

Dr. Chandrashekhar D. Bhagat

1. Personal Information

- **Name:** Dr. Chandrashekhar Devendra Bhagat
- **Position:** Assistant Professor and Head of the Department
- **Department:** Civil Engineering
- **Contact Information:**

Email: cdbhagat@sggs.ac.in ,

Location of Office: First floor Civil Engineering Department,

Mobile number: 9921515287.

2. Educational Background

Doctor of Philosophy (2018-2023), Civil Engineering (Water resources engineering),
Indian Institute of Technology Gandhinagar, India

Title of thesis: Hydrogeochemical unraveling of land-sea interaction along Gujarat coast, India

Research Areas:

Master of Technology (2016-20218), Civil Engineering (Water resources engineering),
Visvesvaraya National Institute of Technology Nagpur, India.

Title of thesis: Optimal Design of irrigation pipe network

Research areas: Hydraulics of pipe flow, Design of pipe network, EPANET, LINGO, Design optimization, Irrigation, Pressure flow, Energy losses

Bachelor of Engineering (2010-2014), **Civil Engineering**, Sant Gadge Baba Amravati
University Amravati Maharashtra, India.

3. Research Interests

- **Areas of Expertise:** Submarine groundwater discharge, Groundwater contamination, Seawater intrusion, Contaminant transport, Water quality modelling, Isotope hydrology, Geochemistry, Managed aquifer recharge (MAR), Heavy metal contamination, Surface water-Groundwater interaction
- **Ongoing Projects:** Health Risk of Fluoride contamination across the Maharashtra
- **Interdisciplinary Work:** Working alongside of research Scholar from IIT Gandhinagar (ongoing research work: Water Sensitive Cities)

4. Teaching Experience

- **Courses Taught:** Design of steel structures, Advanced concrete structures, Reinforced cement concrete structures; Hydraulic Engineering, Groundwater, Engineering Geology, and Introduction to disaster management.
- **Course Development:** Sustainability Engineering Program at UPES Dehradun

5. Publications and Presentations

- **Journal Articles:**

1. **Bhagat, C.**, Kumar, M., Tyagi, V.K. and Mohapatra, P.K., 2020. Proclivities for prevalence and treatment of antibiotics in the ambient water: a review. *npj Clean Water*, 3(1), pp.1-18. <https://doi.org/10.1038/s41545-020-00087-x> (IF=11.19, Scopus)
2. **Bhagat, C.**, Khandekar, A., Singh, A., Mohapatra, P.K. and Kumar, M., 2021. Delineation of submarine groundwater discharge and seawater intrusion zones using anomalies in the field water quality parameters, groundwater level fluctuation and sea surface temperature along the Gujarat coast of India. *Journal of Environmental Management*, 296, p.113176. <https://doi.org/10.1016/j.jenvman.2021.113176> (IF=8.7, SCI)
3. **Bhagat, C.**, Mohapatra, P.K. and Kumar, M., 2021. Unveiling the extent of salinization to delineate the potential submarine groundwater discharge zones along the North-western coast of India. *Marine Pollution Bulletin*, 172, p.112773. <https://doi.org/10.1016/j.marpolbul.2021.112773> (IF=5.8, SCI)
4. Babu, D.S., Khandekar, A., **Bhagat, C.**, Singh, A., Jain, V., Verma, M., Bansal, B.K. and Kumar, M., 2021. Evaluation, effect and utilization of submarine groundwater discharge for coastal population and ecosystem: A special emphasis on Indian coastline. *Journal of Environmental Management*, 277, p.111362. <https://doi.org/10.1016/j.jenvman.2020.111362> (IF=8.7, SCI)
5. **Bhagat, C.**, Puri, M., Mohapatra, P.K. and Kumar, M., 2021. Imprints of seawater intrusion on groundwater quality and evolution in the coastal districts of south Gujarat, India. *Case Studies in Chemical and Environmental Engineering*, 3, p.100101. <https://doi.org/10.1016/j.csee.2021.100101> (IF=0)
6. **Bhagat, C.** and Mirajkar, A.B., 2021. Design Optimization of Irrigation Pipe Network using Different Conventional Techniques. *J. Indian Water Resour. Soc*, 41(2). (IF=0, National Journal)
7. **Bhagat, C.**, Misra, A., Mohapatra, P.K., Babu, D.S. and Kumar, M., 2022. Salinity and temperature profiling for the submarine groundwater discharge simulations: Quantification through heat and solute transport model. *Science of The Total Environment*, 807, p.151888. <https://doi.org/10.1016/j.scitotenv.2021.151888> (IF=9.8, SCI)
8. **Bhagat, C.**, Kumar, M., Mahlknecht, J., Hdeib, R. and Mohapatra, P.K., 2022. Seawater intrusion decreases the metal toxicity but increases the ecological risk and degree of treatment for coastal groundwater: An Indian perspective. *Environmental Pollution*, 310, p.119771. <https://doi.org/10.1016/j.envpol.2022.119771> (IF=8.9, SCI)
9. **Bhagat, C.** and Kumar, M., 2022. Muddy (silty sand) beaches in semi-arid regions attenuate the contaminants flowing into the sea as a submarine groundwater discharge. *Science of The Total Environment*, 833, p.155111. <https://doi.org/10.1016/j.scitotenv.2022.155111> (IF=9.8, SCI)
10. Misra, A., **Bhagat, C.** and Kumar, M., 2022. Geochemical ratios mediated understanding of estuarine dynamics in submarine groundwater discharge prevalent basaltic aquifer. *Marine Pollution Bulletin*, 181, p.113812. <https://doi.org/10.1016/j.marpolbul.2022.113812> (IF=5.8, SCI)
11. Goswami, R., Neog, N., **Bhagat, C.**, Hdeib, R., Mahlknecht, J. and Kumar, M., 2022. Arsenic in the groundwater of the Upper Brahmaputra floodplain: Variability, health risks and potential impacts. *Chemosphere*, 306, p.135621. <https://doi.org/10.1016/j.chemosphere.2022.135621> (IF=8.8, SCI)
12. Goswami, R., **Bhagat, C.**, Lollen, I., Neog, N., Barache, U.B., Thakur, R., Mahlknecht, J. and Kumar, M., 2023. Potential arsenic–chromium–lead Co-contamination in the hilly trains of Arunachal Pradesh, north-

- eastern India: Genesis and health perspective. *Chemosphere*, p.138067. <https://doi.org/10.1016/j.chemosphere.2023.138067> (IF=8.8, SCI)
13. Tripathi, P., Kumar, M., **Bhagat, C.** and Jha, P.K., 2023. Assessment of hydrochemical shift in riverine aquifers of the mid-Gangetic plain of Uttar Pradesh, India. *Groundwater for Sustainable Development*, 22, p.100965. <https://doi.org/10.1016/j.gsd.2023.100965> (IF=5.9, ESCI)
 14. Kumar, M., Panday, D.P., **Bhagat, C.**, Herbha, N., Agarwal, V. and Jain, V., 2023. Demystifying the decadal shift in the extent of groundwater in the coastal aquifers of Gujarat, India: A case of reduced extent but increased magnitude of seawater intrusion. *Science of The Total Environment*, p.165451. <https://doi.org/10.1016/j.scitotenv.2023.165451> (IF=9.8, SCI)
 15. Sethy, S.K., Kishore, M.V., **Bhagat, C.** and Kumar, M., 2023. Periodic monitoring of Nano Clay as the Potential Adsorbent to Remove Metal and Dyes from Wastewater: A Review. *Total Environment Research Themes*, p.100067.

Books/Chapters Published

1. Patel, A.K., **Bhagat, C.**, Taki, K. and Kumar, M., 2020. Microplastic vulnerability in the sediments of the Sabarmati River of India. *Resilience, Response, and Risk in Water Systems: Shifting Management and Natural Forcings Paradigms*, pp.127-138.
 2. **Bhagat, C.**, Kumar, M. and Mohapatra, P.K., 2021. Reigning technologies and their challenges for antibiotics removal. *Contaminants in Drinking and Wastewater Sources: Challenges and Reigning Technologies*, pp.295-324.
 3. **Bhagat, C.** and Kumar, M., 2023. Pharmaceutical and personal care products in the seawater: Mini review. *Emerging Aquatic Contaminants*, pp.35-48.
 4. Modi, A., **Bhagat, C.** and Mohapatra, P.K., 2023. Impact of urbanization on Ganga River basin: an overview in the context of natural surface water resources. *Impacts of Urbanization on Hydrological Systems in India*, pp.111-127.
 5. **Bhagat, C.**, Vaibhav Srivastava, and Manish Kumar. "Expounding heavy metal pollution and associated risks in the River Ganga, India: A meta-analysis approach." In *River Basin Ecohydrology in the Indian Sub-Continent*, pp. 225-240. Elsevier, 2024.
 6. Modi, A., **Bhagat, C.**, and Mohapatra, P.K., 2024. Bio-geo-chemical trade-offs of the Ganga River system: An Overview, its challenges, and management. *River Basin Ecohydrology in the Indian Sub-Continent: Sustainable Strategies and Sustenance*, PP. 30
- **Conference Papers:**
 1. **Bhagat, C.** and Mirajkar, A., 2018. Optimal design of piped irrigation network: A case study of Bakhari Distributary of Pench Irrigation Project, India. In International Conference on 'Emerging Trends and Advanced in Civil and Environment Engineering' KK Wagh Institute of Engineering Education & Research, Nashik.
 2. Singh, A., **Bhagat, C.** and Kumar, M., 2018. Support vector machine-based model for regional Hydro-geochemical zoning of the groundwater: a case study of the aquifers in Alwar district, Rajasthan. (NSE-2019, International conference, IIT Gandhinagar)
 3. **Bhagat, C.**, Puri, M., Mohapatra, P.K. and Kumar, M., 2021. Influenced of Seawater Intrusion on Groundwater Quality Coastal Districts Gujarat, India. (SWARDAM 2021, International conference, COE Aurangabad)
 4. **Bhagat, C.**, Misra, A., Mohapatra P.K. and Kumar, M., 2021. Development of Indices for Delineation of Potential Submarine Groundwater Discharge Zones along the Coast. (HYDRO International 2021, SVNIT Surat)

5. **Bhagat, C.**, Mohapatra P.K. and Kumar, M., 2022. Heavy metal contamination and associated risk assessment for Ganga Rivers: A mini-review. (**2nd International Conference on River Corridor, Research & Management**, IIT Guwahati)

- **Editorial Work:**

1. Groundwater for Sustainable Development (Elsevier, with an impact factor of 0)
2. Hydrologic Science Journal (Taylor and Francis, impact factor of 3.94)
3. Journal of Environmental Management (Elsevier, impact factor of 8.9)
4. Science of the Total Environment (Elsevier, impact factor of 10.75)
5. Environmental Science and Pollution Research (Elsevier, impact factor of 5.55)

6. Awards and Honors

- **Grants:**

- **Awards:** Received the second prize for Paper presentation in International Conference (Hydraulics, Water Resources and Coastal Engineering), HYDRO-2021 held at SVNIT Surat.

- **Fellowships:**

1. Selected for the one-month internship at New Castle University under the UKIERI-DST project
2. Received MHRD fellowship (35000 INR/month) for doctorate studies at IIT Gandhinagar
3. Qualified Graduate Aptitude Test in Engineering for Civil Engineering, AIR-3102 (Score-599)
4. Received MHRD fellowship (12400 INR/month) for Master studies at VNIT Nagpur

7. Professional Experience

**Oct 2023
to present**

Assistant Professor, Department of Civil Engineering, Shri Guru Gobind Singhji Institute of Engineering and Technology, Vishnupuri Nanded, Maharashtra, India- 431606 (Govt. of Maharashtra Aided Autonomous Institute)

- **Head of the department (Oct-2024 to present)**
- Class coordinator for B Tech Civil Engg. final year
- Departmental Training and Placement Coordinator
- Co-coordinator of website and social media.
- Lab in-charge of the strength of material lab.
- Faculty coordinator of UPSC Club at the Institute.

- Teaching various subjects to B. Tech. Civil Engg. students like Design of steel structures, Advanced concrete structures, Reinforced cement concrete structures.
- Discipline committee members for Cultural Fest of Institute (UTSAV-2024)

**June 2022
– Sep
2022**

Assistant Professor in HSE and Civil Engineering Department UPES Dehradun, Uttarakhand, India (NIRF ranking: 61)

- Teaching various subjects to B. Tech. Civil Engg. Students like Hydraulic Engineering, Groundwater, Engineering Geology, Introduction to disaster management etc.
- Guiding M Tech (HSE) students, Mentoring B. Tech. final year students for major projects and term seminars.
- Conducting research and co-mentoring Ph.D. scholars.
- Activity coordinator for M Tech (HSE) and B Tech Civil Engg. final year

**June 2018 –
June 2022**

Teaching Assistant (MHRD Fellowship), Civil Engineering Department, Indian Institute of Technology (IIT) Gandhinagar (GJ) India

- Teaching assistant for the engineering Graphics for first-year B tech.
- Teaching assistant and tutor for water quality engineering, contamination transport and remediation and writing course for undergrad and post-grad students.
- Involved in WET Lab development and Maintenance at IIT Gandhinagar.
- Full-time TA for Ion Chromatography Machine at WETLab IIT Gandhinagar
- Part of the Nation Mission of Submarine groundwater discharge along the Indian coast, sponsored by the Ministry of Earth Science Govt. of India

**June 2016 –
May 2018**

Teaching Assistant (MHRD Fellowship), Visvesvaraya National Institute of Technology (VNIT) Nagpur (MH) India

- Teaching assistant for the Hydraulic engineering lab for B. Tech Civil Engg (VI Sem)

8. Supervision and Mentoring

- **PhD/Master's Supervision:**

9. Professional Memberships

- **Associations:** Indian Water Work Association (IWA)

10. Miscellaneous

- **Languages:** Marathi, English and Hindi
- **Skills:**

Packages: ArcMap GIS package, MODFLOW, SPSS package, AquaChem software (water quality analysis), Visual Minteq (speciation study), Origin PRO 2021b, Microsoft Office Softwares, EPANET, AUTO-CADD, and STADD PRO.

Programming: MATLAB programming