

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.
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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 CC14,” 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. 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.
14. 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.
15. 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.
16. 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
17. 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.
18. 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.
19. 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

20. 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
21. 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
22. 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.
23. 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.
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25. 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.
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28. 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.
29. 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.
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Conference, pp: 39-45, Nov 1998.

31. 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.
32. 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.
33. 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.
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36. Chawla, R.C. (Founding Editor), *Literature Watch*, Published monthly by the Hazardous Materials Control Resources Institute (HMCRI), Rockville, MD, Jan'95 - July'95
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48. 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.
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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., Honjaya, 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 Isopropanol 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.
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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.
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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.
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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.
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