

DR. SHEZA AYAZ KHILJI

Assistant Professor (TTS)

(HEC Approved Supervisor)

Department of Botany,

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EDUCATION

Year	Division / Grade / CGPA	Degree
2008- 2014		Ph.D. Specialization in Environmental Biotechnology, Department of Botany, University of the Punjab Lahore, Pakistan.
2006- 2008	1 st / A /(3.68/4)	MS Botany, Department of Botany, University of the Punjab Lahore, Pakistan.
2002- 2006	1 st / B /(3.71/4)	B.Sc. (Hons) Botany, Department of Botany, University of the Punjab Lahore, Pakistan.
2000- 2001	1 st / A	HSSC / F.Sc. (Pre-Medical), Govt. College for Women, Samanabad, Lahore, Pakistan.
1996- 1998	1 st / A	SSC / Matric (Science), Govt. Girls Higher Secondary School, Samanabad, Lahore, Pakistan.

RESEARCH INTERESTS

- Phytoremediation
- Environmental Biotechnology
- Ecology
- Environmental Engineering

PROFESSIONAL EXPERIENCE

Assistant Professor (TTS) at Department of Botany, Division of Science and Technology, University of Education, Lahore, Pakistan.

(October 2018 to date)

Assistant Professor at Department of Botany, University of the Punjab Lahore, Pakistan. **(October 2014 to 2018)**

Teaching Assistant at College of Earth and Environmental Sciences (CEES), University of the Punjab, Lahore, Pakistan. **(Sep. 2013 to Sep. 2014)**

Courses taught to BS classes

- Water Pollution, its Management and Control
- Phycology and Bryology
- Plant Anatomy
- Plant Diversity
- Plant Ecology
- Systematics and Biodiversity
- Cell and Molecular Biology
- Environmental Biology
- Plant Systematics, Anatomy and Development

Courses taught to M.Sc/ MS classes

- Environmental Pollution in Ecosystem and its Bioremediation
- Horticulture
- Soil Sciences
- Anatomy of Vascular Plants
- Plant Taxonomy
- Synecology
- Autecology

COURSES ATTENDED IN UNIVERSITY OF CALIFORNIA DAVIS, USA

Fall Quarter, 2012

- Environmental Toxicology of Air Pollutants
- Wetland Ecology (ESP 155, 155L)

VISITING RESEARCH SCHOLAR UNDER (IRSIP)

- Worked as a visiting research scholar (Jun 02, 2012- Nov 22, 2012) at Department of Environmental Science and Policy, **University of California, Davis, USA.**

RESEARCH

Ph.D. Research Thesis

- “Role of Aquatic Plants and Indigenous Microbes in Improving Phytoremediation Efficiency of Industrial Sludge”.

MS Research Thesis

- “Role of Some Selected Hydrophytes in Rhizofiltration of Tannery Sludge Containing Toxic Metals” and obtained prolific results published in the Journals of International repute.

RESEARCH STUDENT SUPERVISED

(Thesis completed as a First Supervisor)

1. **Ayesha Ramzan, 2024:** Evaluate the impact of seaweed extract application on the growth of *Euphorbia milli L.* by using phytoextraction technology.
2. **Asma Khalid, 2024:** Potential of *Catharanthus roseus L.* applied to remediation of industrial soil by using nanoplastics.
3. **Muhammad Usman, 2024:** Vermicompost and mixed biochar induced phytoremediation of heavy metals contaminated soil by using sudan grass (*Sorghum × drummondii*)
4. **Afifa Tariq, 2024:** Enhancing Heavy Metal Remediation through *Hibiscus tiliaceus L.* by the application of some bio organic fertilizers
5. **Rabia Serwar:** Role of jasmonic acid in Crepe Jasmine plant to combat heavy metal stress
6. **Areeba Irfan, 2024:** Efficacy of 24-epibrassinolide and melatonin to enhance phytoremediation potential of Fenugreek (MS Thesis).
7. **Sofia Asim, 2024:** Harnessing phytoremediation potential of Flex for simultaneous remediation of microplastic and heavy metals (MS Thesis).
8. **Sidra Razzaq, 2024:** Scarlet sage mediated green nano-phytoremediation of heavy metals for industrial sludge cleanup (MS Thesis).
9. **Sumayya Tariq, 2023:** Acetic acid mediated phytoremediation of industrial effluent and sediments by using selected hydrophytes (MS Thesis).
10. **Muhammad Waseem, 2023:** Bacterial assisted phytoremediation of ornamental plants in contaminated soil amended with compost (MS Thesis).
11. **Hamza Yousaf, 2023:** Combined application of growth regulators and biochar on the phytoextraction efficiency of white willow (*Salix alba L.*) (MS Thesis).
12. **Muhammad Nouman Qamar, 2022:** Influence of humic and fulvic acids on phytoremediation by Quinoa (*Chenopodium quinoa* Willd.) grown in soil irrigated with industrial wastewater (MS Thesis).

13. Tehreem Fatima Uppal, 2022: Assessment of water lettuce (*Pistia stratiotes* L.) in phytoremediation of lead and cadmium by growing in nutrient media (MS Thesis).

14. Shah Din, 2022: Biomass and carbon sequestration potential of Java Plum (*Syzygium cumini* L.) in urban and rural areas of Lahore Division, Punjab, Pakistan. (MS Thesis).

15. Sajid Hussain, 2022: Impact of smog on morphoanatomical, physiological and biochemical characters of sunflower (*Helianthus annus* L.) (MS Thesis).

16. Aqsa Rafique, 2022: Effect of salicylic acid on morphoanatomical features of potato tubers (*Solanum tuberosum* L.) (MS Thesis).

17. Qurat-ul-Aien, 2021: Evaluation of phytoremediation potential of Pensy (*Viola tricolor* L.) using EDTA in paper waste (MS Thesis).

18. Faiza Ashraf, 2021: Effect of biochar amendment on morphological and yield traits of Wheat (*Triticum aestivum* L.) under lead toxicity (MS Thesis).

19. Sidra Fayyaz, 2020: Exogenous application of fulvic acid in the enhancement of metal uptake in canola (*Brassica napus* L.) by growing on paper sludge (MS Thesis).

20. Barerra Anwar, 2020: Bioremediation potential of ZnO nanoparticles synthesized from *Oedogonium* for the treatment of wastewater (MS Thesis).

21. Sonia Ghulam Bari, 2019: Changes in chlorophyll, protein and heavy metals content in aquatic herb water hyacinth (*Eichhornia crassipes* L.) by growing in industrial effluent (BS Thesis).

22. Jharna, 2019: Effect of lead on antioxidant enzyme activities in Kaner (*Nerium indicum* L.) by growing in roadside soils (BS Thesis).

23. Habiba Anwar, 2019: Phytoaccumulation of metals by aquatic macrophyte; *Pistia stratiotes* L. (Water lettuce) (BS Thesis).

24. Ifra Ishrat, 2019: Hyperaccumulation of heavy metals in the herbaceous flora grown in the vicinity of leather industry, Kasur (BS Thesis).

25. Fakhira Mushtaq, 2018: Role of antioxidant enzymes in detoxification of metals in leather tannery wastewater by using macrophytes (water lettuce, water hyacinth) and algae (M.Sc Thesis, PU).

Thesis completed as a Co-Supervisor

- 1. Hafsa Saleem, 2021:** Morphological and physiological changes of *Calendula officinalis* L. (pot marigold) irrigated with sewage wastewater (MS Thesis).
- 2. Ayesha Maham, 2021:** Effect of wastewater irrigation on morphological and physiological features of (*Dahlia pinnata* Cav.) (MS Thesis).
- 3. Hannan Amir, 2019:** Role of H₂S to alleviate salt stress in Pea culture (*Allium Sativum* L.) (MS Thesis).

PhD Thesis Under Process

1. **Syeda Tehreem Zehra, 2023-2026:** Role of myco-synthesized nanoparticles in remediation of heavy metal industrial soil using *Brassica napus* L.
2. **Muhammad Sabir Jamil, 2023-2026:** Bacterial nanoparticles assisted remediation of contaminated industrial soil using *Trifolium alexandrinum* L.

RESEARCH PROJECTS

1. Principal Investigator of the Project title “Exogenously applied ascorbic acid enhanced the growth and yield of potato irrigated with tannery effluent”, under University of the Punjab, (Grant awarded Rs, 150,000/-) for the fiscal year 2014-2015. (Completed)
2. Principal Investigator of the Project title “Role of antioxidant enzymes in detoxification of metals in leather tannery wastewater by using macrophytes (water lettuce, water hyacinth) and algae”, under University of the Punjab, (Grant awarded Rs, 150,000/-) for the fiscal year 2017-2018. (Completed)

PUBLICATIONS

BOOK CHAPTERS

1. Khan, B. A., Noorka, I. R., Heslop-Harrison, J. S. P., Nadeem, M. A., Zehra, T., Najeeb, H. F., Alawadi, S., **Ayaz, S.**, Jamil, S., Zafar, M. M., Abdullah, Wahid, A., & Anokye, B. (2025). Genome editing of biotic and abiotic stress-resistant crops. In U. R. A. Panhwar, K. Akhtar, & S. M. Mahboob (Eds.), Climate smart agriculture for future food security (pp. 289–301). Springer. https://doi.org/10.1007/978-3-031-52357-0_15.
2. Ashraf, U., Shahid, M. N., **Khilji, S. A.**, Kiran, M., Mahmood, S., & Yousaf, I. (2025). Nanofertilizers for growing fortified crops: A need of the day. In A. N. Shah, S. Fiaz, M. Aslam, J. Iqbal, & A. Qayyum (Eds.), Crop biofortification: Biotechnological approaches for achieving nutritional security under changing climate (pp. 439–457). Wiley.

ARTICLES

1. **Khilji, S. A.**, Tariq, R., Aziz, I., Munir, N., Javed, A., Uppal, T., ... & Keblawy, A. E. (2025). Phytoremediation potential and ecophysiological responses of *Pistia stratiotes* L. for removal of cadmium and lead from polluted water: a viable option for agricultural resilience. *Environmental Sustainability*, 1-14. 208

2. Rasool, S., Rasool, K., **Khilji, S. A.**, Sajid, Z. A. (2025). Phytochemicals and antioxidant activity of leaf extract and callus cultures of *Cinnamomum camphora* L. *PLoS One* 20(11): e0321155. <https://doi.org/10.1371/journal.pone.0321155>. IF 2.6
3. Munir, N., **Khilji, S.A.**, Sajid, Z.A. (2025). Phytochemical analysis, antibacterial and antitumor potential of *Hibiscus rosa sinensis*. Volume 2025. <https://doi.org/10.1155/sci5/2722306> *Scientifica*. IF 2.3
4. Tahzeen **S.K, Khilji SA**, Sera B, Sajid ZA, Zarnovican H, and Akbar KF. (2025). The role of domestic lawns and roadside verges in carbon sequestration: a case study from Sahiwal City (Pakistan) – *Applied Ecology and Environmental Research*, 23(2): 2725 –2734. ISSN 1589-1623 IF. 1.2
5. **Khilji, S. A.**, Rafique, A., Sajid, Z. A., Rauf, M., Shah, A. A., Shaffique, S., & Gatasheh, M. K. (2024). Foliar application of salicylic acid improved morpho-anatomical features of potato by irrigating with wastewater. *BMC Plant Biology*, 24(1), 754. IF= 3.9
6. Rafiq, M. T., Sajid, Z. A., & **Khilji, S.A.** (2024). Graphene Oxide Nanoparticle-Assisted Promotion of Stevioside, Rebaudioside A, and Selected Biochemical Attributes in *Stevia rebaudiana Bertoni*. *Scientifica*, 2024(1), 6693085.
7. Awan, Z. A., Ramzani, P. M. A., Khan, L. A., Imran, A., **Khilji, S. A.**, & Gaafar, A. R. Z. (2024). Mitigating salinity stress and improving cotton productivity through integrative use of gypsum and compost amendments with exogenous proline. *Journal of King Saud University-Science*, 103327.
8. Ahmad, M. A., Saleem, A., Tahir, M., **Khilji, S. A.**, Sajid, Z. A., Landry, K. B., ... & Ahmad, P. (2024). Modulation of the polyamines, osmolytes and antioxidant defense system to ameliorate drought stress tolerance in *Hordeum vulgare* L. using ascorbic acid. *South African Journal of Botany*, 171, 726-736.
9. **Khilji, S. A.**, Sajid, Z. A. & Jamil, M.A. (2024). Amelioration of salinity stress by exogenous application of KH_2PO_4 on *Brassica campestris* L. *Pakistan Journal of Botany*
10. **Khilji, S. A.**, Waseem, M., Tariq, S., Jabeen, S., Jamal, A., Alomrani, S. O., ... & Riaz, A. (2024). Microbe assisted phytoremediation of heavy metal contaminated soil by using African marigold (*Tagetes erecta* L.). *Plant Stress*, 100369. (IF= 5)
11. Waseem, M., **Khilji, S. A.**, Tariq, S., Jamal, A., Alomrani, S. O., & Javed, T. (2024). Phytoremediation of heavy metals from industrially contaminated soil using sunflower (*Helianthus annus* L.) by inoculation of two indigenous bacteria. *Plant Stress*, 11, 100297. (IF= 5)
12. **Ayaz, S.** (2023). Phytoaccumulation of metals by aquatic macrophyte; *Pistia stratiotes* L. (water lettuce). *Plantarum*, 5(SI).
13. **Khilji, S. A.**, J., Jamil, M. S. & Ikram, W. (2023). Effects of lead on antioxidant enzyme activities in *Nerium indicum* L. by growing in roadside soil of Lahore. *Plantarum*, 5(2).
14. **Ayaz, S.** & Zehra, T. (2023). Micrographic analysis of microspores of some members of the family Fabaceae, Lahore, Pakistan. *Plantarum*, 5(SI).
15. Rehman, Z., **Khilji, S. A.**, Sajid, Z. A., & Javed, M. A. (2023). Influence of

lead, cadmium, and zinc on phenols, flavonoids and antioxidant activity in cauliflower (*Brassica oleracea* var. *botrytis*). *Pakistan Journal of Botany*, 55(3), 1083-1088. (IF=1.2)

16. **Sheza Ayaz** and Habiba Anwar (2023). Phytoaccumulation of metals by aquatic macrophyte; *Pistia stratiotes* L. (water lettuce) Proceedings of the 2nd International Conference on Recent Approaches in Plant Sciences (RAPS-2023) held in May 04-05, 2023, (RAPS-23,180) 119 pp.

17. Rehman, B., Javed, J., Rauf, M., Khan, S.A., Arif, M., Hamayun, M., Gul, H., **Khilji, S.A.**, Sajid, Z.A., Kim, W.C. & Lee, I.J. (2022). ACC deaminase-producing endophytic fungal consortia promotes drought stress tolerance in *M. oleifera* by mitigating ethylene and H₂O₂. *Frontier in Plant Sciences*. 13:967672. doi: 10.3389/fpls.2022.967672. (IF = 6.627)

18. **Khilji, S.A.**, Munir, N., Aziz, I., Anwar, B., Hasnain, M., Jakhar, A. M., ... & Yang, H.H. (2022). Application of algal nanotechnology for leather wastewater treatment and heavy metal removal efficiency. *Sustainability*, 14(21), 13940. <https://doi.org/10.3390/su142113940> (IF= 3.889)

19. **Khilji, S.A.**, Sajid, Z.A., Fayyaz, S., Shah, A.A., Shah, A.N., Rauf, M., Arif, M., Yang, S.H. & Fiaz, S. (2022). Fulvic acid alleviates paper sludge toxicity in canola (*Brassica napus* L.) by reducing Cr, Cd, and Pb uptake. *Frontier in Plant Sciences*. 13:874723. doi: 10.3389/fpls.2022.874723. (IF= 6.627)

20. Ashraf, I., Akbar, K. F., Sera, B., Tazeen, S. K., Jamil, M., & **Khilji, S. A.** (2022). Assessment of suitable substrate management for both compost from municipal solid waste and roadside, *Fresenius Environmental Bulletin*, 31 (08 B): 8708-8716. (IF= 0.618)

21. Rehman, A., Tabassum, A., Parveen, Z., Ud-Din, A., Sajid, Z.A., **Khilji, S.A.**, Lee & In, J. (2022). *Sargassum weightii* aqueous extract improved salt stress tolerance in *Abelmoschus esculentus* by mediating metabolic and ionic rebalance, *Frontiers in Marine Science*, (9) 853272. 10.3389/fmars.2022.853272. (IF= 5.247)

22. Raid, A., Rauf, M., Gul, H., Hamayun, M., Arif, M., Husna, Sajid, Z.A., **Khilji S.A.**, Lee & In, J. (2022). Growth-Promoting Endophytic Fungus (*Stemphylium lycopersici*) Ameliorates Salt Stress Tolerance in Maize by Balancing Ionic and Metabolic Status, *Frontier in Plant Sciences*. 890565 doi: 10.3389/fpls. 890565 (IF= 6.627)

23. Ullah, Z., Hashmi, S. I., Faiq, M. E., Khan M. A.S., Nauman, Khan., S. & **Khilji, S.A.** (2022). Treatment of Sewage Wastewater through Phytoremediation of Sheikh Maltoon Town: A Case Study of District Mardan, Khyber Pakhtunkhwa Pakistan. *International Journal of Biosciences* 20(2), 47-58.

24. Rehman, Z., Hussain, A., Saleem, S., **Khilji, S.A.** and Sajid, Z.A. (2022). Exogenous application of salicylic acid enhances salt stress tolerance in

lemongrass (*Cymbopogon flexuosus* steud. Wats). *Pakistan Journal of Botany*. 54(2): DOI: [http://dx.doi.org/10.30848/PJB2022-2\(13\)](http://dx.doi.org/10.30848/PJB2022-2(13)). ISSN 1589-1623. ISSN 0556-3321. (IF=1.2)

25. **Khilji, S.A.**, Aqeel, M., Maqsood, M.F., Khalid, N., Tufail, A., Sajid, Z.A., Al-Surhanee, A.A., Hashem, M., Alamri, S. & Al-Mutairi, Ali, N. (2021). *Hemarthria compressa*—*Aspergillus niger*—*Trichoderma pseudokoningii* Mediated trilateral perspective for bioremediation and detoxification of industrial paper sludge. *Sustainability*, 13, 12266. <https://doi.org/10.3390/su132112266>. (IF= 3.889)

26. Munir, N., **Khilji, S.A.**, Saeed, I., Hasnain, M., Sajid, Z.A., Arif, M., Din, A. & Rauf, M. (2021). Phytochemical analysis, Antibacterial and Antitumor potential of *Hibiscus Rosa Sinensis*. *Natural Volatiles and Essential Oils*. 8(4) 3417-3437. <https://nveo.org/index.php/journal/article/view/735>. (IF= 0.65)

27. Munir, N., **Khilji, S.A.**, Sabar, M & Sajid, Z.A. (2021). Exogenous application of ascorbic acid enhances the antimicrobial and antioxidant potential of *Ocimum sanctum* L. grown under salt stress. *Journal of Food Quality*, 4977410. <https://doi.org/10.1155/2021/4977410> (IF= 3.3)

28. Hameed, M. A., Farooqi, Z. U. R., Younas, F., Din, W. M. U., Hussain, M. M., & **Khilji, S. A.** (2021). Microplastic pollution: Sources, fate, impacts and research gaps. *Quality of Life (BANJA LUKA)-APEIRON*, 20 (1-2), 39-50.

29. **Khilji, S.A.** & Sajid, Z.A. (2020). Phytoremediation potential of lemongrass (*Cymbopogon flexuosus* stapf.) grown on tannery sludge contaminated soil. *Applied Ecology and Environmental Research*. 18(6): 7703-7715. ISSN: 1589-1623; http://dx.doi.org/10.15666/aeer/1806_77037715. (IF= 0.74)

30. Aasma T., Aqeel, M., Khalid, N., Ahsan, M., **Khilji, S. A.**, Ahmad, F., Hameed, M., Noman, A., Alamri, S. & Hashem, M. (2020). Salt toxicity in a natural habitat induces structural and functional modifications and modulate metabolism in Bermuda grass (*Cynodon dactylon* [L.] pers.) ecotypes. *Applied Ecology and Environmental Research*, 18(5): 7703-7715. ISSN: 1589-1623. http://dx.doi.org/10.15666/aeer/1806_77037715 (IF= 0.74)

31. **Khilji, S.A.**, Sajid, Z.A & Bari, S.G. (2020). Appraisal of the effect of industrial effluents on the chlorophyll, protein and heavy metals contents in water hyacinth (*Eichhornia crassipes* L.) *Biologia (Pakistan)*. 66(II): 133-145. ISSN: 2313-206X

32. **Khilji, S.A.** & Sajid, Z.A. (2020). Evaluation of salt stress tolerance on some growth and biochemical attributes in *Suaeda fruticosa* L. (Forssk) *Biologia*, 66(II): 163-170. ISSN: 2313-206X

33. Mahmood, A., Sajid, Z.A. & **Khilji, S.A.** (2018). Influence of Salicylic Acid on salinity stress tolerance by seed priming and foliar application on Maize (*Zea Mays*), *Biologia*, 64 (II), 303-312. ISSN: 2313-206X <https://biolspk.com/current-issue-64-ii-2/>

34. **Khilji, S.A.**, Bareen, F., Nasrullah, M. & Ali, S. (2016). Multivariate analysis of heavy metal contamination in vegetables and fruits in the vicinity of some industrial areas of the Punjab, *Acta Horticulturae*, 1145: 159-178. ISSN: 0567-7572. (IF= 0.74)

35. Sajid, Z. A, Safdar, M & **Khilji, S.A.** (2016). Amelioration of salinity stress tolerance in Pea (*Pisum sativum* L.) by exogenous application of salicylic acid. *Biologia*, 62 (1), 69-78. ISSN: 2313-206X

36. **Khilji, S.A** & Bareen, F. (2016). Efficiency of duckweed (*Lemna minor* L.) in phytotreatment of tannery sludge. *Biologia*, 62 (1), 45-55. ISSN: 2313-206X

37. **Khilji, S.A** & Bareen, F. (2015). Hydrophytes and their heavy metal status in tannery effluents and associated contaminated drains, *Journal of Innovative Sciences*, 1(2): 1-11. ISSN: 2412-3486

38. **Khilji, S.A.**, Bareen, F. & Sajid, Z.A. (2015). Role of antioxidants in the growth and heavy metal uptake from tannery sludge in microbe assisted phytoremediation under field conditions. *International Journal of Advances in Science and Technology*. Special issue ISSN: 2348-5426. 10-20 pp.

39. Bareen, F & **Khilji, S.A.** (2008). Bioaccumulation of metals from tannery sludge by *Typha angustifolia* L. *African Journal of Biotechnology*, ISSN 1684-5315© 2008 Academic Journals, Vol: 7 (18), pp. 3314–3320.

40. Bareen, F and **Khilji, S.A.** (2008). Rhizofiltration of heavy metals from the tannery sludge by the anchored hydrophyte, *Hydrocotyle umbellata* L. *African Journal of Biotechnology*, ISSN 1684-5315© 2008 Academic Journals. Vol. 7 (20), pp. 2711–3717.

41. **Khilji, S.A.** & Bareen, F. (2008). Bioremediation potential of two hydrophytes for cleaning the toxic tannery sludge. In: Proceedings of the 1st International Conference on Role of Chemistry for Environmental Preservation (RCEP 2008) held on June 14, 2008. (Hussain, M. ed.) 71-78 pp.

ORAL PRESENTATIONS

1. 3rd International Conference on Recent Approaches in Plant Sciences (RAPS) held in November 12-13, 2025 organized by Department of Botany, Division of Science and Technology, University of Education, Township, Lahore.
2. 9th Invention to Innovation Summit 2024 “Innovation Expo to Buy and Sell Technologies” February 27-28,2024, at University of the Punjab, Lahore.
3. 2nd International Conference on Recent Innovations in Plant Sciences and Natural Products, held in February 15-16, 2024, organized by Department of Botany, University of Okara, Okara.
4. 1st National Conference on Recent Innovations in Plant Sciences and Natural Products & 3rd Natural Product Exhibition, February 16-17, 2023, organized by Department of Botany, University of Okara, Okara.

5. *2nd International Conference on Recent Approaches in Plant Sciences (RAPS) held in May 04-05, 2023* organized by Department of Botany, Division of Science and Technology, University of Education, Township, Lahore.
6. *2nd International Conference on Trends & Research in Chemistry (TRIC 2023) held in May 16-18, 2023* organized by Department of Chemistry, Division of Science and Technology, University of Education, Township, Lahore.
7. *1st International Conference on Recent Approaches in Plant Sciences (RAPS) held online in March 30-31, 2022* organized by Department of Botany, Division of Science and Technology, University of Education, Township, Lahore.
8. *5th International Conference Advances in Biosciences: Bridging the Gap Between Research and Sustainable Development Goals (May, 24-26, 2022)*, organized by Centre for Plant Sciences and Biodiversity, University of Swat, Khyber Pakhtunkhwa.
9. *5th International & 17th National Conference on Advances in Plant Science in Era of Climate Change held on October 26-28, 2022*, held at GCU Lahore and University of the Punjab.
10. *International Horticulture e Conference* held online in *February 22-23, 2021*, organized by Pakistan Society for Horticultural Sciences, Institute of Horticultural Sciences, University of Agriculture, Faisalabad.
11. *1st International Conference of Smart Plantation, an ultimate solution to climate change, ICSP2020 (2-4 March, 2020)*, Department of Botany, Lahore College for Women University, Lahore.
12. *International Conference Horticulture Sciences IHC2020 (March 26-28, 2020)*, IAGS, University of the Punjab.
13. *7th International Horticulture Research Conference* held online in *July 1st -30th, 2020*, Beijing, China.
14. **Invited speaker** in *3rd International Conference on “New trends in Natural Sciences”, December 21-23, 2020*, organized by Department of Biotechnology and Zoology, Lahore College for Women University, Lahore.
15. *1st National Conference on Multidisciplinary Research (NCMR), March 27-28, 2019*, organized by ORIC, held in the University of Okara.
16. *14th International Conference on “Role of Botanical Garden in Climate Change Adaptation and Mitigation” February 21-23, 2018*, organized by Pakistan Botanic Gardens Network Secretariat, Botanic Garden Government College University, Lahore.
17. *1st International Conference on “Conventional and Modern Approached in Plant Sciences (CMAPS-2017)” November 27-29, 2017*, held in the Department of Botany, University of the Punjab, Lahore.
18. *2nd International conference on Agriculture, Biological and Environmental Sciences (ICABES) March 28-29, 2015*, held at Pattaya, Thailand.

19. *International Symposium on Biotechnology and Other Omics in Vegetable Science* (April 29- May 02, 2012), held in Antalya-Turkey.
20. *2nd International Seminar on Medicinal Plants: Isolation and Applications. (ISMP-2010)* (Jan 14-16, 2010), held at Lahore College for Women University, Lahore.
21. *1st International Conference on Role Of Chemistry for Environmental Preservation (RCEP 2008)* June 2008. Organized By: The Royal Society of Chemistry UK & THE ENVIRON MONITOR. To be held at Hotel Ambassador, Lahore.
22. *1st International Seminar on Medicinal Plants: Isolation and Applications, (ISMP-2008)* (May 20-23, 2008), held at Lahore College for Women University, Lahore.

POSTER PRESENTATIONS

1. Rhizofiltration of heavy metals from the tannery sludge by the anchored hydrophyte, *Hydrocotyle umbellata* L.

Presented in: *International Conference of Plant Scientists. (10th National Meeting of Plant Scientists.)* (21-24 April, 2008), held at Department of Botany, Agriculture University, Faisalabad.

2. Efficiency of duckweed (*Lemna minor* L.) in phytotreatment of tannery sludge

Presented in: *1st International Seminar on soil health and reclamation approaches* (June, 2014), held at College of earth and Environmental Sciences, University of the Punjab, Lahore.

AWARDS / FELLOWSHIPS

1. Received **RSC indigenous Technology award of cash prize of Rs. 20,000/-** for displaying Innovative Technology “*Constructed Wetland Technology*” in 8th Invention to Innovation Summit 2019, April 02-03, 2019, organized by ORIC, University of the Punjab, Lahore.
2. Awarded **BEST PAPER AWARD** in oral presentation of research paper titled, “*Role of antioxidants and heavy metal uptake from tannery sludge in microbe assisted phytoremediation under field condition*” in 2nd International conference on Agriculture, Biological and Environmental Sciences (ICABES), March 28-29, 2015, held at Pattaya, Thailand.
3. Awarded **Travel Grant** by University of the Punjab (Overseas Scholarship Committee) for oral presentation to attend 2nd International conference on

Agriculture, Biological and Environmental Sciences (ICABES) March 28-29, 2015, held at Pattaya, Thailand.

4. Awarded **Second Position** in poster competition in the 1st International Seminar on soil health and reclamation approaches (June, 2014), held at College of Earth and Environmental Sciences, University of the Punjab, Lahore.
5. Awarded **PSF Travel Grant** to attend “International Symposium on Biotechnology & other Omics in Vegetable Science” from April 29- May 2, 2012 to be held at Antalya, Turkey.
6. Fellowship awarded by “**Higher Education Commission of Pakistan under International Research Support Initiative Program (IRSIP)**” (PIN ID: IRSIP 20 Agri 17) for 6 months as a **visiting research scholar** (Jun 02, 2012- Nov 22, 2012) at Department of Environmental Science and Policy, University of California, Davis, USA.
7. Awarded “**Indigenous 5000 PhD Fellowship program Batch VII**” PIN ID: 117-3229-BM7-076 (50018125) by Higher Education Commission (HEC) in December 21, 2011.
8. Award of “**Subsistence Allowance to Un-Employed 1st class Graduates**” under the Project “Support to Scientific Talent” in May 23, 2008.
9. Awarded **PSF fellowship** for PhD studies (one year)
10. Merit **Scholarship for Ph.D.** awarded by Doctoral Program Co-ordination Committee (DPCC), Punjab University, Lahore.
11. Annual **Merit Scholarship** from the Department of Botany, Punjab University, Lahore.
12. Certificate on account of securing **first position** in 200m Race in girls’ team in the Department of Botany, Punjab University, Lahore.
13. Runner up of **Cricket and Badminton Tournament** in the Department of Botany, Punjab University, Lahore.

ORGANIZED CONFERENCE, WORKSHOPS AND SEMINARS

1. Member of Organising committee in One day hands on training workshop on “**Roof Top Gardening**” held on January 10, 2023, in Department of Botany, Division of Science and Technology, University of Education, Township, Lahore.
2. **Organized “2nd international Conference on Recent Approaches in Plant Science” RAPS-2023, May 04-05, 2023 as a Conference Secretary**, in Department of Botany, Division of Science and Technology, University of Education, Township, Lahore.
3. **Member of Organising committee “1st international Conference on Recent Approaches in Plant Science” RAPS-2022**, March 30-31, 2022, in Department of Botany, Division of Science and Technology, University of Education, Township, Lahore.

4. Organized a webinar on “*Integrated Waste Biorefineries as Power Plants of the Future*” on September 24, 2021, by Dr. Abdul-Sattar Nizami, Sustainable Development Study Centre (SDSC), Government College University, in Department of Botany, in University of Education, Township, Lahore.
5. Organized a webinar on “*Eco Tourism and Role of Forest*”, September 14, 2021, by Chief conservator Forest Department, Mr. Ajmal Rahim, Forest Department, Department of Botany, in University of Education, Township, Lahore.
6. Organized one-day international seminar on “*Environmentally Smart Nitrogen (ESN) – Potential for Improving Modern Crop Production and N-Use Efficiency*”, March 02, 2020, by Dr. Tarlok Singh Sahota, Department of Botany, University of Education, Township, Lahore.
7. Organized the “*Green and Clean Campaign*” by Tree Plantation, March 11, 2020 in collaboration with Forestry Department, University of Education, Township, Lahore.
8. Organized one day national seminar on “*Smog and Importance of Forests*”, March 11, 2020, by Chief conservator Forest Department, Mr. Ajmal Rahim, University of Education, Township, Lahore.
9. Participated a member of organizing committee of one day “*Aqua Idea Workshop* on the segments of genetics / Biotechnology, Feed and Feeding, Aqua Management, Processing and HR”, February 29, 2020, University of Education, Township, Lahore.
10. Organized the “*Green and Clean Campaign*” by Tree Plantation, April 05, 2019, in collaboration with Forestry Department, University of Education, Township, Lahore.
11. Member of organizing committee in the 2nd National Symposium on “*Botanical Entrepreneurship and Business Development*”, March 25, 2019, organized by Department of Botany, University of Education, Township, Lahore.
12. Organized seminar on “*Role of Forests in Biodiversity followed by Tree Plantation Campaign*”, April 05, 2019, by Chief conservator Forest Department, Mr. Ajmal Rahim, at University of Education, Township, Lahore.
13. Organized seminar on “*Climate Change, Urban Resilience and Green Infrastructure*”, November 27, 2018, by Prof. Dr. Khalid Farooq Akbar, in Department of Botany, University of Education, Township, Lahore.
14. Monthly seminar on “*Traffic Awareness*” by Punjab Traffic Police, April 05, 2018, will be held in Al-Razi Hall, Centre for Undergraduate Studies, University of the Punjab, Lahore.
15. Organized monthly seminar on “*Toward two decades (1995-2015) of Biotechnology: Successes, Failures and Prospects*”, February 14, 2018, by Emeritus Prof. Dr. Javed Iqbal, in Al-Razi Hall, Centre for Undergraduate Studies, University of the Punjab, Lahore.

16. Organized monthly seminar on “*Smog: Nature, Origin and Impact*”, January 26, 2018, by Emeritus Prof. Dr. Syed Razi Abbas Shamsi, in Al-Razi Hall, Centre for Undergraduate Studies, University of the Punjab, Lahore.
17. Organized monthly seminar on “*Department of Botany, University of the Punjab: A Historical Perspective*”, October 25, 2017, by Prof. Dr. Khalid Hamid Sheikh, in Al-Razi Hall, Centre for Undergraduate Studies, University of the Punjab, Lahore.
18. Member of organizing committee in the 1st International Conference on Conventional And Modern Approaches in Plant Sciences (CMAPS-2017) November 27-29, 2017, held in the Department of Botany, University of the Punjab, Lahore.
19. **Organized a workshop on “*Innovative Ideas in Kitchen Gardening and Mushroom Cultivation*” on October 04, 2017, as a Focal Person.**
20. **Organized a Pre-Conference workshop on “*Atomic Absorption Spectrophotometry and Heavy Metal Analysis*” on November 27, 2017, in the 1st International Conference on Conventional and Modern Approaches in Plant Sciences (CMAPS-2017), held in the Department of Botany, University of the Punjab, Lahore.**

CONFERENCES / SYMPOSIUM / WORKSHOPS (Participation)

1. Participated in International Online Training Programme on “*Millets for Global Food Security*” February 13-16, 2023, organized by African Asian Rural Development Organization (AARDO), held at New Delhi, India.
2. Participated in International Online Training Programme on “*Modern Concepts in Plant Diseases & Pest Management for Enhancing Quality and Productivity*” October 11-14, 2022, organized by African Asian Rural Development Organization (AARDO), held at held at School of Agriculture Sciences, University of Zambia, Lusaka.
3. Participated in International Online Training Session on “*Publishing your Research & Innovation with IEEE: Choices and Procedures*” April 20, 2022.
4. Participated in International Online Training Session on “*Preparing your Research Paper for Publication: An IEEE Perspective*” March 23, 2022.
5. Participated in International Online Training Programme on “*Agri Innovation and Technology Transfer for Sustainable Development*” July 26-29, 2022, organized by African Asian Rural Development Organization (AARDO), held at School of Agriculture, University of Ghana, Accra Ghana.
6. Participated in International Online Training Programme on “*Adaptation on optimized Water Resource Management for Sustainable Development*” July 18-21, 2022, organized by African Asian Rural Development Organization (AARDO), held at Caltur, Morocco.

7. Participated in International Online Training Programme on “*Role of Innovative Primary Health (PHC) for Sustainable Development*” March 22-25, 2022, organized by African Asian Rural Development Organization (AARDO), held at IITM, Chennai, India.
8. Participated in one week phycological training workshop 2022 on “*Algal Ecology and Biotechnology*” November 21-25, 2020, organized by Institute of Botany, University of the Punjab, Lahore.
9. Participated in 1st International Symposium on “*Current trends and Future perspectives in Botanical Research*”, November 10, 2020, organized by Department of Botany, University of Okara, Okara.
10. Participated in 8th Invention to Innovation Summit 2019, “*Buy and Sell Technology*”, April 02-03, 2019, organized by ORIC, University of the Punjab, Lahore.
11. Participation in the event of “*Planting Millions Trees Project*”, September 06, 2019, organized by the Agri tourism Development Corporation of Pakistan.
12. Participated as exhibitor in “*Business Idea competition in Life Sciences 2019*”, March 11, 2019, organized by ORIC and Institute of Industrial Biotechnology, Government College University, Lahore.
13. Participated in 2nd National Workshop on “*Basic Tools in Bioinformatics: Molecular Modelling*”, March 07-08, 2019, organized by Institute of Industrial Biotechnology, Government College University, Lahore.
14. Participated in two-day dialogue on “*Promoting Social Harmony and Critical Consciousness*”, December 12-13, 2018, organized by Pak Institute of Peace Studies (PIPS), at Best Western Hotel, Lahore.
15. Participated in 7th Invention to Innovation Summit 2018, “*Buy and Sell Technology*”, March 07-08, 2018, organized by ORIC, University of the Punjab, Lahore.
16. Participated as a member of organizing committee 1st International Conference on “*Conventional and Modern Approaches in Plant Sciences (CMAPS-2017)*” November 27-29, 2017, held in the Department of Botany, University of the Punjab, Lahore.
17. Participated in the seminar on “*Kitchen Gardening and Seed Distribution*” November 21, 2017, held in Institute of Agricultural Sciences, University of the Punjab, Lahore.
18. Participated in the “*4th Faculty Training Program*” November 21-25, 2016, in Department of Microbiology & Molecular Genetics, University of the Punjab, Lahore.
19. Participated in the evaluation committee of 4th Invention to Innovation Summit 2015 and performed duty of judge in the exhibition on “*Technologies having Potential for Commercialization*” March 04-05, 2015, at University of the Punjab, Lahore.

20. Participated in the "Active Citizen Program" September, 14-18, 2015, organized by British Council and Higher Education Commission of Pakistan, held at the Institute of Social and Cultural studies, University of the Punjab, Lahore.
21. Participated in the 3rd International Conference on Education in Pakistan: Practices & Challenges, January 06-07, 2014, organized by University of Education, Lahore.
22. Participated in a one-day seminar on "Soil Health and Reclamation Approaches" June, 2014, held at College of Earth and Environmental Sciences, University of the Punjab, Lahore.
23. Participated in the 4th Faculty Training Program November 21-25, 2016, in Department of Microbiology & Molecular Genetics, University of the Punjab, Lahore.
24. Participated in the 3rd Faculty Training Program November 17-21, 2014, in Department of Microbiology & Molecular Genetics, University of the Punjab, Lahore.
25. Participated in the 3rd International Conference on Education in Pakistan: Practices & Challenges, January 06-07, 2014, organized by University of Education, Lahore.
26. Participated in a one-day International seminar on "Soil Health and Reclamation Approaches" June, 2014, held at College of Earth and Environmental Sciences, University of the Punjab, Lahore.
27. Participated in the 2nd International Conference of Plant Scientists by Pakistan Botanical Society (February 22-24, 2011), held at Department of Botany, Govt. College University, Lahore.
28. Participated in a one-day workshop on "Florescent Microscopy: Introduction and Applications", September 24, 2011, organized by Department of Microbiology and Molecular Genetics, University of the Punjab, Lahore.
29. Participated in the 2nd International Conference on Role Of Chemistry for Environmental Preservation (RCEP 2009), May 2009. Organized By: The Royal Society of Chemistry UK & THE ENVIRON MONITOR. held at Hotel Ambassador, Lahore.
30. Participated in the National Seminar on Food safety and security through application of chemistry and chemical technologies, May 02, 2009, organized By: The Royal Society of Chemistry UK & THE ENVIRON MONITOR. held at Hotel Ambassador, Lahore.
31. Participated in the International Symposium on Glycoproteins in Health and Diseases, May 27-29, 2008, held in School of Biological Sciences, Punjab University, Lahore.
32. Participated in the 2nd Meeting of Nobel Laureates with Pakistani Students/ Young Scholars in Islamabad / Lahore, March 27-31, 2007 (Nominated from the Department).

ADMINISTRATIVE DUTIES

QEC Coordinator at Division of Science and Technology (DSnT), University of the Education, Lahore, Pakistan. (**Jan 2020 to date**).

DEPARTMENTAL SERVICE

Assigned various Departmental duties like

- Herbarium committee
- Seminar Organizing Committee
- Sports Organizing Committee
- Event Organizing Committee
- store stock taking
- Cleanliness Committee
- Equivalence Committee
- Departmental Development Committee
- Admission committee for BS/MS/Mphil/PhD
- Tea Club committee in the Faculty Lounge

The duties assigned to me in the Botanical Garden are,

- Development of Cactus Garden
- Development of Topiary Section
- Beautification of Gates with landscaping
- Establishment of Hydrophytes cells and lake.

COMMUNITY SERVICE

- Member of Board of Studies, Department of Botany, University of Okara
- Co-opted Member of Board of Studies, Department of Botany, University of Education
- External examiner for Viva voce examination of BS and MS research students
- Head examiner for affiliated colleges
- Reviewer of various national and International Journals.
- Designed new Ph.D. courses in Department of Botany, Division of Science and Technology, University of Education, Lahore
- Committee Convener/Secretary/Member

PERSONAL DETAILS

Date of Birth: 22-12-1983
NIC No. 35202-7399593-6
Nationality: Pakistani
Status: Married

SKILLS

- Interpersonal and Communications
- Can effectively use Windows, MS Office & do research oriented Internet surfing
- Equally proficient in English, Urdu and Punjabi
- Scientific equipment handling.

EXTRA & CO - CURRICULAR ACTIVITIES

- Secured 64/100 marks (Percentile 73.17%) in Graduate Assessment Test (GAT)- Subject in 2011.
- Reading and Collecting Research Articles, Current affairs, news etc

INTERPERSONAL SKILLS

- Excellent Presentation Skills
- Adopts to new concepts easily
- Energetic and having potential to handle multiple responsibilities

REFERENCES

- Will be provided on request