




## Faculty Details proforma for DU Web-site

Title	<b>Dr.</b>	First Name	<b>Shashank</b>	Last Name	<b>Shekhar</b>	Photograph
Designation	Assistant Professor					
Address Office	Room No. 121, Department of Geology, University of Delhi, Delhi-110007.					
Residence	C1-301, Plot no.-08, Golf City, Sector-75, NOIDA, Uttar Pradesh, Pin-201301.					
Phone No Office	27666908					
Residence Mobile	9212600385					
Email	shashankshekhar01@gmail.com					
<b>Educational Qualifications</b>						
Degree	Institution				Year	
<b>Ph.D.</b>	Ph.D. (Geology), University of Delhi				2008	
<b>PG</b>	M.Sc (Geology), University of Delhi				1998	
<b>UG</b>	B.Sc (H) (Geology), University of Delhi				1996	
<b>Career Profile</b>						
01-08-2017 – 30-09-2017: Visiting Faculty, Department of Landscape Architecture, School of Planning and Architecture, New Delhi						
17-03-2009 – till date: Assistant Professor, Department of Geology, University of Delhi.						
01-01-2007 – 16-03-2009: Scientist 'C', Central Ground Water Board, Ministry of Water Resources.						
16-3-2001 – 31-12-2006: Scientist 'B', Central Ground Water Board, Ministry of Water Resources.						
1999 – 2001: Junior Research Fellow, University of Delhi.						
1998 -1999: Lecturer (Ad-hoc), Department of Geology, University of Delhi.						
<b>Administrative Assignments</b>						
<b>Areas of Interest / Specialization</b>						
Integrated groundwater management study (using analytical approach and numerical modeling approach), hydrogeological mapping and investigations.						

Well hydraulics, tube well (Production Well) design and construction.
<b>Subjects Taught</b>
<i>Under Graduate and Post Graduate level:</i> Hydrogeology
<b>Research Guidance (University of Delhi)</b>
<p>M.Sc Dissertations:  M.Sc Dissertations, Academic Year 2009-10: Two  M.Sc Dissertations, Academic Year 2010-11: Four  M.Sc Dissertations, Academic Year 2011-12: Four  M.Sc Dissertations, Academic Year 2012-13: Three  M.Sc Dissertations, Academic Year 2013-14: Two  M.Sc Dissertations, Academic Year 2014-15: Two  M.Sc Dissertations, Academic Year 2015-16: Three  M.Sc Dissertations, Academic Year 2016-17: Four  M.Sc Dissertations, Academic Year 2017-18: Three  M.Sc Dissertations, Academic Year 2018-19: Five</p> <p>M.Phil Dissertation, Academic year 2013-14: One  M.Phil Dissertation, Academic year 2014-15: One  M.Phil Dissertation, Academic year 2015-16: Two  M.Phil Dissertation, Academic year 2016-17: One  M.Phil Dissertation, Academic year 2017-18: One  M.Phil Dissertation, Academic year 2018-19: Two</p> <p>Ph.D Thesis, Academic year 2015-16: One degree awarded  Ph.D Thesis, Academic year 2017-18: two degree awarded</p>
<b>Research Guidance &amp; Training (Inter University to students from other Universities)</b>
<p>M.Sc Dissertations, Academic Year 2016-17: One (Kurukshetra University, Haryana, India) as co supervisor.</p> <p>Training (one week), Academic Year 2012-13: One (Indian School of Mines, Dhanbad, Jharkhand, India).</p> <p>Summer research internship, Academic Year 2016-17: (Delhi Tecnological University, Delhi, India)</p> <p>Summer research internship, Academic Year 2015-16: one (IIT Kharagpur, West Bengal, India).</p>
<b>Publications Profile</b>
<p><b><i>Research papers/articles published in Refereed/Peer Reviewed Journals</i></b></p> <p>Ali S, Fakhri Y, Golbini M, Thakur SK, Alinejad A, Parseh I, Shekhar Shashank and Bhattacharya, P. (2019) Concentration of fluoride in groundwater of India: A systematic review, meta-analysis and risk assessment. <i>Groundwater for Sustainable Development</i>.(Volume 9) Available online: <a href="https://doi.org/10.1016/j.gsd.2019.100224">https://doi.org/10.1016/j.gsd.2019.100224</a></p> <p>Jain A, Shekhar Shashank. (2019). Estimation of regional groundwater discharge and base flow contribution in northern stretch of the Yamuna River system of Delhi. <i>Current Science</i>, 116(4), 660-664.</p>

Kumar A, Shekhar Shashank , Sarkar A, & Sharma A K. (2019). A process-based insight to the recent disappearance of streams in the central part of Tarai region, Uttarakhand, India. *Environmental monitoring and assessment*, 191(2), 66.

Ali S, Shekhar Shashank , Bhattacharya P, Verma G, Gurav T, Chandrashekhar AK. 2018. Elevated fluoride in groundwater of Siwani Block, Western Haryana, India: A potential concern for sustainable water supplies for drinking and irrigation. *Groundwater for Sustainable Development*. 7: 410-420.

Sarkar A, Shekhar Shashank. 2018. Iron contamination in the waters of upper Yamuna basin. *Groundwater for Sustainable Development*. 7: 421-429.

Joshi SK, Rai SP, Sinha R, Gupta S, Densmore AL, Rawat YS, Shekhar Shashank. 2018. Tracing groundwater recharge sources in the northwestern Indian alluvial aquifer using water isotopes ( $\delta^{18}O$ ,  $\delta^2H$  and  $^3H$ ). *Journal of Hydrology*. 559:835-47.

Soni Vikram, Shekhar Shashank, Rao S V N, Kumar Suman, Singh, Diwan. 2018 . A new solution for city water: quality drinking water from the river floodplains. *Current Science (00113891)*. 114(3): 452-461.

Kumar S, Sarkar A, Thakur S K, Shekhar Shashank. 2017. Hydrogeological Characterization of Aquifer in Palla flood plain of Delhi using integrated approach. *Jour. Geol. Soc. of India*. 90:459-466.

Sarkar A, Shekhar Shashank, Rai S P. 2017. Assessment of the spatial and temporal hydrochemical facies variation in the flood plains of North-West Delhi using integrated approach. *Environ Earth Sci*.76: 665-677. <https://doi.org/10.1007/s12665-017-7019-5>.

Shekhar Shashank. 2016. Environmental flows and river rejuvenation. *Jour. Geol. Soc. of India*. 88:813-814.

Sarkar A, Shekhar Shashank, Rai SP, Soni V, Kaushik P R, Sharma A, Ali S, Jahan Firdaus.2016. Factors controlling groundwater quality of Yamuna river flood plain in NOIDA-Faridabad region. *International Journal of Advancement in Earth and Environmental Sciences* 4 (2):7-14.

Rajput S, Shekhar Shashank .2016. Spatial analysis of groundwater quality in Gurgaon and Faridabad regions of National Capital Region (NCR) of Delhi in geomorphic perspective and temporal framework. *Indian Groundwater (ISSN:2347-8063)*6:75- 82.

*(article published by the journal from the proceedings International Seminar on Challenges to groundwater management: Vision 2050 at ITC Sonar, Kolkatta. Organized by CGWS during 13-14 November 2015)*

Rajput S, Shekhar Shashank. 2016. Evaluation and characterization of saline groundwater in context of geogenic sources in Faridabad district of Haryana. *Journal of Geotechnical Engineering*. 3(2): 18–22p.

Sarkar A, Arora S , Shekhar Shashank. 2016. Boron in groundwater of National Capital Region Delhi, *Journal of Water Pollution & Purification Research*. 3(2): 30–36p.

Saha D, Shekhar Shashank, Ali S, Vittala SS, Raju NJ. 2016. Recent hydrogeological research in India, *Proc Indian Natn Sci Acad*.82(3):787-803.

Ali,S, Thakur SK, Sarkar A, Shekhar Shashank. 2016. Worldwide contamination of water by

fluoride. *Environmental Chemistry Letters*. 14:291–315.

Dijk, WM, Densmore, AL, Singh, A, Gupta, S, Sinha, R, Mason, PJ, Joshi, SK, Nayak N; Kumar M, Shekhar S, Kumar D, Rai SP. 2016. Linking the morphology of fluvial fan systems to aquifer stratigraphy in the Sutlej-Yamuna plain of northwest India. *Journal of Geophysical Research: Earth Surface*. 121(2):201-222.

Sarkar Aditya, Shekhar Shashank. 2015. The controls on spatial and temporal variation of hydrochemical facies and major ion chemistry in groundwater of South West District, Delhi, India. *Environ Earth Sci*. 74:7783–7791.

Shekhar Shashank, Mao Roger S.K., Imchen Esther B. 2015. Groundwater management options in North district of Delhi, India: A groundwater surplus region in over-exploited aquifers. *Journal of Hydrology: Regional Studies*. 4(2015)212-226.

Rao S V N, Soni V and Shekhar S. 2014. Non-Invasive flood plain technology for river Yamuna to augment drinking water Supply for Delhi. WAPTECH-2014 (Special Edition of In-house technical journal), WAPCOS, Ministry of Water Resources, Govt. of India.

Soni Vikram, Shekhar Shashank and Singh Diwan. 2014. Environmental flow for the Yamuna river in Delhi as an example of monsoon rivers in India. *Current Science*. 106 (4):558-564.

Bawa N, Jain V, Shekhar Shashank., Kumar N, Jyani V. 2014. Controls on Morphological Variability and Role of Stream Power Distribution on Yamuna River, India. *Geomorphology*. 227(2014):60-72.

Sarkar Aditya and Shekhar Shashank. 2013. An Assessment of Groundwater Quality of Lesser Contaminated Aquifers in North District of Delhi. *Proc. Indian natn. Sci. Acad.* 79 (2): 235-243.

*Paper available on website: <http://insa.nic.in/INSAuth/RecentPublications.aspx>*

Shekhar Shashank and Sarkar Aditya. 2013. Hydrogeological characterization and assessment of groundwater quality in shallow aquifers in vicinity of Najafgarh drain of NCT Delhi. *J. Earth Syst. Sci.* 122 (1):43–54.

Shekhar Shashank, A.M.Bhola and P.S.Saklani. 2011. Kink bands in thrust regime: examples from Srinagar - Garhwal area, Uttarakhand, India. *J Earth Syst. Sci.* 120 (5):939-948.

Shekhar Shashank and Rao S V N. 2011. Groundwater Management in Palla Well Field of Delhi Using Numerical Modeling Technique - A Case Study. *Bhu-Jal News* (25(3&4) and 26 (1&4) combined):46-51.

*Paper available on website: [http://cgwb.gov.in/documents/Bhujal%20Vol-25,2&3%20and%20Vol%2026,%201-4%20\(Combined\).pdf](http://cgwb.gov.in/documents/Bhujal%20Vol-25,2&3%20and%20Vol%2026,%201-4%20(Combined).pdf)*

Shekhar Shashank and R K Prasad. 2009. The groundwater in Yamuna flood plain of Delhi (India) and the management options. *Hydrogeology J.* 17(7): 1557-1560.

Chatterjee, Rana, B K Gupta, S K Mohiddin, P N Singh, Shekhar Shashank and Rajaram Purohit. 2009. Dynamic groundwater resources of National Capital Territory, Delhi: assessment, development and management Options. *Environ Earth Sci J.* 59(3): 669-686.

Rao, S V N, Sudhir Kumar, Shekhar Shashank, S K Sinha and S Manju. 2007. Optimal pumping from Skimming Wells from the Yamuna river flood plain in north India. *Hydrogeology J.* 15(6): 1157-1167.

Rao, S V N, Sudhir Kumar, Shashank Shekhar and D Chakraborti. 2007. Closure to: Optimum pumping from Skimming Wells. *Journal of Hydrologic Engineering*. 12(6): 709-710.

Rao, S V N, Sudhir Kumar, Shashank Shekhar and D Chakraborti. 2006. Optimum pumping from Skimming Wells. *Journal of Hydrologic Engineering*. 11(5): 464-471.

Shekhar Shashank. 2006. An approach to interpretation of Step Drawdown Tests. *Hydrogeology J.* 14(6): 1018-1027.

Shekhar Shashank. 2006. An approximate projection of availability of the fresh groundwater resources in South West district of NCT Delhi, India – A case study. *Hydrogeology J.* 14(7): 1330-1338.

Shekhar Shashank, S B Singh and Saleem Romani. 2005. The Controls to the variation in depth to fresh/saline interface in the Groundwater of South West District, NCT Delhi- A Case Study. *Jour. Geol. Soc. of India*. 66(7): 17-20.

***Research papers published in Refereed/Peer Reviewed Conferences/Workshop***

Vikrant Jain, Shashank Shekhar, Nupur Bawa. 2017. Challenges in the geomorphic management of a river system in response to urbanisation expansion around a mega city: Case study from Yamuna River around Delhi NCR. In International Symposium on Sustainable Urban Environment (ISSUE 2017). Tezpur University, Assam, 23-24 June, 2017.

Shekhar Shashank, Kumar Suman, Densmore Alexander, Dijk Wout Van, Sinha Rajiv, Gupta Sanjeev, , Rai S P, Kumar Manoranjan, Singh Ajit, Kumar Dewashish, Joshi Sunil, Mason Philipa. 2016. Evaluation of the control of aquifer geometry on regional groundwater dynamics using a conceptual groundwater modeling framework. In Bhujal Manthan-2: A National Dialogue on Aquifer mapping and Ground Water management. Central Ground Water Board, Ministry of Water Resources, River Development and Ganga Rejuvenation, Government of India. Conference held on 29th Nov. 2016 at Vigyan Bhawan, New Delhi, India.

Sarkar A and Shekhar S. 2015. Appraisal of groundwater dynamics in parts of upper Yamuna alluvial plains. In proceedings: IX World Aqua Congress: Reviving Traditional Water and Environment Conservation Techniques. International Conference held during 26 - 27 November 2015, India Habitat Centre, New Delhi. Ed. Sanjay Rana, Aqua Foundation, New Delhi.

Shekhar Shashank. 2014. Sustainable groundwater management strategies for potential aquifers of NCR to serve as disaster management tool. In proceedings *Workshop on water conservation and sustainable management of groundwater in National Capital Region*, 25 March, 2014, Vigyan Bhawan, New Delhi, ed. Kapoor Uma, Singh P.N & Kapur Sonia, Central Ground Water Board, New Delhi.

Shekhar Shashank, Raja Ram Purohit and Y B Kaushik. 2009. Groundwater Management in NCT Delhi. In proceedings *5th Asian Regional Conference of Indian National Committee on Irrigation and Drainage (INCID)*, December 9-11, 2009, Vigyan Bhawan, New Delhi. Paper available on website: <http://cgwb.gov.in/documents/papers/INCID.html>.

Rao, S V N, Sudhir Kumar, Shekhar Shashank and S K Sinha. 2006. Optimal groundwater pumping from

Palla Well fields to augment drinking water supply to Delhi, in Groundwater Governance Ownership of Groundwater and its Pricing. In *Proceedings of the 12th National Symposium on Hydrology*, November 14-15, 2006, New Delhi, 51-64, ed. Saleem Romani, K D Sharma, N C Ghosh and Y B Kaushik. New Delhi: Capital.

### **Other publications**

### **Edited works**

Kumar Suman, Sarkar Aditya, Ali Shakir and Shekhar Shashank. 2018. Groundwater system of National Capital Region Delhi, India. In *Groundwater of South Asia*. Ed. Mukherjee, Abhijit. Springer, Singapore, 131-152. DOI: 10.1007/978-981-10-3889-1\_9.

Shekhar Shashank, Kumar Suman, Sinha Rajiv, Gupta Sanjeev, Densmore Alexander, Rai SP, Kumar Manoranjan, Singh Ajit, Dijk Wout Van, Joshi Sunil, Mason Philipa, Kumar Dewashish. 2018. Efficient Conjunctive Use of Surface and Groundwater Can Prevent Seasonal Death of Non-Glacial Linked Rivers in Groundwater Stressed Areas. In: Saha D., Marwaha S., Mukherjee A. (eds) *Clean and Sustainable Groundwater in India*. Springer Hydrogeology. Springer, Singapore, 117-124.

Sarkar Aditya, Kumar Suman, Shekhar Shashank. 2016. New Delhi- NCT Delhi in Hydrogeology of select smart cities of India, Ed. Mukherjee A and Shekhar Sudhanshu, INC-IAH Publication. 116-122.

Sarkar Aditya, Ali Shakir, Kumar Suman, Shekhar Shashank, Rao SVN. 2016. Groundwater Environment in Delhi, India. In book *Groundwater Environment in Asian Cities: Concepts, Methods and Case Studies*, Ed. S Shrestha; V Pandey; B R Shivakoti; S Thatikonda, Elsevier Inc. 77-108.

Rao, SVN, Radhakrishna I, Joshi, N, Sharma, A and Shekhar, Shashank. 2010. A study of saline freshwater interface phenomena in the Mahanadi delta region: Orissa, India. In *Sustainable water resources management and impact of climate change*, ed. Raju, K Srinivas and Vasana, A, 452-467. Hyderabad: B S Publications.

Shekhar Shashank, S K Mohiddin and P N Singh. 2009. Variation in concentration of Fluoride in groundwater of South West district of NCT Delhi: A case study. In *Assessment of groundwater Resources and Management*, ed. A L Ramanathan, P Bhattacharya, A K Keshari, J Bundschuh, D Chandrashekharan and S K Singh, 370-376. New Delhi: I K International.

Mohiddin, S K, Shashank Shekhar, Uma Kapoor and P N Singh. 2009. Enhancing the Recharge Capabilities of Aravalli Ridge Around the National Capital Territory, Delhi, India. In *Assessment of groundwater Resources and Management*, ed. A L Ramanathan, P Bhattacharya, A K Keshari, J Bundschuh, D Chandrashekharan and S K Singh, 26-39. New Delhi: I K International.

Shekhar Shashank, P S Saklani and A M Bhola. 2008. Vertical Folds and Mesoscopic Fabrics in Srinagar Area, Garhwal Himalaya. In *Himalaya: Geological Aspects, Vol.5*, ed. P S Saklani, 199-210. New Delhi: Satish Serial.

Shekhar Shashank, P S Saklani and A M Bhola. 2006. Geology and Structure of Srinagar, Garhwal-Himalaya. In *Himalaya: Geological Aspects, Vol.4*, ed. P S Saklani, 153-169. New Delhi: Satish Serial.

**E text modules:**

1. Shashank Shekhar. 2017. Aquifer Properties.  
Available on: [http://epgp.inflibnet.ac.in/view\\_f.php?category=601](http://epgp.inflibnet.ac.in/view_f.php?category=601)
2. Shashank Shekhar. 2017. Darcy's law.  
Available on: [http://epgp.inflibnet.ac.in/view\\_f.php?category=601](http://epgp.inflibnet.ac.in/view_f.php?category=601)
3. Shashank Shekhar. 2017. Assessment of groundwater quality  
Available on: [http://epgp.inflibnet.ac.in/view\\_f.php?category=601](http://epgp.inflibnet.ac.in/view_f.php?category=601)

**Paper coordinator of the following E text modules:**

1. Aquifer Properties. Content writer: Dr. Shashank Shekhar.  
Available on: [http://epgp.inflibnet.ac.in/view\\_f.php?category=601](http://epgp.inflibnet.ac.in/view_f.php?category=601)
2. Assessment of groundwater quality. Content writer: Dr. Shashank Shekhar.  
Available on: [http://epgp.inflibnet.ac.in/view\\_f.php?category=601](http://epgp.inflibnet.ac.in/view_f.php?category=601)
3. Introduction to Hydrology and Hydrogeology.  
Content writer: Dr. Tajdarul Hassan Syed  
Available on: [http://epgp.inflibnet.ac.in/view\\_f.php?category=601](http://epgp.inflibnet.ac.in/view_f.php?category=601)
4. Hydraulic Head, Fluid Potential, Reynolds number and Pumping Tests-I  
Content writer: Dr. Tajdarul Hassan Syed  
Available on: [http://epgp.inflibnet.ac.in/view\\_f.php?category=601](http://epgp.inflibnet.ac.in/view_f.php?category=601)
5. Hydraulic Head, Fluid Potential, Reynolds number and Pumping Tests-II  
Content writer: Dr. Tajdarul Hassan Syed  
Available on: [http://epgp.inflibnet.ac.in/view\\_f.php?category=601](http://epgp.inflibnet.ac.in/view_f.php?category=601)

**Newspaper article/Editorial**

Shekhar Shashank. 2016. Rains flooding Gurgaon but groundwater levels falling. Here is how this can change. In The Times of India on 27<sup>th</sup> June 2017. Source URL: <http://timesofindia.indiatimes.com/city/gurgaon/rains-flooding-gurgaon-but-groundwater-levels-falling-heres-how-this-can-change/articleshow/59328560.cms>

Shekhar Shashank. 2015. Here is a look at the current development pattern vis-a-vis green concerns. In The Asian Age, page entitled "Needed: Green Thumb" on 05<sup>th</sup> July, 2015. Source URL: <http://www.asianage.com/editorial/needed-green-thumb-685>.

Article reproduced in Deccan Chronicle with editing under heading Needed: Green Thumb on 05<sup>th</sup> July, 2015. Source URL: <http://www.deccanchronicle.com/print/150705/commentary-op-ed/article/needed-green-thumb>.

**Book review**

Sarkar Aditya and Shekhar Shashank (2013), *Memoir 1: Applied Geochemistry: Groundwater Quality Evaluation and Control*, Indian Society of Applied Geochemists, Hyderabad, 357p, ed. Subhajyoti Das and Dipankar Saha, *Episodes Journal of International Geoscience*.36 (4):305-306

Shekhar, Shashank (2010), *Drinking Water and Food Security in Hard Rock Areas of India*, by Subhajyoti Das, ed. *Episodes Journal of International Geoscience*.33(3):213

Conference Organization/ Presentations (in the last three years)



### ***Organization of a Conference***

Member of the organizing committee, National Workshop on “Role of groundwater in smart cities and villages”, 17-12-2016, organized by Manav Rachna International University and Indian National Committee of International Association of Hydrogeologists, Manav Rachna International University, Faridabad, Haryana, India.

Convener, Group on River Flows, India Rivers Week, 24- 27 November 2014, New Delhi.

Member of the organizing committee, National Workshop on “Groundwater Governance and Regulation”, 23-08-2014, organized by Indian National Committee of International Association of Hydrogeologists, India International Centre, Lodhi Road, New Delhi.

Organized as coordinator for Department of Geology, the event of displaying Good Practice during cultural festival, Antardhwani – 14-16<sup>th</sup> February, 2014 organized by University of Delhi. The Department of Geology was awarded First Position amongst the various departments of University of Delhi.

Member of the Editorial Committee, Regional Workshop on Groundwater Scenario, Water Quality, Information Dissemination and Capacity Building in NCT, Delhi, 4<sup>th</sup> and 5<sup>th</sup> March, 2009, Nuclear Research Laboratory, IARI Complex, Pusa, New Delhi.

Member of the Organizing committee, National Groundwater Congress, 11<sup>th</sup> September, 2007, Vigyan Bhawan, New Delhi.

Member of the committee for technical guidance for preparing Republic Day Tableau of the Ministry of Water Resources, to be displayed on the eve of Republic Day, 26<sup>th</sup> January, 2008.

Member of the Organizing Committee for Pavilion of Ministry of Water Resources , India International Trade Fair, 14-27<sup>th</sup> Novemebr, 2007, Pragati Maidan, New Delhi. The Pavilion of Ministry of Water Resources was awarded Gold Medal in Central Government category.

### ***Workshops attended***

National Seminar on "River, Water and Environmental Conservation"08 May 2017, RCVP Noronha Academy of Administration, Bhopal, Organized by Government of Madhya Pradesh.

National Workshop on “Role of groundwater in smart cities and villages”, 17-12-2016, organized by Manav Rachna International University and Indian National Committee of International Association of Hydrogeologists, Manav Rachna International University, Faridabad, Haryana, India.

Workshop on “Groundwater modeling for aquifer management in soft rock areas” Organized by Central Ground Water Board, Ministry of Water Resources, River Development and Ganga Rejuvenation, Govt. of India., on 1<sup>st</sup> September 2016, At Indian Institute of Technology Kharagpur, West Bengal, India.

Workshop by South Asian Groundwater Forum: Regional Challenges & Opportunities for Building Draught and Climate Resilience for Farmers, Cities and Villages by Government of India, the International Water Association and The World Bank during 01-03 June 2016 at Chokhi Dhani, Jaipur



Rajasthan.

UGC sponsored Refresher Course in Environmental Studies/Earth Sciences (ID) from 13<sup>th</sup> October to 04<sup>th</sup> November 2015 at Centre for Professional Development of Higher Education, University of Delhi, UGC-ASC.

National Workshop on Water Conservation and Pollution, Organized by Indian National Committee of International Association of Hydrogeologists and Manav Rachna International University, 19-12-2015 at Faridabad, Haryana, India.

UGC sponsored four weeks (24 days) orientation programme (OR-75) from 5 -15 Oct., 9-19 Nov., and 14-20 Dec., 2013 by Centre for Professional Development of Higher Education, University of Delhi, UGC-ASC.

*Workshop on water conservation and sustainable management of groundwater in National Capital Region, 25 March, 2014, Vigyan Bhawan, New Delhi, Central Ground Water Board, New Delhi.*

Yamuna Future Workshop, "A positive plan for the Yamuna in Delhi", March 8th, 2013, Goethe-Institut / Max Mueller Bhavan, 3 Kasturba Gandhi Marg, New Delhi-110001.

MoES-NERC, Changing Water Cycle Workshop, 7-8 February 2013, Ministry of Earth Sciences, PrithviBhawan, Lodhi Road, New Delhi.

Workshop on Information Literacy and Competency, organized by Delhi University Library System, University of Delhi, Delhi-110007, Date-23-02-2010, Venue: North Campus, Delhi University.

Workshop on river style framework, Organized by IIT Kanpur, Kanpur, Date - 21-22 November, 2010, Venue: IIT Kanpur.

### ***Paper/Poster Presentation***

#### ***Paper Presented***

Sarkar A, Kumar S, Shekhar Shashank. 2019. Impact assessment of rejuvenated groundwater in floodplain aquifers of NCT Delhi. International Groundwater Resilience to Climate Change and High Pressure Conference, May. 08-10,2019, Mugla, TURKEY.

Shekhar Shashank. 2019. Water quality issues and remediation. Theme paper of technical session-2 on water quality issues and remedies. National conference on groundwater sustainability, 28-03-2019, Organized by Manav Rachna International Institute for Research & Studies, Central Ground Water Board, Indian National Committee of International Association of Hydrogeologists & Global Hydrogeological Solutions, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India.

Shekhar Shashank & Kumar Vinay. 2019. Groundwater model based estimation of the baseflow contribution to the Burhi-Gnadak River of India. National conference on groundwater sustainability, 28-03-2019, Organized by Manav Rachna International Institute for Research & Studies, Central Ground Water Board, Indian National Committee of International Association of Hydrogeologists & Global Hydrogeological Solutions, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India.

Kant A, Jha E, Shekhar Shashank, Tewari D. 2018. Groundwater Resources Management in Markanda Sub-Basin of Haryana: Past, Present and Future prospects. National Conference on "Water-Technological Innovation & Solution", 23-03-2018, Organized by Manav Rachna International Institute of Research and Studies and Indian National Committee of International Association of Hydrogeologists, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India.

Sarkar A, Shekhar Shashank, Pandey V. 2018. Spatial distribution of Nickel in water: assessment of the unconventional contaminant in upper Yamuna basin. National Conference on "Water-Technological Innovation & Solution", 23-03-2018, Organized by Manav Rachna International Institute of Research and Studies and Indian National Committee of International Association of Hydrogeologists, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India.

Shekhar Shashank , Kumar Suman, Ali S. 2018. Assessment of temporal variation in dynamic groundwater resources of Haryana sub-region, NCR Delhi. National Conference on "Water-Technological Innovation & Solution", 23-03-2018, Organized by Manav Rachna International Institute of Research and Studies and Indian National Committee of International Association of Hydrogeologists, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India.

Chakraborty Nupur Bawa, Jain Vikrant, Shekhar Shashank. 2017. Incorporation of geomorphic criteria to define environmental flow in a Himalayan river, Yamuna River system, India. 9<sup>th</sup> International conference on geomorphology, 6-11 November 2017, Vigyan Bhawan, New Delhi, India.

Sarkar Aditya and Shekhar Shashank. 2017. Status of lead contamination in parts of upper Yamuna basin and its linkage with other contaminants. International seminar on water pollution and health, 27-28 July 2017, organized by Department of Civil Engineering, Jamia Millia Islamia, New Delhi, India.

Sarkar Aditya and Shekhar Shashank. 2016. Groundwater quality studies for development of self sustained smart cities: cases from suburbs in NCT Delhi. National Workshop on "Role of groundwater in smart cities and villages", 17-12-2016, organized by Manav Rachna International University and Indian National Committee of International Association of Hydrogeologists, Manav Rachna International University, Faridabad, Haryana, India.

Chakraborty NB, Jain V, Shekhar Shashank. 2016. Impact of a megacity on the connectivity of a large river System. 35<sup>th</sup> International Geological Congress, 27 August - 4 September 2016, Cape Town, South Africa.

Shekhar Shashank. 2016. Water resources management of Delhi and groundwater supply challenges. South Asian Groundwater Forum: Regional Challenges & Opportunities for Building Draught and Climate Resilience for Farmers, Cities and Villages by Government of India, the International Water Association and The World Bank during 01-03 June 2016 at Chokhi Dhani, Jaipur Rajasthan.

Rajput S and Shekhar Shashank. 2015. A glimpse into spatio-temporal variation of groundwater quality in the Faridabad district of Haryana, India. National Seminar on Past and Present Geochemical Processes- Impacts on Climate Change by Indian Society of Applied Geochemists, Hyderabad. Seminar held during 22 to 23 December 2015 at Jawahar Lal Nehru University, New Delhi, India.

Kumar S, *Shekhar Shashank and* Singh D. 2015. An account of positive impact of rainwater harvesting through a water body in Dwarka, Delhi. National Workshop on Water Conservation and Pollution,

Organized by Indian National Committee of International Association of Hydrogeologists and Manav Rachna International University , 19-12-2015 at Faridabad, Haryana, India.

D. Kumar, R. Sinha, A. Densmore, S. Gupta, S. Mondal, V.S. Sarma, A. Singh, S. Joshi, N. Nayak, M. Kumar, S. Shekhar, S.P. Rai, W.M. Van Dijk and P.J. Mason. New evidence for buried palaeochannel and aquifer systems in north-western India from high resolution electrical resistivity tomography dataset . 51st Annual Convention - Indian Geophysical Union (IGU); theme Earth Sciences and Society, 19-21, November, 2014 at Kurukshetra University, Haryana, India.

*Shekhar Shashank. 2014. The groundwater governance in India and the role of different agencies: some issues and missing links, National Workshop on "Groundwater Governance and Regulation", Organized by Indian National Committee of International Association of Hydrogeologists, 23-08-2014, India International Centre, Lodhi Road, New Delhi.*

*Shekhar Shashank. 2014. Groundwater dynamics of safe potential aquifers in north district of groundwater scarce Delhi and Integrated water management options, Indo German Indo-German Joint Scientific Workshop on water and wastewater management for sustainable development, January 30-31, 2014, Venue- Department of Civil Engineering, IIT Delhi, Organized by Indian Institute of Technology Delhi, India and Institute IWAR, Technical University of Darmstadt, Darmstadt, Germany.*

*Sarkar Aditya and Shekhar Shashank. 2014. Geological and anthropogenic controls on Hydrochemical Facies Variation in South-West District of NCT Delhi, National Conference on Earth and Environment: Pollution and Prevention, January 28-30, 2014, Amity University, Uttar Pradesh, NOIDA, India in association with Ministry of Earth Sciences, Government of India.*

Bawa N., Jain V., Shekhar Shashank. 2013. Stream power based threshold identification for explaining channel morphological variability, Yamuna River system, India. *8th International Association Of Geomorphologist (IAG) International Conference, August 27-31: 2013, Paris, France.*

*Sarkar Aditya and Shekhar Shashank .2013. Assessment of hydrochemical facies variation in shallow and deeper aquifers of North-West district of Delhi, Regional Workshop on "Ground Water Quality and its Importance for Sustainable Ground Water Management in the National Capital Region", February 26, 2013, Central Ground Water Board, New Delhi.*

Bawa N., Jain V., Shekhar S., Jyani V., 2012. Geomorphic variability in Yamuna river basin and role of geological characteristics. *IGCP 581 Symposium on Response of Asian rivers to climate change- past, present and future scenario. 14-16<sup>th</sup> November, 2012, National Geophysical Research Institute, Hyderabad.*

Gupta Iti & Shekhar Shashank. 2012. *Assessment of the changes in stream aquifer interaction by subsurface human intervention close to perennial river in a conceptual framework, paper presented at seminar – "Geology and Geo-resources of Himalaya and cratonic regions of India" 10 – 12 March 2012, Department of Geology, Centre of Advanced Study in Geology, Kumaun University, Nainital.*

Bawa N., Jyani V., Tyagi P., Jain V., Shekhar S., 2012. Morphological variability in the Yamuna river system and role of stream power distribution pattern. *IGCP 582 project and international conference on Tropical*

*Rivers.*, 5-7 January, 2012, Indian Institute of Technology, Kanpur.

Kumar Suman, Shekhar Shashank and Lal Ravish. 2011. *Assessment of existing groundwater draft and annually replenishable groundwater resources in active floodplain of river Yamuna in Delhi stretch, paper presented at seminar – “Modern and Palaeo sediment: Implication to climate, water resources and environmental changes & XXVIII convention of Indian association of Sedimentologists”, 24 – 26 Nov 2011, School of Environmental Sciences, Jawaharlal Nehru University, New Delhi- 110067.*

Gupta Iti & Shekhar Shashank. 2011. *Conceptual assessment of the impact on groundwater regime of a part of the underground Delhi metro tunnel using numerical modeling approach, poster presented at seminar – “Modern and Palaeo sediment: Implication to climate, water resources and environmental changes & XXVIII convention of Indian association of Sedimentologists”, 24 – 26 Nov 2011, School of Environmental Sciences, Jawaharlal Nehru University, New Delhi- 110067.*

Jyani Vikas, Sathish S., Jain Vikrant & Shekhar Shashank. 2011. *Geomorphic mapping in the Yamuna river valley and its application in stream management , poster presented at seminar – “Modern and Palaeo sediment: Implication to climate, water resources and environmental changes & XXVIII convention of Indian association of Sedimentologists”, 24 – 26 Nov 2011, School of Environmental Sciences, Jawaharlal Nehru University, New Delhi- 110067.*

Shekhar, Shashank and Rana Chatterjee. 2009. *Domestic and Industrial water management in the perspective of groundwater system of NCT Delhi.* Paper presented at the Regional Workshop on Groundwater Scenario, Water Quality, Information Dissemination and Capacity Building, March 4-5, 2009, NCT, Delhi. (Organized by Central Ground Water Board, State Unit Office, Delhi).

Shekhar, Shashank, S K Mohiddin and P N Singh. 2006. *Variation in Concentration of Fluoride in the Groundwater of South West District, NCT Delhi- A Case Study.* Paper presented at the Second International Conference, Ground Water for Sustainable Development, Problems, Perspective and Challenges (IGC 2006), February 1-4, 2006, Jawahar Lal Nehru University, New Delhi.

Mohiddin, S K, Shashank Shekhar and Uma Kapoor. 2006. *Enhancing the Recharge Capabilities of Aravalli Ridge in NCT and Parts of NCR Region of Delhi.* Paper presented at the Second International Conference, Ground Water for Sustainable Development, Problems, Perspective and Challenges (IGC 2006), February 1-4, 2006, Jawahar Lal Nehru University, New Delhi.

Shekhar, Shashank and S B Singh. 2005. *The occurrence and availability of fresh groundwater resources in South West district of NCT Delhi, India.* Paper presented at the *National Conference on Earth Science: Its Relevance to Society 14th Biennial Convention of Indian Geological Congress*, December 2-4, 2005, Delhi. (Jointly organized by The Indian Geological Congress, Roorkee and The Department of Geology , University of Delhi)

#### **Posters presented**

Jain V, Chakraborty NB, Shekhar S. (2019). A geomorphic approach to define e-flow in a disconnected Himalayan river system near a megacity. EGU General Assembly 2019, 07-12 April, Vienna, Austria.

Sarkar, A and Shekhar,S. (2018). Appraisal of Sediment-Groundwater interaction using PHREEQC based simulation in parts of active flood plains of Upper Yamuna basin,India. GOLDSCMIDT 2018, 12-17 August, Boston, USA.

Arora , S., Sarkar, A and Shekhar, S. (2017). Evaluation of groundwater pollution due to urbanization in Sonapat-Rohtak districts of Haryana, India. National Conference on "Environmental Sustainability in Wastewater Remediation: Current Status and Future Prospects (ESWR-2017), Organized by Department of Chemistry, Sri Venkateswara College, University of Delhi, 19-20 January 2017.

Singh, A., Gupta. S., Sinha, R., Densmore, A. L., Buylaert, J-P., Carter, A., van-Dijk, W. M., Joshi, S. K., Nayak, N., Mason, P. J., Kumar, D. K., Mondal, M., Murray, A. S., Rai, S. P., and Shekhar, S. (2016). Variable scale channel avulsion history using fan architecture and stratigraphy, and sediment provenance of Sutlej-Yamuna fans in northwest Gangetic plains during Late Quaternary. EGU General Assembly 2016, held 17-22 April, 2016 in Vienna Austria, p.17423.

Sarkar A , Arora S, Shekhar Shashank. 2016. Boron in groundwater of National Capital Region Delhi. National Symposium on- "Geogenic Contamination of Groundwater: Its Impact & Mitigation Measure" (GCG) on 22nd April 2016 organized by TERI University in association with USAID and DST ,TERI University, New Delhi, India.

Rajput S and Shekhar Shashank. 2016. Evaluation and characterization of saline groundwater in Response to geogenic sources in Faridabad district of Haryana. National Symposium on- "Geogenic Contamination of Groundwater: Its Impact & Mitigation Measure" (GCG) on 22nd April 2016 organized by TERI University in association with USAID and DST ,TERI University, New Delhi, India.

Rajput S and Shekhar Shashank. 2016. Identification of possible sources of major ion chemistry in the aquifers of Gurgaon & Faridabad Districts of Delhi-NCR through correlation with nitrate. 103<sup>rd</sup> Indian Science Congress Mysuru, held during 03-07 January 2016 at University of Mysore, Mysuru, Karnataka, India. (ISCA Best Poster Award was given to the first author during the science congress).

Singh A, Gupta S, Sinha R, Densmore AL, Thomsen K, Nayak N, Joshi S, Dijk, WV, Buylaert JP, Mondal S, Kumar D, Mason P, Murray A, Kumar M, Shekhar S, Rai S P. 2015. Fluvial fan evolution during Late Quaternary climate changes: field and chronological constraints from the Indo-Gangetic basin. Abstract EP41A-0905 presented at 2015 AGU Fall Meeting, AGU, San Francisco, Calif., 14-18 Dec.2015.

Wout van Dijk, Alexander Densmore, Rajiv Sinha, Sanjeev Gupta, Philippa Mason, Ajit Singh, Suneel Joshi, Nibedita Nayak, Manoranjan Kumar and *Shashank Shekhar*. 2014. Geomorphic Controls on Aquifer Geometry in Northwestern India. AGU Fall Meeting, 15-19 December 2014, San Francisco, USA.

Suneel Joshi, Shive Rai, Rajiv Sinha, Sanjeev Gupta, *Shashank Shekhar*, Yadvir Rawat, Manoranjan Kumar, Philippa Mason, Alexander Densmore, Ajit Singh, Nibedita Nayak, Wout van Dijk. Spatio-temporal Variations in Groundwater Levels in Northwest India and Implications for Future Groundwater Management. AGU Fall Meeting, 15-19 December 2014, San Francisco, USA.

Shive Rai, Suneel Joshi, Rajiv Sinha, Sanjeev Gupta, Alexander Densmore, Yadvir Rawat and *Shashank Shekhar*. Sources and Relative Timing of Groundwater Recharge in Northwest India Using Environmental

Isotopes. AGU Fall Meeting, 15-19 December 2014, San Francisco, USA.

Shakir Ali, Sachin Thakur, Aditya Sarkar and *Shashank Shekhar*. High Fluoride Contaminated Groundwater in India: Occurrences and Management. Antardhwani –20-22, February, 2015: Good Practices inter departmental event, University of Delhi, Delhi.

Kumar Suman and Shekhar Shashank. *Evaluation of floodplain aquifer in North-West Delhi at village Mohammadpur*. Poster competition in the event “Conglomerate, 27-30 March 2014” organized by Department of Geology, University of Delhi, Delhi.

Rajput S, Sarkar Aditya & Shekhar Shashank. *Nitrate contamination in groundwater of Gurgaon & Faridabad districts of Haryana with a geological approach*. Poster competition in the event “Conglomerate, 27-30 March 2014” organized by Department of Geology, University of Delhi, Delhi.

Kaushik Suvrat, Sarkar Aditya & Shekhar Shashank. *Assessment of temporal and spatial variation in Sodium Adsorption Ratio (SAR) in Sonipat district of Haryana*. Poster competition in the event “Conglomerate, 27-30 March 2014” organized by Department of Geology, University of Delhi, Delhi. The poster was awarded second prize.

Rajput Shraddha, Jahan Firdaus, Sarkar Aditya & Shekhar Shashank. *Sources of groundwater salinity in Indian subcontinent*, Antardhwani – 14-16<sup>th</sup> February, 2014: Good Practices inter departmental event, University of Delhi, Delhi.

Sarkar Aditya, Kumar Suman & Shekhar Shashank. *Quantitative and qualitative aspects of groundwater resources in North-West district of Delhi*, National Seminar on ‘Geosciences for Sustainable Development’ on 28<sup>th</sup> February 2013, Department of Geology, University of Delhi, Delhi.

Shekhar, Shashank, Rajaram Purohit and P N Singh. 2007. Groundwater Flow in Aquifers. Poster presented at the India International Trade Fair, 2007, Pragati Maidan, New Delhi. The Pavillion of Ministry of Water Resources was awarded Gold Medal in Government category.

Singh, P N, Shashank Shekhar, Rajaram Purohit and Rana Chatterjee. 2007. The Palla Well Field, NCT, Delhi- A Model of Sustainable Groundwater Development and Management. Poster presented at the *Conference of Ministers In Charge of Rural Drinking Water Supply and Sanitation in States and Union Territories, Theme, Success stories of sustainable, wiser water management theory and practices*, July 3-5, 2007, Vigyan Bhawan, New Delhi.

#### Research Projects (Major Grants/Research Collaboration/Research Consultancy)

**Name of consultancy Project:** Ground water impact assessment study for Yamuna Bank Depot.

**Position in Project:** Consultant

**Period:** 2018

**Funding Agency:** M/S Delhi Metro Rail Corporation Ltd.(A Joint venture of Govt. of India & Govt. of Delhi)

**Grant:** Rs.4.8 Lakhs

**Name of Project:** Development of a predictive geomorphic model as a tool for sustainable river



management.

**Position in Project:** Project Investigator (DU), Co PI of inter institutional consortium.

**Period:** 2018-2021

**Funding Agency:** Ministry of Earth Science (MOES), Govt. of India.

**Grant:** Rs. 25,36,800/=00

**Name of Project:** Assessment of spatial variation of fluoride concentration in groundwater of Delhi in geological perspective.

**Position in Project:** Project Investigator

**Period:** 2015-2016

**Funding Agency:** R & D grant, University of Delhi.

**Grant:** Rs. 3.0 Lakhs

**Name of Project:** Reconnaissance of hydrochemical facies variation in parts of active Yamuna flood plain of Upper Yamuna Basin and its possible linkages to groundwater contamination.

**Position in Project:** Project Investigator

**Period:** 2013-2014

**Funding Agency:** R & D grant to faculty Program, University of Delhi.

**Grant:** Rs. 2.8 Lakhs

**Name of consultancy Project:** Related to project entitled "A Novel project for sustainable drinking water supply from Palla reach- Yamuna flood plain".

**Position in Project:** Consultant

**Period:** 2013

**Funding Agency:** M/S WAPCOS Ltd.(A Govt. of India PSU under Ministry of Water Resources)

**Grant:** Rs.3.0 Lakhs

**Name of consultancy Project:** Related to project entitled "A new Research and Development (R&D) project for operating Palla group of tubewells in river Yamuna flood plain for sustainable supply of water".

**Position in Project:** Consultant

**Period:** 2011

**Funding Agency:** M/S WAPCOS Ltd.(A Govt. of India PSU under Ministry of Water Resources)

**Grant:** Rs.3.5 Lakhs

**Name of Project:** The structure and dynamics of groundwater system in northwestern India under past present and future climates.

**Position in Project:** Project Investigator

**Period:** 2012-2016

**Funding Agency:** Ministry of Earth Science (MOES), Govt. of India.

**Grant:** Rs. 23,31,800/=00

**Name of Project:** Assessment of shallow regional groundwater flow dynamics in the area between Gandak and Burhi Gandak river of Bihar.

**Position in Project:** Project Investigator

**Period:** 2011-2012



**Funding Agency:** R & D and Doctoral Research Program, University of Delhi.

**Grant:** Rs. 2.5 Lakhs

**Name of Project:** Ganga River Basin Management Plan.

**Position in Project:** Co-Project Investigator

**Period:** 2011(1/1/2011) -2014 (31/3/2014)

**Funding Agency:** Ministry of Environment and Forests, Govt. of India.

**Grant:** Rs. 21,85,544/-

**Name of Project:** Conceptual assessment of the impact on groundwater regime of a part of the underground Delhi Metro tunnel using numerical modeling approach.

**Position in Project:** Project Investigator

**Period:** 2010-2011

**Funding Agency:** R & D and Doctoral Research Program, University of Delhi.

**Grant:** Rs. 2.5 Lakhs

**Name of Project:** Analysis of factors controlling occurrence and availability of groundwater in North district of NCT Delhi: assessment of groundwater development potential, and groundwater management options.

**Position in Project:** Project Investigator

**Period:** 2009-2010

**Funding Agency:** R & D and Doctoral Research Program, University of Delhi.

**Grant:** Rs. 2.5 Lakhs

**Name of Project:** Assessment of groundwater potential of Yamuna flood plain, NCT, Delhi.

**Position in Project:** Project Investigator

**Period:** 2009-2010

**Funding Agency:** Delhi Jal Board, Government of NCT Delhi.

**Grant:** Rs. 36,26,718/- ( Rs. 26,59,472/- handled by NIH and Rs. 9,67,246/ handled by IIT, Delhi)

**Name of Project:** An operational model for groundwater pumping at Palla Well Fields, NCT, Delhi.

**Position in Project:** Project Investigator

**Period:** 2006

**Funding Agency:** Central Ground Water Board, Ministry of Water Resources, Govt. of India.

**Grant:** All material support and logistics provided by the funding agency in Kind as per the requirement.

#### Awards and Distinctions

**Bharat Gaurav Award 2017** for **meritorious services, outstanding performance and remarkable role** by Dr. Bhisma Narain Singh, Former Governor of Tamilnadu and Assam at a seminar on economic growth and national integration at New Delhi on 24<sup>th</sup> August, 2017 under aegis of India International Friendship Society, New Delhi, India.

Awarded Gold Medal at Induction Level Training Course for trainee officers, training organized by Rajeev Gandhi National Groundwater Training and Research Institute, Camp: CGWB, Bangalore, 2002.

First rank in Hydrogeologist category of Geologist's examination conducted by UPSC, 1999.

University Gold Medal, University of Delhi, 1998.

All India Post Graduate Scholarship, 1996-1998.

Science Merit Award, University of Delhi, 1997,1996,1994,1993.

#### Association With Professional Bodies

##### **Memberships**

Fellow, Geological Society of India.

Life member, Indian science Congress Association.

Life member, International Association of Hydrogeologists.

##### **Knowledge Partner:**

Knowledge network centre on Floods and Water logging: Focus On Disaster Risk Reduction and climate Change Adaptation, Indian Institute of Technology Kanpur (01-10-2013 till present).

##### **Involvement at National level with High Level Government Committees:**

1. Committee Member, Subcommittee on Domestic and Industrial Water Management, National Water Mission under National Action Plan on Climate Change, Ministry of Water Resources, Government of India (August 2008 to November 2008).

##### **Involvement at National level as expert in Government Committees:**

1. Member Expert Appraisal Committee (EAC), Industry-2, Ministry of Environment Forest & Climate Change, Govt. of India (October/November 2015 to October 2018).

##### **Involvement at State level in Government Committees:**

1. Committee constituted by Hon'ble Lt. Governor of Delhi for review of restoration of water bodies in Dwarka (07-06-2013 onwards).

##### **Involvement with University level Committees:**

1. Committee for Rainwater Harvesting at University of Delhi (March 2018 onwards).

#### Other Activities

##### Invited lectures in seminars/training course/workshops etc. (2010 Onwards)

1. Given lecture on the topic "Hydrogeology of flood plain areas, assessment of groundwater potential, development of groundwater resources and induced recharge" on invitation by Central Ground Water Board, North Western Region, Chandigarh and Haryana State Public Health Engineering Department, Chandigarh during training course on "Sustainability of Water Resources (September 20-24, 2010) " for engineers of Public Health Engineering Department (PHED), Haryana State, **Date: 24-09-2010**, Venue: Panchkula, Haryana.
2. Given lecture on the topic "Groundwater related problems in the Yamuna River floodplains around Delhi", on invitation by Universtas-21, an international collaboration of multidisciplinary research, Project Development Workshop on: Sustainable urban stream restoration, University of Delhi, 12-13th November 2010, Given lecture on **12-11-2010**, Venue: Department of Geology, University of Delhi, and lead the field work around river Yamuna in Delhi for workshop participant on **13-11-2010**.
3. Given lecture on the topic "River Yamuna, the groundwater in it's flood plain and Delhi", on invitation by Goethe-Institute, Max Mueller Bhawan, New Delhi during seminar entitled

“Yamuna. Elbe-Contemporary flows. Fluid Times” 11-12 December, 2010, under the sub theme “The river and the city-separate/connected” on **11-12-2010**, venue: India International Centre, New Delhi.

4. Given lecture on the topic “An operational model for optimal groundwater pumping from battery of tubewells in Palla well-field, NCT, Delhi” on **13-01-2011**, on invitation by Rajiv Gandhi National Ground Water Training and Research Institute during training program on “Mathematical modeling of groundwater systems”, 05-18<sup>th</sup> January 2011, venue: CGWB, Bhujal Bhawan, Faridabad.
5. Given lecture on the topic “An operational model for optimal groundwater pumping from battery of tubewells in Palla well-field, NCT, Delhi” on **16-02-2011**, on invitation by Rajiv Gandhi National Ground Water Training and Research Institute during training program on “Mathematical modeling of groundwater systems”, 07-18<sup>th</sup> February 2011, venue: CGWB, Bhujal Bhawan, Faridabad.
6. Given lecture on the topic “Groundwater modeling- A case study from Palla area New Delhi” on **11-03-2011**, on invitation by Rajiv Gandhi National Ground Water Training and Research Institute during training program: “International training course on Groundwater Management and Modeling- Training for African countries”, 03-17<sup>th</sup> March 2011, venue: CGWB, Bhujal Bhawan, Faridabad.
7. Given lecture on the topic “Rainwater Harvesting: Needs for Today” on **16-08-2011**, on invitation by All India Foundation for Peace and Disaster Management, during training program: “First National Training on Rainwater Harvesting”, 16-19<sup>th</sup> August 2011, venue: International Guest House, University of Delhi, Delhi.
8. Given lecture on the topic “Groundwater conservation options and techniques in the perspective of NCT Delhi” on **07-09-2011**, on invitation by The Energy Research Institute (TERI) and Asian Development Bank (ADB) during workshop on: “Urban Water Demand Management”, 05-07<sup>th</sup> September 2011, venue: ADB Office, INRM Training Centre, Hotel Taj Palace, Sardar Patel Marg, New Delhi.
9. Given lecture on the topic “Water conservation options in perspective of Delhi” on **28-09-2011**, on invitation by Centre for Science and Environment during training program: “Urban Rainwater Harvesting”, 27-30<sup>th</sup> September 2011, venue: Centre for Science and Environment, 41, Tuglakabad Institutional Area, New Delhi-62, India.
10. Given lecture on the topic “Rainwater harvesting options in Delhi” on **19-10-2011**, on invitation by Centre for Science and Environment during training program: “ Urban Rainwater Harvesting- a special course for municipal engineers”, 18-21<sup>th</sup> October 2011, venue: Centre for Science and Environment, 41, Tuglakabad Institutional Area, New Delhi-62, India.
11. Given lecture on the topic “Numerical modeling of pumping induced contamination of fresh groundwater by up coning of saline groundwater in Palla area, Yamuna flood plain of Delhi-a case study” on **19-10-2011**, on invitation by School of Environmental Sciences , Jawahar Lal Nehru University, New Delhi, during national training program: “ Hydrogeochemical modeling assessment and management of urban and coastal groundwater”, 17-23<sup>rd</sup> October 2011, venue: School of Environmental Sciences , Jawahar Lal Nehru University, New Delhi, India.
12. Given talk with Diwan Singh on the topic “Field database and experimental data collection and preliminary inferences from the Palla well field”, at Workshop on preliminary assessment of sustainable water yield from the Yamuna flood plain, organized by WAPCOS on behalf of Delhi Jal Board, **01-11-2011**, India International Centre, New Delhi.
13. Given lecture on the topic “Rainwater harvesting in Delhi” on **14-12-2011**, on invitation by Centre for Science and Environment during training program: “Urban Rainwater Harvesting”, a

- special course for municipal officials under the Centre Of Excellence (COE) activity of Centre for Science and Environment” , 13-16<sup>th</sup> December 2011, venue: Centre for Science and Environment, 41, Tuglakabad Institutional Area, New Delhi-62, India.
14. Given lecture on the topic “Rainwater harvesting in Delhi” on **28-03-2012**, on invitation by Centre for Science and Environment during training program: “Urban Rainwater Harvesting”, a special course for engineers, activists, students and rainwater harvesting professionals , 27-29<sup>th</sup> March 2012, venue: Centre for Science and Environment, 41, Tuglakabad Institutional Area, New Delhi-62, India.
  15. Given lecture on the topic “Rainwater harvesting in Delhi” on **27-06-2012**, on invitation by Centre for Science and Environment during short course on: “Advanced Rainwater Harvesting”, a special course for engineers, activists, students and rainwater harvesting professionals , 26-27<sup>th</sup> June 2012, venue: Centre for Science and Environment, 41, Tuglakabad Institutional Area, New Delhi-62, India.
  16. Given lecture on the topic “Some concepts of hydrogeology and Groundwater conservation option and techniques in perspective of NCT Delhi” on **11-03-2013**, on invitation by UGC Academic Staff College during 18<sup>th</sup> Refresher Course in Environmental Sciences beginning 04-03-2013, venue: UGC Academic Staff College, Jawaharlal Nehru University, New Delhi-67, India.
  17. Given lecture on the topic “Groundwater conservation and management options for over exploited aquifers of Delhi” on 06-08-2013, Lecture series, Geology Department, Delhi University.
  18. Given lecture on the topic “Managing groundwater resource of Floodplain as Disaster Mitigation tool” on **25-11-2013**, on invitation by UGC Academic Staff College during First Refresher Course in Disaster Management beginning from Monday, 11<sup>th</sup> November 2013., venue: UGC Academic Staff College, Jawaharlal Nehru University, New Delhi-67, India.
  19. Given talk on the topic “Groundwater dynamics of Dwarka Sub City, Delhi”, presentation prepared jointly by Dr. Shashank Shekhar & Mr. Aditya Sarkar, on invitation by NGO named “Sukh Dukh Ke Sathi”, 07<sup>th</sup> June 2014, Venue: Community Hall, Chitrakoot Apartment, Sector-22, Dwarka, New Delhi.
  20. Invited lecture on " Environmental flows and river rejuvenation" Geological Society of India, Bangalore, 28th January 2015.
  21. Given lecture in Hindi on the topic “ Environmental Concern: Water Resources of Delhi” (Paryavaran sankat: Dilli ka Jal Sansadhan) on invitation by Hindi Department, Kirori Mal College, University of Delhi on **29-03-2016** during Hindi Symposium-Literature and Environment (Climate change and environmental imbalance) (Hindi sangosthi- Sahitya aur Paryavaran( Jalvayu pariwartan aur paryavarniye asantulan), kirori Mal College, University of Delhi, Delhi.
  22. Given invited talk on the topic “Regional coarse grid numerical groundwater modeling in NW India - a case study. (Use of groundwater model as a hydrogeological tool)” Workshop on “Groundwater modeling for aquifer management in soft rock areas” organized by Central Ground Water Board, Ministry of Water Resources, River Development and Ganga Rejuvenation, Govt. of India., on 1<sup>st</sup> September 2016, At Indian Institute of Technology Kharagpur, West Bengal, India.
  23. Given invited talk on the topic “Connecting People to Nature-Way Forward” on the occasion of World Environment Day on 05-06-2017, Centre for Advanced Water Technology and Management , Manav Rachna International University, Faridabad, Haryana, India.
  24. Given invited talk on the topic “Regeneration of Catchments-Watershed Management: New &

Traditional Practices”, Symposium on Water: Issues, Research and Solutions, Organized by Manav Rachna Int. Institute of Research & Studies in association with University of The West of England (UWE), Bristol, UK at Manav Rachna Int. Institute of Research & Studies, Faridabad, Haryana on 15-02-2018.

25. Given invited talk on the topic “Water resources management of Delhi and the need for innovative solutions”, on 22-03-2018 at National Conference on Recent Advances In Environmental Sciences, Amrita Devi Bishnoi Seminar Hall, School Of Environmental Sciences, Jawaharlal Nehru University, New Delhi, India.
26. Given invited lecture on the topic “Water quality Issues in Urban Prospect”, on 19-07-2018 at Water Supply and Management Training under WASH innovation Lab, Faridabad, Venue: MCF Office auditorium, Faridabad. Organized by Centre for Advance Water Technology & Management, Manav Rachna International Institute of Research & Studies, Faridabad, Haryana, India.
27. Given training and lecture as invited guest faculty on “Water Resources Management & Water Shed Management, Water management for rural and urban areas etc.” during 20-21 July 2018 training program on “Water Conservation, Rain Water Harvesting & Ground Water Management”, at Red Fox Hotel, Chandigarh. Organized by NVIRON Consulting Pvt. Ltd.(Odisha Startup venture).
28. Given training and lecture as invited guest faculty in Training Program on "Water Conservation, Rainwater Harvesting & Ground Water Recharge" Organised by: NVIRON Consulting Private Limited; 21st & 22nd June 2019; Venue: New Delhi.

#### Others

Involved with revision of CBCS B.Sc (Hons) Geology course (as a member of team during Academic Year 2018-20)

Coordinator for two day (28-06-19 & 01-07-2019) Orientation/Counselling Programme for DU PG Pre-Entrance Examination in Delhi University Economically Weaker Section (EWS/BPL), SC/ST/OBC (Non-Creamy Layer) and Minorities & PwD (EWS/BPL) Kashmiri Migrants, Wards/WarWidows/Ex-servicemen (Defence).

Nodal Officer, Department of Geology, University of Delhi for Admission to M.Phil/Ph.D programmes, Session 2019-2020.

Nodal Officer, Department of Geology, University of Delhi for Admission to Postgraduate/Master’s course, Session 2019-2020.

Nodal Officer, Department of Geology, University of Delhi for Admission to Postgraduate/Master’s course, Session 2018-2019.

Prepared the syllabus for CBCS M.Sc (Geology) course (as a member of team 2018-19).

Works related to annual examination, entrance examination and supervised Midterm examination of B.Sc (H) Geology, Session 2009-10 & 2010-11.

Works related to the admission process of Integrated M.Sc in Earth Sciences-Five Year course as a member of different committees.

Involved with the work of preparing Time Table (Session 2009-10, 2010-11, 2011-12, 2012-13, 2013-14) for smooth running of classes.

Prepared the syllabus for B.Sc(H), Geology course (as a member of team), to be implemented in Four Year Undergraduate Program.

Prepared the syllabus for B.Sc(H), Geology course (as a member of team), to be implemented in semester system of undergraduate teaching and prepared the syllabus for Five Years Integrated M.Sc in Earth Science (as a member of team).

Involved with the Revision of M.Sc syllabus as per CBCS structure.

Involved as key worker in prestigious projects like well field creation in NCT Delhi (The Palla well field and others) and mathematical modeling of groundwater system in part of Yamuna flood plain in NCT Delhi.

In total associated with at least 80 high capacity tubewells design and construction in Yamuna flood plain of NCT Delhi.

Integrated groundwater management study done for all the nine districts of NCT Delhi.  
Micro level groundwater assessment and pollution studies undertaken for localities in NCT Delhi.

Conceptualized and established Rain Centre ( A knowledge dissemination centre using print and other media approaches) at CGWB, Delhi under guidance of Officer-in-Charge, State Unit Office, CGWB, Delhi.

Conceptualized and coordinated the designing of dynamic web page for State Unit Office, Delhi, CGWB.

Under the aegis of Parliamentary Forum on Water Conservation and Management, supervised as Nodal Officer the construction of demonstrative project on Rainwater Harvesting and Artificial Recharge Structures at the residence of Hon'ble Convener of the Forum (Bungalow No.78, Lodhi Estate, New Delhi).

Involved with the work of organization / demonstration of working models and live demonstration of Rain Water Harvesting and Artificial Recharge to groundwater to Hon'ble Members of Parliament under the aegis of Parliamentary Forum on Water Conservation and Management.

Works related to Right To Information (RTI) at Central Ground water Board (CGWB), Ministry of water resources, State Unit Office, Delhi.

As part of the official assignment at CGWB Delhi involved with the work of organizing and coordinating Mass Awareness and Training program to make the stake holders aware about the issue of water management.

As part of the official assignment at CGWB Delhi involved with the work of designing Rainwater

Harvesting and Artificial Recharge to groundwater structures.

Course-Coordinator for training program on Water Management on 30-31st March, 2008 at CSMRS Auditorium, Hauz Khas, New Delhi. The program was organized under the aegis of Rajiv Gandhi National Ground Water Training & Research Institute (RGI), Central Ground Water Board, Ministry of Water Resources, it was attended by nearly 120 trainees from diverse background.

Edited as a member of Editorial Committee, Abstract Volume of Regional Workshop on “Groundwater Scenario, Water Quality, Information Dissemination and Capacity Building in NCT, Delhi”, Organized by Central Ground Water Board, State Unit Office, Delhi, March-2009.

### **Reviews**

Journal articles from Journals published by International Association of Hydrogeologists.

Journal articles from Journals published by International Association of Hydrological Sciences.

Journal articles from Journals published by International Union of Geological Sciences.

Journal articles from Journals published by Indian Academy of Science.

Journal articles from Environmental Monitoring and Assessment Journal published by Springer Publications.

Journal articles from Journal Geological Society of India published by Springer publications.

Journal articles from PLOS ONE journal.

Journal articles from Groundwater for sustainable Development Journal(Elsevier).

Journal articles from Journal of Hydrology (Elsevier).

Journal article from Journal of Hydrology-Regional Studies(Elsevier).

And some more

### **Government of India and other reports/documents**

Shekhar Shashank, Babu C R, Keshari Ashok 2018. Implementation of Rainwater harvesting projects at University of Delhi - Guidelines for the prefeasibility report, Guidelines/Report, University of Delhi, Delhi. DOI: 10.13140/RG.2.2.30078.89920/1

Ministry of Water Resources (MOWR) (2008), Report of the Sub-Committee on Domestic and Industrial Water Management, National Water Mission under National Action Plan on Climate Change, Ministry of Water Resources, Govt. of India, involved with the report as a member of the subcommittee constituted to prepare the report. (POLICY FRAMEWORK REPORT)



CGWB (2008), Groundwater Potential of the Yamuna Flood Plain, NCT, Delhi, Report, Central Ground Water Board, Delhi, Ministry of Water Resources, Government of India, Key author in the report as per Government of India Office Order.

Shashank Shekhar (2008), Integrated Groundwater Management Study in New Delhi, Central, West, North East, East and South districts of NCT Delhi with special reference to surface water and groundwater interaction along Najafgarh drain, Report, Central Ground Water Board, Delhi, Ministry of Water Resources, Government of India

Faisal Abrar and Shashank Shekhar (2008), Groundwater Year Book, NCT, Delhi, Annual Action Plan 2006-2007, Report, Central Ground Water Board, Delhi, Ministry of Water Resources, Government of India.

Shashank Shekhar (2006), Reappraisal Hydrogeological Study in North and North West district of NCT Delhi, Report, Central Ground Water Board, Delhi, Ministry of Water Resources, Government of India.

Planning commission of India (2007), Report of the Expert Group on "Groundwater Management and Ownership, September 2007, Government of India, Planning Commission, Yojana Bhawan, New Delhi-110001. Provided scientific inputs and clarifications on relevant issues of the report and worked on finalization of the report as Scientist (team member) from Central Ground Water Board.

Shashank Shekhar (2007), Hydrogeology of North District , NCT, Delhi, Report , Central Ground Water Board, Delhi, Ministry of Water Resources, Government of India.

Shashank Shekhar (2006), District Hydrogeological map of North district, NCT, Delhi, Map, Central Ground Water Board, Delhi, Ministry of Water Resources, Government of India.

S V N Rao , Sudheer Kumar , S.K Sinha and Shashank Shekhar (2006), An operational model for groundwater pumping at Palla Well Fields, NCT, Delhi, Project Report of a joint study by National Institute of Hydrology, Roorkee and Central Ground Water Board, New Delhi.

Rana Chatterjee, B.K.Gupta, S.K.Mohiddin, P.N.Singh and Shashank Shekhar (2006),Ground Water Resources of National Capital Territory , Delhi, Report, Central Ground Water Board, Delhi, Ministry of Water Resources, Government of India.

S.B.Singh, G.C.Saha, S.K.Mohiddin, P.N.Singh, Shashank Shekhar, Rajaram Purohit, B.K.Gupta, Saidul Haq, Faisal Abrar, V.R.Aneja and Ashok Kumar (2006), Hydrogeological frame work and ground water management plan of NCT Delhi , Report, Central Ground Water Board, Delhi, Ministry of Water Resources, Government of India.

Shashank Shekhar (2004), Integrated groundwater management study of South West district, NCT Delhi with special reference to fresh/saline water interface, Report, Central Ground Water Board, Delhi, Ministry of Water Resources, Government of India.( The report was graded as of "A" category by Departmental committee of experts.)

B.K.Gupta, Shashank Shekhar et al (2003), Groundwater user maps , NCT Delhi, Atlas (Containing district wise G.W user maps of NCT Delhi and a single map for whole NCT, Delhi), Central Ground Water Board, Delhi, Ministry of Water Resources, Government of India.

Shashank Shekhar (2001-2005), Series of Basic Data Reports pertaining to exploratory And other borewell /tubewell drilling, designing and construction (including Aquifer Performance Test and Well Performance Test) taken up by CGWB in NCT Delhi.

NIH (2006): Contribution as a team member to the Report, Comprehensive and Integrated Hydrological Study of NCT Delhi, Collaborators: National Institute of Hydrology, Roorkee, Central Water Commission, Delhi, Central Ground Water Board, Delhi, Strategic Partners: Delhi Jal Board, Delhi, Upper Yamuna Board, Delhi.

***Pamphlets/ Brochures/ Booklets etc. in which associated as team member at different Levels***

Raja Ram Purohit, Shashank Shekhar, P N Singh, Rana Chatterjee, Uma Kapoor, K J Anandha Kumar (2009), State Groundwater Profile, National Capital Territory, Delhi.

CGWB (2008), Success Stories of Rain Water Harvesting and Artificial Recharge of Ground Water in NCT, Delhi.

CGWB (2007), Roof Top Rain Water Harvesting in Rural Areas, Bilingual (Hindi and English).

CGWB (2007), Rain Water Harvesting and Artificial Recharge through Dug well and Recharge Shafts, Bilingual (Hindi and English).

CGWB (2007), Roof Top Rain Water Harvesting in Multi-storied Buildings in Urban Areas, Bilingual (Hindi and English).

CGWB (2007), Rain Water Harvesting and Artificial Recharge System in the Watershed of the Hilly Terrain, Bilingual (Hindi and English).

CGWB (2007), Working models on Rainwater harvesting, Artificial recharge and groundwater management, Bilingual (Hindi and English).

CGWB (2007), Ground Water Development and Management in New Delhi districts of NCT, Delhi, Bilingual (Hindi and English).

CGWB (2007), Ground Water Regulation, Bilingual (Hindi and English).

CGWB (2007), Artificial Recharge of Groundwater of Bungalow No. 78, Lodhi Estate, New Delhi, Bilingual (Hindi and English).

CGWB (2007), Ground Water Development and Management in West District of NCT, Delhi, Bilingual (Hindi and English).

CGWB (Anon), Ground Water Development and Management, North West District of NCT, Delhi, Bilingual (Hindi and English).

CGWB (Anon), Ground Water Management in North district, NCT, Delhi, Bilingual (Hindi and English).

CGWB (Anon), Ground Water Development and Management in South West Districts of NCT, Delhi, Bilingual (Hindi and English).

CGWB (Anon), Ground Water Development and Management in South district of NCT, Delhi, Bilingual (Hindi and English).

(Signature of Faculty Member)

(Signature & Stamp  
of Head of the Department)