

# MOHAMMAD ZAKWAN

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## **Career Summary**

- ❖ **Highest Educational Qualification: Ph.D. (IIT Roorkee)** (Details in Annexure A.1)
- ❖ **SCI Journal Publications: 18** (Details in Annexure A.2)
- ❖ **Scopus Journal Publications: 16** (Details in Annexure A.3)
- ❖ **Editorial Services : 03** (Scopus Books) and 02 Journals (Details in Annexure A.4)
- ❖ **Book Chapters : 09** (Details in Annexure A.5)
- ❖ **Conference Papers: 06** (Details in Annexure A.6)
- ❖ **Teaching Experience: 06 years** (Details in Annexure A.7)
- ❖ **Reviewer : Over 150 research articles** (Details in Annexure A.8)
- ❖ **Invited Lectures : 06** (Details in Annexure A.9)
- ❖ **Supervision: Guiding 2 PhD Scholars**
- ❖ **Citations : 865**
- ❖ **h-Index : 18**
- ❖ **i10-index : 30**

## **Award and Achievement**

- ❖ **NET JRF (Engineering Sciences) secured an All India Rank – 89.**
- ❖ **Gold Medalist – B.Tech. (Civil Engineering) and M.Tech. (Civil Engineering)**

## **Professional Profile Links**

- ❖ Google Scholar: <https://scholar.google.co.in/citations?user=XwH5d5wAAAAJ&hl=en#>
- ❖ ResearchGate: <https://www.researchgate.net/profile/Mohammad-Zakwan>
- ❖ LinkedIn: <https://www.linkedin.com/in/mohammad-zakwan-892bb1b6>

## A.1– EDUCATIONAL QUALIFICATIONS

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- ❖ **Ph.D. – Civil Engineering**, Civil Engineering Department, Indian Institute of Technology, Roorkee with a **CGPA of 9.3 in Course Work** in **2020**.

### **Ph.D. Thesis Topic**

- ❖ **“Investigation on Flow and Sediment Transport in Ganga River”** under the able guidance and mentorship of Prof. Zulfequar Ahmad, Civil Engineering Department, Indian Institute of Technology, Roorkee.
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- ❖ **Master of Technology** (Hydraulic Structures, Civil), Department of Civil Engineering, Zakir Husain College of Engineering and Technology, A.M.U., Aligarh with a **perfect 10 CGPA. (Gold Medallist)** in **2016**.

### **M. Tech. Dissertation Topic**

- ❖ **“Parameter Estimation of Discharge Rating and Infiltration Models Using Optimization Technique”** under the able guidance and mentorship of Prof. Mohd. Muzzammil and Prof. Javed Alam, Department of Civil Engineering, Zakir Husain College of Engineering and Technology, A.M.U., Aligarh.
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- ❖ **Bachelor of Technology** (Civil Engineering), Department of Civil Engineering, Zakir Husain College of Engineering and Technology, A.M.U., Aligarh with a **9.64 CGPA(Gold Medallist)** in **2014**.

## A.2 SCI JOURNAL PUBLICATIONS

Title	Year	Indexing	Publisher
Tabassum, R., Guguloth, S., Gondu, V. R., & Zakwan, M. (2024). <b>Scour depth dynamics in varied spacing spur dike configurations: A comprehensive analysis.</b> <i>Physics and Chemistry of the Earth, Parts A/B/C</i> , 135, 103638.	2024	SCI	Elsevier
Khan, I., Zakwan, M., Pulikkal, A. K., & Lalthazula, R. (2024). <b>Environmental flow assessment for the Musi River, India.</b> <i>Environment, Development and Sustainability</i> , 1-15.	2024	SCI	Springer
Zakwan, M. (2023). <b>Analysis of Simplified approach for Determination of Modified Kostiaikov Model Parameters.</b> <i>Water Science and Technology</i> , IWA, accepted (in production).	2023	SCI	IWA
Masood, A., Niazkar, M., Zakwan, M., & Piraei, R. (2023). <b>A Machine Learning-Based Framework for Water Quality Index Estimation in the Southern Bug River.</b> <i>Water</i> , 15(20)	2023	SCI	MDPI
Niazkar, M., & Zakwan, M. (2023). <b>Developing ensemble models for estimating sediment loads for different times scales.</b> <i>Environment, Development and Sustainability</i> , 1-19.	2023	SCI	Springer
Zakwan M, Pham Q. B., Bonnaci, O. and Durin, B. (2022). <b>Application of Revised InnovativeTrend Analysis in Lower Drava River</b> , <i>Arab J Geosci</i> 15, 758 (2022). <a href="https://doi.org/10.1007/s12517-022-09591-5">https://doi.org/10.1007/s12517-022-09591-5</a>	2022	SCI	Springer
Khan, I., Zakwan, M., Pulikkal, A. K., & Lalthazula, R. (2022). <b>Impact of unplanned urbanization on surface water quality of the twin cities of Telangana state, India.</b> <i>Marine Pollution Bulletin</i> , 185, 114324.	2022	SCI	Elsevier
Zakwan, M.,& Niazkar, M. (2021). <b>Discussion of “Reverse Flood Routing in Rivers Using Linear and Nonlinear Muskingum Models” by Badfar et al. (2022)</b> <i>Journal of Hydrologic Engineering</i> , 2021.	2022	SCI	ASCE
Umar, S., Lone, M. A., Goel, N. K., & Zakwan, M. (2022). <b>Trend analysis of hydro-meteorological parameters in the Jhelum River basin, North Western Himalayas.</b> <i>Theoretical and Applied Climatology</i>	2022	SCI	Springer
Zakwan, M. and Ahmad, Z. <b>Analysis of sediment and discharge ratings of Ganga River, India.</b> <i>Arabian Journal of Geosciences</i> .	2021	SCI	Springer
Zakwan, M., Pham, Q. B., & Zhu, S. (2021). <b>Effective Discharge Computation in the Lower Drava River.</b> <i>Hydrological Science Journal</i> . 626-637	2021	SCI	Taylor & Francis
Niazkar, M., and Zakwan, M. (2021). <b>Application of MGGP, ANN, MHBMO, GRG, and Linear Regression for Developing Daily Sediment Rating Curves</b> , <i>Mathematical Problems in Engineering</i> , 2021,.	2021	SCI	Wiley
Shivashankar, M, Pandey, M., & Zakwan, M.,(2021). <b>Estimation of settling velocity using generalized reduced gradient (GRG) and hybrid generalized reduced gradient–genetic algorithm (hybrid GRG-GA)</b> , <i>Acta Geophysica</i> , 10.1007/s11600-021-00706-2	2021	SCI	Springer
Niazkar, M., and Zakwan, M. (2021). <b>Assessment of Artificial Intelligence Models for Developing Single-value and Loop Rating Curves</b> , <i>Complexity</i> , Volume 2021, Article ID 6627011, 121. DOI: 10.1155/2021/6627011	2021	SCI	Wiley
Zakwan, M.,& Niazkar, M. (2021). <b>A Comparative Analysis of Data-Driven Empirical and Artificial Intelligence Models for Estimating Infiltration Rates.</b> <i>Complexity</i> , 2021.	2021	SCI	Wiley
Zakwan, M., Ahmad, Z., & Sharief, S. M. V. (2018). <b>Magnitude Frequency Analysis for Suspended Sediment Transport in the Ganga River.</b> <i>Journal of Hydrologic Engineering</i> , 23(7), 05018013.	2018	SCI	ASCE
Zakwan, M. (2018). <b>Comparative analysis of the novel infiltration model with other infiltration models.</b> <i>Water and Environment Journal</i> .	2018	SCI	Willey
Pandey, M., Zakwan, M., Khan, M.A. & Bhawe, S. (2020). <b>Development of Scour Around a Circular Pier and its Modelling Using Genetic Algorithm.</b> <i>Water Supply</i> .	2020	SCI	Willey
Zakwan, M. and Ahmad, Z. <b>Trend Analysis of Hydrological Parameters of Ganga River</b> <i>Arabian Journal of Geosciences</i> .	2021	SCI	Springer
Zakwan, M. (2018) <b>Spreadsheet-based modelling of hysteresis affected curves.</b> <i>Applied Water Science</i> , 8(4), 101.	2018	SCI	Springer
Aiyelokun, O., Pham, Q. B., Aiyelokun, O., Malik, A. -- and Zakwan, M. <b>Credibility of design rainfall estimates for drainage infrastructures: extent of disregard in Nigeria and proposed framework for practice.</b> <i>Natural Hazards</i> . Article DOI: 10.1007/s11069-021-04889-1	2021	SCI	Springer

### A.3 SCOPUS INDEXED JOURNAL PUBLICATIONS

Title	Year	Indexing	Publisher
<b>Zakwan, M. (2022). Application of Excel optimisation tool in solving and teaching water resource problems.</b> International Journal of Hydrology Science and Technology, 14(1), 63-74.	2022	Scopus, WoS	Inderscience
Sharief, S. M. V., <b>Zakwan, M.</b> Farhana, N. (2023). <b>Estimation of Infiltration Rate using a Nonlinear Regression Model.</b> Journal of Water Management and Modelling. <a href="https://doi.org/10.14796/JWMM.C509">https://doi.org/10.14796/JWMM.C509</a>	2023	Scopus, WoS	Chi
Pandey, M., <b>Zakwan, M.</b> , Sharma, P. K., & Ahmad, Z. <b>Multiple linear regression and genetic algorithm approaches to predict temporal scour depth near circular pier in non-cohesive sediment.</b> ISH Journal of Hydraulic Engineering, 1-8.	2020	Scopus	Taylor and Francis
<b>Zakwan, M., &amp;Ara, Z. (2019). Statistical analysis of rainfall in Bihar.</b> Sustainable Water Resources Management, 5(4), 1781-1789.	2019	Scopus, WoS	Springer
<b>Zakwan, M. (2020) Revisiting Maximum Observed Precipitation and Discharge Envelope Curves.</b> International Journal of Hydrological science and Technology.	2020	Scopus, WoS	Inderscience
Sharief, S. M. V. & <b>Zakwan, M. (2021) "Comparative Analysis of Seepage Loss through Different Canal Linings"</b> . International Journal of Hydrological science and Technology.	2021	Scopus, WoS	Inderscience
Khan, I., <b>Zakwan, M.</b> , &Mohanty, B. (2022). <b>Water Quality Assessment for Sustainable Environmental Management.</b> ECS Transactions, 107(1), 10133.	2020	Scopus, WoS	ECS
<b>Zakwan, M., &amp; Khan, I. (2020). Estimation of Discharge coefficient for side weirs.</b> Water and Energy International, 62(11), 71-74.	2020	Scopus	CBIP
Ara, Z. and <b>Zakwan, M. "Rainfall Runoff Modelling for Eastern Canal Basin"</b> , Water and Energy International, 61 (6), 63-67	2018	Scopus	CBIP
<b>Zakwan, M.</b> , Muzzammil, M. and Alam, J. <b>"Application of spreadsheet to estimate infiltration parameters"</b> . Perspective in Sciences, 2016 (8), pp 702-704, doi: 10.1016/j.pisc.2016.06.064	2016	DOAJ	Elsevier
<b>Zakwan, M.</b> and Muzzammil, M. (2016). <b>"Optimization Approach for Hydrologic Channel Routing."</b> Water and Energy International,59(3), 66-69.,	2016	Scopus	CBIP
<b>Zakwan, M."Application of optimization technique to estimate IDF parameters"</b> Water and Energy International, 59(5), pp 69-71,	2016	Scopus	CBIP
<b>Zakwan, M. "Estimation of runoff using optimization technique"</b> Water and Energy International, 59(8), 42-44.	2016	Scopus	CBIP

## A.4 Editorial Services

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- ❖ Water Resource Modelling and Computational Technologies, **Elsevier (Scopus)**.
- ❖ Water, Land and Forest Susceptibility and Sustainability: Geospatial Approaches & Modeling- Volume 1, **Elsevier (Scopus)**.
- ❖ Water, Land and Forest Susceptibility and Sustainability: Geospatial Approaches & Modeling- Volume 2, **Elsevier (Scopus)**.
- ❖ Guest Editor for Journal of Water and Climate Change
- ❖ Editor for Journal of Water Management and Modelling.
- ❖ Editor for Mathematical Problems in Engineering Journal

## A.5 BOOK CHAPTERS CONTRIBUTED

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- ❖ Muzzammil, M., Alam, J., and **Zakwan, M. (2018). A Spreadsheet Approach for Prediction of Rating Curve Parameters.** In Hydrologic Modeling (pp. 525-533). Springer, Singapore.
- ❖ **Zakwan, M. (2021).Trend Analysis of Groundwater Level Using Innovative Trend Analysis.** In Springer-Nature Book: Groundwater Resources Development and Planning in the Semi-Arid Region, Springer, Cham.
- ❖ S Sharief, S. M. V., &**Zakwan, M. (2021). Groundwater Remediation Design Strategies Using Finite Element Model.** In Groundwater Resources Development and Planning in the Semiarid Region (pp. 107-127). Springer, Cham.
- ❖ Ahmad, Z., **Zakwan, M.**, & Garg, P. K. (2022). **Braiding and Planform Pattern of Ganga.** In Anthropogeomorphology (pp. 25-54). Springer, Cham.
- ❖ Niazkar, M., &**Zakwan, M. (2022). Parameter estimation of a new four-parameter Muskingum flood routing model.** In Computers in Earth and Environmental Sciences (pp. 337-349). Elsevier.
- ❖ Kushwaha, N. L., Elbeltagi, A., Patel, A., **Zakwan, M.**, Rajput, J., & Sharma, P. (2022). **Assessment of water resources using remote sensing and GIS techniques.** In Current Directions in Water Scarcity Research (Vol. 7, pp. 85-98). Elsevier.
- ❖ **Zakwan, M.**, Sultana, Q., & Ahamad, G. (2022). **Magnitude frequency analysis of sediment transport: Concept, review, and application.** In Current Directions in Water Scarcity Research (Vol. 7, pp. 497-512). Elsevier.
- ❖ Niazkar, M., &**Zakwan, M. (2022). Application of machine learning models to side-weir discharge coefficient estimations in trapezoidal and rectangular open channels.** In Current Directions in Water Scarcity Research (Vol. 7, pp. 467-479). Elsevier.
- ❖ **Zakwan, M.**,& Niazkar, M. (2022). **Innovative triangular trend analysis of monthly precipitation at Shiraz Station, Iran.** In Current Directions in Water Scarcity Research (Vol. 7, pp. 589-598). Elsevier.

## A.6 CONFERENCE ARTICLES

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- ❖ **Zakwan, M.**, Khan, I., Ara, Z., Rahim, Z. A., & Sharief, S. M. V. (2019). Trend Analysis of Rainfall in Bihar. Proceedings of Water Resources Management (WRM2019) pp.79-85.
- ❖ Ara, Z., and **Zakwan, M.** “**Reservoir Sedimentation Analysis: A Case Study**”. Proceedings of National Conference on Water, Environment & Society (NCWES-2018) pp.286-292.
- ❖ **Zakwan, M.** (2016). “**Equation Solvers as an Alternative to Conventional Regression.**” 3rd National Conference on Sustainable Water Resource Development and Management, Aurangabad.
- ❖ **Zakwan, M.**, Muzzammil, M. and Alam, J. (2016). “**Estimation of Soil Properties using Infiltration Data**”. National Conference on Advances in Geotechnical Engineering, Aligarh.
- ❖ Azmi, S. and **Zakwan, M.** (2016). “**Data specific scour predictors**”, 3rd National Conference on Sustainable Water Resource Development and Management, Aurangabad.
- ❖ Muzzammil, M. Alam, J. and **Zakwan, M.** “**An optimization technique for estimation of rating curve parameters.**” Symposium of Hydrology, Delhi, December 2015.

## **A7. TEACHING EXPERIENCE**

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**Assistant Professor - April 2017 till date.**

**Civil Engineering, Polytechnic, Maulana Azad National Urdu University (MANUU), Hyderabad, Telangana**

### **KEY RESPONSIBILITIES AND CONTRIBUTIONS**

- ❖ Designed syllabus for the Water Resource Engineering, Hydraulics and Geo-Technical Engineering at MANUU, Hyderabad.
- ❖ Taught Water Resource Engineering, Hydraulics and Geo-Technical Engineering to the students of Civil Engineering.
- ❖ Developed resources for online teaching and learning (YouTube Videos).
- ❖ Member of NAAC Committee of University for criterion 5.2.
- ❖ In-charge of Fluid Mechanics Laboratory.
- ❖ In-charge of Time Table Civil Engineering.
- ❖ Worked as Incharge -Industrial Training for final year Diploma in Civil Engineering.
- ❖ Worked as Incharge -Industrial visit for final year Diploma in Civil Engineering.
- ❖ Worked as a member of Hindi Club.
- ❖ Worked as an Examination In-charge at Polytechnic, MANUU.
- ❖ Worked as an Attendance Coordinator, Polytechnic, MANUU.
- ❖ Co-ordinator of Research and Development Cell., Polytechnic, MANUU.
- ❖ Worked as Presiding Officer GHMC Election 2020.
- ❖ Worked as Counting Officer GHMC Election 2020.



## A8.REVIEWER

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❖ Journal of Hydrologic Engineering.	ASCE	03 Papers reviewed.
❖ Ain Shams Engineering Journal.	Elsevier	04 Papers reviewed.
❖ Process Safety and Environmental Protection.	Elsevier	01 Papers reviewed.
❖ Journal of South American Earth Sciences.	Elsevier	02 Papers reviewed.
❖ Sustainable Water Resources Management.	Springer	24 Papers reviewed.
❖ Water Science and Technology.	Springer	02 Paper reviewed.
❖ Water Resources Management.	Springer	05 Papers reviewed.
❖ Water Management	ICE	01 Papers reviewed.
❖ Sustainability	MDPI	03 Papers reviewed.
❖ Resources	MDPI	01 Paper reviewed.
❖ Water	MDPI	05 Paper reviewed.
❖ Minerals Engineering	MDPI	01 Paper reviewed.
❖ International Journal of Environment Research & Public Health	MDPI	02 Paper reviewed.
❖ Hydrology	MDPI	02 Papers reviewed.
❖ Plos One	PLOS	02 Papers reviewed
❖ Journal of Hydro-informatics	IWA	02 Papers reviewed.
❖ Mathematical Problems in Engineering	Hindawi	01 Papers reviewed.
❖ Flow Measurement and Instrumentation	Elsevier	03 Papers reviewed.
❖ Cold Regions Science and Technology	Elsevier	01 Paper reviewed.
❖ Journal of Hydro-environment Research	Elsevier	01 Paper reviewed.
❖ International Journal of Hydrology Science & Technology.	Inderscience	05 Papers reviewed.

## A.9 Invited Lectures

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- ❖ Technical Expert Talk at **“Two-Day National Conference On Computational Methods, Data Science and Applications**, May 2021 at Department of Computer Science and I.T., MANUU, Hyderabad.
- ❖ Technical Expert Talk at Faculty Development Program **“Data Science Applications in Sciences and Technologies”** March 2022 at Baba Ghulam Shah Badshah University, Rajouri, J&K.
- ❖ Technical Expert Talk at Faculty Development Program **"Applications of AI in Water Resource Management (AAWRM-2022)"**, March 2022, U.P. Technical University.
- ❖ Invited Lecture at One Day Webinar on **“Mountain Rivers and Hazard Assessment: Mechanics, Prediction and Countermeasures”** February 2022 at National Institute of Disaster Management, New Delhi.
- ❖ Technical Expert Talk in Workshop on **“Mountain Rivers and Hazard Assessment: Mechanics, Prediction and Countermeasures”** February 2022, NIT, Warangal, Telangana.
- ❖ Technical Expert Talk in Workshop on **“Hydrodynamic and Morphologic Characterization of River Channels”** July 2023, NIT, Warangal, Telangana.

## **PERSONAL DATA**

Date of Birth: 14-12-1992

Father's Name: Nudrat Husain

Residential Address: 13/1809, Qazi Mohalla, Sahranpur, U.P., India -247001

## **REFERENCES**

1. Prof. Abdul Wahid (Dean, School of Technology, MANUU, Hyderabad, India)

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2. Prof. Zulfequar Ahmad (Professor, IIT Roorkee, Roorkee, India)

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**(Dr. Mohammad Zakwan)**