

Dr. FIAZ AHMAD

Professor, Department of Agricultural Engineering
Bahauddin Zakariya University, Multan, Pakistan
HEC Approved Supervisor

50 Journal Publications + 16 Conference Contribution

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EDUCATION

2018-2020	Post Doc Fellow (Agricultural Engineering)	Jiangsu University, China
2012-2015	PhD (Agricultural Bio Environment and Energy Engineering)	Nanjing Agricultural University, China
2004-2007	M.Sc. (Hons.) Agricultural Engineering	UAF, Pakistan
2000-2004	B.Sc. (Agricultural Engineering)	UAF, Pakistan

PROFESSIONAL POSITIONS

09/2025- to date	Professor, Department of Agricultural Engineering, Bahauddin Zakariya University, Multan, Pakistan
07/2022 – 09/2025	Associate Professor, Department of Agricultural Engineering, Bahauddin Zakariya University, Multan, Pakistan
11/2008- to 07/2022	Assistant Professor, Department of Agricultural Engineering, Bahauddin Zakariya University, Multan, Pakistan
01/2007-11/2008	Lecturer, Department of Agricultural Engineering, Bahauddin Zakariya University, Multan, Pakistan
07/2005-10/2006	Assistant Agricultural Engineer, On-Farm Water Management Department, Govt. of Punjab, Pakistan

RESEARCH PROJECTS

Year	Role	Amount Million	Project Title
2025	PC	0.3PKR	Evaluation of Water management interventions in south Punjab Pakistan (WWF Pakistan)
2024	PI	1.0 PKR	A Pilot Project for the establishment of the Agricultural Mechanization Center for Women Development

2023	PC	1.8 PKR	Training of farmers for climate adoptive rural and urban flood/ watermanagement under the integrated water resouces management in the indus basin (Funded by WWF, Pakistan
2023	FP	1.0 PKR	Establishment of Rechargwell at BZU (Funded by WWF Pakistan)
2023	FP	1.8PKR	Establishment of wetland water treatment (Fundedby WWF)
2022	PI	5.072 PKR	Enhancement of spraying effectiveness by design and development of self propelled paddy sprayer (Funded by HEC)
2022	PI	13.24PKR	Design anddevelopment of halfcircumfluent sprayerfor orchards (Punjab Agricultural Research Board, Shortlisted)
2021	Co-PI	4.05 PKR	A strategy for energy-efficient control of temperature and humidity for greenhouse farming using solar/heat energy (Funded by HEC)
2021	PI	0.2PKR	Enhancement of spaying efficiency of UAV sprayer in orchards (Funded by BZU)
2018	PI (Completed)	50000 RMB	Study of spraying performance of UAV sprayer (Funded by Jiangu University, China)
2017	PI (Completed)	0.175PKR	Experimental study of pneumatic maize planter (Funded by BZU)
2016	PI (Completed)	0.150 PKR	Field evaluation of pneumatic maize planter (Funded by BZU)
2015	PI (Completed)	0.196 PKR	Development of sugar cane trash shredder (Funded by BZU)

- PI= Project Investigator, FP = Focal Person, PC = Project consultant

AWARDS AND DISTINCTIONS

- Post-Doctoral Fellowship for two years from Jiangu Post-Doctoral Fellowship Program 2018 at Jiangu University China.
- Certificate of Appreciation for winning a Post-Doctoral Fellowship.
- Award of Research Project as Co- PI Natural national science Foundation China,
- “Excellent International Student” year 2015 Nanjing agricultural University.
- Excellent International Student” year 2014 Nanjing agricultural University HEC Faculty development scholarship for UETes for PHD studies from China year 2012.
- Award of travelling grant by HEC Pakistan to present research paper at XIX World Congress CIGR International Commission of Agricultural Engineering Antalya Turkey 2018.
- Award of research project as PI Research grant of Rs. 0.175million on Experimental study of pneumatic maize planter by BZU
- Award of research project as PI Research grant of Rs. 0.150 million on Field evaluation of pneumatic maize planter by BZU

- Award of Research Project as PI of Rs. 0.196 million on “Development of sugar cane trash shredder by BZU.

Conferences/ Workshops Attended:

9th July ,2020	WinSRFR Model for Design and Simulation of Precise Surface Irrigation System
23-25 Jan, 2012	Three HEC Workshop on “ Statistical Modeling for Improving the standards of Research Education for University Professionals, UCA, BZ University Multan.
9 -11 April,2012	Three Day Cascading of AIT, Thailand Based Training Program “ Ensuring Training Effectiveness” held at UCA, BZU, Multan.
16-19 Sept, 2014	18th CIGR World Congress at Beijing, China
30-31 May, 2016	1st Nation conference on Agricultural Engineering, BZU Multan
23-25 April,2018	XIX CIGR World Congress at Antalya, Turkey,
15-30 August, 2012	Introduction to Chinese Language and Culture
25 June, 2010	Food Safety Management System (ISO22000)
30-31 Dec, 2008	Data Collection Methodology of Permanent Raised Beds
12 Dec, 2008	Training of Presiding officers
02 May- 11 June,2005	Watercourse Improvement and Construction

Professional Duties

(a) Activates in Department/University

- Farm manager of Agricultural Engineering Department Experimental Farm (2020- todate)
- In-charge to Industrial Linkage and Farmer Liaison for Agricultural Engineering Department.
- Deputy Director Student Affairs, Bahauddin Zakariya University, Multan (2016-2018).
- Member Departmental Purchase Committee, BZU, Multan (27/06/2016 -26/08/2018).
- In charge Lab I.C Engines and Tractors (28/04/2016 – 28/08/2018).
- Member for organizational committee of 1st National conference of Agricultural Engineering and Sciences (NCAES-2016).
- Secretary Committee for Watercourse Lining on Agriculture Farm BZU (2008-2009).
- Member of Discipline committee for holing of 12th Convocation of Bahauddin Zakariya University, Multan, Pakistan
- Member of Discipline committee for holing of 13th Convocation of Bahauddin Zakariya University, Multan, Pakistan.
- Member of Lap Tops Distribution Committee Bahauddin Zakariya University, Multan, Pakistan
- Deputy Director Student Affairs, University College of Agriculture, BZU, Multan (2008-2012)
- Assistant Superintendent Hamza Hall, BZU Multan(2009-2011).

(b)Activates of Public/ International Affairs

- Member Technical Committee on Tractor-Implements of Pakistan Standard and Quality Control Authority (2017-2018). Member Area Water Board LBDC Canal, PIDA. (2013--)
- Reviewer of Journal “Engineering in Agriculture, Environment and Food”.
- Reviewer of Journal “Computers and Electronics in Agriculture.
- Reviewer of Journal “International Journal of Agriculture and Biological Engineering”.
- Reviewer of Journal “Pakistan Journal of Agricultural Research”.
- Reviewer of Journal “ Sarhad Journal of Agriculture”.
- Reviewer for HEC funded Higher Educational Commission Pakistan funded Technological Development Fund (TDF) Projects.

- Member of Project Defense committee of Higher Educational Commission Pakistan funded Technological Development Fund (TDF) Projects

THESIS TITLES

- Post-Doctoral Research project: Effect of operational parameters of Unmanned Aerial Vehicle (UAV) Sprayers.
- PhD Research Topic Applicant: Performance evaluation of disc type furrow openers in no till paddy soil environment

POSTGRADUATE (M. Phil) STUDENTS

Master Students			
Sr. No.	Name and Sessions	Thesis Title	Status
1	Shoaib Raza	Stability analysis of self propelled paddy crop sprayer	Reseach going on
2	Muhammad Qasim	Effect of operational parameter of self propelled paddy crop sprayer on spray deposition	Reseach going on
3	Muhammad Abubaker	Develop of weed detection model using deep learning approach	Reseach going on
4	Muhammad Saif (2022-2024)	Spray uniformity by the self propeeled sprayer in paddy field	Completed
5	Imran Haider (2020-2022)	Effective tire traction in paddy crop sprayer	Completed
6	Awis ul Hassan (2022-2024)	Tractor tire traction under various tire inflation pressure and soil moisture entent	Completed
7	Muhammad Ifran Riaz	Performance evaluation of multicrop weeder	Reseach goingon
8	Muhammad Awais (2020-2022)	Devlopment of computer vision based deep convolution Neural network model for computation of spraying deposits	Completed
9	Muhammad Zubair Qasim (2020-2022)	Comparative study between variate rate airassited sprayer and conventional air blast sprayer	Completed
10	Aftab Khaliq (2020-2022)	Design optimization of precision maiz planter for local working condition	Completed
11	Muhammad Amjid (2019-2021)	Performance and design modification of onion transplanter	Completed
12	Adul Kaleem (2017-2019)	Testing of Variate rate air assisted sprayer in south Punjab climatic conditions	Completed
13	Muhammad Tahir Jamil (2016-2018)	Design modifications and performance evaluation of cotton stalk puller shredder	Completed
14	Muammad Danyal (2016-2018)	Comparative study of the conventional and imported sugarcane juice extractor	Completed
13	Sajid Maqbool (2016-2018)	Methane enhancement by co-Digestion of cow dung grass (Cynodon Dactylon)with activated sludge	Completed
14	Muhammad Adeel (2016-2018)	Enhancement the sowing uniformity of pneumatic maize planter	Completed
15	Fiazam Ali	Performance and evaluation of sugarcane trash shredder	Completed

	(2015-2017)		
PhD Student			
1	Muhammad Irfan	Spraying deposition and penetration of unmanned aerial sprayer during application in mangoes orchard.	Research ongoing

POSTGRADUATE COURSE DEVELOPED

PhD Agricultural Engineering

1. Design Analysis of Agricultural Machinery
2. Modeling of Agricultural Machinery

M.Sc. (Honors) Agricultural Engineering

1. Plant Protection Equipment Engineering
2. Product Design and Development
3. Advancement of Engineering Technologies in Agriculture

Undergraduate Agricultural Engineering

1. Earth Moving Machinery

PATENTS

1. **Fiaz Ahmad**, Zahid Mehmood Khan, Abdul Aleem, Ch. Shahid Rahim, Sugarcane Trash Shredder **Patent Application Number: PK/81/2018**. Intellectual Property Organization of Pakistan, THE Patent Office, Karachi. (Applied)

JOURNAL PUBLICATIONS

1. Waqar Ahmad, Aftab Khaliq, Ibrar Ahmad, Muhammad Shoaib, Hafiz Sultan Mahmood, Fiaz Ahmad, Bushra Siddiquec, Hajra Azeem, Mahmood Ali Performance evaluation of CNN-based soybean seed health recognition: a comparative study of different datasets, *Tropical Agrobiodiversity*, 2025, 6(1), 38-44.
2. R. M. A. Kanwar Z. M. Khan M. Shoaib H. U. Farid M. Sultan A. Shakoore F. Ahmad A Ullah M. W. Shahzad S. F. Javaid A. Ameen, Performance evaluation of novel cascade aerating trickling filter contaminants removal and biodegradation model, *International Journal of Environmental Science and Technology*, 2025, 22, 12813-12830,
3. Ibrar Ahmad, Aftab Khaliq, Bushra Saddique, Fiaz Ahmad, Mahmood Ali and Muhammed Shoaib, Advances in automation for plug seedling cultivation and transplanting in greenhouses: a review. *J Agric. Res.*, 2025, 63(3):255-266.
4. Khaliq, A. ., Qasim, M. Z., Ahmad, F. ., Mahmood, H. S. ., & Cuong, D. M. Impact of Combine Harvester Speed on Wheat Grain Loss: A Field Study in Multan, Pakistan. *Pakistan Journal of*

- Agriculture, Agricultural Engineering and Veterinary Sciences*, 2024, 40(2), 120–126.
<https://doi.org/10.47432/2024.40.2.9>
5. Tang, L. Chandio, F.A. Shaikh, S.A. Junejo, A.R. Mari, I.A. Khoso, H.B. Hao, L. Syed, T.N. Ahmed, F Drying Hot Red Chilies A Comparative Study of Solar-Gas-Fired, Tunnel, and Conventional Dryers , Processes 2024 , 12 , 2104
 6. Ma, J.,Liu, K., Dong, X. , Xin H. , Ahmad,F, Qiu, B.J., Force and motion behaviour of crop leaves during spraying , Biosystems Engineering, 235, 83-99, <https://doi.org/10.1016/j.biosystemseng.2023.09.012> (IF.= 5.1)
 7. Md-Tahir, H.; Zhang, J.; Zhou, Y.; Sultan, M.; **Ahmad, F.**; Du, J.; Ullah, A.; Hussain, Z.; Xia, J. Engineering Design, Kinematic and Dynamic Analysis of High Lugs Rigid Driving Wheel, a Traction Device for Conventional Agricultural Wheeled Tractors. *Agriculture* 2023, 13, 493. <https://doi.org/10.3390/agriculture13020493>(**IF = 3.4**).
 8. Tunio M H, Gao J M, Mohamed T M K, Ahmad F, Abbas I, Shaikh S A. Comparison of nutrient use efficiency, antioxidant assay, and nutritional quality of butter-head lettuce (*Lactuca sativa* L.) in five cultivation systems. *Int J Agric & Biol Eng*, 2023; 16(1): 95–103(**IF = 2.02**).
 9. Shaikh S A, Li Y M, Ma Z, Chandio F A, Tunio M H, Ahmad F, et al. Effects of soil mechanical properties on the height and tractive performance of rubber grouser at different moisture contents. *Int J Agric & Biol Eng*, 2022; 15(6): 31–37. (**IF = 2.02**).
 10. Shi, R.; Sun, H.; Qiu, W.; Lv, X.; Ahmad, F.; Gu, J.; Yu, H.; Zhang, Z. Analysing Airflow Velocity in the Canopy to Improve Droplet Deposition for Air-Assisted Spraying: A Case Study on Pears. *Agronomy* 2022, 12, 2424. <https://doi.org/10.3390/agronomy12102424> (**IF 3.06**)
 11. Buttar, N.A.; Hu, Y.; Tanny, J.; Raza, A.; Niaz, Y.; Khan, M.I.; Saddique, N.; Sarwar, A.; Azeem, A.; Ahmed, F.; et al. Estimation of Sensible and Latent Heat Fluxes Using Flux Variance Method under Unstable Conditions: A Case Study of Tea Plants. *Atmosphere* 2022, 13, 1545. <https://doi.org/10.3390/atmos13101545> (**IF. 3.1**)
 12. Ahmed, S.; Qiu, B.; Kong, C.-W.; Xin, H.; Ahmad, F.; Lin, J. A Data-Driven Dynamic Obstacle Avoidance Method for Liquid-Carrying Plant Protection UAVs. *Agronomy* 2022, 12, 873. <https://doi.org/10.3390/agronomy12040873> (**IF. 3.06**)
 13. Ahmad, F.; Zhang, S.; Qiu, B.; Ma, J.; Xin, H.; Qiu,W.; Ahmed, S.; Chandio, F.A.; Khaliq, A. Comparison of Water Sensitive Paper and Glass Strip Sampling Approaches to Access Spray Deposit by UAV Sprayers. *Agronomy* 2022, 12, 1302. <https://doi.org/10.3390/agronomy12061302> (**IF. 3.06**)
 14. Wen Z J, Qiu W, Zhang Z T, Ding W M, Lyu X L, Ahmad F, et al. Tunnel-convective air-assisted spraying technology for improving droplet deposition on hedgerow vines. *Int J Agric & Biol Eng*, 2021; 14(6): 9–18.(**IF=2.02**)
 15. Ma, J.; Liu, K.; Chen, C.; **Ahmad, F.**; Qiu, B. 2021 Influence of Plant Leaf Moisture Content on Retention of Electrostatic-Induced Droplets. *Sustainability* , 13, 11685. <https://doi.org/10.3390/su132111685>(**IF = 3..251**).
 16. Ali Raza, H.M.; Bashir, M.A.; Rehim, A.; Raza, Q.-U.-A.; Khan, K.A.; Aon, M.; Ijaz, M.; Ur Rahman, S.; Ahmad, F.; Geng, Y. Effect of K and Zn Application on Biometric and Physiological Parameters of Different Maize Genotypes. *Sustainability* 2021, 13, 13440. <https://doi.org/10.3390/su132313440> (**IF=3.25**)

17. Khan, M.T.; Shoaib, M.; Hammad, M.; Salahudin, H.; Ahmad, F.; Ahmad, S. Application of Machine Learning Techniques in Rainfall–Runoff Modelling of the Soan River Basin, Pakistan. *Water* 2021, 13, 3528. [https://doi.org/ 10.3390/w13243528](https://doi.org/10.3390/w13243528) (IF=3.103)
18. Huang, X.; Dong, X.; Ma, J.; Liu, K.; Ahmed, S.; Lin, J.; Ahmad, F.; Qiu, B. Evaluation and Experiment of Flight Parameter Quality of the Plant Protection UAV Based on Laser Tracker. *Agriculture* 2021, 11, 628. <https://doi.org/10.3390/agriculture11070628> (IF = 2.925).
19. Chandio F A, Li Y M, Ma Z, Ahmad F, Syed T N, Shaikh S A, et al. 2021 Influences of moisture content and compressive loading speed on the mechanical properties of maize grain orientations. *Int J Agric & Biol Eng*, 2021; 14(4): 41–49. (IF = 2.02).
20. Ahmed, S.; Qiu, B.; **Ahmad, F.**; Kong, C.-W.; Xin, H. A State-of-the-Art Analysis of Obstacle Avoidance Methods from the Perspective of an Agricultural **Sprayer UAV's Operation** Scenario. *Agronomy* 2021, 11, 1069. [https:// doi.org/10.3390/agronomy11061069](https://doi.org/10.3390/agronomy11061069) (IF = 3.417).
21. **Ahmad, F.**, Adeel, M., Qiu B, J., M., Shoaib, M., Shakoor, A., Chandio, F.A., 2021. Sowing uniformity of bed-type pneumatic maize Planter at various seed bed preparation levels and machine travel speed. **International Journal of Agricultural and Biological Engineering**, 14(1);163-171 (IF = 1.731).
22. Sher Ali Shaikh , Y.L., Ma Zheng , Farman Ali Chandio, Fiaz Ahmad, Tunio, M.H., Abbas, I., 2021. Effect of Grouser Height on the Tractive Performance of Single Grouser Shoe under Different Soil Moisture Contents in Clay Loam Terrain. **Sustainability** 13, 1156. 10.3390/su13031156 (IF = 2.57).
23. Hadeed Ashraf , Sultan, M., Shamshiri, R.R., Abbas, F., Farooq, M., Uzair Sajjad, Md-Tahir, H., Mahmood, M.H., **Ahmad, F.**, Yousaf R. Taseer, Shahzad, A., Niazi, B.M.K., 2021. Dynamic Evaluation of Desiccant Dehumidification Evaporative Cooling Options for Greenhouse Air-Conditioning Application in Multan (Pakistan). *Energies*, 14,1097. <https://doi.org/10.3390/en14041097> (IF=2.70).
24. Xi, T., Li, C., Qiu, W., Wang, H., Lv, X., Han, C., Ahmad, F., 2020. Droplet Deposition Behavior on a Pear Leaf Surface under Wind-Induced Vibration. **Applied Engineering in Agriculture** 36, 913-926. (IF = 0.97).
25. **Ahmad, F.**, Qiu, B., Dong, X., Ma, J., Huang, X., Ahmed, S., Ali Chandio, F., 2020. Effect of operational parameters of UAV sprayer on spray deposition pattern in target and off-target zones during outer field weed control application. **Computers and Electronics in Agriculture**. 172, 105350. <https://doi.org/10.1016/j.compag.2020.105350> (IF = 3.171).
26. **Ahmad, F.**, Ding, W., Ding, Q., Qiu, B., Khan, Z.M., Shoiab, M., Chandio, F.A., Rehim, A., Khaliq, A., 2020. Discrete element method (DEM) simulation of disc type furrow openers in paddy soil. **International Journal of Agricultural and Biological Engineering**, 13(4),103-110 (IF = 1.349).

27. **Chandio, F.A., Li, Y., Xu, L., Ma, Z., Ahmad, F.,** Cuong, D.M. Lakhair, I.A., 2020. Predicting the 3D forces of disc tool and soil disturbance area using fuzzy logic method under sensor-based soil bin. **International Journal of Agricultural and Biological Engineering**, 13(4),77-84 (IF = 1.349).
28. Lakhair, I.A., Gao, J.M., Tabinda, T.N., Chandio, F.A., Tunio, M.H., **Ahmad, F.,** Solangi, K.A., 2020. Overview of the aeroponic agriculture – An emerging technology for global food security. **International Journal of Agricultural and Biological Engineering**. 13, 1-10. DOI: 10.25165/ijabe.20201301.5156 (IF = 1.349).
29. **Ahmad, F.,** Jamil, M.T., Khan, A.A., Mehmood-Khan, Z., Qiu, B., Ma, J., Chandio, F.A., 2020. Field performance evaluation and finite element simulation of cotton stalk puller-shredder: a sustainable mechanical solution to control pink Bollworm (*Pectinophora Gossypiella*). **Sustainability**. 12,3407 doi:10.3390/su12083407 (IF = 2.592).
30. Shaikh, S.A., Li, Y., Chandio, F.A., Tunio, M.H., **Ahmad, F.,** Mari, I.A., Solangi, K.A., 2020. Effect of wheat residue incorporation with tillage management on physico-chemical properties of soil and sustainability of maize production. **Fresenius Environmental Bulletin**, 9,4921-4929. (IF = 0.691).
31. Chao, X., Chen, S., Qiu, W., Lv, X., Li, H., C., H., **Ahmad, F.,** 2019. Simulation and validation of the air flow generated by a multi-channel air-assisted sprayer. **IEEE Access** 7, 94848-94857. 10.1109/ACCESS.2019.2927377 (IF = 4.098).
32. **Ahmad, F.,** Maqbool, S., Mehammod- Khan, Z., Hassan, M., Baijing Qui, Jing Ma, Jameel, T., 2019. Enhancement Methane Generation by Co Digestion of Cow Dung and Grass (*Cynodon dactylon*) with Activated Sludge. **Bioresources** 14, 6822-6836. DOI: 10.1536/biores.14.3 6822-6836. (IF = 1.396).
33. Yousaf, K., Abbas, A., Zhang, X., Kang, R., Belal, E., **Ahmad, F.,** Chen, K., 2019. The optimization of starch galvanization and quality attributes under hydro thermal treatment of paddy by response surface method. **Fresenius Environmental Bulletin** 28, 2771-2779. (IF = 0.691).
34. Qureshi, M., Khan, Z., Hussain, M., **Ahmed, F.,** Shoaib, M., Qasim, M., 2019. Experimental evaluation of a diesel engine for combustion, performance and exhaust emissions with Fuel blends derived from a mixture of fish waste oil and waste cooking oil biodiesel. **Polish Journal of Environmental Studies** 28, 2793-2803. DOI: 10.15244/pjoes/90096. (IF = 1.186).
35. Shoaib, M., Shamseldin, A.Y., Khan, S., Sultan, M., **Ahmad, F.,** Sultan, T., Dahri, Z.H., Ali, I., 2018. Input Selection of Wavelet-Coupled Neural Network Models for Rainfall-Runoff Modelling. **Water Resources Management** 33, 955-973. <https://doi.org/10.1007/s11269-018-2151-x>. (IF = 2.987).
36. Li, Y., Ali Chandio, F., Ma, Z., Ali Lakhair, I., Razaque Sahito, A., **Ahmad, F.,** Ali Mari, I., Farooq, U., Suleman, M., 2018. Mechanical strength of wheat grain varieties influenced by moisture content

- and loading rate. **International Journal of Agricultural and Biological Engineering** 11, 35-41. DOI: 10.25165/j.ijabe.20181104.3737 (IF = 1.3493.40).
37. Naveed, S., Rehim, A., Imran, M., Bashir, M.A., Anwar, M.F., **Ahmad, F.**, 2018. Organic manures: an efficient move towards maize grain biofortification. **International Journal of Recycling of Organic Waste in Agriculture** 7, 189-197 <https://doi.org/10.1007/s40093-018-0205-y>.
38. Shakoor, A., Arshad, M., Ahmad, R., Khan, Z.M., Qamar, U., Farid, H.U., Sultan, M., **Ahmad, F.**, 2018. Development of Groundwater Flow Model (Modflow) to Simulate the Escalating Groundwater Pumping in the Punjab, Pakistan. **Pakistan Journal of Agricultural Sciences** 55, 635-644. DOI:10.21162/PAKJAS/18.4909. (IF =0.618).
39. Mehboob, N., Minhas, W.A., Nawaz, A., Shahzad, M., **Ahmad, F.**, Hussain, M., 2018. Surface drying after seed priming improves the stand establishment and productivity of maize than seed re-drying. **International Journal of Agriculture & Biology** 20, 1283–1288. DOI: 10.17957/IJAB/15.0625 (IF = 0.802).
40. Quresi, M., Khan, Z., **Ahmad, F.**, Shoaib, M., Farid, H., Khan, A., Sial, J., 2018. Design and performance evaluation of an indigenously developed small scale fish-Oil extraction unit; a solution for improving fish farm environments. **Polish Journal of Environmental Studies**, 27, 2711-2718. DOI: 10.15244/pjoes/81111. (IF=1.186).
41. Qin, K., Ding, W., **Ahmad, F.**, Fang, Z., 2018. Design and experimental validation of sliding knife notch-type disc opener for a no-till combine harvester cum seed drill. **International Journal of Agricultural and Biological Engineering** 11, 96-103. DOI: 10.25165/j.ijabe.20181104.3498 (IF = 1.134).
42. Rehim, A., Ali, I., Bashir, M.A., Hussain, S., Hussain, M., Ahmad, S., **Ahmad, F.**, 2018. Evaluating the interactive effects of rates and Methods of Phosphorus Application on Wheat Productivity. **Science, Technology and Development** 37, 6-12.
43. Hassan, M., Umar, M., Mamat, T., Muhayodin, F., Talha, Z., Mehryar, E., **Ahmad, F.**, Ding, W., Zhao, C., 2017. Methane Enhancement through Sequential Thermochemical and Sonication Pretreatment for Corn Stover with Anaerobic Sludge. **Energy & Fuels** 31, 6145-6153. DOI: 10.1021/acs.energyfuels.7b00478 (IF = 3.021).
44. **Ahmad, F.**, Weimin, D., Qishou, D., Rehim, A., Jabran, K., 2017. Comparative Performance of Various Disc-Type Furrow Openers in No-Till Paddy Field Conditions. **Sustainability** 9, 1143. doi:10.3390/su9071143. (IF = 2.592).
45. **Ahmad F.**, Ding, W., Q., D., M., Z., Chandio F. A., Arslan, C., 2015. Fuzzy logic model to predict wheat straw mechanical properties under moisture content and loading rate. **Pakistan Journal of Agricultural Sciences** 52, 961-970. (IF =0.618).

46. Hashim, S., Yuebo, X., **Ahmad, F.**, Arslan, C., Saifullah, M., 2015. Vulnerability assessment and application of bacterial technology on urban rivers for pollution eradication. **Biomed Research International** 2015, 241769. <http://dx.doi.org/10.1155/2015/241769> (IF = 2.197).
47. **Ahmad F.**, Ding W., Ding Q., Fang H. and Hassan M. (2015).3-D DEM modeling of single disc furrow opener draft force in no-till paddy soil. **International Agricultural Engineering Journal**. 24(2), 1-29.
48. **Ahmad, F.**, Weimin, D., Qishuo, D., Hussain, M., Jabran, K., 2015.Forces and straw cutting performance of double disc furrow opener in no-till paddy soil. **PLoS One** 10, e0119648. doi:10.1371/journal.pone.0119648 (IF = 2.776).
49. Mari, I.A., Ji, C., Chandio, F.A., Arslan, C., Sattar, A., **Ahmad, F.**, 2015. Spatial distribution of soil forces on moldboard plough and draft requirement operated in silty-clay paddy field soil. **Journal of Terramechanics** 60, 1-9. [tp://dx.doi.org/10.1016/j.jterra.2015.02.008](http://dx.doi.org/10.1016/j.jterra.2015.02.008) (IF = 1.447).
50. **Ahmad, F.**, Ding, W., Ding Q. F. A. Chandio, I. A. Mari, Zhu M. (2014). Fuzzy model to predict wheat straw tensile strength influenced by moisture content and loading rate. **International Agricultural Engineering Journal**. 23 (4), 52-62.
51. Tagar A.A., C.Ji, Q. Ding, **Ahmad, F.**, A. Khaliq, M. Hassan and J.C. Bai.(2014).Transitions of soil failure patterns as affected by various moisture contents. **Sci Letter** 2(2):71-75.
52. Mari, I.A., C. Ji, F.A. Chandio, Chaudhry Arslan, A.A. Tagar and **Ahmad, F.** (2014). Rheological properties of paddy soil under various pressure, water content and tool shapes. **American Journal of Agricultural and Biological Sciences** 9 (1): 25-32.
53. Rahim, A., Farooq, M., **Ahmad, F.**, Hussain, M., 2012. Band placement of phosphorus improves the phosphorus use efficiency and wheat productivity under different irrigation regimes. **International Journal of Agriculture and Biology** 14, 727–733. (IF = 0.802).

CONFERENCE ABSTRACTS/ PUBLICATIONS

1. Sarfraz Hashim, Aftab Khaliq, Alamgir Akhtar Khan, Fiaz Ahmad, Farrukh Ehsan (2023) Qualitative Effect of Mechanical Turner on N-P-K Concentration of Compost” 1st International Conference on Trends in Advanced Research March 4-7, 2023 : Konya, Turkey
2. Aftab Khaliq, Fiaz Ahmad Sarfraz Hasim, Muhammad Awais, Sadia Iqbal; An overview of tillage options for low carbon emission, 2nd International Conference on Engineering and Applied Natural Sciences (ICEANS) held October 15-18, 2022, Konya, Turkey.
3. Usama Mehmood, Aftab Khaliq and Fiaz Ahmad, Muhammad Awais test and evaluation of prototype aeroponic system for indoor vegetable plant growth, 1st International Conference on Innovative Academic Studies (ICIAS), September 10 - 13, 2022, Konya, Turkey
4. Aftab Khaliq, Fiaz Ahmad*, Abdul Kaleem, and Zubair Qasim,(2021) Variate rate spraying techniques for reducing spray drift to control the environmental risks. International Conference on

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11. **Ahmad, F.** Khan, Z.M. Shoaib, M. Ding, W. Khawaja, A. N. (2018). DEM simulation of Bed shaper and furrow openers of pneumatic planter, **XIX world Congress CIGR International Agricultural Engineering**, 22-25 April 2018, Antalya Turkey.
12. **Ahmad, F.**, Ding W., Ding, Q., Shoaib, M. 3-D discrete element modelling for soil tool interaction, A Novel approach for cohesive soil. **1st National conference of Agricultural Engineering and Sciences (NCAES-2016)**, 30-31 May 2016, Bahauddin Zakariya University, Multan, Pakistan
13. Qureshi M.W.G., Khan, M.Z. Ahmad, F., Shoaib, M., Sial, J.K. (2016). Design and performance evaluation of indigenous small scale fish oil extraction unit. **1st National conference of Agricultural Engineering and Sciences (NCAES-2016)** 30-31 May 2016, Bahauddin Zakariya University, Multan, Pakistan.
14. Qureshi M.W.G., Khan, M.Z. **Ahmad, F.**, Umar, H.F., Majeed, F., (2016). Design of small scale fish oil extraction unit from fish waste for biodiesel. **International Workshop on Renewable Energy, Technologies for Community Development in Pakistan**, 04-06 November 2015 University of Agriculture Faisalabad, Pakistan
15. Majeed, A. Majeed, A., Khan, Z. M. **Ahmad, F.**, Munir, A., (2016). Evaluation and optimization of a solar pumping system in Pakistan, International Workshop on Renewable Energy Technologies for

Community Development in Pakistan , 04-06November 2015 University of Agriculture Faisalabad, Pakistan

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BOOKS

1. Editors: Fiaz Ahmad , Muhammad Sultan and Ding Qishou, Book Title Tillage Research- New Systems for Sustainable Crop Production (Inprogress)
2. Editors: Muhammad Sultan, Muhammad Imran and Fiaz Ahmad Book Title: “**Irrigation System and Applications**” IntechOpen Publisher, United Kingdom (Published).
3. Editors: Fiaz Ahmad and Muhammad Sultan Book Title: “**Technology in Agriculture**” ISBN: 978-1-83881-922-4. Print ISBN: 978-1-83881-921-7. eBook (PDF) ISBN: 978-1-83881-923-1. Published by IntechOpen Publisher, United Kingdom <http://dx.doi.org/10.5772/intechopen.92469> <http://dx.doi.org/10.5772/intechopen.92469>
4. Editors: Fiaz Ahmad and Muhammad Sultan Book Title: “ **Agriculture Waste**” IntechOpen Publisher, United Kingdom (In Process).
5. Editors: Muhammad Sultan and Fiaz Ahmad Book Title: “ **Advances in Irrigation and Drainage**” IntechOpen Publisher, United Kingdom (Published).
6. Fiaz Ahmad, Practical Manual for subject; **Harveting Machinery**. Bahauddin Zakariya University Multan

BOOK CHAPTER

1. Muhammad Aleem, Muhammad Sultan, Muhammad Imran, Zafar A. Khan, Hadeed Ashraf, Hafiz M. Asfahan and Fiaz Ahmad Hybrid Energy Powered Smart Irrigation System for Smallholder Farmers: Installation Site and Crop Selection, In: Muhammad Sulan , Muhammad Imran and Fiaz Ahmad (ed) Irrigation System and Applications IntechOpen Publisher, United Kingdom
2. Fiaz Ahmad; Aftab Khaliq, Ding Qishuo, Farman Ali Chandio, Muhammad Sultan, Muhammad Awais, Energy-Efficient Tillage System for Crop Production: A Review (2023), In: Rakshit, A., Biswas, A., Sarkar, D., Meena, S.V., Datta,R. (ed), Handbook of Energy Management in Agriculture Springer Nature Singapore, 2023 978-981-19-7736-7, <https://link.springer.com/book/10.1007/978-981-19-7736-7?page=2&fbclid=IwAR3ltx9oy6Ib7RrUX1-cTLHIJXXm4BnxmESpAmgKJjHTkDIUC5jGph9Zt20#about-this-book>
3. Fiaz Ahmad; Aftab Khaliq, Ding Qishuo, , Muhammad Sultan, Crop Residue Collection and Handing Machinery Performance: A Review, In: Fiaz Ahmad, Muhammad Sulan (ed) Agricultural Waste., IntechOpen Publisher, United Kingdom.
4. Ali Raza, Aftab Khaliq, Yongguang Hu, Nadeem Zubair, Siham Acharki, Muhammad Zubair, Neyha Rubab Syed, Fiaz Ahmad, Sadia Iqbal & Ahmed Elbeltagi (2023)“ Water Resources and Irrigation Management Using GIS and Remote Sensing Techniques: Case of Multan District (Pakistan). In: Pande, C.B., Kumar, M., Kushwaha, N.L. (eds) Surface and Groundwater

- Resources Development and Management in Semi-arid Region. Springer Hydrogeology. pp 137–156 . Springer, Cham. https://doi.org/10.1007/978-3-031-29394-8_8
5. Fiaz Ahmad, Aftab Khaliq, Qiu Baijing, Muhammad Sultan, Ma Jing Book Chapter Title: Advancement of Spraying Technology in Agriculture Book: “Technology in Agriculture” ISBN: 978-1-83881-922-4. Print ISBN: xxx. eBook (PDF) ISBN: xxx. Published by IntechOpen Publisher, United Kingdom, indexed by ISI Thomson
 6. Muhammad Sultan*, Muhammad Bilal, Takahiko Miyazaki, Uzair Sajjad, Fiaz Ahmad Book Chapter Title: Adsorption-based atmospheric water harvesting: Technology fundamentals and energy-efficient adsorbents Book: “Technology in Agriculture” ISBN: 978-1-83881-922-4. Print ISBN: xxx. eBook (PDF) ISBN: xxx. Published by IntechOpen Publisher, United Kingdom, indexed by ISI Thomson
 7. Agrovoltaic and Smart Irrigation: Pakistan Perspective, Editors: Muhammad Sultan and Fiaz Ahmad Book Title: “ **Advances in Irrigation and Drainage**” IntechOpen Publisher, United Kingdom (Published).

Research Project Completed

- Research Project as PI Research grant of 50000 RMB on UAV sprayer application evaluation by Jiangsue University 2018-2020.
- Research project as PI Research grant of Rs. 0.175million on Experimental study of pneumatic maize planter by BZU
- Research project as PI Research grant of Rs. 0.150 million on Field evaluation of pneumatic maize planter by BZU
- Research Project as PI of Rs. 0.196 million on “Development of sugar cane trash shredder by BZU.

Conference/ Saminar Organized

Sr. No.	Held on	Event	Status	Funding Source
1	6 th June, 2023	Stakeholder Dialogue and Agricultural Mechanization in Pakistan	Focal Person/Organizer	Farmer Development Organization (FDO)
2	5 th June 2023	One day Hands on training 3D Scanner and Drone Sprayer Technologies	Focal Person/Organizer	AMRI
3	2 nd February 2023	Water Education Saminar	Focal Person	WWF Pakistan
4	24March 2023	One day Saminar on World water day	Focal Person	WWF Pakistan

Teachings/ Courses Taught (55 courses)

Ph.D. Agricultural Engineering

1. Design Analysis of Agricultural Machinery
2. Modelling and simulation of Agricultural Machinery

M. Phil Agricultural Engineering

1. Harvesting Engineering
2. Plant Protection Equipment Engineering

3. Product Design and Development
4. Special Problem

B.Sc. Agricultural Engineering

1. Design of Agricultural Machinery
2. Manufacturing and Reverse Eengineering
3. Farm Machinery and Earth Moving Machinery
4. Instrumentation and Measurements
5. Metallurgy & Workshop Practice
6. Farm Power
7. Project & Report -I
8. Project & Report -II