Abdul Ghafoor, Ph.D

Assistant Professor/ Water quality and Environmental Assessment
Water and Environmental Studies Centre, The Deanship of Scientific Research, King Faisal University, Al-Ahsa, Saudi Arabia

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Research interests

Soil & Water quality, environmental pollution; adsorption, degradation and leaching of organic chemicals; heavy metals pollution; wastewater treatment; waste recycling; carbon sequestration; the effects of changing climate on sustainable development by using modelling approaches, GIS, and field observations/ measurements.

Work Experience

Feb 2024- present: Assistant Professor/ Water quality and Environmental Assessment at Centre for Water and Environmental Studies, King Faisal University, Al-Ahsa, Saudi Arabia

Nov 2016 – Feb 2024: Environmental fate and modelling Expert at Dept. of Environmental risk assessment, Swedish Chemical Agency, Stockholm, Sweden

Aug 2015 - Oct 2016: Postdoc fellow at Dept. Ecosystem Ecology, Swedish University of Agricultural Sciences, Uppsala-Sweden

Jul 2014- Jul 2015: Environmental Scientist at Dept. Environmental risk assessment, Dr. Knoell Consult GmbH, Mannheim-Germany

Apr 2013- Jun 2014: Environmental Scientist at Dept. Environmental Modelling, RIFCON GmbH, Hirschberg-Germany

Academic Qualifications

Ph.D. 2013. Environmental physics (Contaminant Hydrology), Department of Soil and Environment, Swedish University of Agricultural Sciences (SLU), Uppsala-Sweden
Dissertation: Understanding the causes of spatial variation in pesticides degradation, and sorption at the catchment scale. Supervisors: Prof. Dr. Nicholas J. Jarvis (Dept. of Soil & Environment SLU, Sweden), Prof. Dr. John Stenström (Dept. of Microbiology, SLU, Sweden), Prof. Dr. Lars Bergström (Dept. of Soil & Environment SLU, Sweden).

M.Sc (Hons.) 2006. Soil Sciences specialization in environmental soil chemistry, Department of Soil and Environment, University of Agriculture, Faisalabad-Pakistan.
Dissertation: Speciation and availability of cadmium to wheat (Triticum aestivum L.) as affected by inorganic amendments. Supervisor: Prof. Dr. Abdul Ghafoor (Department of Soil and Environment, University of Agriculture, Faisalabad).
CGPA 3.96/4.00, Marks 87.39 %.

B.Sc (Hons.) 2004. Agriculture with major in Soil and Environmental Sciences, Department of Soil and Environment, University of Agriculture, Faisalabad-Pakistan. CGPA 3.92/4.00, Marks 82.94 %.

Publications

1 **Ghafoor, A**; Moeys, J; Stenström, J; Tranter, G; Jarvis, N. 2011. Modeling spatial variation in microbial degradation of pesticides in soil. Environmental Science & Technology, 45, 6411-6419. Link **(Amer Chemical SOC) - Impact Factor 11.3**

2 Gill, Javaeria Maqsood, Syed Makhdoom Hussain, Shafaqat Ali, **Abdul Ghafoor,** Muhammad Adrees, Nadia Nazish, Adan Naeem, Eman Naeem, Mohammed Ali Alshehri, and Eram Rashid. 2025. "Fish Waste Biorefinery: A Novel Approach to Promote Industrial Sustainability." Bioresource Technology 419:132050. doi: 10.1016/j.biortech.2025.132050. **(Elsevier) - Impact Factor 9.0**

3 **Ghafoor, A**., Jarvis, N.J., Thierfelder, T. & Stenström, J. 2011. Measurements and modeling of pesticide persistence in soil at the catchment scale. Science of the Total Environment, 409 (10), 1900-1908. Link **(Elsevier) - Impact Factor 8.0**

4 Ashraf, M. A., Rasheed, R., Ali, S., Alomrani, S. O., Farooq, U., **Ghafoor, A**., & Alshehri, M. A. (2025). Coumarin and hesperidin lessen oxidative damage by regulating metal sequestration, redox homeostasis, and ionomics in castor bean (Ricinus communis L.) under chromium, copper, and nickel stress. Plant Stress, 16, 100818. https://doi.org/10.1016/j.stress.2025.100818 **(Elsevier) - Impact Factor 6.9**

5 **Ghafoor, A**;Koestel, J; Larsbo, M;Moeys, J; Jarvis, N. 2013b. Soil properties and susceptibility to preferential solute transport in tilled topsoil at the catchment scale. Journal of Hydrology, 492, 190-199. Link **(Elsevier) - Impact Factor 6.3**

6 **Ghafoor, A**; Poeplau, C. & Kätterer, T. 2017. Fate of straw- and root-derived carbon in a Swedish agricultural soil. Biol Fertil Soils (2017) 53: 257. Link **(Springer) - Impact Factor 5.6**

7 Dhawi, F., **Ghafoor, A**., Almousa, N., Ali, S., & Alqanbar, S. (2025). Predictive modelling employing machine learning, convolutional neural networks (CNNs), and smartphone RGB images for non-destructive biomass estimation of pearl millet (Pennisetum glaucum). Frontiers in Plant Science, 16. https://doi.org/10.3389/fpls.2025.1594728 **(Frontiers) - Impact Factor 4.8**

8 Rauf, M., Naveed, M., Munir, M., **Ghafoor, A**., Sattar, M. N., Ali-Dinar, H., Mohamed, H. A., Bashir, M. A., Asif, M., & Mustafa, A. (2025). Correction: Revitalizing cadmium-stressed sunflower: co-composted Biochar improves growth, antioxidant responses, and soil remediation efficiency. BMC Plant Biology, 25(1). https://doi.org/10.1186/s12870-025-07098-1 **(Springer Nature) - Impact Factor 4.8**

9 Cao, Yahan, Khalid Turk, Nabila Bibi, **Abdul Ghafoor**, Nazeer Ahmed, Muhammad Azmat, Roshaan Ahmed, Muhammad Imran Ghani, and Muhammad Abass Ahanger. 2025. "Nanoparticles as Catalysts of Agricultural Revolution: Enhancing Crop Tolerance to Abiotic Stress: A Review." Frontiers in Plant Science 15. doi: 10.3389/fpls.2024.1510482. **(Frontiers) - Impact Factor 4.8**

10 Tabassam, Rohina, Shoaib Ahmad, Adiba Khan Sehrish, Azeem Ahmad, Sarah Owdah Alomrani, **Abdul Ghafoor**, Tahira Akram, Muhammad Ali Alshehri, Sumaira Noor, and Shafaqat Ali. 2025. "Optimization of Exogenous CeO2 Nanoparticles on Pak Choi (Brassica Rapa L. Var. Chinensis) to Alleviate Arsenic Stress." Frontiers in Plant Science 15. doi: 10.3389/fpls.2024.1497926. **(Frontiers) - Impact Factor 4.8**

11 Cao, Yahan, Muhammad Imran Ghani, Nazeer Ahmad, Nabila Bibi, **Abdul Ghafoor**, Jing Liu, Jianyu Gou, and Xiao Zou. 2024. "Garlic Stalk Waste and Arbuscular Mycorrhizae Mitigate Challenges in Continuously Monocropping Eggplant Obstacles by Modulating Physiochemical Properties and Fungal Community Structure." BMC Plant Biology 24(1). doi: 10.1186/s12870-024-05710-4 **(Springer Nature) - Impact Factor 4.8**

12 Jabran, Muhammad, Muhammad Amjad Ali, Tuba Acet, Adil Zahoor, Amjad Abbas, Usman Arshad, Muhammad Mubashar, Muhammad Naveed, **Abdul Ghafoor**, and Li Gao. 2024. "Growth Regulation in Bread Wheat via Novel Bioinoculant Formulation." BMC Plant Biology 24(1). doi: 10.1186/s12870-024-05698-x **(Springer Nature) - JIF 4.8**

13 Hien, N. C., Thang, N. H., Mahmood, T., Pawlicka, A., Anwar, M., Munir, M., **Ghafoor, A.**, & Khoa, T. L. A. (2025). Simulation, synthesis, and characterization of Ni-Co and its co-doping in ZnO for energy applications. RSC Advances, 15(28), 22730-22744. https://doi.org/10.1039/d5ra02746b **(Royal SOC Chemistry) - JIF 4.6**

14 Rashid, Eram, Syed Makhdoom Hussain, Shafaqat Ali, Muhammad Munir, **Abdul Ghafoor**, Ebru Yilmaz, Mohammed Ali Alshehri, Danish Riaz, Adan Naeem, and Eman Naeem. 2025. "Impacts of Microplastic Accumulation in Aquatic Environment: Physiological, Eco-Toxicological, Immunological, and Neurotoxic Effects." Aquatic Toxicology 279:107232. doi: 10.1016/j.aquatox.2024.107232. **(Elsevier) - Impact Factor 4.3**

15 **Ghafoor, A**; Stenström, J; Jarvis, N. 2013a. Modeling pesticides sorption in surface and sub-surface soils of an agricultural catchment. Pest Management Science, 69, 919-929. Link **(Wiley) - JIF 3.8**

16 Nazar, A., Hussain, S. M., Ali, S., Zahoor, A. F., **Ghafoor, A.**, Alshehri, M. A., Naeem, A., Naeem, E., Amjad, M., & Rashid, E. (2025). Sustainable Bioplastics Production From Fish Waste: Their Extraction and Applications. Polymers for Advanced Technologies, 36(2). https://doi.org/10.1002/pat.70095 **(Wiley) - JIF 3.4**

17 Kharl, M. W. M., Hussain, S. M., Ali, S., Nazish, N., **Ghafoor, A.**, Alshehri, M. A., Naeem, A., Naeem, E., Amjad, M., & Yilmaz, E. (2025). Processed fish products: a protein source for humans and the challenges faced in processing. Journal of Food Science and Technology, 62(6), 1007-1020. https://doi.org/10.1007/s13197-025-06297-w **(Springer) - JIF 3.3**

18 Baloch, S. B., Ali, S., Bernas, J., Konvalina, P., Naveed, M., Baloch, F. B., Jamali, Z. H., Lošák, T., Roubík, H., **Ghafoor, A.**, Mehmood, M., & Mustafa, A. (2025). Crop Residue Management for Soil Health and Environmental Sustainability: A Comprehensive Review. Journal of Soil Science and Plant Nutrition. https://doi.org/10.1007/s42729-025-

02633-3 (Springer) - **Impact Factor 3.1**

19 Farid, M., Zulfiqar, A., Farid, S., Alshehri, M. A., Alomrani, S. O., Asam, Z. U. Z., Sarfraz, W., **Ghafoor, A.**, & Ali, S. (2025). Combined application of Azadirachta indica leaf extract and zerovalent iron nanoparticles (nZVI) enhances phytoremediation potential of Brassica napus L. in surgical industry wastewater. International Journal of Phytoremediation, 1-13. https://doi.org/10.1080/15226514.2025.2537201 **(Taylor & Francis) - JIF 3.1**

20 Hussain, S. M., Sharif, A., Bashir, F., Ali, S., Javid, A., Hussain, A. I., **Ghafoor, A.**, Alshehri, M. A., Naeem, A., Naeem, E., & Amjad, M. (2025). Polymerase Chain Reaction: A Toolbox for Molecular Discovery. Molecular Biotechnology. https://doi.org/10.1007/s12033-025-01390-z **(Springer Nature) - JIF 2.5**

21 Batool, U., Hussain, S. M., Ali, S., Rasul, A., Shahzad, M. M., Naeem, A., Ahmad, N., Munir, M., **Ghafoor, A.**, & Alshehri, M. A. (2025). Nano-revolution in aquaculture: quantum dot innovations for sustainable fisheries. Aquaculture International, 33(3). https://doi.org/10.1007/s10499-025-01867-3 **(Springer) - Impact Factor 2.4**

22 **Ghafoor, Abdul**, Hayfa Habes Almutairi, Munthir Almoslem, Khalid Turk, Muhammad Munir, Faisal Zeineldin, Shafaqat Ali, and others. 2024. "Assessment and Modeling of the Vulnerability of Regional Aquifers to Anthropogenic Perturbations." Journal of Ecological Engineering 25(7). **Impact Factor 1.5**

23 Ahmad, J., Ali-Dinar, H., Munir, M., Alqahtani, N., Alyas, T., Ahmad, M., Bashir, S., Qurashi, F., & **Ghafoor, A**. (2025). Enhancing Plant Resilience to Biotic and Abiotic Stresses through Exogenously Applied Nanoparticles: A Comprehensive Review of Effects and Mechanism. Phyton, 94(2), 281-302. https://doi.org/10.32604/phyton.2025.061534 **Impact Factor 1.2**

24 Nazim, M., **Ghafoor, A.**, Hussain, A., Tabassum, M., Nawaz, A., Ahmad, M., Muhammad, M., & Ali, M. (2024). Biochar as a Climate-Smart Agricultural Practice: Reducing Greenhouse Gas Emissions and Promoting Sustainable Farming. Phyton, 0(0), 1-10. https://doi.org/10.32604/phyton.2024.058970 **Impact Factor 1.2**

25 **Ghafoor, A.**, Latif, M., Ali, S., Munir, M., Sattar, M.N. et al. (2024). Exploring metal based nanoparticles for boosting plant tolerance to heavy metals and trace element contamination. Phyton-International Journal of Experimental Botany, 93(11), 2683-2705. https://doi.org/10.32604/phyton.2024.055898 **Impact Factor 1.2**

26 Sattar, M. N., Al Hashedi, S. A., Munir, M., & **Ghafoor, A**. (2025). Practical Applications of Minichromosomes in Modern Agriculture for Better Crops. In Handbook of Agricultural Technologies (pp. 1-22). Springer Nature Singapore. https://doi.org/10.1007/978-981-99-0862-2_25-1

27 Munir, Muhammad, **Abdul Ghafoor**, Nashi Alqahtani, and Zafar Iqbal. 2024. "Comparative Assessment of Heavy Metals Contamination in Selected Date Palm Cultivars and Its Significance for Food Safety." Pakistan Journal of Botany 57(1). doi: 10.30848/pjb2025-1(30).

28 Tiktak, A., Poot, A., Jene, B., **Ghafoor, A.**, van den Berg, E., Hoogeweg, G., Klein, M., Stemmer,M.,Sur,R.,Sweeney,P(2020), SpatiallyDistributedLeaching Modelling of Pesticides in the context of Regulation (EC) 1107/2009. Problem definition document, Link

29 Meurer, K., **Ghafoor. A**, Neal R. Haddaway, Martin A. Bolinder, and Thomas Kätterer.
30 **Ghafoor, A**., M. Zia-ur-Rehman ; A. Ghafoor ; G. Murtaza ; M. Sabir. 2008. Fractionation and availability of cadmium to wheat as affected by inorganic amendments. International Journal of Agriculture and Biology, 10 (5), 469-474.
31 Ahmad,I.,Alvi,A.,Tarar,F.S.A., **Ghafoor,A**.,Tarar,Z.H.,andMehmood,T .2005. Yield and yield component's response of mungbean to different phosphorus levels and row spacings. Indus. J. Biol. Sci, 2 (1), 27-31.
32 Alvi, A., Yaseen, M., Khalid, J., **Ghafoor, A**., and Ali, M.A. 2004. Determination of optimum phosphorus rate in rice-wheat cropping systems: growth and yield paramters. Pak. J. Soil Sci. 23(1-2) ,28-34.

Professional Experiences

- Technical areas: Fate and transport of contaminants in the vadose zone, dynamics and reaction of soil organic matter. Surface and subsurface hydrology, Preferential flow, Spatial variability, heavy metal pollution in soil and water, and management of salt-affected soils
- Strong background in planning and conducting of field experiments, collecting soil, water and plant samples, laboratory preparation of soil and water samples for instrumental analysis.
- Excellent experience of working with scientific instruments like: Elemental analyzer, spectrophotometer, Atomic Absorption Spectrophotometer (AAS), High Performance Liquid Chromatography (HPLC), Gas Chromatography-Mass Spectrophotometer (GC-MS).
- Statistics: Descriptive statistics (Describing and displaying data), Hypothesis tests and confidence intervals, correlation, regression, experimental design, ANOVA, multivariate analysis (PCA, PLS-R, etc.), re-sampling methods (e.g., Bootstrapping). Machine learning including Deep Learning
- Proficient user of Microsoft Office (Word, Excel, Access and PowerPoint) Proficient user of EndNote for reference management.
- Modeling expertise: MACRO, PRZM, PEARL, PELMO, SWASH, SWAT, MODFLOW, HYDRUS, ICBM, Introductory Carbon Balance Model and Roth C model
- Proficient skills in Programming in : "A language and environment for statistical computing." for statistical analysis and graphical displaying of data. Python, Google Colab.
- Spatial data analysis and modelling using R, QGIS, Google Earth Engine platforms

Participation in Conferences/Seminars

ChemIndex 2024: ChemIndex 2024 held from November 26 to 28, 2024, at the Dhahran International Exhibition Center, Dhahran, Saudi Arabia

COP16: Conference of the Parties to the United Nations Convention to Combat Desertification (COP16), held in Riyadh, Saudi Arabia, from December 2 to 13, 2024

2022. International Conference on "Pesticide Behaviour in Soils, Water and Air", Ron Cooke Hub, University of York, UK, August 31-September 02, 2022

2017. European Geosciences Union General Assembly, Vienna, Austria, 23-28 April 2017.

2015. 5th International Symposium on Soil Organic Matter, Göttingen, Germany, September 20-24, 2015.

2014. "248th American Chemical Society (ACS) National Meeting and Exposition - Symposium title: ENVIRONMENTAL FATE AND METABOLISM: Improved and Novel Methods to Estimate Pesticide Degradation Patterns and Rates" San Francisco, USA, August 10-14, 2014. (**Invited speaker**).

2012. "244th American Chemical Society (ACS) National Meeting and Exposition - Symposium title: Pesticide Environmental Fate Properties: Measurement, Prediction, Limitations, and Reliability" Philadelphia, PA, U.S.A. August 19th-23th, 2012 (abstract accepted for oral presentation).

2012 . " 2nd International Conference on Hydropedology" at Helmholtz-Centre for Environmental Research (UFZ), Leipzig, Germany, July 22-27, 2012.

2012 . "International Ph.D Course in "Merging measurements and modeling in Soil Physics" at Aarhus University, Department of Agroecology, AU-Foulum, Denmark, March 12-18, 2012.

2011 . "XIV Symposium in Pesticides Chemistry: Pesticides in the Environment: fate, modeling and risk mitigation" organized by The Institute of Agricultural and Environmental Chemistry, Università Cattolica del Sacro Cuore, Piacenza – Italy, August 29-September 01,2011.

2011 . " Soil Systems: An Integrating Chemical, Biophysical interface in soils" organized by Focus on Soils & Water Graduate School " Swedish University of Agricultural Sciences (SLU), Uppsala, Sweden, February 14-18, 2011.

2010 .“ Transport pathways for pesticide loss to waters” organized by Centre for Chemical Pesticides (CKB), Swedish University of Agricultural Sciences (SLU), Uppsala, Sweden, November 25, 2010.

2010 . R Training Course “ An Introduction to R and MS Access” organized by Focus on Soils & Water Graduate School ” Swedish University of Agricultural Sciences (SLU), Uppsala, Sweden, November 5, 6, 12, 2010.

2010 . Comprehensive Training “ Publishing in peer-reviewed journals” held in Swedish University of Agricultural Sciences (SLU), Uppsala, Sweden, February 17-19, 2010.

2009 .“New tools for pesticide risk assessment and development of indicators” organized by Centre for Chemical Pesticides (CKB), held Swedish University of Agricultural Sciences (SLU), Uppsala, Sweden, October 19, 2009.

Language skills

Mother tongue(s) Urdu, English

Other language(s)	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C2	C2	C2
Swedish	B1	B1	B1	B1	A2
German	A1	A2	A1	A1	A1

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2: Proficient user
Common European Framework of Reference for Languages

Referee for Peer-reviewed journals

Journal of Environmental Quality
Science of the Total Environment
Environment Science & Technology
European Journal of Soil Biology
Toxicology & Environmental Chemistry
Environmental Science and Pollution Research
Molecules
Biodegradation
Water Science and Technology
Water
Arabian Journal of Geosciences