

# CURRICULUM VITAE

**MALIK MUHAMMAD AKHTAR, PhD**

**Associate Professor**

*Department Environmental Science*

**Balochistan University of Information Technology, Engineering  
and Management Sciences (BUITEMS), Quetta, Pakistan**

**Hydrologist/Environmentalist**

**Academic Editor**

**PLOS ONE (ISSN: 1932-6203); Impact Factor: 2.91**

## SHORT PROFILE

Dr. Malik Muhammad Akhtar has an outstanding professional, scientific, research, teaching, administration, and management background experience of more than 19 years in the water resources and environment fields. His experience spreads across hydrological modelling, water resources management, climate change vulnerability and adaptation assessment, WASH, drought and flood risk identification, sustainable land and water management, solid waste management, remote sensing and GIS, and natural resources management and water governance. In particular, he has a rich working experience in the river basins including Indus (Pakistan), Pashin Loara Basin (Pakistan), and Jiangnan and Dongting (China), which provided him a good understanding about the real issues and practical challenges. I developed a groundwater flow and MT3D model for Lahore, the second-largest city in Pakistan, to analyze the water budget, underground aquifer dynamics, and pollutant transport. Additionally, I created a DRASTIC model to evaluate aquifer vulnerability, aiding urban planning and land management efforts. For the Quetta aquifer, I utilized GIS to identify potential recharge zones, contributing to sustainable groundwater recharge and water resource management. He is nominated as Expert in Balochistan Water Task Force (Balochistan, Pakistan). He has participated in five international projects funded by Geological Survey of China, ACIAR, ADB, (ERASMUS):European Commission and completed 9 national research projects as PI and CO-PI funded by NRPU-HEC, ORIC-HEC, PSF, ICRMS-BUITEMS, Islamic Relief (USA) and NCPC.

Malik's on-going and previous science and management roles in water organizations across the globe have equipped him with leadership skills necessary to manage and deliver large multidisciplinary water, climate change and food security projects involving multiple stakeholders, funding agencies and government agencies in developing countries. He has developed strong collaborations with partners across research, governments, investors and the private sector bringing their knowledge, models and insight together in adaptation solutions. He has extensive management and problem-solving skills, decision-making and team leadership capabilities. He holds a PhD degree in Environmental Engineering and PostDoc in Hydraulic Engineering (Hydrology and Water Resources Management) from China University of Geosciences, Wuhan, China. He is PhD approved supervisor from HEC, Pakistan. He has a good scientific publication record of more than 40 publications, and he has also supervised or co-supervised over twenty-five Undergraduate and Postgraduate students. He is a member of different committees at BUITEMS. He is a member of national and international universities/organizations, Selection Board, Board of Studies and Research advisors. He is editor/reviewer/member of editorial board of well reputed international Journals. He has diverse experience as a scientist, faculty member, policy adviser and manager in multi-cultural national and international institutions.

## Disciplines

- Environmental Engineering/Science
- Water Science
- Hydrogeology
- Water Supply and Sanitation
- Water Modelling
- Climatology
- GIS and Remote Sensing Applications
- Solid Waste Segregation and Management
- Agricultural Engineering
- Forestry



## DR. MALIK MUHAMMAD AKHTAR

### Associate Professor

Department Environmental Science, Balochistan University of Information Technology, Engineering and Management Sciences (BUITEMS), Quetta, Pakistan

### PERSONAL INFORMATION

Academic Qualification: PhD, Postdoc  
Nationality: Pakistani  
Gender: Male

### PROFILE

An experienced professional with expertise in hydrological modeling, water resources management, Water sanitation and hygiene, climate change vulnerability and adaptation assessments, drought and flood risk analysis, and sustainable land and water management. His skill set also includes remote sensing and GIS applications, natural resources management, and water governance, with a focus on providing innovative solutions for environmental sustainability and resilience.

### RESEARCH STATISTIC

Total Publication: 40+  
Total Citation: 876+  
H Index: 17  
i10 Index: 22

### AWARDED PROJECTS

Participated International: 5  
Awarded National: 15

### Academic Editor

PLOS ONE (SCI, IF 2.91)(JCR Q1)

### CONTACT

#### PHONE:

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#### ADDRESS:

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BUITEMS, Quetta, Pakistan

#### EMAIL:

muhammad.akhtar@buitms.edu.pk  
drmalikma21@gmail.com

**ORCID:** 0000-0002-2235-1499

### EDUCATION

#### POSTDOC. Hydraulic Engineering

March, 2014- March, 2016

School of Environmental Studies

China University of Geosciences, Wuhan (地大, 武汉)

Funded by Hubei provincial Government

#### Ph.D. Environmental Engineering

Sept 2010-December 2013

School of Environmental Studies

China University of Geosciences, Wuhan (地大, 武汉)

Funded by Chinese Government Scholarship (CSC)

### AWARDS AND ACHIEVEMENTS

- Awarded Research Grant from Pakistan Science Foundations, Pakistan (2024)
- Awarded research funding by Türkiye Bursları at Climate Change and Policies Research Center, BOĞAZİÇİ UNIVERSITY, Turkey (2023).
- Awarded postdoc position and Provincial Project funds from Hubei Government at School of Petrol Engineering, China University of Geosciences, Wuhan
- Awarded postdoc position and Provincial Project funds from Hubei Government at School of Environmental Studies, China University of Geosciences, Wuhan.
- Awarded Research Grant Under NRPU-HEC from Higher Education Commission of Pakistan (2019).
- Technical Expert in Water Task Force, Balochistan constituted by the Government of Balochistan, Pakistan (April 2019)
- HEC Approved PhD supervisor from Government of Pakistan (May 2017)
- Awarded PhD scholarship by China Scholarship Council (CSC). (2010).
- Editor and Reviewers of various international journals (SSCI & SCI).

## PROFESSIONAL EXPERIENCE

- **December 2021 to Continue**

Associate Professor at the Department of Environmental Science, BUIEMS, Quetta, Pakistan

- **December 2021 to January 2022**

Chairperson/Associate Professor at the Department of Environmental Science, BUIEMS, Quetta, Pakistan

- **Oct 2017 to December 2021**

Chairperson/Assistant Professor at the Department of Environmental Science, BUIEMS, Quetta, Pakistan

- **July 2016 to Oct 2017**

Assistant Professor at the Assistant Professor Department of Environmental Management and Policy, BUIEMS, Pakistan.

- **March 2014 to March 2016**

POSTDOC Scholar, School of Environmental Studies, China University of Geosciences, Wuhan, China.

- **Sep 2010 to Dec 2013**

PhD Scholar/Research Associate, School of Environmental Studies, China University of Geosciences, Wuhan, China.

- **December 2005 to January 2010**

Research Officer, K-tron Research Incorporated, Islamabad, Pakistan.

- **December 2023 to December 2024**

**Guest Researcher:** Climate Change and Policies Research Center, Boğaziçi University, Istanbul, Turkey

- **May 2023 - Present**

**President:** China University of Geosciences Pakistan Alumni Association , Wuhan, Hubei, China · Hybrid

## PUBLISHED ARTICLES

- Malik Muhammad Akhtar**, Tanzeel khan, et. al., (2025). Hydrologic Impacts of Climate Change and Urbanization on Quetta Watershed. *Jordan Journal of Earth and Environmental Sciences (JJEES)*. Accepted and online July-2025 **IF: 0.29 JCR Q3.**
- Taimoor Shah Durrani, **Malik Muhammad Akhtar** et al (2024). Geochemical evolution, geostatistical mapping and machine learning predictive modeling of groundwater fluoride, A case study of western Balochistan, Quetta. *Environmental Geochemistry and Health* **IF: 4.0 JCR Q1.**
- Li, H., Muhammad, **Akhtar Malik Muhammad**, & Tang, Z. (2024). Variation of groundwater and mineral composition of in situ leaching uranium in Bayanwula mining area, China. *PloS one*, 19(7), e0303595. <https://doi.org/10.1371/journal.pone.0303595> **IF: 3.75 JCR Q1.**
- Laraib Ehtasham, **Malik Muhammad Akhtar\***, Salman Tariq (2024). Spatio-temporal analysis of PM2.5 and its association with elevation by using remote sensing: The scenario of Quetta, Pakistan. *Air Quality, Atmosphere & Health*. **IF: 3.5 JCR Q1.**
- Noureen Khan, Ziviaq Sheikh, Musarat Riaz, **Akhtar Malik Muhammad** et al., (2024). Biofabrication of zero-valent metallic NPs on oxygen and sulfur rich plant biomass as dip-catalyst in photocatalytic reduction of nitrophenol and discoloration of organic dyes. *PLOS ONE*. **IF: 3.75 JCR Q1.**
- Noureen Khan, Nelofer Jamil, Rukhsana Jabeen, **Malik Muhammad Akhtar**, Hussain Ali, Rashad Mehmood, Raha Orfali, 8Shagufta Perveen, 8Jiangnan Peng, Areej M. Al-Taweel. "A cost effective o-toulidine based Schiff base as an efficient sorbent for metal ion uptake from aqueous and soil samples: synthesis, antimicrobial and acute toxicity studies". *Frontiers in Environmental Science* (2023). DOI: 10.3389/fenvs.2023.1128256 **IF: 6.3 JCR Q2**
- Malik Muhammad, Akhtar**, Zhonghua Tang, and Tianyun Xiao. "Evaluation of the factors affecting arsenic distribution using geospatial analysis techniques in Dongting Plain, China." (2022): 1942. **IF: 6.3 JCR Q2**
- Xiao, Tianyun, **Akhtar Malik Muhammad**, Xiao Pan, Yu Wang, Hu Guangming, and Zhonghua Tang. "Spatial distribution and risk identification of arsenic contamination in water and soil through GIS-based interpolation techniques in Jiangnan Plain, Central China." *Frontiers in Environmental Science* (2022): 1614. DOI 10.3389/fenvs.2022.1001862 **IF: 6.3 JCR Q2**
- Sohail, Muhammad Tayyab, Asrar Hussan, Muhsan Ehsan, Nadhir Al-Ansari, **Malik Muhammad Akhter**, Zaira Manzoor, and Ahmed Elbeltagi. "Groundwater budgeting of Nari and Gaj **IF: 5.411 JCR Q1**

formations and groundwater mapping of Karachi, Pakistan." *Applied Water Science* 12, no. 12 (2022): 1-24.

Zaira Manzoor, Muhsan Ehsan, Muhammad Bashir Khan, Aqsa Manzoor, **Malik Muhammad Akhtar**, Muhammad Tayyab Sohail, Asrar Hussain, Tamer Abu-Alam, Mohamed Abioui (2022). Floods and flood management and its socio-economic impact on Pakistan: A review of the empirical literature. *Frontiers in Environmental Science*.

**Malik Muhammad Akhtar**, ZhonghuaTang, ZAKARI Sissou, BahaaMohamadi (2015). Assess arsenic distribution in drinking water applying GIS in capital of Punjab, Pakistan. *Nat. Hazards Earth Syst. Sci. Discuss.*, 2119-2147, 2015.

**Akhtar Malik Muhammad**, Tang Zhonghua. Analysis of Geological Structure and Anthropological Factors Affecting Arsenic Distribution in Lahore's Aquifer. *Hydrogeology Journal*. 24.7 (2016): 1891-1904

Jing Yang; Zhonghua Tang; Tian Jiao; **Malik Muhammad Akhtar** .2017. "Combining AHP and Genetic Algorithms Approaches to Modify DRASTIC Model to Assess Groundwater Vulnerability: A Case Study from Jiangnan Plain, China", *Environmental Earth Sciences*.

Muhsan Ehsan, Hanming Gu, **Malik Muhammad Akhtar**, Saiq Shakeel Abbasi. The identification of Hydrocarbon Potential of Talhar Shale member of Lower Goru Formation by using Well Log derived parameters, Lower Indus Basin, Pakistan. *Journal of Earth Sci.* (2016). doi:10.1007/s12583-016-0910-2.

Muhsan Ehsan , Hanming Gu , **Malik M. Akhtar**. A modified approach for volumetric evaluation of shaly sand formations from conventional well logs: a case study from the Talhar Shale, Pakistan. *Arabian Journal for Science and Engineering*.

ur Rehman, Jalil, Nisar Ahmad, Muhammad Khalid, Zaheer Abbas Gilani, Irfan Ullah, Gulfam Nasar, **Malik Muhammad Akhtar**, and Muhammad Nauman Usmani. "Intensity modulated radiation therapy: A review of current practice and future outlooks." *Journal of radiation research and applied sciences* (2018).

Alshameri, Aref, Alkhafaji R. Abood, Chunjie Yan, and **Akhtar Malik Muhammad**. "Characteristics, modification and environmental application of Yemen's natural bentonite." *Arabian Journal of Geosciences* (2013): 1-13.

**Malik Muhammad Akhtar** ; Abida Dost Mohammad ; Muhsan Ehsan ; Rabia Akhtar, Jalil ur Rehman. Water Resources Of Balochistan, Pakistan—A Review. *Arabian Journal of Geosciences*, 14, 4 (2021): 1-16

**Malik Muhammad Akhtar**, ZhonghuaTang, BahaaMohamadi . Contamination Potential Assessment of Potable Groundwater in Lahore, Pakistan. *Pol. J. Environ Stud*. Vol.23, No.6 (2014), 1905-1916.

Ehsan, Muhsan; Gu, Hanming; **AKHTAR, Malik Muhammad** ; Abbasi, Saiq Shakeel. An integrated approach to evaluate the unconventional hydrocarbon generation potential of the Lower Goru Formation (Cretaceous) in Southern Lower Indus Basin, Pakistan. *Journal of Earth System Science*, 130(2), 1-16.

**Akhtar Malik Muhammad**, Rabia Akhtar, Muhammad Tayyab Sohail, Muhsan Ehsan, Tanzeel Khan (2023). GIS-based multi criteria decision analysis techniques used to identify potential groundwater recharge zones in Quetta Valley, Pakistan. *Desalination and Water Treatment*, 1–13. DOI:10.5004/dwt.2023.29765

Faizan Dawood, **Akhtar Malik Muhammad**, Muhsan Ehsan, Naik Muhammad , Rabia Akhtar. Evaluating temporal urbanization impacts on groundwater in Quetta, Pakistan: using GIS and Remote Sensing techniques. *Desalination and Water Treatment*, 222:103-113. DOI: 10.5004/dwt.2021.27068

Muhsan Ehsan , Hanming Gu , **Malik M. Akhtar** , Saiq S. Abbasi , Umair Ehsan."A geological study of reservoir formations and exploratory well depths statistical analysis in Sindh Province, Southern Lower Indus Basin, Pakistan" (2018), *Kuwait J. Sci.* 45 (2) pp 89-99, 2018

**Akhtar Malik Muhammad**, Tang Zhonghua, Ammar Salman Dawood and Bailey Earl. Evaluation of local groundwater vulnerability based on DRASTIC index method in Lahore, Pakistan. *Geofísica Internacional* (2015) 54-1: 153-162.

Khan, T., **Malik Muhammad Akhtar**, Malghani, G., & Akhtar, R. (2022). Comparative analysis of bacterial contamination in tap and groundwater: A case study on water quality of Quetta City, an arid zone in Pakistan. *Journal of Groundwater Science and Engineering*, 10(2), 153-165.

- Abida Dost Mohammad\*, Rida Faisal and **Malik Mohammad Akhtar** (2020). Appraisal of Fluoride Contamination in Ground water Using Statistical Approach in Rural Areas of Quetta, Balochistan. *Pakistan Journal of Analytical & Environmental Chemistry*, 21(2), 314-321. **IF: 0.7 JCR Q4**
- Akhtar, M.M.**, Tang, Zonghua, **2013**, "Identification of contamination sources and TDS concentration in groundwater of second biggest city of Pakistan" ICESE 2013 (Round III), 21-22, April 2013, Beijing, China. *International Journal of Environmental Science and Development*. **IF: 0.86 JCR Q3**
- Akhtar Malik Muhammad**, Amin Sheikh (2023) Assessment Of Land Use /Land Cover Dynamics Impacts In Zhob River Basin, Pakistan. **Songklanakarin Journal Of Science And Technology**, Vol. 45 No. 1 **IF: 0.67 JCR Q3**
- Akhtar Malik Muhammad** and Tang Zhonghua, 2013 "A study to investigate and compare groundwater quality in adjacent areas of landfill sites in Lahore city " *Nature Environment and Pollution Technology*, Vol. 13, No. 1 (March), Year 2014. Technoscience Publications. **IF: 0.74 JCR Q4**
- Jalil ur Rehman, Zahra Syed, Ghulam Hussain, Nisar Ahmad, H M Noor ul Huda Khan Asghar, Zaheer Abbas Gilani, Gulfam Nasar , **Malik M Akhter** , Muhammad Isa and Tahir Iqbal. (2018). Dose verification of volumetric-modulated arc therapy using one-dimensional and two-dimensional dosimeters. *Journal of Radiotherapy in Practice*, 1-5 **IF: 0.404 JCR Q4**
- ur Rehman, J., Ahmad, N., Gilani, Z. A., Nasar, G., & **Akhter, M. M.** (2019). Quality assurance of intensity modulated radiation therapy treatment planning using head and neck phantom. *Journal of Radiotherapy in Practice*, 1-7. **IF: 0.404 JCR Q4**
- ShahKhan, S., Akhtar, F., Iqbal, S., **Akhtar, M. M.**, Moghira, B., Uddin, M., & ShahKhan, S. Role of Nox and O3 in Micro Climate Change: Policy Dimension and Human Facet Impact for Quetta (Pakistan), *Indian Journal of Natural Sciences*, 9(50), 14557-14572. **2.45**
- Yu Peng, Tang Zhonghua, **Akhtar Malik Muhammad**, MuhsanEhsan. Study on the Temperature Distribution of High Pour Point Oil by Integrated Method Based on Well Log, Geological Data and Experiment. *Research Journal of Applied Sciences, Engineering and Technology* 7(23): 4945-4965, 2014. **0.443**
- Muhammad Tayyab Sohail, Delin Huang, Muhammad AfnanTalib, **Malik Muhammad Akhtar**. *An Analysis Of Environmental Law In Pakistan - Policy And Conditions Of Implementation*. *Research Journal of Applied Sciences, Engineering and Technology*. Maxwell Science Publication, 8.5 (2014): 644-653. **0.443**
- Akhtar Malik Muhammad** and Tang Zhonghua, 2013."Municipal Solid Waste and Its Relation with Groundwater Contamination in Lahore, Pakistan" has been accepted to publish in *Research Journal of Applied Sciences, Engineering and Technology*. Maxwell Science Publication (Feb. 2013). **0.443**
- Muhammad TayyabSohail, Huang Delin, Earl Bailey and **Malik Muhammad Akhtar**, 2013. Critical Evaluation of the Policy Environmental for Mineral Resources Sector in Pakistan, *American Journal of Industrial and Business Management*. Scientific Research Publishing. Vol. 4, No. 3, 2013, ISSN 2167-6429 **Indexing ISI-Impact Factor: 4.003**
- Muhammad TayyabSohail, Delin Huang, Earl Bailey, **Malik Muhammad Akhtar**, Muhammad AfnanTalib. Regulatory Framework of Mineral Resources Sector in Pakistan and Investment Proposal to Chinese Companies in Pakistan *American Journal of Industrial and Business Management*, 2013, 3,p.514-524. **Indexing ISI-Impact Factor: 4.003**
- Malik Muhammad Akhtar** and Tang, Zhonghua, 2013. A study to estimate overall environmental pollution potential in second biggest city of Pakistan. *European International Journal of Science and Technology*. Vol. 2 No. 3 April 2013. **(Index by ISTP, WEB OF SCIENCE)**.
- Akhtar Malik Muhammad** and Abida Dost Muhammad (2018), "Depleting Water Resources in Balochistan" *Development Dialogue (PPAF)*, 3(2), 15
- Zubair Ahmed; **Akhtar Malik Muhammad**; Aimal Khan Kasi; Muhsan Ehsan; Muhammad Ibrahim; Rabia Akhtar; Jalil Ur Rehman (2020). Evaluating Groundwater Vulnerability Using Drastic Risk Model In Quetta Valley, Balochistan. *EVALUATION*, 4(1).

#### NATIONAL AND INTERNATIONAL CONFERENCES

- Invited Keynote Speaker in the Two-day International Conference on title "ECOLOGICAL, ENVIRONMENTAL PROTECTION AND GREEN SPACE: PROBLEMS, SOLUTIONS AND RESULTS, INTERNATIONAL SCIENTIFIC AND TECHNICAL CONFERENCE (2025), 30-31 May 2025. Organized by the Republic of Uzbekistan Ministry of Higher Education,



Science and Innovation Karshi State Technical University, Hohehneheim University (Germany), University of Warmia and Mazury in Olsztyn (Poland), University of Arkansas (USA), Ecology, Environmental Protection, Climate Change Kashkadarya Regional Department. Title of my talk **"Geospatial Solutions for Land and Water Resource Sustainability"**

- Invited Keynote Speaker in the three-day International Conference on the title "Academic Symposium on Urban-Rural Integrated Development (2024), 15-17th June 2024. Organized by the School of Public Administration, Xiangtan University, China. Title of my talk: "Diversity of culture, social development, and grassroots governance issues in South Asia"
- Invited Keynote Speaker in the One-day Seminar on title "World Environment Day Seminar 2024, 6th June 2024. Organized by BUIEMS and Asian Study Centre. Title of my talk was "Water Scarcity Issues and Current Scenario's at Balochistan"
- Invited Keynote Speaker in the One-day Seminar on title "Land Restoration, Desertification and Drought Resilience, 5th June 2024. Organized by the Department of Environmental Science and Forestry Department, Govt of Balochistan. Title of my talk was "BUIEMS contribution and initiatives to conserve local eco-system"
- Abstract accepted in ETEES 4th International Conference 2023 on title "Assessment of Escherichia Coli and Total Dissolved Solids in Groundwater of Urban and Semi-Urban Regions of Quetta Valley, Balochistan" the College of Earth & Environmental Sciences (CEES), University of the Punjab is hosting 4th International Conference on Emerging Trends in Earth and Environmental Sciences (ETEES), 4-6 December, 2023.
- I attended Seminar on title "Seminar on Climate Smart Agriculture for Pakistan" held online organised by the Ministry of Agriculture and Rural Affairs (MARA) of the People's Republic of China, on 30 November to 2 December, 2022.
- I attended conference on title "7th Multi-Disciplinary Student Research International Conference (MDSRIC - 2022)" held at the University of Wah, Wah Cantt, on 29-30 November, 2022.
- I have delivered lecture to the university students (Karshi Engineering-Economics Institute, department of Ecology and labor protection, Uzbekistan) on topic "Impacts of Climate Changes on Human Health and Urban Development" Dated: May 15, 2022
- I have delivered lecture to the university Staff/Students (Karshi Engineering-Economics Institute, department of Ecology and labor protection, Uzbekistan) on topic "Recent Research Trends in Water Resources" Dated: May 16, 2022
- I have delivered lecture to the College of Water Resources and Architectural Engineering, Northwest A&F University, Yangling, Shaanxi 712100, China on topic "Agricultural Soil and Water Processes and Efficient Utilization of Resources" Dated: Sept 15, 2022
- Invited Keynote Speaker in the One day national Conference on title "National Water Conference" Serena Hotel, Quetta, Pakistan, 8th November 2022. Organized by Islamic Relief Pakistan
- I participated in an Online International Conference on "Geoinformatics for Biodiversity Conservation Planning" on 14 Oct., 2022 organised by SURESH Gyan Vihar University, India.
- Invited Keynote Speaker in the 3rd International Conference on Emerging Trends in Earth & Environmental Sciences, Lahore, Pakistan, 16-19 November 2021.
- Title: "Climate Change Impacts on Water Resources of Balochistan, Pakistan"
- Invited Keynote Speaker in the 2nd International Conference on Emerging Trends in Earth and Environmental Sciences, March 04-06, 2020.
- Title: "GIS based factors analyses to investigate arsenic elevated concentration in Lahore aquifer"
- Invited Guest Speaker in the 1st National Conference on Environment & Sustainable Development (NCESD-2019), held on 29 March, 2019 at Sindh Madressatul Islam University, Karachi, Pakistan
- I participated in an International Conference on Integrated Water Resources Management (IWRM) on 28-30 September 2018 at the Supreme Court of Pakistan Building, Islamabad.
- Abstract title conference proceedings "Land use changes impact on groundwater quality using remote sensing and GIS at Quetta Valley" ICAET 2018 BUIEMS Quetta, Pakistan.
- Akhtar Malik Muhammad, Tang Zhonghua. Integrated surface-groundwater interaction model used to manage water resources of a stressed aquifer. International Perspective on Water Resources and the Environment Conference, Wuhan-China, January 4-6, 2017.

- Abstract title conference proceedings " GIS-based geostatistical analysis of stress aquifer of Quetta Valley" at 4th International Water Conference-(04-IWC-2017) from 19th -21st December 2017 at Islamabad.
- Abstract title conference proceedings "Integrated Surface-groundwater Interaction Model Used to Manage Water Resources of a Stressed Aquifer " at conference IPWE 2017, Wuhan-China, January 4-6, 2017.
- Akhtar Malik Muhammad; Tang Zhonghua, 2016. "GIS and Remote Sensing techniques used to investigate various factors influence on arsenic in water resources". 7th International Conference on Water Resources and Arid Environments 2016, King Saud University, Riyadh, Kingdom of Saudi Arabia, 4-6 Dec. 2016

#### TRAINER/RESOURCES PERSON

- I have conducted One-Month training as Team Lead and Resource person to the Provincial Government Employees (Forestry) on topic "30-Day Training on Forest Conservation and Social Forestry" under World Bank Project under the project "Balochistan integrated water resource management and development project (BIWRMDP). Dated July 17-August 25, 2023.
- I have conducted Fifteen-days training as Team Lead and Resource person to the Provincial Government Employees (Balochistan Environmental Protection Agency, PHED, Agriculture and Forestry) on topic "15-day Training on Environmental Impact Assessment (EIA)/ESMP/IEA/SEA" under World Bank Project under the project "Balochistan integrated water resource management and development project (BIWRMDP). Dated July 17-August 4, 2023.
- I have organised One-days training as Team Lead and Resource person to the JANITORIAL STAFF OF BUITEMS under my project title "Solid Waste Segregation & Management Strategy for BUITEMS: A Step Towards Clean Green Campus". Dated June 17, 2023
- I have organised One-days training as Team Lead and Resource person to the BUITEMS students under my project title "Solid Waste Segregation & Management Strategy for BUITEMS: A Step Towards Clean Green Campus". Dated June 6, 2023
- I have proposed and organised two-days training as Team Lead and Resource person to the Employees of the project "Metering the aquifer using smart monitoring and a data-driven approach to assist in devising adaptive groundwater management strategy in Balochistan" and MS researchers on topic "2-days Training on GIS applications in Water Resources. Dated March 14-15, 2023
- I have conducted five-days training as Team Lead and Resource person to the Employees of Balochistan Environmental Protection Agency on topic "Climate Change Mitigation and Adaptation" under World Bank Project under the project "Balochistan integrated water resource management and development project (BIWRMDP). Dated January 2-6, 2023
- I have organised/conducted One day Training as resource person for Government Employees on topic "Integrated Water Resources Management". Dated June 21st, 2022

#### RESEARCH GRANTS

##### International Projects

TITLE OF PROJECT	YEAR	PROJECT NO.	SPONSORING AGENCY	DESCRIPTION
ICT Applications for Sustainable Environmental Protection	<b>2022-25</b>	Project 101082866	Erasmus+ Programme (ERASMUS):European Commission	<b>CO-PI of the Project. (Environmentalist)</b>
Improving groundwater management to enhance agriculture and farming livelihoods in Pakistan	<b>2017-18</b>	LWR036	Australian Centre for International Agricultural Research (ACIAR), Australia	<b>Participated</b>
Balochistan to overcome water crisis in the province	<b>7.9.2018</b>	No. 48158	Asian Development Bank (ADB)	<b>Participated</b>

Comprehensive study on Investigation and evaluation of groundwater resources and environment problems in Jiangnan Dongting Plain	<b>2014-16</b>	121201112114 2	Geology Survey Bureau of China	<b>Participated</b>
Comprehensive study to monitor landuse and geological environment at central reaches of the Yangtze River in Jiangnan Dongting Plain	<b>2014-16</b>	121201112008 4	Geology Survey Bureau of China	<b>Participated</b>

### National Projects

TITLE OF PROJECT	YEAR	SPONSORING AGENCY	DESCRIPTION
An integrated modelling approach used to estimate the impact of climate change and Human-induced pressure on stressed groundwater resources of Quetta Sub-Basin, Balochistan	<b>2024-26</b>	Pakistan Science Foundation, Pakistan <b><u>PSF/Res/B-BUITEMS/Earth(100)</u></b>	<b>In Progress (PI)</b>
Groundwater Vulnerability Modeling Approach Used for Land and Water Management at Quetta Valley	<b>2024-25</b>	National Cleaner Production Center Foundation (NCPC), Islamabad, Pakistan	<b>Completed (PI)</b>
Evaluation of groundwater system and explore recharge zone of depleting aquifer at Quetta valley	<b>2019-23</b>	National Research Program For Universities (NRPU)-HEC	<b>Completed (PI)</b>
Metering the aquifer using smart monitoring and data driven approach to assist in devising adaptive groundwater management strategy in Balochistan	<b>2021-24</b>	HEC-Local Challenge Fund (HEC-LCF 63) (Participated services as Hydrologist/GIS expert)	<b>Completed Participant as Environmentalist</b>
A proposed study on the monitoring of current water table (static water level) of the year 2023 of Quetta sub-basin, Balochistan, Pakistan	<b>2023</b>	Islamic Relief Pakistan	<b>Completed (PI)</b>
Sustainable solid waste segregation and management strategy for BUITEMS: A step towards clean green campus	<b>2022-23</b>	Islamic Relief Pakistan	<b>Completed (PI)</b>
Plastic Scrap Recycling Machine to Promote Small Industry in Pakistan	<b>2022-23</b>	National Cleaner Production Center Foundation (NCPC), Islamabad, Pakistan	<b>Completed (PI)</b>
Treated Masjid's Ablution Water and Reuse for Irrigation and Artificial Recharge at BUITEMS, Takattu Campus Quetta	<b>2022</b>	Islamic Relief Pakistan	<b>Completed (PI)</b>
Treated Masjid's Ablution Water and Reuse for Irrigation at BUITEMS, Takattu Campus Quetta	<b>2021-22</b>	National Cleaner Production Center Foundation (NCPC), Islamabad, Pakistan	<b>Completed (PI)</b>
To Install Rainwater Harvesting Plant at BUITEMS, Quetta	<b>2020-21</b>	National Cleaner Production Center	<b>Completed (PI)</b>



		Foundation (NCPC), Islamabad, Pakistan	
Monitoring and Modeling Temporal Impacts of Urbanization on Local Water Resources of Quetta Valley	<b>2019-20</b>	Office of Research Innovation and Commercialization (ORIC)-HEC	<b>Completed (PI)</b>
Spatial Modelling Approach Use To Investigate Fluoride Contamination In Drinkable Water And Its Effect On Human Health In Quetta District	<b>2019-20</b>	Office of Research Innovation and Commercialization (ORIC)-HEC	<b>Completed (CO-PI)</b>
Evaluating spatiotemporal changes of urban expansion and its environmental impacts in Quetta Valley: Using GIS and Remote Sensing	<b>2018-19</b>	International Center for Refugee and Migration Studies (ICRMS)- BUIITEMS, Quetta	<b>Completed (PI)</b>
Analyses water quality, anthropogenic and metrological factors to manage groundwater resources at Quetta: Using Remote Sensing and GIS techniques	<b>2017-18</b>	Office of Research Innovation and Commercialization (ORIC)-HEC	<b>Completed (PI)</b>
Assessment of Environmental Lead Pollution on Blood Lead Levels in Traffic Police Constables in Quetta District, Pakistan	<b>2017-18</b>	Office of Research Innovation and Commercialization (ORIC)-HEC	<b>Completed (CO-PI)</b>

## TEACHING

I have been teaching the following courses at graduate and postgraduate level

- Hydrology
- Groundwater Management
- Water Supply and Sanitation
- Introduction to GIS and Remote Sensing
- Global warming, Climate Change Adaptation and Mitigation
- Sustainable Development

## COMPUTER SKILLS

- Software using for analyzing data via ARCGIS, GMS, Surfer, Spider, QGIS, C++ language and EPANET, SPSS 23, ENVI etc
- Learning Matlab Programming and FORTRAN language
- Computer applications (MS Word, Excel and PowerPoint).

## TRAINER/RESOURCE PERSON

- I have conducted One-Month training as Team Lead and Resource person to the Provincial Government Employees (Forestry) on topic "30-Day Training on Forest Conservation and Social Forestry" under World Bank Project under the project "Balochistan integrated water resource management and development project (BIWRMDP). Dated July 17-August 25, 2023.
- I have conducted Fifteen-days training as Team Lead and Resource person to the Provincial Government Employees (Balochistan Environmental Protection Agency, PHED, Agriculture and Forestry) on topic "15-day Training on Environmental Impact Assessment (EIA)/ESMP/IEA/SEA" under World Bank Project under the project "Balochistan integrated water resource management and development project (BIWRMDP). Dated July 17-August 4, 2023.

- I have organised One-days training as Team Lead and Resource person to the JANITORIAL STAFF OF BUIITEMS under my project title "Solid Waste Segregation & Management Strategy for BUIITEMS: A Step Towards Clean Green Campus". Dated June 17, 2023
- I have organised One-days training as Team Lead and Resource person to the BUIITEMS students under my project title "Solid Waste Segregation & Management Strategy for BUIITEMS: A Step Towards Clean Green Campus". Dated June 6, 2023
- I have proposed and organised two-days training as Team Lead and Resource person to the Employees of the project "Metering the aquifer using smart monitoring and a data-driven approach to assist in devising adaptive groundwater management strategy in Balochistan" and MS researchers on topic "2-days Training on GIS applications in Water Resources. Dated March 14-15, 2023
- I have conducted five-days training as Team Lead and Resource person to the Employees of Balochistan Environmental Protection Agency on topic "Climate Change Mitigation and Adaptation" under World Bank Project under the project "Balochistan integrated water resource management and development project (BIWRMDP). Dated January 2-6, 2023
- I have organised/conducted One day Training as resource person for Government Employees on topic "Integrated Water Resources Management". Dated June 21st, 2022

#### MEMBERS OF COMMITTEES:

Most recently I am performing following responsibilities along with teaching

- Nomination of Member " **University Anti-Plagiarism Committee**" of the faculty of Life Sciences & Informatics at BUIITEMS, Quetta (Pakistan) Dated: June 13, 2024
- Nomination of Member "**Departmental Core Committee**" of the of the Department of Environmental Science, BUIITEMS, Quetta (Pakistan) Dated: June 20, 2024
- Nomination of Member "**Research & Commercialization Committee**" of the faculty of Life Sciences & Informatics at BUIITEMS, Quetta (Pakistan) Dated: March 07, 2024
- Nomination of Member "**Faculty Examination Committee**" of the faculty of Life Sciences & Informatics at BUIITEMS, Quetta (Pakistan) Dated: March 07, 2024
- Nomination of Member "**Graduate Research Committee**" of the faculty of Life Sciences & Informatics at BUIITEMS, Quetta (Pakistan) Dated: March 07, 2024
- Nomination of Member to prepare self-assessment report of the program "**PhD Environmental Science**" of the department of Environmental Science, faculty of Life Sciences & Informatics at BUIITEMS, Quetta (Pakistan) Dated: 30<sup>th</sup> January 2024.
- Nomination of Members "**Biosafety Committee**" of the faculty of Life Sciences & Informatics at BUIITEMS, Quetta (Pakistan) Dated: November 17, 2022
- Member of "**Departmental Research Committee (DRC), the department of Environmental Science** at Sardar Bahadur Khan Woman's University, Quetta (Pakistan) Dated 04.8.2022
- Member of "**PhD Evaluation Committee BUIITEMS**, at BUIITEMS, Quetta (Pakistan) Dated 10.8.2022
- Member of "Research Collobration/Conference/Research Publications & Journal Committee, **of the faculty of Life Sciences & Informatics** at BUIITEMS, Quetta (Pakistan) Dated 19.5.2022
- Member of "**Graduate Research Committee (GRC), the department of Environmental Science** at BUIITEMS, Quetta (Pakistan) Dated 19.5.2022
- Member of "**Faculty Financial Committee, Faculty of Life Sciences&Informatics** at BUIITEMS, Quetta (Pakistan) Dated 2.8.2021
- Chairman of "**Departmental Graduate Research Committee (DGRC), department of Environmental Science** at BUIITEMS, Quetta (Pakistan) Dated 2.11.2020
- Member of **Faculty Graduate Research Committee (FGRC) of the Faculty of Life Sciences&Informatic** at BUIITEMS, Quetta (Pakistan) Dated 11.11.2020

- BUIEMS, Quetta **Nominated as Water Expert for PPAFs, Balochistan Water Engagement.**
- BUIEMS, Quetta **Nominated Of Geologist As Member Provincial Water Board**, Planning and Development Department (Water Section), Government of Balochistan (Pakistan)
- Member of **Committee Reorganization EPA Service Rules And Job Description** at Environmental Protection Agency (EPA), Balochistan (Pakistan)
- Member of **Board of Advance Studies of the department of Environmental Science** at University of Balochistan, Quetta (Pakistan)
- Member of Research Supervisor Committee of the department of Environmental Management and Policy (EMP) at BUIEMS, Quetta (Pakistan)
- Member of **Board of Advance Studies of the department of Environmental Management and Policy (EMP)** at BUIEMS, Quetta (Pakistan)
- Organising and maintaining the GIS and Remote Sensing Lab at BUIEMS, Quetta (Pakistan)
- Member of **Departmental Research Committee of the department of Environmental Management and Policy (EMP)**, BUIEMS, Quetta. (Dated: 11.2016)
- Member of Departmental Research Committee of the department of Civil Engineering (CE), BUIEMS, Quetta (Dated: 11.2016)
- Member of BUIEMS committee for Urban Unit conference with title **"Seminar on CPEC and Opportunities for urban and industrial growth in Balochistan"**. (Dated: 23.6.2017)

#### **BOARD OF STUDY REVIEW BS, MS AND PHD CURRICULUM**

1. Notified Chairman, committee for Board of Study (BOS) department of Environmental Science, Faculty of Life Sciences & Informatics, BUIEMS, Quetta. (Dated: 12.4.2019 )  
I organised Board of Study (BOS) to review BS, MS and PhD curriculum department of Environmental Science, Faculty of Life Sciences & Informatics, BUIEMS, Quetta. I headed meeting as Chairperson of curriculum review committee department of Environmental Science. Later defended this BOS at Board of Faculty (BOF), Advanced Studies & Research Board (ASRB) and finally at **Academic Council – BUIEMS**. 3rd BOS was approved.
2. Notified **Chairman**, committee for Board of Study (BOS) department of Environmental Science, Faculty of Life Sciences & Informatics, BUIEMS, Quetta. Program: BS, MS and PhD (Environmental Science) ; Dated: 10.10.2021
3. Notified **Chairman**, committee for Board of Study (BOS) department of Environmental Science, Faculty of Life Sciences & Informatics, BUIEMS, Quetta. Program: MS and PhD (Environmental Management and Policy) ; Dated: 12.1.2022
4. Notified **Experts/member**, committee for Board of Study (BOS) department of Environmental Science, Sardar Bahadur Khan Women's University, Quetta. Program: BS, MS and PhD (Environmental Science) ; Dated: 8.2022
5. Nomination of Member **"Departmental Board of Studies (Program: Environmental Science)"** of the Department of Environmental Science, BUIEMS, Quetta (Pakistan) Dated: July 02, 2024 (For Two Years)
6. Nomination of Member **"Departmental Board of Studies (Program: Environmental management and policy)"** of the Department of Environmental Science, BUIEMS, Quetta (Pakistan) Dated: July 02, 2024 (For Two Years)

#### **ACHIEVEMENTS/ AWARDS:**

- CSC research scholarship for completing PhD degree

- Postdoctoral fellowship offered from Hubei province Government, China
- “Member of Volunteer for conferences and academic activities” in China University of Geosciences, Wuhan

#### **MEMBERS OF FOLLOWING ASSOCIATIONS**

- **International Water Resources Association (IWRA)**
- International Association Of Hydrological Sciences (IAHS)
- International Association for Environmental Hydrology (IAEH)
- Worldwatch Institute

#### **COMMUNICATION SKILLS**

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|-----------|---|
| • English | (Speaking, writing, reading, & understanding) |
| • Punjabi | (Reading, writing, understanding & speaking)  |
| • Urdu    | (Reading, writing, understanding & speaking)  |
| • Chinese | (Understanding and Speaking)                  |
| • Arabic  | (Reading)                                     |

#### **ACADEMIC REFERENCES**

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