



## MOHAMMAD ZAKWAN | ASSISTANT PROFESSOR

**CURRENT DESIGNATION/ INVOLVEMENT** Currently working as an **Assistant Professor** in Department of Civil Engineering, Polytechnic, Maulana Azad National Urdu University (Central University), Hyderabad, Telangana, India.

**AREA OF SPECIALIZATION** My research interest include soft computing for modelling of infiltration, modelling of pier scour, modelling river water quality, sediment rating curves, stage discharge curves, Computation of effective discharge and dominant discharge, climate change, trend analysis in water resources, river engineering, hydraulics and hydrology of rivers. Published more than 30 research articles with over 270 citations and serving as reviewer for several Scopus and SCI journals.

**ONGOING ACADEMIC RESEARCH/PROJECTS** Editing two international Research books for Elsevier

- 1) Water Resource Modeling and Computational Technologies, **Elsevier**.
- 2) Water, Land and Forest Susceptibility and Sustainability: Geospatial Approaches & Modeling, **Elsevier**.

Working on following Research Articles

- 1) Application of Revised Innovative Trend Analysis in Lower Drava River
- 2) Dominant Discharge Indices and Impact of Class Size on Effective Discharge
- 3) Application of MGGP, MHBMO, GRG and LR for Developing Daily Sediment Rating Curves

**INNOVATION WITH FIELD OF STUDY AND COLLABORATIVE EFFORTS** **International Collaborations**  
Collaborating with Dr. Quoc Bao Pham (National Cheng Kung University, **Taiwan**) Dr. Senlin Zhu (Hydraulic Research Institute, **China**), Dr. Ahmed Elbeltagi (Mansoura University, **Egypt**) Dr. Majid Niazkar (Shiraz University, **Iran**), Dr. Biswajeet Pradhan (University of Technology, Sydney, **Australia**), Ognjen Bonacci (University of Split, **Croatia**) Babak Mohammadi (Lund University, **Sweden**), Oluwatobi Aiyelokun (University of Ibadan, **Nigeria**) and Dr. Sourav Saha (University of California, **USA**) on various research articles and editing of research books.

### **National Collaborations**

Collaborating with Prof. A. R. Dar (NIT Srinagar, **India**), Prof. Abdul Wahid (Dean, School of Technology, MANUU, **India**), Dr. Manish Pandey (NIT Warangal, **India**), Dr. Mohd. Yousuf Khan (Principal Polytechnic, MANUU, **India**) and Dr. N L Kushwaha (Indian Agricultural Research Institute, **India**) on various research articles.

Reviewer for International Journals

- Journal of Hydrologic Engineering, **ASCE (3)**

- Process Safety and Environmental Protection, **Elsevier (1)**
- Journal of South American Earth Sciences, **Elsevier (1)**
- Sustainable Water Resources Management, **Springer (8)**
- Water Science and Technology, **Springer (1)**
- Water Resources Management, **Springer (1)**
- International Journal of Hydrology Science and Technology, **Inderscience (3)**

ACADEMIC AND ADMINISTRATIVE EXPERIENCE

- **4 Years 7Months of teaching experience. Developed resources for online teaching and learning. Worked with AICTE SWAYAM translation team. Worked as Examination incharge, attendance coordinator, member of NAAC criterion 5 and Laboratory incharge.**

EDUCATIONAL QUALIFICATION

- **DOCTOR OF PHILOSOPHY (Ph.D.), 2020**  
Civil Engineering Department, IIT Roorkee

TEACHING PROFICIENCY

Civil Engineering (Water Resources, Geotechnical Engineering)

RESEARCH PUBLICATION DETAILS

Title	Year	Indexing	Publisher
<b>Zakwan, M., &amp; Niazkar, M. (2021). Discussion of "Reverse Flood Routing in Rivers Using Linear and Nonlinear Muskingum Models" by Badfar et al. (2021) Journal of Hydrologic Engineering, 2021.</b>	2021	SCI	ASCE
<b>Zakwan, M. and Ahmad, Z. Analysis of sediment and discharge ratings of Ganga River, India. Arabian Journal of Geosciences.</b>	2021	SCI	Springer
<b>Zakwan, M., Pham, Q. B., &amp; Zhu, S. (2021). Effective Discharge Computation in the Lower Drava River. Hydrological Science Journal. 626-637</b>	2021	SCI	Taylor and Francis
<b>Niazkar, M., and Zakwan, M. (2021). Assessment of Artificial Intelligence Models for Developing Single-value and Loop Rating Curves, Complexity, Volume 2021, Article ID 6627011, 121. DOI: 10.1155/2021/6627011</b>	2021	SCI	Wiley
<b>Zakwan, M., &amp; Niazkar, M. (2021). A Comparative Analysis of Data-Driven Empirical and Artificial Intelligence Models for Estimating Infiltration Rates. Complexity, 2021.</b>	2021	SCI	Wiley
<b>Zakwan, M., Ahmad, Z., &amp; Sharief, S. M. V. (2018). Magnitude Frequency Analysis for Suspended Sediment Transport in the Ganga River. Journal of Hydrologic Engineering, 23(7), 05018013.</b>	2018	SCI	ASCE
<b>Zakwan, M. (2018). Comparative analysis of the novel infiltration model with other infiltration models. Water and Environment Journal.</b>	2018	SCI	Wiley
<b>Pandey, M., Zakwan, M., Khan, M.A. &amp; Bhawe. S. (2020). Development of Scour Around a Circular Pier and its Modelling Using Genetic Algorithm. Water Supply (in Press)</b>	2020	SCI	Wiley
<b>Zakwan, M. and Ahmad, Z. Trend Analysis of Hydrological Parameters of Ganga River Arabian Journal of Geosciences.</b>	2021	SCI	Springer

<b>Zakwan, M. (2018) Spreadsheet-based modelling of hysteresis affected curves.</b> Applied Water Science, 8(4), 101. Open Access to this article was sponsored by <b>King Abdul-Aziz City of Science and Technology (KACST)</b>	2018	SCI	Springer
Aiyelokun, O., Pham, Q. B., Aiyelokun, O., Malik, A. -- and <b>Zakwan, M. Credibility of design rainfall estimates for drainage infrastructures: extent of disregard in Nigeria and proposed framework for practice.</b> Natural Hazards. Article DOI: 10.1007/s11069-021-04889-1	2021	SCI	Springer
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.	2018	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	ESCI	Springer
<b>Zakwan, M. (2020) Revisiting Maximum Observed Precipitation and Discharge Envelope Curves.</b> International Journal of Hydrological science and Technology.	2020	Scopus	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	Inderscience
<b>Zakwan, M. (2021) “Application of Excel Optimization Tool in Solving and Teaching Water Resource Problems”</b> International Journal of Hydrological science and Technology.	2020	Scopus	Inderscience
<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> 61 (6), 63-67	2018	Scopus	CBIP
<b>Zakwan, M. “Assessment of Dimensionless Form of Kostiakov Model”.</b> Aquademia: Water, Environment and Technology, 1(1).	2017	Index Copernicus	Lectito
<b>Zakwan, M., Muzzammil, M., &amp; Alam, J. “Application of data driven techniques in discharge rating curve—an overview.”</b> Aquademia Water Environ Technol, 1(1), 02.	2017	Index Copernicus	Lectito
<b>Zakwan, M., Muzzammil, M., &amp; Alam, J. “Developing stage–discharge relations using optimization techniques”.</b> Aquademia Water Environ Technol, 1(2), 05.	2017	Index Copernicus	Lectito
<b>Zakwan, M., Muzzammil, M. and Alam, J. “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. and Muzzammil, M. (2016). “Optimization Approach for Hydrologic Channel Routing.”</b> Water and Energy International, 59(3), pp 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

Zakwan, M. "Estimation of runoff using optimization technique" Water and Energy International, 59(8), 42-44.	2016	Scopus	CBIP
--	------	--------	------

### Book Chapters

- 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 Semi-Arid Region (pp. 107-127). Springer, Cham.

DETAILS OF  
CONFERENCE/SEMINAR  
/WORKSHOP/ FDP  
(ATTENDED/PRESENTED)

### Conference Papers

**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.

Participated in One Week Course on Disaster Management which is being organised by the UGC-Human Resource Development Centre, Jamia Millia Islamia from 6th January to 11th January, 2020.

Participated in one Week FDP on "Matlab Applications in Engineering & Sciences (MAES-2020)" from 27th April to 1st May, 2020.

Participated in one week FDP "Modern Pedagogical Techniques and Effective Teaching & Learning" during 8th February to 12th February, 2021.

DETAILS OF KEYNOTE  
SPEAKER/RESOURCE  
PERSON/ SESSION

Delivered Technical Expert Talk at "Two-Day National Conference On Computational Methods, Data Science and Applications"

CHAIR ETC.

---

- ACHIVEMENTS
- **DOUBLE Gold Medalist** at M. Tech (M. Tech all Branches and M. Tech Civil Engineering).
  - **Gold Medalist** at B. Tech.
  - Qualified **CSIR-NET-JRF** Engineering Science (**All India Rank-089**).
- 

DETAILS OF SUPERVISION (M.PHIL/M.TECH/P.HD )

PhD local supervisor of Mr. Iqbal Khan (NIT Mizoram)  
PhD Co-supervisor of Mrs. ReshmaTabassum (NIT Warangal)

---

PROFESSIONAL MEMBERSHIPS

- **INDIAN SOCIETY OF HYDRAULICS**

---

PERSONAL DETAILS

**Gender** : Male  
**Marital Status** : Married  
**Nationality** : Indian  
**Language Known** : English, Hindi and Urdu  
Etc..

Date: 20-11-2021  
Place:Hyderabad

**(Mohammad Zakwan)**