

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

*Professor, [Hydrology, Integrated Water Resources Management Hydraulic Engineering,]
Department of Civil Engineering, INDIAN INSTITUTE OF TECHNOLOGY (IIT)*

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AREAS OF ACTIVITY/ INTEREST:

Integrated water resources management: Hydrologic/ hydraulic engineering, flood/ drought management, water harvesting, water power engineering.

Sustainable development/ combating climate change: Hydrology, natural resource management, soil and water conservation engineering, water and energy related green infrastructure, traditional/ contemporary best management practices (BMPs).

PERSONAL DETAILS: Date of Birth: 20.05.1960; Family Status: Married; having wife & a son; Country of Citizenship: India; Passport valid till 2023.

EXPERIENCE [Full Time Academic; 26 years]:

1983-84 &

1986-87 **Lecturer**, Department of Civil Engineering, Sri Dharmasthala Manjunatheshwara (SDM) College of Engineering and Technology, Dharwad, Karnataka. [Subjects taught: Water Resources Engineering, Fluid Mechanics, Surveying]

1987-89 **Lecturer**, Department of Civil Engineering, B. V. Bhoomraddi College of Engineering and Technology, Hubballi, Karnataka. [Subjects taught: Continuum mechanics, Advanced Fluid Mechanics, Water Resources Engineering]

1993-94 **Visiting Assistant Professor**, Department of Civil Engineering, Clemson University, Clemson, South Carolina, USA [Subjects taught: Computers for Engineers, Dynamics, Fluid Mechanics, Strength of Materials].

1994-95 **Visiting Lecturer**, Department of Civil Engineering, Indian Institute of Technology (IIT), Kharagpur, West Bengal (WB); [Subjects taught: Engineering Drawing, Hydraulic Transients, Drainage & Flood Control Engineering].

1995-2001 &

2002-04 **Assistant Professor**, Department of Civil Engineering, IIT, Kharagpur, WB; [Subjects taught: Advanced Hydrology, Integrated Watershed Management, Water Resources Systems, Water Power Engineering, Surveying, Hydropower Engineering].

2004-10 **Associate Professor**, Department of Civil Engineering, IIT, Kharagpur, WB; [Subjects taught: Water Resource Engineering, Engineering Drawing and Computer Graphics, Applied Hydrology, Hydropower Engineering, Integrated Watershed/ Water Resources Management, Surveying Practice]

2010-present **Professor**, Department of Civil Engineering, IIT, Kharagpur. [Subjects taught: Hydraulics, Geohydraulics, Water Resources Engineering Laboratory, Engineering Drawing and Computer Graphics, Integrated Watershed Management, Hydropower Engineering].

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, India].

EXPERIENCE [Part Time Professional; 6 months]: Building Designer/ Planner, Hubballi, KA; [1983]

REPRESENTATIVE PROJECTS:

Research and Development:

- 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: The 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].

Continuing Education:

- Coordinated a 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]
- Coordinated a 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*, XII(5), 130-135, August, HCI Publications, Kansas City, Missouri, USA
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
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
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
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, 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
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, New York, USA.
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.
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.
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.
13. Mishra, A. K. and Desai, V. R. (2006), “Drought Forecasting using Feed Forward Recursive Neural Network”, *Elsevier Journal of Ecological Modeling*, 198, 127-138.
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.

JOURNAL PUBLICATIONS (continued):

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.
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*, (Theme: Water Resources Management under Drought Situation), 23, 109-123, National Institute of Hydrology, Roorkee, India.
17. Mishra, A.K., Singh, V. P., and Desai, V. R., (2009), “Drought Characterization: A Probabilistic Approach”, *Journal of Stochastic Environmental Research and Risk Assessment*, 23, 41-55, Springer Verlag, Germany.
18. Wakode, H. B., Dutta, D., Desai, V. R., Baier, K. And Azzam, R. (2011), “Morphometric Analysis of the Upper Catchment of Kosi River using GIS Techniques”, DOI 10.1007/s 12517-011-0374-8, *Arabian Journal of Geosciences*, ISSN 1866-7511, Springer, Germany
19. 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
20. Thakkar, A., Desai, V., Patel, A., and Potdar, M. (2014), “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 Journal of Geo-informatics*, Tokyo, Japan.
21. 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 *Arabian Journal of Geosciences*, 9:180,

BOOK:

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

BOOK CHAPTER:

Mishra, A. K., Singh, V.P. and Desai, V. R., (2008), "Bivariate Drought Characterizations: a Case Study"; *Hydrology and Hydraulics*, 793-809, Edited by V.P.Singh, Water Resources Pub., Colorado, USA.

DOCTORAL, POSTGRADUATE and UNDERGRADUATE DISSERTATION/ THESIS

GUIDANCE: Ph. D. :04.
Master of Technology :24.
Bachelor of Technology (Honours) :23.

COUNTRIES VISITED:

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

RESEARCH PROPOSAL REVIEW:

Have been serving as an honorary reviewer of a number of research proposals submitted to the Department of Science and Technology (DST), Government of India since 2003.

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. Desai, V. R., and Aziz, N. M., (1993), “Comparison of the Maximum Efficiencies in a Cross flow Turbine”, *ASCE Waterpower’93, International Conference on Hydropower*, 3, 2012-2021, Nashville, Tennessee, USA; August.
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, 1st International Conference on Renewable Energy-Small Hydro*, 665-671, Hyderabad, Andhra Pradesh, 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; February.
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 - 2nd International Conference on Accelerated Development of Hydro Power Resources in The 21st 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”, *8th 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, *International Conference on Advances in Civil Engineering [ACE-2002]*, 199-205, Department of Civil Engineering, Indian Institute of Technology, Kharagpur, West Bengal, India; January.
9. Mishra, A. K. and Desai, V. R., (2003), “Water: the Critical Resource Ahead”, *8th National Convention and FEISCA Regional Meet*, 456-466, Nepal Engineers Association, Kathmandu, Nepal; April.
10. Desai, V. R. and Bhardwaj, J., (2003), “Preliminary Model of a Pumped Storage Project”, *3rd 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”, *10th 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.

CONFERENCE PUBLICATIONS (Continued):

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, West Bengal, India; January.
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; February.
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, Nagpur, Maharashtra, India; December.
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, Visvesvaraya National Institute of Technology, Nagpur, Maharashtra, India; December.
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 Agricultural University, Junagadh, Gujarat, India; January.
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, Department of Civil Engineering, Annamalai University, Annamalainagar, 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 National Seminar on Innovative Techniques for Sustainable Development of Water Resources*, 385-392, Department of Civil Engineering, Annamalai University, Annamalainagar, Tamil Nadu, India; March.

CONFERENCE PUBLICATIONS (Continued):

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.
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 2nd Indian International Conference on Artificial Intelligence*, 1126-1140, National Insurance Academy, Pune, India,; December.
29. Desai, V. R. (2006), “Holistic Environmental Education through Sustainable Habitats”, 2nd 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”, 12th National Water Convention, 218-238, National Water Development Agency (NWDA) and Government of Puducherry, Puducherry, India; November.
31. Lele, A. and Desai, V. R., (2007), Flood Forecasting using ARMA and Artificial Neural Networks, *Proceedings of the 3rd Indian International Conference on Artificial Intelligence*, 847-858, National Insurance Academy, Pune, India; December.
32. Desai, V. R. and Mani, A., (2008), “Flood Estimation using two-Piece Linear Rating Curves”, 13th National Symposium on Hydrology, 2_2, 1-12, Indian Institute of Technology, Delhi, India; August.
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”, 3rd International Congress on Environmental Research (ICER-10), 819, University of Mauritius, Reduit, Mauritius; September.
35. Chatterjee, S. And Desai, V. R., (2010), “Relief Well Drainage Proposal for a More Reliable Municipal Water Supply”, Conference on Infrastructure, Sustainable Transport and Urban Planning (CiSTUP@CiSTUP 2010), 25, Indian Institute of Science, Bangalore, 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.]

CONFERENCE PUBLICATIONS (Continued):

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., “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., 2013].
39. Desai, V.R., “Innovative/ Sustainable Energy Solutions for Hilly Habitats”, p. 2-1 to 2-7, Invited Presentation @ the *National Workshop on ‘Technical Advances in Hydropower/ Energy Sector’*, Kathmandu, Nepal [Jun., ’14].
40. Chatterjee, S., Desai, V. R. “Runoff and sediment yield simulation for a Himalayan Watershed using SWAT Model”, *XXXIV Indian Natl. Cartographic Assoc. (INCA) Internatl. Congress, Cartography- Exploring New Dimensions*, 24, Hyderabad, Telangana, India [Dec. 2014]
41. Prakash, V., Choudhury, S., Pal, S., Haldar, B. and Desai, V. R., “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, National Institute of Technology, Warangal, Telangana, India [Sep. 2015].

Ph. D. THESES/ DISSERTATION/ Master of Science (M.S)/ Master of Technology (M. Tech.) EVALUATION/ EXAMINATION:

For the following universities/ institutes/ colleges in India which include:

- IIT Madras, Chennai, Tamil Nadu (TN);
 - IIT Bombay, Mumbai, MH;
 - IIT-Banaras Hindu University (BHU), Varanasi, UP;
 - Indian Institute of Engrg., Sci. & Technology (IIST) Shibpur, Near Kolkata, WB;
 - Indian School of Mines (ISM), Dhanbad, Jharkhand (JH),
 - Anna University, Chennai;
 - 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);
 - Maharaja Sayajirao (MS) University, Vadodara, GJ;
 - Visweswaraya Technological University, Belgaum, KA;
 - Biju Patnaik Technical University, Rourkela, OD;
 - Govt. Engg. Coll., Aurangabad, MH; &
 - Alagappa Chettiar (AC) Coll. of Tech., Karaikudi, TN
- and for a University in Australia [viz., Victoria Univ., Melbourne, New South Wales (NSW)].

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
- 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
- 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.

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 highest marks in Mathematics and Social Studies* in the SSLC Examination in *Lamington Boys' High School, Hubballi, KA*.
- 1978 Secured *1st Rank to the Karnatak University in the 1st Semester Bachelor of Engineering (B. E.) Examination.*
- 1979 Secured *2nd Rank to the Karnatak University in the 5th Semester B. E. Examination.*
- 2005 *Nominated Member, Green Rating Project, Centre for Science and Environment, New Delhi.*
- 2003-'15 *Faculty Selection Committee Member for:*
- IIT Hyderabad, Telangana (TS);
 - IIT Bhubaneswar, OD;
 - NIT, Rourkela, OD;
 - NIT, Raipur, CG;
 - NIT Sikkim, Rawangla, SK;
 - NIT Imphal, Manipur (MN);
 - Jawaharlal Nehru Tech. Univ. (JNTU), Kakinada, AP;
 - 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. (BIT), Bhilai, CG;
 - Rawatpura Instt. of Tech., New Raipur, CG;
 - MM Coll. of Tech., Raipur, CG.

MEMBER, BOARD OF STUDIES/ ADMINISTRATION:

1. Member, Board of Studies, Sikkim Manipal Instt. of Tech.(SMIT), SK [since 2011].
2. Member, Executive Board, Indian School of Mines (ISM), Dhanbad, JH [Since 2016].
3. Member, All India Board on Post-Graduate Education & Research, AICTE, New Delhi [Since 2016].
4. Member, All India Board on Undergraduate Studies, AICTE, New Delhi [Since 2016].

INVITED LECTURES DELIVERED:

1. “Water Resources of India and Scope of Utilization of Water Resources to Develop Inland Waterways”, @ National Convention of Transport, Session on Development of Inland Waterways, Bengal Chamber of Commerce & Industry, Kolkata, West Bengal, India [March, 2001].
2. “Rural Water Supply Sustainability”, @ Centre for Sustainable Technology (CST) – Formerly known as Centre for Application of Science and Technology to Rural Areas (ASTRA), Indian Institute of Science (IISc), Bangalore, Karnataka, India [June, 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 University, Guindy Campus, Chennai, Tamil Nadu, India [September, 2007].
4. “Simplified Drought Analysis for a Medium Sized River Basin in Eastern India”, @ the Centre for Technological Alternatives for Rural areas (CTARA), Indian Institute of Technology - Bombay, Mumbai, Maharashtra, India [May, 2008].
5. “Better Management Practices for Floods and Droughts”, @ the ‘Water Summit’ under Technical Education Quality Improvement Program (TEQUIP), College of Technology, GB Pant University of Agriculture and Technology (GBPUAT), Pantnagar, Uttarakhand, India [Feb., 2009].
6. “Preliminary Attempts for Modeling Erosion/ Sedimentation/ Flooding”, @ the National Institute of Technology (NIT), Rourkela, Orissa, India [Sep., 2010].
7. “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, India [Nov., 2010].
8. “Innovative Practices in Experimental Fluid Mechanics & Fluid Power” Expert Lecture No. 5 @ the 38th National Conference on Fluid Mechanics & Fluid Power, Maulana Azad National Institute of Technology (MANIT), Bhopal, Madhya Pradesh, India [Dec. 2011].
9. “Sustainable Water and Wastewater Management- Present Indian and Global Scenarios”, Keynote Speech @ the *National Conference on Sustainable Water Resources Development and Management* (SWARDAM-2013), Govt. College of Engg., Aurangabad, Maharashtra, India [Sep./Oct., 2013].
10. “Comparison of Effective Drought Index and Standardized Precipitation Index: A Case Study of Shivrinarayan Region in Mahanadi Basin”, Invited Lecture in National workshop on Recent advances in Civil Engineering (RACE)-2014, Department of Civil Engineering, Veer Surendra Sai University of Technology, Burla, Odisha, India [Oct. 2014].
11. “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, Madhya Pradesh, India [Dec. 2014].
12. “Combating climate change through best management practices”, Keynote Speech, Natl. Workshop on Water Resources in Developing Countries: Planning and Management, NIT, Raipur, Chhattisgarh, India [Aug. 2015].

WORKSHOP/ SHORT TERM COURSE LECTURES/ PRESENTATIONS:

- 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, Andhra Pradesh, 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, West Bengal, India, June-July.
- Desai, V. R., (2000), “Experimentation on Low-Head Cross-flow Turbine with Savonius Rotor as Nozzle”, An Unpublished Presentation in the 2nd International Workshop on Fluid Mechanics (FLUMEC-2000), Engineering and Science Group, Indian Institute of Technology-Madras (IIT-M), Chennai, Tamil Nadu, India, January.
- 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 Engineering Deptt., IIT, Kharagpur, W. Bengal, India; November.
- 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 Engineering Deptt., IIT, Kharagpur, 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/, 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, West Bengal, India; November.
- Desai, V. R. (2005), “Erosion and Sedimentation in Kosi River”, Short Term Course on ‘Erosion and Sedimentation of River Beds’, 63-67, Department of Civil Engineering, Indian Institute of Technology, Kharagpur, West Bengal, India; November.
- Desai, V. R. (2006), “Success Criteria for Watershed Restoration”, Short Term Training Course on ‘Watershed Management and Restoration Measures’, 58-61, Department of Agricultural and Food Engineering, IIT, Kharagpur, W. Bengal, 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, Orissa, 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, Organized by Civil Engineering Department, National Institute of Technology (NIT), Rourkela, Orissa, 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’, Department of Civil Engineering, IIT, Kharagpur, W. Bengal, India; 26th Dec. 2010 to 2nd 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, W. Bengal, India; 29th June.

JOURNAL MANUSCRIPT REVIEW:

Since 2003, I am serving as a reviewer of manuscripts for the following journals:

- Springer Journal of Earth System Science
- Springer Journal of Water Resource Management
- International Association of Hydrological Sciences (IAHS) Journal of Hydrological Sciences
- International Association of Hydraulic Research (IAHR) Journal of River Basin Management
- American Society of Civil Engineers (ASCE) Journal of Irrigation and Drainage
- Elsevier Journal of Hydro-Environment
- 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.

ADMINISTRATIVE RESPONSIBILITIES HELD AT IIT, KHARAGPUR:

- Library Committee Representative, Civil Engineering Department [1996-'97 and 2004-'05].
- Water Resources Engineering Laboratory in-Charge [1996-2000].
- Water Resources Engineering Section-in-Charge [1999 and 2006-'09].
- Assistant Warden, Acharya J.C.Bose & H.J.Bhabha Halls of Residence (Hostels) [1996-'99].
- Faculty Advisor for the B.Tech. (Hons.) Civil Engineering students [1997-2001; 2003-'04].
- Training & Placement In-Charge, Civil Engineering Department [2002-'06].
- Rector's Nominee (Social & 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].
- Member, Senate Library Advisory Committee (SLAC) and Purchase Committee, Central Library [2012-'13].
- Course Coordinator, Engineering Drawing and Computer Graphics [2012 and onwards].
- Ph.D. Research Scholar Coordinator, Civil Engineering Department [2013 and onwards].
