

## **Curriculum Vitae**



Name: Dr. Brijesh Kumar Yadav

Current Affiliation: Associate Professor, Department of Hydrology, Indian Institute of Technology (IIT) Roorkee, Uttarakhand-247667, India,  
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Web: [https://www.iitr.ac.in/departments/HY/pages/People+Faculty+Dr\\_Brijesh\\_Kumar\\_Yadav.html](https://www.iitr.ac.in/departments/HY/pages/People+Faculty+Dr_Brijesh_Kumar_Yadav.html)

### **Educational Qualifications**

- Ph.D. (April 2008) “Mathematical Model of Phytoextraction for Contaminated Soils”
  - Department of Environmental Resources, UNESCO-IHE Institute for Water Education, Delft, The Netherlands; Nov 2006- Oct 2008 (Advisor: Prof. Maarten A. Siebel)
  - Department of Civil Engineering, Indian Institute of Technology Delhi, India; Jan 2003- Oct 2006 (Supervisor: Prof. Shashi Mathur)
- M. Tech., Water Resources Engineering from Indian Institute of Technology (IIT) Delhi, India (CGPA 8.51/10); 1999-2000 (Dissertation: “Hydro-environmental modeling of lakes using mathematical and Artificial Neural Networks models”)
- B. E., Agricultural Engineering from College of Technology and Engineering (CTAE) Udaipur, Rajasthan, India (69.1%); 1995-1999

### **Research Areas/Interests**

Groundwater flow and contaminant transport Modeling, Plant-soil-atmosphere interactions, Phytoremediation of heavy metal contaminated soils, Treatment wetland Analysis, Moisture flow and contaminant transport modeling in variably saturated and heterogeneous soils, Salt water intrusion, Bioremediation of non-aqueous phase liquid (NAPL) polluted soils, Multiphase flow through porous media, CO<sub>2</sub> sequestration in deep subsurface, Nitrate transport in vadose zone, Surface water quality modeling, Solid waste management, Finite difference methods of numerical modeling, Vulnerability assessment of groundwater resources using indexing and GIS, Geophysical investigation

### **Work Experience**

- **Associate Professor**, Department of Hydrology, IIT Roorkee (April 2016- till date)
- **Assistant Professor**, Department of Hydrology, IIT Roorkee (July 2012- April 2016)
- **Ramanujan Fellow**, Department of Civil Engineering, IIT Delhi (Jan 2011- July 2012)
- **Postdoctoral Research**, University of California, Davis (July 2010- Dec 31 2011)
- **Postdoctoral Research**, University of Utrecht, Netherlands (Nov 2008 – June 2010).
- **Researcher** at UNESCO-IHE Institute for Water Education, Delft Netherlands (Nov 2006 - Oct 2008)
- Worked in an IT firm called Frontier Information Technologies Ltd (FITL), Secunderabad, India (**May 2001 to Dec 2002**) as a Software Engineer.

### **Software/Numerical Skills**

- Languages/GUI tool: Fortran77 and 90, C, C++, MATLAB, Visual Basic
- Software Package: HYDRUS 2/3D, STOMP, SWAT, MODFLOW, LINGO, COMSOL

### **Laboratory/Experimental Skills**

1) Batch and microcosm study for bioremediation of LNAPL polluted soils, 2) Column and 2-D tank experiments for fate and transport of LNAPL in porous media, 3) Pot experiments for phytoremediation of a heavy metal containing wastewater, 4) Time-domain reflectometry (TDR) for measuring soil moisture content, 5) Atomic Absorption Spectroscopy (AAS) for analyzing heavy metal content in water, 6) Digestions of plant biomass for heavy metal removal, 7) Measurement of soil moisture retention curve using sandbox and pressure plate, 8) Gas chromatography (GC) for analyzing BTEX in pore water and in headspace, 9) Design of small scale wetlands 10) Use of Terrameter for VES survey to characterize subsurface lithology and groundwater resources

### **Technical Reviewer for**

1) Journal of Irrigation and Drainage Engineering, 2) Environmental Modeling and Assessment, 3) Journal of Legal Affairs and Dispute Resolution in Engineering, 4) Review in Environmental Science and Bio/Technology, 5) Soil and Plant, 6) Environmental Monitoring and Assessment, 7) Environmental Progress & Sustainable Energy, 8) CLEAN – Soil, Air, Water, 9) Water Resources Research, 10) Vadose Zone Journal, 11) Hydrology Journal, 12) Climate Dynamics

## **Supervision of Students**

**Postdocs:** 03 (Completed)

**PhD Students:** 03 Completed and 07 Ongoing

**Masters' Thesis:** 25 Completed and 05 Ongoing

**B Tech projects:** 05 completed

### **Postdoc Supervision**

1. Dr. Deepak Kumar, Bioremediation of LNAPL in Costal Semi (-Arid) Environmental Condition (Project No. DST-695-HYD). June- Sept. 2014.
2. Dr. Basant Kumar, Reactive Transport Modelling for Discrete Fracture Network (DFN) in Porous Media (Project No. CCT-1043-HYD), July-October 2017
3. Dr. Shobhika Parmar, Assessment of heavy metals in soil-plant of wastewater irrigated farms and its remediation using enhanced phytoextraction, National postdoctoral Fellowship (N-PDF), Aug-Nov 2017

### **PhD Students**

1. Ms. Shreejita Basu, Bioremediation of LNAPLs in polluted soil-water system under varying Environmental Conditions, 2011-2016 (Awarded)
2. Mr. Jahangeer, Non-point source pollutants transport in deep and heterogeneous vadose zone, 2012- (Awarded)
3. Mr. Pankaj Kumar Gupta, "Multi-scale fate and transport of LNAPL under varying subsurface flow conditions" July 2014 (Awarded)
4. Ms. Sachi Srivastava, "Hydrogeological aspects of CO<sub>2</sub> sequestration in subsurface" July 2014- Continuing
5. Mr. Shashi Ranjan, "In situ arsenic sequestration using permeable reactive barriers" January 2015- Continuing (Co-Guide: Prof. H Joshi, IIT Roorkee)
6. Mr. Apoorva Verma, Groundwater vulnerability assessment using mechanistic and index based models, 2015-Continuing (Jointly with: Prof RN Singh, IET Lucknow)
7. Ms. Anooja Thomas, "Plant water uptake using root compensation and hydraulic redistribution mechanisms" 2016- Continuing
8. Anuradha Garg, "Impacts of climate variability on subsurface water resources dynamics and quality", 2018-Continuing
9. Shubham Tiwari "Analysing Saline water intrusion in shallow aquifers of Mewat region of India " 2018- Continuing
10. Tegegn Kassa Beyene "Surface and Groundwater interaction modeling at watershed scale in Ethiopia" 2018 –Continuing (Jointly with - Prof. Manoj Jain, IIT Roorkee)
11. Rosette Nyiranziza "Analysis of surface and ground water interactions within The Crater Highlands of Tanzania" 2019- Continuing (Jointly with Nelson Mandela African Institute of Technology and Science )
12. Manik Goel "Quantification of surface-ground water interactions for conjunctive use of water resources" 2019- continuing
13. Jashwant Singh "Assessment of landfill leachate from micro-plastic containing wastes" 2020-continuing

Masters' Thesis Supervision

1. Mr. Asrat Yirgu Senato, "Recycling of MSW- a case study for the city of Awassa, Ethiopia", UNESCO-IHE, Delft, April 2008 (Jointly with Prof Piet. Lens)
2. Mr. Kwame Owusu-Ansah, "Evaluation of Household Solid waste processing options in Accra, Ghana", UNESCO-IHE, Delft, April 2008 (Jointly with Prof. Piet Lens)
3. Ms. Yvonne M. Mos, "Bioremediation of a Light NAPL (Toluene) Contaminated Soil under Different Environmental Conditions" Utrecht University, Netherlands, August 2010 (Jointly with Prof Majid Hassanizadeh)
4. Ms. Shristi Rajbhandari, "Investigating the effect of water table dynamics on fate and transport of a light NAPL" Utrecht University, Netherlands, Nov 2010 (Jointly with Prof Majid Hassanizadeh)
5. Monika Agnihotri "Runoff Modelling and crop water planning of Gadarwara watershed in Madhya Pradesh" IIT Roorkee, June 2013 (Jointly with Dr. D K Srivastava, IIT Roorkee)
6. Mamata Verma, "Vulnerability and Pollution Risk Assessment of Groundwater Resources of Doon Valley, India" IIT Roorkee, June 2013
7. Heidi Eilzer "Impact of soil-moisture content on LNAPL fate and transport in unsaturated zone", completed (Jointly with Dr. Franz Lennartz, TU Dresden, Germany), 2014
8. Sachi Srivastava "Modeling dense non-aqueous phase liquids transport in variably saturated porous media ", IIT Roorkee, June 2014
9. Rakesh Deopanday "Geophysical Investigation of groundwater availability" IIT Roorkee, June 2014 (Jointly with Dr .D C Singhal, IIT Roorkee)
10. Sayed M. Junaid "Nitrate fate and transport simulation in heterogeneous vadose zone of Doon Valley, Uttarakhand, India " IIT Roorkee, June 2014
11. Haji shaaban "Groundwater Pollution Risk Assessment of the Zanzibar Island in Tanzania" IIT Roorkee, June 2014
12. Kuntal Purkayastha "Soil Moisture Dynamics Modeling In Vadose Zone Using Hydraulic Redistribution Mechanism of Plants" IIT Roorkee, June 2015
13. Manish Tungaria "Groundwater Protection Planning: A case study from Saharanpur City U.P." IIT Roorkee, June 2015 (Jointly with Dr .D C Singhal, IIT Roorkee)
14. Saurabh Sharma "Impact of water table dynamics on sea-water interface in coastal zone using sand tank experiments" June 2016-
15. Jogendra Pal "Numerical analysis of groundwater flow on efficiency of ground source heat pumps" June 2016
16. Himanshu Tyagi "Modeling saline water interface under varying groundwater flow conditions" May 2017
17. Vivek Kumar "Role of substrate pressure and temperature on CO<sub>2</sub> sequestration" June 2017

18. Abhishek Das “Hydro-geochemical analysis of Mewat (Nuh) district, Haryana” June 2017 (Jointly with DR Gopal Krishan, NIH Roorkee)
19. Shubham Goswami “Vadose zone modeling under varying Environmental conditions” May 2018 (Jointly Prof. CSP Ojha, IIT Roorkee)
20. Bijendra Kumar Baghel “Hydrogeological investigation and groundwater modeling for aquifer characterization of Bhopal region” Completed in May 2018
21. Ashish Kumar Singh Chaudhary “Modeling soil moisture flow and solute transport through vadose zone of Gwalior” Completed in May 2018
22. Abhishek, “Inverse Modeling of Heterogeneous Vadose zone using Genetic Algorithm: Afield Scale Lysimeter study” (Jointly with Prof. Thomas Wohling, TU Dresden)- Completed in June 2019
23. Abhishek Kumar “Multidimensional Flow Modeling using Discrete Fracture Network in Fractured Rocks”, Completed in June 2019
24. Manik Goel “Groundwater Assessment and Vulnerability Mapping of Vindhyan-Ganga Sedimentary Formations Around Mirzapur District in India”- Completed in June 2019
25. Uzzawal Sen “Analysing Arsenic Contaminated Aquifers of Gopalganj District Bangladesh using MODFLOW”- Completed in June 2019
26. Firewaynie Kasu “Delineating Groundwater Potential and Recharge Zones of Haramaya Watershed, Ethiopia, Completed in July 2020
27. Amensis Habtamu, Assessment of Salt Removal from vadose zone by a Fully Penetrating Ditch Drains under the Influence of Sink or Source, Completed in July 2020
28. Amit Vats “Combined Removal of Chromium and Toluene from ground water using Nano-scale Zero Valent Iron” Completed in July 2020
29. Negasi haile “Applied Groundwater flow modeling of Akaki-Kaliti sub city well field of Ethiopia” Completed in July 2020
30. Deepak Tripathi “Managed aquifer recharge in salt affected regions of India” 2020- Ongoing
31. Sauvik Gupta “Modeling geological sequestration of CO<sub>2</sub> under ins-situ reservoir condition” 2020- Ongoing
32. Shubham Singh “Groundwater arsenic source apportionment using Inverse Modeling approach” 2020- Ongoing
33. Kunal Daspa “Characterization of Fluoride contaminated groundwater zones” 2020- Ongoing
34. Umesh Uchenia “Fate and transport of Micro-plastic through variably saturated zone” 2020- Ongoing

**BTech Projects:** Completed: 05 (Two at IIT Delhi and one at Utrecht University, and two at IIT Roorkee)

## **Details of Sponsored Projects**

### **Research Projects**

<b>S.N o.</b>	<b>Title</b>	<b>Sponsoring Agency</b>	<b>Period</b>	<b>Sanct. Amount (Lacs)</b>	<b>PI/ CO-PI</b>	<b>Status</b>
1	Bioremediation of LNAPL polluted land under (semi)-arid coastal environment conditions	DST	2011-2016	73	PI	Completed
2	Multidimensional soil water flow and nonpoint source pollutant movement through deep and heterogeneous variably saturated zones, Ministry of Human Resource and Development	MHRD	2012-2017	9.5	PI	Completed
3	In-situ Arsenic sequestration using engineered nanomaterials	DST	2016-2017	30.37	CO-PI	Completed
4	Reactive Transport Modelling for Discrete Fracture Network (DFN) in Porous Media	CCTech, Pune	2017-2018	5.5	PI	Completed
5	Benchtop Atomic Absorption Spectroscopy, under SMILE Grant, IIT Roorkee,	SMILE Grant	2017-1018	45	PI	Completed
6	Future Secular Changes & Remediation of Groundwater Arsenic in the Ganga River Basin	DST-Newton Bhabha-NERC-EPSRC Indo-UK	2018-2021	370.9 (total); 67.3 (IIT R )	CO-PI	Ongoing
7	In-situ bioremediation of non-aqueous phase liquids (NAPLs) pollution within the Baddi-Barotiwala Nalagarh (BBN) Industrial area in Himachal Pradesh	DST – UKIERI (Indo-UK)	2018-2020	16.7	PI	Ongoing
8	Optimal Design of in-situ remediation system for shallow Contaminated aquifers, Teachers Associateship for Research Excellence (TARE)	DST (TARE)	2018-2021	15	NA	Ongoing

### **Consultancy Projects**

<b>Sr.No.</b>	<b>Title</b>	<b>Sponsoring Agency</b>	<b>Period</b>	<b>PI/Co-PI</b>	<b>Amount (Lacs)</b>
1	Geophysical investigation Of 200 acre site in Khandela in Sikar district, Rajasthan, 03 Months, completed	DS Group, Noida	2017-2018	PI	2.95
2	Hydrological Survey for sitting of tube wells in five villages in Baitalghat block, Dist. Nainital, 06 months, Completed	Uttarakhand Irrigation Dept.	2017-2018	PI	8.20
3	Hydro-geological monitoring and analysis of groundwater in and around Lalitpur thermal power plant, 03 month, Completed	Spatial Geotech Pvt. Ltd, Noida	2017-2018	PI	2.30

4	Ground water coloration studies near Shabajpur village, Gajraula, Completed	Jubilant Life Sciences Ltd	2014-2017	Co-PI	14.97
5	Feasibility study for remediating hydrocarbon polluted sites, Completed	Dr. Reddy's Laboratory	2016	Co-PI	13.0
6	Report validation on drainage design for solar power plant in roorkee	Rays Power Infra Ltd.	2017	PI	0.74
7	Area Drainage Study in and around M/s HPCL Rajasthan Refinery Ltd (HRRL), Pachpadra, Barmer, Rajasthan	Engineers India Limited	2018-2019	Co-PI	11.8
8	Verifying Water Flow of P&G Baddi Plant, Completed	P&G Plant Baddi	2018	Co-PI	4.44
9	Hydro-geochemical analysis of groundwater resources of Gajraula site using existing piezometers	Jubilant Life Sciences Ltd, Gajraula, UP	2018-2019	PI	3.75
10	Groundwater survey for identifying the bore well sites within the premise of Koteswar pooling station, Completed	Power Grid Corporation of India Ltd	2018	Co-PI	2.66
11	Hydrogeology study and groundwater quantification of Mirzapur Thermal Power Plant, UP, Completed	Adani Group	2018	PI	9.44
12	Groundwater Survey of 150 acre area nearby to Vrindavan, UP, Completed	D S Group, Noida	2018-19	PI	2.95
13	Hydrogeological investigation of Pur village site for finding the causes of cracks in buildings, ongoing	DM, Bhilwara	2019-20	PI	25.96
14	Environment Impact Assessment of So2 Emission LPGCL Plant	Spatial Geotech Pvt. Ltd, Noida	2020-21	PI	3.3
15	Hydrogeological Investigation of Site Nearby to M/S Marshall Cycle and Kathuria Brothers, Ghaziabad	M/S Marshall Cycle, Ghaziabad	2020-21	PI	7.55
16	Hydrogeological investigation of Asian paint Site, Mysuru	M/s Asian Paints Ltd	2020-21	CO-PI	16

#### **Advisor for Sanctioned PDS to NIH**

1. Assessment of Impacts of Groundwater Salinity on Regional Groundwater Resources, Current and Future Situation in Mewat, Haryana– Possible Remedy and Resilience Building Measures, Purpose Driven Study (PDS) of 65 Lacs, PI: Dr Gopalkrishna, NIH Roorkee (2018-2021)
2. Hydro-geochemical Evolution and Arsenic Occurrence in Aquifer of Central Ganges Basin, Purpose Driven Study (PDS) with partnership of Minor Water Resources Department, Govt. of Bihar, 70 Lacs, PI: Dr Sumant Kumar, NIH Roorkee (2018-2021)
3. Water Quality Assessment of Southwestern Punjab Emphasizing carceogenic contaminants and their possible remedial measures, Purpose Driven Study, 65.5 Lacs (2018-2021)

### **Organised Conference**

1. Organized the 8th International Groundwater Conference-2019 (**IGWC-2019**) at IIT Roorkee during October 21-24, 2019 with focus on ‘Sustainable Management of Soil and Water Resources’. (Conference **Convener**)
2. Organized The 1st Roorkee Water Conclave 2020 (RWC-2020) under the aegis of IIT Roorkee and National Institute of Hydrology (NIH) during February 26-28, 2020 at IIT Roorkee (**Core committee member**)

### **Coordinated Courses/workshops (Total: 13)**

1. Five-day TEQIP-III training FDP on “Applied groundwater Flow and Contaminant Transport Modelling” during June 24-28, 2019 sponsored by **MHRD**.
2. Ten-day GIAN training workshop on “Transport of Viruses and Colloids in variably saturated soil and groundwater” February 12-20, 2019 sponsored by **MHRD**
3. Three days training on “Carbon Sequestration Estimation and Nitrogen Footprint Assessment” during January 28-30, 2019 sponsored by Central Pollution Control Board (**CPCB**).
4. Two-week GIAN training workshop on “Applied groundwater flow and transport modeling with MODFLOW” July 26-August 03, 2018 sponsored by **MHRD**
5. Two days Indo-UK workshop on “Bioremediation of LNAPL polluted Groundwater” on March 26-27, 2018 at IIT Roorkee sponsored by **Loughborough University, UK**
6. Three days training on “Identification of Remediation and Management of Polluted soil and Groundwater Sites” On Nov 20-22, 2017 sponsored by **CPCB**
7. A brain storming session on “Reactive Transport Modelling for Discrete Fracture Network in Porous Media” on April 12, 2017 at Department of Hydrology, sponsored by **CCTech Pune**
8. Two week GIAN training workshop on “Integrated Modeling of Subsurface flow and solute transport in porous media: challenges and opportunities” 02-14 Jan, 2017 sponsored by **MHRD**
9. Five days training on “Identification of Contaminated sites and Its treatment technologies, Interferences and data Management using GIS Hands on training” 14-18 Nov. 2016 sponsored by **CPCB**
10. Two week GIAN training workshop on “Remediation and Management of Polluted Groundwater Sites” 16-24 May, 2016 sponsored by **MHRD**
11. One-day workshop on “Modeling fate and transport of soil water pollutants” February 13, 2016 at IIT Roorkee sponsored by **QIP**
12. A brain storming session on “Bioremediation of LNAPL Polluted Land under (Semi)-arid Coastal Environment Conditions” organized on November 10, 2014 at Department of Hydrology, IIT Roorkee sponsored by **DST**
13. Two mass awareness activities on Groundwater Hydrology at Department of Hydrology with collaboration of National Institute of Hydrology (NIH) during the technical festival Cognizance, of IIT Roorkee on March 22-24, 2013 and March 21-23, 2014 sponsored by NIH (faculty Advisor)



### **Professional Bodies Membership**

1) International Association of Hydrological Sciences (IAHS), 2) International Society for Porous Media (INTERPORE), 3) American Geophysical Union (AGU), 4) International Association of Engineers (IAENG), 5) Indian Association of Hydrologists (IAH), 6) Indian Association of Water Resources Society (IWRS), 7) Association of Global Groundwater Scientists (AGGS)

### **Awards, Fellowships, Recognition**

- The prestigious Ramanujan Fellow award conferred by Department of Science and Technology, India in January 2011.
- Member of Research Advisory Group (RAG) of Gujarat Environmental Management Institute (GEMI), Government of Gujarat, India
- Invited speaker at Loughborough University as a part of a prestigious program, namely, the Institute Advanced Study (IAS) to deliver a research seminar on during June 22-29, 2018.
- Chief Editor, newsletter of Association of Association of Global Groundwater Scientists (AGGS), 2019- till date
- Invited to deliver a seminar at Department of Civil and Environmental Engineering, Shantou University, China during December 10-12, 2019.
- Co-chairman of a session during International conference on “Sustainable technologies for intelligent water management (STIWM) held at IIT Roorkee, Feb 16-19, 2018.
- Session co-chairperson of technical session on Groundwater Pollution in *7<sup>th</sup> International Groundwater conference on “Water security challenges and climate change adaptations”*, held by NIH Roorkee in New Delhi on 11-13 Dec, 2017.
- Invited to travel AIT, Bangkok for taking part in Water Security and Climate Change (WSCC): Challenges and Opportunities in Asia sponsored by German Academic Exchange Services (DAAD) in Nov-Dec 2016
- Session co-chairperson of technical session on Groundwater hydrology in *HYDRO-2015*, 20th International Conference on Hydraulics, Water Resources and River Engineering, IIT Roorkee, 17-19 Dec, 2015.
- Session chair in the National Conference on “Transportation and water resources engineering (NCTWE) held by L. D. College of Engineering Ahmedabad, Gujarat on April 25-26, 2015
- Chairperson for the poster session entitled “Nonpoint Source Flux Impact on Groundwater, Vadose Zone, and Surface Waters: Assessment, Mechanisms, and Control Strategies” in AGU held on Dec 15-19, 2014 in San Francisco, California
- Postdoctoral Fellowship awarded by University of California, Davis from July 2010 to Dec 2010.
- Postdoctoral Fellowship awarded by University of Utrecht, Netherlands from Nov 2008-June 2010.

- Research grant awarded by the EU from Nov 2006 to Dec 2008 during PhD and postdoctoral research at UNESCO-IHE Delft, The Netherlands.
- Scholarship by MHRD, New Delhi during PhD and MTech study at IIT Delhi.
- Qualified the National Eligibility Test (2003) for Lectureship / Assistant Professor conducted by ASRB, ICAR, New Delhi, India.

### **Invited/Recorded Talks**

1. Delivered a conference talk (webinar) on Bioremediation during the Global Sustainability Summit-The New Normal organized by Amity Institute of Environmental Sciences & Amity Institute of Ecotoxicity and Safety Management, Amity University, Uttar Pradesh held during June 3-5, 2020
2. Delivered a conference talk on “bio-remediation of polluted sites” The 1st Indo-China Research Webinar Series 2020 in Civil and Environmental Engineering, organised during May 8-19, 2020
3. Delivered a talk on “Engineered Bioremediation of LNAPL polluted groundwater sites” during the 5-Day Training Course on “Water Quality Assessment & Management” held at NIH, Roorkee during June 17-21, 2019
4. Delivered a talk on “Groundwater Contamination and Engineered Bioremediation of polluted groundwater sites” during the 5-Day Training Course on “Ground Water Quality Monitoring and Assessment” held at NIH, Roorkee during June 3-7, 2019
5. Delivered a talk on ‘Ground water management for sustainable development’ during the 5 days training program on Water Audit and Rainwater harvesting for the participants of African countries by WRDM IIT Roorkee during Feb 18-22, 2019
6. Delivered a session talk during training for IFS Officers on “Regional Environment Impact Assessment and Environmental Carrying Capacity of Eco-sensitive Zones” organized by Gujarat Environment Management Institute, Gandhinagar during January 21-25, 2018 held in
7. A couple of talks on “Groundwater Contamination and Engineered Bioremediation of LNAPL Polluted Sites” during five-day training course on Ground water quality modeling on Feb 12-16, 2018 held at NIH Roorkee.
8. A talk on “Groundwater contamination and Engineered Bioremediation of NAPL polluted sites” on September 16, 2017 at College of Technology, GBPUA&T, Pantnagar
9. A talk on “Groundwater contamination and Engineered Bioremediation of NAPL polluted sites” during six-day training course on Ground water on August 21-25, 2017 held at NIH Roorkee
10. Keynote talk on Engineered Bioremediation of LNAPL Polluted Soil-water Resources during the conference on Emerging Trends in Water Resources and Environmental Engineering (ETWRE) held at MVGR College, Vizianagaram, Andhra Pradesh On March 30, 2017.

11. A talk on “Phyto-remediation for improving water quality of lakes” during a 5-days training course on ILBM approach for conservation and management of lakes at NIH Roorkee on March 23, 2017
12. Expert talk on “Modelling aspects of (sub)surface water resources systems in basin planning” during a one short term training courses on River Basin Planning using HEC Software held at Department of Hydrology on September 07, 2016 and Feb 24, 2017
13. Keynote talk on “Groundwater flow and contaminant transport simulation” during the National Conference on Transportation and Water Resources Engineering (NCTWE-2015) held by L. D. College of Engineering Ahmedabad, on April 26, 2015.
14. “Modeling Concepts of water resources systems” external expert for research week-2015 at GTU, Ahmedabad on April 09, 2015
15. A talk on “Coastal and seasonal wetlands: An overview” during the short term training course on ‘Climate change issues and its impacts on the water resources management in coastal and seasonal wetlands’ April 06-17, 2014 at Department of Hydrology, IIT Roorkee
16. ‘Applied Modeling of Water Resources Systems’ in workshop organized by Gujarat Technical University (GTU), Ahmedabad on March 31, 2014.
17. A talk on “Modeling root water uptake and soil moisture dynamics considering the root compensation mechanism” in workshop on “Water Use Efficiency” at Department of Water Resources Development & Management, IIT Roorkee on December 09, 2013
18. A talk on “Bioremediation of hydrocarbon polluted groundwater using bio-stimulation and bio-augmentation techniques” in the mini-symposium titled ‘Eco-technologies for domestic wastewater treatment and reuse’ at UNESCO-IHE Delft, Netherlands on November 29, 2013
19. A talk on “Plant-assisted Bioremediation of LNAPL contaminated groundwater” in the two-day Symposium titled ‘Research in porous media science and technology’ at earth Sciences Building, Utrecht University, Netherlands on 25-26 November, 2013
20. Pollution Risk Assessment of Groundwater Resources of an Intermontane Watershed in Uttarakhand State, India” in a workshop on Groundwater Management in Uttarakhand held by CGWB, Dehradun on Feb 15, 2013
21. “Bioremediation of LNAPL polluted soil-water sites in (semi)-arid coastal regions” at Center for Rural Development and technology, IIT Delhi on November 30, 2012.
22. Series of four-lectures on groundwater hydrology were delivered for video recording at TERI University, New Delhi for an e-learning MHRD project in March-April 2012.
23. “Mechanisms of groundwater flow and contaminant transport modelling” at L.D. College of Engineering Campus, Gujarat Technological University (GTU), Ahmedabad on March 15, 2012.
24. “Bioremediation of LNAPL Contaminated Soil-water in (Semi)-arid Coastal Environment” at Indian Institute of Science Education and Research (IISER) Bhopal, India on June 09, 2010.

25. “Phytoremediation of heavy metal contaminated soils” at Indian Institute of Technology (IIT) Kanpur, India on January 01, 2009.
26. “Producing and processing metal contaminated biomass” at UNESCO-IHE Institute for Water Education, Delft, Netherlands on May 13, 2009.

### **Administrative Responsibilities**

#### *Institute Level*

- 1) Member Institute Sponsored Research & Consultancy Committee (SRICC), 2016- To date
- 2) Chairperson Sangram 2016
- 3) Co-coordinator Thomso 2014
- 4) Co-coordinator Thomso 2016
- 5) Member Library Advisory Committee, 2013- To date
- 6) Member of Institute Football team, 2013- To date
- 7) Faculty Advisor sports (Gymnasium, Athletics, Taekwondo) from 2013-2017

#### *Department level*

- 1) OC Groundwater and Geophysical laboratories 2013- To date
- 2) Faculty Advisor Cognizance 2013, 2014 and 2017
- 3) OC Library since 2013-To date
- 4) OC Educational tour 2013-2018

### **PhD Examiner**

1. Dr. R. Someswaran, Numerical Modelling of Non-equilibrium Reactive Transport in Acid Mine Drainage, Department of Civil Engineering, IIT Guwahati on June 20, 2019
2. Mr. Aditya Kapoor, Groundwater evaluation of Punjab region, Civil Engineering Department at IIT Ropar, April 20, 2018.
3. External expert to review the PhD students of Gujarat Technical University (GTU) registered in Water Resources Management, at GTU on April 16-17, 2018
4. Najenga Mburu “Experimental and modeling studies of horizontal sub-surface flow constructed wetlands treating domestic wastewater” UNESCO-IHE Delft, The Netherlands, November 29, 2013 (stand-by examiner)
5. Sanjaykumar Kanubhai Dave, The study of different River catchment Models, L.D. College of Engineering, Gujarat University, Ahmedabad, September 2011
6. S. Bhanushanker Joshi, Determination of rainfall runoff relationship & deviation of instantaneous unit hydrograph using Nash model and Clark model for Bhadar basin upto village Vegadi of jetpur Taluka of rajkot district of Gujarat state- India, Nirma Institute of Technology, Ahmedabad, November 5, 2012

### **List of Publications** (Q1 Rank journal= 12; Q2 Rank journal =12)

- 1) Krishan G, Prasad G, Anjali A, Kumar C P, Patidar N, **Yadav B K**, Kansal M L, Singh S, Sharma LM, A Bradley A, Verma S K (2020) “Identifying the seasonal variability in source of groundwater salinization using deuterium excess- a case study from Mewat, Haryana, India” Journal of Hydrology: Regional Studies (Accepted)

- 2) Ranjan, S, **Yadav, B. K.**, and Joshi, H (2020) Development of nZVI-Pumice/Zeolite Composites for Effective Removal of Arsenic (III) from Aqueous Solution, *ASCE's Journal of Hazardous, Toxic, and Radioactive Waste*, 24 (3), 04020014
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