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## **EDUCATION**

**Research Associate** Hydrodynamic Processes and Ecosystems Laboratory, Oregon Graduate Institute of Science and Technology, Portland, OR, USA, 1998-2001.

**Ph. D.** Earth Sciences (Hydrogeology), Indian Institute of Technology, Roorkee, 1995.

**M.S.** Environmental Science and Engineering, Oregon Graduate Institute of Science and Technology, Beaverton, Portland, OR, USA, 1998.

**M.Sc.** Applied Geology, Indian Institute of Technology, Roorkee, 1984.

**B.Sc. (Hons.)** Geology Honours. Sambalpur University, Jyotivihar, Odisha, 1982.

**B. Tech.** Civil Engineering (Water), University of South Africa, Pretoria, RSA, 2013.

## **PROFESSIONAL EXPERIENCE**

**Scientist B (1987 - 1992), Scientist C (1993 – 1998), Scientist D/Superintending Scientist (Hydrogeologist) (1998 – present):**

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

Hydrogeological investigations; ground water resources assessment, development and management; ground water and surface water modeling; water supply investigations; ground water exploration, aquifer performance tests, well logging and well installation; design and economics of ground water structures; site characterization and risk assessment; ground water quality monitoring, regulatory permitting and compliance; monitoring of hydrograph stations and field sampling; environmental impact assessment, policy design and evaluation; remote sensing studies and GIS; artificial recharge of aquifers; watershed management; project coordination and management; preparation of technical memos, maps and reports.

**Advisor (Water Resources) (November 2007 – September 2013)**

**Ministry of Municipalities Affairs and Urban Planning, Kingdom of Bahrain**

Advisory work on all matters related to ground water resources assessment, development and management; planning, monitoring and coordination of work programmes; capacity building development; policy design and evaluation; assessment and formulation of project proposals; artificial recharge of aquifers; development of water information system; ground water data analysis and processing; formulation of policies and guidelines for dredging and reclamation, deep foundations, piling, geotechnical investigations and other infrastructure developments; environmental impact assessment; training and supervision of personnel on all ground water related issues including data collection, processing, analysis and reporting.

**Research Associate (July 1998 to September 2001):**

**Hydrodynamic Processes and Ecosystems Laboratory, Environmental Science and Engineering, Oregon Graduate Institute of Science and Technology (under Oregon Health and Sciences University since September 2001), Portland, OR, USA.**

Hydrological modeling and fluvial sediment transport of the major North American rivers (from north to south): the Yukon, Mackenzie and Fraser Rivers of Alaska and Canada, the Columbia, Snake, Cowlitz and Willamette Rivers of the Pacific Northwest, and the Eel, Sacramento and San Joaquin Rivers of California; impact of the large-scale climate processes, such as those of El Niño Southern Oscillation (ENSO), Pacific Decadal Oscillation (PDO), and California Sea Level Pressure (SLP) Index/California Pressure Anomaly (CPA) on the streamflow and sediment discharges; seasonality of sediment transport dynamics; Columbia River historical virgin flow estimation and the corresponding sediment/sand transport; separation of natural and anthropologic influences on the Columbia River mean flow and sediment transport; analysis of freshet styles and their timings; Columbia River disturbance processes and overbank flows; statistical analyses and computer simulations.

**Research Fellow (February 1985 to March 1987):**

**Department of Earth Sciences, Indian Institute of Technology, Roorkee, India.**

Exploration of Buried River Channels in parts of Thar Desert, India.

Monograph on Applications of Geosciences in Engineering.

**Research Fellow (August 1984 to January 1985):**

**Central Building Research Institute, Roorkee, India.**

Eco-development in Garhwal Himalaya with special reference to Landslides (geotechnical investigations, hazard zonation and mitigation).

**PROFESSIONAL AFFILIATIONS**

1. Geological Society of India (fellow);
2. Gondwana Geological Society (fellow).
3. Institution of Engineers (India) (fellow).
4. Indian Water Resources Society (fellow).
5. Maharashtra Academy of Sciences (fellow).
6. Indian Association of Hydrologists (fellow).
7. American Geophysical Union (member).
8. Geological Society of America (member).
9. Water Environment Federation (member).
10. Odisha Bigyan (Science) Academy (member).
11. Association of Hydrologists of India (member).
12. Indian Science Congress Association (member).
13. Water Science and Technology Association (member).
14. International Association of Hydrogeologists (member).
15. Saudi Arabian Water Environment Association (member).
16. International Association of Hydrological Sciences (member).
17. Indian Association of Soil and Water Conservationists (member).
18. International Association for Promoting Geoethics (member).

## AWARDS / HONOURS

1. **National Geoscience Award 2016 for Ground Water Exploration** including project development, hydrogeological studies and management of ground water resources, Ministry of Mines, Govt. of India.
2. Publisher's Choice Article on occasion of World Water Day 2017. (Article: Water Crisis in Africa: Myth or Reality? Publisher: M/s. Taylor and Francis)
3. Rashtriya Gaurav Award 2017, India International Friendship Society, New Delhi.
4. **Eminent Environmental Engineer Award 2006, Institution of Engineers (India).**
5. International Scientist of the Year Award 2006, International Biographical Centre, Cambridge, England.
6. Included in Who's Who in America, Marquis Publications, USA, since 2008.
7. Included in Marquis Who's Who in Asia, since 2007.
8. Included in Marquis Who's Who in the World, since 2006.
9. Included in Marquis Who's Who in Science and Engineering, since 2006.
10. First Prize for Best Scientific Writing, Indian Physics Association, Roorkee, 1986.
11. President, Hamrock Society, Indian Institute of Technology, Roorkee, 1983-84.
12. Under Officer, National Cadet Corps (Territorial Army), 1981-82.
13. National Scholarship, 1978-82.
14. About 50 certificates in school and college for several extra-curricular activities.

## SIGNIFICANT CONTRIBUTIONS

1. Studied the impacts of the large-scale climate processes, such as those of ENSO, PDO and CPA, on the streamflow and sediment transport of the major North American rivers. **First time in the world.**
2. Studied the seasonality of sediment transport in major North American rivers.
3. Estimated the virgin flow of the Columbia River, USA for the periods 1878-1929 and 1990-2004 and virgin sediment/sand transport for the period 1878-2004. **First time in the USA.**
4. Developed a proto-type model for separation of climate and anthropogenic influences on the Columbia River mean flow and sediment transport. **First time in the world.**
5. Made a historical analysis of the Columbia River hydrological disturbance processes, flow magnitudes, timings and freshet styles. Distinguished human and climate influences.
6. Examined the impacts of urbanization on the ground water regime in a fast growing city in central India. The conventional assumption that urbanization reduces urban ground water recharge was dismissed. Several other contributions.
7. Studied the ground water pollution in an industrial area in the coastal stretch of Maharashtra and suggested several remedial measures that could be applied to similar areas on the coastline of India for disposal of industrial wastes.
8. Depicted in detailed the hydrogeologic framework and hydrogeochemistry of the Koyna River basin (India), world-famous for the Koyna earthquake of 1967 (M7).
9. Evaluated the aquifer parameters of basalts through pumping tests in large diameter wells by the conventional methods and critically analyzed their constraints and advantages.
10. Studied in detailed the basaltic springs of the Western Ghats with special reference to their origin, distribution, classification, discharges, chemistry, and possible use as a potable source of water. **First time in India.**

11. Defined unique methods for estimation of regional specific yield and baseflow in a river with modified and/or regulated streamflow.
12. Estimated the ground water use in different sectors (drinking, agriculture and industry) in an over-exploited watershed, and critically examined the Groundwater Estimation Methodology (GEC) – 1997) in terms of sectoral uses of ground water.
13. Suggested several measures for ground water resources development and management in the Western Ghats region, India for solving water scarcity.
14. Carried out several pilot studies in the Kingdom of Bahrain for storm water injection. **First Time in Bahrain.**
15. Formulated aquifer management plan for the National Capital Region, Haryana State, India. **First such report in CGWB.**

### **IMPORTANT PROFESSIONAL SERVICES**

1. Associate Editor, Arabian Journal of Geosciences, Springer.
2. Associate Editor, Air, Soil and Water Research, Libertas Academica/SAGE, N. Zealand.
3. Editorial Board, Jour. of Environmental Science and Engineering, David Publishing Co.
4. Past-Editor, Journal of Geology and Mining Research, Academic Journals.
5. Past-Member, Editorial Board, Gondwana Geological Magazine, Nagpur, India.
6. Reviewer, Research Proposals for National Science Foundation, USA
7. Reviewer, Journal of Environmental Management, Elsevier, USA.
8. Reviewer, Pedosphere, Elsevier, People's Republic of China.
9. Reviewer, Hydrological Sciences Journal, IAHS, Oxfordshire, UK.
10. Reviewer, Journal of Environmental Monitoring and Assessment, Springer
11. Reviewer, Hydrogeology Journal, International Association of Hydrogeologists.
12. Reviewer, Journal of Stochastic Environmental Research and Risk Assessment.
13. Reviewer, Journal of Asian Earth Sciences, Elsevier.
14. Reviewer, Journal of Environmental Earth Sciences, Springer.
15. Reviewer, Journal of Agricultural Water Management, Elsevier.
16. Reviewer, Journal of Earth System Sciences, Indian Academy of Sciences.
17. Reviewer, Journal of Climate Change, Springer.
18. Reviewer, Climate Change Biology, Wiley
19. Reviewer, Journal of Soil Science and Environ. Management, Academic Journal.
20. Reviewer, Journal of Chemistry and Ecology, Taylor and Francis.
21. Reviewer, Journal of Geological Society of India.
22. Reviewer, Indian Journal of Geochemistry.
23. Reviewer, Current Science, Indian Academy of Sciences.
24. Reviewer, Arabian Journal of Geosciences, Springer.
25. Reviewer, Fresenius Environmental Bulletin, Parlar Scientific Publications.
26. Reviewer, British Journal of Applied Science and Technology, Science Domain Int.
27. Reviewer, Environmental Science and Pollution Research, Springer.
28. Reviewer, Journal of Water and Climate, International Water Association.
29. Reviewer, River Research and Applications, Wiley.
30. Reviewer, Water Resources Management, Springer.
31. Reviewer, International Journal of Environmental Science and Technology, Springer.
32. Reviewer, Journal of Environmental Processes, Springer.

33. Reviewer, Journal of Hydro-environment Research, Elsevier.
34. Reviewer, Environment, Development and Sustainability, Springer.
35. Reviewer, Global and Planetary Change, Elsevier.
36. Reviewer, Chemosphere, Elsevier.
37. Reviewer, Times Journal of Agriculture and Veterinary Sciences.
38. Reviewer, Open Journal of Oceanography, Peertechz.
39. Reviewer, Journal for Water Security, Aleksandras Stulginskis University, Lithuania.
40. Reviewer, Open Journal of Petroleum Engineering, Bentham Open.
41. Reviewer, Geofluids, Wiley/Hindawi
42. Domain Expert 2017, National Research Development Corporation, Govt. of India.
43. Member, Technical Committee, International Water Conf. 2016, Water Resources in Arid Areas: The Way Forward, Sultan Qaboos University, Muscat, Oman, March 12-16, 2016.
44. Convener, Workshop on Ground Water Development in the Alluvial Terrains of North Western India, Chandigarh, October 28, 2015.
45. Nodal Officer, Workshop on Treated Sewage Effluent (TSE) and its Utilization in the Kingdom of Bahrain, October 26, 2011.
46. Nodal Officer, Workshop on Aquifer Storage Recovery, Bahrain, May 26, 2008.
47. Vice-President, Indian Water Resources Soc., Nagpur Centre, India, 2007-2009.
48. Expert, Manual on “Integrated Fluorosis Mitigation: Challenges and Avenues”, United Nations Children’s Fund (UNICEF) and National Environmental Engineering Research Institute (NEERI), Nagpur, India, January – February 2007.
49. Organizing Secretary, 22<sup>nd</sup> National Convention of Environmental Engineers and National Seminar on “Rainwater Harvesting and Water Management” (RAINHARVEST 2006), Nagpur, India, November 2006.
50. Expert, Manual on “Wise Water Management - Water Reuse at Schools and Households in Rural Areas of India”, UNICEF-NEERI, Nagpur, India, June 2006.
51. Expert, Guidance Manual for Water Testing Laboratories, US Environmental Protection Agency, World Health Organization-NEERI, India, June 2006.
52. Convener, Sub-group for Optimization of Water Quality Monitoring Network, Water Quality Review Committee, Maharashtra State, India, 2005-06.
53. Joint Organizing Secretary, All India Seminar on “Challenging Problems in Water Resources Development and Management”, Nagpur, India, November 2005.
54. Joint Secretary, Indian Water Resources Society, Nagpur Centre, India, 2004-07.
55. Member of several executive and technical committees.

## RESEARCH PUBLICATIONS

### Papers in Peer-reviewed Publications

1. Herojeet R., **P.K. Naik**, M.S. Rishi, K. Dolma (under revision). Evaluation of heavy metal contamination in groundwater using indexing approaches and chemometric techniques. Journal of Hydrology.
2. Herojeet R., **P.K. Naik**, M.S. Rishi (2018). Evaluation of heavy metal contamination in soil using indexing approaches and chemometric techniques. International Journal of Environmental Science and Technology. DOI: <https://doi.org/10.1007/s13762-018-2081-4>

3. Matta, G., L. Gjyli, **P.K. Naik**, A. Kumar, J. Machel (2018) Comparative study on seasonal variation in hydro-chemical parameters of Ganga River water using comprehensive pollution index (CPI) at Rishikesh, Uttarakhand, India. *Desalination and Water Treatment*, 118: 87-95. DOI: 10.5004/dwt.2018.22487.
4. Matta G., A. Kumar, A. Kumar, **P. K. Naik**, A. Kumar (2018). Assessment of Heavy Metals Toxicity and Ecological Impact on Surface Water Quality Using HPI in Ganga River. *INAE Letters (INAE: Indian National Academy of Engineering)*, 3(3):123-129. <https://doi.org/10.1007/s41403-018-0041-4>
5. Matta G., A. Kumar, A.K. Tiwari, **P.K. Naik**, R. Berndtsson (2018) HPI appraisal of concentrations of heavy metals in dynamic and static flow of Ganga River System. *Environment, Development and Sustainability*. <https://doi.org/10.1007/s10668-018-0182-3>
6. Anantha Rao. D., **P. K. Naik**, S. K. Jain, E. N. Dhananjaya Rao, K. Vinod Kumar (2018). Assessment of vulnerability zones for ground water pollution using GIS-DRASTIC-EC model: a field-based approach. *Journal of Earth System Science*, 127:49. <https://doi.org/10.1007/s12040-018-0944-1>.
7. Matta G., A. Kumar, **P.K. Naik**, A.K. Tiwari, R. Berndtsson (2018). Ecological Analysis of Nutrient Dynamics and Phytoplankton Assemblage in the Ganga River System, Uttarakhand, Taiwan Water Conservancy, 66(1).
8. **Naik, P.K.**, M. Mojica, F. Ahmed, and S. Al-Mannai (2017). Stormwater injection in Bahrain: pilot studies. *Arabian Journal of Geosciences*.10: 452, 2017. DOI: <https://doi.org/10.1007/s12517-017-3232-5>.
9. Matta, G., A. Kumar, D.P. Uniyal, P. Singh, A. Kumar, G.K. Dhingra, A. Kumar, **P.K. Naik**, N. G. Shrivastva (2017). Temporal assessment using WQI of River Henwal, a tributary of river Ganga in Himalayan region. *International Journal for Environmental Rehabilitation and Conservation*, VIII (1): 187-204.
10. **Naik, P.K** (2017). Water crisis in Africa: myth or reality. *International Journal of Water Resources Development*, 33(2): 326-339. DOI: 10.1080/07900627.2016.1188266.
11. Thakur T., M.S. Rishi, **P.K. Naik**, and P. Sharma (2016). Elucidating hydrochemical properties of groundwater for drinking and agriculture in parts of Punjab, India. *Environmental Earth Sciences*, 75(6): 467, DOI: 10.1007/s12665-016-5306-1.
12. **Naik P.K.**, and D.A. Jay (2011). Distinguishing human and climate influences on the Columbia River: Changes in mean flow and sediment transport. *Journal of Hydrology*, 404 (3-4): 259-277.
13. Jay, D.A., and **P.K. Naik** (2011). Distinguishing human and climate influences on hydrological disturbance processes in the Columbia River, USA. *Hydrological Sciences Journal*, 56 (7), 1186-1209.
14. **Naik, P.K.**, and D.A. Jay (2011). Human and climate impacts on Columbia River hydrology and salmonids. *River Research and Applications*, 27 (10):1270-1276.
15. **Naik, P.K.**, and D.A. Jay (2011). Distinguishing human and climate influences on the Columbia River: changes in the disturbances processes. In: D. Yang, P. Marsh, A. Gelfan (Eds.), *Cold Regions Hydrology in a Changing Climate*, Proceedings of the symposium H2 held during XXV IUGG2011 General Assembly on 'Earth on the Edge: Science for a Sustainable Planet', Melbourne, Australia, 28 June - 7 July 2011, IAHS Publ. 346, 21-26.
16. **Naik, P.K.**, and D.A. Jay (2011). Separation of climate and anthropogenic influences on Columbia River mean flow and sediment transport. In: S.W. Franks, E. Boegh, E. Blyth,

- D.M. Hannah, K.K. Yilmaz (Eds.), *Hydro-climatology: Variability and Change*, Proceedings of the symposium J-H02 held during XXV IUGG2011 General Assembly on 'Earth on the Edge: Science for a Sustainable Planet', Melbourne, Australia, 28 June - 7 July 2011, IAHS Publ. 344, 157-162.
17. **Naik, P.K.** (2009). Impact of National Watershed Development Programme for Rainfed Agriculture – a case study. *Indian Journal of Soil Conservation*, 37 (3), 230-235.
  18. **Naik, P.K.**, A.K. Awasthi, A.V.S.S. Anand, and P.N. Behera (2009). Hydrogeochemistry of the Koyna River basin, India. *Environmental Earth Sciences*, 59 (3), 613-629.
  19. **Naik, P.K.** and A.K. Awasthi (2009). Ground water resources development in the Western Ghats, India. In: A.L. Ramanathan, P. Bhattacharya, A.K. Keshari, J. Bundschuh, D. Chandrasekharam, S.K. Singh (Eds.), *Assessment of Groundwater Resources and Management*, I.K. International Publication, 502 p.
  20. **Naik, P.K.**, J.A. Tambe, B.N. Dehury, and A.N. Tiwari (2008). Impact of urbanization on the groundwater regime of a fast growing city in central India. *Environmental Monitoring and Assessment*, 146 (1-3): 339-373.
  21. **Naik, P.K.**, B.N. Dehury, and A.N. Tiwari (2007). Groundwater pollution around an industrial area in the coastal stretch of Maharashtra State, India. *Environmental Monitoring and Assessment*, 132 (1-3): 207-233.
  22. **Naik, P.K.**, and A.K. Awasthi (2007). Estimation of shallow aquifer parameters from large-diameter wells in basalts. *Journal of Geological Society of India*, 69, 949-958.
  23. **Naik, P.K.**, and K. Keerthiseelan (2007). Ground water utilization in Raver Taluka, District Jalgaon, Maharashtra. *Gondwana Geological Magazine Spl. Publication*, 11: 1-12.
  24. **Naik, P.K.**, D. Prakash, and A.K. Awasthi (2007). Thickness estimation of Deccan Flood Basalt of the Koyna area, Maharashtra (India) and implications for recurring seismic activity. *Current Science*, 92 (7): 877-878.
  25. **Naik P.K.**, and D. Prakash (2006). Paradigm shift in water resources development and management. *Current Science*, 91(10): 1304.
  26. **Naik P.K.**, and D. Prakash (2006). High elevation springs – who owns them? *Current Science*, 91(9): 1126-1127.
  27. **Naik, P.K.**, and A.K. Awasthi (2005). Ground water resources development in the Koyna River basin – implications for the Western Ghats region, Maharashtra. *Journal of the Indian Water Resources Society*, 25 (3): 25-32.
  28. **Naik, P.K.**, and D.A. Jay (2005). Estimation of Columbia River virgin flow: 1879-1928. *Hydrological Processes*, 19 (9): 1807-1824.
  29. **Naik, P.K.**, and D.C. Singhal (2004). BBS Singhal – a legend in the Indian hydrogeology. *Hydrogeology Journal*, 12 (4): 476-477.
  30. **Naik, P.K.**, and A.K. Awasthi (2003). Groundwater resources assessment of the Koyna River basin, India. *Hydrogeology Journal*, 11(5): 582-594.
  31. **Naik, P.K.**, and A.K. Awasthi (2003). Neotectonic activities in the Koyna River basin – a synopsis. *Gondwana Geological Magazine Spl. Publication*, 5: 157-163.
  32. **Naik, P.K.**, and A.K. Awasthi (2003). Groundwater resources development in the Deccan Trap country of the Western Ghats, India. In: J. Krasny, Z. Hrkal, J. Bruthans (Eds.), *Groundwater in Fractured Rocks. IHP-VI, Series on Groundwater No. 7*, UNESCO, Paris, ISBN 92-9220-002-X.
  33. **Naik, P.K.**, A.K. Awasthi, and P.C. Mohan (2002). Springs in a head water basin in the Deccan terrain of the Western Ghats, India. *Hydrogeology Journal*, 10(5): 553-565.

34. **Naik, P.K.**, and D.A. Jay (2002). Estimation of the Columbia River virgin flow. In: G. Gelfenbaum and G.M. Kaminsky (Eds.), Southwest Washington Coastal Erosion Workshop Report 2000. U.S. Geological Survey Open-File Report 02-229, pp. 68-74.
35. Jay, D.A. and **P.K. Naik** (2002). Separating human and climate impacts on Columbia River hydrology and sediment transport. In: G. Gelfenbaum and G.M. Kaminsky (Eds.), Southwest Washington Coastal Erosion Workshop Report 2000. U.S. Geological Survey Open-File Report 02-229, pp. 38-48.
36. **Naik, P.K.**, A.K. Awasthi, A.V.S.S. Anand, and P.C. Mohan (2001). Hydrogeologic framework of the Deccan terrain of the Koyna River basin, India. *Hydrogeology Journal*, 9 (3): 243-264.
37. Jay, D.A., and **P.K. Naik** (2000). Climate effects on the Columbia River sediment transport. In: G. Gelfenbaum and G.M. Kaminsky (Eds.), Southwest Coastal Erosion Workshop Report 1999. U.S. Geological Survey Open-File Report 00-439, pp. 97-106.
38. **Naik, P.K.**, A.K. Awasthi, and P.K. Agarwal (1995). On the origin and classification of springs in the Western Ghats, Maharashtra. *Gondwana Geological Magazine*, 10: 55-62.
39. **Naik, P.K.**, and P.K. Agarwal (1995). An assessment of public awareness on groundwater pollution. *Hydrology Journal*, Vol. XVIII (3-4): 87-98.
40. **Naik, P.K.** (1993). On harnessing the springs in the Western Ghats, Maharashtra. *Bhujal News, Quarterly Journal of Central Ground Water Board, Ministry of Water Resources, Government of India*, 8(2): 13-18.

### **Papers in Conference Proceedings**

#### ***Full Papers***

41. **Naik, P.K.**, S. K. Jain, M. L. Angurala, S. Pandey, R. G. Krishnan, Iti Gupta, B. P. Singh, D. Gnanasundar, F. Alam, D. AnanthaRao (2016). Aquifer mapping and formulation of aquifer management plan for the National Capital Region, Haryana – a synopsis. *Bhujal Manthan 2* on ‘Aquifer Mapping and Ground Water Management’, New Delhi, November 29, 2016.
42. **Naik, P.K.**, S. K. Jain, M. L. Angurala, S. Pandey, R. G. Krishnan, Iti Gupta, B. P. Singh, D. Gnanasundar, F. Alam, D. Anantha Rao (2015). Aquifer mapping and formulation of aquifer management plan for the National Capital Region, Haryana – a synopsis, Workshop on ‘Ground Water Management in Alluvial Terrains of North Western India’, Chandigarh, October 28, 2015.
43. **Naik, P.K.** (2015). Remediation of arsenic in ground water. Workshop on ‘Arsenic Contamination in Groundwater’, Chandigarh, India, March 26, 2015.
44. **Naik, P.K.**, and A.K. Awasthi (2014). Estimation of baseflow in a river with modified and/or regulated streamflow. National Conference on ‘Water and its Sustainability in Mining and Other Environment - Vision 2050 (WSME 2014)’, Indian School of Mines, Dhanbad, 28-29 March 2014.
45. **Naik, P.K.**, and A.K. Awasthi (2012). A new classification for basaltic springs in the Western Ghats, India and a note on their protection and ownership. Fifth International Groundwater Conference on ‘The Assessment and Management of Groundwater Resources in Hard Rock Systems with special reference to Basaltic Terrain’, Aurangabad, December 18-21.



46. **Naik, P.K.**, and D.A. Jay (2010). Distinguishing human and climate-induced contributions to the Columbia River hydrology. World Water Week 2010, Theme: Responding to Global Changes: The Water Quality Challenge – Prevention, Wise Use and Abatement, Stockholm, September 5-11, 2010 (poster).
47. **Naik, P.K.**, and A.K. Awasthi (2009). Estimation of baseflow in a river with modified and/or regulated streamflow. Joint International Convention: 8<sup>th</sup> IAHS Scientific Assembly and 37<sup>th</sup> IAH Congress on ‘Water: A Vital Resource under Stress – How Science can Help’, Hyderabad, India, September 6-12, 2009 (poster).
48. **Naik, P.K.**, P.K. Parchure, and S.K. Bhatnagar (2006). Water resources planning and management in the face of global warming. In: Proc., 22<sup>nd</sup> National Convention of Environmental Engineers and National Seminar on ‘Rainwater Harvesting and Water Management’, Nagpur, India, November 2006, pp. 486-487.
49. **Naik, P.K.** (2006). Water resources development and management: Changing philosophy. In: Proc., National Seminar on ‘Interlinking of Rivers in India’, The Institution of Engineers (India), Nagpur, India, September 2006, pp. 109-110.
50. **Naik, P.K.**, and A.K. Awasthi (2006). Ground water resources development in the Western Ghats, India. In: Proc., International Workshop on ‘Impacts of Reforestation of Degraded Land on Landscape Hydrology in the Asian Region’, Roorkee, India, March 2006 (paper in CD).
51. **Naik, P.K.**, and A.K. Awasthi (2006). Role of springs in regeneration of forests in the Western Ghats, India. In: Proc., International Workshop on ‘Impacts of Reforestation of Degraded Land on Landscape Hydrology in the Asian Region’, Roorkee, India, March 2006 (paper in CD).
52. **Naik, P.K.**, P.K. Jain, R.R. Shende, V.P. Nawale, K.B. Sahoo, K.N. Murthy, and K.P. Banerjee (2005). In: Proc., Tackling ground water scarcity in Nagpur district, Maharashtra. All India Seminar on ‘Challenging Problems in Water Resources Management and Development’, Nagpur, India, November 2005, pp. 141-152.
53. Jain, P.K., D.N. Mandal, and **P.K. Naik** (2005). Ground water resources potential of Solapur district, Maharashtra. In: Proc., All India Seminar on ‘Challenging Problems in Water Resources Management and Development’, Nagpur, India, November 2005, pp. 153-166.
54. **Naik, P.K.**, D. Venkateshwaran (2005). Hydrogeology of Maharashtra. In: Manual for Training Programme on ‘Water Management and Rainwater Harvesting’, Central Ground Water Board, Ministry of Water Resources, Govt. of India, February 2005, pp. 8-21.
55. **Naik, P.K.**, B. Lamsoge, and D.Y. Sirsikar (2004). Planning conjunctive use practices – a prerequisite for irrigation development in India. In: Proc., 20<sup>th</sup> National Convention of Civil Engineers and National Seminar on ‘Irrigation Development in India’, Nagpur, India, October 2004, pp. 94-100.
56. **Naik, P.K.**, P.K. Jain, and D.N. Mandal (2002). Impact of the National Watershed Development Programme for rainfed agriculture – a case study. In: Proc., Seminar on ‘Drought and Water Resources’, Nagpur, India, April 2002, pp.107-116.
57. Agarwal, P.K., and **P.K. Naik** (1992). Impact of large reservoirs on groundwater recharge in Western Ghats of Maharashtra: A gain to hydrogeological environment. In: Proc., National Seminar on ‘Large Reservoirs: Environmental Loss or Gain?’, Nagpur, India, February 1992, pp. 301-304.

58. **Naik, P.K.** (1990). Possibilities of surface water development and artificial recharge of aquifers in parts of Western Ghats, Maharashtra. In: Proc., All India Seminar on 'Appropriate Methods of Artificial Recharge of Groundwater in Hard Rock Areas', Hyderabad, India, July 1990, pp. 1.7.1-1.7.4.
59. Agarwal P.K., and **P.K. Naik**, (1990). Artificial recharge in Deccan Trap areas of Maharashtra. In: Proc., All India Seminar on 'Appropriate Methods of Artificial Recharge of Groundwater in Hard Rock Areas', Hyderabad, India, July 1990, pp.1.7.9-1.7.12.
60. **Naik, P.K.** (1990). Drinking water problem in parts of Western Ghats, Maharashtra. In: Proc., National Seminar on 'Challenging Problems in Water Supply Engineering', Nagpur, India, October 1990, pp. 39-41.

### *Abstracts (Published)*

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2. “Climate Change Impacts on Water Resources in Chhattisgarh: Understanding Issues of Floods and Droughts”, March 8, 2018.
3. “Perils of water in Punjab”, Chandigarh Science Congress, Centre of Advanced Studies in Geology, Punjab University, Chandigarh, January 26, 2015.
4. “Impact of urbanization on groundwater regime in a fact growing city in India”, World Water Week, August 24, 2011.
5. “Distinguishing human and climate-induced contributions to the Columbia River hydrology”, World Water Week 2010, September 2010.
6. “Role of springs in regeneration of forests in the Western Ghats, India”, International Workshop on ‘Impacts of Reforestation of Degraded Land on Landscape Hydrology in the Asian Region’, National Institute of Hydrology, Roorkee, India, March 07, 2006.
7. “Springs of the Western Ghats of Maharashtra and environmental concerns”, Institute of Science, Nagpur, India, January 13, 2005.
8. “Conjunctive use of water resources, watershed management, and estimation of ground water resources in canal command areas”, Workshop on “Techno-economic appraisal of water resources projects”, Central Water Commission (CWC), Nagpur, India, October 21, 2003 (CWC invitation).
9. “Ground water monitoring”, Government Polytechnic, Nagpur, June 17, 2003.
10. “El Niño impacts on water resources”, Institution of Engineers (India), Nagpur Centre, Nagpur, India, May 02, 2003.
11. “Origin and occurrence of springs”, Shivaji Science College, Nagpur, India, July 12, 2002.

### **PROFESSIONAL TRAINING**

1. ArcGIS Desktop, Environmental Systems Research Institute, USA at the Rajiv Gandhi National Ground Water Training & Research Institute, Raipur, October 23-25, 2018.

2. Facilitation Skills, Department of Personnel and Training, Govt. of India at Yashwantrao Chavan Academy of Development Administration, Pune, March 23-25, 2017.
3. Management of Training, Department of Personnel and Training, Govt. of India at Chhattisgarh Academy of Administration, Raipur, August 28, 2017 to September 1, 2017.
4. Right to Information, Department of Personnel and Training, Govt. of India at Chhattisgarh Academy of Administration, Raipur, January 04-05, 2017.
5. Evaluation of Training, Department of Personnel and Training, Govt. of India at Gopabandhu Academy of Administration, Bhubaneswar, December 26-30, 2016.
6. Design of Training, Department of Personnel and Training, Govt. of India at Chhattisgarh Academy of Administration, Raipur, September 26-30, 2016.
7. Direct Training Skills, Department of Personnel and Training, Govt. of India at Chhattisgarh Academy of Administration, Raipur, July 11-15, 2016.
8. Groundwater Modeling with iMOD, Deltares Academy (The Netherlands), New Delhi, March 8-10, 2016.
9. Administration and Finance, Rajiv Gandhi National Ground Water Training Institute, Raipur, India, September 21- October 1, 2015.
10. Statistical and Hydrograph Analysis Module of GEMS, Rajiv Gandhi National Ground Water Training & Research Institute, Faridabad, India, November 27 - December 02, 2006.
11. Management Principles and Practices, Rajiv Gandhi National Ground Water Training & Research Institute, Bhopal, India, December 19-30, 2005.
12. Water Information System & Data Online Management (WISDOM), Rolta India Ltd, National Water Academy, Pune, India, February 21-25, 2005.
13. WINDOWS 2000 Administration and Maintenance of GEMS, Tata Info Tech (India) Pvt. Ltd., Faridabad, India, February 17 - March 7, 2003.
14. Relational Database Management Systems, Oracle 8i and Oracle DBA, Electronic Research & Development Corp. of India, Noida, India, May 6-24, 2002.
15. Stocktaking and Upgradation Skills in GWDES, DHV Consultants, Bangalore, India, September 11-12, 2002.
16. CORMIX Training Workshop, United States Environmental Protection Agency, Portland, Oregon, USA, March 15-17, 2000.
17. Applications of Remote Sensing and GIS in Groundwater Exploration, Indian Space Research Organization, Faridabad, India, August 17 - September 25, 1992.