

Curriculum Vitae

Dr. Zulfiqar Ali Sahito (Ph.D)

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Working Experience

2022-till now Researcher (Plant nutrition) from College of Environmental and Resources Sciences, Zhejiang University, Hangzhou, China.

Research Interest: Plant-Plant and Plant-Microbe Interactions, Phytoremediation of Heavy Metals, Ecological and Ecosystem Studies,

2021-2022 Worked as Visiting Faculty Member (VFM) at Environmental Sciences, Bahria School of Maritime and Applied Sciences, Bahria University, Karachi (Campus), Karachi.

Courses Taught:

(i) MS Course: Advances in Environmental Sciences

(ii) MS Course: Analytical Techniques in Environmental Sciences

(iii) BS Course: Environmental Management System (EMS)

Academic Qualification

Postdoctorate (Post-Doc)

2018-2021 Postdoctoral Researcher (Plant nutrition) from College of Environmental and Resources Sciences, Zhejiang University, Hangzhou, China.

Research Interest: Environmental Health Risk Assessment, Hazardous Solid Waste Management, Ecological and Ecosystem Studies, Phytoremediation of Heavy Metals.

Doctorate (Ph.D)

2013-2018 Doctor of Philosophy (Ph.D) in “Genetics/Biotechnology” from Institute of Genetics and Developmental Biology-Chinese Academy of Sciences, Beijing, China.

2010-2012 Masters (M.Sc) in “Plant Sciences” Specialization in plant ecology form department of botany, University of Karachi, Karachi, Pakistan.

Research interest

I am interested in furthering my research and career to Climate Change/ Biotechnology and Green Technology.

Research Experience

2018-2021 Postdoctoral Researcher worked on Pollution and Green Technology "Phytoremediation of Heavy Metals from contaminated soils/waters.

2013-2018 PhD research project entitled "Optimization of soybean transformation system and functional analysis of miR172C-NNC1 module in response to salt stress.

2011-2012 Masters (M.Sc) research project entitled: "Physiological and biochemical parameters of stress tolerance against sea water salinity in three Acacias viz *Acacia coriacea* subsp *pendens*, *Acacia nilotica* subsp *nilotica* and *Acacia stenophylla* a.cunn. Ex benth. in Karachi, Pakistan.

Major Achievements

2013-2017 Awarded CAS-TWAS president's fellowship sponsored by 'The World Academy of Sciences Italy (TWAS).

2015 Won 2nd prize in summer school in Beijing organized by IC-UCAS.

Research Awards / Research Grant

2019 Assessment of Sunflower (*Helianthus annuus*) germplasm for the phytoremediation of Co-contaminated (As/Pb) soil of Shaoxing field in Zhejiang Province. (Zhejiang Provincial Government Research Grant for Excellent Postdoctoral Researchers).

Membership of societies/Groups

Life time Pakistan Botanical Society

Life time Plant Stress group

Manuscript Editor

- ✓ Frontiers in Plant Sciences

Manuscript Reviewer

- ✓ Biofuels
- ✓ Environmental Science and Pollution Research

- ✓ Pakistan Journal of Botany
- ✓ International Journal of Plant Sciences
- ✓ Journal of Arid Environment
- ✓ Cereal Research Communication

Recent conferences and workshops attended

2023 Talented Young Scientist Forum (TYSP-Program) that was held on September, 27 (2023), Yunnan Academy of Agricultural Sciences, Yunnan, China

2019 16th International Phytotechnology Conference (IPC-2019) that was held on September, 23-27 (2019), Changsha, Hunan, China

2018 Attended 3rd Huangshan Dialogue on UNESCO Sites and Sustainable Development 2018.

2016 Participated in Summer School on Frontier and Inter disciplinary Sciences for the Overseas students in IC-UCAS, Beijing, China.

2015 Attended The 16th Genomics Conference in Chengdu, China.

2015 Participated in Spring school on Frontier and Inter disciplinary Sciences for the Oversea students in IC-UCAS, Nanjing, China.

2014 Participated in Summer School on Frontier and Inter disciplinary Sciences for the Oversea students in IC-UCAS, Beijing, China.

2013 International Workshop on Mechanism of Plant Stress Tolerance and Sustainable Use of Saline Resources, at Agriculture Resource Research Center of Institute of Genetics and Development, Chinese Academy of Sciences. China. October 13-20, 2013.

2013 Attended 9th “National Conference of Plant Scientists” Karachi, Pakistan

Technical skills

Efficiently conduct independent or group laboratory research and accurately record data . Ability to thoroughly research literature and identify pertinent publications using the Internet. Proficiency with Microsoft Word, Excel, Access, SPSS and Sigma Plot

Research related /Lab experience:

(i) Analytical Techniques in Marine Sciences

(ii) Detection of Heavy Metals in soil, Water, Plant and Animal samples using ICP-MS

(iii) Protein-Protein Interaction using yeast two hybrid assay and BiFC

(iv) DNA extraction, RNA extraction, Polymerase Chain Reaction (PCR) Quantitative Real Time PCR, Polyacrylamide Gel Electrophoresis.

(v) DNA Band elution from Agrose and Polyacrylamide Gel. Ligation and Trasformation Culturing of bacteria, Sequencing of DNA/Gene.

(iv) Agrobacterium rhizogenes mediated hairy root transformation of soybean.

(v) Agrobacterium tumefaciens mediated stable transformation of soybean to generate transgenic plants.

(vi) Tissue Culture Technology/Aqua Culture Technology/Mushroom Culture Technology

Publications submitted

1. **Zulfiqar Ali Sahito**, Afsheen Zehra, Shaoning Chen, Song Yu, Zhenli He and Xiaoe Yang (2023). Smart engineering of *Sedum alfredii* with high biomass production and superior phytoextraction efficiency. (Submitted in Journal of Hazardous Material).
2. **Zulfiqar Ali Sahito**, Afsheen Zehra, Shaoning Chen, Song Yu, Zhenli He and Xiaoe Yang (2023). Folic acid (FA) supplementation enhances seed germination, seedling growth and cadmium uptake in *Solanum nigrum* Cd-hyperaccumulator ecotype. Environmental Technology and Innovation (Under review).
3. **Zulfiqar Ali Sahito**, Afsheen Zehra, Shaoning Chen, Song Yu, Zhenli He and Xiaoe Yang (2023). Biocontrol of *Sclerotinia rolfusii*, Fungal Pathogen of Stem rot disease in Ecotype of *Sedum alfredii* Nursery. (Submitted in Biocontrol Journal).

Recent publications

1. Farhadi, Zohreh, Masumeh Ziaee, Mehdi Esfandiari, Anayatollah Salimi, Arash Rasekh, and **Zulfiqar Ali Sahito** (2024). "Design and evaluation of deltamethrin-based microemulsion formulation to control *Aphis gossypii* (Hemiptera: Aphididae)." *Journal of Applied Entomology* ([SCI Indexed \(Q1-IF: 2.211\)](#))
2. Raza, Syed Turab, Adugna Feyissa, Rong Li, Eldon R. Rene, Zulfiqar Ali, Hassan Iqbal, **Zulfiqar Ali Sahito**, and Zhe Chen (2024). Emerging technology effects on combined agricultural and eco-vermicompost. *Journal of Environmental Management* 352 (2024): 120056. ([SCI Indexed \(Q1-IF: 8.1241\)](#))
3. Li, Xin, Bo Xu, **Zulfiqar Ali Sahito**, Shaoning Chen, and Zongsuo Liang (2024). Transcriptome analysis reveals cadmium exposure enhanced the isoquinoline alkaloid biosynthesis and disease resistance in *Coptis chinensis*. *Ecotoxicology and Environmental Safety* 271: 115940. ([SCI Indexed \(Q1-IF: 7.1241\)](#))

4. Song Yu , Afsheen Zehra, **Zulfiqar Ali Sahito**, Wenkai Wang, Shaoning Chen, Ying Feng, Zhenli He, and Xiaoe Yang (2023). Cytokinin-mediated shoot proliferation and its correlation with phytoremediation effects in Cd-hyperaccumulator ecotype of *Sedum alfredii*. *Science of The Total Environment*, 168993. [\(SCI Indexed \(Q1-IF: 10.2241\)\)](#)
5. **Zulfiqar Ali Sahito**, Afsheen Zehra, Shaoning Chen, Song Yu, Zhenli He and Xiaoe Yang (2023). Chinese sapindaceous tree species (*Sapindus mucrosii*) exhibits lead tolerance and long term phytoremediation potential for moderately contaminated soils. *Chemosphere* 338, 139376 [\(SCI Indexed \(Q1-IF: 8.841\)\)](#)
6. Dong, Qin, Yingjie Wu, Bing Li, Xi Chen, Lu Peng, **Zulfiqar Ali Sahito**, Huanxiu (2023) "Multiple insights into lignin-mediated cadmium detoxification in rice (*Oryza sativa*). *Journal of Hazardous Materials*, 131931. [\(SCI Indexed \(Q1-IF: 14.2241\)\)](#)
7. Yu, Song, **Zulfiqar Ali Sahito**, Min Lu, Qiwei Huang, Pengtao Du, Dan Chen, Jiapan Lian, Ying Feng, Zhenli He, and Xiaoe Yang. (2023) Soil water stress alters differentially relative metabolic pathways affecting growth performance and metal uptake efficiency in a cadmium hyperaccumulator ecotype of *Sedum alfredii*. *Environmental Science and Pollution Research* 30, no. 38 88986-88997. [\(SCI Indexed \(Q1\) category with impact factor: 14.2241\)](#)
8. **Zulfiqar Ali Sahito**, Afsheen Zehra, Shaoning Chen, Song Yu, Lin Tang, Zarina Ali, Salma Hamza, Muhammad Irfan, Tanveer Abbas, Zhenli He and Xiaoe Yang (2022). *Rhizobium rhizogenes*-mediated root proliferation in Cd/Zn hyperaccumulator *Sedum alfredii* and its effects on plant growth promotion, root exudates and metal uptake efficiency. *Journal of Hazardous Materials*. 424, 127442 [\(SCI Indexed \(Q1\) category with impact factor: 14.2241\)](#)
9. **Zulfiqar Ali Sahito**, Afsheen Zehra, Lin Tang, Zarina Ali, Muhammad Laeeq ur Rehman Hashmi, Nabila Bano, Muhammad Asmat Ullah, Zhenli He, Xiaoe Yang (2021). Arsenic and mercury uptake and accumulation in oilseed sunflower accessions selected to mitigate a co-contaminated soil coupled with oil and bioenergy production. *Journal of Cleaner Production* 291, 125226. [\(SCI Indexed \(Q1\) category with impact factor: 11.0721\)](#)
10. Ma, Luyao, Yaru Liu, Yingjie Wu, Qiong Wang, **Zulfiqar Ali Sahito**, Qiyao Zhou, Lukuan Huang, Tingqiang Li, and Ying Feng (2020). "The effects and health risk assessment of cauliflower co-cropping with *Sedum alfredii* in cadmium contaminated vegetable field. *Environmental Pollution* 115869. [\(SCI Indexed \(Q1\) category with impact factor: 9.9882\)](#)
11. Lin Tang, Yasir Hamid, Afsheen Zehra, **Zulfiqar Ali Sahito**, Zhenli He, Wolde Tefera Beri, Muhammad Bilal Khan, Xiaoe Yang (2020). Fava bean intercropping with *Sedum alfredii* inoculated with endophytes enhances phytoremediation of cadmium

and lead co-contaminated field. **Environmental Pollution**. 114861. [\(SCI Indexed \(Q1\) category with impact factor: 9.9882\)](#)

12. Lin Tang, Yasir Hamid, Afsheen Zehra, [Zulfiqar Ali Sahito](#), Zhenli He, Muhammad Bilal Khan, Ying Feng, Xiaoe Yang (2020). Comparative assessment of *Brassica pekinensis* L. genotypes for phytoavoidance of nitrate, cadmium and lead in multi-pollutant field. **International Journal of Phytoremediation**. 1-14. [\(SCI Indexed \(Q1\) category with impact factor: 3.025\)](#)
13. Lin Tang, Yasir Hamid, Afsheen Zehra, [Zulfiqar Ali Sahito](#), Zhenli He, Muhammad Bilal Khan, Ying Feng, Xiaoe Yang (2020). Mechanisms of water regime effects on uptake of cadmium and nitrate by two ecotypes of water spinach (*Ipomoea aquatica* Forsk.) in contaminated soil. **Chemosphere**, 246, 125798. [\(SCI Indexed \(Q1\) category with impact factor: 8.9431\)](#)
14. Wang, Qiong, Chaofeng Ge, Yingjie Wu, [Zulfiqar Ali Sahito](#), Luyao Ma, Fengshan Pan, Qiyao Zhou, Lukuan Huang, Ying Feng, and Xiaoe Yang (2020). "The endophytic bacterium *Sphingomonas* SaMR12 alleviates Cd stress in oilseed rape through regulation of the GSH-AsA cycle and antioxidative enzymes." **BMC Plant Biology** 20, 1-14. [\(SCI Indexed \(Q1\) category with impact factor: 4.0131\)](#)
15. Muhammad Bilal Khan, Xiaoqiang Cui, Ghulam Jilani, Lin Tang, Min Lu, Xuerui Cao, [Zulfiqar Ali Sahito](#), Yasir Hamid, Bilal Hussain, Xiaoe Yang, Zhenli He (2020). New insight into the impact of biochar during vermi-stabilization of divergent biowastes: Literature synthesis and research pursuits. **Chemosphere**. 238, 124679. [\(SCI Indexed \(Q1\) category with impact factor: 8.9431\)](#)
16. Shaoning Chen, Min Zhang, Ying Feng, [Zulfiqar Ali Sahito](#), Shengke Tian, Xiaoe Yang (2019). Nicotianamine Synthase Gene 1 from the hyperaccumulator *Sedum alfredii* Hance is associated with Cd/Zn tolerance and accumulation in plants. **Plant and Soil**. 12, 551-559. [\(SCI Indexed \(Q1\) category with impact factor: 4.0425\)](#)
17. Afsheen Zehra, [Zulfiqar Ali Sahito](#), Wenbin Tong, Lin Tang, Yasir Hamid, Muhammad Bilal Khan, Zarina Ali, Beena Naqvi, Xiaoe Yang. (2020). Assessment of sunflower germplasm for phytoremediation of lead-polluted soil and production of seed oil and seed meal for human and animal consumption. **Journal of Environmental Sciences**. 87, 24-38. [\(SCI Indexed \(Q1\) category with impact factor: 6.796\)](#)
18. Afsheen Zehra, [Zulfiqar Ali Sahito](#), WenbinTong, Lin Tang, YasirHamid, Qiong Wang, Xuerui Cao, Muhammad Bilal Khan, Bilal Hussain, Shakeel Ahmed Jatoui, Xiaoe Yang. (2019). Identification of cadmium high-accumulating oilseed sunflower (*Helianthus annuus*) cultivars for phytoremediation in oxisol and inceptisol. **Ecotoxicology and Environmental Safety**. 187, 109857 [\(SCI Indexed \(Q1\) category with impact factor: 7.1291\)](#)

19. Cai, Zhaoming, Deer Zeng, Jingjing Liao, Chunhong Cheng, **Zulfiqar Ali Sahito**, Meiqin Xiang, Min Fu, Yuanqing Chen, and Diandong Wang (2019). Genome-Wide Analysis of Auxin Receptor Family Genes in Brassica juncea var. tumida. **Genes** 2, 165. [\(SCI Indexed \(Q1\) category with impact factor: 4.0251\)](#)
20. Chen, Shaoning, **Zulfiqar Ali Sahito**, Min Zhang, Ying Feng, Qianying Yang, and Xiaoe Yang (2018). Identification and Characterization of Four Nicotianamine Synthase Genes in Sedum alfredii Hance. **Journal of Biobased Materials and Bioenergy** 12, 551-559. [\(SCI Indexed \(Q1\) category with impact factor: 2.023\)](#)
21. **Zulfiqar Ali Sahito**, Lixiang Wang, Zhengxi Sun, Qiqi Yan, Xingke Zhang, Qiong Jiang, Ihteram Ullah, Yiping Tong and Xia Li (2017). The miR172C-NNC1 module modulates root plastic development in response to salt in soybean. **BMC Plant Biology**, 17, 229. [\(SCI Indexed \(Q1\) category with impact factor: 5.2631\)](#)
22. Tang, Lin, Yasir Hamid, Afsheen Zehra, **Zulfiqar Ali Sahito**, Zhenli He, Bilal Hussain, Hanumanth Kumar Gurajala, and Xiaoe Yang (2019). "Characterization of fava bean (*Vicia faba* L.) genotypes for phytoremediation of cadmium and lead co-contaminated soils coupled with agro-production." **Ecotoxicology and Environmental safety** 171,190-198. [\(SCI Indexed \(Q1\) category with impact factor: 7.1291\)](#)
23. Tang, Lin, Yasir Hamid, **Zulfiqar Ali Sahito**, Hanumanth Kumar Gurajala, Zhenli He, and Xiaoe Yang (2019). "Effects of CO₂ application coupled with endophyte inoculation on rhizosphere characteristics and cadmium uptake by *Sedum alfredii* Hance in response to cadmium stress. **Journal of Environmental Management** 239: 287-298. [\(SCI Indexed \(Q1\) category with impact factor: 8.910\)](#)
24. Tang, Lin, Yasir Hamid, **Zulfiqar Ali Sahito**, Hanumanth Kumar Gurajala, Zhenli He, Ying Feng, and Xiaoe Yang. (2019) "Evaluation of variation in essential nutrients and hazardous materials in spinach (*Spinacia oleracea* L.) genotypes grown on contaminated soil for human consumption. **Journal of Food Composition and Analysis**. 212-220. [\(SCI Indexed \(Q1\) category with impact factor: 4.044\)](#)
25. **Zulfiqar Ali Sahito**, D Khan and Afsheen (2021). Variation in fruit size, seed size, pericarp mass and seed packaging cost and seedling micromorphology of *Sapindus mukorossi* Gaertn. From Nanjing city, Jiangsu Province, China. *Int. J. Biol. Biotech*, 18(3), 633-646.
26. **Zulfiqar Ali Sahito**, D Khan, Afsheen Zehra, M Javed Zaki (2020). Variation in pseudocarp and seed-size and seed packaging cost in *Chimonanthus praecox* (L.) Link. (Family Calycanthaceae) from Chengdu, Sichuan province, China. *Int. J. Biol. Biotechnol.* 16, 835-848.
27. Xing, L., Gaudel, G., Bizimana, F., Mosongo, P. S., Zhang, Y., & **Zulfiqar Ali Sahito** (2022). The improved N₂O microelectrode calibration method significantly improves

the sensitivity of the sensor. *Pak. J. Agri. Sci*, 59(1), 157-166.

28. D. Khan, **Zulfiqar Ali Sahito**, Shahanaz Dawar and Muhammad Javed Zaki. (2016). Frass of Saproxylic-Cerambycid larvae from dead twigs of *Acacia stenophylla* A. Cunn. EX. Benth. and its effects on germination and seedling growth of *Lactuca sativa* L. var. Grand rapids. *Int. J. Biol. Biotechnol.* 13, 461-470.
29. D. Khan and **Zulfiqar Ali Sahito** (2015). Concentrations of some major and trace metals in bottom ash of stem wood of *Acacia stenophylla* a. Cunn. Ex benth. Burnt in an open hearth. *Int. J. Biol. Biotechnol.* 12, 135-141.
30. D. Khan, Muhammad Javed Zaki Syed Shahid Shaukat and **Zulfiqar Ali Sahito**. (2015). Seedling characteristics of *Pongamia pinnata* pierre (Papilionaceae). *Int. J. Biol. Biotechnol.* 12, 457-479.
31. D. Khan and **Zulfiqar Ali Sahito** (2014). Growth of *Vachellia nilotica* sub sp. Indica (Benth.) Kyal & Boatwr. (Mimosaceae) seedlings in relation to sea salt stress and changes in biochemical and ionic composition of leaves. *Int. J. Biol. Biotechnol.* 11, 35-50.
32. D. Khan, **Zulfiqar Ali Sahito**, Muhammad Javed Zaki and Syed Shahid Shoukat (2014). Axial dimensions of pods and seeds and within-pod-allocation of phytomass and seed packaging cost in *Erythrina suberosa* Roxb.(Papilionaceae). *Int. J. Biol. Biotechnol.* 11, 191-206.
33. D. Khan, **Zulfiqar Ali Sahito** and Muhammad Javed Zaki (2014). Seedling characteristics of *Erythrina suberosa* Roxb. *Int. J. Biol. Biotechnol.* 11, 563-579.
34. D. Khan, **Zulfiqar Ali Sahito** and Muhammad Javed Zaki (2014). Axial dimensions of seeds, within-regma allocation of phytomass and seed packaging cost in a wild castor bean, *Ricinus Communis* l.(Euphorbiaceae). *Int. J. Biol. Res.* 2, 13-22.
35. D. Khan, **Zulfiqar Ali Sahito** and Muhammad Javed Zaki (2013). Parental investment of biomass in pod, seed and seed packaging in a tree of wiry wattle (*Acacia coriacea* subsp. pendens) growing in Karachi, Pakistan. *Int. J. Biol. Biotechnol.* 10, 515-536.
36. D. Khan and **Zulfiqar Ali Sahito** (2013). Maternal investment of biomass in pods, seeds and seed packaging in *Delonix regia* (Bojer) Rafin.(Caesalpiniaceae). *Int. J. Biol. Res.* 1, 105-114.
37. **Zulfiqar Ali Sahito** and D. Khan (2013). Growth of wiry wattle seedlings under salt stress. *FUUAST J. Biol.* 3, 11.
38. D. Khan, **Zulfiqar Ali Sahito** and Imtiaz Ahmed (2013).The occurrence of white grub [*adoretus versutus* harold 1869] in the sandy rhizosphere of *acacia nilotica* subsp. *Nilotica* seedlings irrigated with moderately saline water. *Int. J. Biol. Biotechnol.* 10,

39. D. Khan and **Zulfiqar Ali Sahito** (2013). Variation in pod-and seed-sizes and seed packaging cost in *Acacia stenophylla* a. Cunn. Ex. Benth.-an Australian wattle growing in Karachi, Pakistan. FUUAST J. Biol. 3, 15.
40. **Zulfiqar Ali Sahito.**, D, Khan and Naeem Ahmed. (2013). Some parameters of growth of River cooba seedlings under salt stress. Int. J. Biol. Biotechnol. 10, 339-352.
41. D. Khan and **Zulfiqar Ali Sahito** (2012). *Eurema hecabe* (Linnaeus, 1758) [Lepidoptera: Pieridae], A serious seedling pest of *Acacia stenophylla* A. Cunn. Ex. Benth., in Karachi, Pakistan. Int. J. Biol. Biotechnol. 9, 307-312.

GOOGLE SCHOLAR CITATION INDEX

IMPACT FACTOR=150.67 & CITATIONS=674

Citation Indices	All	Since 2015
Citations	674	606
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I10-index	21	16

References

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JOURNALS WITH HIGH CITATION INDEX

No.	Journal	Publisher	2022-2023 IF	No. of Papers	Total (IF)
1.	Journal of Hazardous Materials	Elsevier	13.6	2	27.2
2.	Journal of Cleaner Production	Elsevier	11.5	1	11.5
4.	Science of the Total Environment	Elsevier	9.8	2	19.2
5.	Environmental Pollution	Elsevier	9.7	2	19.4
6.	Chemosphere	Elsevier	8.8	4	35.4
7.	Journal of Environmental Management	Elsevier	8.7	2	17.4
8.	Ecotoxicology and Environmental Safety	Elsevier	6.8	3	20.4
9.	Journal of Environmental Sciences.	Elsevier	7.1	3	21.2
10.	BMC Plant Biology		4.2	2	8.4
11.	Plant and Soil	Springer	4.3	1	3.6
12.	International Journal of Phytoremediation	Taylor & Francis	3.8	1	3.8
13.	Genes (MDPI)	(MDPI)	3.6	1	3.6
14.	Journal of Biobased Materials and Bioenergy	American Scientific Publishers	2.2	1	2.2
15.	Journal of Food Composition and Analysis	Elsevier	4.3	1	4.3
16.	Journal of Applied Entomology	Willy	2.4	1	2.4
TOTAL IMPACT FACTOR					180.1