitted to Savannah River Nuclear Solutions, Department of Energy on funded grant, 2018-20.
3. As member of the National Advisory Council for Environmental Policy and Technology (NACEPT) addressed issues of importance to the citizens and prepared documents for dissemination, 2016-20.
4. Chawla, R.C., (2017), DOE Professor of Excellence Chair, Final Report, submitted to Department of Energy.
5. Chawla, R.C. (2016), “Program Review (November 29-December 3, 2015): Master of Environmental Science, College of Graduate Studies,” Submitted to Kuwait University March 20, 2016.
6. Chawla, R.C., (2010-16), DOE Professor of Excellence Chair, 20 Quarterly Progress Reports, (24), submitted to Department of Energy.
7. Chawla, R.C., CRESP III, 20 Quarterly Progress Reports, 2006-12 (20)
8. Chawla, R.C., 4 Semiannual Progress Reports to NRC, 2007-09 (4)
9. Johnson, J.H. and Chawla, R.C., “Proceedings of July 2005 HBCU/MI ETC Technical Conference,” Submitted to DOE, October 2005.
10. Johnson, J.H. and Chawla, R.C., “Research, Education, Outreach and Technology Transfer Efforts of HBCU/MI ET Consortium,” Progress Report submitted to DOE, September 2003.
11. Johnson, J.H. and Chawla, R.C., “Proceedings, 2003 HBCU/MI ETC Technical Conference,” Submitted to DOE, June 2003.
12. Chawla, R.C., “Treatability Studies for TCE Removal from Contaminated Soils,” Final Report Submitted to the U.S. Army Cold Regions Research and Engineering Laboratory, Hanover, NH, March 2001.
13. Chawla, R.C., “Treatability Studies for TCE Removal from Contaminated Soils,” Progress Report Submitted to the U.S. Army Cold Regions Research and Engineering Laboratory, Hanover, NH, October 2000.
14. Tharakan, J.P. and Chawla, R.C., "Overcoming the Barriers to In Situ Bioremediation: Characterization and Optimization of conditions for Co-metabolism". Progress Report Submitted to the US EPA Great Lakes & Mid Atlantic Hazardous Substance Research Center, Sept 1998
15. Cannon, J.N., Chawla, R.C., Martin, E.J., Kushawaha, V.S., and Misra, P., "Collaborative Core Unit - Laboratory for Combustion Research," 1993-94 Progress Report, GSAS, Howard University, June 1994.

16. Johnson, J.H. and Chawla, R.C., "Establishment of Dr. Samuel P. Massie Chair in Environmental Engineering", (a) Progress Report Submitted to The Department of Energy, March 1995
17. Chawla, R.C., Johnson, J.H., and Belzair, M., "Development of a Proposal for Ph.D. Program in Environmental Engineering", Progress Report, Submitted to The General Motors Corporation, March 1995.
18. Tharakan, J.P. and Chawla, R.C., "Overcoming the Barriers to In Situ Bioremediation: Characterization and Optimization of conditions for Co-metabolism". Progress Report Submitted to the Science Advisory Committee, U.S. EPA Great Lakes & Mid Atlantic Hazardous Substance Research Center: (a) November 1994, (b) May 1995.
19. Tharakan, J.P. and Chawla, R.C., "Overcoming the Barriers to In Situ Bioremediation: Characterization and Optimization of conditions for Co-metabolism". Progress Reports Submitted to the U.S. EPA Great Lakes & Mid Atlantic Hazardous Substance Research Center: (a) October 1993, (b) March 1994.
20. Cannon, J.N., Chawla, R.C., Martin, E.J., Kushawaha, V.S., and Misra, P., "Collaborative Core Unit - Laboratory for Combustion Research", 1992-93 Progress Report, GSAS, , Howard University June 1993.
21. Chawla, R.C., "Emissions from Burning Pesticide Bag Components", Progress Report IV, Office of Pesticide Programs, U.S. Environmental Protection Agency on Project No.: R 818693-01-0, Aug. 1993.
22. Chawla, R.C. and Cannon, J.N., "Use of Surfactants and Microorganisms for In Situ Biodegradation of Hazardous Wastes", Progress Report (May'90-Oct'90) Submitted to EPA Oct. 1990.
23. Chawla, R.C. and Cannon, J.N., "Use of Surfactants and Microorganisms for In Situ Biodegradation of Hazardous Wastes", Progress Report (Oct'89-May'90) Submitted to EPA, May 1990.
24. Chawla, R.C. and Cannon, J.N., "Use of Surfactants and Microorganisms for In Situ Biodegradation of Hazardous Wastes", Progress Report (May'89-Oct'89) Submitted to EPA, Oct. 1989.
25. Chawla, R.C. and Cannon, J.N., "Use of Surfactants and Microorganisms for In Situ Biodegradation of Hazardous Wastes", Progress Report (Feb'89-May'89) Submitted to EPA, May 1989.
26. Chawla, R.C., Diallo, M.S., Cannon, J.N. and Johnson, J.H., "In Situ Treatment of Soils Contaminated with Hazardous Organic Compounds Using Surfactants: Possibilities, Problems and Research", Final Report, Los Alamos National Laboratory Contract #7006, RFP #9-x58-8080v, December 1988.
27. Chawla, R.C., Cannon, J.N., Johnson, J.H., Wan, L. and Pourhashemi, S.A., "Testing of the Oil Separation Efficiency of the Walker Breathing System (AIRSEP)", Final Report to US Navy (NASSES), January 1988.
28. Diallo, M.S., Chawla, R.C., Johnson, J.H., Cannon, J.N., Henley, K.G., Helou, A., Egbe, M. and Sylvalie, S., "In Situ Treatment of Soils Contaminated with Hazardous Organic

Compounds Using Surfactants", Progress Report, Los Alamos National Laboratory, March, 1988.

29. Chawla, R.C., "Theoretical Basis for A Chemiluminescent Organic Hazardous Waste Monitor", A Report Submitted to EPA-IERL on Grant No. 810283-01, July 1984.
30. Chawla, R.C., Varma, M.M., Natarajan, P., and Murali, D.M., "Trihalomethane Removal and Formation Mechanism in Water", NTIS Report PB 83-224410, 1983.
31. Chawla, R.C. and Varma, M.M., "Whey Utilization and Disposal Study", A report submitted to USEPA, Effluent Guidelines Division, Washington, DC, 1981.
32. Chawla, R.C., "Water Management-Distribution, Usage and Conservation Potential at Western Electric (Allentown Works)", Final Report Submitted to Western Electric, AT&T Corporation, Aug. 1979.
33. Krieger, B.B., Chawla, R.C. and Kummler, R.H., "Hydrocarbon Chemiluminescence," Final Report to General Motors Corporation, September 1975.
34. Kummler, R.H., Krieger, B.B., Chawla, R.C., and Malki, M., "Oxygen Atom Chemiluminescence Hydrocarbon Monitor," Wayne State University Report, September 1973.
35. Chawla, R.C., "Particulate Distribution in Detroit Air - A Comparative Study Between Wayne State University and Wayne County Measurements," Wayne State University Report, 1972.
36. Batra, R.C. and Chawla, R.C., "Multi-Component Analysis of Hydrocarbon Mixtures in Synthetic Rubber Production via Gas Chromatography," Final Report, Synthetics and Chemicals Ltd., Bareilly, India, 1970.

VI. Teaching and Advising

A. Courses Taught

- CHEG-801, Graduate Seminar (1 cr) offered every fall and spring,
CHEG-601, Graduate Research (1-3 cr), offered every fall and spring
- CHEG-701, 702, MS Thesis I and II (1-3 cr), offered every fall and spring
- From 1977-2005, taught 2 courses per semester, which included:
 - Intro to Chemical Engineering (EGPP-101, CHEG-102),
 - Mass and Energy Balances (CHEG-201, 202),
 - ChE Analysis (CHEG-306),
 - Chemical Reaction Kinetics (CHEG-403),
 - Separation Processes (CHEG-401),
 - ChE Lab (CHEG-413),
 - Graduate Kinetics (CHEG-505)

- Chemical Process Safety (CHEG-420), and
- Elective courses in environmental engineering.
- 1977-2005, Advised about 30-40 undergraduate and 5-6 graduate students per year

B. Curriculum Development and other Pedagogical Activities

- Developed curriculum for PhD degree in Chemical and Biomolecular Engineering, 2016
- Modified curriculum for BS in Chemical Engineering from 130 to 120 credits, 2013
- Developed curriculum for MS degree in Chemical Engineering, 1983

Graduate Courses developed and taught

1. Advanced Chemical Reaction Engineering
2. Advanced Topics in chemical Engineering
3. Properties of Air Pollutants (Civil & Environmental Engineering)
4. Air Pollution Control (Civil & Environmental Engineering)
5. Advanced Chemical Process Safety

C. Theses: Primary Advisor (include student start date, graduation date (or expected graduation date), and candidacy date)

1. Masters Students

- i. May Adams, "*Adsorption Kinetics and Mechanism for Chloroform Removal from drinking Water Using Granulated Activated Carbon*," M.S. Ch.E., 1983-1985.
- ii. Seyed Ali Pourhashemi, "*Deoxygenation of Tap Water Via Nitrogen Stripping in Well Mixed Aqueous System*," M.S.Ch.E., 1984-1986.
- iii. Kermit Redmon, "*Chemiluminescent Reactions of Oxygen Atoms with Selected Hydrocarbons in Hazardous Waste Incineration Systems*," M.S.Ch.E., 1984-1986.
- iv. Nathan Spears, "*Comparative Kinetics of Propane and Methylene Chloride Destruction in a Catalytic and Noncatalytic High temperature Fluidized Bed Reactor*," M.S.Ch.E., 1985-1987.
- v. Terry Adams, "*Application of a Gaussian Dispersion model to predict Sulfur Dioxide Concentrations in Washington, DC*," M.S.Ch.E., 1986-1988.
- vi. Andrew Johnson, "*Chemiluminescent Reaction Studies with Application to the Monitoring of Environmental Pollutants*," M.S.Ch.E., 1987-1989.
- vii. Alexander Helou, "*Adsorption/Desorption Characteristics of TCE on Silty Loam Soils*," M.S.Ch.E., 1989-1991.,
- viii. Margaret Egbe, "*Surfactant assisted Biodegradation of Trichloroethylene Contaminated Soil*," M.S.Ch.E., 1989-1991.

- ix. Babatunde Adebona, "Laboratory Evaluation of PIC Formation During the Burning of Agricultural Insecticide Bags," M.S.Ch.E., 1990-1992.
- x. Dorian Etienne, "Effect of Temperature on Evaporation Rates of BTEX Compounds from Liquid Phase, and Dry & Moist Soil Matrices," M.S.Ch.E., 1992-1994.
- xi. Helen Maduka, "Effect of Soil Composition and Moisture Content on the Thermal Desorption of BTEX Compounds," M.S.Ch.E., 1993-1995.
- xii. Tanya Rigby, "Gas Migration in Oilwell Cements," M.S.Ch.E., 2005-2008.
- xiii. Anthony Farrell, "Mass Transfer and Chemical Oxidation Studies for TCE Treatment in Aqueous and Soil Systems," M.S.Ch.E., 2007-2010.
- xiv. Jacob Mlusu, "The Kinetics of Redox Reactions Of Hexavalent Chromium And Trichloroethylene In Waste Containing Both Contaminants," M.S.Ch.E., 2009-2011.
- xv. Jude Ighere, "Laboratory study on the Extent and Kinetics of Chelation of Hexavalent Chromium in Chelsea Soil Systems," M.S.Ch.E., 2010-2012.
- xvi. Shawn Tanagho, "Precious Metal Washcoats vs. Base Metal Particulate for Hydrogen Generation from Natural Gas for Fuel Cell Applications," M.S.Ch.E., 2009-2013.
- xvii. Jude Ighere, "Transformation of Mixed Contaminants of Trichloroethylene and Chromium using Polymer Modified and Unmodified KMnO₄ Particles in Soil and Water Treatment," M.E., Mechanical Engineering, 2012-2014.
- xviii. Daniel Attoh, "Optimization of Redox Reaction Systems for Hexavalent Chromium and TCE in Soil and Aqueous Media," M.S.Ch.E., 2014-2017.
- xix. Timara Benson, "Solubility Enhancement of Chlorinated Organic Compounds Using Household Detergents," M.S.Ch.E., 2014-2017.
- xx. Shah, Aadarsh, J., "Simultaneous Transformation of Hexavalent Chromium and Carbon Tetrachloride by Atomized Zerovalent Iron in Aqueous Medium," M.S.Ch.E., 2018-2019.
- xxi. Hossain, Md. Alamgir, "Regeneration of Fe(II) by *S. oneidensis* MR-1 from Fe(III) Formed during Cr(VI) Reduction to Cr(III) by Fe(II) in Aqueous System," M.S.Ch.E., 2017- 2019.
- xxii. Cole, Michelle T., "Biological Transformation of Hexavalent Chromium in the Presence of Carbon Tetrachloride in Aqueous Medium by *Shewanella oneidensis* Strain MR1 and *Cellulomonas* Strain ES6," M.S.Ch.E., 2017-2019.

2. Doctoral Students

- S.A. Pourhashemi, "Heat and Mass Transfer Modeling in Thermal destruction of Hazardous Waste," Ph.D. (Civil Eng.), Univ. of Maryland, 1993-1998.

D. Theses: Co- Advisor (include student start date, graduation date (or expected graduation date), and candidacy date)

1. Masters Students

- xxiii. A. Balram, "Chlorine Disinfection of Municipal Water and Formation of THMs,"

M.S.C.E., 1980-1981.

- xxiv. P. Ramnarain, *“Kinetics of THM Formation and Removal in drinking Water,”* M.S.C.E., 1980-1982.
- xxv. Frank Niles, *“Reactions of Organic Nitrogen Compounds with Chlorine and Chlorine Dioxide,”* M.S.C.E., 1981-1983.
- xxvi. D.M. Murali, *“Chlorine and Chlorine Dioxide Demand of Drinking Water,”* M.S.Ch.E., 1982-1984.
- xxvii. Gerald Torrence, *“Comparative Disinfection of Water by Chlorine and Chlorine Dioxide,”* M.S.C.E., 1983-1985.
- xxviii. Simon Kizito, *“Cometabolic Biotransformation of Polychlorinated Biphenyls (PCBs) Using Biphenyl and Naphthalene as the Primary Growth substrates,”* M.S.Ch.E., 1994-1996.
- xxix. Kimberly Crawford, *“Biodegradation of BTEX Compounds under Aerobic and hypoxic Conditions,”* M.S.C.E., 1994-1996.
- xxx. Kishore Kanaria, *“Biodegradation of BTEX Compounds in Biological Fluidized Bed reactors,”* M.S.C.E., 1994-1996.
- xxxi. Brigitte Philpot, *“Kinetics of PCB degradation under Cometabolic Aerobic Conditions,”* M.S.C.E., 1995-1997.
- xxxii. Benjamin Reiss, *“Surfactant Utilization in Enhancing the Cleanup of PCB Contaminated Soils,”* M.S.C.E., 1995-1997.

E. Thesis Committee Chair/Member

- Since 1980, Served/Chaired the Thesis Committees of over **50 candidates** for the degrees of M.E.C.E. and M.S.Ch.E.

VII. External Research and Scholarly Activities

A. Proposals Submitted (2015-2019)

Proposal Title	PI/Co-PI	Agency	Amount	Date Submitted
Fate and Transport of Hexavalent Chromium, Nitrates and Carbon Tetrachloride Through the investigation of physiochemical and Biological Interactions at the 200 West Area at the Hanford Site	Savanna h River National Solutions (DOE)	Ramesh Chawla	\$299,995	May 2019

Fate and Transport of hexavalent chromium and carbon tetrachloride through the investigation of physiochemical and biological interactions	PI	Savannah River Nuclear Solutions	\$299,996	May, 2018
NRT-INSEWS: Addressing Multi-Scale Urban Complexities	Core-participant	NSF	\$2,784,446	Feb. 2018
Acquisition of ICP-MS System	PI	NSF	\$333,250	Feb. 2018
Recycling Micro-Polluted Water to Dilute Biogas Slurry for Agricultural Irrigation by Integrating Forward-Osmosis Polymer Membrane and Zero-Valent Iron Technologies	Co-PI	NSF	\$499,544	Oct. 2017
Overcoming Barriers to the Delivery of Micron Zero Valent Iron (mZVI) Particles to the Hanford Site Deep Vadose Zone for Cr(VI) and Tc-99 Immobilization.	PI	Savannah River Nuclear Solutions	\$998,556	May 2017
Chemical and Biological Approaches for Organic and Inorganic Waste Remediation in 200 West Area at Hanford Site	PI	Savannah River Nuclear Solutions	\$871,752	March 2016
Fate and Transport of chromium through the investigation of physiochemical and biological interactions at Hanford Site	PI	Savannah River Nuclear Solutions	\$299,728	April 2015

B. Funded Proposals (include date awarded, grant #, agency, amount and PI or Co-PI)

Proposal Title	PI/Co-PI	Agency	Amount	Dates
Chemical and Biological Approaches for Organic and Inorganic Waste Remediation in 200 W. Area at Hanford Site	PI	Savannah River Nuclear Solutions	\$871,752	Sept 2016 – Aug 2019

DOE Chair of Excellence Professorship in Environmental Disciplines	PI	U.S. Department of Energy	\$1.385 Million	Oct. 2010 – Sept 2016
Consortium for Advanced Manufacturing (CAM): Applied Research and Workforce Development for High Power Density Electronic Device Technology,	Co-PI	U.S. Department of Energy	\$380,000	Oct. 2010-Sept 2011
CRESP- Consortium for Risk Evaluation with Stakeholders Participation	Co-PI	U.S. Department of Energy	\$400,000	Oct 2006-Sept 2012
Development of an Educational Course Module on Uses of Nuclear Materials and Nuclear Environmental Management (Module 1) as part of Nuclear Environmental Protection	Co-PI	Nuclear Regulatory Commission	\$200,000	Aug 2007-Aug 2009
Develop and Conduct Teaching Workshops for Faculty at Historically Black Colleges and Universities/ Minority Serving Institutions in Nuclear Engineering and Health Physics	Co-PI	Nuclear Regulatory Commission	\$125,000	Aug 2009-Dec 2010
Research, Education, Outreach and Technology Transfer, HBCU/MI ET Consortium	Co-PI	U.S. Department of Energy	\$8.6 Million (HU=\$2.7 million)	Oct 2002-Dec 2009
Treatability Studies of Trichloroethylene Removal from Contaminated Soils:	PI	U.S. Army Corps of Engineers	\$31,000	Aug 2001-July 2004

Kinetics and Mass Transfer Aspects				
Air Force Mentor-Protégé Center of Excellence	PI	U.S. Air Force	\$80,000	June 2000-June 2002
Treatability Studies for TCE removal from Contaminated Soils	PI	U.S. Army Corps of Engineers	\$25,896	July 2000- Oct 2000
Environmental Research for Hazardous Waste Treatment	PI	HydroGeologic, Inc.	\$10,000	July 2000-until expended
EPA-MAI Traineeships in Environmental Engineering	PI	US Environmental Protection Agency	\$150,000	Aug 1997-Aug 2000
Overcoming the Barriers to in situ Bioremediation of PCBs	Co-PI	USEPA/Great Lakes - Mid Atlantic Haz. Substance Research Center	\$225,000	Feb 1994-May 1998
Development of Doctoral Program in Environmental Engineering	Co-PI	General Motors	\$100,000	Feb 1994-Feb 1998
Removal of BTEX Compounds by BGAC	Co-PI	Mobil Oil Corp.	\$45,000	Oct 1992-Sept 1994
Collaborative Core Unit - Laboratory for Combustion Research	Co-PI	Howard University	\$30,500	Sept 1992-Aug 1994
Relationship between Container Components and Combustion Products	PI	US Environmental Protection Agency	\$47,500	Oct 1991-Sept 1993
Characterization of Organic Emissions from Used Pesticide Bag Burning	PI	US Environmental Protection Agency	\$50,000	Aug 1990-Oct 1991
Effect of Water in Soil Matrices on Heat Transfer Rates in Contaminated Soil Remediation	PI	National Science Foundation	\$100,000	Oct 1990-Sept 1992
Studies of Geochemical Mechanisms Controlling Sorption of Radionuclides on Soils	Co-PI	Nuclear Regulatory Commission	\$50,000	Oct 1990-Sept 1991

Use of Microorganisms and Surfactants for In Situ Detoxification of Hazardous Wastes in Soils	PI	USEPA/Great Lakes - Mid Atlantic Haz. Substance Research Center	\$141,382	Feb 1989-Feb 1991
Environmental/Hazardous Waste Instrumentation Core Unit Development	Co-PI	Howard University	\$25,000	Aug 1989-July 1990
Displacement Mechanisms for Restoration of Soils and Aquifers Contaminated with Hazardous Wastes	PI	Los Alamos National Laboratory	\$ 87,500	Oct 1988-Dec 1990
Testing of the Oil Separation Efficiency of the Walker Breathing System	PI	QED/NAVY	\$24,750	July'87-May'88
Wastewater Sludge to a High-Grade Fuel	Co-PI	Battelle-Pacific Northwest Lab	\$14,870	Oct'87-May'88
Fluidized Bed Incineration	PI	Mobil Chemical Corporation	\$10,000	Oct'87-May'89
Graduate Student Fellowships	PI	US Environmental Protection Agency	\$240,000	1984-1994
Development of a Chemiluminescent Organic Hazardous Waste Monitor	PI	US Environmental Protection Agency	\$30,000	Oct' 1982-May 1984
Trihalomethane Formation and Removal Mechanism in Drinking Water	PI	Water Resources Center, Washington, DC	\$11,150	1982-83
Influence of Particulate Matter on Disinfectant Demand in Water	Co-PI	US Environmental Protection Agency	\$163,000	1981-83
Kinetics of Trihalomethane Formation and Removal in Water	PI	Atlantic Richfield Corp.	\$20,000	1980-82

Oxygen Atom-Hydrocarbon Chemiluminescent Reactions Mechanism of Photochemical Smog Formation	PI	Atlantic Richfield Corp.	\$10,000	1980-81
Equipment Grant for Research	PI	Monsanto and Celanese Corporations	\$100,000	1980-81
Student & Equipment Support for research on (a) Particulate Distribution in Washington, DC; (b) Kinetics of Reversible Catalytic Reactions; (c) Oxygen Demand of Dead Algae; and (d) Particulate Pollution in Air, 1980.	PI	Various Corporations	\$50,000	1979-1981

VIII. Service (reverse chronological order)

A. University-Wide

1. Member, University Faculty Performance Evaluation System (FPES) Committee, 2010-2011
2. Technical Director, HBCU/MI Environmental Technology Consortium (DOE funded to support research, education, training and outreach at 17-member Consortium), 2002- 2010.
3. Faculty Mentor, Department of Education Funded Summer Research Program for Minority College Students, 1989-2009
4. Director of Graduate Studies (1983-1988, 1994-97, 2002-05).
5. Co-Chair, Graduate School Task Force for the Establishment of an Interdisciplinary Graduate Program in Environmental Studies, 2000-2005.
6. Graduate Research Committee of the Graduate School, 2004-05.
7. Ad-hoc Committee for the Establishment of Center for Environmental Studies (1994-1999)
8. McNair Research Program Mentor for 3 Undergraduates (1996-1999)
9. Graduate School Grievance Committee (Fall, 1997- Summer, 1998); Task Force, Establishment of Interdisciplinary Grad. Program in Environ. Studies (1997-1999)
10. Task Force for Increasing the Enrollment of Graduate Students in Engineering (1998-2000).

B. College-Wide

- Chair, EE/CS Merger Committee, March-May 2016
- College of Engineering, Architecture and Computer Sciences (CEACS):

- Average of three committees (1977-2005) every year, for example:
 - Executive,
 - Appointment, Promotion & Tenure (1990-2005).
 - Bylaws Committee
 - Grievance,
 - Education,
 - UG Affairs,
 - Safety, and
 - Research Policies

- Member, CEACS FPES Committee, 2010-2012
- Member, Research Task force for CEACS, May 2000.

C. Departmental

- Department Chair 2005-2009, 2010-Present
- Chair, Lab Committee, 1977-2000
- Chair, Executive Committee, 2005-Present
- Curriculum Committee, 1977-Present
- Chair, ABET Committee, 2005-Present
- Assessment Committee, 1998-Present
- Chair, Safety Committee, 1977-2000, Member 2000-Present
- Chair, Industrial Outreach, 2005-Present

D. National and International

1. Advisory Committee for EPA Administrator, National Advisory Council for Environmental Policy and Technology (NACEPT), April 2016 – Present.
2. Program Reviewer, Master of Environmental Science, College of Graduate Studies, Kuwait University, 2015-2016
3. Selected to the International Board of Judges for evaluation of the top invention in chemical engineering over the last two years (Kirkpatrick Award, Most Prestigious Industrial Award in chemical engineering since 1933), 2015-2016
4. External Reviewer, Promotion Committee for Full Professor, New Jersey Institute of Technology, Newark, NJ, 2014-15
5. ABET Program Evaluator for Engineering Accreditation Commission, 2007-Present
6. Programming Board of Environmental Division for American Institute of Chemical Engineers (AIChE), 2013-Present.

7. Reviewer for AIChE Conferences; reviewed 30 abstracts per year since 2013-Present.
8. Member, AIChE Minority Affairs Committee, 1992-Present
9. Reviewer for AIChE Conferences; reviewed 30 abstracts per year since 2013.
10. Reviewer for Chemical Engineering Division and Environmental Engineering Division for American Society for Engineering Education Conferences, 2007-Present
11. Session Co-Chair and Organizer, 09C00 Environmental Advances in Nuclear and Hazardous Waste Treatment, American Institute of Chemical Engineers Annual Meetings, 2013-Present.
12. Session Chair and Organizer, 09C01 Fundamentals and Applications of Hazardous Waste Treatment, American Institute of Chemical Engineers Annual Meeting, 2013-Present.
13. Session Co-Chair and Organizer, 09C02 Fundamentals and Applications for Municipal Solid Waste Treatment and Valorization, American Institute of Chemical Engineers Annual Meeting, 2013-Present.
14. Reviewer for Nuclear Regulatory Commission research proposals 2008-Present
15. External Reviewer, Promotion Committee for Full Professor, University of Minnesota, Duluth Campus, Duluth, MN, 2012-13
16. Chair, Session: 2526: Interdisciplinary and Multidisciplinary Laboratories, ASEE Annual Meeting, Austin, TX, June 2009.
17. NSF Research Experience for Undergrad. Review and Selection Panel, Nov. 14-15, 2005.
18. Member, NSF UG Engineering Res. Centers Review & Selection Panel, May 23-24, 2005.
19. Member, EPA STAR Fellowships Review & Selection Panel, March 1-3, 2005.
20. Member, EPA Greater Research Opportunities Grants Review & Selection Panel, 2004.
21. Member, EPA Greater Res. Opportunities Graduate Fellowships Review/Selection Panel, 2004.
22. Member, EPA Minority Academic Institutions (MAI) Graduate Fellowship Research Program Review & Selection Panel, Feb 26-28, 2003.
23. Chair, Session 4A, "Industrial Waste," Cairo 7th International Conference on Energy and Environment, March 2000.
24. Member, Selection Committee, AAAS/EPA Environmental Fellowships, American Association for the Advancement of Science, 1994 -2000.
25. External Reviewer, Promotion Committee for Full Professor, Michigan Technological University, Houghton, Michigan, 1995-96.
26. Chair, Session 30, "Soil and Sludge Treatment I", ACS/I&EC Emerging Technologies for Hazardous Waste Management V, Atlanta, GA, Sept. 27-29, 1993.
27. Chair, Session 43, "Soil and Sludge Treatment II", ACS/I&EC Emerging Technologies for

- Hazardous Waste Management V, Atlanta, GA, Sept. 27-29, 1993.
28. Chair, Session 30, "Soil and Sludge Treatment I", ACS/I&EC Emerging Technologies for Hazardous Waste Management V, Atlanta, GA, Sept. 27-29, 1993.
 29. Instructor, "Chemical and Environmental Engineering for the Non-Engineer", Workshop 3, Hazmat'93 International: 11th Annual Environmental Management and Technology Conference and Exhibition/ International, Atlantic City, NJ, June 9-11, 1993.
 30. Instructor, "Fundamentals and Applications of Physical, Chemical and Biological Methods for Hazardous Waste Treatment", Continuing Education Course at the 1993 HMCRI Federal Environmental Restoration Conference, Washington DC, May 1993.
 31. Instructor, "Fundamentals of Physical, Chemical and Biological Methods for Hazardous Waste Treatment", Continuing Education Course at the 1992 HMCRI Superfund Conference, Washington, DC, December 1992.
 32. Instructor, "Applications of Physical, Chemical and Biological Methods for Hazardous Waste Treatment", Continuing Education Course at the 1992 HMCRI Superfund Conference, Washington, DC, December 1992.
 33. Chair, Session 42, "Bioremediation of Soils and Sediments V", ACS/I&EC Special Symposium on Emerging Technologies for Hazardous Waste Management IV, Atlanta, GA, Sept. 21-23, 1992.
 34. Co-Chair, Session 4, "Air Treatment and Protection," ACS/I&EC Special Symposium on Emerging Technologies for Haz. Waste Management IV, Atlanta, GA, Sept. 21- 23, 1992.
 35. Chair, Session 103, "Soil Treatment and Transport Phenomena I,"ACS/I&EC Third Annual Symposium, Emerging Technologies for Hazardous Waste Management," Atlanta, GA, Oct. 1-3, 1991.
 36. Co-Chair, Session 121, "Water Treatment I", ACS/I&EC Third Annual Symposium on "Emerging Technologies for Hazardous Waste Management", Atlanta, GA, Oct 1-3, 1991.
 37. Co-Chair, Session 125, "Water Treatment II", "ACS/I&EC Third Annual Symposium on Emerging Technologies for Hazardous Waste Management", Atlanta, GA, Oct 1-3, 1991.
 38. Chair, Session, "Water Monitoring and Treatment," The First Annual Hazardous Materials and Environmental Conference/South", Atlanta, GA, Oct 1-3, 1991.
 39. Co-Chair, Session 34, "Biological Remediation of Contaminated Soils and Solids", AIChE Summer National Meeting, Pittsburgh, Pa, August 18-21, 1991.
 40. Member, Organization Committee for ACS/I&EC Special Symposium on Emerging Technologies for Hazardous Waste Management, Atlanta, GA, Sept. 27-29, 1993.
 41. Member, Organization Committee for ACS/I&EC Special Symposium on Emerging Technologies for Hazardous Waste Management, Atlanta, GA, Sept. 21-23, 1992.

42. Member, Organization Committee for ACS Symposium on Emerging Technologies for Hazardous Waste Management, Atlanta, Georgia, Oct.1-3, 1991.
43. Instructor, 3-Day "Hazardous Waste" Workshop for 30 High School Math & Science Teachers, Sponsored by EPA/GLMA HSRC, Michigan State University, East Lansing, MI, Aug. 1990.
44. Instructor, 3-Day "Hazardous Waste" Workshop for 25 High School Math & Science Teachers Sponsored by EPA/GLMA HSRC, Philadelphia, PA, August 1990.
45. Instructor, 5-Day Workshop on "Hazardous Waste" for 21 High School Math and Science Teachers Sponsored by EPA/GLMA HSRC, Washington, DC August 21-25, 1989.
46. Instructor, Air Force Orientation to Technical and Engineering Careers (AFOTEC) Summer Program for High School Seniors, 1985-2000.
47. Instructor, Howard Introduction to Technical and Engineering Careers (HITEC), Summer Program for High School Juniors, 1985-2000.
48. Reviewer for Inderscience Publishers for archival journals in science and engineering.
49. Reviewer for Journal of Hazardous Waste Treatment.
50. Reviewer, AIChE and ACS Journals.
51. Reviewer, NSF, NRC, EPA Proposals.
52. Reviewer, Journal of Environmental Science & Health.
53. Reviewer, Journal of Hazardous Materials.

IX. Professional Development Activities (reverse chronological order)

A. Professional Membership

1. American Institute of Chemical Engineers (**Fellow, 2013**; member since 1975)
2. Tau Beta Pi, inducted as **Esteemed Engineer, 2009**.
3. American Society of Engineering Education (ASEE)
4. Omega Chi Epsilon, Chemical Engineering Honor Society (1987-Present)
5. Air Pollution Control Association (APCA) (1975-1987)
6. Water Pollution Control Federation (WPCF) (1982-1988)
7. Federal Water Quality Association (FWQA) (1982-1988)
8. Sigma-Xi, Scientific Research Society of North America (1973-Present)
9. Society of Automotive Engineers (SAE)
10. Society of Hazardous Waste Generators (SHWG)

B. Professional Leadership

1. Member, AIChE Undergraduate Affairs Committee.
2. Member, Programming Board of Environmental Division for American Institute of Chemical Engineers (AIChE), 2013-Present.
3. Director, AIChE National Capital Section, 2012.
4. Elected to 3-year term on the Executive Committee of American Institute of Chemical Engineers, National Capital Section: Vice Chair (2009), Chair (2010) and Past Chair (2011).
5. Member, Advisory Committee for the Cairo International Conferences on Energy and Environment, 1999-2003.
6. Mentor for an 8-A (minority-owned) firm, MicroPact, Air Force Mentor-Protégé Center of Excellence Program, 2000-2003.
7. Member, Science Advisory Committee, U.S. EPA Great Plains Rocky Mountain Hazardous Substance Research Center, 1992 - 2002.
8. Member, Organization Committee for ACS/I&EC Special Symposium on Emerging Technologies for Hazardous Waste Management, Atlanta, GA, 1991-1993.
9. Member, AIChE Pilot Plants Subcommittee.
10. Member, Organization Committee for AIChE 1988 Annual Meeting, Washington, DC.
11. Member, APCA Industrial Waste Committee (1980-87)
12. Member, Joint Task Group on Biomass (via ATP); Standard Methods for the Examination of Water and Wastewater (AWWA, APHA, WPCF), 1981-82
13. Member, Joint Task Group on TOD: Standard Methods for the Examination of Water and Wastewater (AWWA, APHA, and WPCF), 1981-82.
14. Student Liaison, National Capital Section, SAE, 1982-84
15. Career Guidance Counselor, National Capital Section, AIChE, 1980-81.
16. Member, AIChE Career Guidance Committee, National Capital Section, 1980-81.
17. Science Fair Judge, Washington, DC, Maryland and Virginia School Systems, 1978-2000.