

Dr. Vinay Kumar Gautam

Assistant Professor (Soil & Water Conservation Engineering)

School of Natural Resource Management, CPGS-AS (CAU-Imphal), Umiam, Meghalaya-793103

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SUBJECT EXPERTISE & RESEARCH INTEREST

Groundwater Management, Water Quality Assessment, Soil and Water Conservation, Remote Sensing & GIS, Watershed Management, Water Harvesting, Agri-residue management

EDUCATION

Maharana Pratap University of Agriculture and Technology, Udaipur, Rajasthan, India 2018- 2021
Doctor of Philosophy (Soil and Water Conservation Engineering).

Jawaharlal Nehru Agriculture University, Jabalpur, M.P., India 2016-2018
Master of Technology in Soil and Water Engineering.

Mahatma Gandhi Chitrakoot Gramoday University, Chitrakoot, M.P., India 2012-2016
Bachelor of Technology in Agricultural Engineering

RESEARCH EXPERIENCE

Doctoral Research

Characterization of Groundwater Prospective Zones and Water Quality for Jakham River Basin using RS and GIS.

Post Graduate Research

Block Level Resource Optimization for Crop Planning in Upper Narmada Basin, Madhya Pradesh

PROFESSIONAL EXPERIENCE

- Working as an **Assistant Professor (SWCE)**, School of Natural Resource Management, College of Post Graduate Studies in Agricultural Sciences, Central Agricultural University (Imphal), Umiam, Meghalaya, India. (**22 Feb 2024 to Till Date**)
- Worked as a **Senior Research Fellow** in *Unnat Bharat Abhiyan* at Department of Soil and Water Engineering, CTAE, MPUAT, Udaipur (**22 Oct. 2021 to 20 Feb 2024**).
- Worked as a **Senior Research Fellow** in *FASAL* Project at Department of Agronomy, RCA, MPUAT, Udaipur (**7th July 2021- 21 Oct. 2021**).
- Worked as an **Assistant Fellow** in ICAR funded Irrigation Water Management scheme in JNKVV University, Jabalpur (M.P.) (**1 April 2018 to 20 July 2018**)

ACADEMIC ACHIEVEMENTS

National Eligibility Test (NET) 2020 (Land and Water Management Engineering)

- Scored 62% in Assistant Professor Eligibility Test, ASRB-NET ICAR.

Indian Council of Agricultural Research (ICAR-PG-JRF) 2016

- Achieved All India Rank 150 for M.Tech admission

Awards

- **Received Outstanding Paper Award for Young Scientists (Committee on Space Research, Paris, France)** for the manuscript entitled “*Exploration of Groundwater Potential Zones Mapping for Hard Rock Region in the Jakham River Basin using Geospatial Techniques and aquifer parameters*” *Journal Advances in Space Research, Elsevier* on 5th April 2024.
- **Received Best Paper Presentation Award** in Two days International conference on Soil and Water resource management, Feb 26-27, 2021, Department of Soil & Water Engineering, CTAE, MPUAT, Udaipur.
- **Received Best Paper Presentation Award** in Two days International conference on recent challenges and opportunity in Engineering, March 13-14, 2021, Department of Electrical Engineering, CTAE, MPUAT, Udaipur.

PROJECT HANDLING

- Participating Institute (PI) Coordinator of CPGSAS, Umiam, Unnat Bharat Abhiyan, IIT New Delhi, Ministry of Education, Govt. of India.
- EFP on Promotion of Rice based Biochar for Soil Moisture Conservation in Mid Hill Agroecosystem of Meghalaya” funded by ICAR- IIRR, Hyderabad.

ACADEMIC RESPONSIBILITIES

- Warden of Boys Hostel, CPGSAS, CAU (Imphal) Umiam, Meghalaya since May 2024 to till date
- Member of College Rajbhasha Hindi Committee at CPGSAS, Umiam.

PUBLICATIONS

First Author/Corresponding Author (*)/ Equal contribution

- **Gautam, V.K, Kothari, M., Singh, P. K. (2024).** Spatial interpolation and mapping groundwater quality using geostatistical method: case study in Jakham River Basin. *Environmental Earth Sciences, 83*, 674. <https://doi.org/10.1007/s12665-024-11954-y> (**IF: 2.90, NAAS: 8.90, SCI & SCOPUS Indexed**)
- **Gautam, V.K, Kothari, M., Singh, P. K., & Pande, C. B. (2024).** Groundwater quality characterization with the integration of water quality index and multivariate statistical techniques. *PLoS-one, 19(2):* e0294533. doi: 10.1371/journal.pone.0294533 (**IF: 3.75, NAAS: 9.70, SCI & SCOPUS Indexed**)
- **Gautam, V.K, Pande, C. B., Kothari, M., Singh, P. K., & Agrawal, A. (2023).** Exploration of groundwater potential zones mapping for hard rock region in the Jakham river basin using geospatial techniques and aquifer parameters. *Advances in Space Research, 71(6)*, 2892-2908.(**IF: 2.63, NAAS: 8.60, SCI & SCOPUS Indexed**)
- **Gautam, V. K., Pande, C. B., Moharir, K. N., Varade, A. M., Rane, N. L., Egbueri, J. C., & Alshehri, F. (2023).** Prediction of Sodium Hazard of Irrigation Purpose using Artificial Neural Network Modelling. *Sustainability, 15(9)*, 7593. (**IF: 3.89, NAAS: 9.90, SCI & SCOPUS Indexed**)
- **Gautam, V. K. & Trivedi, A. (2023).** Optimal Water Resources Allocation and Crop Planning for Mandla District of Madhya Pradesh. *Indian Journal of Soil Conservation, 51: 1-8.*(**NAAS: 5.28**)

- **Gautam, V. K.** et al., (2023). Flood-Prone Area Mapping of Manu-Deo River Basin, Tripura using GIS and RS. *Indian Journal of Ecology*, 50(2), 539-545. (NAAS: 5.66, ESCI & SCOPUS Indexed)
- **Gautam, V. K.**, Kothari, M., Singh, P. K., Bhakar, S. R., & Yadav, K. K. (2022). Spatial mapping of groundwater quality using GIS for Jakham River basin of Southern Rajasthan. *Environment Conservation Journal*, 23(1&2), 234-243. (NAAS: 5.66, ESCI & SCOPUS Indexed)
- **Gautam, V. K.**, Kothari, M., Singh, P. K., Bhakar, S. R., & Yadav, K. K. (2022). Decadal Groundwater Level Changes in Pratapgarh District of Southern Rajasthan, India. *Ecology Environment & Conservation*, 28(1), 283-289. (NAAS: 5.66, ESCI & SCOPUS Indexed)
- **Gautam, V. K.**, Kothari, M., Singh, P. K., Bhakar, S. R., & Yadav, K. K. (2021). Determination of geomorphological characteristics of Jakham River Basin using GIS technique. *Indian Journal of Ecology*, 48(6), 1627-1634. (NAAS: 5.79, ESCI & SCOPUS Indexed)
- **Gautam, V. K.**, Kothari, M., Singh, P. K., Bhakar, S. R., Yadav, K. K., & Singh, M. (2021). Analysis of Groundwater Level for Detection of Trend in Jakham River Basin of Southern Rajasthan Using Geospatial Technique. *Journal of Groundwater Science and Engineering*, 10(1): 1-9. (IF: 0.55, NAAS: 6.55 & ESCI Indexed)

Other Publication

- Mehla, M.K., Kothari, M., Singh P.K., **Gautam, V.K.*** & Bilaiya S. 2025. Basin Scale Impacts of Nitrogenous Fertilizer Use on Croplands from a Grey Water Footprint Perspective. *Discover Water*. Springer.
- Moharir, K. N., Pande, C. B., **Gautam, V. K.**, Dash, S. S., Mishra, A. P., Yadav, K. K., ... & Elshahi, M. 2025. Estimation of land surface temperature and LULC changes impact on groundwater resources in the semi-arid region of Madhya Pradesh, India. *Advances in Space Research*, 75(1), 233-247. (IF: 2.60, NAAS: 8.60, SCI & SCOPUS Indexed).
- Mohair, K.N., Pande, C.B., **Gautam, V.K.** et al. 2025. Investigation of urban heat island and urban thermal field variance index effect on groundwater level in India using Google Earth Engine. *Journal of Water and Climate Change*; jwc2025754. doi: <https://doi.org/10.2166/wcc.2025.754>. (IF: 2.70, NAAS: 8.70, SCI & SCOPUS Indexed).
- Agrawal, A.; Kothari, M.; Jaiswal, R.K.; **Gautam, V.K.**; Pande, C.B.; Ahmed, K.O.; Refadah, S.S.; Khan, M.Y.A.; Abdulqadim, T.J.; Durin, B. 2024. Integrated Basin-Scale Modelling for Sustainable Water Management Using MIKE HYDRO Basin Model: A Case Study of Parvati Basin, India. *Water*. 16, 2739. <https://doi.org/10.3390/w16192739>. (IF: 3.40, NAAS: 9.40, SCI & SCOPUS Indexed)
- Trivedi, A., Awasthi, M.K., Nandeha, N. **Gautam, V.K.*** & Mehla, M.K. 2024. Addressing water security challenges through groundwater recharge for revival of *Kanari* River using AHP and geospatial techniques. *Discover Water* 4, 59. <https://doi.org/10.1007/s43832-024-00124-7>.
- Pande, C.B., Egbueri, J.C., Costache, R., Sidek, L.M., Wang, Alshehri, F., Din, N.M., **Gautam, V.K***, & Pal, S.C. 2024. Predictive modeling of land surface temperature (LST) based on Landsat-8 satellite data and machine learning models for sustainable development. *Journal of Cleaner Production*. 141035. <https://doi.org/10.1016/j.jclepro.2024.141035>. (IF: 11.10, NAAS: 17.10, SCI & SCOPUS Indexed).

- Nath, N.K., **Gautam, V.K***, Pande, C.P., Mishra, L., Raju, J.T., Kanak N. Moharir & Rane, N.L. 2023. Development of landslide susceptibility maps of Tripura, India, using GIS and analytical hierarchy process (AHP). *Environmental Science and Pollution Research*. **31**, 7481–7497. <https://doi.org/10.1007/s11356-023-31486-5>. (IF: 5.80, NAAS: 11.19, SCI & SCOPUS Indexed)
- Trivedi, A., Awasthi, M. K., **Gautam, V. K***, Pande, C. B., & Din, N. M. (2023). Evaluating the groundwater recharge requirement and restoration in the Kanari River, India, using SWAT model. *Environment, Development and Sustainability*, **26**, 15067–15092. <https://doi.org/10.1007/s10668-023-03235-8>. (IF: 4.08, NAAS:10.90, SCI & SCOPUS Indexed)
- Moharir, K. N., Pande, C. B., **Gautam, V. K.**, Singh, S. K., & Rane, N. L. (2023). Integration of hydrogeological data, GIS and AHP techniques applied to delineate groundwater potential zones in sandstone, limestone and shales rocks of the Damoh district,(MP) central India. *Environmental research*, **228**, 115832. (IF: 8.43, NAAS: 14.30, SCI & SCOPUS Indexed)
- Nath, N. K., Agrawal, A., **Gautam, V. K***, Kumar, A., & Das, P. (2022). Morphometric evaluation of Ranikhola watershed in Sikkim, India using geospatial technique. *Environment Conservation Journal*, **23**(3), 273-284. (NAAS: 5.66, ESCI & SCOPUS Indexed)
- Trivedi, A., & **Gautam, V. K.*** (2022). Decadal analysis of water level fluctuation using GIS in Jabalpur district of Madhya Pradesh. *Journal of Soil and Water Conservation*, **21**(3), 250-259. (NAAS: 5.20)
- Trivedi, A., Galkate, R. V., **Gautam, V. K*** & Pyasi, S. K. (2021). Development of RRL AWBM model and investigation of its performance, efficiency and suitability in Shipra River Basin. *Journal of Soil and Water Conservation*, **20**(2), 160-167. (NAAS: 5.20)

Books / Manuals/Book Chapters/Bulletins/Extension folder

- Nath, N.K., Das, P., Kumar, A., Mishra, L.R., Suryavasni, S.L., **Gautam, V.K.** (2024). Hydrological Modelling and Simulation for Water Resource Assessment. Integrated Management of Water Resources in India: A Computational Approach: Optimizing for Sustainability and Planning. Springer.43-58. https://doi.org/10.1007/978-3-031-62079-9_3.
- Das, P Nath, N.K., Kumar, A., Mishra, L.R., Suryavasni, S.L., **Gautam, V.K.** (2024). Future of Water Management in India: Emerging Role of IoT, AI, and Data Analytics. Integrated Management of Water Resources in India: A Computational Approach: Optimizing for Sustainability and Planning. Springer. 385-401. https://doi.org/10.1007/978-3-031-62079-9_22
- **Gautam. V.K.**, Trivedi A. & Yadav, N.K.. (2023). Book on Advances in Land and Water Resource Management: Concepts and Applications. IPM Publications. 1-180.
- Das, P., Kumar, A., **Gautam, V.K.***, Nath, N.K. (2023). Natural Resource Planning Under Climate Change Issue Using Advanced Remote Sensing and GIS Technology: A Review. In: Pande, C.B., Moharir, K.N., Negm, A. (eds) Climate Change Impacts in India. Earth and Environmental Sciences Library. Springer, Cham. https://doi.org/10.1007/978-3-031-42056-6_4.
- Trivedi, A, **Gautam.V.K.** & Nandeha, N. (2023). Manual on Watershed Hydrology and Management. Department of SWE, CTAE, Udaipur. 1-63.

- **Gautam.V.K. & Raju, J.T. (2022).** Practical Manual on Groundwater Engineering. Department of SWE, CTAE, Udaipur. 1-75.
- **Gautam.V.K. & Raju, J.T. (2022).** Practical Manual on Drainage Engineering. Department of SWE, CTAE, Udaipur. 1-73.
- **Chaoudhary, J. & Gautam.V.K.* (2022).** Textbook on Geoinformatics and Nanotechnology for Precision Farming. IMP Publications. 1-110.
- **Jat, S. & Gautam.V.K.* (2022).** Practical Manual on Participatory Vulnerability Risk Assessment. Department of SWE, CTAE, Udaipur. 1-80.
- **Chaoudhary, J. & Gautam.V.K.* Raju, J.T. (2021).** Practical Manual on Geoinformatics and Nanotechnology for Precision Farming. IMP Publications. 1-92.
- **Gautam.V.K. & Raju, J.T. (2020).** Practical Manual on Introductory Soil and Water Conservation Engineering. ATG Publications. 1-110.
- **Dube, Rajiv & Gautam.V.K.* (2020).** Textbook on Soil and Water Conservation. ATG Publications. 1-250.
- **Dube, Rajiv & Gautam.V.K.* (2020).** Practical Manual on Irrigation Water Management. Himanshu Publications. 1-85.

Course Thought:

S.No.	Name of the course with Course No.	Credit hours
1.	Protected cultivation and secondary agriculture (AGENGG-362)	(1+1)
2.	Design of Surface Irrigation (IDE 501)	(1+1)
3.	Dryland Farming and Watershed Management AGRON 512	(2+1)
4.	Advanced Soil and Water Conservation Engineering (SWCE 501)	(2+1)
5.	Soil Physics (Soil 501)	(2+1)
6.	Farm Power & Machinery (NF-213)	(1+2)
7.	RAWE (AGENGG-472)	(0+2)

Students Guided/Guiding:

S. No.	Programme of study: B.Tech/PG/ M.Tech/PhD etc.	Academic Year/ Semester	No. of students allotted	Enrollment Year	Currently pursuing study	Project/Thesis Submitted
1.	PG programme M.Sc (Soil Science)	2023-24	Member of Mr. Manish Kumar (One Student)	2023	M.Sc	Thesis Submitted
2.	Ph.D programme (Soil Science)	2023-24	Member of Miss. Ventina Yamnum (One Student)	2023	Ph.D	Thesis work is going on
3	PG programme M.Sc (Agronomy)	2024-25	Member of Dharmendra Yadav	2024	M.Sc	Thesis work is going on
4	PG programme M.Sc (Agronomy)	2024-25	Member of Indrani Borgohein	2024	M.Sc	Thesis work is going on
5.	PG programme M.Sc (Soil Science)	2024-25	Member of Sukla Giri	2024	M.Sc	Thesis work is going on

6.	PG programme M.Sc (Agril. Extention)	2024-25	Member of Pronoy Protim Sharma	2024	M.Sc	Thesis work is going on
7.	PG programme M.Sc (Soil Science)	2024-25	Member of Ankit Kumar	2024	M.Sc	Thesis work is going on

TRAINING AND CERTIFICATIONS.

- Conducted a one week One week On-Campus Farmers Training Programme as course director on **“Application of Bio-Inputs in Rice Based Cropping System in Mid Hill Agroecosystem of Meghalaya”** from 23rd to 28th February 2026, Under the project **“Promotion of Rice based Biochar for Soil Moisture Conservation in Mid Hill Agroecosystem of Meghalaya”** funded by ICAR-IIRR, Hyderabad.
- Completed One Week Training programme on **Groundwater Potential Zoning and Identification of Suitable Sites for GWR** from 23 Dec. to 30 Dec. 2022 organized by NAHEP-ICAR, JNKVV, Jabalpur.
- Attended online 5-day Training programme on **Soil and Water Conservation Technologies for Climate Smart Watersheds** from 22 – 26 June 2020 organized by CAAST, MPKV, Rahuri.
- Attended online 5-day Training programme on **Climate Resilient Technologies for Rainfed Agriculture** from 11 – 15 June 2020 organized by CAAST, VNMKV, Parbhani.
- Attended 5-day Training programme on **Conservation Agriculture based Crop Management Technologies in Climate Smart Agriculture** from 18 – 22 May 2020 organized by CAAST - CSAWM, MPKV, Rahuri.
- Completed successfully Outreach certificate programme of Indian Institute of Remote Sensing, Dehradun in **Soil and Water Resource Utilization and Basics of Remote sensing and global Navigation Satellite system**, 2017.
- Completed **NASA Applied Remote Sensing Training Program (ARSET) for Monitoring Water Quality of Inland Lakes using Remote Sensing** on 18-25 July 2023.
- Completed **5 days Faculty Development Program for classroom leadership** at IIM shilling, Meghalaya on 15-20 March 2024.
- Completed **One week Faculty Induction Training for Newly joined Faculty/Scientist** at College of Agriculture, Iroisemba, Imphal, Manipur on 24-30 May 2024.
- Completed **two- week short course on "Advanced Geospatial Technologies towards Precision Agriculture"** during 25th August - 05th September, 2025 at NESAC, Umiam.

Research Publication access :

- ✓ H-index: 16; Total citations: 817
- ✓ Website: <https://sites.google.com/view/drvkgautamlab/home>
- ✓ ORCID ID: <https://orcid.org/0000-0002-3525-3716>
- ✓ Google scholar: <https://scholar.google.com/citations?user=eQ0Lli8AAAAJ&hl=en>
- ✓ Scopus Id: <https://www.scopus.com/authid/detail.uri?authorId=57687175000>
- ✓ Web of Science: <https://www.webofscience.com/wos/author/record/HKG-8774-2023>