

## 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, 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

**PhD Students:** 01 Completed and 07 Ongoing

**Masters' Thesis:** 21 Completed and 03 Ongoing

**B Tech projects:** 05 completed

### *Postdoc Supervision*

1. Dr. Deepak Kumar, Bioremediation of LNAPL in Coastal Semi (-Arid) Environmental Condition (Project No. DST-695-HYD). June- Sept. 2014.
2. Dr. Basant Yadav, 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- (Thesis submitted)
3. Mr. Pankaj Kumar Gupta, "Multi-scale fate and transport of LNAPL under varying subsurface flow conditions" July 2014 (Synopsis completed)
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
6. Mr. Apoorva Verma, Groundwater vulnerability assessment using mechanistic and index based models, 2015-Continuing
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

### *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

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

## Details of Sponsored Projects

### Research Projects

Sr.No.	Title	Sponsoring Agency	Period	Sanct. Amount (Lacs)	PI/CO-PI	Status
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	2017-2020	19.80	PI	Ongoing
5	Benchtop Atomic Absorption Spectroscopy, under SMILE Grant, IIT Roorkee,	SMILE Grant	2017-1018	45	PI	Ongoing
6	Future Secular Changes & Remediation of Groundwater Arsenic in the Ganga River Basin	DST-Newton Bhabha-NERC-EPSRC Indo-UK	2018-2021	370.9	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

### Consultancy Projects

Sr.No.	Title	Sponsoring Agency	Period	PI/Co-PI	Amount (Lacs)
1	Geophysical investigation in Sikar district, Rajasthan, 03 Months,	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	Jubilant Life Sciences Ltd	2014-2017	Co-PI	14.97
6	Feasibility study for remediating hydrocarbon polluted sites,	Dr. Raddy's Laboratory	2016	Co-PI	13.0
7	Area Drainage Study in and around M/s	Engineers	2018-	Co-PI	11.8

	HPCL Rajasthan Refinery Ltd (HRRL), Pachpadra, Barmer, Rajasthan	India Limited	2019		
8	Verifying Water Flow of P&G Baddi Plant	P&G Plant Baddi	2018	Co-PI	4.44
9	Hydrogeology study and groundwater quantification of Mirzapur Thermal Power Plant, UP	Adani Group	2018	PI	9.44

### **Sanctioned PDS to be undertaken with 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)

### **Coordinated Courses/workshops (Total: 09)**

1. Two days Indo-UK workshop on “Bioremediation of LNAPL polluted Groundwater” on march 26-27, 2018 at IIT Roorkee sponsored by **Loughborough University, UK**
2. Three days training on “Identification of Remediation and Management of Polluted soil and Groundwater Sites” On Nov 20-22, 2017 sponsored by **CPCB**
3. 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**
4. 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**
5. 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**
6. Two week GIAN training workshop on “Remediation and Management of Polluted Groundwater Sites” 16-24 May, 2016 sponsored by **MHRD**
7. One-day workshop on “Modeling fate and transport of soil water pollutants” February 13, 2016 at IIT Roorkee sponsored by **QIP**
8. 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**
9. 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.
- 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 IIT Roorkee in New Delhi on 11-13 Dec, 2017.
- Invited to travel AIT, Bangkok for taking part in Water Security and Climate Change (WSSC): 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. 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.
2. 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.
3. 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
4. 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
5. 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.
6. “Modeling Concepts of water resources systems” external expert for research week-2015 at GTU, Ahmedabad on April 09, 2015
7. 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
8. ‘Applied Modeling of Water Resources Systems’ in workshop organized by Gujarat Technical University (GTU), Ahmedabad on March 31, 2014.
9. 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
10. A talk on “Bioremediation of hydrocarbon polluted groundwater using biostimulation and bioaugmentation techniques” in the mini-symposium titled ‘Eco-technologies for domestic wastewater treatment and reuse’ at UNESCO-IHE Delft, Netherlands on November 29, 2013
11. 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
12. 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
13. “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.



14. 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.
15. “Mechanisms of groundwater flow and contaminant transport modelling” at L.D. College of Engineering Campus, Gujarat Technological University (GTU), Ahmedabad on March 15, 2012.
16. “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.
17. “Phytoremediation of heavy metal contaminated soils” at Indian Institute of Technology (IIT) Kanpur, India on January 01, 2009.
18. “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 of Institute Sponsored Research & Consultancy Committee (SRICC)
- 2) Chairperson Sangram 2016
- 3) Co-coordinator Thomso 2014 and 2016
- 4) Member Library Advisory Committee
- 5) Member of Institute Football team since 2013
- 6) Faculty Advisor sports (Gymnasium, Athletics, Taekwondo)

#### **Department level**

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

#### **PhD Examiner**

1. Mr. Aditya Kapoor, Groundwater evaluation of Punjab region, Civil Engineering Department at IIT Ropar, April 20, 2018.
2. External expert to review the PhD students of Gujarat Technical University (GTU) registered in Water Resources Management, at GTU on April 16-17, 2018
3. 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)
4. Sanjaykumar Kanubhai Dave, The study of different River catchment Models, L.D. College of Engineering, Gujarat University, Ahmedabad, September 2011
5. 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**

- 1) Mustapha I.H., Gupta P.K., **Yadav B.K.**, J.J.A van Bruggen and P. N. L. Lens, (2018). “Performance evaluation of duplex constructed wetlands for the treatment of diesel contaminated wastewater”. *Chemosphere*, <https://doi.org/10.1016/j.chemosphere.2018.04.036>
- 2) Yadav, B., Mathur, S., Ch., Sudheer, **Yadav, B. K.** (2018) “Data Based Modeling Approach for Variable Density Flow and Solute Transport Simulation in a Coastal Aquifer”. *Hydrological Sciences Journal*: [doi.org/10.1080/02626667.2017.1413491](https://doi.org/10.1080/02626667.2017.1413491)
- 3) Yadav, B., Mathur, S., Ch., Sudheer, Yadav, B. K. (2018) “A simulation-optimization approach for the consideration of well clogging during cost estimation of in-situ bioremediation system”. *Journal of Hydrologic Engineering* (DOI: 10.1061/(ASCE)HE.1943-5584.0001622), 2017.
- 4) Jahangeer, Gupta P.K., **Yadav B.K.**, (2017) “Transient water flow and Nitrate Movement Simulation in Partially Saturated Zone”. *ASCE Journal of Irrigation and Drainage Engineering* 143(12): 04017048.
- 5) Priyanka, Krishan G, Sharma L. M, **Yadav B. K.**, Ghosh N. C. (2016) Analysis of Water Level Fluctuations and TDS Variations in the Groundwater at Mewat (Nuh) District, Haryana (India). *Current World Environment*, 11(2), 388-398.
- 6) Basu, S, **Yadav. B. K.**, and Mathur, S. (2015) “Enhanced Bioremediation of BTEX Contaminated Groundwater in Pot-Scale Wetlands”. *Environmental Science and Pollution Research*, 22(24), 20041-20049
- 7) **Yadav, B. K.**, and Junaid, S (2014) “Groundwater vulnerability assessment to contamination using soil moisture flow and solute transport modelling” *Journal of Irrigation and Drainage Engineering*, 141(7), 1-11.
- 8) **Yadav, B. K.**, Verma, M., and Singhal, D.C. (2014) “Pollution Risk Assessment of Groundwater of an Intermontane Watershed using GIS based Index Approach”. *Hydrology Journal*, 37(1-5), 1-77.
- 9) **Yadav, B. K.**, Ansari, F.A., Basu, S., and Mathur, A. (2013) “Remediation of LNAPL contaminated groundwater using plant-assisted biostimulation and bioaugmentation methods, *Water, Air, & Soil Pollution*, 225:1793-1801.
- 10) Kumar, G. P., Shashi R., and **Yadav, B. K.** (2013) “BTEX biodegradation in soil-water system having different substrate concentrations” *International Journal of Engineering Research and Technology*, 2(12), 1765-1772
- 11) **Yadav, B. K.**, Hassanizadeh, S. M. and Rajbhandari, S. (2012) “Biodegradation of toluene under seasonal and diurnal fluctuations of soil-water temperature conditions”, *Water, Air, & Soil Pollution*, 223(7), 3579-3588
- 12) Jhajharia D., **Yadav, B. K.**, Maske, S., and Kar, A.K. (2012) “Identification of trends in rainfall, rainy days and 24 hours maximum rainfall over sub-tropical Assam in Northeast India” *Elsevier J. of Comptes Rendus Geoscience*, 344(1), 1-13
- 13) **Yadav, B. K.** and Hassanizadeh, S. M (2011) “An Overview of Biodegradation of LNAPL-polluted Coastal Regions in (Semi)-arid Environment” *Water, Air, & Soil Pollution*, 220 (1-4), 225-239.

- 14) **Yadav, B. K.**, Siebel, M. A. and van Bruggen J. J. A. (2011). “Rhizofiltration of a Heavy Metal Containing Wastewater using the Wetland Plant *Carex pendula*” CLEAN - Soil, Air, Water, 39 (5), 467–474
- 15) **Yadav, B. K.**, Mathur, S. and Siebel, M. A. (2009). “Soil moisture dynamics modeling considering the root compensation mechanism for water uptake by plants” ASCE Journal of Hydrologic Engineering, 14(9), 913-922
- 16) **Yadav, B. K.**, Mathur, S. and Siebel, M. A. (2009). “Soil Moisture Flow Modeling with Water Uptake by Plants (Wheat) under Varying Soil and Moisture Conditions” ASCE Journal of Irrigation and Drainage Engineering, 135(3), 375-381
- 17) Mathur, S and **Yadav, B. K.** (2009). “Phytoextraction Modeling of Heavy Metal (Lead) Contaminated Site using Maize (*Zea mays*)” ASCE Practice periodical of hazardous toxic and radioactive waste management, 13(4), 229-238
- 18) **Yadav, B. K.** and Mathur, S. (2008). “Modeling Soil Water Extraction by Plants Using Non-Linear Dynamic Root Density Distribution Function” ASCE Journal of Irrigation and Drainage Engineering 134 (4), 430-436.
- 19) **Yadav, B. K.**, Keshari, A. K. (2007). “A Coupled Mathematical Water and Salt Balance Model of Flat Bay” Asian Journal of Water, Environment and Pollution, 4(2), 49-55.
- 20) **Yadav, B. K.** and Mathur, S. (2006) "Modeling of Environmental Phytoextraction in the Vadose Zone" Indian Journal of Environmental Protection, 26(7), 593-598.
- 21) Keshari, A. K. and **Yadav, B. K.** (2005) "Inflow Forecasting for Flat Bay, Andaman and Nicobar Islands Using Artificial Neural Networks" Hydrology Journal, IAHR, Roorkee, 28(3),1-15.

#### Book Chapters

- 22) **Gupta P.K.**, Yadav B.K. (2018), “Impact of climatic variability on subsurface water resources”. In Climate Change and Hydrology-Science, Impacts and Adaptation to be published by Springer. (Ed. Dr. Devesh Sharma: In Press
- 23) Gupta P.K and **Yadav B.K.**, (2017). “*Bioremediation of Non-Aqueous Phase Liquids (NAPLS) Polluted Soil and Water Resources*”. Chapter 8, Environmental Pollutants and their Bioremediation Approaches, ISBN 9781138628892, CRC Press, Taylor and Francis Group, Florida, USA.
- 24) S. Basu, **B. K. Yadav**, and S. Mathur (2017) Modeling engineered bioremediation of BTEX contaminated water in treatment wetlands in Wetland Science: ‘Perspectives from South Asia’, Springer, ISBN 978-81-322-3715-0, pp-468-488
- 25) Gupta P.K., **Yadav B.K.**, (2017), “Effects of climatic variation on dissolution of LNAPL pollutants in subsurface environment”. Chapter 8, Climate Change Resource Conservation and Sustainability Strategies, ISBN 9789384871086, DBH Publishers and Distributors, New Delhi
- 26) Gupta P.K., Abhishek, **Yadav B.K.**, (2017), “Impact of hydrocarbon pollutants on partially saturated soil media in batch system: Morphological analysis using SEM techniques”. Chapter 5, Water Quality Management; Water Science and Technology, Vol. 79, Springer.

27) Jahangeer, Gupta P.K., **Yadav B.K.**, (2017), “Spatial and Temporal Nitrate Transport in Deep Heterogeneous Vadose Zone of India’s Alluvial Plain” Chapter 14, Groundwater; Water Science and Technology Library, ISBN 978-981-10-5788-5, Vol. 79, Springer

International Conferences/Symposiums

- 1) Yadav B.K., Basu, S, Ansari F., “Plant-Assisted Bioremediation of LNAPL Contaminated Groundwater Using Practical Experiments”, AOGS, August 06-12, 2017 held in Singapore.
- 2) Pal, M., Jadhav S., **Yadav, B. K.** (2017) “Robust gridding and discretization for modeling flow in discrete fracture network medium” in 9<sup>th</sup> International Conference on Porous Media and Annual meeting” held in Rotterdam, Netherlands, from May 8-12, 2017
- 3) **Yadav, B. K.**, Basu, S, Mathur S (2017) “Engineered Bioremediation of LNAPL Polluted Soil-water Resources” in International conference on Emerging trends in Water resources and Environmental Engineering at MVGR College, Vizianagaram, Andhra Pradesh, March 30-April 1, 2017 (Keynote speaker and Session chair)
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