




**RAM LAL ANAND COLLEGE**  
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<b>Educational Qualifications</b>				
Degree		Institution		Year
<b>Dr. D. S. Kothari Post-Doctoral Fellow (DSKPDF)</b>		<b>Department of Geology, University of Delhi, Delhi, India</b>		<b>2018-2021</b>
<b>National Post-Doctoral Fellow (NPDF)</b>		<b>Department of Civil Engineering, IIT Delhi, New Delhi, India</b>		<b>2016-2018</b>
<b>Ph.D. (Environmental Sciences)</b>		<b>School of Environmental Sciences, Jawaharlal Nehru University, New Delhi, India</b>  <i>Thesis title: "Hydrological characteristics and solute dynamics of meltwater draining from Chhota Shigri Glacier, Western Himalaya, India"</i>		<b>2011-2016</b>
<b>M.Phil. (Environmental Sciences)</b>		<b>School of Environmental Sciences, Jawaharlal Nehru University, New Delhi, India</b>  <i>Dissertation title: "Hydro-meteorological and Hydro-geochemical characteristics of Chhota Shigri Glacier, Lahaul-Spiti Valley, Himachal Pradesh, India"</i>		<b>2009-2011</b>
<b>M.Sc. (Environmental Sciences)</b>		<b>School of Environmental Sciences, Jawaharlal Nehru University, New Delhi, India</b>		<b>2007-2009</b>

### Career Profile

- **Assistant Professor (Permanent): 30<sup>th</sup> Jan 2023 to till date in the Department of Environmental Studies, Ram Lal Anand College, University of Delhi, New Delhi, India**
- **Assistant Professor (Adhoc): 13<sup>th</sup> April 2022 to 29<sup>th</sup> Jan 2023 in the Department of Environmental Studies, Ram Lal Anand College, University of Delhi, New Delhi, India**
- **Research Associate (RA): 1<sup>st</sup> Jul 2016 to 15<sup>th</sup> Nov 2016 in the National Institute of Hydrology, Roorkee, India under the sub-project of National Mission For Sustaining The Himalayan Ecosystem (NMSHE) project entitled “Environmental Assessment of Aquatic Ecosystem of Upper Ganga basin”**

### Administrative Assignments

- **Teacher Incharge, Department of Environmental Studies in the academic session 2024-2025, Ram Lal Anand College, University of Delhi, New Delhi**
- **Co-convener, Solid Waste Management including Biowaste Committee in the academic session 2024-2025, Ram Lal Anand College, University of Delhi, New Delhi**
- **Member, Swachhata Action Plan Committee (Implementation & Monitoring) in the academic session 2024-2025, Ram Lal Anand College, University of Delhi, New Delhi**
- **Member NIRF 2024 committee in Parameter II: Research and Professional Practice, Ram Lal Anand College, University of Delhi, New Delhi**
- **Member, Students Union Advisory Committee in the academic session 2024-2025, Ram Lal Anand College, University of Delhi, New Delhi**

### Areas of Interest / Specialization

**Glaciology, Hydrology, Hydro-meteorological Correlation, Suspended Sediment Transport, Biogeochemistry, Meteorology, Climate Change and Groundwater Contamination**

### Subjects Taught

**Introduction to Environmental Studies, Ecosystem, Natural Resources, Biodiversity and Conservation, Environmental Pollution, Environmental Policies, Human Population and Swachh Bharat**

### Publications Profile

#### **Research papers published in Peer Reviewed Journals:**

- (1) Mahesh Prasad Awasthi, Ramesh Raj Pant, Kiran Bishwakarma, Gaurav Kumar Raut, Ganga Paudel, Sushmita Kafle and **Virendra Bahadur Singh** (2024). Integrating multivariate statistical techniques

- and geochemical indices for water quality assessment in pond ecosystems of Kirtipur Municipality, Kathmandu, Nepal. **Sustainable Water Resources Management**, 11:13. doi: 10.1007/s40899-024-01182-4.
- (2) Ramesh Raj Pant, Kiran Bishwakarma, Kshitiz Kandel, Sudip Poudel, Jharana Nepal, Bhanu Bhakta Neupane and **Virendra Bahadur Singh** (2023). Seasonal variations and health risk assessment of trace elements in the Badigad River, lesser Himalayas, Nepal. **Acta Geochimica**, 42, 689-703.
- (3) R. R. Pant, K. Bishwakarma, K. B. Pal, L. B. Thapa, R. G. Shrestha, S. Karuppanan, L. Garu, S. Bista and **Virendra Bahadur Singh** (2023). Comparative analysis of hydrochemical variables of two Ramsar-listed lakes in Pokhara Valley, Nepal. **International Journal of Energy and Water Resources**, 7, 1-13. doi.: 10.1007/s42108-022-00204-1.
- (4) **Virendra Bahadur Singh** and Pramod Kumar (2022). Hydrogeochemical characteristics of meltwater draining from Himalayan glaciers: a critical review. **Arabian Journal of Geosciences**, 15:680, doi: 10.1007/s12517-022-09903-9.
- (5) **Virendra Bahadur Singh**, AL. Ramanathan and Pramod Kumar (2021). Hydro-meteorological correlations of Himalayan glaciers: A review. **Journal of Climate Change**, 7(3): 45-55.
- (6) Thupstan Angchuk, Alagappan Ramanathan, I. M. Bahuguna, Arindan Mandal, Mohd. Soheb, **Virendra Bahadur Singh**, Somdutta Mishra and Sarvagya Vatsal (2021). Annual and seasonal glaciological mass balance of Patsio glacier, western Himalaya (India) from 2010 to 2017. **Journal of Glaciology**, 67(266): 1137–1146.
- (7) Shyam Ranjan, AL. Ramanathan, Tirumalesh Keesari, **Virendra Bahadur Singh**, Naveen Kumar, Manish Pandey and Markus Leuenberger (2021). Triple water vapour–isotopologues record from Chhota Shigri, Western Himalaya, India: a unified interpretation based on  $\delta^{17}\text{O}$ ,  $\delta^{18}\text{O}$ ,  $\delta\text{D}$  and comparison to meteorological parameters. **Frontiers in Earth Science**, 8: 599632, doi: 10.3389/feart.2020.599632.
- (8) **Virendra Bahadur Singh**, A. K. Keshari and AL. Ramanathan (2020). Major ion chemistry and atmospheric  $\text{CO}_2$  consumption deduced from the Batal glacier, Lahaul-Spiti valley, Western Himalaya, India. **Environment, Development and Sustainability**, 22: 6585-6603.
- (9) Arindan Mandal, Alagappan Ramanathan, Mohd. Farooq Azam, Thupstan Angchuk, Mohd. Soheb, Naveen Kumar, Jose George Pottakkal, Sarvagya Vatsal, Somdutt Mishra and **Virendra Bahadur**

**Singh** (2020). Understanding the interrelationships among mass balance, meteorology, discharge and surface velocity on Chhota Shigri Glacier over 2002-2019 using in-situ measurements. **Journal of Glaciology**, 66(259): 727-741.

(10) **Virendra Bahadur Singh**, Pritam Chand, Milap Chand Sharma, Ujjal Deka Baruah, Manoj Kumar, Naveen Kumar and AL. Ramanathan (2020). Evaluation of meltwater quality using dissolved ions chemistry and multivariate statistical methods: a case study of the Manimahesh Glacier, Ravi basin, Himachal Pradesh, India. **Proceeding of National Academy of Sciences, India Section A: Physical Sciences**, 90(1): 57-66.

(11) Manoj Kumar, Ritu Nagdev, Ritu Tripathi, **Virendra Bahadur Singh**, Prabhat Ranjan, Mohd Soheb and AL. Ramanathan (2019). Geospatial and multivariate analysis of trace metals in tubewell water using for drinking purpose in the upper Gangetic basin, India: Heavy metal pollution index. **Groundwater for Sustainable Development**, 8: 122-133.

(12) Shyam Ranjan, AL. Ramanathan and **Virendra Bahadur Singh** (2019). Extreme climate event footprint at Delhi, India: A comparison of last one decade meteorological conditions. **Journal of Climate Change**, 5(1): 33-40.

(13) **Virendra Bahadur Singh** and AL. Ramanathan (2018). Suspended sediment dynamics in the meltwater of Chhota Shigri glacier, Chandra basin, Lahaul-Spiti Valley, Himachal Pradesh, India. **Journal of Mountain Science**, 15(1): 68-81.

(14) **Virendra Bahadur Singh**, AL. Ramanathan, Thupstan Angchuk, Naveen Kumar, Mohd Soheb, Arindan Mandal, Kalyan Biswal, Shyam Ranjan and Pramod Kumar (2018). Meteorological characteristics of the Chhota Shigri glacier, Lahaul-Spiti valley, Himachal Pradesh, Northern India. **Journal of Climate Change**, 4(2): 41-49.

(15) **Virendra Bahadur Singh**, AL. Ramanathan, A.K. Keshari, Shyam Ranjan, Naveen Kumar and Shailesh Kumar Yadav (2018). Climatic influence on hydrogeochemistry of meltwater draining from Chhota Shigri glacier, Himachal Pradesh, India. **Journal of Climate Change**, 4(1): 23-31.

(16) Manoj Kumar, AL. Ramanathan, Shyam Ranjan, **Virendra Bahadur Singh**, Naveen Kumar, Shailesh Kumar Yadav, M. Someshwar Rao, Susie Ritch and Prosun Bhattacharya (2018). Groundwater evolution and its utility in upper Ganges-Yamuna Alluvial plain of Northern India, India: Evidence from solute chemistry and stable isotope. **Groundwater for Sustainable**

**Development**, 7, 400-409.

- (17) **Virendra Bahadur Singh** and AL. Ramanathan (2017). Hydrogeochemistry of the Chhota Shigri glacier meltwater, Chandra basin, Himachal Pradesh, India: solute acquisition processes, dissolved load and chemical weathering rates. **Environmental Earth Sciences**, 76: 223, doi: 10.1007/s12665-017-6465-4.
- (18) **Virendra Bahadur Singh** and AL. Ramanathan (2017). Characterization of hydrogeochemical processes controlling major ion chemistry of the Batal glacier meltwater, Chandra basin, Himachal Pradesh, India. **Proceeding of National Academy of Sciences, India Section A: Physical Sciences**, 87(1): 145-153.
- (19) **Virendra Bahadur Singh**, AL. Ramanathan and Jose George Pottakkal (2016). Glacial runoff and transport of suspended sediment from the Chhota Shigri glacier, Western Himalaya, India. **Environmental Earth Sciences**, 75: 695, doi: 10.1007/s12665-016-5271-8.
- (20) **Virendra Bahadur Singh**, AL. Ramanathan and Arindan Mandal (2016). Hydrogeochemistry of high altitude lake: a case study of the Chandra Tal, Western Himalaya, India. **Arabian Journal Geosciences**, 9: 308, doi: 10.1007/s12517-016-2358-1.
- (21) Mohd Farooq Azam, AL. Ramanathan, Patrick Wagon, Christian Vincent, Anurag Linda, Etienne Berthier, Parmanand Sharma, Arindan Mandal, Thupstan Angchuk, **Virendra Bahadur Singh** and P.G. Jose (2016). Meteorological conditions, seasonal and annual mass balances of Chhota Shigri Glacier, western Himalaya, India. **Annals of Glaciology**, 57(71): 328-338.
- (22) Namrata Priya, Renoj J. Thayyen, AL. Ramanathan and **Virendra Bahadur Singh** (2016). Hydrochemistry and dissolved solute load of meltwater in a catchment of cold-arid trans-Himalayan region of Ladakh over an entire melting period. **Hydrology Research**, 47(6): 1224-1238.
- (23) **Virendra Bahadur Singh** and AL. Ramanathan (2015). Assessment of solute and suspended sediments acquisition processes in the Bara Shigri glacier meltwater (Western Himalaya, India). **Environmental Earth Sciences**, 74: 2009-2018.
- (24) **Virendra Bahadur Singh**, AL. Ramanathan and Parmanand Sharma (2015). Major ion chemistry and assessment of weathering processes of the Patsio glacier meltwater, Western Himalaya, India. **Environmental Earth Sciences**, 73: 387-397.

- (25) **Virendra Bahadur Singh**, AL. Ramanathan, Parmanand Sharma and Jose George Pottakkal (2015). Dissolved ion chemistry and suspended sediment characteristics of meltwater draining from Chhota Shigri glacier, western Himalaya, India. **Arabian Journal of Geosciences**, 8: 281-293.
- (26) **Virendra Bahadur Singh**, AL. Ramanathan, Jose George Pottakkal and Manoj Kumar (2015). Hydrogeochemistry of meltwater of the Chaturangi glacier, Garhwal Himalaya, India. **Proceeding of National Academy of Sciences, India Section A: Physical Sciences**, 85(1): 187-195.
- (27) **Virendra Bahadur Singh**, AL. Ramanathan, Arindan Mandal and Thupstan Angchuk (2015). Transportation of suspended sediment from meltwater of Patsio glacier, western Himalaya, India. **Proceeding of National Academy of Sciences, India Section A: Physical Sciences**, 85(1): 169-175.
- (28) **Virendra Bahadur Singh**, AL. Ramanathan and T. Kuriakose (2015). Hydrogeochemical assessment of meltwater quality using major ion chemistry: A case study of Bara Shigri glacier, western Himalaya, India. **National Academy Science Letters**, 38(2): 147-151.
- (29) **Virendra Bahadur Singh**, AL. Ramanathan, Jose George Pottakkal and Manoj Kumar (2014). Seasonal variation of the solute and suspended sediment load in Gangotri glacier meltwater, central Himalaya, India. **Journal of Asian Earth Sciences**, 79: 224-234.
- (30) Jon Telling, Alexandre M. Anesio, Martyn Tranter, Andrew Fountain, Thomas Nylen, Jon Hawkings, **Virendra Bahadur Singh**, Preeti Kaur, Michaela Musilova and Jemma Wadham (2014). Spring thaw ionic pulses boost nutrient availability and microbial growth in entombed Antarctic Dry Valley cryoconite holes. **Frontiers in Microbiology**, 5: 1-15, doi: 10.3389/fmicb.2014.00694.
- (31) Jose George Pottakkal, AL. Ramanathan, **Virendra Bahadur Singh**, Parmanand Sharma, Mohd Farooq Azam and Anurag Linda (2014). Characterization of subglacial pathways draining two tributary meltwater streams through the lower ablation zone of Gangotri Glacier, Garhwal Himalaya, India. **Current Science**, 107(4): 613-621.
- (32) Mohd Farooq Azam, P. Wagnon, C. Vincent, AL. Ramanathan, Anurag Linda and **Virendra Bahadur Singh** (2014). Reconstruction of the annual mass balance of Chhota Shigri Glacier (Western Himalaya, India) since 1969. **Annals of Glaciology**, 55(66): 69-80.
- (33) **Virendra Bahadur Singh**, AL. Ramanathan, Jose George Pottakkal, Parmanand Sharma, Anurag

Linda, Mohd. Farooq Azam and C. Chatterjee (2012). Chemical characterisation of meltwater draining from Gangotri Glacier, Garhwal Himalaya, India. **Journal of Earth System Sciences**, 121(3): 625-636.

- (34) Mohd Farooq Azam, Patrick Wagnon, Alagappan Ramanathan, Christian Vincent, Parmanand Sharma, Yves Arnaud, Anurag Linda, Jose George Pottakkal, Pierre Chevallier, **Virendra Bahadur Singh** and Etienne Berthier (2012). From balance to imbalance: a shift in the dynamic behaviour of Chhota Shigri Glacier (Western Himalaya, India). **Journal of Glaciology**, 58(208): 315-324.

### **Books Edited:**

- (1) **Virendra Bahadur Singh**, Sughosh Madhav, Rakesh Kumar Gupta, Perna Diwan and Amit Kumar (2025). Water Resources Management in Mountain Regions. Edited book, **Wiley publication**, p. 448, **ISBN: 978-1-394-24958-9**.
- (2) **Virendra Bahadur Singh**, Sughosh Madhav, Naresh Chandra Pant and Ravi Shekhar (2024). Weathering and Erosion Processes in the Natural Environment. Edited book, **Wiley publication**, p. 416, **ISBN: 978-1-394-15733-4**, DOI: <https://doi.org/10.1002/9781394157365>
- (3) Sughosh Madhav, **Virendra Bahadur Singh**, Manoj Kumar and Sandeep Singh (2023). Hydrogeochemistry of Aquatic Ecosystems. **Wiley publication**, p. 432, **ISBN: 978-1-119-87053-1**, DOI: <https://doi.org/10.1002/9781119870562>
- (4) Sughosh Madhav, Shyam Kanhaiya, Arun Lal Srivastav, **Virendra Bahadur Singh** and Pardeep Singh (2022). Ecological Significance of River Ecosystems: Challenges and Management Strategies. **Elsevier publication**, p. 507, **ISBN: 978-0-323-85045-2**, DOI: <https://doi.org/10.1016/C2020-0-02111-0>

### **Book Chapters:**

- (1) **Virendra Bahadur Singh** and AL. Ramanathan (2015). Meltwater quality and quantity assessment in the Himalayan glaciers. In: Hiroaki Furumai, AL. Ramanathan, Futoshi Kurisu, Absar Kazimi and Manish Kumar (eds) Trends in Asian Water Environmental Science and Technology. **Capital Publishers (New Delhi and Kolkata)** and **Co-published by Springer international publishing, Cham, Switzerland**, pp. 183-193, **ISBN: 978-3-319-39259-2**.



- (2) Manoj Kumar, Mukesh Kumar, Alok Kumar, **Virendra Bahadur Singh**, Senthil Kumar, AL. Ramanathan and Prosun Bhattacharya (2015). Arsenic distribution and mobilization: A case study of three districts of Uttar Pradesh and Bihar (India). In: AL. Ramanathan, Scott Johnston, Abhijit Mukherjee and Bibhash Nath (eds) Safe and Sustainable Use of Arsenic-Contaminated Aquifers in the Gangetic Plain: A Multidisciplinary Approach. **Capital Publishing Company, New Delhi, India** and **Co-published by Springer, International Publishing, Cham, Switzerland**, pp. 121-135, **ISBN: 978-93-81891-08-7**.
- (3) Shruti Dutta, AL. Ramanathan, Anurag Linda, Jose George Pottakkal, **Virendra Bahadur Singh** and Thupstan Angchuk (2014). Glacier Mass Balance and its Significance on the Water Resource Management in the Western Himalayas. In: N. Janardhana Raju, Wolfgang Gossel, AL. Ramanathan and M. Sudhakar (eds) Management of Water, Energy and Bio- resources in the era of Climate Change: Emerging Issues and Challenges. **Capital Publishing Company, New Delhi**, and **Co-published by Springer, the Netherlands**, pp. 70-81, **ISBN: 978-93-81891-06-3**.
- (4) **Virendra Bahadur Singh**, AL. Ramanathan, Jose George Pottakkal, Naveen Kumar and Parmanand Sharma (2014). Dissolved ion chemistry of Bara Shigri glacier meltwater, western Himalaya, India. In: J Sundaresan, Pankaj Gupta, K.M. Santosh and Ram Boojh (eds) Climate Change & Himalaya: Natural Hazards and Mountain Resources. **Scientific Publishers (India)**, pp. 22-29, **ISBN: 978-81-7233-881-7**.
- (5) **Virendra Bahadur Singh**, AL. Ramanathan, Jose George Pottakkal, Parmanand Sharma, Anurag Linda, C. Chatterjee, Thupstan Angchuk and Arindan Mandal (2013). Hydrochemistry of meltwater emerging from Raktvarn glacier, central Himalaya, India. In: J Sundaresan, Pankaj Gupta, K.M. Santosh and Ram Boojh (eds) Climate Change & Himalayan Ecosystem-indicator, Bio & Water Resources. **Scientific Publishers (India)**, pp. 109-118, **ISBN: 978-81-7233-847-3**.
- (6) **Virendra Bahadur Singh**, AL. Ramanathan, P.G. Jose, Manoj Kumar, Parmanand Sharma and Anurag Linda (2011). Hydro-Geochemical characteristics of Gangotri glacier. In: Vir Singh, Nanda Nautiyal, Suman Kalyani Apparusu and M.S.S. Rawat (eds) Climate change in the Himalayas, preserving the Third Pole for cooling the Earth. **Indus Publishing Company, New Delhi**, pp. 125-141, **ISBN: 978-81-7387-228-0**.

#### Conference Organization/ Presentations

- **Virendra Bahadur Singh** (2024). Invited Speaker, delivered a talk on “Hydrogeochemical characterization of meltwater draining from high altitude Himalayan glaciers in the



**“International Conference on Environment and Society: Traditional and Contemporary Perspectives (Mathematical and Computational Approach) IC-ESTCP-2024”** organised by School of Sanskrit & Indic Studies and School of Computational & Integrative Sciences, Jawaharlal Nehru University, New Delhi in association with Bharat Vikas Parishad, held on 29-30 January 2024 at Jawaharlal Nehru University, New Delhi, India.

- **Virendra Bahadur Singh** (2023). Participated in the **“National Workshop on Air Pollution: Its Implication, Mitigation and Planning Innovative Actions”** organized by Indira Gandhi National Open University (IGNOU), New Delhi and Shiksha Sanskriti Utthan Nyas, New Delhi, India, from 23-24 September 2023.
- **Virendra Bahadur Singh**, Naresh Chandra Pant, AL. Ramanathan and Sughosh Madhav (2020). “Characterization of weathering and hydrogeochemical processes controlling dissolved ion chemistry of meltwater draining from Western Himalayan glaciers, India” in **International Conference on Environmental Challenges and Solutions**, jointly organized by Shiksha Sanskriti Utthan Nyas, New Delhi, Manav Rachna International Institute of Research and Studies, Faridabad and Dakshina Foundation, India, 31 January-2 February 2020.
- **Virendra Bahadur Singh**, AL. Ramanathan and A. K. Keshari (2017). “Hydrological Characteristics of Chhota Shigri Glacier, Lahaul-Spiti Valley, Western Himalaya, India” in **INDO-UK (DST-UKIERI) Workshop on Bio-climatic Feedbacks of Melting Himalayan Ice Research Workshop and Planning Meetings** at School of Environmental Sciences, Jawaharlal Nehru University, New Delhi, 20-21 September 2017.
- **Virendra Bahadur Singh**, AL. Ramanathan and A. K. Keshari (2016). “Major ion chemistry of meltwater draining from Western Himalayan glaciers, India” in seminar **On Thin Ice: Arctic, Antarctic and the Himalayas**, organized by the Royal Norwegian Embassy, New Delhi and Jawaharlal Nehru University, New Delhi, India, 29-30 November 2016.
- **Virendra Bahadur Singh**, AL. Ramanathan, Jose George Pottakkal, Arindan Mandal, Shyam Ranjan and Thupstan Angchuk (2015). “Hydrological characteristics of the Chhota Shigri glacier, Western Himalaya, India” in **National Seminar on Past and Present Geochemical Processes Impacts on Climate Change & Annual General Body Meeting- 2015, Indian Society of Applied Geochemists, Hyderabad** at Jawaharlal Nehru University, New Delhi, India, 22-23 December 2015.

- **Virendra Bahadur Singh**, AL. Ramanathan and T Kuriakose (2015). “Hydrogeochemical attributes of the meltwater draining from Bara Shigri glacier, Western Himalaya, India” in **National Seminar on Past and Present Geochemical Processes Impacts on Climate Change & Annual General Body Meeting- 2015, Indian Society of Applied Geochemists, Hyderabad** at Jawaharlal Nehru University, New Delhi, India, 22-23 December 2015.
- **Virendra Bahadur Singh** and AL. Ramanathan (2015). Invited speaker in **International conference on “Global Environmental Change in the Himalayan Region: Controversies, Impact, Future”** and presented paper title “Glacier mass balance studies in Chhota Shiri glacier” at Indian Habitat Centre, New Delhi, India, 6-8 November 2015.
- **Virendra Bahadur Singh** and AL. Ramanathan (2015). Invited speaker in **International workshop on “Sustainable Water Resource Management: Perspective from Europe and South Asian”** and presented paper title “Sustainability of water quality of Indian Himalayan glacier meltwater” at German House for Research and Innovation, New Delhi, India, 28-29 September 2015.
- Arindan Mandal, Alagappan Ramanathan, Mohd Farooq Azam, Patrick Wagnon, Christian Vincent, Anurag Linda, Parmanand Sharma, Thupstan Angchuk, **Virendra Bahadur Singh**, Jose George Pottakkal, Naveen Kumar and Mohd Soheb (2015). Annual and seasonal mass balances of Chhota Shigri Glacier (benchmark glacier, Western Himalaya), India. **Geophysical Research Abstracts**, Vol. 17, EGU2015-14078.
- **Virendra Bahadur Singh** (2014). participated in “**16<sup>th</sup> Annual Conference of International Association for Mathematical Geosciences (IAMG)** held at Jawaharlal Nehru University, New Delhi, India, 17-20 October 2014.
- AL. Ramanathan and **Virendra Bahadur Singh** (2014). “Hydrochemistry of meltwater draining from Western Himalayan glaciers, Himachal Pradesh, India” in **11<sup>th</sup> International Symposium on Southeast Asian Water Environment (SEAWE11)** at Asian Institute of Technology, Bangkok, Thailand, 26-28 November 2014.
- **Virendra Bahadur Singh**, AL. Ramanathan, Jose George Pottakkal, Parmanand Sharma, Anurag Linda and Naveen Kumar (2012). Presented paper entitled “Evaluation of meltwater quality of Gangotri glacier, Grahwal Himalaya, Uttaranchal, India” in the **International Conference on Biosciences and Bioengineering: A Collaborative Approach** at IMS Engineering College,

Ghaziabad, India, 6-7 July 2012.

- **Virendra Bahadur Singh**, AL. Ramanathan, Jose George Pottakkal, Parmanand Sharma and Anurag Linda (2012). Presented paper entitled “Temporal variation in the chemical characteristics of meltwater draining from Chhota Shigri glacier, Western Himalaya, India” in the **National Seminar on Recent Trends in Environmental Sciences** at Department of Engineering Chemistry, NRI College of Engineering & Management, Gwalior, M.P, India, 5 June 2012.
- **Virendra Bahadur Singh** (2012). Participated in **International Workshop on Hindu Kush Himalayan Cryosphere Data Sharing Policy** at International Centre for Integrated Mountain Development (ICIMOD), Kathmandu, Nepal, 17-18 May 2012.
- **Virendra Bahadur Singh** (2012). Participated in **International Conference on Cryosphere of The Hindu Kush Himalaya: State of the Knowledge** at International Centre for Integrated Mountain Development (ICIMOD), Kathmandu, Nepal, 14-16 May 2012.
- **Virendra Bahadur Singh**, AL. Ramanathan, P.G. Jose, Parmanand Sharma, Anurag Linda and Naveen Kumar (2012). Presented paper entitled “Assessment of meltwater quality draining from Chhota Shigri Glacier, Lahaul-Spiti Valley, Himachal Pradesh, India” in the **National Seminar on Environmental Pollution and Its Mitigation Strategies** at School of Environmental Sciences, Jawaharlal Nehru University, New Delhi, India, 28-29 March 2012.
- **Virendra Bahadur Singh**, AL. Ramanathan, P.G. Jose, Parmanand Sharma, Anurag Linda and Naveen Kumar (2012). Presented paper entitled “Major ion chemistry of meltwater draining from Chhota Shigri Glacier, Western Himalaya, India” in the **National Conference on Sustainable Development of Groundwater Resources in Industrial Regions** at Department of Environmental Sciences & Engineering, Centre of Mining Environment, Indian School of Mines, Dhanbad, India, 22-23 March 2012.
- **Virendra Bahadur Singh** (2012). Participated in the **National Conference on Mangrove Wetlands and Near Shore Marine Ecosystems-From Sustainability Issues to Management & Restoration** held at School of Environmental Sciences, Jawaharlal Nehru University, New Delhi, India during 5-6 March 2012.
- **Virendra Bahadur Singh**, AL. Ramanathan, P.G. Jose, Parmanand Sharma and Anurag Linda (2011). Presented paper (poster) entitled “Hydro-geochemical characteristics of Chhota Shigri glacier, Western Himalaya, India” in the **National Seminar on Environmental Pollution and**

**Bioremediation** at School of Environmental Sciences, Jawaharlal Nehru University, New Delhi, India, 28-29 December 2011.

- **Virendra Bahadur Singh** (2011). Participation and valued organizer contribution in National Seminar on “**Modern and Palaeo Sediments: Implication to Climate, Water Resources and Environmental Changes & XXVIII Convention of Indian Association of Sedimentologists**” at School of Environmental Sciences, Jawaharlal Nehru University, New Delhi, India, 24-26 November 2011.
- Participated in the “**3-Day Familiarization Workshop in Scientific Ballooning**” at National Ballooning Facility, Tata Institute of Fundamental Research, Hyderabad, India, 13-15 December 2010.
- **Virendra Bahadur Singh**, AL. Ramanathan and P.G. Jose (2010). Presented paper entitled “Hydrochemical characteristic of Gangotri glacier, Garhwal Himalaya, India” in the **Second International Conference on Climate Change and Sustainable Management of Natural Resources** at Institute of Allied Sciences & Computer Application, ITM University- Gwalior, India, 5-7 December 2010.
- **Virendra Bahadur Singh**, AL. Ramanathan, P.G. Jose, Parmanand Sharma and Anurag Linda (2010). Presented paper entitled “Dissolved load characteristics of meltwater of Chhota Shigri Glacier, Lahaul-Spiti Valley, Himachal Pradesh, India” in the **International Conference on Cooling the Earth Tactics for Restoring Climate Order and Saving the Living Planet** at Department of Environmental Sciences, G. B. Pant University of Agriculture and Technology, Pantnagar, India, 15-17 November 2010.
- **Virendra Bahadur Singh**, AL. Ramanathan, P.G. Jose, Manoj Kumar, Parmanand Sharma and Anurag Linda (2010). Presented paper entitled “Hydro-geochemical characteristics of Gangotri glacier, Garhwal Himalaya, India” in the **International Conference on Cooling The Earth Tactics for Restoring Climate Order and Saving the Living Planet** at Department of Environmental Sciences, G. B. Pant University of Agriculture and Technology, Pantnagar, India, 15-17 November 2010.
- **Virendra Bahadur Singh** and AL. Ramanathan (2010). Presented paper entitled “Meltwater Characteristics of Raktvarn nala of Gangotri glacier, Garhwal Himalaya, India” in the **National Seminar on Sustainable Consumption, Climate Change and Consumer- Towards A Better**

**Future** at IIPA, New Delhi, India, 11-12 November 2010, Page 6.

- **Virendra Bahadur Singh**, AL. Ramanathan, P.G. Jose and Parmanand Sharma (2010). Presented paper entitled “Chemistry of melt water draining from snout of Gangotri glacier, Garhwal Himalaya, India” in the **National Seminar on Global Environmental Issues and Climate Change** at MCM DAV College for Women, Chandigarh, India, 9-10 November 2010, Page 14.
- **Virendra Bahadur Singh**, AL. Ramanathan, P.G. Jose, Parmanand Sharma and Anurag Linda (2010). “Climate Change Impact on Chhota Shigiri Glacier, Lahaul-Spiti Valley, Himachal Pradesh, India” presented and published paper in the proceeding (**ISBN: 978-93-80697-25-3**) of **International Conference on Emerging Technologies for Sustainable Environment** organized by Department of Civil Engineering, Z.H. College of Engineering & Technology, A.M.U, Aligarh, India, 29-30 October 2010, Page 201-206.
- **Virendra Bahadur Singh**, AL. Ramanathan, P.G. Jose, Parmanand Sharma and Anurag Linda (2010). “Effects of climate change on the major ion chemistry of meltwater of Chhota Shigri glacier, Lahaul-Spiti valley, Himachal Pradesh, India” presented paper in the **International Conference on Climate Change and Environment** at CUSAT, Kochi, Kerala, India, 24-26 October 2010, Page 49.
- **Virendra Bahadur Singh**, AL. Ramanathan and P.G. Jose (2010). “Major ions Chemistry of Nandanvan nala of Gangotri glacier, Garhwal Himalaya, India” presented and published paper in proceeding of the **National Conference on Green Chemistry** organized by SRM University, NCR campus Modinagar, Ghaziabad, India, 16-17 September 2010, Page 213-217.
- **Virendra Bahadur Singh**, AL. Ramanathan and P.G. Jose (2010). Participated and presented poster entitled, “Melt water quality of Gangotri glacier, Garhwal Himalaya, India” in the **National Seminar on Water Auditing** organized by University of Rajasthan, Jaipur (Rajasthan), India, 18-20 May 2010.
- AL. Ramanathan, **Virendra Bahadur Singh**, P.G. Jose, Parmanand Sharma, Anurag Linda, Manoj Kumar and M. F. Azam (2009). “Hydrogeochemistry of Chhota Shigri Glacier, Lahaul-Spiti valley, Himachal Pradesh” presented paper in the **National Symposium on Climate Change and Water Resources in India (CCWRIN)** organized by IAH at National Institute of Hydrology, Roorkee, India, 18-19 November 2009, Page 48-49.

- **College Research Grant** project entitled “Assessment of groundwater quality and associated human health risk in the area around Bhalswa landfill site, Delhi, India”, awarded by Ram Lal Anand College, University of Delhi, total grant Rs.100000.00, year 2023-2024.

#### Awards and Distinctions

- **Commonwealth Split-site Scholarship** tenable at the **University of Bristol, United Kingdom** for two periods of study i.e. first period of study was from 23<sup>rd</sup> November 2013 to 22<sup>nd</sup> May 2014 (6 months) and second period of study was from 22<sup>nd</sup> September 2014 to 21<sup>st</sup> March 2015 (6 months), awarded by **Commonwealth Scholarship Commission, United Kingdom**.
- Qualified **National Eligibility Test (NET)** in **Environmental Sciences**, organized by Agricultural Scientist Recruitment Board (Indian Council of Agricultural Research), Government of India in October 2013.
- Qualified **Junior Research Fellowship (JRF)** in **Environmental Sciences**, awarded by University Grants Commission (UGC), Government of India in October 2010.
- Qualified **CSIR-UGC NET & Junior Research Fellowship (JRF)** in **Earth, Atmospheric, Ocean & Planetary Sciences**, securing **All India 18<sup>th</sup> rank**, awarded by Council of Scientific and Industrial Research (CSIR), Government of India in December 2009.
- Qualified **UGC-NET** in **Environmental Sciences**, organized by University Grants Commission (UGC), Government of India in June 2009.
- Qualified **GATE examination** in **Life Sciences**, securing **All India 68<sup>th</sup> rank** in 2008.
- Best poster presentation award in **11<sup>th</sup> International Symposium on Southeast Asian Water Environment (SEAWE11)** at Asian Institute of Technology, Bangkok, Thailand, 26-28 November 2014.

#### Association With Professional Bodies

**Reviewer:** **Nature Communications**, Journal of Hydrology, Science of the Total Environment, Hydrological Processes, Catena, Environment Development and Sustainability, Applied Geochemistry, Marine Pollution Bulletin, Frontiers in Environmental Science, Journal of Earth System Sciences, Heliyon, Polar Science, Groundwater for Sustainable Development, Environmental Processes, Sustainable Water Resources Management, Proceedings of the Indian National Science Academy and

Other Activities

- Participated as **Scientist** in **Indian Arctic Expedition**, 5<sup>th</sup> batch at **Indian Scientific Station “Himadri”, Ny-Ålesund, Norway** (2016).
- Resource person in **Indo-Bhutan Training and Workshop on “Hydrochemistry, Isotope Hydrology and Hydrograph Separation Model and Syllabus Formulation”** held from January 17-26, 2018 at School of Environmental Sciences, Jawaharlal Nehru University, New Delhi, India.
- Teaching assistant (partial) in taking class for the course “Introduction to Environmental Sciences” for B.A students of **SLL & CS, Jawaharlal Nehru University, New Delhi** for monsoon semester, 2014-2015.
- Given training to the participants of “**2<sup>nd</sup> Indo-Swiss Capacity Building Programme on Himalayan Glaciology (Level-II)**” held from September 17-October 7, 2014 at Chhota Shigri glacier, Himachal Pradesh, India.

**Faculty Induction/Faculty Development programmes/ Refresher Course:**

- Participated in two weeks online UGC-sponsored Inter-Disciplinary Refresher Course in “**Environmental Studies and Eco-centric Development (IDC)**” organized by Centre for Professional Development in Higher Education, Malaviya Mission Teacher Training Centre [CPDHE (UGC-MMTTC)], University of Delhi, Delhi from 27<sup>th</sup> August 2024-9<sup>th</sup> September 2024 and obtained grade “A”.
- Participated and successfully completed “**NEP 2020 Orientation & Sensitization Programme**” under Malaviya Mission Teacher Training Programme (MM-TTP) of University Grants Commission (UGC) organized by Centre for Professional Development in Higher Education (UGC-MMTTC), University of Delhi from 2<sup>nd</sup> January 2024-11<sup>th</sup> January 2024.
- Participated and successfully completed online one week Faculty Development Programme on “**Research writing & Mathematical typesetting with LateX**” organized by Teaching Learning Centre, Ramanujan College, University of Delhi, Delhi in collaboration with Department of Statistics, Ram Lal Anand College, University of Delhi, Delhi, from 07-13 December 2023 and



obtained grade “A<sup>+</sup>”.

- Participated and successfully completed online two-week **Inter-disciplinary Refresher Course in “Environmental Science”** organized by Teaching Learning Centre, Ramanujan College, University of Delhi, Delhi in collaboration with Raghunath Girls Post Graduate College, Meerut and under the aegis of Ministry of Education, Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching, from 29 August-12 September 2023 and obtained grade “A<sup>+</sup>”.
- Participated and successfully completed **One-Week National Faculty Development Program in “Essential Skills for Genomics”** jointly organized by Ram Lal Anand College (Department of Microbiology); Centre for Innovation in Infectious Disease Research, Education and Training (CIIDRET), University of Delhi, South Campus; Institution of Eminence-Delhi School of Skill Enhancement and Entrepreneurship Development (IOE-DSSEED); University of Delhi (Skill Enhancement Course Committee) and Guru Angad Dev Teaching Learning Centre, SGTB Khalsa College, University of Delhi under the Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNTT) of Ministry of Education from 04 August-11 August 2023 and obtained grade “A”.
- Participated and successfully completed online two-week **Inter-disciplinary Refresher Course in “Advanced Research Methodology”** organized by Teaching Learning Centre, Ramanujan College, University of Delhi, Delhi in collaboration with Agrawal PG College, Jaipur and under the aegis of Ministry of Education, Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching, from 21 June-5 July 2023 and obtained grade “A<sup>+</sup>”.
- Participated and successfully completed online one-week **Faculty Development Programme (FDP) on “National Education Policy-2020”** organized by Teaching Learning Centre, Ramanujan College, University of Delhi, Delhi in collaboration with Dhing College, Dhing Nagoan, Assam and under the aegis of Ministry of Education, Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching, from 29 May-04 June 2023 and obtained grade “A<sup>+</sup>”.
- Participated and successfully completed 4-week **Faculty Induction/Orientation Programme (FIP) for Faculties in Universities/Colleges/Institute of Higher Education** organized by Teaching Learning Centre, Ramanujan College, University of Delhi, Delhi in collaboration with Army Institute of Education (AIE) affiliated with Guru Gobind Singh Indraprastha University, Delhi and under the aegis of Ministry of Education, Pandit Madan Mohan Malaviya National

Mission on Teachers and Teaching, from 23 April-22 May 2023 and obtained grade “A”.

**Practical Training:**

- Participated and successfully completed Tier III Training Programme on “**Ground Water Management and Rain Water Harvesting to Recharge Ground Water**” organized by Central Ground Water Board, SUO, New Delhi under the aegis of Rajiv Gandhi National Ground Water Training and Research Institute, Raipur held on 29 November 2023.
- Participated in the one-day training programme on “**Ground Water Management and Rain Water Harvesting to Recharge Ground Water**” organized by Central Ground Water Board, State Unit Office-Delhi, Department of Water Resources, RD & GR, Ministry of Jal Shakti held on 21 September 2022.
- Participated and successfully completed “**Indo-Swiss Capacity Building Programme On Himalayan Glaciology, Level-II**” held at Chhota Shigri Glacier, Himachal Pradesh, India (for field training) & School of Environmental Sciences, Jawaharlal Nehru University, New Delhi, India (for Classroom sessions), from 19 September to 22 November 2013.
- Participated and successfully completed “**Level-I Indo-Swiss Capacity Building Programme on Himalayan Glaciology**” held at School of Environmental Sciences, Jawaharlal Nehru University, New Delhi, India, from 1-27 April 2013.
- Training on “**Safe Handling of Radioactive Sources in Research Applications with the help of Lectures and Demonstrations**” held at School of Environmental Sciences, Jawaharlal Nehru University, New Delhi, India, from 09-12 September 2013.
- Training course on “**Hydrogeochemical Modeling using PHREEQC and MODFLOW**” organized by Department of Earth Sciences, Annamalai University, Tamilnadu and School of Environmental Sciences, Jawaharlal Nehru University, New Delhi, India, 21-31 January 2013.
- Training course on “**Hydrological Modelling using RS/GIS with Special Reference to Climate Change**” organized by National Institute of Hydrology, Roorkee, India and The Institution of Engineers (India), Roorkee Local Centre (RLC), 24-28 September 2012.
- “**Regional Training on Glacier Mass Balance in Kathmandu and on Yala glacier, Langtang Valley, Nepal**” organized by the International Centre for Integrated Mountain Development

(ICIMOD), Kathmandu, Nepal with the support of Norwegian Ministry of Foreign Affairs and the Department of state, United State of America, 26 April–12 May 2012.

- Training course on **“Snow Studies, Climate Change and Remote Sensing”** at Divecha Centre for Climate Change, Indian Institute of Sciences, Bangalore, India, 12-23 December 2011.
- Summer School (5 days), **“INTRAMIF summer school Science and Society”** conducted by **European Marie Curie Initial Training Network at University Pierre and Marie Curie (UPMC), Paris, France**, 22-26 August 2011.
- Training course (3 days) on **“Hydrological Data Entry & Processing using SWDES”** conducted by National Institute of Hydrology, Roorkee at Western Himalayan Regional Centre, National Institute of Hydrology, Jammu, India, 22-24 March 2011.
- Training course (3 days) on **“Hydrological Investigation for Conservation and Management of Lakes”** organized by National Institute of Hydrology, Roorkee, India, 1-3 March 2011.
- Training programme (5days) on **“Application of Hydrogeochemical Modeling in Water Research”** organized by Department of Earth Sciences, Annamalai University, India, 1-5 march 2010.
- Training programme (short term) on **“GIS Application in Hydrogeology and Environmental Geology”** by Prof. Wolfgang Gossal, Martin Luther University, Germany, conducted by the School of Environmental Sciences, Jawaharlal Nehru University, New Delhi, India, 16-18 February 2010.

**Subject skills and instruments handling:**

- Hydrology of Himalayan glaciers (Chhota Shigri, Patsio, Gaglu and Batal glaciers, Himachal Pradesh, India and Gangotri glacier, Uttarakhand, India).
- Hydro-geochemistry of Himalayan glaciers (Chhota Shigri, Bara Shigri, Batal, Patsio, Gaglu and Manimahesh glaciers, Himachal Pradesh, India and Gangotri and Chaturangi glaciers, Uttarakhand, India).
- Biogeochemistry (cryoconite holes) of Antarctic Valley (Taylor Valley, Antarctica) and Chhota Shigri glacier, Himachal Pradesh, India.
- Glacier mass balance (Chhota Shigri and Patsio glaciers, Himachal Pradesh, India).
- Glacier meteorology (Chhota Shigri glacier).

- Operational knowledge of Atomic Absorption Spectrometer (AAS), GPR, Ion Chromatograph (Dionex DX-5000), Shimadzu TOC-V<sub>CSN</sub> with TNM-1 total nitrogen analyzer, Picaro Isotope analyzer, Bran and Luebbe SEAL colorimetric Autoanalyser 3, Flow injection analyser (FIA-LaChat QuikChem 8500 series 2), Picarro L1120-i cavity ringdown spectrometer, Eurovector EA3000 Elemental Analyzer, Fluorometer (Turner design model 10-AU), Spectrophotometer, DGPS, Flame Photometer, Air Samplers, Water testing kits (including pH & conductivity meters), GPS locators, etc.