

## Venkappayya R. Desai Ph. D. [Clemson, USA]

**Professor, Civil Engg Dept.** [Water Resources Engg.] & **Dean, Faculty of Engg. & Architecture**  
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### **AREAS OF PROFESSIONAL ACTIVITY/ INTEREST:**

Integrated Water Resources Management (Mgt.): Hydrologic/ Hydraulic Engineering (Engg.), Flood/ Drought Mgt., Water Harvesting, Water Power Engg.

Sustainable Development/ Combating Climate Change: Hydrology, Natural Resource Mgt., Soil and Water Conservation Engg., Water and Energy Related Green Infrastructure, Traditional/ Contemporary Best Mgt. Practices (BMPs).

**PERSONAL DETAILS:** Date of Birth: 20.05.1960; Marital Status: Married; Citizen of India.

### **EDUCATION:**

- 1977-83 **Bachelor of Engineering** (*Civil Engg.*) from KLE Tech University [formerly BVB College of Engg. & Tech.], Hubballi, Karnataka (KA), India
- 1984-86 **Master of Technology** in *Hydraulics & Water Resources Engg.*, (*HWRE*) from National Institute of Technology Karnataka (NITK) [formerly Karnataka Regional Engg. College (KREC)], Surathkal, KA, India
- 1989-93 **Doctor of Philosophy** (*Civil Engineering*) from Clemson University, Clemson, South Carolina, USA; Thesis Title: A parametric study of the crossflow turbine performance; Advisor:- Dr N M Aziz; [10 Citations].

### **EXPERIENCE [Full Time Academic; 32 years]:**

- 1983-84 & 1986-87  
**Lecturer** in Civil Engg., Sri Dharmasthala Manjunatheshwara (SDM) College of Engg. & Tech., Dharwad, KA, India. [Subjects taught: Water Resources Engg., Fluid Mechanics, Surveying Lab., Fluid Mechanics Lab.]
- 1987-89 **Lecturer** in Civil Engg., B. V. Bhoomraddi College of Engg. and Technology, Hubballi, KA. [New Subjects taught: Continuum Mechanics, Advanced Fluid Mechanics]
- 1993-94 **Visiting Assistant Professor** in Civil Engg., Clemson University, Clemson, South Carolina (SC), USA [New Subjects taught: Computers for Engineers, Dynamics, Strength of Materials Lab.].
- 1994-95 **Visiting Lecturer** in Civil Engg., Indian Institute of Technology (IIT), Kharagpur, West Bengal (WB), India; [New Subjects taught: Engg. Drawing, Hydraulic Transients, Drainage & Flood Control Engg.].
- 1995-2001 & 2002-04  
**Assistant Professor** in Civil Engg., IIT, Kharagpur, WB, India; [New Subjects taught: Advanced Hydrology, Integrated Watershed Mgt., Water Resources Systems, Hydropower Engg., Water Resources Engg. Lab.].
- 2004-10 **Associate Professor** in Civil Engg., IIT, Kharagpur, WB, India; [New Subjects taught: Engineering Drawing and Computer Graphics, Applied Hydrology, Integrated Water Resources Mgt.].
- 2010-present **Professor** of Civil Engg., IIT, Kharagpur. [New Subjects taught: Geohydraulics, Surveying].

**EXPERIENCE [Full Time Professional; 1 year]:** Project Manager (Risk Management), R. M. Software India (RMSI), Noida, Uttar Pradesh (UP); [2001-'02]; [Projects handled: Flood risk modeling for Eastern USA, selected states of India having better data availability].

### **REPRESENTATIVE PROJECTS:**

#### **Research and Development (R&D):**

- Remote sensing and GIS-based surface water resource planning [1997-2001]; Collaborator: Regional Remote Sensing Service Centre (RRSSC), Indian Space Research Organisation (ISRO), Kharagpur, West Bengal (WB), India.
- Study of a preliminary physical model of a pumped storage hydropower project [1999-2000]; Collaborator: Department of Electrical Engineering, IIT, Kharagpur, India.
- Remote sensing and GIS-based flood modeling for catastrophic risk insurance awareness in selected states in India [2001-'02], US\$ 80,000; Sponsor: World Bank, Washington DC, USA.
- Rainwater harvesting for IIT Kharagpur Campus [2003-'04], Indian Rupees (₹) 300,000; Sponsor: Sponsored Research and Industrial Consultancy (SRIC), IIT Kharagpur, WB, India.

#### **Consultancy:**

- Economic feasibility analysis for a proposed micro-hydropower project for Nowera Nuddy Tea Estate, WB, India; [1996-'97; ₹ 12,000; Sponsor: Tata Tea Ltd., Kolkata, WB, India].
- Rainwater harvesting study for Bharatiya Reserve Bank Note Mudran Ltd. (BRBNML), Salboni, WB, India; [2001; ₹25,000; Sponsor: BRBNML, Bangalore, Karnataka, India].
- Rainwater harvesting scheme for Bharatiya Reserve Bank Note Mudran Ltd. (BRBNML), Salboni, WB, [2004-'05; ₹5,00,000; Sponsor: BRBNML, Bangalore, India].
- Rainwater harvesting scheme for Tata Metaliks Plant, Gokulpur, WB [2004 –2007; ₹ 3,34,990; Sponsor: Tata Metaliks Ltd., Gokulpur, WB, India].
- Study of water supply distribution/storage and source availability for Darjeeling Municipality, Darjeeling, WB, India; [2007-'09; ₹ 4,82,000; Sponsor: District Magistrate, Darjeeling, WB, India].
- Determination of Hazen Williams' Coefficient values for ductile iron spun pipes [2011; Sponsor: Rashmi Metaliks Ltd., Kharagpur, WB, India; ₹90,000].
- Stormwater outflow drainage plan & subsurface drainage plan [2012; ₹ 6,17,980; Sponsor: Keventer Projects Ltd., Kolkata, WB, India].
- Scientific study on basement seepage at South City Residential Complex, Kolkata [2018-'19; ₹ 15,10,000; South City Apartment Owners' Association, Kolkata, WB, India]

#### **Continuing Education:**

- Coordinator, Winter Short Term Course on 'Sustainable Development through Integrated Water Resources Planning and Management' [1998-99; ₹ 55,000; Sponsor: All India Council for Technical Education (AICTE), New Delhi, India]
- Coordinator, Winter Short Term Course on 'Green Infrastructure' [2010-'11; ₹ 3,11,500; Sponsor: AICTE, New Delhi, India].

### **JOURNAL PUBLICATIONS:**

1. **Desai, V. R.** and Aziz, N. M. (1993), "Finding Ways to Make Cross-flow Turbines More Efficient", *Hydro Review*, 12(5), 130-135, Aug., HCI Publications, Kansas City, MO, USA [1 Citation]
2. **Desai, V. R.** and Aziz, N. M. (1994), "Parametric Evaluation of Cross-flow Turbine Performance", *American Society of Civil Engineers (ASCE) Journal of Energy Engineering*, 120(1), 17-34, April, New York City, New York, USA [23 Citations].

### **JOURNAL PUBLICATIONS (continued):**

3. **Desai, V. R.**, Aziz, N. M., and Kumar, R. (1994), “Advances in the Cross-flow Turbine Technology”, *International Water Power and Dam Construction*, 46(4), 50-56, April, Reed Business Publishing, Sutton, Surrey, UK [[3 Citations](#)].
4. **Desai, V. R.**, and Aziz, N. M. (1994), “An Experimental Investigation of Cross-flow Turbine Efficiency”, *American Society of Mechanical Engineers’ (ASME) Journal of Fluids Engineering*, 116(3), 545-550, September, New York City, New York, USA [[47 Citations](#)].
5. **Desai, V. R.**, Aziz, N. M., and Juang, C. H. (1995), “Uncertainty and Sensitivity Analysis for a Low-Head Hydro System”, *Journal of Civil Engineering Systems*, 12(3), 207-217, Gordon & Breach Science Publishers, Amsterdam, The Netherlands
6. **Desai, V. R.** (1996), “Parametric Study on Performance of Cross-flow Turbine”, Discussion in *ASCE Journal of Energy Engineering*, 122(3), 126-127, December, New York City, New York, USA, of the Paper No. 7174, published in the same Journal in April 1995 {121(1)} authored by Joshi, C. B., Seshadri, V. and Singh, S. N.
7. Biswas, S., Sudhakar, S. and **Desai, V. R.** (1999), “Prioritisation of Sub-watersheds Based on Morphometric Analysis of Drainage Basin: A Remote Sensing and GIS Approach”, *Photonirvachak- Journal of the Indian Society of Remote Sensing*, 27(3), 155-166, September, Dehra Dun, India [[310 Citations](#)].
8. Biswas, S., Sudhakar, S. and **Desai, V. R.** (2002), “A Remote Sensing and Geographic Information System Based Approach for Watershed Conservation”, *ASCE Journal of Surveying Engineering*, 128(3), 108-124, August, New York City, NY, USA [[53 Citations](#)].
9. Mishra, A. K. and **Desai, V. R.** (2005), “Spatial and Temporal Drought Analysis in the Kansabati River Basin, India” *International Journal of River Basin Management*, 3(1), 31-41, International Association of Hydraulic Research, The Netherlands [[128 Citations](#)].
10. **Desai, V. R.**, Ghosh, S. N., and Patro, J. (2005), “National Water Grid – Its Objectives and Challenges”, *Indian Society of Hydraulics (ISH) Journal of Hydraulic Engineering*, 11(1), 1-10, March, Indian Society of Hydraulics, India.
11. Mishra, A. K. and **Desai, V. R.** (2005), “Drought Forecasting using Stochastic Models”, *Journal of Stochastic Environmental Research and Risk Assessment*, 19, 326-339, Springer Verlag, Germany [[393 Citations](#)].
12. **Desai, V. R.**, Ghosh, S. N., and Patro, J. (2006), “National Water Grid – Its Objectives and Challenges”, Paper Discussion Closure, *ISH Journal of Hydraulic Engineering*, 12(1), 131-132, March, Indian Society of Hydraulics, India [[4 Citations](#)].
13. Mishra, A. K. and **Desai, V. R.** (2006), “Drought Forecasting using Feed Forward Recursive Neural Network”, *Elsevier Jnl of Ecological Modeling*, 198, 127-138 [[292 Citations](#)].
14. **Desai, V. R.** and Mishra, A. K. (2006), “Drought Forecasting using Standardized Precipitation Index”, *Indian Natl. Committee on Hydrology (INCOH), Jalvigyan Sameeksha (Hydrology Review)*, 21, 89-106, National Institute of Hydrology, Roorkee, India.
15. Mishra, A. K., **Desai, V. R.** and Singh, V. P, (2007) “Drought Forecasting using a Hybrid Stochastic and Neural Network Model”, *American Society of Civil Engineers (ASCE) Journal of Hydrologic Engineering*, 12(6), 626-638 [[205 Citations](#)].
16. **Desai, V. R.**, Kumar, N. and Mishra, A. K. (2008), “Development of a Simplified Drought Index and its Comparison with the Standardised Precipitation Index”, *INCOH Journal of Hydrological Research and Development*, 23, 109-123, Natl Instt of Hydrology, Roorkee, India.
17. Mishra, A.K., Singh, V. P., and **Desai, V. R.** (2009), “Drought Characterization: A Probabilistic Approach”, *Jnl of Stochastic Environmental Research and Risk Assessment*, 23, 41-55, Springer Verlag, Germany [[189 Citations](#)].

## JOURNAL PUBLICATIONS (continued):

18. Tripathy, S.K., Mali, V.K., Damdapat, R., Pathak, K. and **Desai, V.R.** (2012), “Morphometric Analysis of the Drainage in Koina Watershed of Ironiferous Sector of Chiria Mining Area, Jharkhand Using RS-GIS Technique”, *Mining Engineers’ Journal*, 13(11), 22-29, Mining Engineers’ Association of India, Hyderabad, India
19. V.M. Chowdary, **V.R. Desai**, M. Gupta, A. Jeyaram, Y. Murthy (2012), Runoff simulation using distributed hydrological modeling approach, remote sensing and GIS techniques: A case study from an Indian agricultural watershed, *International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, core.ac.uk, 39( ), B8. [3 Citations].
20. Wakode, H. B., Dutta, D., **Desai, V. R.**, Baier, K., Azzam, R. (2013), “Morphometric Analysis of the Upper Catchment of Kosi River using GIS Techniques”, 6(2), 395-408, DOI 10.1007/s12517-011-0374-8, *Arabian Jnl of Geosciences*, ISSN 1866-7511, Springer. [32 Citations].
21. Thakkar, A., **Desai, V.**, Patel, A., Potdar, M. (2015), “Land Use/ Land Cover Classification of Remote Sensing Data and their Derived Products in a Heterogeneous Landscape of a Khan-Kali Watershed, Gujarat”, 14(4), 1-12, *Asian Jnl of Geo-informatics*, Tokyo, Japan [16 Citations].
22. Thakkar, A. K., **Desai, V. R.**, Patel, A. and Potdar, M. B. (2015), “Selection of Remote Sensing Data Using Phenological Parameters for Land Use/ Land Cover Change analysis”, *Internatl. Jnl. of Advancement in Remote Sensing, GIS & Geography*, 3(2), 36-47
23. Thakkar, A. K., **Desai, V. R.**, Patel, A. and Potdar, M. B. (2016), “An effective hybrid classification approach using tasseled cap transformation (TCT) for improving classification of land use/ land cover (LU/LC) in semi-arid region: a case study of Morva-Hadaf Watershed, Gujarat, India”, DOI 10.1007/s12517-015-2267-8, *Arabian Journal of Geosciences*, 9(3), 1-13, Springer, Germany [6 Citations].
24. Thakkar, A. K., **Desai, V. R.**, Patel, A. and Potdar, M. B. (2017), “Post-classification Corrections in Improving the Classification of Land Use/ Land Cover of Arid Region Using RS & GIS: the Case of Arjuni Watershed, Gujarat, India”, *Egyptian Jnl. of Remote Sensing & Space Science*, 20(1), 79-89, DOI:10.1016/j.ejrs.2016.11.006, Elsevier [21 Citations].
25. Thakkar, A. K., **Desai, V. R.**, Patel, A. and Potdar, M. B. (2017), “Application of Remote Sensing in Analysis of Impact Assessment Using Biomass Vigor Changes of Watersheds”, *Jnl. of Environmental Biology*, 38(4), 543-551 [1 Citation].
26. Thakkar, A. K., **Desai, V. R.**, Patel, A. and Potdar, M. B. (2017), “Impact Assessment of Watershed Management Programmes on Land Use/ Land Cover Dynamics Using Remote Sensing and GIS”, *Remote Sensing Applications: Society & Environment*, 5, 1-15, DOI: 10.1016/J.RSASE.2016.12.001, Elsevier [10 Citations].
27. Singh, U., **Desai, V. R.**, Sharma, P.K., Ojha, C. S. P. (2018), “Copula and ARMA based study of controlled outflow at Farakka barrage”, *Hydrology and Earth System Sciences Discussions*, 1-45.
28. Padhi E., Penna N., **Desai V. R.**, Dey S. and Gaudio R. (2019) Water-worked gravel bed: State-of-the-Art Review. *Water*, Multidisciplinary Digital Publishing Instt. (MDPI), 11(4), 694 [Citations: 3].
29. Ray, S. K., **Desai V. R.** (2020) “Flood moderation and water management study in a Non-Himalayan Indian Basin”, *American Journal of Water Science & Engineering*, 6(3), 89-103.
30. Ray, S. K. and **Desai, V. R.** (2022), Flood frequency analysis of Jamsholaghat sub-basin using three methods and its comparison”, *Internatl Jnl of Creative Thoughts*, 10(3), 36-42.
31. Singh, U., **Desai, V. R.**, Sharma, P. K., Ojha, C. S. P. (2022), “Simulating pre-monsoon and post-monsoon flows at Farakka Barrage, India”, *Sustainable Water Resources Management*, 8(1), 1-14, DOI:10.1007/s40899-021-00594-w.

## CONFERENCE PUBLICATIONS:

1. **Desai, V. R.**, and Aziz, N. M. (1992), “An Experimental Investigation of Cross-flow Turbine Efficiency”, *Sixth International Symposium on Hydropower Fluid Machinery*, 7-14, Winter Annual Meeting of the American Society of Mechanical Engineers (ASME), Anaheim, California, USA; November [[2 Citations](#)].
2. **Desai, V. R.**, Aziz, N. M. (1993), “Comparison of Maximum Efficiencies in a Crossflow Turbine”, *ASCE Waterpower '93, Internatl Conf on Hydropower*, 3, 2012-2021, Nashville, TN, USA; Aug.
3. **Desai, V. R.** (1997), “Planning a Low-Head Hydropower Turbine for Power Development at Canal Drops”, Central Board of Irrigation and Power *Hydro Centenary-1997, 1<sup>st</sup> International Conference on Renewable Energy-Small Hydro*, 665-671, Hyderabad, India; February.
4. **Desai, V. R.** (1997), “Sustainable Water Resources Development through [Mini and Micro] Hydro Projects”, *International Conference on Civil Engineering for Sustainable Development*, 165-171, Univ. of Roorkee, Roorkee, Uttar Pradesh, India; Feb.
5. **Desai, V. R.**, and Saradhi, M. V. V. (1999), “Economic Aspects of a Proposed Small Hydropower Project”, *World Council of Power Utilities (WCPU) – Green Power 2 - 2<sup>nd</sup> International Conference on Accelerated Development of Hydro Power Resources in The 21<sup>st</sup> Century*, VI-68 – VI-75, Three Gorges Project Site, Yichang, Hubei, China; October.
6. **Desai, V. R.** (2000), “In Water Resources too, small is Beautiful but BIG is Satisfactory”, *8<sup>th</sup> National Water Convention*, 25-29, National Water Development Agency (NWDA) and Govt. of Tamil Nadu, Udthagamandalam, Tamil Nadu, India; February.
7. **Desai, V. R.** (2000), “Towards better Water Management through GIS/Other Strategies”, Map India 2000, *Third Annual International Conference and Exhibition on GIS/GPS/RS*, WRM 19-21, Centre for Spatial Database Management and Solutions (CSDMS), New Delhi, India; April.
8. Biswas, S, **Desai, V. R.**, and Sudhakar, S. (2002), “Application of Remote Sensing and GIS in Watershed Prioritization”, Vol. 1, *Internatl Conf on Advances in Civil Engineering [ACE-2002]*, 199-205, Dept of Civil Engg, Indian Instt of Tech, Kharagpur, W Bengal, India; Jan.
9. Mishra, A. K. and **Desai, V. R.** (2003), “Water: the Critical Resource Ahead”, *8<sup>th</sup> Natl. Convention & FEISCA Regnl. Meet*, 456-466, Nepal Engineers Assoc., Kathmandu; April.
10. **Desai, V. R.** and Bhardwaj, J. (2003), “Preliminary Model of a Pumped Storage Project”, *3<sup>rd</sup> International Course on 'Development of Small Hydro'*, 111-121, International Association for Small Hydro (IASH), New Delhi, India; April.
11. Mishra, A. K. and **Desai, V. R.** (2003), “Cauvery Water Sharing: Challenges Ahead”, *10<sup>th</sup> National Water Convention*, 142-153, National Water Development Agency and Government of Orissa, Bhubaneswar, Orissa, India; November.
12. Ghosh, S. N. and **Desai, V. R.** (2003), “The Effect Of Variation Of Water Quality Parameters On Shell Fish Production”, Paper No. 1/2/304, 107-110, *Hydro-2003*, Indian Society for Hydraulics, Central Water and Power Research Institute, Pune, Maharashtra, India; December.
13. Mani, A. and **Desai, V. R.** (2004), “Organic Farming and Issues of Sustainability”, *National Conference on Traditional Knowledge Systems of India*, 7, Department of Humanities and Social Sciences, Indian Institute of Technology, Kharagpur, West Bengal, India; January.
14. **Desai, V. R.** and Panda, R. K. (2004), “Rejuvenation of Water Storage Structure: IIT Kharagpur Experience”, *National Conference on Traditional Knowledge Systems of India*, 128, Department of Humanities and Social Sciences, Indian Institute of Technology, Kharagpur, WB, India; Jan.
15. Mishra, A. K., **Desai, V. R.**, and Chowdary, V. M. (2004), “Tapping the Potential of Remote Sensing and GIS for Drought Monitoring”, *World Congress on Natural Disaster Mitigation*, 263-269, Institution of Engineers (India), New Delhi, India; Feb.

## CONFERENCE PUBLICATIONS (Continued):

16. **Desai, V. R.** and Kahlon, K. S. (2004), “Sustainable Water and Wastewater Management for Residential Buildings”, *Symposium on Prediction in Ungauged Basins for Sustainable Water Resources Planning and Management (PUBSWRPM-2004)*, 145-152, Civil Engineering Group, Birla Institute of Technology and Science, Pilani, Rajasthan, India; October.
17. Mishra, A. K. and **Desai, V. R.** (2004), “Spatial and Temporal Drought Analysis in Kansabati Catchment”, *Natural Resources Engineering and Management AND Agro-Environmental Engineering*, International Conference on Emerging Technologies in Agricultural and Food Engineering (etae2004), 1-9, Department of Agricultural and Food Engineering, Indian Institute of Technology, Kharagpur, West Bengal, India; December.
18. Patro, J. and **Desai, V. R.** (2004), “River Interlinking for Flood Moderation in Lower Godavari Basin”, *National Conference on Hydraulics and Water Resources, Hydro-2004*, 59-65, Visvesvaraya National Institute of Technology (VNIT), Nagpur, Maharashtra, India; Dec.
19. Biswal, R. K., **Desai, V. R.**, Kansal, M. L. and Sharma, N. (2004), “Inter Basin Water Transfer and Water Balance Study of Mahanadi Basin”, *National Conference on Hydraulics and Water Resources, Hydro-2004*, 79-84, VNIT, Nagpur, Maharashtra, India; Dec.
20. Mani, A., **Desai, V. R.** and Lambert, M. (2005), “Development of Flood Prediction Models by Using Soft Computing Technique”, *Proceedings of the National Conference on Sustainable Management of Water Resources*, 336-341, Gujarat Agri. Univ., Junagadh, GJ, India; Jan.
21. Mishra, A. K. and **Desai, V. R.** (2005), “A Neural Network Approach for Drought Forecasting”, *International Conference on Hydrological Perspectives (HYPESD-2005)*, Vol. 1, 266-274, Indian Institute of Technology, Roorkee, Uttaranchal, India; February.
22. Mani, A. and **Desai, V. R.** (2005), “Application of Various Frequency Distributions in Annual Maximum Discharge Estimation”, *National Conference on Hydraulics and Water Resources, Hydro-2005*, 1-10, Siddaganga Institute of Technology, Tumkur, Karnataka, India.
23. Mani, A., **Desai, V. R.** and Nagarajan, M. (2005), “Estimation and Comparison of Peak Discharge by Using Various Methods of Routing (A Case Study)”, *Proceedings of the National Seminar on Innovative Techniques for Sustainable Development of Water Resources*, 163-170, Dept. of Civil Engineering, Annamalai University, Annamalai Nagar, Tamil Nadu, India; March.
24. Mani, A., **Desai, V. R.** and Nagarajan, M. (2005), “Application of Artificial Neural Networks (ANNs) in River Flow Prediction - A Case Study”, *Proceedings of the Natl Seminar on Innovative Techniques for Sustainable Development of Water Resources*, 385-392, Dept. of Civil Engg., Annamalai University, Annamalai Nagar, Tamil Nadu, India; March.
25. Mani, A. and **Desai, V. R.** (2005), “Development and Performance Evaluation of Rating Curve Using Artificial Neural Networks (A Case Study)”, *National Conference on Advances in Water Engineering for Sustainable Development (NCAWESD-2005)*, 63-69, Indian Institute of Technology- Madras, Chennai, Tamil Nadu, India; May.
26. Nagar, M. P. and **Desai, V. R.** (2005), “Rainfall-Runoff Modeling of the October 2004 Storm with Special Reference to IIT Kharagpur Campus”, *National Conference on Advances in Water Engineering for Sustainable Development (NCAWESD-2005)*, 79-86, Indian Institute of Technology- Madras, Chennai, Tamil Nadu, India; May.
27. Mishra, A. K. and **Desai, V. R.** (2005), “Regional Drought Analysis: A Case Study”, *National Conference on Recent Advances in Water Resources Development and Management (RAWRDM-2005)*, 292-299, Indian Inst. of Technology, Roorkee, Uttaranchal, India; Nov.

### CONFERENCE PUBLICATIONS (Continued):

28. Mani, A. and **Desai, V. R.** (2005), “Artificial Neural Networks – A State-of-the-art Computing Technique in Stage Discharge Relationship”, *Proceedings of the 2<sup>nd</sup> Indian International Conference on Artificial Intelligence (IICAI)*, 1126-1140, Natl. Insurance Academy, Pune, India; December [[1 Citation](#)].
29. **Desai, V. R.** (2006), “Holistic Environmental Education through Sustainable Habitats”, 2<sup>nd</sup> International Conference on Environmental Science and Technology, 2, 444-449, American Academy of Sciences, Houston, Texas, USA; August.
30. Rao, V. L. N., **Desai, V. R.**, and Kumar, N. (2007), “Inter Basin Water Transfer Proposal for Flood Moderation”, *12<sup>th</sup> National Water Convention*, 218-238, National Water Development Agency (NWDA) and Govt of Puducherry, Puducherry, India; Nov.
31. Lele, A. and **Desai, V. R.** (2007), Flood Forecasting using ARMA and Artificial Neural Networks, *Proceedings of the 3<sup>rd</sup> Indian International Conference on Artificial Intelligence IICAI*, 847-858, National Insurance Academy, Pune, India; December.
32. **Desai, V. R.** and Mani, A. (2008), “Flood Estimation using two-Piece Linear Rating Curves”, *13<sup>th</sup> Natl. Symposium on Hydrology*, 2\_2, 1-12, Indian Insti. of Technology, Delhi, India; Aug.
33. **Desai, V. R.** (2009), “Scientific Promotion of Water Harvesting through Rainwater Quality Analysis”, *International Conference on Water-Harvesting, Storage and Conservation (WHSC-2009)*, 30, Indian Institute of Technology, Kanpur, India; November.
34. **Desai, V. R.** (2010), “Water Conservation – Quantitative and Qualitative Considerations”, *3<sup>rd</sup> International Congress on Environmental Research (ICER-10)*, 819, University of Mauritius, Reduit, Mauritius; September.
35. Chatterjee, S., **Desai, V. R.** (2010), “Relief Well Drainage Proposal for a More Reliable Municipal Water Supply”, Conf. on Infrastructure, Sustainable Transport and Urban Planning (CiSTUP@CiSTUP 2010), 25, Indian Institute of Science, Bangalore, KA, India; October.
36. Chowdary, V. M., **Desai, V. R.**, Gupta, M., Jeyaram, A., Murthy, Y. V. N. K. (2012), “Runoff Simulation Using Distributed Hydrological Modeling Approach, remote sensing and GIS Techniques: A Case Study from an Indian Agricultural Watershed”, *International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, vol. XXXIX,-B8, XXII ISPRS Congress, Melbourne, Australia; Aug./Sep.; [[2 Citations](#)]
37. Choudhari, P., **Desai, V.R.**, Reddy, A.S. (2012), “Finite Element Method Based Analysis of Single Anchored Rubber Dam”, *National Conference on Hydraulics, Water Resources, Coastal and Environmental Engineering, Hydro-2012*, 1289-1296, Indian Institute of Technology - Bombay, Mumbai, Maharashtra, India; December.
38. **Desai, V.R.** (2013) “Sustainable Water and Wastewater Management- Present Indian and Global Scenarios”, Keynote Speech @ the *National Conference on Sustainable Water Resources Development and Management (SWARDAM-2013)*, 3-12, Govt. College of Engg., Aurangabad, Maharashtra, India; Sep./Oct..
39. Chatterjee, S., **Desai, V. R.** (2014) “Runoff & sediment yield simulation for a Himalayan Watershed using SWAT Model”, *XXXIV Indian Natl Cartographic Assoc. (INCA) Internatl Congress, Cartography- Exploring New Dimensions*, Hyderabad, Telangana (TS), India; Dec.
40. Prakash, V., Choudhury, S., Pal, S., Haldar, B. and **Desai, V. R.** (2015) “Evaluation of rainwater harvesting methods and sustainability in India”, Keynote speech at the *Natl. Conf. on Climate Change and Sustainable Water Resources Management*, 45-54, Natl Instt of Tech, Warangal, TS, India; Sep.



### CONFERENCE PUBLICATIONS (Continued):

41. E. Padhi, N. Penna, R. Gaudio, **V. R. Desai**, and S. Dey, (2018), “Turbulent kinetic energy flux and budget in a water-worked gravel bed”, *E3S Web of Conferences*, Lyon, France, 40, 05006 [https://doi.org/10.1051/e3sconf/20184005006River Flow \[2018\]](https://doi.org/10.1051/e3sconf/20184005006River Flow [2018]).
42. S. K. Ray and **V. R. Desai**, (2019), “River Restoration through Sustainable Water Management Proposal for Subarnarekha Basin”, *International Conference on River Health: Assessment of Restoration [RHAR-2019]*, Indian Institute of Technology, Banaras Hindu University (IIT BHU), Varanasi, UP, India; Feb.

### BOOK:

Ghosh, S. N. and **Desai, V. R.** (2006), *Environmental Hydrology and Hydraulics*, Science Publishers, Enfield, New Hampshire, USA; ISBN1-57808-403-2 [[13 Citations](#)].

### BOOK CHAPTERS:

- Mishra, A. K., Singh, V. P. & **Desai, V. R.** (2008), "Bivariate Drought Characterizations: a Case Study", *Hydrology and Hydraulics*, 793-809, Water Resources Publications, CO, USA.
- Kumar, Y., Sen, D., **Desai, V. R.**, Adak, A. (2021), “Numerical simulation of positive surge moving upstream”, *Water Security and Sustainability, Lecture Notes in Civil Engg.*, 283-297, Springer Singapore; DOI: 10.1007/978-981-15-9805-0\_24.

### TECHNICAL REPORTS:

- Aziz, N. M., and **Desai, V. R.**, *An Experimental Study of the Effect of Some Design Parameters on the Cross-flow Turbine Efficiency*, Engineering Report No. 1W-91, Deptt. of Civil Engg., Clemson University, 1991, Clemson, South Carolina, USA [[21 Citations](#)].
- Aziz, N. M., and **Desai, V. R.**, *A Laboratory Study to Improve the Efficiency of Cross-flow Turbines*, Engineering Report, Deptt. of Civil Engineering, Clemson University, 1993, Clemson, South Carolina, USA [[18 Citations](#)].
- Ghosh, S. N., **Desai, V. R.** and Nagesh Kumar, D., *Rainwater Harvesting Scheme for Bharatiya Reserve Bank Note Mudran Ltd. (BRBNML), Salboni, Midnapur District, West Bengal*, June 2001, Civil Engineering Department, Indian Institute of Technology, Kharagpur, West Bengal, India.

### EXTERNAL Ph.D. THESIS EVALUATION for the following universities/ institutes/ colleges in India & Abroad.

- IIT Madras, Chennai, Tamil Nadu (TN); IIT Bombay, Mumbai, MH; IIT Roorkee, Uttarakhand (UK); IIT Kanpur, UP; IIT-Banaras Hindu University (BHU), Varanasi, UP; IIT (ISM) Indian School of Mines, Dhanbad, Jharkhand (JH); IIT Bhubaneswar, Odisha (OD).
- National Institute of Technology (NIT) Warangal, Telangana (TS); NIT, Rourkela, OD; Visveswaraya NIT (VNIT), Nagpur, MH; Motilal Nehru NIT, Allahabad, UP; Malviya NIT, Jaipur, Rajasthan (RJ); NIT Silchar, Assam (AS); NIT Patna, Bihar (BR); Maulana Azad NIT, Bhopal, MP;
- Maharaja Sayajirao (MS) University, Vadodara, GJ; Visweswaraya Technological University, Belgaum, KA; Biju Patnaik Technical University, Rourkela, OD;
- Govt. Engg. Coll., Aurangabad, MH;
- Victoria Univ., Melbourne, New South Wales (NSW), Australia.

### COUNTRIES VISITED:

USA, Canada, Mexico, China, Hong Kong, Nepal, Bhutan and Mauritius.



## **JOURNAL MANUSCRIPTS REVIEWED:**

- Springer Journal of Earth System Science
- Springer Journal of Water Resource Management
- Internatl. Assoc. of Hydrological Sciences (IAHS) Jrnl. of Hydrol. Sciences
- Internatl. Assoc. of Hydraulic Research (IAHR) Jrnl. of River Basin Mgt.
- American Society of Civil Engineers (ASCE) Journal of Irrigation and Drainage
- Elsevier Journal of Hydro-Environmental Research
- Wiley Journal on Hydrological Processes
- Quaternary International Journal
- Journal of Spatial Hydrological Review
- Journal of Indian Academy of Sciences –‘Sadhana’
- International Journal of Earth Sciences and Engineering
- National Institute of Science Communication and Information Resources (NISCAIR) Indian Journal of Engineering and Materials Sciences
- Journal of Indian Water Resources Society
- Journal of Water Sciences and Engineering, China
- Journal of Hydrometeorology
- Sadhana, Academic Proceedings in Engineering Sciences
- Springer Natural Hazards Journal
- ASCE Journal of Hydrologic Engineering
- Journal of Mountain Science
- Journal of Institution of engineers (India): Series A
- Stochastic Environmental Research & Risk Assessment (SERRA), Springer Verlag Journal
- European Jrnl. of Environmental & Civil Engineering
- Korean Society of Civil Engineers Journal
- Indian Society of Hydraulics (ISH) Journal.

## **DOCTORAL, PG and UG DISSERTATIONS/ THESES SUPERVISED:**

Ph. D.	: 7.
Master of Technology	:31.
Bachelor of Technology (Honours)	:25.

## **RESEARCH PROPOSALS REVIEWED:**

Reviewer for research proposals submitted to Dept. of Sci. & Tech. (DST), GoI, [since 2003].

## **INVITED/ KEYNOTE LECTURES/ PRESENTATIONS DELIVERED:**

1. “Water Resources of India & Scope of Utilization of Water Resources to Develop Inland Waterways”, National Convention of Transport, Session on Devment. of Inland Waterways, Bengal Chamber of Commerce & Industry, Kolkata, WB) [Mar., 2001].
2. “Rural Water Supply Sustainability”, @ Centre for Sustainable Technology (CST) –Formerly known as ASTRA, Indian Institute of Science (IISc), Bangalore, Karnataka, [Jun., 2003].
3. “RAinwater Powered Pumped stOrage hydRo Turbine (RAPPORT). and RELief WELl (REWEL) concepts for localized renewable power generation and regional flood management”, @ Center for Water Resources (CWR), Department of Civil Engineering, Anna Univ., Guindy, Chennai, Tamil Nadu (TN), [Sep., 2007].
4. “Simplified Drought Analysis for a Medium Sized River Basin in Eastern India”, @ the Centre for Technological Alternatives for Rural areas (CTARA), IIT Bombay, Mumbai, Maharashtra (MH), [May, 2008].

### **INVITED/ KEYNOTE LECTURES/ PRESENTATIONS DELIVERED [Cont'd.]:**

5. “Better Management Practices for Floods and Droughts”, @ ‘Water Summit’ under Technical Education Quality Improvement Program (TEQUIP), College of Technology, GB Pant Univ. of Agriculture and Technology (GBPUAT), Pantnagar, Uttarakhand (UK), [Feb., 2009].
6. “Drought Mitigation through a Blend of Traditional and Modern Technologies”, @ the 1-Day Brainstorming Session on Drought Preparedness and Mitigation, National Academy of Agricultural Sciences, Pusa, New Delhi, [Nov., 2010].
7. “Innovative Practices in Experimental Fluid Mechanics & Fluid Power” Expert Lecture No. 5 @ the 38<sup>th</sup> National Conference on Fluid Mechanics & Fluid Power, Maulana Azad National Institute of Technology (MANIT), Bhopal, Madhya Pradesh (MP), [Dec., 2011].
8. “Combating climate change thru’ best mgt. practices”, Natl. Seminar on Green Technologies for Sustainable Environment, Avinashilingam Univ., Coimbatore, TN, [Mar., 2012]
9. “Sustainable Water and Wastewater Management- Present Indian and Global Scenarios”, National Conference on Sustainable Water Resources Development and Management (SWARDAM-2013), Govt. Coll. of Engg., Aurangabad, MH, [Sep./Oct., 2013].
10. “Innovative/ Sustainable Energy Solutions for Hilly Habitats”, National Workshop on Technical Advances in Hydropower/ Energy Sector, Nepal Electricity Authority, Kathmandu, Nepal, [Jun., 2014].
11. “Impact of Positive Thinking/ Action and Innovative Practices in Civil Engineering”, Faculty Development Programme, Kalinga Institute of Industrial Technology (KIIT) Univ., Bhubaneswar, OD, [Jun., 2014].
12. “Comparison of Effective Drought Index and Standardized Precipitation Index: A Case Study of Shivrinarayan Region in Mahanadi Basin”, National workshop on Recent advances in Civil Engineering (RACE)-2014, Department of Civil Engineering, Veer Surendra Sai University of Technology (VSSUT), Burla, OD, [Oct., 2014].
13. “Comparison of Surface Drainage Schemes in Different Parts of West Bengal”, Keynote Speech, Hydro 2014 International Conference, Department of Civil Engineering, Maulana Azad National Institute of Technology (MANIT), Bhopal, MP, [Dec., 2014].
14. “A River Interlinking Proposal for Eastern India”, 1<sup>st</sup> Brainstorming Session on River Engg. Solutions & their Implementation strategies, NIT Patna, Bihar (BR), [Jul., 2015].
15. “Combating climate change through best management practices”, Natl. Workshop on Water Resources in Developing Countries: Planning & Mgt, NIT, Raipur, CG, [Aug., 2015].
16. “Evaluation of Rainwater Harvesting Sustainability in India”, Keynote Speech, National Conference on Climate Change and Sustainable Water Resources Management (CSWM-2015), NIT, Warangal, Telangana (TS), [Sep., 2015].
17. “Water/ Energy Management in Ancient/ Medieval India”, 9<sup>th</sup> All India Students’ Conference on Science and Spiritual Quest (AISSQ-2015), IIT, Kharagpur, WB, [Oct./ Nov., 2015].
18. “Catchment hydrology: natural/ human induced problems and feasible solutions”, National Conference on Water Resources and Flood Management (WRFM 2016), Sardar Vallabhbhai NIT (SVNIT), Surat, GJ, [Oct., 2016].
19. “Effective Afforestation Strategy through Precipitation Constellations for Combating Climate Change”, Hydro 2018 International Conference on Hydraulics, Water Resources & Coastal Engineering, NIT Patna, BR [Dec., 2018].
20. “River restoration through sustainable water management proposal for Subarnarekha Basin”, 5-Day Workshop on ‘Recent trends in water and wastewater treatment, NIT Agartala, TR [Aug, 2019].

## **WORKSHOP/ SHORT TERM COURSE LECTURES/ PRESENTATIONS DELIVERED:**

- **Desai, V. R.**, (1997), “Water Management through ‘Janmabhoomi’- A Mass Involvement Concept”, Unpublished Presentation in All India Seminar on Participatory Management of Irrigation Schemes – A Janmabhoomi Concept, Rural Development Forum and Institute of Engineers (India) Local Centre, Tirupati, AP, India; August.
- **Desai, V. R.**, (1997), “Integrated River Basin Planning”, Summer School on ‘System Techniques and Computer Applications in Water Resources’, 14.1-14.5, Civil Engineering Department, Indian Institute of Technology (IIT), Kharagpur, WB, India, June-July.
- **Desai, V. R.**, (1999) “Hydrologic Modelling of Water Bodies”, A Lecture in the Wetlands International South Asia sponsored Workshop on ‘Lake Water Quality and Hydrology Models’, 8.1-8.4, Civil Engg. Dept., IIT, Kharagpur, WB, India; November.
- **Desai, V. R.**, (2000), “Experimentation on Low-Head Cross-flow Turbine with Savonius Rotor as Nozzle”, Unpublished Presentation in 2<sup>nd</sup> Internatl. Workshop on Fluid Mechanics (FLUMEC-2000), Engg. & Science Group, IIT Madras, Chennai, TN, India, January.
- **Desai, V. R.**, (2000), “Application of Remote Sensing and GIS in Watershed Conservation”, Quality Improvement Programme Short Term Course on ‘Advanced IT Applications to Civil Engineering’, 169-174, Civil Engg. Deptt., IIT, Kharagpur, WB, India; December.
- **Desai, V. R.**, (2001), “Freedom from Arsenic through Surface Water Management”, *Third International Symposium on Reducing the Impact of Toxic Chemicals in the Bengal Basin*, [http://nvo.com/ghosh\\_research/abstracts2001/](http://nvo.com/ghosh_research/abstracts2001/), 1-2, Kolkata, West Bengal, India; February.
- **Desai, V. R.** (2004), “Uncertainty Analysis of a Low-Head Hydro System”, Short Term Course on ‘Risk and Reliability Assessment’, Reliability Engineering Centre, Indian Institute of Technology, Kharagpur, WB, India; Nov.
- **Desai, V. R.** (2005), “Erosion and Sedimentation in Kosi River”, Short Term Course on ‘Erosion & Sedimentation of River Beds’, 63-67, Civil Engg. Dept., IIT, Kharagpur, WB, India; Nov.
- **Desai, V. R.** (2006), “Success Criteria for Watershed Restoration”, Short Term Training Course on ‘Watershed Management and Restoration Measures’, 58-61, Department of Agri. & Food Engg. Dept., IIT, Kharagpur, WB, India; June.
- **Desai, V. R.**, (2009), “Harnessing Hydropower from Gravity Dams for Sustainable Development”, A Quality Improvement Programme (QIP) Sponsored Short Term Course on ‘Earthquake Analysis of Dams’, Hotel Swosti Premium, Bhubaneswar, OD, India; August.
- **Desai, V. R.** and Ajay, A. K., (2010), “Preliminary Attempts for Modeling Erosion/ Sedimentation/ Flooding”, Invited Lecture, Case Studies on Real Time Hydrologic Modelling for Ganga-Brahmaputra Basins, 146-153, Civil Engg. Dept., NIT, Rourkela, OD, India; Sep. 23-25
- **Desai, V. R.**, (2010), “Green Infrastructure- an overview and case studies”, 1.1-1.11, AICTE Sponsored QIP Short Term course on ‘Green Infrastructure’, Civil Engg. Dept., IIT, Kharagpur, WB, India; 26<sup>th</sup> Dec. 2010 to 2<sup>nd</sup> Jan. 2011
- T. K. Choudhury and **Desai, V. R.**, (2011), “Breach Resistant Earthen bund (BREAD) Technology for flood management”, 1-Day Workshop on ‘Financing for commercialization of Technologies’ organized by Federation of Indian Chamber of Commerce & Industries (FICCI) and Technology Development Board (TDB), Department of Science & Technology (DST), Government of India, Hotel Oberoi Grand, Kolkata, WB, India; 29<sup>th</sup> June.

## **AWARDS/ PRIZES/ DISTINCTIONS:**

- 1972-'75 Received *Government of India National Merit Scholarship* for rural talented students.
- 1975 Stood *first to the Lamington Boys' High School, Hubballi, Karnataka (KA)*, in the Secondary School Leaving Certificate (SSLC) Examination among ~500 students and was subsequently *offered a Govt. of India National Merit Scholarship* for college study.
- 1975 Awarded 2 *Kirloskar prizes for securing the highest marks in Mathematics and Social Studies* in the SSLC Examination in *Lamington Boys' High School, Hubballi, KA*.
- 1978 Secured *1<sup>st</sup> Rank to Karnatak University in the 1<sup>st</sup> Sem. Bachelor of Engineering (B. E.) Examination.*
- 1979 Secured *2<sup>nd</sup> Rank to the Karnatak University in the 5<sup>th</sup> Semester B. E. Examination.*
- 2005 *Nominated Member, Green Rating Project, Centre for Science & Environment, N. Delhi.*
- 2003-present

### Faculty Selection Committee Member for:

- IIT Hyderabad, Telangana (TS);
- IIT (ISM), Dhanbad, JH;
- IIT Bhubaneswar, OD;
- IIT Jammu, J&K;
- NIT Karnataka (NITK), Surathkal, KA;
- NIT, Rourkela, OD;
- NIT, Raipur, CG;
- NIT, Agartala, Tripura (TR);
- NIT Sikkim, Rawangla, SK;
- NIT Imphal, Manipur (MN);
- Jawaharlal Nehru Tech. Univ. (JNTU), Kakinada, AP;
- Veer Surendra Sai University of Technology (VSSUT), Burla, OD;
- Chattisgarh Swami Vivekananda Technical Univ. (CGSVTU), Bhilai, CG;
- Instt. of Technology Education & Research (ITER), Bhubaneswar, OD;
- Kalinga Instt. of Industrial Technology (KIIT), Bhubaneswar, OD;
- Sikkim Manipal Instt. of Tech. (SMIT), Majitar, Sikkim (SK);
- Bhilai Instt. of Tech., Bhilai, CG;

2019-present

### Visitor's Nominee for Civil Engineering Professor Selection in

- IIT Indore [2019-'22];
- IIT BHU, Varanasi [2022-present].

## **MEMBER, Board of Governors/ Board of Management/ Board of Studies/ Academic Committee/ Court:**

1. Member, Board of Studies, Sikkim Manipal Instt. of Tech.(SMIT), SK [since 2011];
2. Member, Board of Governors (BoG), IIT (ISM) Indian School of Mines, Dhanbad, JH [2016-'18];
3. Member, All India Board on Post-Graduate Education & Research, All India Council for Technical Education (AICTE), New Delhi [2016-'19];
4. Member, All India Board on Undergraduate Studies, AICTE, New Delhi [2016-'19];
5. Member, Board of Studies in Civil Engineering, Kalinga Instt. of Industrial Technology (KIIT), Bhubaneswar, OD [Since 2019];
6. Member, Board of Management (BoM), Veer Surendra Sai University of Technology (VSSUT), Burla, OD [2019-'22];
7. Member, The Court, University of Burdwan, Burdwan, WB [Since 2018];

**MEMBER, Board of Governors/ Board of Management/ Board of Studies/ Academic Committee/ Court [Cont'd.]:**

8. Member, Academic Committee, Military College of Telecom Engg, Mhow, MP [2019-'21];
9. Member, Board of Governors, National Institute for Technical Teachers' Training & Research (NITTTR), Kolkata, WB [Since 2020];
10. Member, Academic Committee, Military College of Electronics & Mechanical Engg., Secunderabad, TS [Since 2021];
11. Member, Academic Advisory Committee (AAC), National Assessment & Accreditation Council (NAAC), Bengaluru, KA [Since 2021];
12. Executive Committee Member, AICTE, New Delhi [Since 2021].

**ADMINISTRATIVE RESPONSIBILITIES HELD/ HOLDING AT IIT, KHARAGPUR:**

- Library Committee Representative, Civil Engineering Dept. [1996-'97 and 2004-'05];
- Water Resources Engineering Laboratory in-Charge [1996-2000];
- Water Resources Engineering Section-in-Charge [1999 and 2006-'09];
- Asst. Warden, Acharya J.C.Bose & H.J.Bhabha Halls of Residence (i.e., Hostel) [1996-'99];
- Faculty Advisor for B.Tech. (Hons.) & Dual Degree {B. Tech. (Hons.) + M. Tech.} Civil Engineering students [1997-2001; 2003-04; 2017-21];
- Training & Placement In-Charge, Civil Engineering Department [2002-'06].
- Rector's Nominee (Soc. & Cultural Events), Technology Students' Gymkhana [2002-'05].
- Chairman, Students' Brotherhood Fund Committee [2003-'16];
- Warden, Lala Lajpat Rai (LLR) Hall of Residence [2005-'07];
- Coordinating Warden (Allotment), Hall Management Center (HMC), [2007-'09];
- Program Officer, National Service Scheme (NSS), [2008-'09; 2016-'18];
- Member, Senate Library Advisory Committee (SLAC) & Purchase Committee, Central Library [2012-'13];
- Course Coordinator, Engineering Drawing and Computer Graphics [2012-'20];
- Ph.D. Research Scholar Coordinator, Civil Engineering Department [2013-'17];
- Chairman, Rajbhasha Vibhag {Responsible for matters on official languages}[2016-'19];
- Dean of Faculty [2020];
- Professor-in-Charge, 66th Convocation [2020-'21];
- Dean, Faculty of Engg. & Architecture [2020-present].

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