

Dr. Sumant Kumar

(Scientist-D)

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**E-Mail: sumantks@gmail.com; sumantk.nihr@gov.in**Google Scholar: <https://scholar.google.co.in/citations?user=DRd5eIgAAAAJ&hl=en>**RESEARCH INTEREST**

Groundwater Contamination, Groundwater Modelling, Urban Stormwater Treatment & Management, Managed Aquifer Recharge (MAR), River Bank Filtration (RBF), Artificial Neural Network

PROFESSIONAL EXPERIENCE (13+ years)

S. N	Org./Inst.	Period		Designation	Job Profile
		From	To		
1	National Institute of Hydrology (NIH), Roorkee	July, 2018	Till date	Scientist-D	R & D work on GW Hydrology and Environmental Hydrology
2	National Institute of Hydrology (NIH), Roorkee	July, 2014	June, 2018	Scientist-C	R & D work on GW Hydrology and Environmental Hydrology
3	National Institute of Hydrology (NIH), Roorkee	Jan., 2011	June, 2014	Scientist-B	R & D work on GW Hydrology and Environmental Hydrology
4	TATA Consulting Engineers Ltd (TCE), Pune	July, 2009	Dec. 2010	Engineer (Civil)	Design of Stormwater drainage system, Sewerage system and Water supply scheme
5	TATA Consulting Engineers Ltd (TCE), Pune	July, 2008	June, 2009	Assistant Engineer (Civil)	Design of Stormwater drainage system, Sewerage system and Water supply scheme

EDUCATIONAL QUALIFICATION

- Ph.D (Environmental Engineering), Department of Civil Engineering, **IIT Roorkee**, India. Year 2013-2019
- M.Tech (Hydraulics & Water Resources Engineering), Department of Civil Engineering, **IIT Kanpur**, India. Year 2006-2008
- B.E. (Agricultural Engineering), **CTAE, Udaipur**, India. Year 2002-2006

ACHIEVEMENTS/ AWARDS/ FELLOWSHIP

- ‘**Best Paper**’ award from National Institute of Hydrology (NIH) during 6th Rashtriye Jal Sangosthi, 2019, organized at NIH, Roorkee.
- **Ibaraki Kasumigaura Prize** from Governor of Ibaraki Prefecture, **Govt. of Japan** for outstanding content of paper on lake conservation during 17th World Lake Conference (Lake Kasumigaura, Ibaraki, Japan, 2018).
- ‘**Journal Best Paper**’ award for the year 2017 from Indian Water Resources Society (**IWRS**) **Journal**.
- **Young Scientist Award** in Engineering Science and Technology discipline from Uttarakhand Council of Science & Technology, **Govt. of Uttarakhand, India** during 11th Uttarakhand state science & technology congress (USSTC) 2016-17.
- **National Talent Scholarship** by MHRD, Government of India during B.E (2002-2006)
- **All India Rank 53**, GATE- 2006

PUBLICATIONS (Annexure-A)

- **Research Paper Publication-47** (Journals-26, Conferences-21)
- **Book Chapters-09**

SPONSORED/CONSULTANCY PROJECTS (Annexure-B)

- **Sponsored Projects/NIH funded studies-12** (Completed-07, Ongoing-05)
- **Consultancy Projects-10** (Completed-09, Ongoing-01)

CONFERENCES/TRAINING COURSES ORGANIZED

- International conference on “Groundwater Vision 2030 (IGWC-2017)”, 11-13 Dec., 2017 organized by NIH, Roorkee at New Delhi (**Key role in organizing conference**)

- International conference on “Natural Treatment Systems for Safe and Sustainable Water Supply in India: Results from Saph Pani Project” 18-19 September 2014, organized by NIH, Roorkee at New Delhi, India (**Key role in organizing conference**)
- Online training course on “Groundwater Modelling using Visual MODFLOW”, 14-18 June, 2021 organized by NIH, Roorkee (**Course Coordinator**).
- Online training course on “Groundwater Modelling using Visual MODFLOW”, 18-22 January, 2021 organized by NIH, Roorkee (**Course Coordinator**).
- Online training course on “Groundwater Modelling using Visual MODFLOW”, 06-10 July, 2020 organized by NIH, Roorkee (**Course Coordinator**).
- Training course on “Water Quality Assessment & Management”, 17-21 June, 2019, organized by NIH, Roorkee (**Course Co-coordinator**).
- Bank Filtration for Sustainable Drinking Water Supply 05-09 March, 2018 organized by NIH, Roorkee (**Course Co-coordinator**).
- Training course on “Groundwater Hydrology”, 21-25 August, 2017 organized by NIH, Roorkee (**Course Coordinator**).
- *Various lectures taken during training courses organized by different government and private agencies

M. Tech. /M.Sc GUIDANCE (Annexure-C)

- **M.Tech-04, M.Sc-05**

FOREIGN VISITS

- Orleans, **France**
- Delft, **The Netherland**
- Tsukuba, **Japan**

MEMBERSHIP OF PROFESSIONAL SOCIETIES

- Life member of Indian Association of Hydrologists
- Life member of Indian Water Resources Society
- Life Membership of Indian Soil Water conservation, Dehradun

ADMINISTRATIVE RESPONSIBILITIES

- **Officer-in charge** Computer Centre, National Institute of Hydrology, Roorkee (21-10-2019 to till date)
- **Officer-in charge** Soil Water Laboratory, National Institute of Hydrology, Roorkee (01-07-2021 to till date)

- **Alternate Finance Officer**, National Institute of Hydrology, Roorkee (06-10-2020 to till date)
- **Member**, External Project Management Cell, National Institute of Hydrology, Roorkee (03-01-2020 to till date)
- **Member**, Training cell, under National Hydrology Project (NHP) at National Institute of Hydrology, Roorkee (24-09-2015 to till date)
- **Member**, Editorial Board, Hindi Technical Magazine “Jal Chetna” published by NIH (01-09-2016 to 31-08-2018)
- **Dy. OIC**, Security, NIH staff colony, Jal Vihar Roorkee (30-03-2016 to 15-10-2019)
- **Member**, House Allotment Committee, NIH staff Quarter, Roorkee (23-04-2015 to 31-03-2017)
- **President**, Hall of Residence- 7, IIT Kanpur (2006-07)
- **Senator** in student Gymkhana, the students’ representative body of IIT Kanpur (2006-07)

Sumant Kumar

Date: 19th August, 2021

Place: Roorkee

Annexure A

Papers in Journals

- **Kumar, S.**, Kumar, M., Chandola, V.K., Kumar, V., Saini, R.K., Pant, N., Kumari, N., Srivastava, A., & Chaudhary, A (2021). Groundwater Quality Issues and Challenges for Drinking and Irrigation Uses in Central Ganga Basin Dominated with Rice-Wheat Cropping System. *Water*, 13(17):2344.
- Krishan, G., Taloor, A. K., Sudarsan, N., Bhattacharya, P., **Kumar, S.**, Ghosh, N. C., ... & Kour, R. (2021). Occurrences of potentially toxic trace metals in groundwater of the state of Punjab in northern India. *Groundwater for Sustainable Development*, 15,100655.
- **Kumar, S.**, Joshi, S. K., Pant, N., Singh, S., Chakraborty, B., Saini, R. K., ... & Singh, V. (2021). Hydrogeochemical evolution and groundwater recharge processes in arsenic enriched area in central Gangetic plain, India. *Applied Geochemistry*, 131, 105044.
- **Kumar, S.**, Kumar, V., Saini, R. K., Pant, N., Singh, R., Singh, A., ... & Kumar, M. (2021). Floodplains landforms, clay deposition and irrigation return flow govern arsenic occurrence, prevalence and mobilization: A geochemical and isotopic study of the mid-Gangetic floodplains. *Environmental Research*, 201, 111516.
- Krishan, G., Kumar, B., Sudarsan, N., Rao, M. S., Ghosh, N. C., Taloor, A. K., Bhattacharya, P., Singh, S., Kumar, C.P., Sharma, A., Jain, S.K., Sidhu, B.s., **Kumar, S.**, Vasisht, R. (2021). Isotopes ($\delta^{18}\text{O}$, δD and 3H) variations in groundwater with emphasis on salinization in the State of Punjab, India. *Science of The Total Environment*, 789, 148051.

- Richards, L. A., Kumari, R., White, D., Parashar, N., Kumar, A., Ghosh, A., **Kumar, S.**, Chakravorty, B., Lu, C., Civil, W., Lapworth, D.J., Krause, S., Polya, D.A., Gooddy, D. C. (2021). Emerging organic contaminants in groundwater under a rapidly developing city (Patna) in northern India dominated by high concentrations of lifestyle chemicals. *Environmental Pollution*, 268, 115765.
- Pandey, B.K., Singh, R., Pandey, R.P., Das, S., Kumar, J., Kumar, P., **Kumar, S.**, Pandey, V.K. (2021). Water Quality Appraisal of a Mountainous River: A Case Study of Rispana River, Dehradun. *Water and Energy International*, 64(1), 14-23.
- Pandey, R.P., Kumar, P., Pandey, B.K., Tyagi, J.V., Singh, R., **Kumar, S.**, Saini, S. (2021). Development of Rejuvenation Plan for Rispana River System, Uttarakhand, India. *Water and Energy International*, 64(2), 6-18.
- **Kumar, S.**, Ghosh, N. C., Kazmi, A. A., Jain, S. K., Kumar, V., & Rajpal, A. (2020). Hybrid approach for urban hilly catchment runoff modelling and prediction of pollutant loads. *Hydrological Sciences Journal*, 65(15), 2535-2547.
- Surjeet, S., **Kumar, S.**, Chakravorty, B., Singh, A.K., Raju, M. (2020). Assessment of Groundwater Quality of Bijnor District, India using Water Quality Index. *J. of Water Engg. and Management*, 1(2), 52-60.
- **Kumar, S.**, Kumar, V., Saini, Ravi K., Kumar, C.P., Raju, M., Singh, S., Singh, O., Chakravorty, B. (2020). Detection of Arsenic in Groundwater of Laksar Area, Haridwar District, Uttarakhand. *J. Indian Water Resour. Soc*, 39(3).
- Gurjar, S., Ghosh, N. C., **Kumar, S.**, Sharma, A., & Singh, S. (2019). Process Based Integrated Models for Managed Aquifer Recharge and Aquifer Storage Treatment and Recovery. *Water Resources Management*, 33(1), 387-400.
- Singh, S., Ghosh, N.C., Krishan, G., **Kumar, S.**, Gurjar, S., Sharma, M. K. (2019). Development of indices for surface and ground water quality assessment and characterization for Indian conditions. *Environmental Monitoring and Assessment* 191:182.
- **Kumar, S.**, Vellanki, B. P., Rahman, S. P., Kazmi, A. A., & Ghosh, N. C. (2018). Runoff characterization and pollutant load estimation of Nainital lake, India. *Environmental Nanotechnology, Monitoring & Management*, 10, 394-398.
- **Kumar, S.**, Kazmi, A. A., Ghosh, N. C., Kumar, V., & Rajpal, A. (2018). Urban stormwater runoff treatment of Nainital Lake's catchment: an application of ballasted sand flocculation technology. *Water Science and Technology: Water Supply*, 19 (4): 1017–1025.
- Singh, S., Ghosh, N.C., Gurjar, S., Krishan, G., **Kumar, S.**, Berwal, P. (2018). Index Based Assessment of Suitability of Water Quality for Irrigation Purpose under Indian Conditions. *Environmental Monitoring and Assessment* 190 (1).

- Singh, K., Singh, R., Malyan, S.K., Rawat, M., Kumar, P., **Kumar, S.**, Sharma, M.K., Pandey, G. (2018). Health risk assessment of drinking water in Bathinda district, Punjab, India. *Journal of Indian Water Resources Society*, 38(3).
- Krishan, G., Singh, S., Sharma, A., Sandhu, C., **Kumar, S.**, Kumar, CP, Gurjar, S. (2017). Assessment of river Yamuna and groundwater interaction using Isotopes in Agra-Mathura area of UP, India. *International Journal of Hydrology*. 1(3): 00016.
- **Kumar, S.**, Kazmi, A. A., Ghosh, N. C., Singh, R. (2017). Optimization of ballasted sand flocculation process for urban runoff treatment. *Journal of Indian Water Resources Society*, 37(4), 55-60.
- **Kumar, S.**, Ghosh, N.C., Kazmi, A.A. (2016). Ballasted sand flocculation for water, wastewater and CSO treatment. *Environmental Technology Reviews* 5, 57-67.
- Krishan, G., Surjeet, S., Anupma, S., Sandhu, C., Grischek, T., Gurjar, S., **Kumar, S.**, Singh, R.P., Glorian, H. and Bornick, H. (2016). Assessment of river quality for river bank filtration along Yamuna River in Agra-Mathura. *International Journal on Environmental Sciences* 7(1), 56-57.
- Singh, S., and **Kumar, S.** (2016). Trend analysis of rainfall of Sagar district, Madhya Pradesh. *Indian Journal of Soil Conservation*, 44 (1), 44-49.
- Ghosh, N. C., **Kumar, S.**, Grützmaker, G., Ahmed, S., Singh, S., Sprenger, C., Singh, R.P., Das, B., Arora, T. (2015). Semi-analytical model for estimation of unsteady seepage from a large water body influenced by variable flows. *Water Resources Management*, 29(9), 3111-3129.
- **Kumar, S.**, Ghosh, N.C., Singh, R.P. Sonkusare, Mahesh M., Singh, S., Mittal, S., (2015). Assessment of Water quality of lakes for drinking and irrigation purposes in Raipur City, Chhattisgarh, India. *International Journal of Engineering Research and Applications*, Vol. 5, Issue 2, pp.42-49.
- **Kumar, S.**, Ghosh N.C., Singh, S. (2013). A comparative study of Artificial Neural Network and Hybrid Model for prediction of Groundwater level. *Journal of Indian Water Resources society*, 33(4), 17-23.
- Jain, A. and **Kumar, S.** (2009). Dissection of trained neural network hydrologic model architectures for knowledge extraction. *Wat. Resour. Res.* 45 (7).

Papers presented in Conferences

- Krishan, G., Sudarsan, N, **Kumar, S**, Ghosh, N.C., Singh, S, Sharma, A, Mittal, S, Sidhu, BS, Vasisth, Rajesh, (2021). Distribution of heavy metals in groundwater and assessment of heavy metal index in Punjab. In: INC-IAH National e seminar on Resilience of groundwater resources for accommodating changing climatic conditions” organized by International Association of Hydrologist during February 27-28, 2021.
- Krishan, G., Ghosh, N.C., Singh, S., Grischek, T, Sandhu, C, Bornick, H, **Kumar, S**. (2020). Implementation of river bank filtration technology in Agra, India. In: XIV World Aqua Congress International conference and exhibition organized by Aqua Foundation during October 29 - 30, 2020, p 99-112
- **Kumar, S.**, Kumar, V., Saini, R.K., Raju, M., Singh, A., Singh, R., Singh, S., Mittal, S., Choudhary, A. (2019). Arsenic Contamination in Groundwater of Bhojpur District, Bihar, India. HYDRO-2019, organized by Osmania University and the Indian Society for Hydraulics during 18-20 Dec., 2019 at Hyderabad.
- **Kumar, S.**, Kumar, V., Singh, A., Raju, M., Tyagi, P., Saini, R.K. (2019). Arsenic Contamination of Groundwater in Central Ganga Basin and Possible Remediation Methods: A Review. IGWC-2019, organized by IIT Roorkee during 21-24 Oct., 2019 at Roorkee.
- **Kumar, S.**, Ghosh, N.C., Kumar, V., Saini, R.K., Singh, R., Chowdhury, A., Singh, R.P. (2018). Assessment of Groundwater Quality with special reference to Arsenic in Ballia District, Uttar Pradesh, India. Hydro 2018, International Hydraulics, Water Resources and Coastal Engineering, organized at NIT Patna during 19-21 Dec. 2018.
- **Kumar, S.**, Kazmi, A.A., Ghosh, N.C., Kumar, P. Rajpal, A. (2018). Characterization and Treatment of Stormwater Runoff from the Nainital Lake Catchment in the Himalayan Region of India. 17th World Lake Conference (Lake Kasumigaura, Ibaraki, 2018), during 15-19 October, Tsukuba, Ibaraki, Japan.
- Kazmi, A.A., **Kumar, S.**, Ghosh, N.C., Rajpal, A. (2018). Ballasted Sand flocculation technology for stormwater runoff treatment. pp 76, Twenty first International water technology conference, IWTC, Ismailia, Egypt, 28-30 June 2018.
- Kazmi, A.A., **Kumar, S.**, Ghosh, N.C. (2017). Performance evaluation of Ballasted Sand Flocculation Technique for Urban Runoff Treatment. In: Proc. of International conference on Civil, Architectural and Environmental Sciences CAES-17, 13-14 March, 2017, Dubai (UAE).
- **Kumar, S.**, Kazmi, A.A., Ghosh, N.C. (2017). Optimal Coagulant & Polymer Dose for High Rate Clarifier for Urban Runoff Treatment. In: Proc. of 7th International Groundwater Conference on Groundwater Vision 2030 - Water Security, Challenges and Climate Change Adaptation , 11-13 December, 2017, New Delhi.

- Singh, S., Ghosh, N.C., **Kumar, S.**, Krishan, G. (2017). Development of index for wastewater quality assessment. In: Proc. of 7th International Groundwater Conference on Groundwater Vision 2030 - Water Security, Challenges and Climate Change Adaptation , 11-13 December, 2017, New Delhi.
- **Kumar, S.**, Kazmi, A.A., Ghosh, N.C. (2017).Urban Runoff Characterization and Treatment in Naini lake Catchment using Ballasted Sand Flocculation Technology. Proc. of 11th Uttarakhand State Science & Technology Congress, 2016-17,2-4 March, 2017, UCOST, Dehradun.
- **Kumar, S.**, Singh, S., Kale, R.V. Ghosh, N.C., Sonkusare, M. (2016). Spatio-temporal variation and trend analysis of groundwater level in Raipur city, Chhattisgarh. In: Proceedings of International conference on Water, Energy and Society, 15-18 March, 2016, Bhopal.
- Krishan, G., Surjeet, S., Sharma, A., Sandhu, C., Singh, R.P. and **Kumar, S.** (2016). Tracing Yamuna River Water Component in Groundwater using Isotopes in Agra-Mathura area of UP, India In: Proceedings of International conference and Exhibition on Innovative technologies and field applications for Sustainable water, wastewater & energy management-SWWEM-16, 17-19 August, 2016, IISC, Bangalore.
- **Kumar, S.**, Zainab, Omkar, S., Parul, P. (2015). Assessment of hydrochemistry and groundwater quality in Roorkee and Bhagwanpur block, Haridwar district (Uttarakhand), India. National symposium on Hydrology jointly organized by NIH, Roorkee and CWC, New Delhi conference on Water, Energy and Society, 22-23 December, 2015 at New Delhi.
- Ghosh, N.C., **Kumar, S.**, Gurjar, S., Sharma, A., Singh, S., Kishan, G., Chakraborti, B., Rao, Y.R.S., Singh, R.P., Choudhury, A., Mittal, S., Sandhu, S.S., and Grischek, T. (2015). Science Based RBF Schemes for Water Supply at Few Sites in Gangetic Alluvium', National Seminar on R & D Perspective for Rejuvenation of River Ganga, 16-17 December, 2015 at NIH, Roorkee.
- **Kumar, S.**, Prajapati, P., Singh, O. and Ram Chander (2015). "Water Quality Assessment of Groundwater and Ponds in Masahi Village of Haridwar District.5th National Hindi Seminar on 'Badalte Parivesh mein Jal Sanshadhan Prabandhan ki Bhumika' 19-20 Nov,2015 NIH, Roorkee.
- **Kumar, S.**, Zainab, Singh, O., Prajapati, P. (2015). Assessment of Hydrochemistry and Groundwater Quality in Roorkee and Bhagwanpur block, Haridwar District (Uttarakhand), India, Proc. Of the National Seminar, Symposium on Hydrology, organized by Indian Association of Hydrologists, 22-23 December, New Delhi.
- **Kumar, S.**, Singh, O., Prajapati, P., Ramchandra (2015). Evaluation of Water Quality of a Lake and Groundwater of Masahi Village, Haridwar. Proc. of the national conference 5th Rashtriya Jal Sangosthi, 19-20 November 2015, NIH Roorkee.

- **Kumar, S.** and Singh, S. (2013). Managed Aquifer Recharge and Rainwater Harvesting in Uttarakhand. Proc of National Seminar on Groundwater management in Uttarakhand, 15 February 2013, CGWB, Dehradun.
- Vatsa, R, **Kumar, S.**, Kumar, C.P. (2011). Groundwater artificial recharge, proc. of the national conference 4th Rashtriya Jal Sangosthi, 16-17 December 2011, NIH Roorkee.
- **Kumar, S.** and Jain, A. (2008). Knowledge extraction from trained neural network hydrologic models. National conference HYDRO2008, 15-16 December 2008, MNIT Jaipur, Rajasthan, India.

Chapters in Edited Books

- **Kumar, S.**, Saini, R.K., Kumar, V. (2021). Groundwater flow modelling of a hypothetical groundwater System. IN: Advances in Hydrology and Climate Change (Eds. Chandaniha, S.K., Lohani, A.K., Krishan, G., Prabhakar, A.). CRC Press, A Taylor & Francis group. **(Accepted)**
- Singh, R. and **Kumar, S.** (2019). Impact of climate change on water quality. IN: Climate change and its impact on water resources with focus on India (Eds. Jain, Sharad, K. and Singh, P.K.). National Institute of Hydrology, Roorkee.
- Kumar, C.P., Sharma, A., Shruthi, K.V., Purandre, B.K., **Kumar, S.** (2019). Climate change and groundwater. IN: Climate change and its impact on water resources with focus on India (Eds. Jain, Sharad, K. and Singh, P.K.). National Institute of Hydrology, Roorkee.
- **Kumar, S.**, Singh, S., Kale, R.V., Ghosh, N. C., Sonkusare, Mahesh M., Chandaniha, S.K. (2018). Spatio-Temporal Variation and Trend Analysis of Groundwater Level in Raipur City, Chhattisgarh. IN: Groundwater (Singh V., Yadav S., Yadava R. (Eds.). Water Science and Technology Library, vol 76. Springer, Singapore pp. 31-39, ISBN: 978-981-10-5788-5.
- Ghosh, N.C., Singh, P.K., **Kumar, S.**, Purendra, B.K., Sharma, M.K. (2018). Surface Water Quality Modelling. IN: Hydrological Modelling, Current status and future directions. Prepared under Ageis of National Hydrology Project, National Institute of Hydrology, Roorkee.
- Nätörp, A., Brand, J., Chadha, D.K., Elango, L., Ghosh, N.C., Grützmacher, G., Sprenger, C., **Kumar, S.** (2016). Overview of Managed Aquifer Recharge in India. In: Natural Water Treatment Systems for Safe and Sustainable Water Supply in the Indian

Context (Wintgens et al.). IWA Publications, London, pp. 79-98, ISBN:9781780408392.

- **Kumar, S.,** Ghosh, N. C., Singh, R.P, Singh, R., and Singh, S. (2014). Impact of Canal Recharge on Groundwater Quality of Kolayat Area, District Bikaner, India. IN: Geostatistical and Geospatial Approaches for the Characterization of Natural Resources in the environment: Challenges, Processes and Strategies (Ed. Raju N. J.), Capital Publisher, pp. 198-202, ISBN: 978-93-81891-25-4
- Singh, R., **Kumar, S.,** Garg, M., (2014). Domestic Wastewater Treatment Using Tanfloc: A Tannin Based Coagulant. IN: Geostatistical and Geospatial Approaches for the Characterization of Natural Resources in the environment: Challenges, Processes and Strategies (Ed. Raju N. J.), Capital Publisher, pp. 198-202, ISBN: 978-93-81891-25-4
- **Kumar, S.,** Ghosh, N.C., Singh S., (2014). Forecasting groundwater level using hybrid modeling technique. IN: Management of Natural Resources in changing Environment, (Eds. Raju N. J. et al.), Springer and Capital publishers, pp. ISBN: 93-98 978-3-319-12559-6.
- **Kumar, S.,** Ghosh, N.C., Singh S., (2012). Prediction of groundwater level using Artificial Neural Networks, IN: Environmental Technology (Eds. Khanna D. R., Chopra A. K., Matta G., Bhutiani R. and Singh V.), ISBN- 9788170358237, Daya Publishing House, New Delhi, Chapter 8, pp. 71-78.

Annexure-B

Sponsored/Consultancy Projects

S. No.	Title	Duration	Project Cost	Sponsoring Agency
1	Hydro-geochemical Evolution and Arsenic Occurrence in Aquifer of Central Ganges Basin- PI (Ongoing)	12/2017-09/2021	Rs. 7 million	Department of Water Resources, RD & GR, Ministry of Jal Shakti, Govt. of India
2	The regional hydrological impact of farm-scale water saving measures in the Gangetic plains- PI (Completed)	07/2019-03/2021	Rs. 0.5 million (NIH Budget)	Collaborative study with CSIRO, Brisbane Australia
3	Future Secular Changes and Remediation of Groundwater Arsenic in	01/2018-12/2021	Rs.11.02million (NIH Share)	Department of Science & Technology (DST), Govt. of India and

	the Ganga River Basin- Co-PI (Ongoing)			Natural Environment Research Council(NERC) under Newton-Bhabha Fund
4	Impact of rainwater harvesting in India on groundwater quality with specific reference to fluoride and micro pollutants - Co-PI (Ongoing)	01/2018-12/2021	Rs.14.3 million (NIH Share)	Department of Science & Technology (DST), Govt. of India and Natural Environment Research Council(NERC) under Newton-Bhabha Fund
5	Water Quality Assessment of Southwest Punjab Region with Special Emphasis on Carcinogenic Contaminants and Suggesting Remedial Measures- Co-PI (Ongoing)	07/2017-09/2021	Rs. 5.5 million	Department of Water Resources, RD & GR, Ministry of Jal Shakti, Govt. of India
6	Peya Jal Suraksha - Development of Six Pilot Riverbank Filtration Demonstrating Schemes in Different Hydrogeological Settings for Sustainable Drinking Water Supply - Co-PI (Completed)	10/2015-3/2019	Rs.37.6 million	Ministry of Water Resources, RD & GR, Govt. of India
7	Alternate water supply management strategies in arsenic affected/vulnerable areas: Mapping of Arsenic affected zones/regions in Eastern Uttar Pradesh- PI (Completed)	04/2015-03/2017	(Internal funded)	National Institute of Hydrology, Roorkee
8	Study of Feasibility and Scope of Managed Aquifer Recharge (MAR) for Groundwater Augmentation- Co-PI (Completed)	03/2017-09/2017	(Internal funded)	National Institute of Hydrology, Roorkee
9	Web Enabled Groundwater Recharge Estimation Model (WEGREM)- Co-PI (Completed)	06/2015-05/2016	(Internal funded)	National Institute of Hydrology, Roorkee
10	Estimation of Specific Yield and Storage	04/2013-03/2015	(Internal funded)	National Institute of Hydrology, Roorkee

	Coefficient of Aquifers- Co-PI (Completed)			
11	Managed Aquifer Recharge and Aquifer Storage Recovery- PI (Completed)	04/2011-03/2014	(Internal funded)	National Institute of Hydrology, Roorkee
12	Enhancement of natural water systems and treatment methods for safe and sustainable water supply in India (Project acronym: Saph Pani)- Co-PI (Completed)	10/2011-09/2014	€ 242,044 (NIH share)	European Union
Consultancy Projects				
1	Feasibility Study of Surface Water and Ground Water Availability Including Identification of Potential Ground Water Recharge Sites in CIMFR Campus, Dhanbad- Co-PI (Completed)	08/2012-03/2013	Rs.1.5 million	Engineering Projects(India) Ltd., New Delhi
2	Drainage area mapping and hydrological mapping in and around Guraha (W) Lignite Block in Kolayat Tehsil of Bikaner Districts- Co-PI (Completed)	02/2012-08/2013	Rs. 1.25million	Rajasthan State Mines and Mineral Limited, Jaipur, Govt. of Rajasthan
3	Evaluation of Water Level Network to Identify Suitable Piezometers for Installation of Digital Water Level Recorders (DWLRs) in the Districts Moradabad, Amroha, Bijnor, Muzaffar Nagar, Shamli and Saharanpur of Northern Uttar Pradesh- Co-PI (Completed)	09/2016-06/2017	Rs. 2.03 million	Groundwater Department, Lucknow, Govt. of Uttar Pradesh
4	Feasibility of Infiltration Wells for river Bank Filtration of Srinagar, Gauchar, and Karnprayag in Uttarakhand- Co-PI (Completed)	04/2015-04/2015	Rs. 0.3 million	Uttarakhand Jal Sansthan, Govt. of Uttarakhand
5	Hydro-geological study of Goindwal Sahib area of Tarn Taran District,	10/2019-03/2020	Rs. 1.59 million	GVK Power Ltd Tarn Taran Punjab

	Punjab- Co-PI (Completed)			
6	Groundwater conditions in Punjab- a case study on assessment of saline aquifers and ascertaining reasons for their expansion from SW region to central parts of Malwa region, Punjab - Co-PI (Completed)	03/2019-09/2020	Rs. 11.8 million	Punjab State Farmers' and Farm Workers' Commission
7	Preparation of Strategic Land and Water Management Plan for Rejuvenation of Rispna River System- Co-PI (Completed)	09/2018-03/2020	Rs. 8.61 million	Uttarakhand Irrigation Department, Govt. of Uttarakhand
8	Geo-Environmental Study in and around areas of Oil Marketing Companies Located in Manglia, Indore- PI (Completed)	11/2020-08/2021	Rs. 2.23 million	BPCL, Indore
9	Area drainage study for Khavda hybrid renewable power in kutchh region- Co-PI (Completed)	08/2020-12/2020	Rs. 3.5 million	Adani Green Energy Ltd., Ahmedabad
10	Hydro-geological Study of Area in the Vicinity of SEL Manufacturing Company Ltd Nawanshahr(Punjab)- Co-PI (Ongoing)	02/2021-09/2021	Rs. 8.5	SEL Manufacturing Company Ltd Nawanshahr

Annexure-C

M.Tch/M.Sc Guidance

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- Zainab, “Groundwater Quality assessment for drinking and irrigation purposes”. M.Sc, Department of Chemistry, Gurukul Kangri University, Haridwar (2014-15).
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- Aakriti Gaud “Suitability of surface water for drinking and irrigation purposes”, M.Sc, Department of Chemistry, Gurukul Kangri University, Haridwar (2014-15).