Professor,
School of Studies in Geology &WRM,
Pt. Ravishankar Shukla University,
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Ninad Bodhankar

Research Experience

More than 25 years, in chronological order below

1987–1988 Master of Philosophy Hydrogeology

Research scholar

- Pursued research under supervision of Professor A. S. Dave at the Department of Geology, Pt. Ravishankar Shukla University, Raipur.
- The outcome of the research work is, as a thesis entitled, Hydrogeological investigations of Kulhi river basin, district Rajnandgaon, Madhya Pradesh.
- The thesis comprises details on field investigations for geology, geomorphology, groundwater occurrence and movement and quality of groundwater in the Kulhi river basin. Also, remote sensing techniques viz. visual interpretation of satellite imagery data was also incorporated during the course of work.
- On the basis of evaluation of the marks obtained in theory & practical examinations and thesis grading, have secured first position in order of merit, in the University examination.

1990–1992 Doctor of Philosophy Hydrogeology

Research Scholar

- Pursued research under the supervision of Dr. U. C. Singh at the School of Geology, Pt. Ravishankar Shukla University, Raipur.
- The outcome of the research work, is as a thesis entitled, Perspective analysis of hydrogeological conditions of the Amner river basin, district Rajnandgaon, Madhya Pradesh.
- The thesis comprises detailed study on geology, geomorphology, groundwater occurrence and movement, geophysical investigations using electrical resistivity method, remote sensing techniques, aquifer parameter evaluation, and groundwater quality estimation.
- On the basis of above, the thesis concluded with the estimation of water balance study of the Amner river basin. Potential groundwater harvesting zones were suggested for future exploitation.

1994–1996 Research Fellowship

Indira Gandhi Fellowship for Environmental Conservation & Management

- The fellowship was instituted by Ministry of Environment, Government of Madhya Pradesh and monitored by Environmental Planning and Coordination Organisation, Bhopal.
- Research on; Management of groundwater pollution due to urbanisation in and around Raipur, Madhya Pradesh, was worked at.
- The work included detailed investigation of geology, groundwater occurrence and movement, and quality of groundwater.
- The impact of land-use practices, sewage disposal system, industries and agriculture practices on the groundwater quality has been highlighted.
- The study has also suggested remedial measures that can be incorporated as a policy for all the urban centres in the State.

1994–1996 **Research Project**

Board of Research in Nuclear Sciences Project

- The research project was sanctioned by the Department of Atomic Energy, Government of India for, Groundwater recharge study in the western part of Chhattisgarh Basin using isotope techniques.
- This work was carried out in collaboration with Isotope Hydrology Section, Isotope Division, Bhabha Atomic Research Centre, Mumbai.
- Stable environmental isotope measurements and chemical analysis of groundwater samples was the basis of the investigation, which was correlated with the prevailing geological and geomorphological conditions and thus recharge areas were delineated.
- The delineated recharge areas were call for to be conserved so as to facilitate and maintain groundwater balance in the area.

1998–2001 **Research Project**

UNDP/IAEA/RCA Project

- The research coordination project (RCA) was sanctioned by United Nations Development Programme and International Atomic Energy Agency, Vienna to Dr. K. M. Kulkarni, Scientist, Isotope Hydrology Section, Isotope Division, Bhabha Atomic Research Centre, Mumbai.
- Associated as Co-investigator to work on, Access to clean drinking water (RAS/8/084): Application of isotope techniques to investigate impact of urbanisation on the karstic aquifer around Raipur city, Madhya Pradesh.

1998–2001 **Research Project**

IAEA/CRP Project

- The coordinated research project (CRP) was sanctioned by International Atomic Energy Agency, Vienna to Dr. U. K. Sinha, Scientist, Isotope Hydrology Section, Isotope Division, Bhabha Atomic Research Centre, Mumbai.
- Associated as Co-investigator to work on, Assessment of aquifer systems near major urban centres such as Calcutta and Raipur in India using isotope techniques IAEA/CRP (F3.30.10).

Education

1981–1984 **Bachelor of Science** **Pt. Ravishankar Shukla University**

- Graduated in First division, with the following subject combination Physics Mathematics, Geology and English from Government Science College, Raipur, one of the oldest institutions in education.

1984–1987 **Master of Technology** **Pt. Ravishankar Shukla University**

- Passed with 2nd position in order of merit for the post-graduate degree in Applied Geology from Government College of Engineering & Technology, Raipur.
- During the course, independent geological mapping around Jabalpur and mines training at Khetri Copper Deposit, Rajasthan were carried out.

1987–1988 **Master of Philosophy** **Pt. Ravishankar Shukla University**

- Passed with 1st position in order of merit for the degree of Master of Philosophy in Geology, with hydrogeology as specialisation.
- A thesis entitled, Hydrogeological investigations of Kulhi river basin, district Rajnandgaon, Madhya Pradesh was submitted under the supervision of Dr. A. S. Dave.

1990–1992 **Doctor of Philosophy** **Pt. Ravishankar Shukla University**

- A thesis entitled, Perspective analysis of hydrogeological conditions of the Amner river basin, district Rajnandgaon, Madhya Pradesh was submitted under the supervision of Dr. U. C. Singh.

Personal Information

Name	Ninad Bodhankar
Date of birth	12th May, 1965
Address (Home)	96, Samta Colony, Raipur 492001, India.
Cellphone	0091 9826515859
Designation	Professor & Head
Office	School of Studies in Geology & Water Resources Management, Pt. Ravishankar Shukla University, RAIPUR – Chhattisgarh State – 492010 – INDIA.
Area of specialisation	Hydrogeology

Training

National

1. Four-week UGC sponsored Refresher Course in Remote Sensing applications in mineral and water resources evaluation, from 04-10-1990 to 31-10-1990 at Bharathidasan University, Tiruchirapalli;
2. DST sponsored SERC School programme on Geological mapping in volcanic terranes (Deccan Traps) from 10th to 29th September 1997 at Nagpur, organised by Geological Survey of India Training Institute;
3. Four-week UGC sponsored Refresher Course in Landscapes and processes organised by the Geology Department, M. S. University of Baroda, Vadodara from 13th November to 5th December, 2000;
4. Four-week UGC sponsored Refresher Course in Environmental Science (Geology) conducted at Department of Geology, University of Pune from 25th March to 22nd April, 2002.
5. National Workshop on Computer Applications in Geology, Department of Geology, Andhra University, Visakhapatnam, August 25 – 27, 2003;
6. Workshop on Emerging Challenges in Water Resources before Chhattisgarh State, Central Groundwater Board, Raipur, December 12, 2003.
7. Training Course on "GIS Application in Disaster Management" from 16 – 21 May 2005 at National Institute of Rural Development, Hyderabad.
8. ISRO-Sponsored certificate course "NNRMS Remote Sensing & GIS Applications to Water Resources (N-WR)", May 5 to June 27, 2014, IIRS Dehradun.

International

1. UNDP/IAEA/RCA Regional Field Training Course on Application of Isotope and Chemical Techniques to Groundwater Problem; organised by International Atomic Energy Agency in cooperation with the Government of India through Bhabha Atomic Research Centre, Mumbai; 30 November – 11 December, 1998;
2. First Assessment Workshop on Development of Hydrological Dynamic Simulation Models for Managing Drinking Water Resources; organised by International Atomic Energy Agency in cooperation with the Government of Viet Nam through Centre for Nuclear Techniques, **Ho Chi Minh City, Viet Nam**; 27 September – 1 October, 1999;
3. First Assessment Workshop on Development of Hydrological Dynamic Simulation Models for Managing Drinking Water Resources which involved introduction to Numerical Flow and Transport Modelling using Visual MODFLOW and HT3M; organised by International Atomic Energy Agency in

	cooperation with the Government of Viet Nam through Centre for Nuclear Techniques, **Ho Chi Minh City, Viet Nam**; 4 – 8 October, 1999; 4. Advanced Regional Training Course on Numerical Modelling for Water Resources Management (C7-RAS-8.084-002/00); organised by International Atomic Energy Agency in cooperation with Government of Thailand through the Office for Atomic Energy for Peace, **Bangkok, Thailand**; 14 – 25 February, 2000. 5. Regional (RCA) Training Course on Geochemical Modelling for Water Resources Assessment and Management Part II; organized by the International Atomic Energy Agency, Vienna in cooperation with the Government of the Philippines through Philippines Nuclear Research Institute, **Manila, Philippines**; 16-20 October, 2000. 6. UNESCO-IHP International Workshop on Modelling in Hydrogeology at Centre for Geoscience and Engineering, Anna University, Chennai, India, 3-7 December 2001. 7. XXIII General Assembly of the International Union of Geodesy and Geophysics, June 30 – July 11, 2003 at **Sapporo, Japan**.
Participation in policy reform/ framing activities	1. Awarded Indira Gandhi Fellowship for Environmental Conservation and Management, instituted by Ministry of Forest & Environment, Government of Chhattisgarh through Environmental Planning and Coordination Organisation (EPCO), Bhopal to study "Management of groundwater pollution due to urbanisation in and around Raipur, MP" for the year 1995-97; 2. Member Representative, State Level Technical Clearance Committee for Centrally sponsored Accelerated Rural Water Supply Programme constituted by Public Health Engineering Department, Government of Chhattisgarh, vide letter number 734/TS/SRWSP/2001, dated 25.05.2001; 3. Member, Committee for Chhattisgarh Heritage Conservation Act/ Regulation constituted by Chief Secretary, Government of Chhattisgarh (Forest, Environment, Tourism, Culture Department), vide letter number F-71/10/FCE/2001, dated 1.6.2001; 4. Associate Member, Hydrological Data Users Group (HDUG) for Hydrological Project in Chhattisgarh State constituted by Water Resources Department, Government of Chhattisgarh vide Endt. No. 3748/150/TS/WRD/2001, dated 16.10.2001; 5. Expert, Advisory Committee for Wet Dredging of Budha Talab constituted by Commissioner, Raipur Municipal Corporation, vide letter number 747/PWD/2003, dated 17.04.2003; 6. Resource Person, National Orientation Programme for Activities of National Children's Science Congress 2004 – 5, nominated by Chhattisgarh Council of Science & Technology, Raipur vide letter number 593/CCOST/NCSTS/2003, dated August 22, 2003. 7. Member, Technical Evaluation Committee for Disaster Management projects, Department of Revenue and Relief, Government of Chhattisgarh; 8. Member, Technical Evaluation Committee for various committees of Chhattisgarh Council of Science & Technology. 9. State-level Advisory Committee for Restoration of Lakes, constituted by Urban Administration and Development Department, Government of Chhattisgarh vide order no. 3957/2213/2015/18 dated 19 May 2015. 10. Various technical and working committees of Pt. Ravishankar Shukla University, Raipur.

Publications

1. Bodhankar, N. (1988): Hydrogeologic setup of Kulhi river basin, Rajnandgaon district, Madhya Pradesh. Journal of Pt. Ravishankar Shukla University, Vol. 1, No. 1, pp. 71-76;
2. Bodhankar, N. and Singh U. C. (1992): Hydrogeomorphological mapping of Amner river basin, Rajnandgaon district, Madhya Pradesh. Fourth Conference of Indian Institute of Geomorphologists, NEHU, Shillong, April 30 – May 2, 1992;
3. Bodhankar, N. and Chatterjee, B. (1993): Pollution of limestone aquifer due to urban waste disposal around Raipur, M.P., India. Applied Karst Geology, Beck (ed.) © 1993 Balkema, Rotterdam, pp. 73-77. ISBN 90 5410 305 1;
4. Bodhankar, N., Upadhyaya, S., Kulkarni, K. M., Navada, S. V., Sinha, U. K., and Kulkarni, U. P. (1997): Application of isotopes to study karst hydrogeology. Engineering Geology and the Environment, Marinos, Koukis, Tsiambaos Stoumaras (eds.), © 1997 Balkema, Rotterdam, pp. 1617-1622, ISBN 90 5410 877 0;
5. Bodhankar, N. (2001): Hydraulic interconnections and evaluation of contaminant migration from abandoned limestone quarries, Raipur, Chhattisgarh, India. UNESCO – IHP International Workshop on Modeling in Hydrogeology, Centre for Geosciences and Engineering, Anna University, Chennai, December 3 – 7, 2001;
6. Deb, Manas Kanti, Manisha Thakur, R. K. Mishra and Ninad Bodhankar (2002): Assessment of atmospheric arsenic level in airborne dust particulates of an urban city of Central India. Water, Air and Soil Pollution, © Kluwer Academic Publishers, Netherlands.
7. Bodhankar, N. (2002): Biodiversity and ecosystem analysis with reference to traditional water harvesting systems. Chhattisgarh: Beautiful & Bountiful (Studies in biodiversity of Chhattisgarh), Tarushikha Surjan (ed.), © Directorate of Public Relations, Government of Chhattisgarh;
8. Bodhankar, N. (2002): Numerical simulation for groundwater flow and solute transport modeling. Computer Applications in Mineral and Water Resources Management (Eds. K.L.Rai, G.R.Sahu and P.Diwan), Publishers: South Asian Association of Economic Geologists, pp. 111-116;
9. Bodhankar, N., K.M.Kulkarni, S.V.Navada, U.K.Sinha and U.P.Kulkarni (2003): Stable environmental isotope variation in the karstic terrain and delineation of groundwater recharge area in the western part of Chhattisgarh Basin, India. IANCAS Bulletin, Vol. II, No. 1, pp. 55 – 59;
10. Bodhankar, N. (2003): Application of vectors for suitability of landforms in siting surface water harvesting structures. Environmental Geology, Vol. 44, No. 2, pp. 176 – 179, Springer International;
11. Bodhankar, N. and Kulkarni, K. M. (2003): Characterisation of aquifers in karstic terrain using stable environmental isotopes. XXIII General Assembly of the International Union of Geodesy and Geophysics, Sapporo, Japan, June 30 – July 11, 2003.
12. Deb, MK, D Verma, SK Verma, N Bodhankar, and JK Sircar (2010): Quantitative analysis of inorganic ions in soil employing diffuse reflectance Fourier transform infrared spectroscopy (DRS-FTIR). J. Indian Chem. Soc., Vol. 87, November 2010, pp. 1317 – 1327.
13. Chalapathi Rao, NV, Burgess, R, Lehmann, B, Mainkar, D, Pande, SK, Hari, KR and Bodhankar, N (2011): $^{40}Ar/^{39}Ar$ ages of mafic dykes from the Mesoproterozoic Chhattisgarh basin, Bastar craton, Central India: Implication for the origin and spatial extent of the Deccan Large Igneous Province. Lithos, 125, 994-1005.

Computer proficiency	1. Competence in working on software's in Windows and DOS environment, familiarity on software's like MS Office. 2. Expertise on scientific software's like: (a) Sigma Plot for statistical analysis and plotting; (b) Aquifer Test for aquifer parameter evaluation; (c) Visual MODFLOW for groundwater modeling; (d) Aqua Chem for analysis and plotting of chemical data; (e) Surfer for map generation; (f) PHREEQC for geochemical modeling; (g) Map Info for Geographical Information System (GIS); (h) MATLAB for statistical analysis and plotting.
Research Projects	1. "Hydrogeochemical identification of groundwater system in karstic terrain" funded by Chhattisgarh Council of Science & Technology, Government of Chhattisgarh, Raipur (Project Code: 1/MRP/E&Asci-Ear/2002-03); 2. "Genesis and mechanism of mobilisation of arsenic in Banduka – Dalekasa – Upper Kotri watersheds, Rajnandgaon district, Chhattisgarh" funded by International Atomic Energy Agency, Vienna (IAEA Resarch Contract No. 12792/RO/RBF); 3. Hydrogeology and water quality investigations of Bilaspur city for evaluation of groundwater quality in urban perspective. 4. Flood Inundation Mapping of Indrawati River Basin, Chhattisgarh; funded by Department of Revenue & Disaster Management, Government of Chhattisgarh
Other information	Have worked as ***Faculty Member, Disaster Management Cell, Chhattisgarh State Institute of Rural Development (Ministry of Panchayat & Rural Development, Government of Chhattisgarh)*** from January to December 2005, on deputation.