Curriculum Vitae | Dr. Hafiz Umar Farid

S/O **Muhammad Sharif**
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Area of Field

Agricultural Engineering

Value Added

I am confident, hardworking, and reliable person. I can work well under pressure either as an individual or part of a team. I am confident that I will be able to fulfill my duties in conformity to the requirements of the organization.

Personal Information

Date of Birth:	06/04/1981
Marital Status:	Married
Religion:	Islam
Nationality:	Pakistani
C.N.I.C#	36104-2797347-5

Professional Education

Ph.D., Agricultural Engineering	(2009-2013)
M.Sc., Agricultural Engineering	(2007-2009)
B.Sc., Agricultural Engineering	(2003-2007)

Ph.D. Thesis Title

Modeling Precision Farming Practices to Improve Wheat Productivity

M.Sc. Thesis Title

Determining Aquifer Characteristics Using Resistivity Survey and Pumping Test Techniques

Experience

08/2020 to date	Associate Professor (Tenured), under TTS in the Department of Agricultural Engineering, Bahauddin Zakariya University, Multan.
04/2014 to 08/2020	Assistant Professor, under TTS in the Department of Agricultural Engineering, Bahauddin Zakariya University, Multan.
03/2014 to 4/2014	Assistant Professor, Department of Agricultural Engineering, Bahauddin Zakariya University, Multan.
03/2013 to 03/2014	Assistant Professor, under IPFP program of HEC in the Department of Agricultural Engineering, Bahauddin Zakariya University, Multan.
09/2012 to 02/2013	Research Associate/Research Scholar in project "Enhancing Water Productivity by Using Feasible Efficient Irrigation Techniques" run by Department of Irrigation and Drainage, University of Agriculture Faisalabad.

01/2011 to 02/2012	Research Scholar in the Department of Irrigation and Drainage, University of Agriculture Faisalabad
03/2008 to 12/2010	Research Fellow in the project "Investigating Aquifer Storage and Recovery Techniques to Recharge the Saline Groundwater at Farmers Field's run by Department of Irrigation and Drainage, University of Agriculture, Faisalabad.
07/2007 to 03/2008	Research Assistant in the Department of Irrigation and Drainage, University of Agriculture Faisalabad

Honours and Activities

- Higher Education Commission (HEC) Approved PhD Supervisor for Agri. Engineering Discipline
- Associate Editor, Pakistan Journal of Life and Social Sciences
- Member of Editorial Board, Universal Journal of Agricultural Research
- Won Research Grant Under National Research Program for Universities (NRPU) of HEC entitled "Precise soil nutrient management using hand-held sensor measurements and crop yield mapping"
- Received "Performance Based Increments" for the year 2016 from BZU Multan based on my excellence performance in research, teaching, and other related activities.
- Received "Performance Based Increments" for the year 2017 from BZU Multan based on my excellence performance in research, teaching, and other related activities.
- Received "Performance Based Increments" for the year 2018 from BZU Multan based on my excellence performance in research, teaching, and other related activities.
- Received "Performance Based Honorarium" for the year 2018 from BZU Multan based on my excellence performance in research, teaching, and other related activities.
- Received "Performance Based Increments" for the year 2019 from BZU Multan based on my excellence performance in research, teaching, and other related activities.
- Received "Performance Based Honorarium" for the year 2019 from BZU Multan based on my excellence performance in research, teaching, and other related activities.
- Received "Performance Based Increments" for the year 2020 from BZU Multan based on my excellence performance in research, teaching, and other related activities.
- Received "Performance Based Increments" for the year 2021 from BZU Multan based on my excellence performance in research, teaching, and other related activities.
- Received "Performance Based Honorarium" for the year 2021 from BZU Multan based on my excellence performance in research, teaching, and other related activities.
- Best Paper award at the 1st National Conference on Agricultural Engineering and Sciences, BZU Multan
- Received letter of appreciation from Vice Chancellor BZU on excellence research performance during the year 2018, Organed by ORIC BZU
- Peer Reviewer of Agriculture Water Management
- Peer Reviewer of Journal of Environmental Management
- Peer Reviewer of Scientific Reports
- Peer Reviewer of Sustainability

- Peer Reviewer of Environmental Monitoring and Assessment
- Peer Reviewer of Journal of Water and Climate Change
- Peer Reviewer of Water
- Peer Reviewer of Remote Sensing
- Peer Reviewer of Groundwater for Sustainable Development
- Peer Reviewer Environment Development and Sustainability
- Peer Reviewer Pakistan Journal of Agricultural Sciences
- Peer Reviewer of Environmental Challenges
- Peer Reviewer of International Journal of Remote Sensing
- Peer Reviewer of Geocarto International
- Peer Reviewer of Atmosphere
- Peer Reviewer Journal of Flood Risk Management
- Peer Reviewer of Desalination and Water Treatment
- Peer Reviewer of Pakistan Journal Life and Social Sciences
- Peer Reviewer of Universal Journal of Agricultural Research
- Peer Reviewer of Journal of Agricultural and Crop Research
- Peer Reviewer of International Journal of Agricultural and Policy Research
- Received Letter of Appreciation by the Vice Chancellor University of Agriculture, Faisalabad on successful completion of my PhD degree within six semesters
- Received Amount Rs. 5000/- by the university of Agriculture, Faisalabad on successful completion of my PhD degree within six semesters
- Received Shield of honor as best Mess Manager in UAF (2004-2009)

Training Course

- Attend the four-days training session on "Level 1 training Program" held on 5th to 8th May 2025 at Bahauddin Zakariya (BZU) Multan organized by the Professional Development Center, ORIC, BZU, Multan. (May 5-8, 2025)
- Attend 3day hands on Training workshop on "Community of Practice (CoP) for the SWAT+ Model" organized by the International Water Management Institute (IWMI) from 18th to 20th December 2024 at the Ramada Hotel, Islamabad
- Attend the one-day training session on "Generated crop-type maps using geospatial tools and field data" organized by Food and Agriculture Organization (FAO) of the United Nation under the Project Transforming Indus Basin with Climate Resilient Agriculture and Water Management. (October 20, 2023)
- Attended online Capacity Building Training on "Introduction to Monitoring Evapotranspiration with pyWaPOR" from 23-26 January 2023, organized by Food and Agriculture Organization of the United Nation under the Project Transforming Indus Basin with Climate Resilient Agriculture and Water Management.
- Attend the two days training session on "Satellite Remote Sensing for Estimating Actual Evapotranspiration-Course No.1 PYTHON for Evapotranspiration estimation. Organized by Food and Agriculture Organization (FAO) of the United Nation under the Project

Transforming Indus Basin with Climate Resilient Agriculture and Water Management. (September 20-21, 2022)

- Attended two days training workshop on "Principles of Efficient Tractor Operation; Environmental impact of diesel exhaust, its remedies, and EPA standards" Organized by Department of Agricultural Engineering BZU, Multan (13-14 Sep., 2022)
- Attended 1-Day CPD training workshop on "WinSRFR Model for Design and Simulation of Precise Surface Irrigation Systems" arranged by Pakistan Engineering Council and Department of Agricultural Engineering at BZU, Multan on July 09, 2020
- Delivered a lecture in training session regarding Geographic Information System (GIS) arranged by Agricultural Engineering Department Field Wing Govt. of Punjab on 26-11-2020.
- Attended one-day training workshop "Dynamics Teaching Skills" organized by ORIC, BZU on Multan on 25 March 2018.
- Delivered a lecture in training session regarding design of tube wells arranged by Agricultural Engineering Department Field Wing Govt. of Punjab on 12-09-2019.
- 15 days internship at Water Management Training Institute Lahore
- Attended one-day training workshop on "Outcome based education and development of self-assessment report" at Agricultural Engineering Department, FAST, BZU, Multan on September 18, 2018
- Attended training workshop on "Resistivity survey workshop" organized by Department of Agricultural Engineering, Bahauddin Zakariya University, Multan on November 23, 2014
- Attended 1-Day CPD course on "Interactive Workshop" Pakistan Engineering Council at BZU, Multan on April 28, 2014
- Attended 1-Day CPD Interactive Workshop on "CPD framework for Professional Development of Engineers" organized by Pakistan Engineering Council at BZU, Multan
- Attended Two Day Intensive Training Course on "GIS, GPS and Mobile Mapper" from December 14 to 15, 2011, organized by Department of Irrigation and Drainage, University of Agriculture, Faisalabad in Collaboration with Nova Scotia Agriculture College Canada.
- Attended one-month Intensive training Workshop on "Remote Sensing and Digital Image Processing" from November 29 to December 26, 2010, organized by Department of Irrigation and Drainage, University of Agriculture, Faisalabad, and Sponsored by USDA.

Computer Skills

- Technical Software: DSSAT, MZA, ANN, IXID Resistivity Software, Erdas Imagin, ArcGIS 9.3
- Microsoft office (word and Excel. power point), Internet, Auto cad
- Statistical Package: SAS, Statistix v.8, SPSS

Research Projects Completed/Ongoing as PI/Research Associate/Team Member

- Research Project (PSF/NSLP/P-BZU (1170)) Entitled "Groundwater Quality Mapping and Site-Specific Options for On-Farm Water Storage to Enhance Water Productivity in the Cholistan Desert of Pakistan" (Funded by PSF_NSLP) as PI (Ongoing)
- Precise soil nutrient management using hand-held sensor measurements and crop yield mapping funded by HEC Under National Research Program for Universities (NRPU) (Completed)

- Development and evaluation of indigenous soil moisture and nitrogen fertilizer sensors for site-specific application of crop inputs (Funded by BZU) as PI (Completed)
- Investigating Groundwater Extraction Efficiency Using Resistivity Survey and Energy Audit Techniques (Funded by BZU) as PI (Completed)
- Development and evaluation of design procedure for gravity fed drip irrigation systems for small farmers (Funded by BZU) as PI (Completed)
- Investigating Aquifer Storage and Recovery Techniques to Recharge the Groundwater at Farmer's Field (Funded by Endowment Fund Secretariat) as Research Associate (Completed)
- Decision Support System for Better Crop productivity and Environmental Quality (Funded by Pakistan Science Foundation) as team Member (Completed)
- Development of High Efficiency Irrigation System (Funded by University of Agriculture Faisalabad) as team Member (Completed)
- Demonstration of a Groundwater Model to Simulate Pumping Effects on a Faisalabad Water Supply Scheme (Funded by Endowment Fund Secretariat) as team Member (Completed)
- Enhancing Water Productivity by Using Feasible Efficient Irrigation Techniques (Funded by International Food Policy Research Institute) as Research Associate (Completed)

Supervisor of Ph.D. Agri. Engg. Students (Thesis Completed)

- Groundwater Salinity Mapping and Tubewell Energy Conservation using Geo-electrical Survey Technique (Engr. Dr. Haris Abdullah, 2024)
- Groundwater Behaviour in relation to climate Change trends in Indus Basin of Pakistan (Engr. Dr. Akhtar Ali, 2022)

Supervisor of M.Sc. (Hons.) Agri. Engg. Students (Thesis Completed)

- Estimation of Precision Crop Nitrogen Requirement using Remote Sensing Techniques (Engr. Usman Raza, 2025)
- Comparative Study of Evaluation of Analytical Hieratical Process (AHP) and Multi-Influencing Factors (MIF) for Identification of Groundwater Recharge Sites (Engr. Muhammad Usama, 2025)
- Quantification of Solid Waste Generation and Identification of Suitable Landfill Sites using GIS and Remote Sensing in Rajanpur Pakistan (Engr. Kashif Bashir, 2024)
- Climate Response to Land Use Changes using Remote Sensing Techniques (Engr. Nadeem Zubair, 2023)
- GIS-based analytical hierarchical process for potential groundwater recharge zones in Punjab, Pakistan (Engr. Maira Naeem, 2023)
- Identifying soil fertility based site-specific management zones in Multan, Pakistan using GIS and remote sensing (Engr. Aqsa Dilshad, 2023)
- Application of nano carbon for enhancing soil infiltration and water holding capacity (Engr. Arees Nasir, 2023)
- Quantifying Irrigtaion Demand/Supply Gap using Remote Sensing and GIS in Multan Pakistan (Muhammad Haseeb, 2022)
- Spatial Distribution of Groundwater Potential and Borehole Design Parameters for Multan-Pakistan (Najum-ul-Hassan, 2022)
- Performance of Millet (Pennisetum glaucum L.) Under the Combination of Different Irrigation and Nitrogen Levels (Muhammad Abrar, 2022)

- Formulation of Precision Input Management Strategy for Wheat using Handheld Crop Sensors (Huzaifa Shahzad Qureshi, 2021)
- Effect of Urbanization on Irrigated Agriculture in Shujaabad Canal Command Area of District Multan (Khawaja Muhammad Zakariya, 2021)
- Groundwater Vulnerability and Aquifer Protective Capacity potential using Vertical Electrical Sounding Method (Muhammad Rizwan Shahid, 2021)
- Time Series Modeling Approach for Temporal Variability of Groundwater Level and Site-specific Management Zoning (Saddam Hussain, 2021)
- Verification of Satellite Precipitation in comparison with Rain Gauge Data in Lower Indus Basin of Pakistan (Mazhar Abbas, 2021)
- Assessment of Climate Change Impact on Input Use Efficiency of Cotton-Wheat using DSSAT model (Khawar Abbas, 2021)
- Identifying suitable technique for delineation of potential management zone for precision agriculture (Mehran Iqbal, 2019)
- Evaluation and adoption of Precision farming practices to improve land productivity (Hafiz Usman Ayub, 2019)
- Performance evaluation and applicability of sensing technologies in precision agriculture (Behzad Mustafa, 2018)
- Spatial analysis of physical and chemical analysis of saline soil properties in District Multan, Pakistan (Hafiz Hamid Saleem, 2018)
- Energy conservation using resistivity survey and tubewell auditing technique (Sabir Hussain, 2018)
- Site specific ground water assessment in Multan Region (Mubashir Ali Ghaffar, 2018)
- Optimization of Pressurized Irrigation System Using of Flow-Driven Model (Attiq-ur-Rehman, 2017)
- Decision Support Mechanism for Adoption of High Efficiency System in Punjab, Pakistan (Muhammad Zubair, 2016)
- Drip Irrigation Field-Adoption Constraints in Multan Region Punjab Pakistan (Muhammad Navid Rasool, 2016)
- Site- Specific Aquifer Characterization Using Resistivity Survey and GIS for District Rahim Yar Khan Pakistan (Akhtar Ali, 2015)

Publications

Articles Published in different National and International journals

1. Ali, A., **Farid, H.U.,** Shoaib, M. and Anjum, M.N., (2025) Sensitivity of groundwater quality to climate explained variability in the areas of Indus Basin of Pakistan. *Water and Environment Journal*. PP 1-19. https://doi.org/10.1111/wej.12985
2. Saleem, M.A., Shoaib, M., Hashim, S., Shoaib, M., **Farid, H.U.,** Ismail, M., Ghaffar, M.A., Mujtaba, A., Lee, J., Inam, M.A. and Ameen, A., 2025. Projecting future climate extremes in the glacier-fed upper indus basin using machine learning based downscaling of CMIP6 GCMs. *Theoretical and Applied Climatology*, *156*(11), p.567.
3. Saleem, M.A., Shoaib, M., Hashim, S., **Farid, H.U.,** Ghaffar, M.A., Ismail, M., Ameen, A., Lee, J., Inam, M.A. and Jun, C., (2025). Machine Learning-Based Streamflow Projections in

the Upper Indus Basin Under CMIP6 Climate Scenarios. *Physics and Chemistry of the Earth, Parts A/B/C*, p.104035. https://doi.org/10.1016/j.pce.2025.104035

4. Zakariya, K.M., Sarwar, T., **Farid, H.U.,** Albano, R., Inam, M.A., Shoaib, M., Ahmad, A. and Ahmad, M., (2025). Land Use Land Cover (LULC) Mapping for Assessment of Urbanization Impacts on Cropping Patterns and Water Availability in Multan, Pakistan. *Earth*, *6*(3), p.79.
5. Shakoor, A., Rasheed, I., Sattar, M.N., Ogunrinde, A.T., Shah, S.A., Farid, H.U., Keerio, H.A., Butt, A.Q., Khan, A.A. and Riaz, M.S., 2025. Geostatistical Analysis and Delineation of Groundwater Potential Zones for Their Implications in Irrigated Agriculture of Punjab Pakistan. *World*, *6*(3), p.115.
6. Kanwar, R.M.A., Khan, Z.M., Shoaib, M., **Farid, H.U.,** Sultan, M., Shakoor, A., Ahmad, F., Ullah, A., Shahzad, M.W., Javaid, S.F. and Ameen, (2025). Performance evaluation of novel cascade aerating trickling filter: contaminants removal and biodegradation model. *International Journal of Environmental Science and Technology*, (22)12813–12830.
7. Ahmad, A., Khan, Z.M. and **Farid, H.U.,** (2025) Optimization of condensing tray shapes for a multi-effect solar still coupled with parabolic solar collectors for domestic wastewater treatment: A comparative study. *Environmental Progress & Sustainable Energy*, p.e14515.
8. Waleed, M., Inam, M.A., Albano, R., Samad, A., **Farid, H.U.,** Shoaib, M. and Ali, M.U., 2025. Statistical Model Development for Estimating Soil Hydraulic Conductivity Through On-Site Investigations. *Hydrology*, *12*(3), p.55. https://doi.org/10.3390/hydrology12030055
9. Abbas, T., Shoaib, M., Albano, R., Baig, M.A.I., Ali, I., **Farid, H.U.** and Ali, M.U., 2025. Artificial-Intelligence-Based Investigation on Land Use and Land Cover (LULC) Changes in Response to Population Growth in South Punjab, Pakistan. Land, 14(1), p.154. https://doi.org/10.3390/land14010154
10. Mehdi, S.N., Khan, Z.M., **Farid, H.U.,** Khan, S.U., Khan, M.I., Jameel, M., Abduvalieva, D., Garalleh, H.A. and Waqas, M., 2024. Analyzing the Combustion Characteristics of Thar Coal Block XI: A Comprehensive Study. *Results in Engineering*, p.103038. https://doi.org/10.1016/j.rineng.2024.103038
11. Naeem, M., **Farid, H.U.,** Madni, M.A., Albano, R., Inam, M.A., Shoaib, M., Shoaib, M., Rashid, T., Dilshad, A. and Ahmad, A., 2024. GIS-Based Analytical Hierarchy Process for Identifying Groundwater Potential Zones in Punjab, Pakistan. *ISPRS International Journal of Geo-Information*, *13*(9), p.317.
12. Ahmad, A., Khan, Z.M. and **Farid, H.U.,** 2024. A potential solution for clean water supply: multi-effect solar still and water quality analysis. Water Supply, 24(2), pp.329-340.
13. Abdullah, H., **Farid, H.U.,** Naeem, M., Zubair, N., Khan, Z.M., Shahzad, H., Sikandar, P., Abrar, M., Shakoor, A. and Mubeen, M., 2023. Investigating On-Site Energy Consumption Patterns Using Vertical Electrical Sounding (VES) and Geographic Information System (GIS) Techniques. Sustainability, 15(24), p.16782.
14. **Farid, H.U.,** Ayub, H.U., Khan, Z.M., Ahmad, I., Anjum, M.N., Kanwar, R.M.A., Mubeen, M. and Sakinder, P., 2023. Groundwater quality risk assessment using hydro-chemical and geospatial analysis. Environment, Development and Sustainability, 25 (8), 8343-8365.
15. Haseeb, M., **Farid, H. U.,** Khan, Z. M., Anjum, M. N., Ahmad, A., & Mubeen, M. (2023). Quantifying irrigation water demand and supply gap using remote sensing and GIS in Multan, Pakistan. Environmental Monitoring and Assessment, 195(8), 990.
16. Kanwar, R.M.A., Khan, Z.M. and **Farid, H.U.,** 2023. Fate of biofilm activity in cascade aerating trickling filter for wastewater treatment: Comparison of two types of indigenous support media. Biochemical Engineering Journal, 194, p.108875.

17. Ameen, A., and Farid, H.U. 2023. Greywater Characteristics and Treatment Processes: A Review. *Journal of Business and Environmental Management*, *2*(2), pp.22-44.
18. Anjum MN, Ghanim AAJ, **Farid HU**, Zaman M, Niazi UM, Rahman S, Alsaiari MA and Irfan M (2022) Assessment of Climate Change and Its Impacts on the Flows of a Subtropical River Basin in the Hindu-Kush Mountain, South Asia. Pure and Applied Geophysics, *179*(10), pp.3841-3857. doi: 10.1007/s00024-022-03150-58
19. Waleed, M., Mubeen, M., Ahmad, A., Habib-Ur-Rahman, M., Amin, A., **Farid, H.U.**, Hussain, S., Ali, M., Qaisrani, S.A., Nasim, W. and Javeed, H.M.R., (2022). Evaluating the efficiency of coarser to finer resolution multispectral satellites in mapping paddy rice fields using GEE implementation. Scientific reports, 12(1), p.13210.
20. Naeem, Maira, **Hafiz Umar Farid**, Muhammad Arbaz Madni, Rameez Ahsen, Zahid Mehmood Khan, Aqsa Dilshad, and Huzaifa Shahzad. "Remotely sensed image interpretation for assessment of land use land cover changes and settlement impact on allocated irrigation water in Multan, Pakistan." Environmental monitoring and assessment 194, No. 2 (2022): 1-18. https://doi.org/10.1007/s10661-021-09732-5
21. Ali, A. and **Farid, H.U.,** (2022). Evaluation and Performance of SM2-Satellite Precipitation Product with Reference to Ground-Based Observations, in different cities of Pakistan. NUST Journal of Engineering Sciences, 15(1), pp.30-43.
22. **Hafiz Umar Farid,** Ijaz Ahmad, Zahid Mahmood Khan, Allah Bakhsh, Muhammad Naveed Anjum, Aamir Shakoor, Assad Farooq (2021) Prediction and Maximization of Wheat Grain Yield in Semiarid Environment by Using Artificial Neural Networks. Fresenius Environmental Bulletin, 30(02A/2021) 1977-1987.
23. Ahmed, N., Lü, H., Ahmed, S., Nabi, G., Wajid, M.A., Shakoor, A. and **Farid, H.U.,** 2021. Irrigation Supply and Demand, Land Use/Cover Change and Future Projections of Climate, in Indus Basin Irrigation System, Pakistan. Sustainability, 13(16), p.8695. https://doi.org/10.3390/su13168695
24. Mehdi, S.N., Khan, Z.M., **Farid, H.U.** and Hussain, S., 2021. Investigating Compatible Drying Technique for Safe Utilization of Thar Coal, Pakistan. International Journal of Coal Preparation and Utilization, 42(11) pp. 3303-3324. https://doi.org/10.1080/19392699.2021.1958794
25. Hussain, S., Mubeen, M., Ahmad, A., Masood, N., Hammad, H.M., Amjad, M., Imran, M., Usman, M., **Farid, H.U.,** Fahad, S. and Nasim, W., 2021. Satellite-based evaluation of temporal change in cultivated land in Southern Punjab (Multan region) through dynamics of vegetation and land surface temperature. Open Geosciences, 13(1), pp.1561-1577.
26. Ali A, **HU Farid**, ZM Khan, I Ahmad, MN Anjum, M Mubeen, A Shakoor (2021) Temporal Analysis for Detection of Anomalies in Precipitation Patterns over a Selected Area in the Indus Basin of Pakistan. Pure and Applied Geophysics, 178, 651–669. https://doi.org/10.1007/s00024-021-02671-9
27. RMA Kanwar, ZM Khan, **HU Farid** (2021) Modelling Based Performance Evaluation of Novel Cascade cum Trickling Filter Wastewater Treatment System. International Journal of Environmental Science and Technology. *19*(6), pp.5015-5028. https://doi.org/10.1007/s13762-021-03455-3
28. RMA Kanwar, ZM Khan, **HU Farid** (2021) Enhanced contaminant removal from municipal wastewater using novel cascade cum trickling filter and multilayer adsorption bioreactor. International Journal of Environmental Science and Technology, *19*(3), pp.1423-1436. https://doi.org/10.1007/s13762-021-03201-9

29. RMA Kanwar, ZM Khan, **HU Farid** (2021) Investigation of municipal wastewater treatment by agricultural waste materials in locally designed trickling filter for peri-urban agriculture. Water Supply, 21(5): 2298–2312. https://doi.org/10.2166/ws.2021.075
30. Huzaifa Shahzad, **Hafiz Umar Farid**, Zahid Mahmood Khan, Muhammad Naveed Anjum, Ijaz Ahmad, Xi Chen, Perviaz Sakindar, Muhammad Mubeen, Matlob Ahmad, Aminjon Gulakhmadov (2020) An Integrated Use of GIS, Geostatistical and Map Overlay Techniques for Spatio-Temporal Variability Analysis of Groundwater Quality and Level in the Punjab Province of Pakistan. Water 12(12):3555.
31. R Ahsen, ZM Khan, **HU Farid**, A Shakoor, Ali, I. (2020) Estimation of cropped area and irrigation water requirement using remote sensing and GIS. Journal of Animal and Plant Sciences 30 (4), 876-884.
32. Muhammad Mubeen, Ashfaq Ahmad, Hafiz Mohkum Hammad, Muhammad Awais, **Hafiz Umar Farid,** Mazhar Saleem, Muhammad Sami ul Din, Asad Amin, Amjed Ali, Shah Fahad and Wajid Nasim (2020) Evaluating the climate change impact on water use efficiency of cotton-wheat in semi-arid conditions using DSSAT model. Journal of Water and Climate Change, 11 (4): 1661–1675. doi: 10.2166/wcc.2019.179.
33. A Shakoor, ZM Khan, **HU Farid,** M Sultan, I Ahmad, N Ahmad, (2020) Delineation of regional groundwater vulnerability using DRASTIC model for agricultural application in Pakistan. Arabian Journal of Geosciences 13 (4), 1-12. https://doi.org/10.1007/s12517-020-5161-y
34. Hussain S., M. Mubeen, W. Akram, A. Ahmad, M. H. Rahman, A. Ghaffar, A. Amin, M. Awais, **H. U. Farid,** A. Farooq, W. Nasim 2020. Study of land cover/land use changes using RS and GIS: a case study of Multan district, Pakistan. Environmental Monitoring Assessment (2020) 192(1):2. https://doi.org/10.1007/s10661-019-7959-1
35. Ali, A., **H.U. Farid,** and M.M.H. Khan. 2020. Divergent effect of rainfall, temperature and surface water bodies on groundwater quality in Haveli Canal Circle of Multan Irrigation Zone, Southern Punjab, Pakistan. Journal of Environmental and Agricultural Sciences. 22(4): 25-36.
36. **Hafiz Umar Farid**, Ijaz Ahmad, Muhammad Naveed Anjum, Zahid Mahmood Khan, Muhammad Mazhar Iqbal, Aamir Shakoor, Muhammad Mubeen (2019) Assessing seasonal and long-term changes in groundwater quality due to over-abstraction using geostatistical techniques. Environmental Earth Sciences, 78 (386) 1-12. https://doi.org/10.1007/s12665-019-8373-2
37. Rana Muhammad Asif Kanwar, Zahid Mahmood Khan, **Hafiz Umar Farid** (2019) Development and Adoption of Wastewater Treatment System for peri-urban Agriculture in Multan, Pakistan. Water Science and Technology 80(8):1524-1537. https://doi.org/10.2166/wst.2019.403
38. Hussain S, M Mubeen, A. Ahmad, W Akram, HM Hammad, M Ali, N Masood, A Amin, **HU Farid**, SR Sultana, S Fahad, D Wang, W Nasim (2019) Using GIS tools to detect the land use/land cover changes during forty years in Lodhran District of Pakistan. Environmental Science and Pollution Research, 27(32), pp.39676-39692. doi.org/10.1007/s11356-019-06072-3.
39. **Hafiz Umar Farid**, Zahid Mahmood-Khan, Ijaz Ahmad, Aamir Shakoor, Muhammad Naveed Anjum, Muhammad Mazhar Iqbal, Muhammad Mubeen and Muhammad Asghar (2019) Estimation of infiltration models' parameters and their comparison to simulate the onsite soil infiltration characteristics. International Journal of Agricultural and Biological Engineering, 12(3): 84-91.

40. **Hafiz Umar Farid**, Muhammad Zubair, Zahid Mahmood Khan, Aamir Shakoor, Behzad Mustafa, Aftab Ahmad Khan, Muhamad Naveed Anjum, Ijaz Ahmad and Muhammad Mubeen (2019) Identification of Influencing Factors for Optimal Adoptability of High Efficiency Irrigation System (HEIS) in Punjab, Pakistan. Sarhad Journal of Agriculture, 35(2): 539-549. http://dx.doi.org/10.17582/journal.sja/2019/35.2.539.549
41. Zahid Mahmood Khan, Rana Muhammad Asif Kanwar, **Hafiz Umar Farid**, Muhammad Sultan, Muhammad Arsalan, Maqbool Ahmad, Mian Muhammad Ahson Aslam, Amir Shakoor (2019) Wastewater Evaluation for Multan (Pakistan): Characterization and Agricultural Reuse. Pol. J. Environ. Stud. 28(4):1-16. doi: 10.15244/pjoes/90838
42. Imran Ali, Changsheng Peng, Zahid M. Khan, Muhammad Sultan, Iffat Naz, Mohsin Ali, **Hafiz U. Farid,** Muhammad H. Mahmood, Rameez Ahsen. (2019). Removal of Crystal Violet and Eriochrome Black T dyes from Aqueous Solutions by Magnetic Nanoparticles Biosynthesized from Leaves Extract of Fraxinus Chinensis Roxb. Pol. J. Environ. Stud. 28(4):2027–2040. 10.15244/pjoes/89505

43. **Hafiz U. Farid**, Allah Bakhsh, Muhammad U. Ali, Zahid Mahmood-Khan, Amir Shakoor, Imran Ali (2018) Field Investigation of Aquifer Storage Recovery (ASR) Technique to Recharge Groundwater – A case study in Punjab Province of Pakistan, Water Science and Technology-Water Supply, 18(1)71-83. https://doi.org/10.2166/ws.2017.083
44. Muhammad Mazhar Iqbal, Muhammad Shoaib, **Hafiz Umar Farid** and Jung Lyul Lee (2018) Assessment of Water Quality Profile Using Numerical Modeling Approach in Major Climate Classes of Asia. International Journal of Environmental Research and Public Health, 15(2258): 1-26. **https://doi.org/10.3390/ijerph15102258**
45. Muhammad Naveed Anjum, Yongjian Ding, Donghui Shangguan, Ijaz Ahmad, Muhammad Wajid Ijaz, **Hafiz Umar Farid**, Yousif Elnour Yagoub, Muhammad Zaman, Muhammad Adnan (2018) Performance evaluation of latest integrated multi-satellite retrievals for Global Precipitation Measurement (IMERG) over the northern highlands of Pakistan. Atmospheric Research, 205 (2018) 134-146. https://doi.org/10.1016/j.atmosres.2018.02.010
46. Ijaz Ahmad, Fan Zhang, Muhammad Tayyab, Muhammad Naveed Anjum, Muhammad Zaman, Junguo Liu, **Hafiz Umar Farid**, Qaisar Saddique (2018) Spatiotemporal analysis of precipitation variability in annual, seasonal and extreme values over upper Indus River basin. Atmospheric Research, 213: 346-360.
47. Muhammad Waqar Ghous Qureshi, Zahid Mahmood-Khan, Fiaz Ahmad, Muhammad Shoaib, **Hafiz Umar Farid**, Alamgir Akhtar Khan, Jehangir Khan Sial (2018) Design and Performance Evaluation of an Indigenously Developed Small-Scale Fish-Oil Extraction Unit; a Solution for Improving Fish Farm Environments. Pol. J. Environ. Stud. 27(6): 1-8. https://doi.org/10.1016/j.atmosres.2018.06.019
48. Aamir Shakoor, Muhammad Arshad, Riaz Ahmad, Zahid Mahmood Khan, Uzair Qamar, **Hafiz Umar Farid**, Muhammad Sultan and Fiaz Ahmad (2018) Development of groundwater flow model (MODFLOW) to simulate the escalating groundwater pumping in the Punjab, Pakistan. Pak. J. of Agri. Sci.55(3): 635-644. https://doi.org/10.21162/pakjas/18.4909

49. Ijaz Ahmad, Fan Zhang, Junguo Liu, Muhammad Naveed Anjum, Muhammad Zaman, Muhammad Tayyab, Muhammad Waseem, **Hafiz Umar Farid** (2018) A linear bi-level multi-objective program for optimal allocation of water resources. PLoS ONE 13(2):1-25. https://doi.org/10.1371/journal.pone.0192294
50. Aamir Shakoor, Zahid Mahmood Khan, **Hafiz Umar Farid**, Muhammad Sultan, Aftab Ahmad Khan, Ijaz Ahmad and Muhammad Azmat (2018) Groundwater vulnerability mapping in Faisalabad district using GIS based Drastic Model. MATEC Web of Conferences, 240,01001 (2018) ISWSO 2018. https://doi.org/10.1051/matecconf/201824601001
51. Aamir Shakoor, Zahid Mahmood Khan, **Hafiz Umar Farid**, Ijaz Ahmad, Naveed Ahmad, Muhammad Nadeem, Muhammad Usman Ali and Faisal Baig (2018) Delineation of regional groundwater vulnerability and determining its impact on agricultural productivity. J. Glob. Innov. Agric. Soc. Sci., 6(2):47-53.
52. Akhtar Ali, **Hafiz Umar Farid**, Zahid Mehmood Khan, Aamir Shakoor, Muhammad Nadeem, Muhammad Usman Ali, Faisal Baig, Hafiz Usman Ayub and Huzaifa Shahzad (2018) Subsurface Investigation for Groundwater Formation in District Rahim Yar Khan (Pakistan) using Vertical Electrical Techniques. J. Glob. Innov. Agric. Soc. Sci., 6(3):94-100.
53. Muhammad Bilal Khalid, Muhammad Arshad, Aamir Shakoor, **Hafiz Umar Farid**, Muhammad Nadeem, Faisal Baig, Muhammad Usman Ali and Hafiz Muhammad Awais (2018) Embedment of Sandy Soil to Increase Surface Irrigation Efficiency and Crop Yield Under Modeling and Experimental Approach. J. Glob. Innov. Agric. Soc. Sci., 6(3):88-93.
54. Ali A.F., C. Xiao, M. N Anjum, M. Adnan, Z. Nawaz, M. W. Ijaz, M. Sajid, **H.U. Farid** (2017) Evaluation and Comparison of TRMM Multi-Satellite Precipitation Products with Reference to Rain Gauge Observations in Hunza River Basin, Karakoram Range, Northern Pakistan. Sustainability, 2017(9) 1954: 1-19.
55. Aamir Shakoor, Zahid Mahmood Khan, Muhammad Arshad, **Hafiz Umar Farid,** Muhammad Sultan, Muhammad Azmat, Muhammad Adnan Shahid and Zafar Hussain (2017) Regional groundwater quality management through hydrogeological modeling in LCC (West) Faisalabad Pakistan. Journal of Chemistry, 2017, 1-16.
56. **Hafiz U. Farid**, Zahid Mahmood-Khan, Akhtar Ali, Muhammad Mubeen, Muhammad N. Anjum (2017) Site-Specific Aquifer Characterization and Identification of Groundwater Potential Areas in District Rahim Yar Khan, Pakistan. Polish Journal of Environmental Studies, 26(1) 17-27.
57. Imran Ali, Zahid M. Khan, Muhammad Sultan, Muhammad Hamid Mahmood, **H. U. Farid,** Mohsin Ali· Abdul Nasir (2016) Experimental Study on Maize Cobs Trickling Filter based Wastewater Treatment System: Design, Development and Performance Evaluation. Polish Journal of Environmental Studies, 25(6): 2265-2273.
58. **Farid, H. U.,** A. Bakhsh, N. Ahmad, A. Ahmad, And Z. Mahmood-Khan, (2016) Delineating Site-specific management zones for precision agriculture. The Journal of Agricultural Science, 154(02) 273-286.
59. **Farid, H.U**., A. Bakhsh, N. Ahmad, A. Ahmad, Z. Mahmood-Khan and M. H. Mahmood (2015). Calibration and Validation of CERES-Wheat (Triticum Aestivum) Model for Simulating Fertilizer Application Rates in Management Zones. Journal of Agricultural Sciences 7(7): 115-127.

60. **Hafiz Umar Farid** and Allah Bakhsh (2015) Use of vertical electrical sounding (VES) techniques to explore the groundwater potential. Asian Journal of Science and Technology, 6(01): 915-923.
61. **Farid, H.U.**, A. Bakhsh, N. Ahmad. A. Ahmad and A. Farooq (2013) Spatial relationships of landscape attributes and wheat yield patterns. Journal of Agricultural Science, 5(1): 275-294.
62. Bakhsh, A., I. Bashir, **H.U. Farid**. S.A. Wajid. 2013. Using CERES-Wheat Model to Simulate Grain Yield Production Function. Experimental Agriculture. 49(3): 461-475.
63. **Farid, H.U.**, A. Bakhsh, N. Ahmad and A. Ahmad, (2013) Evaluation of management zone for site-specific application of crop inputs. Pakistan Journal of Life and Social Sciences. 11(1): 29-35.
64. **Farid H. U.** (2013) Modeling Precision Farming Practices to Improve Wheat Productivity. A Dissertation published online on eprints.hec.gov.pk/346/ which is submitted for the fulfilment PhD Agricultural Engineering Degree to Department of Irrigation and Drainage, University of Agriculture Faisalabad.
65. Bakhsh, A., F. Hussain, N. Ahmad, A. Hassan and **H. U. Farid.** (2012) Modeling Deficit irrigation effects on maize to improve water use efficiency. Pak. J. of Agri. Sci. 49(3):331-341.
66. Ahmed M., A. Ghafoor, M. Asif and **H.U. Farid.** (2010) Effects of Irrigation Techniques on Wheat Production and Water Saving in Soils. Soil & Environ, 29(1):69-72.
67. **Farid H. U.** (2009) Determining Aquifer Characteristics Using Resistivity Survey and Pumping Test Techniques. A Dissertation published which is submitted for the fulfilment MSc (Hons) Agricultural Engineering Degree to Department of Irrigation and Drainage, University of Agriculture Faisalabad.

Book Chapter and Laboratory Manual

68. **Farid, H.U. et al**. (2025). Modern Irrigation Methods. In: Mubeen, M., Jatoi, W.N., Hashmi, M.Z., Ahmad, M. (eds) Innovations in Agricultural Water Management. Springer, Cham. https://doi.org/10.1007/978-3-031-91883-4_3
69. Kanwar, R.M.A., Khan, Z.M., Shoaib, M. and **Farid, H.U.,** 2025. Fundamentals of Wastewater Treatment and Sludge Processing. Soils and Sustainable Agriculture: Interplay of Soil, Plant, Water and Environmental Systems for Sustainable Agriculture, pp.753-776.
70. Ishaq, M., Mubeen, M., Hussain, S., **Farid, H.U.**, El Sabagh, A., Nasim, W., Ali, M., Masood, N., Ahmad, S., Javeed, H.M.R. and Amjad, M. (2025) Nanotechnology in Agriculture: Current Trends and Future Prospects Under Changing Climate. In *Nanotechnology for Agriculture* (pp. 223-236). Apple Academic Press.
71. **Farid, H.U.,** Mustafa, B., Khan, Z.M., Anjum, M.N., Ahmad, I., Mubeen, M. and Shahzad, H., 2023. An Overview of Precision Agricultural Technologies for Crop Yield Enhancement and Environmental Sustainability. In *Climate Change Impacts on Agriculture: Concepts, Issues and Policies for Developing Countries*, pp.239-257. Springer International Publishing
72. Amanet, K., Mubeen, M., Qaisrani, S.A., Hammad, H.M., Abbas, B., Abbas, Z., Baluch, K., Labar, N.H., Rehmani, I.A., Amin, A. and **Farid, H.U.,** 2023. Irrigation Scheduling Under Crop Water Requirements: Simulation and Field Learning. In: Jatoi, W.N., Mubeen, M., Hashmi, M.Z., Ali, S., Fahad, S., Mahmood, K. (eds) Climate Change Impacts on Agriculture. Springer, Cham. https://doi.org/10.1007/978-3-031-26692-8_15. Cham: Springer International Publishing.
73. Tariq, S., Mubeen, M., Hammad, H.M., Jatoi, W.N., Hussain, S., **Farid, H.U**., Ali, M., Javeed, H.M.R., Sabagh, A.E. and Fahad, S., 2023. Mitigation of Climate Change Through Carbon

Farming. In: Jatoi, W.N., Mubeen, M., Hashmi, M.Z., Ali, S., Fahad, S., Mahmood, K. (eds) Climate Change Impacts on Agriculture. Springer, Cham. https://doi.org/10.1007/978-3-031-26692-8_22. Cham: Springer International Publishing.

74. Hussain, S., Mubeen, M., Jatoi, W.N., Tahir, M., Ahmad, S., **Farid, H.U**., ur Rahman, M.H., Ali, M., Qaisrani, S.A., Ahmad, I. and Abbas, Z., 2023. Sustainable Development Goals and Governments' Roles for Social Protection. In: Jatoi, W.N., Mubeen, M., Hashmi, M.Z., Ali, S., Fahad, S., Mahmood, K. (eds) Climate Change Impacts on Agriculture. Springer, Cham. https://doi.org/10.1007/978-3-031-26692-8_12. Cham: Springer International Publishing.
75. **Hafiz Umar Farid,** Zahid Mahmood Khan, Aamir Shakoor, Muhammad Mubeen, Hafiz Usman Ayub, Rana Muhammad Asif Kanwar, Muhammad Bilal 2022. Water Resources in Relation to Climate Change. In: Jatoi W.N., Mubeen M., Ahmad A., Cheema M.A., Lin Z., Hashmi M.Z. (eds) Building Climate Resilience in Agriculture. Springer, Cham. https://doi.org/10.1007/978-3-030-79408-8_10
76. Akram, R., Amanet, K., Iqbal, J., Fatima, M., Mubeen, M., Hussain, S., Ali, M., Nasim, W., Ahmad, A., **Farid, H.U.** and El Sabagh, A., Climate Change, Insects and Global Food Production. In Climate Change and Ecosystems (pp. 47-60). CRC Press.
77. Hussain S, M Mubeen, SR Sultana, A Ahmad, S Fahad, WN Jatoi, S Ahmad, A Ali, **HU Farid**, HMR Javeed, M Ali 2022. Managing Greenhouse Gas Emission. In Book: Modern Techniques of Rice Crop Production. Springer, Singapore. Doi: 10.1007/978-981-16-4955-4_27
78. Khizer Amanet, Emmanuel Obianuju Chiamaka, Gabriel Willie Quansah, Muhammad Mubeen, **Hafiz Umar Farid**, Rida Akram, Wajid Nasim, (2020) Cotton Production in Africa. DOI: 10.1002/9781119385523.ch17
79. Hussain S, A Ahmad, A Wajid, T Khaliq, N Hussain, M Mubeen, **HU Farid** et al. (2020) Irrigation Scheduling for Cotton Cultivation, Cotton Production and Uses, 59-80. https://doi.org./10.1007/978-981-15-1472-2_5
80. Ali M., M. Mubeen, N. Hussain, A. Wajid, **H. U. Farid**, M. Awais, S. Hussain, W. Akram, A. Amin, R. Akram, M. Imran, A. Ali, W. Nasim (2019) Role of ICT In Crop Management. In: Hasanuzzaman M. (Eds) Agronomic Crops. Springer, Singapore, pp 637-652. https://doi.org/10.1007/978-981-32-9783-8_28
81. Akhtar Ali and **Hafiz Umar Farid** (2022) "Fluid Mechanics and Hydraulics Machinery" a Book is published by Ahmad Book Dipu Lahore for Diploma for Associate Engineers in Mechanical Technology, (Published in Urdu)
82. Akhtar Ali and **Hafiz Umar Farid** (2018) "Hydraulics Machinery" a Practical Notebook is published by Ahmad Book Dipu Lahore for Diploma for Associate Engineers in Mechanical Technology, (Published in Urdu)
83. Akhtar Ali and **Hafiz Umar Farid** (2018) "Applied Thermodynamic" a Practical Notebook is published by Ahmad Book Dipu Lahore for Diploma for Associate Engineers in Mechanical Technology, (Published in Urdu)

Articles Published in National/International Conference Proceedings

84. Najm-ul-Hassan, **Hafiz Umar Farid**, Muhammad Azhar Innam, Aamir Shakoor, Rana Muhammad Asif Kanwar, Akhlaq Ahmad (2024) Spatial Distribution of Groundwater Potential and Borewell Design Parameters for Multan-Pakistan. *An abstract published in Proceedings on "National Conference on Climate Change and Water Resources (CCWR) Bridging the Gap for SDG6" organized by Department of Agricultural Engineering, Bahauddin Zakaritya University Multan. Pp 177.*

85. Aamir Shakoor, Wajahat Mehrose Sohjal, Zahid Mahmood Khan, **Hafiz Umer Farid**, Muhammad Awais and Rana Muhammad Asif Kanwar (2024) Field and Modelling Assessment of the Influence of Precise Land Levelling on Surface Irrigation Performance. *A paper published in Proceedings on "National Conference on Climate Change and Water Resources (CCWR) Bridging the Gap for SDG6" organized by Department of Agricultural Engineering, Bahauddin Zakaritya University Multan. Pp 38-41.*

86. Rana Muhammad Asif Kanwar, Zahid Mahmood Khan, H Muhammad Shoaib, **Hafiz Umar Farid**, Aamir Shakoor (2024) Evaluation of Wastewater in Pakistan: Characterization and Impact Assessment. *A paper published in Proceedings on "National Conference on Climate Change and Water Resources (CCWR) Bridging the Gap for SDG6" organized by Department of Agricultural Engineering, Bahauddin Zakaritya University Multan. Pp 42-53.*

87. M. Shoaib Yasin, **Hafiz Umar Farid**, M. Zaniq Kafi, M. Taimoor Atter (2024) Estimation of Recharge Potential Through a Development of Lab Scale Aquifer Storage and Recovery Well. *A paper published in Proceedings on "National Conference on Climate Change and Water Resources (CCWR) Bridging the Gap for SDG6" organized by Department of Agricultural Engineering, Bahauddin Zakaritya University Multan. Pp 61-62.*

88. Maira Naeem, **Hafiz Umar Farid**, Muhammad Arbaz Madni, Zahid Mahmood Khan, Rana Muhammad Asif Kanwar, Haris Abdullah, Aqsa Dilshad, Akhlaq Ahmad (2024) Delineation of GIS-Based Groundwater Potential Recharge Zones in Punjab Pakistan. *An abstract published in Proceedings on "National Conference on Climate Change and Water Resources (CCWR) Bridging the Gap for SDG6" organized by Department of Agricultural Engineering, Bahauddin Zakaritya University Multan. Pp 92.*

89. Muhammad Waqar Hanif, Zahid Mehmood Khan, Muhammad Asif, **Hafiz Umar Farid**, Muhammad Sultan, Atta Ullah, Nadeem Zubair, Shoaib Raza (2024) Evaluation and reusing of wastewater use of Moringa Oleifera Seed as natural coagulant. *An abstract published in Proceedings on "National Conference on Climate Change and Water Resources (CCWR) Bridging the Gap for SDG6" organized by Department of Agricultural Engineering, Bahauddin Zakaritya University Multan. Pp 92.*

90. Shoaib Raza, Zahid Mehmood Khan, Shakeel Ahmad, Fiaz Ahmad, Rana Muhammad Asif Kanwar, **Hafiz Umar Farid**, Muhammad Qasim, Muhammad Waqar Hanif (2024) Operational Simulation of Wastewater Treatment Pilot Plant using GPS-X Process Model. *An abstract published in Proceedings on "National Conference on Climate Change and Water Resources (CCWR) Bridging the Gap for SDG6" organized by Department of Agricultural Engineering, Bahauddin Zakaritya University Multan. Pp 152.*

91. Syed Khizer, Zahid Mahmood Khan, Rana Muhammad Asif Kanwar, Muhammad Habibullah, Muhammad Umair, **Hafiz Umar Farid**, Muhammad Shoaib (2024) Decentralized Wastewater Treatment System in Pakistan to achieve Sustainable Development Goals (SDGs). An abstract published in Proceedings on "National Conference on Climate Change and Water Resources (CCWR) Bridging the Gap for SDG6" organized by Department of Agricultural Engineering, Bahauddin Zakaritya University Multan. Pp 153.

92. Muhammad Qasim, **Hafiz Umar Farid**, Fiaz Ahmad, Shoaib Raza, Jameel-ur-Rehman1 (2024) Investigating Groundwater Recharge Potential for Various Site in Multan Using

Laboratory Methods. An abstract published in Proceedings on "National Conference on Climate Change and Water Resources (CCWR) Bridging the Gap for SDG6" organized by Department of Agricultural Engineering, Bahauddin Zakaritya University Multan. Pp 155.

93. Saleem Akram, Zahid Mahmood Khan, Rana Muhammad Asif Kanwar, **Hafiz Umar Farid** (2024) Application of Electrocoagulation for the Treatment of Textile Dying Industry Wastewater for Agriculture Reuse. *An abstract published in Proceedings on "National Conference on Climate Change and Water Resources (CCWR) Bridging the Gap for SDG6" organized by Department of Agricultural Engineering, Bahauddin Zakaritya University Multan. Pp 156.*

94. M Shoaib Yasin, M Zaniq Kafi, M Taimoor Atter, **Hafiz Umer Farid** (2024) Estimation of Recharge Potential through a Development of Lab Scale Aquifer Storage and Recovery Well. *An abstract published in Proceedings on "National Conference on Climate Change and Water Resources (CCWR) Bridging the Gap for SDG6" organized by Department of Agricultural Engineering, Bahauddin Zakaritya University Multan. Pp 162.*

95. Muhammad Qasim, Fiaz Ahmad, **Hafiz Umar Farid**, Shoaib Raza (2024) Remote Sensing and GIS-Based Approach For Delineating Groundwater Recharge Potential Zones In Multan District, Pakistan. *An abstract published in Proceedings on "National Conference on Climate Change and Water Resources (CCWR) Bridging the Gap for SDG6" organized by Department of Agricultural Engineering, Bahauddin Zakaritya University Multan. Pp 164.*

96. **Hafiz Umar Farid**, Zahid Mahmood Khan, Muhammad Naveed Anjum, Aamir Shakoor, Huzaifa Shahzad Qureshi (2022) Precision Nitrogen Management for Cotton Using (GreenSeeker) Handheld Crop Sensors. Environmental Sciences Proceedings, 23(1): 1-12. https://doi.org/10.3390/environsciproc2022023012

97. Shakoor A, M Ali, ZM Khan, **HU Farid** and MA Aslam (2022) Application of Satellite Remote Sensing Data to Manage Groundwater in Irrigated Canal Zone of Punjab. Environmental Sciences Proceedings, 23(1): 1-12. https://doi.org/10.3390/environsciproc2022023012

98. **HU Farid**, M Naeem, ZM Khan, I Ahmad, S Hussain, A Shakoor, H Shahzad (2022) Use of Tubewell Auditing and VES Techniques for Enhancing Pumping Efficiency. *2nd International Conference on Hydrology and Water Resources (ICHWR-22) Lahore-Pakistan*, March 30, 2022. *CEWRE/CHWRE/22/005/pp:27-33. ISBN: 978-969-8670-06-01 Online available at www.cewre*

99. Shahzad H, **HU Farid**, MN Rasool, ZM Khan, A Shakoor (2022) Pressurized irrigation Field-Adoption constraints in Multan Region Punjab Pakistan. *2nd International Conference on Hydrology and Water Resources (ICHWR-22) Lahore-Pakistan*, March 30, 2022. *CEWRE/CHWRE/22/005/pp:09-26. ISBN: 978-969-8670-06-01 Online available at www.cewre*

100. Shakoor A, SQA Naqvi, ZM Khan, **HU Farid** (2022) Determining Canal Water Deficit in Lower Chenab Canal (LCC) System using Remote Sensing Technique. *2nd International Conference on Hydrology and Water Resources (ICHWR-22) Lahore-Pakistan*, March 30, 2022. *CEWRE/CHWRE/22/005/pp:41-45. ISBN: 978-969-8670-06-01 Online available at www.cewre*

101. **Hafiz Umar Farid**, Saddam Hussain, Zahid Mahmood Khan, Aamir Shakoor, Huzaifa Shahzad (2022) Time series modeling approach for temporal variability of groundwater level. An abstract is also published in abstract book in *ESCON, 2022 International Conference on "Recent Trends in Environmental Sustainability*" held on February 21-23, 2022, organized by

the Department of Environmental Sciences, COMSATS University Islamabad, Vehari Campus.

102. Khawar Abbas, **Hafiz Umar Farid**, Zahid Mahmood khan, Aamir Shakoor, Huzaifa Shahzad, Kh. Muhammad Zakariya (2021) Assessment of Climate Change Impact on productivity of Cotton-Wheat using DSSAT Model. *A paper published in the Conference on Sustainable Water Resources Management (SWRM-21) hosted (online) at Centre of Excellence in Water Resources Engineering, University of Engineering and Technology, Lahore, Pakistan on September 23, 2021. ISBN: 978-969- 8670-06- 01. Paper ID: SWRM-21-903*

103. Huzaifa Shahzad, **Hafiz Umar Farid**, Muhammad Naveed Rasool, Zahid Mahmood Khan, Aamir Shakoor (2021) Pressurized irrigation Field-Adoption constraints in Multan Region Punjab Pakistan. *A paper published in the Conference on Sustainable Water Resources Management (SWRM-21) hosted (online) at Centre of Excellence in Water Resources Engineering, University of Engineering and Technology, Lahore, Pakistan on September 23, 2021. ISBN: 978-969- 8670-06- 01. Paper ID: SWRM-21-405*

104. Khawaja Muhammad Zakariya, Tahir Sarwar, **Hafiz Umar Farid**, Ijaz Ahmad and Rana M. Asif Kanwar (2021) Impact of Urbanization on Water Allowance in Sidhandi Canal Command Area using GIS and Remote Sensing. *A paper published in the Conference on Sustainable Water Resources Management (SWRM-21) hosted (online) at Centre of Excellence in Water Resources Engineering, University of Engineering and Technology, Lahore, Pakistan on September 23, 2021. ISBN: 978-969- 8670-06- 01. Paper ID: SWRM-21-804*

105. **Hafiz Umar Farid**, Akhtar Ali, Zahid Mehmood Khan, Ijaz Ahmad, Aamir Shakoor (2021) Subsurface investigation for Groundwater formation in District Rahim Yar Khan (Pakistan) using Vertical Electrical Techniques. *A paper published in Proceeding of International Conference on Hydrology and Water Resources (ICHWR-21) ISBN: 978-969- 8670-06- 01. CEWRE/ICHWR/21/023/pp: 175-182.*

106. Muhammad Rizwan Shahid, **Hafiz Umar Farid**, Zahid Mahmood Khan, Muhammad Naveed Anjum2, Saddam Hussain (2021) Assessment of Groundwater Vulnerability and Aquifer Protective Capacity Using Vertical Electrical Resistivity Method. *A paper published in Proceeding of International Conference on Hydrology and Water Resources (ICHWR-21) ISBN: 978-969- 8670-06- 01. CEWRE/ICHWR/21/024/pp: 183-191.*

107. Muhammad Abdul Wajid, Syed Hamid Hussain Shah, Aamir Shakoor, **Hafiz Umar Farid**, Ijaz Ahmad, Naveed Ahmad, Muhammad Adnan Shahi1, Aroosa Jabeen (2021) Optimization of Water Allocation Based on Irrigation Water Supply and Demand in Chaj Doab, Pakistan. *A paper published in Proceeding of International Conference on Hydrology and Water Resources (ICHWR-21) ISBN: 978-969- 8670-06- 01. CEWRE/ICHWR/21/028/pp: 209-217*

108. Qamar Iqbal, Aamir Shakoor, Zahid Mahmood Khan, **Hafiz Umar Farid**, Ijaz Ahmad, Muhammad Awais, Imran Rasheed, Hafiz Muhammad Kamran, Muhammad Abdul Wajid (2021) Application of Multispectral images using R-Studio package to Estimate Canal Water Deficit: A comprehensive study of Multan Irrigation Zone. *A paper published in Proceeding of International Conference on Hydrology and Water Resources (ICHWR-21) ISBN: 978-969- 8670-06- 01. CEWRE/ICHWR/21/029/pp: 218-225.*

109. Huzaifa Shahzad, **Hafiz Umar Farid**, Zahid Mahmood Khan, Aamir Shakoor, Rana Muhammad Asif Kanwar, Khawar Abbas (2021) Formulation of Precision Input Management Strategy for Wheat using Handheld Crop Sensor. *A paper published in Proceeding of International*

Conference on Hydrology and Water Resources (ICHWR-21) ISBN: 978-969- 8670-06- 01. CEWRE/ICHWR/21/030/pp: 226-232.

110. Hafiz Muhammad Kamran, Aamir Shakoor, Zahid Mahmood Khan, **Hafiz Umar Farid**, Ijaz Ahmad, Hafiz Muhammad Awais, Qamar Iqbal, Imran Rasheed, Muhammad Abdul Wajid (2021) Quantifying Potential Impact of Temperature Variations on Water Demand in Multan Irrigation Zone. *A paper published in Proceeding of International Conference on Hydrology and Water Resources (ICHWR-21) ISBN: 978-969- 8670-06- 01. CEWRE/ICHWR/21/036/pp: 264-271*

111. Muhammad Ameer Hassan, Zahid Mahmood Khan, Rana Muhammad Asif Kanwar, **Hafiz Umar Farid**, Sheikh Fahad Javaid, Waqas Maqbool, Arshad Ameen (2021) Gravity aeration (Cascade aeration) System with Integrated Settler for pre-Treatment of Wastewater. *A paper published in the Conference on Sustainable Water Resources Management (SWRM-21) hosted (online) at Centre of Excellence in Water Resources Engineering, University of Engineering and Technology, Lahore, Pakistan on September 23, 2021. ISBN: 978-969- 8670-06- 01. Ref. No.: SWRM/21/12*

112. Rana Muhammad Asif Kanwar, Zahid Mahmood Khan, **Hafiz Umar Farid** (2021) Wastewater irrigation issues and options for peri-urban agriculture in Pakistan. A paper published in the Conf*erence on Sustainable Water Resources Management (SWRM-21) hosted (online) at Centre of Excellence in Water Resources Engineering, University of Engineering and Technology, Lahore, Pakistan on September 23, 2021. ISBN: 978-969- 8670-06- 01. Ref. No.: SWRM/21/13*

113. Imran Rasheed, Aamir Shakoor, Zahid Mahmood Khan, **Hafiz Umar Farid**, Ijaz Ahmad, Naveed Ahmad, Qamar Iqbal1, Hafiz Muhammad Kamran and Muhammad Abdul Wajid (2021) Application of Geostatistical Algorithms to Investigate Groundwater Quality Zones for Irrigated Agriculture. *A paper published in Proceeding of International Conference on Hydrology and Water Resources (ICHWR-21) ISBN: 978-969- 8670-06- 01. CEWRE/ICHWR/21/021/pp: 147-154.*

114. Aroosa Jabeen, Syed Hamid Hussain Shah, Aamir Shakoor, Muhammad Abdul Wajid, Muhammad Adnan Shahid and **Hafiz Umar Farid** (2021) Climate Change Impact Assessment on Irrigation Water Supply and Demand in Rechna Doab, Pakistan. *A paper published in Proceeding of International Conference on Hydrology and Water Resources (ICHWR-21) ISBN: 978-969- 8670-06- 01. CEWRE/ICHWR/21/037/pp: 272-279*

115. Aamir Shakoor, Zahid Mahmood Khan, **Hafiz Umar Farid**, Muhammad Sultan and Hadeed Ashraf (2019) Assessment of Spatio-Temporal Variability of Climatic Parameters and Their Effect on Reference Evapotranspiration in Punjab, Pakistan which is published in the abstract book of "1st International Conference on Sustainable Agriculture: Food Security under Changing Climate Scenarios" dated April 3-5, 2019.

116. Sajjad Hussain, Ashfaq Ahmad Chattha, Tasneem Hamid Majeed, Hafiz Mohkum, Muhammad Amjad, **Hafiz Umar Farid**, Muhammad Imran, Khurram Shahzad, Shah fahad, Iftikhar Ahmad, Wajid NasimImpact of Land Surface Temperature on Vegetation Index using Remote Sensing Techniques in Southern Punjab, Pakistan" (as mentioned in the forwarded email) is accepted for Oral presentation at the 2nd International conference on "Climate Smart Agriculture: The way towards sustainability" at Department of Agronomy, MNS-University of Agriculture, Multan, Pakistan, on November 26-27,2019.

117. Muhammad Mazhar Iqbal Saddam Hussain and **Hafiz Umar Farid** "Regional climatic response to global warming: Trends in temperature, precipitation, evapotranspiration, and surface

runoff in the entire region of Pakistan since the 1948s" which is published in the abstract book of "International Conference on 'Climate Smart Agriculture" dated August 2018.

118. Muhammad Sami Ul Din, Ashfaq Ahmad, Aftab Wajid, Tasneem Khaliq,Wajid Nasim, Muhammad Mubeen, Abdul Rauf, **Hafiz Umar Farid**, Rameez Ahsan, Waseem Akram, Khizer Amanet, Mazhar Saleem, Rida Akram, Asad Amin, Muhammad Amjad, Syed Ahsan Zahoor (2018) Studying the Effect of climate Change on crop Production and Water Resources through Remote Sensing. An abstract published in the Abstract Book of 2nd International Conference on Environment and Sustainable Development (ICESD-2018) held on 13-14th March 2018 organized by the Sustainable Development Study Center, GC University Lahore.
119. **Hafiz Umar Farid**, Zahid Mahmood-Khan, Allah Bakhsh, Assad Farooq, Imran Ali (2016) Predicting Wheat Yield using Artificial Neural Network (ANN) in Faisalabad, Pakistan. Paper published in the Proceedings of the [NCAES-2016] 1st National Conference on Agricultural Engineering and Sciences held on 30-31 May 2016 in IMS Hall, Department of Agricultural Engineering, Bahauddin Zakariya University, Bosan Road 60800 Multan, Pakistan (SP-3)
120. Khizer Amanet, Muhammad Mubeen, Ashfaq Ahmad, Aftab Wajid, Hafiz Mohkum Hammad1, Ghulam Mustafa Shah, Behzad Murtaza, Wajid Nasim, Muhammad Farooq Hussain Munis, **Hafiz Umar Farid** (2016) Maize Hybrids Response to Various Irrigation Regimes in the Arid Environment of Vehari. An abstract published in the Abstract Book of Third International Conference on Global Environmental Changes held on March 21-22, 2016 organized by the Department of Environmental Sciences and Engineering, Government College University, Faisalabad.
121. Muhammad Ahsan Amjed, **Hafiz Umar Farid**, Zahid M. Khan, Ehsan Ali, M. Awais Zafar, Maria Sattar (2016) Hydraulic Characteristic Comparison and Pressure Head Optimization of Orifice and Dripper. Paper published in the Proceedings of the [NCAES-2016] 1st National Conference on Agricultural Engineering and Sciences held on 30-31 May 2016 in IMS Hall, Department of Agricultural Engineering, Bahauddin Zakariya University, Bosan Road 60800 Multan, Pakistan (SP-6)
122. Muhammad Waqas Fareed, Zahid Mahmood Khan, Imran Ali, **Hafiz Umar Farid**, Muhammad Arsalan, Main M. Ahson, M. Maqbool (2016) Indigenously Developed Composite Sand Filter for Onsite Decontamination of Surface Water. Paper published in the Proceedings of the [NCAES-2016] 1st National Conference on Agricultural Engineering and Sciences held on 30-31 May 2016 in IMS Hall, Department of Agricultural Engineering, Bahauddin Zakariya University, Bosan Road 60800 Multan, Pakistan (P-40).
123. Rameez Ahsen, Zahid Mahmood Khan, Imran Ali, **Hafiz Umar Farid**, Muhammad Sultan (2016) Mapping Wheat and Cotton Planting Area Through Analysis of Satellite Imagery: A Case Study for Multan District. Paper published in the Proceedings of the [NCAES-2016] 1st National Conference on Agricultural Engineering and Sciences held on 30-31 May 2016 in IMS Hall, Department of Agricultural Engineering, Bahauddin Zakariya University, Bosan Road 60800 Multan, Pakistan (P-39)
124. M. Asghar, M. Yasin, F. Aslam, **H. U. Farid** (2016) Estimation of Kostiakov's Infiltration Model Parameters of Silty Clay Soil of Multan Region. Paper published in the Proceedings of the

[NCAES-2016] 1st National Conference on Agricultural Engineering and Sciences held on 30-31 May 2016 in IMS Hall, Department of Agricultural Engineering, Bahauddin Zakariya University, Bosan Road 60800 Multan, Pakistan (P-28)

125. Akhtar Ali, **Hafiz Umar Farid**, Zahid Mahmood (2016) Using the Resistivity Survey Techniques to Identify the Low Salinity Groundwater Zone in District Rahim Yar Khan (Pakistan). Paper published in the Proceedings of the [NCAES-2016] 1st National Conference on Agricultural Engineering and Sciences held on 30-31 May 2016 in IMS Hall, Department of Agricultural Engineering, Bahauddin Zakariya University, Bosan Road 60800 Multan, Pakistan (P-23)
126. **Hafiz Umar Farid**, Allah Bakhsh, Zahid Mahmood Khan, Imran Ali, Muhammad Imran Khan, Faizan Majeed and Aftab Nazeer (2016) "Excess Nitrogen Management using Variable Rate Technology (VRT) for Protecting in Situ Quality of Soil and Water" Paper published in the Proceedings of the 6th International Conference: Environmentally Sustainable Development (ESDev-2016) at COMSATS Institute of Information Technology (CIIT) Abbottabad, Pakistan
127. **Hafiz Umar Farid,** Zahid Mahmood Khan, Allah Bakhsh, Imran Ali, Muhammad Sultan, Muhammad Imran Khan (2016) Site-Specific Optimization of Fertilizer Application to Wheat. Paper presented in the 2nd National Stakeholder's Conference on Precision Agricultural (NSCPA) titled Current Status and Future Prospects of Adopting Precision Agriculture in Pakistan's Farm dated 16th April 2016 in the DLC-2, University of Agriculture, Faisalabad, Pakistan.
128. Muhammad Arsalan*, Zahid Mahmood Khan, Imran Ali, **Hafiz Umar Farid**, Mian M. AhsonAslam, Maqbool Ahmad (2016) "Maize Cob Trickling Filter (MCTF) Wastewater Treatment System Performance Variation-II" Paper accepted in the Proceedings of 6th International Conference: Environmentally Sustainable Development (ESDev-2016) at COMSATS Institute of Information Technology (CIIT) Abbottabad, Pakistan
129. Awais, H.M, M. Arshad, A. Shakoor, Z. Mahmood and **H.U. Faird** (2015). Delineation of Spatio-Temporal Fluctuation in Groundwater Level and Its Impact on Tubewell Energy Nexus. International Workshop on Renewable Energy Technologies for Community Development in Pakistan organized by University of Agriculture Faisalabad-Pakistan & University of Kassel, Germany. ISBN: 978-969-9035-11-1(Nov. 4-6, 2015).
130. Faizan Majeed, Zahid Mehmood Khan, Anjum Munir, Muhammad Sultan, **Hafiz Umar Farid**, Aamir Shakoor and Aftab Nazeer, (2015) Performance Evaluation of Solar water pumping System for irrigation: A case study in Gujranwala (Pakistan). An abstract published in an International Conference on Renewable Energy Technologies for Community Development in Pakistan
131. Mian M. Ahson Aslam, Zahid Mahmood-Khan, Imran Ali, **Hafiz Umar Farid**, Muhammad Arsalan, Maqbool Ahmad (2016) "Use of Cotton Sticks Agri-Waste as Trickling Filter Biofilm Support Medium for Wastewater Treatment" Paper accepted in the Proceedings of 6th International Conference: Environmentally Sustainable Development (ESDev-2016) at COMSATS Institute of Information Technology (CIIT) Abbottabad, Pakistan
132. Engr. Rameez Ahsen, Dr. Zahid Mahmood Khan, **Dr. Hafiz Umar Farid**, Engr. Muhammad Hamid Mahmood, Engr. Muhammad Zubair and Engr. ImranAli (2014) "Innovative

Management of Land & Water Resources through Satellite Imagery and Current Land-Use Land-Cover Mapping of Multan Region" Paper Presented & Printed in Proceedings of the 1st Young International Engineers Convention (FYIEC-2014) on 18-20 April 2014 at University of Engineering and Technology (UET), Lahore Pakistan: p 185

133. Engr. Muhammad Zubair, Dr. Zahid Mahmood Khan, **Dr. Hafiz Umar Farid**, Engr. Muhammad Hamid Mahmood, Engr. Rameez Ahsen and Engr. Imran Ali (2014) "Calibration of TRMM Satellite Rainfall Data using Actual Rainfall Rain Gauge Data of Punjab, Pakistan" Paper Presented & Printed in Proceedings of the 1st Young International Engineers Convention (FYIEC-2014) on 18-20 April 2014 at University of Engineering and Technology (UET), Lahore Pakistan: p 185
134. Rafiq, M. S., Z. Mahmood-Khan, **H. U. Farid**, M. H. Mahmood, M. Ali, M. Khan and I. Ali, 2013. Pelletization of Organic Solid Wastes for Reuse in Agricultural Lands. A Paper accepted in World Engineering Congress.
135. **Farid, H.U.**, A. Bakhsh (2013) Use and Importance of management zones for precision agriculture. Zaraii Digest, July 2013 pp. 56 (Urdu and English)
136. Bakhsh, A. and **H.U. Farid**, 2013. Using CERES-Wheat Model to Determine Site Specific Fertilizer Application Rates. An Abstract published in Proceedings of Department of Agronomy.
137. Bakhsh, A., N. Ahmad, **H.U. Farid**, M.U. Ali, U.K. Awan. 2011. Aquifer Storage Recovery Technique to Recharge Groundwater. In: Proceedings of Farm Machinery Week of the University Golden Jubilee celebrations held on March 21-26, 2011, University of Agriculture, Faisalabad, pp. 201-209.
138. Shakoor A., M. U. Ghani, H. Basher, **H. U. Farid**. 2011. Determination of Kostiakov Equation Parameters and Their Effects on Infiltration. In: Proceedings of Farm Machinery Week of the University Golden Jubilee celebrations, held on March 21-26, 2011, University of Agriculture, Faisalabad, pp. 227-234.
139. A. Bakhsh, **H. U. Farid,** and M. I. Khan, 2011.Precision Agriculture for Sustainability. An Abstract published in Proceedings of Department of Irrigation and Drainage Week of the University Golden Jubilee celebrations held on December 11-17, 2011, University of Agriculture, Faisalabad.
140. Bakhsh, A., M.U. Ali, N. Ahmad. And **H.U. Farid**. 2010. Investigating Aquifer Storage and Recovery Technology to Recharge Saline Groundwater at Farmer's Fields. An Abstract published in: Proceedings of international planning workshop "Watershed Management and Land Rehabilitation NW Frontier Region, Pakistan" held on December 6-8, 2010 at Pakistan Academy of Sciences, Islamabad, pp. 13.