

Mahtab Ahmad

Department of Environmental Sciences, Faculty of Biological Sciences,
Quaid-i-Azam University, Islamabad 45320, Pakistan



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Research Interests

- Environmental chemistry
- Production and application of biochar from agricultural and solid waste materials
- Carbon sequestration and climate change mitigation
- Environment friendly utilization of waste resources
- Remediation of contaminated soils and waters
- Revitalization of abandoned soils
- Wastewater treatment
- Waste management

Education

Doctor of Philosophy (Ph.D) Agricultural Chemistry, 2013

CGPA: 4.50 out of 4.50

Department of Biological Environment, College of Agriculture and Life Science,
Kangwon National University, Republic of Korea

Thesis Topic: Application of Waste Resources and Biochar for the Remediation of Contaminated Soil and Water

Master of Philosophy (M.Phil) Environmental Sciences, 2008

CGPA: 3.57 out of 4.00

College of Earth and Environmental Sciences,
University of the Punjab, Lahore – Pakistan

Thesis Topic: An Integrated Treatment of Slaughterhouse Wastewater

Master of Science (M.Sc.) Applied Environmental Sciences, 2001

Marks Percentage: 82.75

Post Graduate Center for Earth Sciences,
University of the Punjab, Lahore – Pakistan

Thesis Topic: Dispersion Gradient of Free Fall Dust and Heavy Elements Concentration in Dust Along a Main Road

Master of Science (M.Sc.) Chemistry (Analytical), 1999

Marks Percentage: 68.25

Department of Chemistry,
Bahauddin Zakarya University, Multan – Pakistan

Thesis Topic: A Study on Estimation of Zinc in Air, Soil, Petroleum, Pigeons and Human Blood with Reference to Traffic Density

Bachelor of Science (B.Sc.)1997

Marks Percentage: 62.87

Government College of Multan,
Bahauddin Zakarya University, Multan – Pakistan

Professional Experience	<p>Assistant Professor (Feb 2017 to present) Department of Environmental Sciences, Faculty of Biological Sciences, Quaid-i-Azam University, Islamabad, Pakistan</p> <p>Researcher (Sep 2014 to Jan 2017) Attracting Outstanding Faculty and Researchers Program, Soil Sciences Department, College of Food and Agricultural Sciences, King Saud University, Riyadh, Saudi Arabia</p> <p>Assistant Professor (Apr 2013 to March 2014) University Institute of Biochemistry and Biotechnology, PMAS Arid Agriculture University, Rawalpindi, Pakistan</p> <p>Team Leader (Material Exploration & Manufacturing) (Sep 2011 to Feb 2013) Korea Biochar Research Centre, Kangwon National University, Republic of Korea</p> <p>Research Fellow (Sep 2009 to Feb 2010) Department of Biological Environment, College of Agriculture and Life Sciences, Kangwon National University, Republic of Korea</p> <p>Senior Scientific Officer (May 2005 to June 2009) Pakistan Council of Scientific & Industrial Research (PCSIR) Laboratories Complex, Ministry of Science and Technology, Pakistan</p> <p>Senior Lab Analyst (Dec 2003 to May 2005) Mauri Fermentation Pakistan (Pvt) Ltd. A group of companies – Australia, Lahore – Pakistan</p> <p>Analyst / Microbiologist (Sep 2003 to Dec 2003) AZ Pharmaceuticals, Kasur – Pakistan</p> <p>Analyst (Mar 2003 to May 2003) Askari Pharmaceuticals, Kasur – Pakistan</p> <p>Assistant Quality Control Incharge (Dec 1999 to Mar 2003) Mian Brothers Labs (Pvt) Ltd, Lahore – Pakistan</p>
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Funded Projects	Role	Title	Duration	Amount	Funding agency
	Principal Investigator	Soil water conservation and enhanced crop productivity under deficit irrigation system	09 months	2000 USD	Eco-Peace Leadership Center, Kangwon National University, Korea
	Assistant Project Director	Establishment of University Institute of Biochemistry and Biotechnology	60 months	3.418 M USD	Higher Education Commission of Pakistan
	Co-Researcher	International Research Group of conversion of bio-waste into biochar: production, application and social implication	12 months	400,000 USD	King Saud University, Saudi Arabia
	Co-Researcher	International Research Group of application influence of biochar produced from different sources on dynamics of CO ₂ -C efflux, physical and biochemical properties of sandy calcareous soils	12 months	400,000 USD	King Saud University, Saudi Arabia

Supervised Thesis Research	<ol style="list-style-type: none"> 1. PhD; Engineered biochar and biowaste: synthesis, characterization and application to decontaminate soil and water (2014 – 2017) 2. MPhil; Synthesis of slow release fertilizer and its application in soil for plant productivity (2017 – 2019) 3. MPhil; Designing and optimization of a cost-effective pyrolyzer for biochar and bio-oil production from biowaste (2017 – 2019) 4. MPhil; Removal of lead (Pb) and cadmium (Cd) from water by modified biochars derived from peanut shells (2017 – 2019) 5. MPhil; Effect of orange peel derived biochar on herbicides mobility in agricultural soil (2017-2019) 6. MPhil; Enhanced removal of chromium(VI) from tannery industry wastewater and soil remediation with biochar (2017-2019) 7. MPhil; Adsorption of moxifloxacin and ofloxacin from water using biochars produced from different feedstock (2016-2019) 8. MPhil; Carbon negative potential of biochar derived from solid waste in saline soil (2016 – 2018) 9. MPhil; Potential of saw dust- and rice husk-derived biochars on leaching behavior of arsenic in contaminated soil (2016 – 2018) 10. MPhil; Nitrates and phosphates removal from water by biochar and its application to soil as fertilizer (2016 – 2018) 11. MPhil; Revitalization of saline soil with acidic biochar derived from municipal solid waste (2016 – 2018) 12. MPhil; Quality assessment of some raw eaten vegetables through study of associated microbial pathogens (2013 – 2014) 13. MPhil; Biosorption of metals by <i>Saccharomyces cerevisiae</i> (2006 – 2008) 14. MPhil; Biosorption of metals by <i>Aspergillus oryzae</i> (2006 – 2008) 15. MPhil; Synthesis of activated carbon from coal by thermal activation and its application on wastewater treatment (2007 – 2008) 16. MPhil; Production of activated carbon from saw dust and its application on wastewater treatment (2007 – 2008) 17. MSc; Evaluating PAHs emission during biochar production via pyrolysis of biomass and PAHs catalytic oxidation by Pd/Al₂O₃ catalyst (2015 – 2017) 18. MSc; Residuals of veterinary antibiotics in animal wastes and the effect of application of biochar for their retention onto soil (2015 – 2016) 19. MSc; Residuals of veterinary antibiotics in animal wastes and the effect of application of biochar for their retention onto soil (2015 – 2016) 20. MSc; Extraction of fatty material from sludge of food industry and its characterization (2005 – 2007)
Courses Taught	<ol style="list-style-type: none"> 1. MPhil/PhD; Research Planning & Scientific Writing 2. MPhil/PhD; Soil Remediation 3. MPhil/PhD; Topics in Contaminant Environmental Hydrology 4. MPhil; Environmental Biochemistry 5. MSc; Pollution Control Technologies 6. MSc; Waste Management 7. BS; Physical Chemistry
Publications	<p style="text-align: center;">Cumulative Impact Factor (2019): 240.084 Scopus <i>h</i>-index: 31 Google Scholar <i>h</i>-index: 39</p>
	<p>ISI Indexed:</p> <ol style="list-style-type: none"> 1. Amin, M., Ahmad, M*, Farooqi, A., Hussain, Q., Ahmad, M., Al-Wabel, M. I., Saleem, H. (2020) Arsenic release in contaminated soil amended with unmodified and modified biochars derived from sawdust and rice husk. <i>Journal of Soils and Sediments</i> 20:3358-3367 (2019 Impact Factor: 2.763) 2. Batool, S., Idrees, M., Ahmad, M., Hussain, Q., Ahmad, M*, Iqbal, A., Kong, J. (2020) Design and characterization of biomass template/tin oxide nanocomposite for enhanced adsorption of

- 2,4-dichlorophenol. *Environmental Research* 181:108955 (2019 Impact Factor: **5.715**)
3. Rashid, J., Azam, R., Kumar, R., **Ahmad, M.**, Rehman, A., Barakat, M. A. (2019) Sulfonated polyether sulfone reinforced multiwall carbon nanotubes composite for the removal of lead in wastewater. *Applied Nanoscience* 9:1695-1705 (2019 Impact Factor: **2.880**)
 4. Ahmad, M., **Ahmad, M.**, Usman, A.R.A., Al-Faraj, A.S., Abduljabbar, A., Ok, Y.S., Al-Wabel, M.I. (2019) Date palm waste-derived biochar composites with silica and zeolite: synthesis, characterization and implication for carbon stability and recalcitrant potential. *Environmental Geochemistry and Health* 41:1687-1704 (2019 Impact Factor: **3.472**)
 5. El-Naggar, A., Lee, S.S., Rinklebe, J., Farooq M., Song, H., Sarmah, A.K., Zimmerman, A.R., **Ahmad, M.**, Shaheen, S.M., Ok, Y.S. (2019) Biochar application to low fertility soils: A review of current status, and future prospects. *Geoderma* 337:536-554 (2019 Impact Factor: **4.848**)
 6. Batool, S., Idrees, M., Al-Wabel, M.I., **Ahmad, M.**, Hina, K., Ullah, H., Cui, L., Hussain, Q. (2019) Sorption of Cr(III) from aqueous media via naturally functionalized microporous biochar: Mechanistic study. *Microchemical Journal* 144:242-253 (2019 Impact Factor: **3.594**)
 7. Al-Wabel, M.I., Rafique, M.I., **Ahmad, M.**, Ahmad, M., Usman, A.R.A. (2019) Pyrolytic and hydrothermal carbonization of date palm leaflets: Characteristics and ecotoxicological effects on seed germination of lettuce. *Saudi Journal of Biological Sciences* 26:665-672 (2019 Impact Factor: **2.802**)
 8. Idrees, M., Batool, S., Ullah, H., Hussain, Q., Al-Wabel, M.I., **Ahmad, M.**, Hussain, A., Riaz, M., Ok, Y.S., Kong, J. (2018) Adsorption and thermodynamic mechanisms of manganese removal from aqueous media by biowaste-derived biochars. *Journal of Molecular Liquids* 266:373-380 (2019 Impact Factor: **5.065**)
 9. Vithanage, M., Bandara, T., Al-Wabel, M.I., Abduljabbar, A., Usman, A.R.A., **Ahmad, M.**, Ok, Y.S. (2018) Soil enzyme activities in waste biochar amended multi-metal contaminated soil: Effect of different pyrolysis temperatures and application rates. *Communications in Soil Science and Plant Analysis* 49:635-643 (2019 Impact Factor: **0.767**)
 10. Kumarathilaka, P., **Ahmad, M.**, Herath, I., Mahatantila, K., Athapattu, B.C.L., Rinklebe, J., Ok, Y.S., Usman, A., Al-Wabel, M.I., Abduljabbar, A., Vithanage, M. (2018) Influence of bioenergy waste biochar on proton- and ligand-promoted release of Pb and Cu in a shooting range soil. *Science of the Total Environment* 625:547-554 (2019 Impact Factor: **6.551**)
 11. Ahmad, M., **Ahmad, M.**, Usman, A.R.A., Al-Faraj, A.S., Ok, Y.S., Hussain, Q., Abduljabbar, A., Al-Wabel, M.I. (2018) An efficient phosphorus scavenging from aqueous solution using magnesiothermally modified bio-calcite. *Environmental Technology* 39:1638-1649 (2019 Impact Factor: **2.213**)
 12. Ahmad, M., Usman, A.R.A., Al-Faraj, A.S., **Ahmad, M.**, Sallam, A., Al-Wabel, M.I. (2018) Phosphorus-loaded biochar changes soil heavy metals availability and uptake potential of maize (*Zea mays* L.) plants. *Chemosphere* 194:327-339 (2019 Impact Factor: **5.778**)
 13. Al-Wabel, M., Hussain, Q., Usman, A.R.A., **Ahmad, M.**, Abduljabbar, A., Abdulazeem, S., Ok, Y.S. (2018) Impact of biochar properties on soil conditions and agricultural sustainability: A review. *Land Degradation & Development* 29:2124-2161 (2019 Impact Factor: **3.775**)
 14. Ahmad, M., **Ahmad, M.**, Usman, A.R.A., Al-Faraj, A.S., Abduljabbar, A.S., Al-Wabel, M.I. (2018) Biochar composites with nano zerovalent iron and eggshell powder for nitrate removal from aqueous solution with coexisting chloride ions. *Environmental Science and Pollution Research* 25:25757-25771 (2019 Impact Factor: **3.056**)
 15. Ahmad, M., **Ahmad, M.**, El-Naggar, A.H., Usman, A.R.A., Abduljabbar, A., Vithanage, M., Elfaki, J., Al-Faraj, A. and Al-Wabel, M.I. (2018) Aging effect of organic and inorganic fertilizers on phosphorus fractionation in a calcareous sandy loam soil. *Pedosphere* 28:873-883 (2019 Impact Factor: **3.736**)
 16. Karunanithi, R., Ok, Y.S., Dharmarajan, R., **Ahmad, M.**, Seshadri, B., Bolan, N., Naidu, R. (2017). Sorption, kinetics and thermodynamics of phosphate sorption onto soybean stover derived biochar. *Environmental Technology & Innovation* 8:113-125 (2019 Impact Factor: **3.356**)
 17. Hussain, A., Al-Barakah, F.N., Al-Sewailem, M., El-Saeid, M.H., Waqar, M., **Ahmad, M.** (2017) Oxidative photodegradation of pyrene and fluoranthene by Fe-based and Zn-based Fenton reagents. *Sustainability* 2017, 9, 870; DOI:10.3390/su9050870 (2019 Impact Factor: **2.576**)
 18. Vithanage, M., Seneviratne, M., **Ahmad, M.**, Sarkar, B., Ok, Y.S. (2017) Contrasting effects of engineered carbon nanotubes on plants: a review. *Environmental Geochemistry and Health* 39:1421-1439 (2019 Impact Factor: **3.472**)

19. Al-Wabel, M.I., Sallam, A.E.S., Usman, A.R.A., **Ahmad, M.**, El-Naggar, A.H., El-Saeid, M.H., Al-Faraj, A., El-Enazi, K., Al-Romian, F.A. (2017) Trace metal levels, sources, and ecological risk assessment in a densely agricultural area from Saudi Arabia. *Environmental Monitoring and Assessment* 189:252-272 (2019 Impact Factor: **1.903**)
20. **Ahmad, M.**, Lee S.S., Lee, S.E., Al-Wabel, M.I., Tsang, D.C.W., Ok, Y.S. (2017) Biochar-induced changes in soil properties affected immobilization/mobilization of metals/metalloids in contaminated soils. *Journal of Soils and Sediments* 17:717-730 (2019 Impact Factor: **2.763**)
21. Herath, I., Iqbal, M.C.M., Al-Wabel, M.I., Abduljabbar, A., **Ahmad, M.**, Usman, A.R.A., Ok, Y.S. and Vithanage, M. (2017) Bioenergy-derived waste biochar for reducing mobility, bioavailability, and phytotoxicity of chromium in anthropized tannery soil. *Journal of Soils and Sediments* 17:731-740 (2019 Impact Factor: **2.763**)
22. Usman, A., Sallam, A., Zhang, M., Vithanage, M., **Ahmad, M.**, Al-Faraj, A., Ok, Y.S., Abduljabbar, A., Al-Wabel, M. (2016) Sorption process of date palm biochar for aqueous Cd (II) removal: efficiency and mechanisms. *Water Air and Soil Pollution* 227:449-464 (2019 impact factor: **1.900**)
23. Idrees, M., Batool, S., Hussain, Q., Ullah, H., Al-Wabel, M.I., **Ahmad, M.**, Kong, J. (2016) High efficiency remediation of cadmium (Cd^{2+}) from aqueous solution using poultry manure- and farmyard manure-derived biochars. *Separation Science and Technology* 51:2307-2317(2019 Impact Factor: **1.718**)
24. Al-Wabel, M.I., El-Saeid, M.H., Usman, A.R.A., Al-Turki, A.M., **Ahmad, M.**, Hassanin, A.S., El-Naggar, A.H., Al-Enazi, K.K.H. (2016) Identification, quantification and toxicity of PCDDs and PCDFs in soils from industrial areas in the central and eastern regions of Saudi Arabia. *Bulletin of Environmental Contamination and Toxicology* 96:622-669 (2019 impact factor: **1.657**)
25. Herath, I., Kumarathilaka, P., Al-Wabel, M.I., Abduljabbar, A., **Ahmad, M.**, Usman, A.R.A. and Vithanage, M. (2016) Mechanistic modelling of glyphosate interaction with rice husk derived engineered biochar. *Microporous & Mesoporous Materials* 225:280-288 (2019 Impact Factor: **4.551**)
26. El-Naggar, A.H., Alzhrani, A.K.R., **Ahmad, M.**, Usman, A.R.A., Mohan, D., Ok, Y.S. and Al-Wabel, M.I. (2016) Preparation of activated and non-activated carbon from conocarpus pruning waste as low cost adsorbent for heavy metal ions removal from aqueous solution. *BioResources* 11:1092-1107 (2019 Impact Factor: **1.409**)
27. **Ahmad, M.**, Ok, Y.S., Kim, B.Y., Ahn, J.H., Lee, Y.H., Zhang, M., Moon, D.H., Al-Wabel, M.I., Lee, S.S. (2016) Impact of soybean stover- and pine needles-derived biochars on Pb and As mobility, microbial community, and carbon stability in a contaminated agricultural soil. *Journal of Environmental Management* 166:131-139 (2019 Impact Factor: **5.647**)
28. **Ahmad, M.**, Ok, Y.S., Rajapaksha, A.U., Lim, J.E., Kim, B.Y., Lee, Y.H., Al-Wabel, M.I., Lee, S.E., Lee, S.S. (2016). Lead and copper immobilization in a shooting range soil using soybean stover- and pineneedle-derived biochars: chemical, microbial and spectroscopic assessments. *Journal of Hazardous Materials* 301:179-186 (2019 Impact Factor: **9.038**)
29. Mayakaduwa, S.S., Kumarathilaka, P., Herath, I., **Ahmad, M.**, Al-Wabel, M.I., Ok, Y.S., Vithanage, M. (2016). Equilibrium and kinetic mechanisms of woody biochar on aqueous glyphosate removal. *Chemosphere* 144:2516-2521 (2019 Impact Factor: **5.778**)
30. Usman, A.R.A., Al-Wabel, M.I., Ok, Y.S., Al-Harbi, A., Wahb-Allah, M.A., El-Naggar, A.H., **Ahmad, M.** and Al-Omran, A. (2016). Conocarpus biochar induced changes in soil nutrients availability and tomato growth under saline irrigation system. *Pedosphere* 26:27-38 (2019 Impact Factor: **3.736**)
31. Usman, A.R.A., **Ahmad, M.**, El-Mahrouky, M., Al-Omran, A., Ok, Y.S., Sallam, A.S., El-Naggar, A.H., Al-Wabel, M.I. (2015). Chemically modified biochar produced from Conocarpus waste increases NO_3 removal from aqueous solutions. *Environmental Geochemistry and Health* 38:511-521 (2019 Impact Factor: **3.472**)
32. Usman, A.R.A., Abduljabbar, A., Vithanage, M., Ok, Y.S., **Ahmad, M.**, Ahmad, M., Elfaki, J., Abdulazeem, S.S., Al-Wabel, M.I. (2015). Biochar production from date palm waste: Charring temperature induced changes in carbon stability and surface chemistry. *Journal of Analytical and Applied Pyrolysis* 115:392-400 (2019 Impact Factor: **3.905**)
33. Zhang, M., **Ahmad, M.**, Al-Wabel, M.I., Vithanage, M., Rajapaksha, A.U., Kim, H.S., Lee, S.S. and Ok, Y.S. (2015) Adsorptive removal of trichloroethylene in water by crop residue biochars pyrolyzed at contrasting temperatures: Continuous fixed-bed experiments. *Journal of*

Chemistry Article ID 647072 (2019 Impact Factor: **1.790**)

34. El-Najjar, A.H., Usman, A.R.A., Al-Omran, A., Ok, Y.S., **Ahmad, M.**, Al-Wabel, M.I. (2015) Carbon mineralization and nutrients availability in calcareous sandy soils amended with woody waste biochar. *Chemosphere* 138:67-73 (2019 Impact Factor: **5.778**)
 35. Rajapaksha, A.U., **Ahmad, M.**, Vithanage, M., Kim, K.R., Chang, J.Y., Lee, S.S. and Ok, Y.S. (2015) The role of biochar, natural iron oxides, and nanomaterials as soil amendments for immobilizing metals in shooting range soil. *Environmental Geochemistry and Health* 37:931-942. (2019 Impact Factor: **3.472**)
 36. Rajapaksha, A.U., Vithanage, M., **Ahmad, M.**, Seo, D.C., Cho, J.S., Lee, S.E., Lee, S.S. and Ok, Y.S. (2015) Enhanced sulfamethazine removal by steam activated invasive-plant-derived biochar. *Journal of Hazardous Materials* 290:43-50 (2019 Impact Factor: **9.038**)
 37. Vithanage, M., Rajapaksha, A.U., **Ahmad, M.**, Uchimiya, M., Dou, X., Alessi, D.S. and Ok, Y.S. (2015) Mechanisms of antimony adsorption onto soybean stover-derived biochar in aqueous solutions. *Journal of Environmental Management* 151:443-449 (2019 Impact Factor: **5.647**)
 38. Rajapaksha, A.U., Vithanage, M., Zhang, M., **Ahmad, M.**, Mohan, D., Chang, S.X. and Ok, Y.S. (2014) Pyrolysis conditions affected sulfamethazine sorption by tea waste biochars. *Bioresource Technology* 166:303-308 (2019 Impact Factor: **7.539**)
 39. Zhang, M., **Ahmad, M.**, Lee, S.S., Xu, L.H., Ok, Y.S. (2014) Sorption of polycyclic aromatic hydrocarbons to lignin: effect of chemical hydrophobicity and temperature. *Bulletin of Environmental Contamination and Toxicology* 93:84-88 (2019 Impact Factor: **1.657**)
 40. **Ahmad, M.**, Vithanage, M., Kim, K., Cho, J.S., Lee, Y.H., Joo, Y.K., Lee, S.S. and Ok, Y.S. (2014) Inhibitory effect of veterinary antibiotics on denitrification in groundwater: A microcosm approach. *The Scientific World Journal* 2014:7 pages, article ID879831
 41. **Ahmad, M.**, Rajapaksha, A.U., Lim, J.E., Zhang, M., Bolan, N., Mohan, D., Vithanage, M., Lee, S.S. and Ok, Y.S. (2014) Biochar as a sorbent for contaminant management in soil and water: a review. *Chemosphere* 99:19-33 (2019 Impact Factor: **5.778**)
 42. **Ahmad, M.**, Lee, S.S., Lim, J.E., Lee, S.E., Cho, J.S., Moon, D.H., Hashimoto, Y. and Ok, Y.S. (2014) Speciation and phytoavailability of lead and antimony in a small arms range soil amended with mussel shell, cow bone and biochar: EXAFS spectroscopy and chemical extractions. *Chemosphere* 95:433-441. (2019 Impact Factor: **5.778**)
 43. **Ahmad, M.**, Moon, D.H., Lee, S.S., Vithanage, M., Koutsospyros, A. and Ok, Y.S. (2014) Production and use of biochar from buffalo-weed (*Ambrosia trifida*) for trichloroethylene removal from water. *Journal of Chemical Technology and Biotechnology* 89:150-157 (2019 Impact Factor: **2.750**)
 44. Almaroi, Y.A., Usman, A.R.A., **Ahmad, M.**, Lee, S.S., Moon, D.H., Ok, Y.S. (2014) Effects of biochar, cow bone and eggshell on Pb availability to maize in contaminated soil irrigated with saline water. *Environmental Earth Sciences* 71:1289-1296 (2019 Impact Factor: **2.180**)
 45. Saifullah, Sarwar, N., Bibi, S., **Ahmad, M.**, Ok, Y.S. (2014) Effectiveness of zinc application to minimize cadmium toxicity and accumulation in wheat (*Triticum aestivum* L.). *Environmental Earth Sciences* 71:1663-1672 (2019 Impact Factor: **2.180**)
 46. **Ahmad, M.**, Lee, S.S., Rajapaksha, A.U., Vithanage, M., Zhang, M. and Ok, Y.S. (2013) Trichloroethylene adsorption by pine needle biochars produced at various pyrolytic temperatures. *Bioresource Technology* 143:615-622 (2019 Impact Factor: **7.539**)
 47. Moon, D.H., Park, J.W., Chang, Y.Y., Ok, Y.S., Lee, S.S., **Ahmad, M.**, Koutsospyros, A., Park, J.H. and Baek, K. (2013) Immobilization of lead in contaminated firing range soil using biochar. *Environmental Science and Pollution Research* 20:8464-8471. (2019 Impact Factor: **3.056**)
 48. **Ahmad, M.**, Lee, S.S., Oh, S.E., Mohan, D., Moon, D.H., Lee, Y.H. and Ok, Y.S. (2013) Modeling adsorption kinetics of trichloroethylene onto biochars derived from soybean stover and peanut shell wastes. *Environmental Science and Pollution Research* 20:8364-8373. (2019 Impact Factor: **3.056**)
 49. Yang, J.E., Skogley, E.O., **Ahmad, M.** and Ok, Y.S. (2013) Carbonaceous resin capsule for vapor-phase monitoring of volatile hydrocarbons in soil: partitioning and kinetic model verification. *Environmental Geochemistry and Health* 35:715-725. (2019 Impact Factor: **3.472**)
 50. Usman, A.R.A., Almaroi, Y., **Ahmad, M.**, Vithanage, M. and Ok, Y.S. (2013) Toxicity of synthetic chelators and heavy metal availability in poultry manure amended Pb and As contaminated agricultural soil. *Journal of Hazardous Materials*, 262:1022-1030. (2019 Impact
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Factor: **9.038**)

51. **Ahmad, M.**, Moon, D.H., Wazne, M. and Ok, Y.S. (2013) Effects of natural and calcined oyster shells on antimony solubility in shooting range soil. *Journal of the Korean Society for Applied Biological Chemistry* 56:461-464. (2019 Impact Factor: **1.838**)
 52. Abd El-Azeem, S.A.M., **Ahmad, M.**, Usman, A.R.A., Kim, K.R., Oh, S.E., Lee, S.S. and Ok, Y.S. (2013) Changes of biochemical properties and heavy metal availability in soil treated with natural liming materials. *Environmental Earth Sciences* 70:3411-3420. (2019 Impact Factor: **2.180**)
 53. Lim, J.E., **Ahmad, M.**, Lee, S.S., Shope, C.L., Hashimoto, Y., Kim, K.R., Usman, A.R.A., Yang, J.E. and Ok, Y.S. (2013) Effects of lime-based waste materials on immobilization and phytoavailability of Cd and Pb in contaminated soil. *CLEAN - Soil, Air, Water* 41:1235-1241. (2019 Impact Factor: **1.603**)
 54. Almaroai, Y.A., Usman, A.R.A., **Ahmad, M.**, Kim, K.R., Vithanage, M. and Ok, Y.S. (2013) Role of chelating agents on release kinetics of metals and their uptake by maize from chromated copper arsenate-contaminated soil. *Environmental Technology* 34:747-755. (2019 Impact Factor: **2.213**)
 55. Lim, J.E., **Ahmad, M.**, Usman, A.R.A., Lee, S.S., Jeon, W.T., Oh, S.E., Yang, J.E. and Ok, Y.S. (2013) Effects of natural and calcined poultry waste on Cd, Pb and As mobility in contaminated soil. *Environmental Earth Sciences* 69:11-20. (2019 Impact Factor: **2.180**)
 56. Almaroai, Y.A., Usman, A.R.A., **Ahmad, M.**, Kim, K.R., Lee, S.S. and Ok, Y.S. (2012) Effects of synthetic chelators and low molecular weight organic acids on chromium, copper, and arsenic uptake and translocation in maize (*Zea mays* L.). *Soil Science* 177:655-663. (2019 Impact Factor: **1.122**)
 57. **Ahmad, M.**, Moon, D.H., Lim, K.J., Shope, C.L., Lee, S.S., Usman, A.R.A., Kim, K.R., Park, J.H., Hur, S.O., Yang, J.E. and Ok, Y.S. (2012) An assessment of the utilization of waste resources for the immobilization of Pb and Cu in the soil from a Korean military shooting range. *Environmental Earth Sciences* 67:1023-1031. (2019 Impact Factor: **2.180**)
 58. **Ahmad, M.**, Lee, S.S., Dou, X., Mohan, D., Sung, J.K., Yang, J.E. and Ok, Y.S. (2012) Effects of pyrolysis temperature on soybean stover- and peanut shell-derived biochar properties and TCE adsorption in water. *Bioresource Technology* 118:536-544. (2019 Impact Factor: **7.539**)
 59. **Ahmad, M.**, Lee, S.S., Yang, J.E., Ro, H.M., Lee, Y.H. and Ok, Y.S. (2012) Effects of soil dilution and amendments (mussel shell, cow bone, and biochar) on Pb availability and phytotoxicity in military shooting range soil. *Ecotoxicology and Environmental Safety*. 79:225-231. (2019 Impact Factor: **4.872**)
 60. **Ahmad, M.**, Hashimoto, Y., Moon, D.H., Lee, S.S. and Ok, Y.S. (2012) Immobilization of lead in a Korean military shooting range soil using eggshell waste: an integrated mechanistic approach. *Journal of Hazardous Materials*. 209-210:392-401. (2019 Impact Factor: **9.038**)
 61. **Ahmad, M.**, Usman, A.R.A., Lee, S.S., Kim, S.C., Joo, J.H., Yang, J.E. and Ok, Y.S. (2012) Eggshell and coral wastes as low cost sorbents for the removal of Pb²⁺, Cd²⁺ and Cu²⁺ from aqueous solutions. *Journal of Industrial and Engineering Chemistry*. 18:198-204. (2019 Impact Factor: **5.278**)
 62. Ok, Y.S., Oh, S.E., **Ahmad, M.**, Hyun, S., Kim, K.R., Moon, D.H., Lee, S.S., Lim, K.J., Jeon, W.T. and Yang, J.E. (2010) Effects of natural and calcined oyster shells on Cd and Pb immobilization in contaminated soils. *Environmental Earth Sciences*. 61:1301-1308. (2019 Impact Factor: **2.180**)
 63. **Ahmad, M.**, Tariq, M., Shafiq, T., Nasir, A. (2009) Coagulation/adsorption combined treatment of slaughterhouse wastewater. *Desalination and Water Treatment*. 12:270-275. (2019 Impact Factor: **0.854**)
 64. **Ahmad, M.**, Tariq, M., Shafiq, T. (2007) Temporal evaluation of effluent treatment plant (ETP) and treatment of sludge produced by ETP. *Journal of the Chemical Society of Pakistan*. 29:211-216. (2019 Impact Factor: **0.300**)
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65. **Ahmad, M.**, Usman, M., Nasir, A., Shafiq, T. (2006) Dispersion gradient of free fall dust and heavy metal elements concentration in dust along a main road. *Journal of the Chemical Society of Pakistan*. 28:567-575. (2019 Impact Factor: **0.300**)

Non ISI Indexed:

1. Tariq, M., **Ahmad, M.**, Siddique, S., Waheed, A., Shafiq, T., Khan, M.H. (2012) Optimization of coagulation process for the treatment of the characterized slaughterhouse wastewater. *Pakistan Journal of Scientific and Industrial Research*. 55:43-48.
2. Lee, S.E., **Ahmad, M.**, Usman, A.R.A., Awad, Y.M., Min, S.H., Yang, J.E., Lee, S.S. and Ok, Y.S. (2011) Effects of biochar on soil quality and heavy metal availability in a military shooting range soil in Korea. *Korean Journal of Soil Science and Fertilizer*. 44(1):67-77.
3. Awad, Y.M., Abdelhafez, A.A., **Ahmad, M.**, Lee, S.S., Kim, R.Y., Sung, J.K., Ok, Y.S. (2010) Synthesis of nanoscale zerovalent iron particle and its application to Cr(VI) removal from aqueous solutions. *Korean Journal of Environmental Agriculture*. 29:402-407.
4. Khan, A.W., Shafiq, T., **Ahmad, M.** (2008) Physical and biochemical changes in commonly grown grapes (*Vitis vinifera*) in Pakistan at different maturity levels. *Pakistan Journal of Science*. 60:94-99.

Books/Book Chapters

1. Vithanage, M., Rajapaksha, A.U., **Ahmad, M.**, Shinogi, Y., Kim, K.H., Kim, G. and Ok, Y.S. (2016) Biochar for waste management and environmental sustainability. In: *Sustainable Solid Waste Management*. American Society of Civil Engineer. <http://dx.doi.org/10.1061/9780784414101.ch10>
2. **Ahmad, M.**, Lee, S.S., Moon, D.H., Yang, J.E. and Ok, Y.S. (2012) A review of environmental contamination and remediation strategies for heavy metals at shooting range soils. In: *Environmental Protection Strategies for Sustainable Development*. Springer. ISBN 978-94-007-1590-5.
3. Khokhar, I., **Ahmad, M.** and Tariq, M. (2011) Biosorption of chromium by Baker's yeast: Freundlich and Langmuir adsorption models. Lap Lambert Academic Publishing. ISBN 9783847328568.

Conference Proceedings

1. Biochar induced changes in soil properties affected immobilization/mobilization of metals/metalloids in contaminated soils
Mahtab Ahmad
1st International Conference on "Soil and Crop Health in Changing Climate". MNS-University of Agriculture, Multan – Pakistan (November 28 – 29, 2018)
2. Soil Water Conservation and Enhanced Plant Productivity under Deficit Irrigation System
Mahtab Ahmad
Asia-Pacific Environment Forum 2018, Chuncheon, Korea (October 15 – 18, 2018)
3. Environmental Issues of Pakistan
Mahtab Ahmad
Asia-Pacific Environment Forum 2018, Chuncheon, Korea (October 15 – 18, 2018)
4. Impact of Biochar Properties on Metal Mobility and Microbial Community in Contaminated Soil
Mahtab Ahmad, Sang Soo Lee¹, Byung-Yong Kim, Young Han Lee, Yong Sik Ok
CLEAR 2014, 2nd International Conference on Contaminated Land, Ecological Assessment and Remediation, Chuncheon, Korea (October 5-8, 2014)
5. Pyrolysis Condition Affected Sulfamethazine Sorption by Tea Waste Biochars
Anushka Upamali Rajapaksha, Meththika Vithanage, Ming Zhang, **Mahtab Ahmad**, Dinesh Mohan, Scott X. Chang, Yong Sik Ok
CLEAR 2014, 2nd International Conference on Contaminated Land, Ecological Assessment and Remediation, Chuncheon, Korea (October 5-8, 2014)
6. Effects of Biochar, Cow Bone and Eggshell on Pb Availability to Maize in Contaminated Soil Irrigated with Saline Water
Yaser A. Almaroai, Adel R. A. Usman, **Mahtab Ahmad**, Deok Hyun Moon, Young Kyoo Joo, Sang Soo Lee, Yong Sik Ok
CLEAR 2014, 2nd International Conference on Contaminated Land, Ecological Assessment

- and Remediation, Chuncheon, Korea(October 5-8, 2014)
7. Lead immobilization and phytoavailability in small arms range soil by mussel shell, cow bone and biochar: X-ray absorption fine structure spectroscopy study
Mahtab Ahmad, Sang Soo Lee and Yong Sik Ok
1st International Conference on Contaminated Land, Ecological Assessment and Remediation. Hangzhou, China (Nov 4 – 8, 2012)
 8. Effects of oyster shell and eggshell on immobilization of Cd and Pb in agricultural soil: Long-term incubation study
Jung Eun Lim, **Mahtab Ahmad**, Sang Soo Lee and Yong Sik Ok
1st International Conference on Contaminated Land, Ecological Assessment and Remediation. Hangzhou, China (Nov 4 – 8, 2012)
 9. Lead immobilization and soil quality improvement in contaminated and acid soils by biochar
Deok Hyun Moon, Yoon-Yong Chang, Sang Soo Lee, **Mahtab Ahmad**, Yong Sik Ok, Mahmoud Wazne and Hoon Roh
1st International Conference on Contaminated Land, Ecological Assessment and Remediation. Hangzhou, China (Nov 4 – 8, 2012)
 10. Removal of antibiotics in water using biochars derived from various biomass
Se Hee Jeong, Hae Won Kim, **Mahtab Ahmad**, Jung Eun Lim, Sang Soo Lee and Yong Sik Ok
1st International Conference on Contaminated Land, Ecological Assessment and Remediation. Hangzhou, China (Nov 4 – 8, 2012)
 11. Biochar amendment decreased soil Pb availability and phytotoxicity in military shooting range in Korea
Mahtab Ahmad, Sang Soo Lee and Yong Sik Ok
The 4th IBI Biochar Congress in Beijing, China (Sep 16 – 20, 2012)
 12. Effects of soybean stover and peanut shell-derived biochar properties on TCE adsorption in water
Mahtab Ahmad, Sang Soo Lee and Yong Sik Ok
The 4th IBI Biochar Congress in Beijing, China (Sep 16 – 20, 2012)
 13. Biochar derived from poultry manure immobilized Pb and improved soil quality in contaminated agricultural soil
Jung Eun Lim, Byeong Gu Gi, **Mahtab Ahmad** and Yong Sik Ok
The 4th IBI Biochar Congress in Beijing, China (Sep 16 – 20, 2012)
 14. Efficacy of soybean stover-derived biochar for antimony removal from water
Anushka Upamali Rajapaksha, Meththika Vithanage, **Mahtab Ahmad** and Yong Sik Ok
The 4th IBI Biochar Congress in Beijing, China (Sep 16 – 20, 2012)
 15. Potential of biochar derived from invasive plant (burcucumber) for the removal of veterinary antibiotics from carcass disposal sites in Korea
Se Hee Jeong, Hae Won Kim, **Mahtab Ahmad**, Yong Sik Ok
The 4th IBI Biochar Congress in Beijing, China (Sep 16 – 20, 2012)
 16. Phytoremediation – A reliable approach to clean-up metal contaminated soils
Yong Sik Ok, Yaser A. Almaroi, **Mahtab Ahmad**, Sang Soo Lee and Jae E. Yang
2012 International Forum on Green Technology and Phytoremediation for Contaminated Sites at Taipei, Taiwan (Jun 25, 2012)
 17. Effects of pyrolysis temperature on Soybean Stover and peanut shells derived biochar properties and TCE adsorption in water
Mahtab Ahmad, Sang Soo Lee, Xiaomin Dou and Yong Sik Ok
2011 International Symposium on Biochar for Climate Change Mitigation & Soil and Environmental Management at Kangwon National University, Republic of Korea (Dec 8 – 9, 2011)
 18. Modeling antimony sorption onto soybean biochar
Meththika Vithanage, Anushka Rajapaksha, Kushani Mahatantila, **Mahtab Ahmad** and Yong Sik Ok
2011 International Symposium on Biochar for Climate Change Mitigation & Soil and Environmental Management at Kangwon National University, Republic of Korea (Dec 8 – 9, 2011)
 19. Efficacy of soybean-stover derived biochar for the removal of arsenic and antimony from

- aqueous solutions
Anushka Upamali Rajapaksha, Meththika Vithanage, Hasintha Wijesekera, **Mahtab Ahmad** and Yong Sik Ok
2011 International Symposium on Biochar for Climate Change Mitigation & Soil and Environmental Management at Kangwon National University, Republic of Korea (Dec 8 – 9, 2011)
20. Pb immobilization in an army firing range soil using soybean stover biochar
Deok Hyun Moon, Yong Sik Ok, **Mahtab Ahmad**, Yoon Young Chang
2011 International Symposium on Biochar for Climate Change Mitigation & Soil and Environmental Management at Kangwon National University, Republic of Korea (Dec 8 – 9, 2011)
21. Effects of pyrolysis temperature on Soybean Stover and peanut shells derived biochar properties and TCE adsorption in water
Mahtab Ahmad, Sang Soo Lee and Yong Sik Ok
2011 International Symposium & Annual Meeting of the KSABC at Jeju, Republic of Korea (Oct 20 – 22, 2011)
22. Characterization and TCE adsorption capacities of biochars derived from a variety of feedstocks
Mahtab Ahmad, Sang Soo Lee and Yong Sik Ok
KSEA's 30th Anniversary International Symposium on Environment and Food Safety for the Future Generation at Jeju, Republic of Korea (Jul 7 – 9, 2011)
23. Immobilization of lead in a Korean military shooting range soil using eggshell waste: X-ray absorption fine structure spectroscopy investigation
Mahtab Ahmad and Yong Sik Ok
2011 Annual Meeting of the Korean Society of Soil Science and Fertilizer at Moju, Republic of Korea (May 19 – 20, 2011)
24. Immobilization of heavy metals in shooting range soil using lime based waste materials
Mahtab Ahmad, Ahmed Azizeldin Abdelhafez and Yong Sik Ok
2010 SETAC Asia/Pacific Meeting at Guangzhou, China (Jun 4 – 7, 2010)
25. Lead immobilization in military shooting range soil using eggshell waste
Mahtab Ahmad, Sang Soo Lee and Yong Sik Ok
7th International AFAS Joint Symposium between Korea and Japan. Current Status and Perspectives of Agriculture, Forestry, and Animal Sciences in 2010 at Chuncheon, Republic of Korea (Nov 11, 2010).
26. Lime-based heavy metals immobilization in outdoor shooting range soils in South Korea
Mahtab Ahmad, Deok Hyun Moon, Sang Soo Lee, Dennis G. Grubb and Yong Sik Ok
2010 Annual Meeting of the Korean Society of Soil Science and Fertilizer at Hongcheon, Republic of Korea (May 6 – 7, 2010)
27. Effects of natural and calcined oyster shell on Cd and Pb immobilization in the contaminated soil
Mahtab Ahmad, Jung Eun Lim, Jae E. Yang and Yong Sik Ok
The 9th International Conference of the East and Southeast Asia Federation of Soil Science Societies at Seoul, Republic of Korea (Oct 27, 2009)
28. Dispersion gradient of free fall dust and heavy metal elements concentration in dust along main road
Mahtab Ahmad, Muhammad Usman, Nasir Ahmad and Tahira Shafiq
6th International and 16th National Conference of Chemistry at Bahuddin Zakariya University, Multan, Pakistan (Apr 4 – 6, 2006)

Research & Development Projects
Green Remediation of TCE-Contaminated Groundwater by Biochar

- Convert agricultural and industrial by-products to biochar
- Evaluate the effect of temperature on biochar properties
- Remove TCE from groundwater by various biochars

Slaughterhouse Waste Management

- Treatment of slaughterhouse wastewater and stomach waste
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- Production of Blood Meal from blood waste in slaughterhouse wastewater
- Wastewater treatment by Coagulation / flocculation and Adsorption onto activated carbon
- Improvised a lab scale treatment plant for slaughterhouse wastewater
- Conversion of stomach waste of slaughtered animals into bio – fertilizer

Synthesis of Activated Carbon from Indigenous Waste Material and its Application on Wastewater Treatment

- Prepared activated carbon from locally available coal, wood and burnt leaves
- Thermal and chemical methods were applied for preparation of activated carbon
- Applied synthesized activated carbon on treatment of wastewater of textile and paper industry
- Adsorption models were applied for optimization studies

Biosorption Studies on Removal of Chromium from Aqueous Solution

- *Saccharomyces cerevisiae* and *Aspergillus oryzae* were used for biosorption of chromium from aqueous solutions
- Adsorption models were applied for optimization studies

Wastewater Sludge Treatment

- Analysis of sludge from wastewater treatment plant of an ice cream factory
- Developed a process for extraction of oil & fat from sludge

Treatment of Wastewater by Electro-Coagulation

- Using a new technique of electro-coagulation for treatment of different industrial wastewater
- Optimization of various parameters for efficient treatment process

Trainings / Workshops

1. Three days' "Curriculum Orientation Workshop on Environmental Science" organized by Learning Innovation Division, Higher Education Commission, Islamabad – Pakistan from 08 – 10 October, 2018.
2. Five days' workshop on "Risk Management of Foodborne Pathogens" organized by Asian Productivity Organization held at Islamabad, Pakistan from 20 – 24 January 2014.
3. Two days training on "X-Ray Absorption Fine Structure Spectroscopy (XAFS)" at 2011 XAFS School, Jeonbuk National University, Jeonju, Republic of Korea from 7 – 8 Jan 2011.
4. One-day training course on "Environmental Impact Assessment (EIA)" by Environment Protection Department (EPD), Punjab in collaboration with National College of Business Administration and Economics at Lahore – Pakistan.
5. Four-days training program on "Olive Oil Quality" at PCSIR Laboratories Complex, Lahore – Pakistan.
6. One-day training on "PC-I Preparation" by PCSIR Labs, Lahore.
7. Received one-day training course on "Traceability Measurement" organized by Pakistan National Accreditation Council (PNAC) on 6th Aug 2007, at Lahore – Pakistan.
8. Trainings on ISO 17025 management system at PCSIR Labs, Lahore – Pakistan.
9. Three days training course on "Climate Change through Better Air Quality Management: organized by IUCN and Pak-EPA at Pearl Continental Hotel Lahore – Pakistan from 21 – 24th Oct 2008.

Reviewer of Journals

1. Biomass and Bioenergy
2. Canadian Journal of Soil Science
3. Chemistry and Ecology
4. Chemosphere
5. Desalination and Water Treatment
6. Ecotoxicology and Environmental Safety
7. Environmental Geochemistry and Health
8. Environmental Pollution
9. Environmental Research

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10. Environmental Technology
 11. Journal of Agricultural Chemistry and Environment
 12. Journal of Environmental Management
 13. Journal of Hazardous Materials
 14. Journal of Industrial and Engineering Chemistry
 15. Journal of Saudi Chemical Society
 16. Journal of Soils and Sediments
 17. Journal of the Saudi Society of Agricultural Sciences
 18. Saudi Journal of Biological Sciences
 19. Science of the Total Environment
 20. Scientific Reports
 21. Water, Air, and Soil Pollution
-

ISO 17025

- Worked as a member of ISO 17025 management team with AQM and actively participated in the implementation, maintenance and up-gradation of ISO 17025 management record for the accreditation of PCSIR Labs, Lahore.
 - Worked as a performer of ISO 17025 scope tests at Center for Environmental Protection studies, PCSIR Labs, Lahore.
 - Participated in internal, external and surveillance audits of ISO-17025.
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QC / QA Management

- Managed the quality control laboratory and the microbiological testing laboratory of Mauri Fermentation (Pvt) Ltd. Pakistan.
 - Managed the QC/QA of the laboratory of water and wastewater testing by arranging calibration of glassware and equipment, manufacture of glassware apparatus, preparation of solutions, etc.
 - Participated and arranged Interlaboratory Comparisons (ILC) and Proficiency Testing (PT).
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Analytical Skills

Full command on handling the following instruments:

XAFS spectroscopy;	IC
SEM;	HPLC
ICP-OES;	Atomic Absorption Spectrophotometer
CHNS Elemental Analyzer;	Kjeldahl Apparatus
UV/Visible Spectrophotometer;	Digestion & Distillation Unit (Automatic)
Flame Photometer;	Microbial Air Sampler
High Volume Air Sampler;	Lux Meter
PM ₁₀ & PM _{2.5} Air Sampler;	Opacity Meter
Tintometer;	Smoke Analyzer
Sound Level Meter;	Turbidity Meter
Muffle Furnace;	Dissolution Apparatus
IR Moisture Analyzer;	BOD System
Karl-Fischer Apparatus;	Deionizer Plant
COD Analyzer;	Centrifuge
Soxhlet Apparatus;	Membrane Filtration Assembly
Autoclaves;	Ovens & Driers
Analytical Balances;	

Personal Information

Full Name:	Mahtab Ahmad
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Marital status:	Married
Nationality:	Pakistani
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References

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