**Dr. Muhammad Tahir Shehzad** *+92-333-6387504*

27 Feb. 1988 tahir_kumboh@hotmail.com
muhammad.shehzad@uaf.edu.pk

## CURRENT POSITION

**Lecturer** **Sep. 2019 – Present**

Institute of Soil and Environmental Sciences, University of Agriculture Faisalabad, 38040-Pakistan.

## RESEARCH PROFILE

Environmental and Soil Scientist specializing in arsenic and heavy-metal dynamics, soil–plant interactions, and contaminant remediation. Strong international research experience with GCER (University of Newcastle, Australia), advanced analytical expertise (ICP-MS, IC-ICP-MS), and a solid publication record in high-impact journals. Seeking a postdoctoral position focused on soil health, environmental risk assessment, and sustainable agro-ecosystems.

## EDUCATION

- **Doctor of Philosophy (PhD) Environmental Science** **2022**

**Institution:** Institute of Soil and Environmental Sciences, University of Agriculture Faisalabad, 38040-Pakistan
**Thesis Title:** Assessment and management of arsenic in rice in Punjab-Pakistan.
**Foreign Research:** A part of research (6 months) was conducted at Global Centre for Environmental Remediation, University of Newcastle, Australia under supervision of Laureate Professor Ravi Naidu under HEC Pakistan's International Research Support Initiative Program (IRSIP) (No. I-8/HEC/HRD/2017/8136).

- **Master of Philosophy (M-Phil)** **2014**

**Subject:** Environmental Science
**Institution:** Department of Environmental Sciences, PMAS-Arid Agriculture University, Rawalpindi-Pakistan
**Thesis Title:** Assessment of heavy metals in soils of urban areas of Rawalpindi.

- **Bachelor of Science (Hons.) Agriculture** **2012**

**Major Subject:** Soil Science
**Institution:** Institute of Soil and Environmental Sciences, University of Agriculture Faisalabad, 38040-Pakistan.

## FELLOWSHIPS AND COMPETITIVE FUNDING

- HEC-5000 Indigenous Ph.D. Scholarship, Phase-II, Batch-IV
  (Pin No. 417-55070-2AG4-001)
- University of Newcastle, Australia
  International Research Support Initiative Program (IRSIP), by HEC-Pakistan
  (No. I-8/HEC/HRD/2017/8136; PIN: IRSIP 38 Agri 14)
- DAAD-supported International Training (Germany)

## EMPLOYMENT HISTORY/ EXPERIENCE

- **Name of Position: Lecturer** **Sep. 2019 – Present**

Institute of Soil and Environmental Sciences, University of Agriculture Faisalabad, 38040-Pakistan.

**Duties and Responsibilities:**

- Teaching undergraduate courses to B.Sc. (Hons.) Agriculture and B.Sc. (Hons.) Environmental Sciences.
- Co-advisor of M.Sc. (Hons.) and Ph.D. Environmental Science degree programs.
- Conducting and supervising research of master's students.
- Member departmental committee of Environmental Science - Objective Based Education (OBE) system.

- **Name of Position: Visiting Researcher** (Honorary Staff) **May 2018 – Nov. 2018**

Global Centre for Environmental Remediation (GCER), University of Newcastle (UoN), Callaghan, Australia.

- Conducted a part of PhD Dissertation at state-of-the-art laboratories working with ICP-MS, ICP-OES and IC-ICP-MS.
- I also contributed to ongoing research at GCER, and published the research in peer-reviewed journals including Environmental Science and Pollution Research, Sustainability, etc.

- **Name of Position: Teaching Assistant**

Institute of Soil and Environmental Sciences, University of Agriculture Faisalabad, 38040-Pakistan.

**Duration:**

Oct. 2016 – Dec. 2016
Jan. 2019 – June 2019

- **Name of Position: Internee** **Mar. 2012 – May 2012**

Soil Biology and Biochemistry Laboratory, Land Resource and Research Institute, National Agriculture Research Center, Islamabad-Pakistan.

**Worked on:**

Isolation and characterization of soil microbes.

## INTERNATIONAL RESEARCH & TRAINING

- International Research Support Initiative Program (IRSIP) at **University of Newcastle, Australia**, funded by Higher Education Commission (HEC), Islamabad, Pakistan
- GHGs Summer School, at **Geisenheim University, Germany**, funded via DAAD project within the German-Pakistan Exchange program 2024-2025.

## RESEARCH INTERESTS

- Arsenic speciation and mitigation in agro-ecosystems
- Soil carbon dynamics and mineral–organic interactions
- Microplastics–heavy metal interactions
- Environmental and human health risk assessment

## CORE EXPERTISE

- Trace metal analysis (ICP-MS, ICP-OES, IC-ICP-MS, GC-MS)
- Multivariate statistics and spatial analysis
- Soil–water–plant experimental systems

## IMORTANT LINKS

**Google Scholar:** https://scholar.google.com/citations?user=qD_oQAcAAAAJ&hl=en
**Research Gate:** https://www.researchgate.net/profile/Muhammad-Shehzad-22
**LinkedIn:** https://www.linkedin.com/in/muhammad-tahir-shehzad-09a0b474/
**ORCID:** https://orcid.org/0000-0002-7365-3147
**Web of Science:** https://www.webofscience.com/wos/author/record/ABA-9844-2020?state=%7B%7D

## RESEARCH OUTPUT SUMMARY

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|---|---|
| Scholarly Peer Reviewed Book Chapters: | 5 (1 in production) |
| Peer Reviewed Journal Articles: | 16 |
| HEC Recognized Journal Articles: | 06 |
| Impact Factor: | > 50 |
| Total Citations (Google Scholar): | > 270 |
| H-Index (Google Scholar): | 10 |

## SELECTED PUBLICATIONS

1. Bashir, M.H., A. Abbas, H.R. Ahmad and M.T. Shehzad. 2026. Modelling Urban Roads Dust and Airborne Traffic Related Metals Exposure: AERMOD-Support Vector Machine Hybrid Framework for Monte Carlo Health Risk Assessment. Atmospheric

Pollution Research. 102944. (DOI: https://doi.org/10.1016/j.apr.2026.102944) (**Impact Factor: 3.5**)

2. Wang, S., L. Wei, L. Zhang, **M.T. Shehzad**, M.A. Hameed, H. Bashir, Q. Ali, M.Z. Hashmi and M.M. Hussain. 2025. Tillage-regulated impacts of engineered Fe/Zn-humic complexes on lead toxicity and soil biochemical health. International Journal of Phytoremediation. 28:1-12. (DOI: https://doi.org/10.1080/15226514.2025.2579150) (**Impact Factor: 4.003**)
3. Bashir, M.H., A. Asif, A. Abbas, **M.T. Shehzad** and H.R. Ahmad. 2025. Spatio-temporal assessment of heavy metal contamination in groundwater along madhuana drain, Faisalabad: source apportionment and health risk analysis. Environmental Geochemistry and Health. 47(7): 251. (DOI: https://doi.org/10.1007/s10653-025-02563-0) (**Impact Factor: 3.8**)
4. Hussain, K., M.H. Bashir, H.R. Ahmad, **M.T. Shehzad** and A. Zulfqar. 2025. Modeling source identification of dust and paints metals effecting workshops indoor air quality: associated contamination and cancer risk. Modeling Earth Systems and Environment. 11:178 (DOI: https://doi.org/10.1007/s40808-025-02372-5) (**Impact Factor: 2.7**)
5. Bashir, M.H., A. Rehman, H.R. Ahmad, A. Hedfi, M.B. Ali, F. Boufahja, K. Elmnasri, E. Mahmoudi and **M.T. Shehzad***. 2024. Dust trace metals implications on school's indoor air quality linked to human health risk at Khurianwala (Pakistan). Atmospheric Environment. 339:120889 (DOI: https://doi.org/10.1016/j.atmosenv.2024.120889) (**Impact Factor: 4.2**)
6. Irfan, A., H.R. Ahmad, **M.T. Shehzad**, F. Siddiqa, A, Ashban, M.S.B. Zafar and M.H. Bashir. 2024. Alleviating Cadmium Toxicity in Eggplant (*Solanum melongena* L.) and Human Health Risk Analysis: Contrasting Effects of Gypsum, Farm Manure and Poultry Manure. Journal of Soil Science and Plant Nutrition. 24(4): 7881-7893. (DOI: https://doi.org/10.1007/s42729-024-02084-2) (**Impact Factor: 3.4**)
7. Bashir, M.H., M. Farhan, T. Samreen and **M.T. Shehzad***. 2024. Effectiveness of constructed wetland technology-treated industrial wastewater on the spinach (Spinacia oleracea) health risks and biochar efficiency. Environmental Geochemistry and Health. 46:469 (DOI: https://doi.org/10.1007/s10653-024-02254-2) (**Impact Factor: 3.8**)
8. Ahmad, N., M. Usman, H.R. Ahmad, M. Sabir, Z.U.R. Farooqi and **M.T. Shehzad***. 2023. Environmental implications of phosphate-based fertilizer industrial waste and its management practices. Environmental Monitoring and Assessment. 195:1326. (DOI: https://doi.org/10.1007/s10661-023-11958-4) (**Impact Factor: 3.0**)
9. Younas, F., S. Younas, I. Bibi, Z.U.R. Farooqi, M.A. Hameed, W. Mohy-ud-Din, **M.T. Shehzad**, M.M. Hussain, Q. Shakil, M. Shahid, N.K. Niazi. 2023. Critical review on the separation of heavy metal(loid)s from the contaminated water using various agricultural wastes. International Journal of Phytoremediation. 26(3):349-368. (https://doi.org/10.1080/15226514.2023.2242973) (**Impact Factor: 4.003**)
10. **Shehzad, M.T.***, M. Sabir, Saifullah, A.B. Siddique, M.M. Rahman and R. Naidu. 2022. Impact of water regimes on minimizing the accumulation of arsenic in rice (*Oryza sativa* L.). Water, air and soil pollution. 233(9):1-12. (DOI: https://doi.org/10.1007/s11270-022-05856-7) (**Impact Factor: 3.0**)
11. **Shehzad, M.T.***, M. Sabir, M. Zia-ur-Rehman, M.A. Zia and R. Naidu. 2022. Arsenic concentrations in soil, water and rice grains of rice growing areas of Punjab-Pakistan: Multivariate statistical analysis. Environmental Monitoring and Assessment. 194(5):1-16. (**Impact Factor: 3.0**)
12. Murtaza, G., **M.T. Shehzad**, S. Kanwal, Z.U.R. Farooqi and G. Owens. 2022. Biomagnification of heavy metals in animals consuming fodder irrigated with sewage

water. Environmental Geochemistry and Health. 44:4523-4538 (DOI: https://doi.org/10.1007/s10653-022-01211-1) (**Impact Factor: 3.8**)

13. Siddique, A.B., M.M. Rahman, M.R. Islam, **M.T. Shehzad**, B. Nath and R. Naidu. 2021. Influence of Iron Plaque on Accumulation and Translocation of Cadmium by Rice Seedlings. Sustainability. 13:10307. (DOI: https://doi.org/10.3390/su131810307) (**Impact Factor: 3.3**)
14. Murtaza, G., M.Z. Rehman, M. Qadir, **M.T. Shehzad**, N. Zeeshan, H.R. Ahmad, Z.U.R. Farooqi and R. Naidu. 2021. High residual sodium carbonate water in the Indian subcontinent: concerns, challenges and remediation. Int. J. Environ. Sci. Technol. 18(10):3257-3272. (**Impact Factor: 3.4**)
15. Rahman, M.M., **M.T. Shehzad**, A.K. Nayak, S. Sharma, M. Yeasmin, S. Samanta, R. Correll and R. Naidu. 2020. Health risks from trace elements in muscles of some commonly available fish in Australia and India. Environmental Science and Pollution Research. 27(17):21000-21012. **(Impact Factor: 5.190)**
16. Munir, A., **M.T. Shehzad**, A.A. Qadir, G. Murtaza and H.I. Khalid. 2019. Use of potassium fertilization to ameliorate the adverse effects of saline-sodic stress condition ($EC_w$: $SAR_w$ levels) in rice (*Oryza sativa* L.). Communications in Soil Science and Plant Analysis. 50(16): 1975-1985. (**Impact Factor: 1.40**)
17. **Shehzad, M.T.***, G. Murtaza, M. Shafeeque, M. Sabir, H. Nawaz and M.J. Khan. 2019. Assessment of Trace Elements in Urban Topsoils of Rawalpindi-Pakistan: A Principal Component Analysis Approach. Environmental Monitoring and Assessment. 191(2):65. (**Impact Factor: 3.0**)

**HEC Recognized Journal Articles**

1. Rashid, A., R. Saleem, I. Rafiq, A. Saleem, H. Bashir, **M.T. Shehzad***. 2025. Enhancing Soil Organic Carbon Sequestration and Spinach Growth through Organic Amendments. Plant and Environment. 6:32-43. (DOI: https://doi.org/10.54219/plantenviron.06.01.2025.238)
2. Rashid, A., M.A. Zeshan, N. Ghafoor, H. Bashir, F. Mehmood, M.A. Hameed, I. Masood-Ul-Hasan, A. Qadir, **M.T. Shehzad**, M. Batool and M.U. Ghani. 2025. Biofortification of Wheat, Rice, and Maize with Zinc: Combating Hidden Hunger. Plant and Environment. 6:1-23 (DOI: https://doi.org/10.54219/plantenviron.06.01.2025.169)
3. Hameed, M.A., H. Bashir, N. Ghafoor, A. Rashid, M.J. Nazir, M. Ali, **M.T. Shehzad**, M.S.B. Zafar, A. Rehman and A. Sonia. 2024. Silicon and sustainable agriculture: Strengthening soil-plant synergy for food security. Plant and Environment 5:35-54. (DOI: https://doi.org/10.54219/plantenviron.05.01.2024.100)
4. Nawaz, H., M. Umar, F. Parvaiz, **M.T. Shehzad** and I. Afraz. 2024. Impacts of Climatic Changes and Air Pollution on Public health and Environment. Journal of Health and Climate Change. 3(1):1-12. (DOI: https://doi.org/10.37939/jhcc.v3i1.12)
5. Hussain, M.M., Z.U.R. Farooqi, W. Mohy-Ud-Din, F. Younas, **M.T. Shehzad**, M.U. Ghani, M.A. Ayub and A. Qadeer. 2021. Application of Bioremediation as sustainable approach to remediate heavy metal and pesticide polluted environments. Plant and Environment. 1(2):62-92.
6. Akhter, M.T., M.R. Islam, M.R. Islam, **M.T. Shehzad** and A.B. Siddique. 2018. Response of Growth and Yield of Potato to Neb-26 as a Source of Nitrogen. American Journal of Agricultural Research (ISSN: 2475-2002).

**Book Chapters**

1. Farooqi, Z.U.R., A. Kareem, M.A. Ayub, M.M. Hussain, N. Zeeshan and **M.T. Shehzad**. 2020. Use of pesticides in agriculture: impacts on soil, plant, and human health. In: Mehmood, M.A., K.R. Hakeem, R.A. Bhat and G.H. Dar (Eds.). Pesticide Contamination in Freshwater and Soil Environs: Impacts, Threats, and Sustainable Remediation (ed. 1). Apple Academic Press, Palm Bay, Florida USA.
2. Ali, M., M.Z. Ur Rehman, A. Jamil, M.A. Ayub and **M.T. Shehzad.** 2023. Silicon in Soil, Plants, and Environment. In: S. Pandey, D.K. Tripathi, V.P. Singh, S. Sharma and D.K. Chauhan (Eds.). Beneficial Chemical Elements of Plants: Recent Developments and Future Prospects, 227-255. https://doi.org/10.1002/9781119691419.ch10
3. Ghazanfar, H., M. Hussain and **M.T. Shehzad***. 2025. Lead Role of Cyanobacteria in Drug Discovery Using the Genome Mining Approach. In: Md. Faiyazuddin and K.R. Hakeem (Eds.). Handbook of Research in Marine Pharmaceutics**:** *Exploring Oceanic Microbial Diversity for Human Health and Wellness*. Apple Academic Press. P. 511-534.
4. **Shehzad, M.T.***, H. Ghazanfar, M. Hussain, Z. Farooqi, M.M. Hussain and H. Bashir. 2025. Drought stress influence on tomato: a brief understanding. In: Chaudhry, U.K., Z.N. Öztürk and A.F. Gökçe (eds.). Drought Stress: *Review and Recommendations*. Springer Nature, Switzerland AG. P. 221-237. https://doi.org/10.1007/978-3-031-80610-0_8

## EDITORIAL SERVICES

- Review Editor: Frontiers in Plant-Soil Interactions
- Journal article reviewer for:
  - Biological Trace Element Research
  - Ecotoxicology and Environmental Safety
  - Environmental Monitoring and Assessment
  - Frontiers in Soil Science
  - Journal of Hazardous Materials
  - Pedosphere
  - Rice Science
  - Scientific Reports

## COUNTRIES VISITED

- Australia
- Germany