



BUIITEMS

Quality & Excellence in Education

ISO 9001-2008 certified

www.buitms.edu.pk

UAN: 081- 111-717-111



Name	Dr. MALIK MUHAMMAD AKHTAR	
Designation	Associate Professor	
Department	Environmental Science	
Faculty	Life Sciences and Informatics	
E-mail address	Official	muhammad.akhtar@buitms.edu.pk
	Personal	drmalikma21@gmail.com
Telephone Number	Office Extension	081-111-717-111 (634)
	Mobile	+92 3354457067

Qualification

Year	Degree/ Certificate	Name of the Institute/ University	Field of study
1.2014-3.2016	Post Doctorate	China University of Geosciences, Wuhan, People's Republic of China	Hydrology and Water Resources Management
9.2010-12.2013	PhD	China University of Geosciences, Wuhan, People's Republic of China	Environmental Engineering

Publications in HEC Recognized journals

S. No	Title of Paper	Name of Journal	National/ International	Publication date
1	GIS-based multi criteria decision analysis techniques used to identify potential groundwater recharge zones in Quetta Valley, Pakistan	Desalination and Water Treatment, doi: 10.5004/dwt.2023.29765	International	(2023)
2.	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	International	(2023)
3.	Floods and flood management and its socio-economic impact on Pakistan: A review of the empirical literature	Frontiers in Environmental Science. 10, 2480. https://doi.org/10.3389/fenvs.2022.1021862	International	(2022)

4.	Groundwater budgeting of Nari and Gaj formations and groundwater mapping of Karachi, Pakistan.	Applied Water Science 12, no. 12 (2022): 1-24.	International	(2022)
5.	Assessment Of Land Use /Land Cover Dynamics Impacts In Zhob River Basin, Pakistan.	Songklanakar Journal Of Science And Technology, Vol. 45 No. 1	International	(2022)
6.	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	International	(2022)
7.	Comparative Evaluation of Bacterial Contamination in Tap and Groundwater: A Case Study of Quetta, Pakistan	Journal of Groundwater Science and Engineering.	International	(2022)
8.	Evaluation of the factors affecting arsenic distribution using geospatial analysis techniques in Dongting Plain, China	Frontiers in Environmental Science (2022): 1942.	International	(2022)
9.	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.	International	(2021)
10.	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	International	(2021)
11.	Water Resources Of Balochistan, Pakistan—A Review.	Arabian Journal of Geosciences, 14, 4 1-16	International	(2021)
12.	Evaluation of groundwater vulnerability to contamination by DRASTIC risk mapping in Quetta valley, Balochistan	EVALUATION, 4(1).	International	(2020)
13.	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.	International	(2020)
14.	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	Arabian Journal for Science and Engineering, 44(1), 417-428	International	(2019)
15.	Quality assurance of intensity modulated radiation therapy treatment planning using head and neck phantom	Journal of Radiotherapy in Practice, 1-7.	International	(2019)
16.	Depleting Water Resources in Balochistan	Development Dialogue (PPAF), 3(2), 15	International	(2018)
17.	Dose verification of volumetric-modulated arc therapy using one-dimensional and two-dimensional dosimeters.	Journal of Radiotherapy in Practice, 1-5	International	(2018)
18.	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.	International	(2018)

19.	A geological study of reservoir formations and exploratory well depths statistical analysis in Sindh Province, Southern Lower Indus Basin, Pakistan	Kuwait J. Sci. 45, 89-99	International	(2018)
20.	Combining AHP and Genetic Algorithms Approaches to Modify DRASTIC Model to Assess Groundwater Vulnerability: A Case Study from Jiangnan Plain, China	Environmental Earth Sciences, Springer 76, 1-16	International	(2017)
21.	Analysis of Geological Structure and Anthropological Factors Affecting Arsenic Distribution in Lahore's Aquifer	Hydrogeology Journal, Springer, 24(7), 1891-1904.	International	(2016)
22.	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 Science, Springer, DOI: 10.1007/s12583-016-0910-2	International	(2016)
23.	Evaluation of local groundwater vulnerability based on DRASTIC index method in Lahore, Pakistan	Geofísica internacional, Elsevier, 54(1): 67-81.	International	(2015)
24.	Assess arsenic distribution in drinking water applying GIS in capital of Punjab, Pakistan	Natural Hazards and Earth System Sciences Discussions 3.3 (2015): 2119-2147	International	(2015)
25.	Contamination Potential Assessment of Potable Groundwater in Lahore, Pakistan	Pol J Environ Stud, Hard 23(6), 1905-1916.	International	(2014)
26.	A study to investigate and compare groundwater quality in adjacent areas of landfill sites in Lahore city	Nature Environment and Pollution Technology, Technoscience Publications, 13(1): 1-13	International	(2014)
27.	Municipal Solid Waste and Its Relation with Groundwater Contamination in Lahore, Pakistan	Research Journal of Applied Sciences, Engineering and Technology 7(8): 1551-1560.	International	(2014)
28.	Characteristics, modification and environmental application of Yemen's natural bentonite.	Arabian Journal of Geosciences, Springer 7.3: 841-853	International	(2014)
29.	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	International	(2014)
30.	An Analysis Of Environmental Law In Pakistan - Policy And Conditions Of Implementation	Research Journal of Applied Sciences, Engineering and Technology, 8(5), 644-653	International	(2014)
31.	Identification of contamination sources and TDS concentration in groundwater of second biggest city of Pakistan	International Journal of Environmental Science and Development 4(3): 341.	International	(2013)

32.	Critical Evaluation of the Policy Environmental for Mineral Resources Sector in Pakistan, American Journal of Industrial and Business Management	American Journal of Industrial and Business Management, 3(5), 514.	International	(2013)
33	Regulatory Framework of Mineral Resources Sector in Pakistan and Investment Proposal to Chinese Companies in Pakistan American	American Journal of Industrial and Business Management, 3(05), 514.	International	(2013)
34.	A study to estimate overall environmental pollution potential in second biggest city of Pakistan	European International Journal of Science and Technology 2.3 (2013): 155-163.	International	(2013)

Paper Presented

S. No	Title of Paper	Name of Conference	National/ International	Date
01	Emerging water scarcity challenges and its impacts on agricultural productivity in Pakistan	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.	International	(2022)
02	Water modelling for groundwater management in Balochistan, Pakistan	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	national	(2022)
03	Climate Change Impacts on Water Resources of Balochistan, Pakistan”	Invited Keynote Speaker in the 3rd International Conference on Emerging Trends in Earth & Environmental Sciences, Lahore, Pakistan, 16-19 November 2021.	International	(2021)
04	GIS based factors analyses to investigate arsenic elevated concentration in Lahore aquifer	2nd International Conference on Emerging Trends in Earth and Environmental Sciences, March 04-06, 2020	International	(2020)
05	Analysis of geological structure and anthropological factors affecting arsenic distribution in the Lahore aquifer, Pakistan	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	National	(2019)

06	Water Resources of Balochistan	International Conference on Integrated Water Resources Management (IWRM) on 28-30 September 2018 at the Supreme Court of Pakistan Building, Islamabad.	International	(2018)
07	Land use changes impact on groundwater quality using remote sensing and GIS at Quetta Valley	ICAET 2018 BUITEMS Quetta, Pakistan.	International	(2018)
08	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.	International	(2017)
09	Integrated Surface-groundwater Interaction Model Used to Manage Water Resources of a Stressed Aquifer	IPWE 2017, Wuhan-China, January 4-6, 2017.	International	(2017)
10	GIS-based geostatistical analysis of stress aquifer of Quetta Valley	4th International Water Conference-(04-IWC-2017) from 19th -21st December 2017 at Islamabad.	International	(2017)
11	GIS and Remote Sensing techniques used to investigate various factors influence on arsenic in water resources in China	Conference Paper presented at 7th International Conference on Water Resources and Arid Environments 2016, King Saud University, Riyadh, Kingdom of	International	(2016)
12	Identification of contamination sources and TDS concentration in groundwater of second biggest city of Pakistan	Paper presented at ICESE 2013 (Round III), 21-22, April 2013, Beijing, China.	International	(2013)

Professional Skills

1.	Expertise	<ul style="list-style-type: none"> ➤ Water Resources Management ➤ GIS and Remote Sensing Applications ➤ Surface water and Groundwater modelling ➤ Hydrology and Environmental Issues ➤ Climate Changes ➤ Soil and Water Conservation ➤ Land Use Change
----	------------------	---

2.	Expertise to use softwares	<ul style="list-style-type: none"> • I am applying GMS, GIS, Surfer and SPSS software's for my research work • I am also familiar with ENVI, Spider, Remote sensing, C++ language and EPANET • I am learning Matlab Programming, FORTRAN language and Google Search Engine
3.	Participated in the International Research Projects	<p>These research projects were financially supported by Geology Survey Bureau of China</p> <ul style="list-style-type: none"> ➤ “Comprehensive study on Investigation and evaluation of groundwater resources and environment problems in Jiangnan Dongting Plain. No.1212011121142” 2014 ➤ “Jiangnan - Dongting Plain groundwater circulation patterns and numerical simulation studies” ➤ “Comprehensive study to monitor landuse and geological environment at central reaches of the Yangtze River in Jiangnan Dongting Plain. Project No.1212011120084”. 2016 ➤ Project Title: Improving Salinity and Agricultural Water Management in the Indus Basin of Pakistan..Project Number: LWR-2017-028 Collaborative research project between Australian Centre for International Agriculture Research (ACIAR), Charles Sturt University, BUIITEMS, Quetta,etc 2018 ➤ Project Title: ICT Applications for Sustainable Environmental Protection. International research project Erasmus+ Programme (ERASMUS):European Commission. (Team Member as Expert in Environmental Science) 2023

<p>4.</p>	<p>Participated in the national Research Projects</p>	<ul style="list-style-type: none"> ➤ Principal Investigator: “Analyses water quality, anthropogenic and metrological factors to manage groundwater resources at Quetta: Using Remote Sensing and GIS techniques” Office of Research Innovation and Commercialization (ORIC) working under Pakistan Higher Education Commission. (Approved-2017) ➤ Co-Principal Investigator: “Assessment of Environmental Lead Pollution on Blood Lead Levels in Traffic Police Constables in Quetta District, Pakistan” to Office of Research Innovation and Commercialization (ORIC) working under Pakistan Higher Education Commission. (Approved-2017) ➤ Co-Principal Investigator: Spatial Modelling Approach Use To Investigate Fluoride Contamination In Drinkable Water And Its Effect On Human Health In Quetta District. Office of Research Innovation and Commercialization (ORIC)-HEC. (Approved-2018) ➤ Principal Investigator: Monitoring and Modeling Temporal Impacts of Urbanization on Local Water Resources of Quetta Valley. Office of Research Innovation and Commercialization (ORIC)-HEC. (Approved-2018) ➤ Principal Investigator: Evaluating spatiotemporal changes of urban expansion and its environmental impacts in Quetta Valley: Using GIS and Remote Sensing. International Center for Refugee and Migration Studies (ICRMS)- BUIITEMS, Quetta. (Approved) ➤ Principal Investigator: “Evaluation of groundwater system and explore recharge zone of depleting aquifer at Quetta valley” to Pakistan Higher Education Commission (HEC) under National Research Program for Universities (NRPU). (Approved-2019) ➤ Principal Investigator: To Install Rainwater Harvesting Plant at BUIITEMS, Quetta. National Cleaner Production Center Foundation (NCPC), Islamabad, Pakistan. (Approved-2020) ➤ Principal Investigator: Treated Masjid’s Ablution Water and Reuse for Irrigation at BUIITEMS, Takattu Campus Quetta. National Cleaner Production Center Foundation (NCPC), Islamabad, Pakistan. (Approved- 2021). ➤ Principal Investigator: Sustainable solid waste segregation and management strategy for BUIITEMS:A step towards clean green campus. Funded: Islamic Relief USA. (Approved-2022). ➤ Principal Investigator: Treated Masjid’s Ablution Water and Reuse for Irrigation and Artificial Recharge at BUIITEMS, Takattu Campus Quetta. Funded: Islamic Relief USA . (Approved-2022) ➤ Principal Investigator: Plastic Scrap Recycling Machine to Promote Small Industry in Pakistan. NCPC, Islamabad, Pakistan. (Approved-2022) ➤ Principal Investigator: A proposed study on the monitoring of current water table (static water level) of the year 2023 of Quetta sub-basin, Balochistan, Pakistan. Funded: Islamic Relief Pakistan. (Approved-2023) ➤ Principal Investigator: 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. Pakistan Science Foundation, Pakistan, Islamabad, Pakistan. (Approved-2023).
-----------	--	--

5.	Work Experience	<ul style="list-style-type: none"> ➤ March, 2022 to Till today Associate Professor, Department of Environmental Science, BUIITEMS, Quetta. ➤ December 31, 2021 to March, 2022 Chairperson/Associate Professor, Department of Environmental Science, BUIITEMS, Quetta. ➤ Oct 19, 2017 to December 6, 2021 Chairperson/Assistant Professor, Department of Environmental Science, BUIITEMS, Quetta. ➤ July 28, 2016 to Oct 19, 2017 Assistant Professor, Department of Environmental Management and Policy, BUIITEMS, Quetta. ➤ March 1, 2014 to March 30, 2016 Post Doctorate China University of Geosciences, Wuhan, China ➤ Sept 1, 2010 to January 30, 2016 PhD Scholar China University of Geosciences, Wuhan, China
	Editorship	<p>PLOS One (ISSN: 1932-6203) Impact factor: 3.75 Position: Academic Editors https://journals.plos.org/plosone/static/editorial-board</p> <p>Journal of Environmental and Public Health ; Special issue "Water Quality and Associated Health Risks" Publisher Hindawi Position: Guest Editor https://www.hindawi.com/journals/jeph/si/924385/</p>
6.	Reviewer of Scientific Journal	<ul style="list-style-type: none"> ➤ Hydrogeology Journal ➤ Arabian Journal of Geosciences ➤ Journal of Earth System Science ➤ Journal of PLOS ONE ➤ NUST Journal of Engineering Sciences (NJES) ➤ Journal of Water and Land Development ➤ Journal of Water Supply Research and Technology - AQUA ➤ ActaNaturalisScientia” publisher: Sci-pub journals web site: www.sci-pub.com ➤ Current Science (Published by Indian Academy of Sciences; ISSN 0011-3891)
	External reviewer	<ul style="list-style-type: none"> ➤ Higher Education Commission of Pakistan ➤ Pakistan Science Foundations
7.	HEC Approved PhD supervisor	Yes