Curriculum Vitae Gopal Krishan

Scientist-C: National Institute of Hydrology, Roorkee Location : Roorkee; Mobile : 9634254939

E-mail : drgopal.krishan@gmail.com

Personal Details:

Nationality : Indian
Marital Status : Married
Date of birth : June 25, 1973

Place of birth : Shimla (Himachal Pradesh)

Address (Correspondence): House no. 331, Solanipuram, Roorkee-247667

Category : General

Current projects and collaboration

- Impact of high abstraction on groundwater resources and water quality in the Punjab (BGS, UK)
- Assessment of impacts of groundwater salinity on regional groundwater resources, current and future situation in Mewat, Haryana – possible remedy and resilience building measures (National Hydrology Project)
- Pump Priming project "understanding aquifer ssystem of Sunderbans" (Indo-UK Water Centre)

Education-M.Sc., PhD (Soil Science & Water Management-Soil Chemistry) Dr. YSPUHF, Nauni, Solan-173230, HP

Skills

• Groundwater Hydrology, Hydro-geochemistry, Isotope systematic, Soil Science

Experience (19 years & 03 months)

Sr.No.	Designation	Employer	Funding	Pe	riod	Year	Month
				From	То		
1	Scientist-C	NIH, Rke	MoWR, NDelhi	Sep, 2015	-contd-	3	10
2	Res. Person	NIH, Rke	Wapcos, Ltd	July, 2015	Sep, 2015	0	1
3	Researcher	BGS, UK	BGS, UK	Oct, 2014	Jul, 2015	0	9
4	Res. Sc. 'C'	NIH, Rke	BGS-DFID	Mar, 2013	Sep, 2014	1	7
5	Res. Sc. 'B'	NIH, Rke	DST-SERC	Jul, 2009	Mar, 2013	3	7
6	Res. Assoc.	IIRS-ISRO	DoS, Bluru	Apr, 2006	Apr, 2009	3	0
7	Res. Assoc.	UHF, Solan	DST, NDelhi	Jun, 2002	Mar, 2006	3	9
8	Res. Assoc.	UHF, Solan	GBPIHED	Aug, 2001	May, 2002	0	9
9	Res. Fellow	UHF, Solan	ICFRE (WB)	Apr, 1997	Mar, 1999	1	11

Awards and Honours

- The Sentinels of Science Awards. 2018. Top 1% of International Researchers Contributing to the peer review of the field of AGRICULTURAL SCIENCES by PUBLONS
- RASHTIRYA GAURAV AWARD- Certificate of Excellence for meritorious services, outstanding and remarkable role by Lt Gen K M Seth former Governor of Chhatisgarh and Tripura at a Seminar on Economic Growth and National Integration at New Delhi on June 02, 2018 organized by India International Friendship Society
- The Sentinels of Science Awards. 2017. Top 1% of International Researchers Contributing to the peer review of the field of AGRICULTURAL AND BIOLOGICAL SCIENCES by PUBLONS
- The Sentinels of Science Awards. 2016. Top 10% of International Researchers Contributing to the peer review of the field of ENVIRONMENT SCIENCE by PUBLONS.
- BEST PRACTICE RESEARCH AWARD in International conference and Exhibition on Innovative Technologies and field applications for Sustainable water, wastewater & energy management-SWWEM-16, during 17-19 August, 2016 IISC, Bangalore
- ITS, DST. New Delhi-Travel support to USA
- Certificate of appreciation: AWRA-2012, USA



- Certificate of best presentation in a session-Peas-2012, Faculty of engineering, GKVV, Haridwar
- Certificate Young Scientist (consolation)-Janta college Bakewar, Ettawah (1998)
- Merit Scholarship in 10th, 10+1, 10+2, BSc (1st), MSc, PhD

Published outputs

Year	Peer Reviewed	-		Seminars/conferences/Sym posia/Workshops		Book chapters	Reports/ Newsletter
	International	National	Inter.	National	Inter.	Nat.	
2019	03		04				
2018	05	01	03			01	03
2017	10		10	01		01	04/01
2016	10	03	06	02			01/-
2015	11	07	10	09			01/-
2014	11	04	06	06		03	04/-
2013	04	02	16	03	01	01	01/-
2012	04	01	06	05			
1997 to 2011	01	13	05	14		07	01/01
Total	59	31	66	40	01	13	15/02

Professional association

- Member International Association of Hydrological Sciences (IAHS) 17349
- Life Member Association of Global Groundwater Scientists LM-AGGS-133
- Fellow Society of Earth Scientists (F/486)
- 2015: Life member "Indian Association of Hydrologists (IAH-1878)"
- 2012 : American Water Resources Association (member ship no. 55384)
- 2008: Indian Society of Remote Sensing (C-3299)
- Co Editor in Chief of the Journal: Current World Environment

Reviewer of the Journals: Plos One, Journal of Hydrology, Applied Radiation and Isotopes, Hydrological Sciences, Quaternary International, Arabian Journal of Geosciences (Springer), Journal of Earth System & Science (Springer), Sustainable Water Resource Management (Springer), Applied Water Science (Springer), Journal of Irrigation and Drainage Engineering (ASCE), Environmental System Research (Springer)

Key Publications

Key papers (1, 2-GW status IGB; 4,6,7-Air moisture; 3,5,8,9-water quality; 10,11,12-Radon conc. in GW;11-13; Org. Carbon)

- MacDonald, Alan, Bonsor, Helen, Ahmed, Kazi, Burgess, William, Basharat, Muhammad, Calow, Roger, Dixit, Ajaya, Foster, Stephen, Krishan, Gopal, Lapworth, Daniel, Lark, Murray, Moench, Marcus, Mukherjee, Abhijit, Rao, M.S., Shamsudduha, Mohammad, Smith, Linda, Taylor, Richard, Tucker, Josephine, Steenbergen Frank van, Yadav, Shobha. 2016. Groundwater quality and depletion in the Indo-Gangetic basin from ground observations. Nature Geosciences 9:762-766 (Impact Factor-12.508) SPRINGER-NATURE.
- 2. Bonsor HC, MacDonald AM, Ahmed KM, Burgess WG, Basharat M, Calow RC, Dixit A, Foster SSD, **Gopal K**, Lapworth D, Lark RM, Moench M, Mukherjee A, Rao MS, Shamsudduha M, Smith L, Taylor R, Tucker J, van Steenbergen F, Yadav SK. 2017. Hydrogeological typologies of the Indo-

- Gangetic basin alluvial aquifer, South Asia. **Hydrogeology Journal** . DOI: 10.1007/s10040-017-1550-z. **(Impact Factor-2.028) SPRINGER**
- 3. Rao, M.S., **Krishan, Gopal**, Kumar, C. P., Purushotmanan P., Kumar, Sudhir. 2017. Observing changes in groundwater resource using hydro-chemical and isotopic parameters: a case study from Bist Doab, Punjab. **Environmental Earth Science** 76:175. DOI: 10.1007/s12665-017-6492-1(Impact Factor-1.76) SPRING
- 4. Krishan, Gopal, Rao, M.S., Kumar, Bhishm, Kumar, C.P.2014. Possibility of using isotopic composition of ground level vapour (Glv) for monitoring arrival and withdrawal of southwest monsoon. Current Science 108(5): 784-786 (Impact Factor-0.91) Indian Academy of Sciences, Bangalore
- 5. Lapworth DJ, MacDonald AM, **Krishan G**, Rao MS, Gooddy DC, Darling WG. 2015. Groundwater recharge and age-depth profiles of intensively exploited groundwater resources in northwest India. **Geophys. Res. Lett.**, **42**, **doi:10.1002/2015GL065798(Impact Factor-4.50)**
- **6.** Saranya, **Krishan**, **Gopal**, Rao, MS, Kumar, Sudhir, Kumar, Bhishm. 2018. Controls on water vapor isotopes over Roorkee, India: Impact of convective activities and depression systems. Journal of Hydrology. 557: 679-687 (**Impact Factor-3.50**)
- Krishan, Gopal, Rao, M.S. and Kumar, Bhishm. 2011. Instrumentation for measurement of isotopic composition of air moisture. *Journal of Instrument Society of India*, 41:217-220. Instrument Society of India, IISc, Bang.
- 8. Lapworth, DJ, **Krishan, Gopal,** MacDonald, Alan, Rao, MS. 2017. Groundwater quality in the alluvial aquifer system of northwest India: new evidence of the extent of anthropogenic and geogenic contamination. **Science of the Total Environment,** (Impact Factor-3.98) **ELSEVIER**
- Lapworth, Dan; Das, Prerona; Shaw, Ashok; Mukherjee, Abhijit; Civil, Wayne; Petersen, Jade; Gooddy, Daren; Wakefield, Oliver; Finlayson, Andrew; Krishan, Gopal; Sengupta, Probal; MacDonald, Alan. 2018. Deep urban groundwater vulnerability in India revealed through the use of emerging organic contaminants and residence time tracers. Environmental Pollution (Impact Factor-5.099), ELSEVIER
- Krishan Gopal. Rao, M.S. and Kumar C.P. 2014. Radon Concentration in Groundwater of East Coast of West Bengal, India. *Journal of Radioanalytical and Nuclear Chemistry*. DOI: 10.1007/s10967-014-3808-4. (Impact Factor-1.41) <u>Springer</u>
- 11. Krishan Gopal. Rao, M.S. and Kumar C.P. 2014. Estimation of Radon concentration in groundwater of coastal area in Baleshwar district of Odisha, India. *Indoor and Built Environment*. DOI: 10.1177/1420326X14549979 (Impact Factor-1.72) <u>Sage</u>
- 12. **Krishan, Gopal,** Rao, M.S., Kumar, C.P., Kumar, Sudhir, Rao, M. Ravi, Anand. 2015. A study on identification of submarine groundwater discharge in northern east coast of India. International Conference on Water Resources, Coastal and Environmental Engineering. March 12-14, 2015 NIT Surathkal. *Aquatic Procedia*. **4:3-10 Elsevier**
- 13. **Krishan, Gopal,** Srivastav, S.K.; Kumar, Suresh,; Saha, S.K. and Dadhwal, V.K. 2009. Quantifying the underestimation of soil organic carbon by Walkley and Black technique- an example from Himalayan landscape and Central Indian soils. *Current Science*. 96: 1133-1136. (Impact Factor-0.91) Indian Academy of Sciences, Bangalore

Trainings

Sr. No.	Title of training	Date/duration	Place	Sponsored
1	Groundwater issues in Punjab with special emphasis on salinity	16-07-2019 to 18-07-2019	Forest complex, Mohali	NHP

Workshops/Symposium/Seminars

Sr. No.	Title of workshop/symposium/Seminars	Date/duration	Place	Sponsored
1	Regional workshop on Groundwater Recharge, Reduction in Soil Salinity- solutions and way forward for Indian Sunderbans"	August 07, 2019	ICAR-CSSRI, Canning town, West Bengal	IUKWC
2	Community workshop on participatory groundwater management (PGWM)	August 03, 2019	Karakoti, Sunderabn, West Bengal	IUKWC
3	Community workshop on participatory groundwater management (PGWM)	June 14, 2019	Gosaba, Sunderabn, West Bengal	IUKWC
4	Community workshop on participatory groundwater management (PGWM)	June 13, 2019	Sandeshkhali, Sunderabn, West Bengal	IUKWC

Guidance of M.E./M.Tech./Ph.D. Thesis P.hD

S. No.	Title of PhD Thesis	Scholar/Department University	Period
1	Groundwater quality studies in dynamic aquifer system of Bist-Doab Punjab- a case study from Talwara region, Hoshiarpur district, Punjab, India	Ms Ravneet Saini, CSIR- JRF, PU, Chandigarh	2015- left in 2017 due to personal reasons
2	Assessment of impact on groundwater after the closure of mining activities in and the Aravalli hills of District, Haryana, India	Ms Deepa Ahuja, UGC- JRF, PU, Chandigarh	2015-2019

3	Hydrochemical and isotopic study of groundwater in Awash river basin (Ethiopia) & Bhatsa and Kalu river basins, Western Deccan volcanic province (India)	Mr. Biruk Teshome Desta, Department of Earth Sciences, IIT-Roorkee	2017-continuing
4	Assessment of Spatial and Temporal distribution of groundwater level and groundwater quality of Ghazipur district, Uttar Pradesh	Mr. P. Yadav, Department of Agriculture and Farm Engineering, BHU. Varanasi	2018-continuing

M.Tech

S. No.	Title of M.Tech/M.Sc. Thesis	Scholar/Department University	Period
1	Spatial Hydro-chemical evaluation	Mr. Vikas Saini (M.Tech, KU,	January 2016 to
1	of groundwater in Mewat, Haryana	Kurukshetra)	May, 2016
2	Hydro-geochemical Analysis of	Mr. Abhishek Das, Department	July 2016 to May,
2	Mewat (Nuh) district, Haryana	of Hydrology, IIT-Roorkee	2017
	Assessment of declination of		September, 2017-
2	groundwater levels and its	Mr. Yeshwant Das, Dept. of	May, 2018
3	potential causes in Kurukshetra,	Earth Sciences, IIT-Roorkee	
	Haryana		
4	Groundwater salinity experiment-	Mr. Ashutosh Kumar Yadav,	January, 2019-May,
4	in different sand soil ratios	MMMUT, Gorakhpur	2019

M.Sc.

S. No.	Title of M.Tech/M.Sc. Thesis	Scholar/Department University	Period
1	Groundwater conditions in Mewat, Haryana	Ms Priyanka (MSc- TERI university)	May 2016 to July, 2016
2	Groundwater status of New Delhi	Ms Sakshi Sharma (MSc- SD college, KLDAV, Roorkee)	Feb 2017 to April, 2017

CV Raman Fellow

		Mr. David Saka, PhD student of	September 2017-
		Environmental Engineering	March, 2018
1	Potential of River bank Filtration	Department, University of	
1	in Ghana	Energy and Natural Resources,	
		Sunyami, Ghana, West Africa,	
		CV Raman Fellow	

DAAD Fellow

1.	Experiment on grading of EC and mixing of fresh water with saline water	Mr. Johannes M. Medick, (HTWD, Germany)	November 2018- January, 2019
	water	(III WD, Germany)	

B.Tech. Summer Interns

1.	Groundwater assessment of Haryana on the basis of historical data (1949-74)	Mr. Vinayak Dhiman, (Quantum school of Technology, Roorkee)	June 2017-July, 2017
2.	Groundwater assessment of Haryana on the basis of historical data (1949-74)	Mr. Bhuvneshwar Pratap Singh, (Quantum school of Technology, Roorkee)	June 2017-July, 2017

https://scholar.google.co.in/citations?user=aWTcRaEAAAAJ&hl=en

Lectures/Talks Delivered

- 1. Groundwater monitoring practices, applications and challenges in Punjab at University College London on February 13, 2019
- 2. Application of Isotopes in South West Monsoon studies, at CEH conference hall Wallingford, UK on February 06, 2019
- 3. Groundwater fluctuations and monitoring in Punjab, at Lyell Centre, BGS, UK on January 30, 2019
- 4. Fundamentals of Soil Science and soil engineering Galgotias University, Greater Noida January 27, 2019
- 5. Groundwater salinity status of Mewat- State IOWA University Faculty and Students at Sehgal Foundation, Gurgaon, January 11, 2019
- 6. RBF in extreme environments along Yamuna River in Indo-German Workshop on Riverbank Filtration for Sustainable Water Supply in India Vision 2030 at Dehradun on December 17, 2018
- 7. Isotopes in Hydrograph Separation- Examples from Gangetic Region DST-SERB training course on "Application of isotopes in water resource management" at CWRDM, Kozhikode July 30 to August-04, 2018
- 8. Use of isotopes in bank filtration technique-few case studies DST-SERB training course on "Application of isotopes in water resource management" at CWRDM, Kozhikode July 30 to August-04, 2018
- 9. Application of isotopes in groundwater management at GIAN training course on "Applied Groundwater Flow and Transport Modeling with MODFLOW" at DOH, IIT-Roorkee, July 30, 2018
- 10. Design, operation and maintenance of Bank Filtration sites in a training course on "Hydrology, Water Resources Management and Climate Change" for participants from the Pacific Island Countries is being organized during June 25-July 20, 2018 at NIH, Roorkee
- 11. Protocol for groundwater and surface water sampling, monitoring and assessment in a training course on "Hydrology, Water Resources Management and Climate Change" for participants from the Pacific Island Countries is being organized during June 25-July 20, 2018 at NIH, Roorkee
- 12. Environmental tracers in groundwater contamination studies in an Indo-UK workshop on "Bioremediation of LNAPL Polluted Groundwater" during 26-27 March, 2018 at Department of Hydrology, IIT-Roorkee
- 13. Investigation of RBF sites in Agra Mathura in a training course on "Bank filtration for sustainable drinking water supply" during 05-09 March, 2018 at NIH, Roorkee organized in association with HTWD, Germany; UJS, Dehradun; UCOST, Dehradun; DST, New Delhi
- 14. Groundwater quality in northwest India in India UK Water sponsored UEI 1: Improving freshwater monitoring frameworks and data for research and management during January 23-25, 2018 at Kochi, Kerala. http://www.iukwc.org/sites/www.iukwc.org/files/images/Gopal_K-UEI.pdf
- 15. Tracers Techniques in soil and groundwater contaminant investigations in a training course on "Investigation, remediation and management of soil and groundwater contaminated sites" during 20-22 November, 2017 at Department of Hydrology, IIT-Roorkee sponsored by Central Pollution Control Board, New Delhi

- 16. Integrated Watershed Management, Introduction to integrated planning, conjunctive use and rainwater harvesting in a training course on "Basic Hydrology" during 06-10 November, 2017 at IMTI, Kota, Rajasthan organized by Water Resources Department, Rajasthan under NHP.
- 17. Groundwater Hydrology: basic concepts, aquifer properties, aquifer mapping, groundwater flow concepts in a training course on "Basic Hydrology" during 06-10 November, 2017 at IMTI, Kota, Rajasthan organized by Water Resources Department, Rajasthan under NHP.
- 18. Preliminary investigations to develop RBF sites in Agra Mathura area of UP, India in a training course on "Bank filtration for sustainable drinking water supply" during 18-22 September, 2017 at PHED, Shillong jointly organized by NIH, Roorkee; PHED, Shillong; HTWD, Germany; UJS, Dehradun; UCOST, Dehradun; DST, New Delhi
- 19. Groundwater fluctuations case studies in a training course on ""*Groundwater Hydrology under NHP*" during August 21-25, 2017 at NIH-Roorkee
- 20. Environmental tracers in groundwater investigation in a training course on ""*Groundwater Hydrology under NHP*" during August 21-25, 2017 at NIH-Roorkee
- 21. Preliminary investigations to develop RBF sites in Agra Mathura area of UP, India in a training course on "Bank filtration for sustainable drinking water supply" during 06-10 February, 2017 at Goa jointly organized by NIH, Roorkee; HTWD, Germany; UJS, Dehradun; UCOST, Dehradun; DST, New Delhi
- 22. Environmental tracers in groundwater investigation in a GIAN training course on "Integrated modelling of subsurface flow and transport in porous media Challenges and Opportunities" during January 02-14, 2017 at IIT-Roorkee
- 23. Environmental tracers in groundwater investigation in a training course on "'Identification of Contaminated Sites and its Treatment Technologies, Interferences and Data management using GIS Hands-on-Training" during November 14-18, 2016 at IIT-Roorkee sponsored by CPCB, New Delhi
- 24. Preliminary investigations to develop RBF sites in Agra Mathura area of UP, India in a training course on "Bank filtration for sustainable drinking water supply" during 12-16 September, 2016 at NIH, Roorkee jointly organized by NIH, Roorkee; HTWD, Germany; UJS, Dehradun; UCOST, Dehradun; DST, New Delhi
- 25. Environmental tracers in groundwater investigations in Faculty Development Programme on "Environmental science and engineering, in Civil Engineering" in Civil Engineering" funded by TEQIP-II at IFTM University, Moradabad, August 30, 2016
- 26. Radon measurements in groundwater and applications in Faculty Development Programme on "Environmental science and engineering, in Civil Engineering" in Civil Engineering" funded by TEQIP-II at IFTM University, Moradabad, August 30, 2016
- 27. Environmental tracers in groundwater investigations at GIAN training course on "Remediation and management of polluted groundwater sites" at DOH, IIT-Roorkee, May 21, 2016
- 28. Isotopes for groundwater investigation in semi-arid alluvial regions- case studies from Punjab, India DST-SERB training course on "Isotope Hydrology" at CWRDM, Kozhikode March 14-19, 2016
- 29. Radon measurement in groundwater- case studies north east coast and Gangetic basin (Haridwar) India DST-SERB training course on "Isotope Hydrology" at CWRDM, Kozhikode March 14-19, 2016
- 30. Analysis of air moisture isotopes and its application in hydrology in context of climate change training course on "Climate Resilient Fruit Production Technology, at SKUAST, Jammu November 30-December 1, 2015
- 31. Hydrologic Regimes under Climate Change in Indo-Gangetic Basin (IGB) and impact assessment in training course on "Climate Resilient Fruit Production Technology, at SKUAST, Jammu November 30-December 1, 2015
- 32. Advanced Techniques to understand the Response of Groundwater Resources to Sustained Abstraction in training course on "Integrated Water Resources Development and Management" during November 30, 2015 to December 5, 2015 at National Institute of Hydrology, Roorkee sponsored by MoWR, RD GR, New Delhi
- 33. Advanced Techniques to understand the Response of Groundwater Resources to Sustained Abstraction in training course on "Integrated Water Resources Development and Management" during September 28-October 3, 2015 at National Institute of Hydrology, Roorkee sponsored by MoWR, RD GR, New Delhi

34. Analysis of air moisture isotopes and its application in hydrology - in context of climate change training course on "Water Resources Investigations and Management in Coastal Regions", at DRC-NIH-Kakinada, AP during February 3-7, 2014

Key note Delivered

- 35. Application of isotopes in water resources management at National seminar on "Forest and Tree-Based Land Use Systems for Livelihood, Nutritional and Environmental Security", from Dec. 21st 23rd 2016 at NAU, Navsari, Gujarat
- 36. Decision support system for natural resource system at National seminar on "Forest and Tree-Based Land Use Systems for Livelihood, Nutritional and Environmental Security", from Dec. 21st 23rd 2016 at NAU, Navsari, Gujarat
- 37. Groundwater conditions in Punjab at International Conference on Recent Trends and Development in Environmental Sustainability (RTDES-2016), 20th May, 2016 at Chandigarh, India

7.6 Reports

- Ghosh, NC, **Krishan, Gopal**, 2018. Country-wide capacity building program on "Bank filtration for sustainable drinking water supply" submitted to DST, New Delhi
- Ghosh, NC, **Krishan, Gopal**, Singh, Surjeet, Gurjar, Suman 2018. Investigation of Physical Groundwater Table and Ascertaining its Fluctuation and Trend in Stretch from Chainage 59+600 m to 67+300 m in Rewari to Dadri of CTP-14 Package of Western Dedicated Freight Corridor Project. Consultancy project report submitted to L&T, Limited, Faridabad.
- **Krishan, Gopal**, Ghosh, NC, Ranade, Ashwini, Chaudhry, Anju 2018. Impact of Metro Railroads Viaduct on Groundwater Recharge in NCT Delhi. Consultancy project report submitted to DMRC, New Delhi.
- **Krishan, Gopal**, Rao, MS, Ghosh, NC, Kumar, Sudhir, Rai, SP. 2017. Groundwater recharge source in deep aquifer using isotopes in Punjab. Consultancy project report submitted to DWSS, SAS Nagar, Mohali, Punjab.
- **Krishan, Gopal**, Ghosh, NC, Singh, Surjeet, Kumar, CP, 2017. Groundwater Fluctuations and Conductivity Monitoring in Punjab. Technical Report. National Institute of Hydrology, Roorkee.
- **Krishan, Gopal**, Ghosh, NC, Singh, Surjeet, Kumar, CP, Sharma, Lalit, Yadav, Brijesh. 2017. Baseline Hydro-geological data collection and analysis of Mewat district, Haryana. Technical Report. National Institute of Hydrology, Roorkee
- Rao, M.S. **Krishan, Gopal**, Kumar, Sudhir and Kumar, C.P. 2016. The use of environmental isotopes to assess sustainability of intensively exploited aquifer systems in north eastern parts of Punjab, India. Report submitted to IAEA, Vienna (F 3.30.19; Research Contract 17429).
- MacDonald AM, Bonsor HC, Taylor R, Shamsudduha M, Burgess WG, Ahmed KM, Mukherjee A, Zahid A, Lapworth D, **Gopal K**, Rao MS, Moench M, Bricker SH, Yadav SK, Satyal Y, Smith L, Dixit A, Bell R, van Steenburgen F, Basharat M, Gohar MS, Tucker J, and Maurice L. 2015. Groundwater Resources in the Indo-Gangetic basin- Resilience to

- climate change and abstraction. Technical Report. NERC Open Research Archive, BGS-UK
- Lapworth, Dan, Krishan, Gopal, Rao, MS, MacDonald, Alan, 2014. Intensive Groundwater Exploitation in the Punjab an Evaluation of Resource and Quality Trends. . Technical Report. NERC Open Research Archive, BGS-UK
- Garg, P.K., Kumar, Bhishm, Kumar, CP, Rao, MS, **Krishan, Gopal,** Agarwal, Rajesh, Ahmed, Tanvir. 2014. Hydro-geological assessment of Ghar area for artificial recharge and water management planning. Technical Report. National Institute of Hydrology, Roorkee
- Rao, MS, Kumar, Bhishm, Kumar, CP, Kumar, Sudhir, **Krishan, Gopal**. 2014. Groundwater dynamics of Bist Doab, Punjab using isotopes. Technical Report. National Institute of Hydrology, Roorkee
- Rao, MS, Kumar, Bhishm, Kumar, CP, Kumar, Sudhir, **Krishan, Gopal**. 2014. National Programme on Isotope Fingerprinting of Waters of India. Technical Report. National Institute of Hydrology, Roorkee
- Krishan, Gopal, Rao, M. S., Lapworth, D.J. and MacDonald, A.M. 2013. Indo-gangetic groundwater resilience project- Punjab case study. In: Report of IBG-Groundwater Resilience Project (eds. H.C. Bonsor and A.M. MacDonald) during 4-7 November 2013 at India Habitat Centre, New Delhi. BGS Internal Report, IR/13/060. http://nora.nerc.ac.uk/505660/1/IR13060.pdf
- Kushwaha S.P.S., Singh, I.J., Velmurgan, A., **Gopal Krishan** and Nandy, S. 2007. Forest and land degradation assessment in upper catchment of river Tons, Uttarkashi. Technical Report, Indian Institute of Remote Sensing, Dehradun.