Dr. Mazhar Iqbal

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Working Experience

From 8th February 2013 to 27th January 2014:

Worked as an Assistant Professor in Department of Environmental Sciences, Quaid-i-Azam University, Islamabad, Pakistan.

From 27th January 2014 to 28th May 2015:

Worked as an Assistant Professor in Department of Environmental Sciences, COMSATS Institute of Information Technology, Abbottabad, Pakistan.

From 29th May 2015 to 29th June 2020:

Worked as an Assistant Professor in Department of Environmental Sciences, Quaid-i-Azam University, Islamabad, Pakistan.

From 29th June 2020 to 29th June 2024:

Worked as Associate Professor (Tenured) in Department of Environmental Sciences, Quaid-i-Azam University, Islamabad, Pakistan.

From 30th June 2024 to date:

Working as Professor (Tenured) in Department of Environmental Sciences, Quaid-i-Azam University, Islamabad, Pakistan.

http://www.qau.edu.pk/profile.php?id=931004

Education

2007-2013 **PhD, Phytoremediation, Molecular mechanisms of metal tolerance**
Vrije Universiteit, Amsterdam, The Netherlands

PhD Thesis Title: "Molecular mechanisms of heavy metal tolerance and accumulation in hyperaccumulating and non-hyperaccumulating metallophytes"

Supervisor: Dr. Henk Schat

http://dare.ubvu.vu.nl/handle/1871/39298?show=full

2004-2006 **M.Sc. (Hons.), Soil and Environmental Sciences**

University of Agriculture, Faisalabad, Pakistan

Distinction percentage: 76% (CGPA = 3.56/4.00)

M.Sc. (Hons.) Thesis Title: "Screening of rice (*Oryza Sativa* L.) genotypes against salinity (a hydroponics study)"

Supervisor: Dr. Javaid Akhtar

2000-2004 **B.Sc. (Hons.), Agriculture (Soil Sciences)**

University of Agriculture, Faisalabad, Pakistan

Distinction percentage: 72.29% (CGPA = 3.43/4.00)

Internship Report Title: "Extraction/separation of guar gum from different guar seed varieties/cultivars"

2.5 - months Internship at AARI, Faisalabad, Pakistan

1998-2000 **F.Sc. (Pre-medical)**

BISE Multan

Distinction percentage: 70.45% (Marks obtained = 775/1100)

1996-1998 **Matriculation/SSC (Science)**

BISE Multan

Distinction percentage: 86.70% (Marks obtained = 737/850)

Supervision

	Completed	In Process
MS/MPhil	28	5
PhD	02	4

Analytical/Laboratory Skills

- I have good experience to work with different molecular and cellular biology laboratory equipments, including PCR machines (e.g. Gradient-PCR machine, Quantitative RT-PCR Detection System), DNA Sequencer System, Atomic Absorption Spectrometer (AAS), Nano-drop, Binocular microscope, Laser microscope, Gel Doc system.
- My expertise are in the following laboratory techniques;

- DNA/RNA extraction, making 1st strand cDNA, mini-prep, midi-prep, DNA purification from agarose gel, chromosome walking
- Amplifying unknown sequences (promoters as well as coding region)
- Polymerase Chain Reaction (PCR) e.g., Nested PCR, Quantitative RT-PCR, Step-down PCR, Gradient PCR, Colony PCR, Hot-start PCR, long PCR, Sequencing PCR
- Agarose Gel Electrophoresis for DNA and mRNA
- Sequencing of the different DNA and cloned plasmid fragments
- Blast queries using NCBI and TAIR, and aligning sequences by ClustalW resources
- Cloning e.g., GATEWAY cloning, pGEM-T Easy, cloning using restriction sites
- Southern blotting, Western blotting
- Genetic transformation of model plant *Arabidopsis thaliana* via floral dip method, followed by the screening of T_1 progeny using different antibiotics
- Transient gene expression/protoplast transformations
- Tissue culture (leaf disc method)
- Acid digestions of plant material

- I have extensive experience of working in the climate chambers, in addition to the laboratory work; designing and conducting experiments in the climate chamber as well as in the glasshouse.
- I have good command on hydroponics culture for plants, most of my climate chambers experiments are conducted in hydroponics.

List of Publications

1) Hussain N, Asif M, Shafaat S, Khan MS, Riaz N, **Iqbal M**, Javed A, Butt TA, Shaikh AJ, Bilal M. 2024. Multilayer Adsorption of Reactive Orange 16 Dye onto Fe_2O_3/ZnO Hybrid Nanoadsorbent: Mechanistic Insights from Kinetics, Isotherms and Dynamic Light Scattering Studies. Journal of Chemical Technology and Biotechnology. Accepted. (**IF = 2.8 Q2**)
2) Zhang X, Qu Z, Tang Z, **Iqbal M**. 2024. pH-temperature coupled regulation for promoted nanofluidic osmotic energy conversion. Desalination. 572, 117131. https://doi.org/10.1016/j.desal.2023.117131 (**IF = 8.7 Q1**)
3) Rehman H, Rehman W, Qu Z, Ahmad M, Yousaf S, Jamal A, **Iqbal M***. 2024. Electromagnetic biochar: a novel material for cadmium adsorption from industrial wastewater. International Journal of Environmental Science and Technology. 21, 747-756. https://doi.org/10.1007/s13762-023-05006-4 (**IF = 3 Q2**)
4) Khan AHA, Tanveer S, Kiyani A, Barros R, **Iqbal M**, Yousaf S. 2023. Biosurfactant producing *Aspergillus*, *Penicillium*, and *Candida* performed higher biodegradation of diesel

oil than a non-producing fungal strain. Applied Biochemistry and Microbiology. 59, 282-289. https://doi.org/10.1134/S0003683823030109 (**IF = 1 Q4**)

5) Saleem K, Zaman A, Butt TA, Mirza CR, Iqbal A, Khan AHA, Yousaf S, **Iqbal M***. 2023. Uptake and distribution of cadmium and copper by *Solanum lycopersicum* L. and changes in the metabolite production. Biology Bulletin. 50(3), 390-399. https://doi.org/10.1134/S1062359022602245 (**IF = 0.5 Q4**)
6) Khan AHA, Kiyani A, Santiago-Herrera M, Ibáñez J, Yousaf S, **Iqbal M**, Martel-Martín S, Barros R*. 2023. Sustainability of phytoremediation: post-harvest stratagems and economic opportunities for the produced metals contaminated biomass. Journal of Environmental Management. 326, 116700. https://doi.org/10.1016/j.jenvman.2022.116700 (**IF = 7.9 Q1**)
7) Khan AHA, Kazmi SZ, Mirza CR, Butt TA, Gul N, Barros R, Yousaf Y, **Iqbal M***. 2023. Effect of soil amendments on the enzymatic profile of soil when *Nicotiana alata* L. and *Petunia hybrida* L. were irrigated with synthetic heavy metal-contaminated wastewater. Chiang Mai Journal of Science. 50(1): e2023008. https://doi.org/10.12982/CMJS.2023.008 (**IF = 0.7 Q3**)
8) Javed S, Mirza CR, Khan AHA, Khalifa W, Achour B, Barros R, Yousaf S, Butt TA*, **Iqbal M***. 2022. Limited phosphorous supply improved lipid content of *Chlorella vulgaris* that increased phenol and 2-chlorophenol adsorption from contaminated water with acid treatment. Processes. 10(11), 2435. https://doi.org/10.3390/pr10112435 (**IF = 3 Q2**)
9) Zhang X, Qu Z*, Wang Q, **Iqbal M**. 2022. Geometry design and mechanism analysis of artificial nanoroughness for enhanced osmotic energy conversion. Energy Conversion and Management. 273, 116373 https://doi.org/10.1016/j.enconman.2022.116373 (**IF = 9.8 Q1**)
10) Malik JA, Musharraf S, Safdar R, **Iqbal M***. 2022. Myths and misconception of COVID-19 among hospital sanitary workers in Pakistan: Efficacy of a training program intervention. BMC Health Services Research. 22, 818. https://doi.org/10.1186/s12913-022-08217-6 (**IF = 3.1 Q2**)
11) Yousaf U, Khan AHA, Farooqi A, Muhammad YS, Barros R, Tamayo-Ramos JA, **Iqbal M**, Yousaf S. 2022. Interactive effect of biochar and compost with Poaceae and Fabaceae plants on remediation of total petroleum hydrocarbons in crude oil contaminated soil. Chemosphere. 286, 131782. https://doi.org/10.1016/j.chemosphere.2021.131782 (**IF = 7.7 Q1**)
12) Hussain F, Khan AHA, Hussain I, Farooqi A, Muhammad YS, **Iqbal M**, Arslan M, Yousaf S. 2022. Soil conditioners improve rhizodegradation of aged petroleum hydrocarbons and enhance the growth of *Lolium multiflorum*. Environmental Science and Pollution Research. 29, 9097-9109 https://doi.org/10.1007/s11356-021-16149-7 (**Q1**)
13) Mustafa G, Ali MA, Amith DL, Masood S, Qayyum MF, Ahmed N, Rehman AU, Ahmad S,

Hussain S, Arshad M, Muneer S, Khan AHA, Fahad S, Datta R, **Iqbal M**, Schwinghamer TD. 2021. Formalin fumigation and steaming of various composts differentially influence the nutrient release, growth and yield of muskmelon (*Cucumis melo* L.). Scientific Reports. 11, 21057 https://doi.org/10.1038/s41598-021-99692-0 (**IF = 4.3 Q1**)

14) Saleem K, Iqbal A, Mirza CR, Butt TA, Toqeer M, Yousaf S, Zafar MI, **Iqbal M**[*]. 2021. Role of *Trametes hirsuta* on *Petunia hybrid*a Vilm. in the presence of cadmium and lead. Russian Journal of Plant Physiology. 68, S116-S130. https://doi.org/10.1134/S1021443721070116 (**IF = 1.5 Q3**)
15) Rehman R, Ali MI, Ali N, Badshah M, **Iqbal M**, Jamal A, Huang Z. 2021. Crude oil biodegradation potential of biosurfactant-producing *Pseudomonas aeruginosa* and *Meyerozyma* sp. Journal of Hazardous Materials. 418, 126276. https://doi.org/10.1016/j.jhazmat.2021.126276 (**IF = 11.9 Q1**)
16) Qurban M, Mirza CR, Khan AHA, Khalifa W, Boukendakdji M, Achour B, Yousaf S, Nawaz I, Butt TA, **Iqbal M**[*]. 2021. Metal accumulation profile of *Catharanthus roseus* (L.) G.Don and *Celosia argentea* L. with EDTA Co-Application. Processes. 9, 598. https://doi.org/10.3390/pr9040598 (**IF = 3 Q2**)
17) Khan AHA, Kiyani A, Mirza CR, Butt TA, Barros R, Ali B, **Iqbal M**[*], Yousaf S[*]. 2021. Ornamental plants for the phytoremediation of heavy metals: Present knowledge and future perspectives. Environmental Research. 195, 110780. https://doi.org/10.1016/j.envres.2021.110780 (**IF = 7.5 Q1**)
18) Khan AHA, Kiyani A, Cheema AS, Tareen U, Nawaz I, **Iqbal M**[*], Yousaf S. 2021. Integrative application of soil conditioners and bio-augmentation for enhanced heavy metal stabilization from wastewater and improved growth of *Nicotiana alata* L. and *Petunia hydrida* L. Journal of Plant Growth Regulation. 40, 240-253. https://doi.org/10.1007/s00344-020-10094-4 (**IF = 4.7 Q1**)
19) Aftab N, Saleem K, Khan AHA, Butt TA, Mirza CR, Hussain J, Farooq G, Tahir A, Yousaf S, Zafar MI, Nawaz I, **Iqbal M**[*]. 2021. *Cosmos sulphureus* Cav. is more tolerant to lead than copper and chromium in hydroponics system. International Journal of Environmental Science and Technology. 18, 2325-2334 https://doi:10.1007/s13762-020-02981-w (**IF = 3 Q2**)
20) Haroon H, Shah JA, Khan MS, Alam T, Khan R, Asad SA, Ali MA, Farooq G, **Iqbal M**[*], Bilal M[**]. 2020. Activated carbon from a specific plant precursor biomass for hazardous Cr(VI) adsorption and recovery studies in batch and column reactors: Isotherm and kinetic modeling. Journal of Water Process Engineering. 38, 101577. https://doi.org/10.1016/j.jwpe.2020.101577 (**IF = 6.3 Q1**)
21) Jabbar A, Rehman B, **Iqbal M**, Ahmed R, Mahmood S, Baig MA. 2020. Elemental analysis

of plants cultivated in saline soil by Laser-Induced Breakdown Spectroscopy (LIBS). Analytical Letters. 54, 1351-1365. https://doi.org/10.1080/00032719.2020.1802738 (**IF = 1.9 Q3**)

22) Malik A, Butt TA, Naqvi STA, Yousaf S, Qureshi MK, Zafar MI, Farooq G, Nawaz I, **Iqbal M**[*]. 2020. Lead tolerant endophyte *Trametes hirsuta* improved the growth and lead accumulation in the vegetative parts of *Triticum aestivum* L. Heliyon. 6, e04188. https://doi.org/10.1016/j.heliyon.2020.e04188 (**IF = 3.9 Q1**)
23) Mushtaq MU, Iqbal A, Nawaz I, Mirza CR, Yousaf S, Farooq G, Ali MA, Aqib Khan AHA, **Iqbal M**[*]. 2020. Enhanced uptake of Cd, Cr, and Cu in *Catharanthus roseus* (L.) G.Don by *Bacillus cereus*: application of moss and compost to reduce metal availability. Environmental Science and Pollution Research. 27: 39807-39818. https://doi.org/10.1007/s11356-020-08839-5 (**Q1**)
24) Neelab, Asi MR, Kali S, Riaz MA, Waseem A, Iqbal MM, Ahmad N, **Iqbal M**, Masood N, Zafar MI. 2020. Comparative efficacy of mitigation techniques for the detoxification of *Prunus persica* (L.) from selected pesticide residues. Environmental Science and Pollution Research. 27: 39786-39794. https://doi:10.1007/s11356-020-08720-5 (**Q1**)
25) Hanif H, Waseem A, Kali S, Qureshi NA, Majid M, **Iqbal M**, Rehman T-U, Tahir M, Yousaf S, Iqbal MM, Khan IA, Zafar MI. 2020. Environmental risk assessment of diclofenac residues in surface waters and wastewater: a hidden global threat to aquatic ecosystem. Environmental Monitoring and Assessment. 192, 204. https://doi.org/10.1007/s10661-020-8151-3 (**IF = 3.1 Q3**)
26) Khan AHA, Nawaz I, Qu Z, Butt TA, Yousaf S, **Iqbal M**[*]. 2020. Reduced growth response of ornamental plant *Nicotiana alata* L. upon selected heavy metals uptake, with co-application of ethylenediaminetetraacetic acid. Chemosphere. 241: 125006. https://doi.org/10.1016/j.chemosphere.2019.125006 (**IF = 7.7 Q1**)
27) Iqbal A, Mushtaq MU, Khan AHA, Nawaz I, Yousaf S, Zeshan, **Iqbal M**[*]. 2020. Influence of *Pseudomonas japonica* and organic amendments on the growth and metal tolerance of *Celosia argentea* L. Environmental Science and Pollution Research. 27: 24671-24685. https://doi.org/10.1007/s11356-019-06181-z (**Q1**)
28) Jabbar A, Akhtar M, Mehmood S, **Iqbal M**, Ahmed R, Baig MA. 2019. Quantification of copper remediation in the *Allium cepa* L. leaves using electric field assisted laser induced breakdown spectroscopy. Spectrochimica Acta Part B: Atomic Spectroscopy. 162, 105719. https://doi.org/10.1016/j.sab.2019.105719 (**IF = 3 Q1**).
29) Fareed A, Riaz S, Nawaz I, **Iqbal M**, Ahmed R, Hussain J, Hussain A, Rashid A, Naqvi TA. 2019. Immobilized cells of a novel bacterium increased the degradation of *N*-methylated

carbamates under low temperature conditions. Heliyon 5, e02740. https://doi.org/10.1016/j.heliyon.2019.e02740 (**IF = 3.9 Q1**)

30) Raza A, Khan AHA, Nawaz I, Qu Z, Yousaf S, Ali MA, Sayal AU, **Iqbal M**[*]. 2019. Evaluation of Arsenic-induced stress in *Dahlia pinnata* Cav.: Morphological and physiological response. Soil and Sediment Contamination: An International Journal. 28: 716-728. https://doi.org/10.1080/15320383.2019.1657380 (**IF = 2.4 Q4**)
31) Muazzam B, Munawar K, Khan IA, Jahan S, **Iqbal M**, Asi MR, Farooqi A, Nazli A, Hussain I, Zafar MI. 2019. Stress response and toxicity studies on zebrafish exposed to endosulfan and imidacloprid present in water. Journal of Water Supply Research and Technology-AQUA. 68 (8): 718-730. https://doi.org/10.2166/aqua.2019.077 (**IF = 2.1 Q2**)
32) Hayat A, Hussain I, Soja G, **Iqbal M**, Shahid N, Syed JH, Yousaf S. 2019. Organic and chemical amendments positively modulate the bacterial proliferation for effective rhizoremediation of PCBs-contaminated soil. Ecological Engineering.138: 412-419. https://doi.org/10.1016/j.ecoleng.2019.07.038 (**IF = 4.1 Q2**)
33) Khan AHA, Nawaz I, Yousaf S, Cheema AS, **Iqbal M**[*]. 2019. Soil amendments enhanced the growth of *Nicotiana alata* L. and *Petunia hydrida* L. by stabilizing heavy metals from wastewater. Journal of Environmental Management. 242: 46-55. https://doi.org/10.1016/j.jenvman.2019.04.040 (**IF = 7.9 Q1**)
34) Nawaz I, **Iqbal M**[*], Hakvoort HWJ, de Boer AH, Schat H. 2019. Analysis of *Arabidopsis thaliana HKT1* and *Eutrema salsugineum/botschantzevii HKT1;2* promoters in response to salt stress in *Athkt1:1* mutant. Molecular Biotechnology. 61(6), 442-450. https://doi.org/10.1007/s12033-019-00175-5 (**IF = 2.6 Q3**)
35) Khan AHA, Butt TA, Mirza CR, Yousaf S, Nawaz I, **Iqbal M**[*]. 2019. Combined application of selected heavy metals and EDTA reduced the growth of *Petunia hybrida* L. Scientific Reports. 9:4138. https://doi.org/10.1038/s41598-019-40540-7 (**IF = 4.3 Q1**)
36) Ali Z, Nawaz I, Yousaf S, Naqvi STA, Mahmood T, Khan N, **Iqbal M**[*]. 2019. Wheat straw biochar promotes the growth and reduces the uptake of lead, cadmium and copper in *Allium cepa* L. International Journal of Agriculture and Biology. 21: 1173-1180.
37) Khan AHA, Ayaz M, Arshad M, Yousaf S, Khan MA, Anees M, Sultan A, Nawaz I, and **Iqbal M**[*]. 2019. Biogeochemical cycle, occurrence and biological treatments of polycyclic aromatic hydrocarbons (PAHs). Iranian Journal of Science and Technology, Transactions A: Science. 43(3), 1393-1410. https://doi.org/10.1007/s40995-017-0393-8 (**IF = 1.3 Q2**)
38) Hussain F, Hussain I, Khan AHA, Muhammad YS, **Iqbal M**, Soja G, Reichenauer TG, Sheikh, Yousaf S. 2018. Combined application of biochar, compost, and bacterial consortia with Italian ryegrass enhanced phytoremediation of petroleum hydrocarbon contaminated

soil. Environmental and Experimental Botany. 153: 80-88. https://doi.org/10.1016/j.envexpbot.2018.05.012 (**IF = 5.2 Q1**)

39) Li Y, **Iqbal M**, Zhang Q, Spelt C, Bliek M, Hakvoort HWJ, Quattrocchio FM, Koes R and Schat H. 2017. Two *Silene vulgaris* copper transporters residing in different cellular compartments confer copper hyper-tolerance by distinct mechanisms when expressed in *Arabidopsis thaliana*. New Phytologist. 215:1102-1114 https://doi:10.1111/nph.14647 (**IF = 10.2 Q1**)
40) Nawaz I, **Iqbal M**, Bliek M, and Schat H. 2017. Salt and heavy metal tolerance and expression levels of candidate tolerance genes among four extremophile Cochlearia species with contrasting habitat preferences. Science of the Total Environment. 584-585: 731-741. https://doi.org/10.1016/j.scitotenv.2017.01.111 (**IF = 8.6 Q1**)
41) Khan AHA, Tanveer S, Alia S, Anees M, Sultan A, **Iqbal M**, Yousaf S. 2017. Role of nutrients in bacterial biosurfactant production and effect of biosurfactant production on petroleum hydrocarbon biodegradation. Ecological Engineering. 104: 158-164. https://doi.org/10.1016/j.ecoleng.2017.04.023 (**IF = 4.1 Q2)**
42) Arshad M, Khan AHA, Hussain I, Zaman B, Anees M, **Iqbal M**, Soja G, Lindef C, Yousaf S. 2017. The reduction of chromium (VI) phytotoxicity and phytoavailability to wheat (*Triticum aestivum* L.) using biochar and bacteria. Applied Soil Ecology. 114: 90-98. https://doi.org/10.1016/j.apsoil.2017.02.021 (**IF = 4.9 Q1**)
43) Khan AHA, Tanveer S, Anees M, Muhammad YS, **Iqbal M,** Yousaf S. 2016. Role of nutrients and illuminance in predicting the fate of fungal mediated petroleum hydrocarbon degradation and biomass production. Journal of Environmental Management. 176: 54-60. https://doi.org/10.1016/j.jenvman.2016.03.040 (**IF = 7.9 Q1**)
44) Khan AHA, Anees M, Arshad M, Muhammad YS, **Iqbal M,** Yousaf S. 2016. Effects of illuminance and nutrients on bacterial photo-physiology of hydrocarbon degradation. Science of the Total Environment. 557-558: 705-711. https://doi.org/10.1016/j.scitotenv.2016.03.068 **(IF = 8.6 Q1**)
45) Ajmal A, Majeed I, Malik RN, **Iqbal M**, Nadeem MA, Hussain I, Yousuf S, Zeshan, Mustafa G, Zafar MI, Nadeem MA. 2016. Photocatalytic degradation of textile dyes on Cu_2O-CuO/TiO_2 anatase powders. Journal of Environmental Chemical Engineering. 4(2): 2138-2146. https://doi.org/10.1016/j.jece.2016.03.041 **(IF = 7.3 Q1**)
46) Khan S, Zaffar H, Irshad U, Ahmad R, Khan AR, Shah MM, Bilal M, **Iqbal M**, Naqvi T. 2016. Biodegradation of malathion by *Bacillus licheniformis strain* ML-1. Archives of Biological Sciences. 68(1), 51-59. https://doi.org/10.2298/ABS141218007K (**IF = 0.8 Q4**)
47) Ahmad N, Ullah F, Hussain I, Ahmad K, Raza G, Sajjad Y, **Iqbal M**, Adil M, Ali M. 2016.

Soybean (*Glycine max*) Extracts Impacts on Plant and Soil Biology. Communications in Soil Science and Plant Analysis. 47(15):1751-1763. https://doi.org/10.1080/00103624.2016.1206920 (**IF = 1.9 Q4**)

48) Ali A, **Iqbal M**, Ali Q, Razzaq A, Nasir IA. 2016. Gene Profiling for Invertase Activity: Assessment of Potato Varieties for Resistance towards Cold Induced Sweetening. Advancements in Life Sciences. 3(2): 63-70. http://www.alsjournal.com/articles/vol3issue2/325.16/325.16.pdf **(IF = 0.8 Q3)**

49) Nawaz I, **Iqbal M**, Hakvoort HWJ, Bliek M, de Boer B, Schat H. 2014. Expression levels and promoter activities of candidate salt tolerance genes in halophytic and glycophytic Brassicaceae. Environmental and Experimental Botany. 99:59-66. http://dx.doi.org/10.1016/j.envexpbot.2013.10.006 (**IF = 5.2 Q1**)

50) **Iqbal M**, Nawaz I, Hassan Z, Hakvoort HWJ, Bliek M, Aarts MGM, Schat H. 2013. Expression of *HMA4* cDNAs of the zinc hyperaccumulator *Noccaea caerulescens* from endogenous *NcHMA4* promoters does not complement the zinc-deficiency phenotype of the *Arabidopsis thaliana hma2hma4* double mutant. Frontiers in Plant Science. 4:404. https://doi.org/10.3389/fpls.2013.00404 (**IF = 5.3 Q1**)

51) **Iqbal M,** Akhtar J, Haq MA, Nasim M, Saeed A, Naveed M. 2007. Variation in growth and ion uptake in rice cultivars under NaCl stress in hydroponics. Pakistan Journal of Agricultural Sciences. 44:393-405. http://pakjas.com.pk/papers%5C280.pdf (**IF = 0.8 Q3**)

Total IF = 207.2

Scopus ID: 56371189100, **h-index:** 21, **ORCID:** 0000-0001-5891-9798

Book Chapters

1. Aqib Hassan Ali Khan*, Amna Kiyani, Blanca Velasco Arroyo, Carlos Rad, Muhammad Abeer Khan, Sandra Curiel-Alegre, **Mazhar Iqbal**, Rocío Barros. (**2024**). Chapter 11: **Sustainable decentralized urban water and wastewater treatment in off-grid areas of developing countries using NBS and integrated green technologies**. In: Stefanakis, A., Oral, H.V., Calheiros, C., Carvalho, P. (eds) Nature-based Solutions for Circular Management of Urban Water. Circular Economy and Sustainability. Springer, Cham. https://doi.org/10.1007/978-3-031-50725-0_11

2. Bushra Rehman, **Mazhar Iqbal***, and Ismat Nawaz (**2019**) Chapter 15: **Toxicity, Eco-toxicity, and Phytoremediation of E-Waste**. In: Hashmi, M., Varma, A. (eds) Electronic Waste Pollution. Soil Biology, vol 57. Springer, Cham. https://doi.org/10.1007/978-3-030-26615-8_15

3. Muhammad Arif Ali, Fariha Ilyas, Muhammad Arshad, Sajjad Hussain, **Mazhar Iqbal**, Shakeel Ahmad, Abdul Saboor, Ghulam Mustafa, and Niaz Ahmed (**2019**) Chapter: **Microbial Inoculation of Seeds for Better Plant Growth and Productivity**. In: Hasanuzzaman, M.,

Fotopoulos, V. (eds) Priming and Pretreatment of Seeds and Seedlings. Springer, Singapore. https://doi.org/10.1007/978-981-13-8625-1_26

Conferences/Workshops

1) Organized "International Conference on Waste Business and Management" on Sep. 12 - 13, 2023, at Quaid-i-Azam University, Islamabad, Pakistan.
2) Organized one day seminar on "Challenges, Opportunities and Trends in Biotechnology in Pakistan" on March 22, 2023, at Serena Hotel, Islamabad, Pakistan.
3) Organized "2nd International Conference on Climate Change & Environment" on January 11 - 13, 2023, at Quaid-i-Azam University, Islamabad, Pakistan.
4) Organized "1st International Conference on Climate Change & Environment" on February 2-3, 2022, at Quaid-i-Azam University, Islamabad, Pakistan.
5) Muhammad Umair Mushtaq, Ameena Iqbal, Aqib Hassan Ali Khan, Ismat Nawaz, Sohail Yousaf, **Mazhar Iqbal***. *Bacillus cereus* enhanced uptake of Cd, Cr and Cu in *Catharanthus roseus* L. while moss and compost improved plant growth by reducing metal uptake. International Conference on Environmental Toxicology and Health (ESCON, 2019), February 25-27, 2019, Vehari, Pakistan.
6) **Mazhar Iqbal**, Muhammad Umair Mushtaq, Ameena Iqbal, Ismat Nawaz. Influence of *Pseudomonas japonica* on growth and metal tolerance of *Celosia cristata* L. The 11th International Conference on the Challenges in Environmental Science and Engineering (CESE-2018), 4-8 November, Bangkok, Thailand.
7) **Mazhar Iqbal**, Amna Raja, Ismat Nawaz. Biochar mediated phytoremediation of heavy metal contaminated soil using *Nicotiana tabacum* expressing *NcHMA4*. 2nd International Congress & Expo on Biotechnology and Bioengineering, 25-27 September 2017, Valencia Spain (Oral)
8) Preparing Biological Laboratories for Certification in Biorisk Management. December 10-13, 2016, Marriot Hotel, Karachi
9) Hands on Training Workshop on Agriculture Production System Simulator (APSIM) Modeling. August 30-September 01, 2016, University of Agriculture, Faisalabad
10) **Mazhar Iqbal,** Henk WJ Hakvoort, Henk Schat. Expression of *HMA4* cDNAs under the *HMA4* promoter from a zinc hyperaccumulator (*Noccaea caerulescens*) does not fully restore Zn translocation in the *Arabidopsis thaliana hma2hma4* double mutant. 4th and 5th April 2011 in Lunteren, The Netherlands (Oral and poster).
11) **Mazhar Iqbal**, Miluscia Arnetoli, Henk WJ Hakvoort, Henk Schat. The Role of the 1b P-type Heavy Metal Transporting ATPase HMA4 in heavy metal hypertolerance and translocation in non-hyperaccumulator metallophytes. 11th International Conference on the

Biogeochemistry Trace Elements (ICOBTE-2011). 3-7 July 2011 in Conference Center-Florence Italy (Oral).

12) Ilaria Colzi, Sara Pignattelli, **Mazhar Iqbal**, Miluscia Arnetoli, Cristina Gonnelli, Henk Schat. *HMA2* expression in metallicolous and nonmetallicolous non-hyperaccumulator metallophytes. COST Action FA0905 Mineral Improved Crop Production for Healthy Food and Feed. 23-26 November 2011, Instituto Veneto di Scienze, Lettere ed Arti Palazzo Cavalli Franchetti - Venice, Italy (Poster).
13) Sara Pignattelli, Ilaria Colzi, **Mazhar Iqbal,** Miluscia Arnetoli, Cristina Gonnelli, Henk Schat. The role for HMA5 in copper hypertolerance in the metallophyte *Silene paradoxa*. COST Action FA0905 Mineral Improved Crop Production for Healthy Food and Feed. 23-26 November 2011, Instituto Veneto di Scienze, Lettere ed Arti Palazzo Cavalli Franchetti - Venice, Italy (Poster).

Research Grants

1) Transgenic expression of *Noccaea caerulescens* heavy metal tolerant gene (*HMA4*) in tobacco (PKR 0.425 M, from HEC). (**Completed, 2015**)
2) Risk assessment of transgenic potato on microbial community, enzymatic activity and physical/chemical properties of soils from major potato growing areas of Pakistan (USD 15,855 from CERA under The Biosafety Research in Pakistan Grants Program). (**Completed, 2020**)
3) Assessment and Training of occupational safety measures for sanitary staff working at COVID-19 health care facilities, funded by WHO, Project No. RPPH 20-23. US$ 15,000. (**Completed 2022**)
4) Combined effect of biochar as inoculant carrier of GFP tagged metal remediating bacteria and expression of metal tolerance proteins, to reduce phytoavailability of heavy metals (NRPU by HEC 2016-17, Project No. 6208, PKR 3.6 M). (**Completed 2023**)

Courses Taught

BS/MSc Level	MPhil/MS/PhD Level
➢ Environmental Biotechnology ➢ Environmental Toxicology ➢ Biological Diversity and Conservation ➢ Natural Resource Management ➢ Energy Resources ➢ Climatology	➢ Bioinformatics Tools in Environmental Science ➢ Heavy Metal Toxicology ➢ Water & wastewater treatment processes ➢ Environmental Contaminants and Genetic Engineering

➢ Recombinant DNA Technology ➢ Research Methodology in Environmental Sciences ➢ Introduction to Environmental Science	➢ Gene Expression and Regulation