

Curriculum Vitae

1. Name MITTHAN LAL KANSAL
2. Father's Name Sh. Mange Ram
3. Address for communication :

Dr. M L KANSAL

Professor,

WATER RESOURCES DEVELOPMENT & MANAGEMENT,
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE
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3. Date of Birth: February 5, 1962



International flexibility

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Roorkee - 247 667
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Previous Positions

- Associate Professor (WRD&M), IIT Roorkee (2001-08)
- Assistant Professor (Civil Engg.), DCE, Delhi (1996-2001)
- Lecturer (Civil Engg.), DCE, Delhi (1991-96)
- Scientist-B, NIH, Roorkee (1990-91)
- Research Scholar, IIT Delhi (1989-90)
- Research Fellow, WRMC, NIT Kurukshetra (1986-89)
- Quality Control Er., Private, (1985-86)

Education

Year	Degree	Institute
1997	Ph.D. (Civil Engg.)	Delhi University
1996	Post Graduate Diploma in Operations Management	I.G.N.O.U., Delhi
1988	M.Tech. (Civil Engg.) (Water Resources Engg.)	Kurukshetra Univ
1985	B.Sc. (Civil Engg.) (Hons.)	Kurukshetra Univ.

Work Experience

32 years as researcher which includes 27 years of teaching at PG level and 11 years of teaching at UG level in the following subjects:

System Design Techniques (optimization techniques), Rural & Urban Water Supply Systems, Hydropower System Planning, Water Resources Planning & Management, Planning & Design of Small Hydropower Schemes, Fluid Mechanics, Engineering Hydrology, Water Resources Systems Reliability, Construction Planning & Management and Computer simulation

Publications

- International Journals 51
- National Journals 19
- International Conferences 50
- National Conferences 27
- **Total** 147

Research Supervision

➤ Post-doctoral Fulbright Fellow	01
➤ Ph.D. Awarded	09
➤ Ongoing	03
➤ M.Tech. Awarded	59
➤ Ongoing	17
➤ B. Tech. Projects	15
➤ Internships (International)	02
➤ Internships (Nationals)	07
➤ Total	113

Books

- “System Analysis Techniques in Water Resources Management”, Turkish Water Foundation, Turkey, (2005) as single author.
- “Challenges in the Management of Water Resources & Environment in the Next Millennium”, Delhi, (1999) (Best Selling Book at Bagchi.com \$ 32.68) as joint author (Ed.).
- Proceedings of “Water and Environment – Issues and Challenges, WRD&M, IIT Roorkee, (2002) (Ed.).

Book Chapters

- **Kansal M.L.** (2018) Issues and Challenges of River Health Assessment in India. In: Singh V., Yadav S., Yadava R. (eds) Water Resources Management. Water Science and Technology Library, vol 78. Springer, Singapore.
- Chandniha S.K., **Kansal M.L.** (2018) Water Sustainability Assessment Under Climatic Uncertainty – A Case Study of Chhattisgarh (India). In: Singh V., Yadav S., Yadava R. (eds) Climate Change Impacts. Water Science and Technology Library, vol 82. Springer, Singapore.

Course package

- “System Analysis Techniques in Water Resources Management”, Continuing Education Department, IIT Roorkee, 2004.

Recognition as researcher

International Level

1. Visited Austin, Texas, IOWA state University, Lehigh University, Bethlehem, MIT Bostin, USA presented paper during EWRI Congress, May 16th to June 10th, 2015.
2. Visited International Union for Conservation of Nature (IUCN) Bangkok, Thailand as an Peer-Review and Joint Research Team member for participating in a meeting on Environmental Flow for Sundarbans Ecosystem, An Indo-Bangladesh Project, Nov. 6-9, 2014.
3. Visited Portland, Oregon and IOWA State University, USA and attended & presented paper during EWRI Congress, May 30th to June 08, 2014.

4. Visited International Union for Conservation of Nature (IUCN) Dhaka, Bangladesh, as a member of JRT for Pilot project on E-Flows for Ecosystem Sundarbans, An Indo-Bangladesh Project, May, 4-8, 2014.
5. Visited Cincinnati, Austin, Chorus Christy, Bethlehem, Harrisburg, USA and attended & presented paper during EWRI Congress, May 18 to June 02, 2013.
6. Visited International Union for Conservation of Nature (IUCN) Bangkok, Thailand as an expert for participating in an International Workshop on Environmental Flow for Ecosystem Sundarbans, An Indo-Bangladesh Project, April 10, 2013.
7. Visited Fiji National University, Fiji as Visiting Faculty & invited Expert to discuss various issues related flood, irrigation schemes, and drinking water in Fiji and to deliver expert lectures on Water Conservation and Flood Control and on Drinking Water Issues, July 07-28, 2012.
8. Visited Palm Springs, Austin, Bethlehem, Harrisburg, USA as Visiting International Fellow (VIF) and attended & presented paper during EWRI Congress, May 21-June 05, 2011.
9. Visited College of Engineering, Yeungnam University, Gyeongsan, S. Korea as Visiting Professor & invited Expert to discuss various issues related to Collector Wells for Urban Water Supply Systems, June 20-25, 2010.
10. Visited NEC, Kathmandu, Nepal, as invited Expert for Regional Conference, May 19-21, 2010
11. Visited Kansas, USA, to attend & present paper during EWRI Congress, May 17-21, 2009.
12. Visited Gold Coast, Australia, as Keynote Presenter during Asia Pacific Water and Sewer Systems Modelling Seminar, April, 27-28, 2009.
13. Visited 2iE Institute, Ouagadougou, Burkina Faso, as Visiting Professor to deliver expert lectures on Urban Water Supply, Nov. 01-17, 2008
14. Visited ENGEES, Strasbourg, France as Visiting Professor & invited Expert to deliver special lectures and to discuss various issues related to Urban Water Supply Systems, June 16 - July 15, 2008
15. Visited NEC, Kathmandu, Nepal, as invited Expert to attend International Seminar, April, 21-22, 2008
16. Visited ENGEES, Strasbourg, France as Visiting Faculty & invited Expert to deliver special lectures and to discuss various issues related to Urban Water Supply Systems, March 03-07, 2008
17. Visited MIT, Cambridge, USA as invited Expert for the Lead User Workshop in the area of Urban Water Supply, Feb. 28 - March 02, 2008
18. Visited Denmark Technical University, Copenhagen, Denmark, to deliver expert lecture on "Reliability Analysis of Water Distribution Systems", Jan. 2008.
19. Visited Regional Centre on Urban Water Management (RCUWM) of UNESCO, Tehran, Iran to attend the Expert Group Meeting for Training of Trainers (ToT) manual on Integrated Water Resources Management at, 2006 & 2004.
20. Contributed two chapters on "Supply Management" and "Design Issues" in ToT Manual on Integrated Urban Water Management (IUWM) for RCUWM, Tehran, Iran, (2006).
21. Visited WERDEC, Istanbul, Turkey as an International Expert to deliver lectures in Advanced Course on "Water Resources Assessment : Data processing, Fuzzy System Modeling, Interpretation, Design and Application", 2004.
22. Worked as reviewer for various prestigious International Journals like
23. IEEE Trans. on Reliability, American Society of Civil Engineers (ASCE),

24. Hydrological Processes (UK), Water Management (UK), Water Policy (UK), Reliability Engineering & System Safety (RESS), and IASTED Canada, SARJ of RES (Nigeria), Pertanika Journal of S&T (Malaysia)
25. Reviewed a R & D project submitted to Israel Science Foundation (ISF)
26. Recognized as researcher at international level and offered membership of ASCE, USA (1999, 2001), Diplomat, Water Resources Engineer (D.WRE) (2010) and New York Academy of Sciences, USA.
27. Appointed as Member, Technical Committee on Modelling and Simulation (2004-2007) of IASTED, Canada

National Level

- Nominated as Working Group member of National Institute of Hydrology, Roorkee (2018)
- Nominated as member to the sectional committee on 'Hydraulic Power House Structures' of WRD 15 of the Bureau of Indian Standards, New Delhi.
- AICTE representative to BOG, THDC Institute of Hydropower Engineering & Technology, Uttarakhand (2017).
- Member Board of Studies in Civil Engg. at D.C.R.U.S.T., Murthal (Haryana)
- Worded as Editor of the Journal of Indian Water Resources Society.
- Deputy Chairman, All India MCA Common Entrance Test (AIMCET) (2004)
- Deputy Chairman, Uttaranchal JEE-P, (2003)
- Deputy Chairman, UPR, (2002)
- Reviewer for various journals like IWRS, IAH, ISH, etc.
- Invited as examiner for Ph.D. thesis and as an expert for delivering expert lectures by various universities.
- Selected as Full Professor for Delhi College of Engineering, Delhi by Union Public Service Commission in 2003.

Research awards and Honors

- Awarded Chair Professor (Hydropower) by *Jay Pee Seva Sansthan*, New Delhi at IIT Roorkee (2013-17).
- Working as Host of Indo-US Fulbright Post-Doctoral Fellow, Dr. David E Rheinheimer from USA (2015)
- Visiting International Fellow (VIF-2011) award by EWRI of ASCE, USA for the year 2011.
- Gold medal from Indian Building Congress (IBC) for best paper during the 12th Annual Convention at Vigyan Bhawan, New Delhi, in June 2006.
- Star Performer on the basis of overall performance during the academic year 2004-05 by IIT Roorkee
- Commendation certificate Twice for best paper by Indian Building Congress during 1999 and 2003.
- Best paper award (a prize & citation) by the Indian Water Works Association (IWWA) for the paper published in the Journal of IWWA during the year 2004.
- Advisor and Expert for Union and State Public Service Commissions.

Administrative experience

1. Member, Board of Governors, THDC Institute of Hydropower Engineering & Technology, Uttarakhand
2. Member Expert Committee of UGC and AICTE for recognition of various Deemed to be Universities.
3. Member of various sectional committees of WRD 15 of the Bureau of Indian Standards, New Delhi.
4. Chief Advisor Sports, IIT Roorkee (June 2016 to June 2017)
5. Associate Dean of Students Welfare, IIT Roorkee (07/ 2008 to 03/ 2013)
6. Chairman, Co-coordinating Committee of Bhawnas (CCB) (07/2008 – 12/2010)
7. Chief Returning Officer, SAC-2015, SAC-2013 Elections, IIT Roorkee.
8. Returning officer, SAC Executive Elections, 2008-09, 2009-10, 2010-11, 2011-12
9. Disciplinary Committee of IIT Roorkee, Anti-ragging (2015, 2016)
10. Convener and Prof-In-charge, Pandal Arrangements, Convocation-2017, 2015, 2014
11. In charge, Married Accommodations and KIH Guest House (2012 - 13).
12. Chairman, Departmental Academic Committee (2010 – 2012, 2016 onwards)
13. Chairman, Departmental Research Committee (2012, 2016 onwards)
14. Member, Board of Studies, IIT Roorkee (2010 - 2012)
15. Member, Senate, IIT Roorkee (2008 onwards)
16. Deputy Chief Advisor Sports (Administration) (2008-09)
17. Chief Warden, Azad Bhawan, IIT Roorkee (2006 - 2008)
18. Working Group member, Intellectual Property Rights, IIT Roorkee (2005 to 2013)
19. Member, and In-charge of several committees for Institute convocation for the years 2008, 2007, 2006, 2005
20. Faculty Advisor, web page designing at DCE & WRD&M, IIT Roorkee.
21. Expert member of B.E. Admission Committee, D.U., Delhi (1993, 96, 97, and 2000)
22. Deputy Chairman, College Convocation, D.C.E., Delhi (2000)
23. In-charge, Examination cell, D.C.E., Delhi (1999-2001)
24. Co-ordinator, B.Tech. Entrance Exam, D.U., Delhi (1998)

Organization of professional activities in IIT Roorkee

Organization of Short-Term Training Programmes

- International Short term training program on “Planning, Design and Implementation of Irrigation Schemes”, Dec. 05-15, 2016
- "Introduction to Hydrological Methods for E-flow Assessment for a river", Oct. 27-31, 2014.
- “Planning & Design of Small Hydroelectric Projects”, 06-10 Feb., (2006).
- “System Approach for Water Resources Management”, June 26-July 07, 2006.
- “Planning & Management of Gauging & Discharge sites”, 04-08 Sep., (2006).
- “Management of Sustainable Irrigated Agriculture using Agro-climatic Data”, 07-13 Feb., (2005).
- Challenges in the Management of Water Resources & Environment in the Next Millennium - Need for Inter-Institute Collaboration, Delhi (India), 8-9 Oct., (1999).
- “System Analysis Techniques and Computer Applications in Water Resources Management”, 05-20 January, (2004).

National & International Conferences/ Seminars Organisation

- Organizer, International Conference on “Sustainable Technologies for Intelligent Water Management”, Feb., 16-19, 2018.
- Organizer, National Workshop on “Hydropower Development and Management – Thinking Ahead”, March 22, 2017.
- Organizer, National Workshop on “Challenges in Irrigation Management for Food Security”, November 26-27, 2016.
- All India Seminar on Water and Environment – Issues and Challenges, Roorkee (India), 12-13 Oct., (2002).
- As Convener, Water Resources Forum of Roorkee – organized several technical activities.
- Several technical national and international activities as team member

Short Term Training

- “Remote Sensing & GIS Applications to Water Resources” at Indian Institute of Remote Sensing, Dehradun, 5th May – 27th June, 2003
- International Advanced Course on “Water Resources Assessment : Data processing, Fuzzy System Modeling, Interpretation, Design and Application” at WERDEC, Istanbul – Turkey, August 30 – September 9, 2004.

Important Consultancy/ Research Projects

1. Detailed Project Report for Supply of 200 cusec of Water to Delhi from Ganga Canal in U.P. (Pr. No. WRC-1-002/2001-2002, Rs. 18 lakhs).
2. Pre-feasibility Reports of 10 Hydroelectric Projects in Uttaranchal (Pr. No. WRC-1005/2003-2004, Rs. 56 lakhs).
3. Residual Life Study of Effluent Channel, ECPL Vadodara (Pr. No. WRC-1014/2007-08), Rs. 8.19 lakhs)
4. Water Balance Study of Man Sagar Lake Restoration of Jal Mahal Monument in the Man Sagar Lake of Jaipur (Pr. No. WRC-1001/2005-2006, Rs. 1.26 lakh).
5. Minimum Flow Requirements of River System for Ecology in River Brahmani in Orissa for WAPCOS (Pr. No. WRC-1004/2002-03, amount Rs. 4.2 lakhs).
6. Preparation of RFP for Preparation of DPR for HIS for the state of Uttaranchal (Pr. No. WRC-1004/2005-2006, amount) amount Rs. 0.83 lakh.
7. Preparation of feasibility report for augmentation of water supply of Mewat Region in Haryana, a Project of Haryana Public Health, Faridabad, amount Rs. 5.4 lakhs.
8. Vetting of Hydraulic & Structural Design of Ranney Well Site No. 13 & 15, Village Maholi, a Project of Haryana Public Health, Faridabad, amount Rs. 0.40 lakh.
9. Area Drainage Study for Sasan Ultra Mega Power Project (Pr. No. WRC-1015/2005-2006, amount Rs. 8.02 lakhs).
10. Vetting of Hydraulic & Structural Design of Ranney Well at Site Rahimpur, a Project of Haryana Public Health, Faridabad, amount Rs. 0.67 lakh.
11. Design of Hindon Aqueduct (Parallel Deoband Branch), UP Irrigation, amount Rs. 7.6 lakhs.
12. Khareli Nala Diversion, amount Rs. 2.0 Lakhs.
13. Rasin Dam Spillway and appurtenances, amount Rs. 2.5 lakhs.
14. Hydrological Study of Jamrani Multipurpose Project for Uttaranchal Irrigation Department, amount Rs. 10.5 lakhs.

15. Establishment of Gauge & discharge Sites at Nand Prayag and Tamak for Uttaranchal Jal Vidyut Nigam, Rs. 72 lakhs.
16. Preparation of DPR for Water supply to Almora for ILF & S, New Delhi, Rs. 20 lakhs.
17. PFR for Guchupani Water Supply Scheme, a Project of Uttarakhand Irrigation Department, Dehradun, amount Rs. 1.8 lakh.
18. Vetting of Hydrology report for Tuini Plasu Hydroelectric Project, a Project of Uttarakhand Irrigation Department, Dehradun, amount Rs. 1.2 lakh.
19. PFR for Karligad Water Supply Scheme, a Project of Uttarakhand Irrigation Department, Dehradun, amount Rs. 1.8 lakh.
20. Basin Study for Lohit Basin, WAPCOS India Ltd., amount 6.3 lakhs.
21. Basin Study for Bichom Basin, WAPCOS India Ltd., amount 6.3 lakhs.
22. Environmental Flow Study for 2x35 MW Dhamwari Sundra Hydroelectric Project, Goyal Group, Delhi, amount 9.92 lakhs.
23. Vetting of Design for Small Syphon Aqueducts on Arjun Sahayak Pariyojna, Techno-care Lucknow, amount 6.06 lakhs.
24. Vetting of Design for Two number Underground water reservoirs at IMT Manesar, amount 1.52 lakhs.
25. Vetting of Design for Canal Crossings and Head and Cross Regulators on Arjun Sahayak Pariyojna, Techno-care Lucknow, amount 4.41 lakhs.
26. A Study on Improvement Measures for Efficient Water Use in Irrigation, WAPCOS India Ltd., amount 4.9 lakhs.
27. Vetting of Design for Ramganga Barrage, UP, M/S Ghanaram Engineers & contractors, Jhansi, amount 8.28 lakhs.
28. Vetting of Design for Silt Excluder and Ejector for Ramganga Barrage, UP, M/S Ghanaram Engineers & contractors, Jhansi, amount 6.62 lakhs.
29. Planning & Design for UGPL type Micro Irrigation Under SS Project, M/s Jyoti Build Tech. Pvt. Ltd., Lucknow, amount 1.1 lakhs.
30. Design of D/S Guide Bund for Uttari Dam, Irrigation Department, Lalitpur, amount 4.42 lakhs.
31. Vetting of G & D Site Data for Bowala Nandprayag and Nadprayag Langashu HEPs for 2011-12, M/s Geo-Tech India, Roorkee, amount 5.3 lakhs.
32. A Review Study on Release of Environmental Flows for Hydroelectric Projects, WAPCOS India Ltd., amount 9.83 lakhs.
33. Cumulative Scientific Study to Assess the Impact of Existing and Proposed Hydro Power Stations on Eastern Ganga Basin in Bageshwar (Uttarakhand), (WRD-1002/12-13), amount 53.4 lakhs.
34. Cumulative Scientific Study to Assess the Impact of Existing and Proposed Hydro Power Stations on Saryu River in Bageshwar District (Uttarakhand), (WRD-1001/12-13), amount 54.5 lakhs.
35. A Review Study on Hydropower and its Impact on GHGs Emissions, WAPCOS India Ltd., amount 10.67 lakhs (WRC-6009/2013-14).
36. A Part Study on "Piloting of E-Flow assessment Methodology for the Sunderbans Ecosystem - Hydrological Modeling of two river reaches in Sunderbans Area" , IUCN, New Delhi, amount 11.236 lakhs. (WRC-6024/2014-15).
37. Vetting of Balawala G.O.H. Water Supply Scheme, Doiwala, Dehradun, , Uttarakhand Peyjal Sansthan Vikas Evam Nirman Nigam, Dehradun, amount 17 lakhs (WRC- /2014-15)
38. Vetting of Mussoore Phalpatti-Surkanda Devi, GOV Pumping Water Supply Scheme, Uttarakhand Peyjal Sansthan Vikas Evam Nirman Nigam, Dehradun, amount 17 lakhs (WRC-/2014-15)

39. Vetting of Suridhar Water Supply Scheme, Uttarakhand Peyjal Sansthan Vikas Evam Nirman Nigam, Dehradun, amount 17 lakhs (WRC- /2014-15)
40. Third Party Evaluation of Cost Estimates of Myntdu (Leshka) H.E. Project (2 x 42 MW) in Meghalaya, amount 65 lakhs (WRC- /2014-15).
41. Feasibility Study for Flood Protection Works in Satluj River Basin in Kinnaur District under Pooh Division of Himachal Pradesh, amount 16.5 lakhs (WRC-6001/2016-17).
42. International Short term training program on "Planning, Design and Implementation of Irrigation Schemes", Dec. 05-15, 2016, amount US \$ 19, 340, (CO-1464/16).
43. Review of Guide Bund & Protection Measures at Major Bridge Over Yamuna River for Eastern Peripheral Expressway (Package I) in the state of Haryana and Uttar Pradesh, amount 9.91 lakhs (WRD-6004/17-18).

Fellowships/ Memberships of Professional Bodies

- Working as Founder President of North India Chapter of Environmental & Water Resources institute (EWRI) of ASCE, USA from 2010 onwards.

Life Fellowships

- Institution of Engineers (India) (FIE (I))
- Chartered Engineer (I), Institution of Engineers, India.
- Indian Water Works Association (FIWWA)
- Indian Water Resources Society (FIWWA)
- Indian Association of Hydrologists (FIAH)

Memberships

- Associate Member of ASCE and EWRI (2011 to 2016).
- Executive member (2005-08, 2009-onwards) of Indian Association of Hydrologists.
- Executive member (2004-06) of the Roorkee Local Centre of the Institution of Engineers (India).
- Executive member (2002-05) of Indian Water Resources Society.
- Executive member of Faculty Forum of IIT Roorkee (2007-09)
- Life Member of Indian Society for Hydraulics (LMISH)
- Life Member of Institute of Urban Transport (India) (LMIUT)
- Life Member of Indian Society of Technical Education (LMISTE)
- Member, Indian Association of Agro meteorologists (2016 onwards)

List of Publications

International Journals

1. **Kansal, M.L.**, Kumar, A. & Sharma, P.B., (1995). "Reliability Analysis of Water Distribution Systems Under Uncertainty", *Reliability Engg. & System Safety*, Vol 50, No.1, 51-59.
2. Kumar, A and **Kansal, M L** Discussion on "Reliability Analysis of Water Distribution Systems", *J Env Engg, ASCE*, September, pp 674-75, (1995).
3. Kumar, A, **Kansal, M L** and Arora G, "Identification of Monitoring Stations in Water Distribution System" *ASCE, Journal of Env. Engg.*, Aug., Vol. 123, No. 8, pp 746-52, (1997).
4. Kumar, A, **Kansal, M L** and Kumar Sanjay, Discussion on "Systemic Analysis of Urban Water Supply and Growth Management", *Journal of Urban Planning & Development, ASCE*, September, pp135-137, (1998).
5. Kumar, A, **Kansal, M L** and Arora G, Closure of "Identification of Monitoring Stations in Water Distribution System" *Journal of Env. Engg., ASCE*, Feb., pp 203-204, (1999).
6. Kumar, A, **Kansal, M L** and Arora G, Discussion on "Inverse Modeling of Chlorine Concentration in Pipe Networks Under dynamic conditions" *Journal of Env. Engg., ASCE*, pp 296-297, March, (1999).
7. Kumar, A, **Kansal, M L**, Minocha, V K and Kumar Sanjay, Discussion on "Risk Analysis of Traffic and Revenue Forecasts for Road Investment Projects", *Journal of Infrastructure Development & Planning, ASCE*, September, pp 112-114, (1999).
8. Kumar, A, **Kansal, M L** and Arora G, Discussion on "Detecting Accidental Contaminations in Municipal Water Networks", *Journal of Water Resources Planning and Management, ASCE*, September, pp 308-310, (1999).
9. Kumar, A, **Kansal, M L** and Kumar Sanjay, Discussion on "Condition Assessment of Water Supply Infrastructure", *Journal of Infrastructure Development & Planning, ASCE*, December, pp 161-162, (1999).
10. **Kansal, M.L.** and Kumar, A. "Computer Aided Reliability Analysis of Water Distribution Networks", *International Journal of Modelling & Simulation*, Vol. 20, No. 3, 264-273, (2000).
11. Arora, G and **Kansal, M L**, Discussion on "Performance of Various Kinetic Models for Chlorine Decay" *Journal of Water Resources Planning and Management, ASCE*, September, pp. 349, (2001).
12. **Kansal, M L**, and Arora, G, Discussion on "EXPLORE – Hybrid Expert System for Water Supply Management" *Journal of Water Resources Planning and Management, ASCE*, Nov.-Dec., pp. 415-416, (2001).
13. **Kansal, M L**, and Arora, G, Discussion on "Reliability as Tool for Hydraulic Network Planning" *Journal of Hydraulic Engineering, ASCE*, January, pp. 127, (2002).
14. **Kansal, M L**, and Arora, G, Discussion on "Optimal Operation of Water Distribution Pumps Considering Water Quality" *Journal of Water Resources Planning and Management, ASCE*, July-August, pp. 307, (2002).
15. **Kansal, M.L.**, & Verma, Shuchi "An Efficient Technique for Failure Assessment in a Distribution Network", *International Journal of Modeling & Simulation*, Vol. 25, No. 4, 2005, pp. 269-276.
16. Kansal, M.L., Das, Devadutta, & Mandal, Jeebachh "Performance Assessment of a Hydropower Station using Fault Tree Analysis", *International Journal of Water & Energy*, Vol. 62, No. 3, pp 44-55, 2005.
17. Kansal, M.L., Devi, Sunita. "An Improved Algorithm for Connectivity Analysis of Distribution Networks", *Rel. Engg. & System Safety*, Vol 92, No.10, 295-1302, (2007).
18. Kusum Deep, **M.L. Kansal**, K P Singh. "Ranking of Alternatives in Fuzzy Environment using Integral Value", *Journal of Mathematics, Statistics, and Allied Fields (Scientific Journals International)*, Vol. 1, Issue 2, (2007).
19. Fery M. Hepy, Z. Ahmad, and **Kansal, M L**. "Critical velocity for slurry transport through pipeline", *Journal of Dam Engineering*, Vol. XIX, 3, pp 169-184, (2008).

20. Mohd Fahimuddin, Govinda C Mishra and **Mitthan L Kansal**. "Groundwater Recharge Through a Multi-Aquifer Shaft Near a Flooding Stream", *Journal of Hydrologic Engineering*, ASCE, Vol. 14, 1, pp 84-90, (2009).
21. Muthukrishnavellaisamy. K, G. C. Mishra, N. C. Ghosh and **M. L. Kansal**. "Estimation of stream water quality parameter using regime channel theory", *Journal of Environmental Geology*, Springer-Verlag, Vol. 57, No. 4, pp 899-908, (2009).
22. Kusum Deep, K P Singh, **M.L. Kansal**, and Chander Mohan. "Management of multipurpose multi-reservoir using fuzzy interactive method", *Journal of Water Resources Management*, Vol. 23, No. 14, pp 2987-3003, (2009).
23. Kusum Deep, K P Singh, **M.L. Kansal**, and Chander Mohan. "A real coded genetic algorithm for solving integer and mixed integer optimization problems", *Journal of Applied Mathematics and Computations*, 212 (2), pp 505-518, (2009).
24. **Kansal, M.L.** and I Nyoman Suwarno "Integrated Agricultural Risk Management in Way Jepara Area of Indonesia", *International Journal of Irrigation & Drainage*, Online ISSN: 1531-0361, June (2009).
25. Kusum Deep, K. P. Singh, **M. L. Kansal** and C. Mohan: "A Fuzzy Interactive Approach to Portfolio Management", *OPSEARCH*, Springer, Vol. 46, No. 1, pp. 69-88, 2009.
26. Saha, A, **Kansal, M L**, Mishra, G C, and Gupta, R P, "Restoration of the Traditional Small Water Bodies in Braj", *South Asian Journal of Tourism and Heritage*, Vol. 3, No. 2, pp 19-29, 2010.
27. Kusum Deep, K. P. Singh, **M. L. Kansal** and C. Mohan: "An Interactive Method Using Genetic Algorithm for Multi-Objective Optimization Problems Modeled in Fuzzy Environment", Available online, *ESWA*, Elsevier, 2010.
28. Kusum Deep, **M. L. Kansal** and K.P. Singh: "Genetic Algorithm based Fuzzy Weighted Average Application in Multi-Criteria Decision Making Problems", accepted, *OPSEARCH*, Springer, Vol. 48, No. 2, pp. 96-108, 2011.
29. Saha, A, Mishra, G C, **Kansal, M L**, and Gupta, R P, "Analysis of Seepage from a Pond", *Hydrogeology Journal*, Springer, 573-589, 2011.
30. Muthukrishnavellaisamy. K, N. C. Ghosh, G. C. Mishra, and **M. L. Kansal**. "Semianalytical Solution for Nonequilibrium Sorption of Pollutant Transport in Streams", ASCE, *Journal of Env. Engg.*, Nov., Vol. 137, No. 11, pp 1066-1074, (2011).
31. **Kansal, M.L.** and Shilpy Arora, "Biodiversity and Present Status of Freshwater Fishes in Lohit River Basin of India", *Environmentalist Journal*, Vol. 32, No. 1, pp 58-69, Springer, (2012).
32. Muthukrishnavellaisamy. K, N. C. Ghosh, G. C. Mishra, and **M. L. Kansal**. "Hybrid Model Development for the Decaying Pollutant Transport in Streams", *Int. J. of Environment and Waste Management (IJEWM)*, (2012).
33. Mishra, G C, Mahanta, K K, and **Kansal, M L**, "Determination of Inter-plate Distance and Initial Bulk", *Journal Soil Research*, CSIRO, Australia, 2011.
34. Mahanta, K K, Mishra, G C, and **Kansal, M L**, "Estimation of electric double layer thickness from linearized and nonlinear solutions of Poisson-Boltzman equation for single type of ions", *Journal of Applied Clay Science*, 2012.
35. **Kansal, M L**, Dorje, T, and Chandniha, S K, "Design Scheme for Water Quality Monitoring in a Distribution Network" *International Journal of Environment and Development*, Vol. 9, No. 1, pp. 69-81, (2012).
36. Maryam Abdolapour, Mehdi Yasi, Javad Behmanesh, and **Kansal, M L**, "Performance evaluation of horizontal sharp crested weirs in a channel bend" *Int. Journal of Hydrology Science & technology*, Vol. 2, No. 4, pp. 402-412, 2012.
37. Mahanta, K K, Mishra, G C, and **Kansal, M L**, "Estimation of electric double layer thickness in the presence of two types of ions in soil water", *Journal of Applied Clay Science*, Vol. 87, pp. 2012-2018, 2014,
38. Gupta, Stuti, and **Kansal, M L**, 'Reliability Assessment of a Real Time Distribution System', *International Journal of Electronic and Electrical Engineering*, Vol. 7, No. 9, pp. 993-999, (2014).
39. Singh, K. P., **Kansal, M. L.** and Kusum Deep, "GA-NR for Optimal Design of Water Distribution Networks", *International Journal of Operational Research*, Vol. 20, No. 3, 2014, pp 241-261.

40. Singh, K. P., Kusum Deep and **Kansal, M. L.**, "Fuzzy-based Interactive Method for Solution of bi and multi-level Programming Problems", International Journal of Information and Decision Sciences, Vol. 6, No. 2, 2014, pp 166-181.
41. Chandniha, S K, **Kansal, M L**, and Gunjuluri, Anvesh, "Watershed Sustainability Index Assessment of a watershed in Chhattisgarh, India", Current World Environment, Vol. 9, No. 2, pp. 403-411, 2014.
42. Dereje, A, **Kansal, M L**, and Sen, Sumit, "Assessment of Water Scarcity and its Impacts on Sustainable Development in Awash Basin, Ethiopia" Journal of Sustainable Water Resources Management, Vol. 1, No. 1, pp. 71-87, 2015.
43. Sharma, S K, **Kansal, M L**, and Tyagi, Aditya, "Resource Assessment & Strategic Planning for Sustainable Water Supply to Shimla City (India) using Geo-Spatial Techniques", The Egyptian Journal of Remote Sensing and Space Sciences, Vol. 18, No. 1, pp. 85-87, 2015.
44. Sharma, S K, **Kansal, M L**, and Tyagi, Aditya, "Integrated Water Management Plan for Shimla City in India using Geo-Spatial Techniques", Water Science & Technology : Water Supply, IWA, London, Vol. 16, No. 3, pp. 641-652, 2016.
45. Dereje, A, **Kansal, M L**, and Sen, Sumit, "Economic Evaluation of Proposed Alternatives of Inter-basin Water Transfer from Baro Akobo to Awash Basin in Ethiopia", Journal of Sustainable Water Resources Management, Vol. 2, No. 3, pp. 313-330, 2016.
46. Shukla, S, **Kansal, M L**, and Jain, S K, "Snow cover area variability assessment in the upper part of the Satluj river basin in India", Geo-carto International, pp. 1-22, 2016.
47. Chandniha, S K, and **Kansal, M L**, "Prioritization of sub-watersheds based on morphometric analysis using geospatial technique in Piperiya watershed, India", Applied Water Science, Vol. 7, No. 1, 329-338, (2017).
48. **Kansal, M L**, Kumar, P, Kishore, K A, "Integrated Flood Risk Management using Multi Criterion Decision Analysis – A Case Study of Bihar", International Journal of Scientific and Research Publications, Vol. 7, No. 3, March. 2017, pp 271-276.
49. **Kansal, M L**, Kishore, K A, Kumar, P, "Impacts of Flood and its Management- A Case Study of Bihar", International Journal of Advanced Research, Vol. 5, No. 3, March. 2017, pp 1695-1706.
50. **Kansal, M L**, Ivor, J N, and Chandaniha, S, "Urban Water Service Quality Assessment in Tanzanian Towns of Songea and Mbeya" Journal of Sustainable Water Resources Management, Accepted, (2017).
51. **Kansal, M L**, Thakur, A, "Flood Estimation for a Cloudburst Event in an Ungauged Western Himalayan Catchment", International Journal of Hydrology, 2017, 1(6): 00030. DOI: 10.15406/ijh.2017.01.00030

National Journals

52. Pillai, N N, Goel, A and **Kansal, M L**, "Rapid Determination of Optimum Moisture Content of Engineering soils for Embankment Construction", Journal of Irrigation & Power, Jan., pp 59-66, (1990).
53. Kumar, A, **Kansal, M L**, Arora G and Kumar Sanjay, "A Study on Financial & Contractual Issues in BOT Projects" IBC, Journal of Indian Building Congress, Vol. 5, No. 1, pp 149-157, (1998).
54. **Kansal, M L**, and Arora G, "Issues and challenges in the Management of Urban Water Supply Schemes" IBC, Journal of Indian Building Congress, Vol. 9, No. 1, 188-194, (2002).
55. **Kansal, M.L.**, Arora, Geeta, and Verma, Shuchi "Water Quality Reliability Analysis in an Urban Network", Journal of IWWA, Vol. 36, No. 3, pp 185-198, (2004).
56. **Kansal, M.L.**, Arora, Geeta, and Verma, Shuchi "Optimal Location of Chlorine Booster Stations in an Urban Water Distribution Network", Journal of IWWA, Vol. 37, No. 1, pp 25-36, 2005.
57. Mishra, G C, and **Kansal, M L**, "Radial Collector Well as an Alternate Source of Water Supply – A Case Study", Journal of Indian Building Congress, Vol. 12, No. 1, pp 3-12, (2005).
58. **Kansal, M L**, and Verma, Shuchi,, "Rational Water Pricing – Need for Sustainable Management of Urban Water Supply ", Journal of Indian Building Congress, Vol. 12, No. 1, pp 244-152, (2005).

59. **Kansal, M L**, "Water Balance Analysis for Large Scale Water Transfer – A Case Study", Jalvigyan Sameeksha, Journal of INCOH, 19(1-2), pp 105-115, (2004).
60. **Kansal, M L**, " Sustainable Development and Management of Water Supply to the City of Almora ", Journal of Indian Building Congress, Vol. 14, No. 1, pp. 232-237, (2007).
61. **Kansal, M L**, Mishra, G C, and Bisnoi, Kailash "Radial Collector Well - An Alternate Source of Water Supply", Journal of CSIR, Vol. 20, No. 1, June, (2012), pp. 30-35.
62. **Kansal, M L**, Bayu, K, and Mishra, G C, "Yield Estimation of Radial collector Well Located Near a Meandering River", Special Issue of JIWWA on River Bank Filtration, Vol. 20, No. 1, Dec., (2012) (Sp. Issue), pp. 59-66.
63. Bisnoi, K, **Kansal, M L**, and Mishra, G C, "Flow to a Collector Pipe Laid under a Stream Bed", ISH Journal of Hydraulic Engineering, Vol. 22, No. 1, (2015), pp. 100-108
64. **Kansal, M L**, and Agarwal, S S, "Impact of Uncertainties on Economic Sustainability – A Case Study of Myntdu Leshka Hydropower Project", Indian Power Journal, (2015), Vol. XXIII, No. 4, pp 31-39.
65. Chandniha, S K and **Kansal, M L**, "Rainfall Estimation using Multiple Linear Regression based Statistical Downscaling for Piperiya Watershed in Chhattisgarh", Journal of Agro-meteorology, (2016).
66. **Kansal, M L**, and G, Anvesh, "Greenhouse Gas Emission Assessment from Few Storage Based Hydropower Schemes in India", Journal of Indian Water Resources Society, Vol. 36, No. 4, Oct., 2016, pp. 27-35.
67. Agarwal SS, and **M L Kansal**, "Issues of Hydropower Development in Uttarakhand Region of Indian Himalaya", Water and Energy International, Vol. 59, No. 11, pp. 52-64, 2017.
68. **Kansal, M L**, "Issues and Challenges in Water Productivity for Sustainable Agricultural Growth in India", Journal of Indian Water Resources Society (Special Issue), 2017, pp.
69. **Kansal, M L**, and Shukla Sandeep, "Role of Climate Change and Anthropogenic Activities in 2013 Flood Disaster of Uttarakhand", Journal of Indian Water Resources Society, Vol. 37, No. 1, Jan., 2017, pp.
70. Chandniha, S K and **Kansal, M L**, "Water resources planning and management using probability distribution", Journal of Agro-meteorology, (2017), Vol. 19, No. 2, pp.

International Congress/ Symposium/ Conferences

71. **Kansal, M L** and Arora G, "Reliability Analysis of Booster Chlorination in Urban Water Distribution Networks", World Water & Environmental Resources Congress, ASCE, May 20-24, 2001, Orlando, Florida, USA pp. I-67-76, 111, 474.
72. Kumar, A, **Kansal, M L** and Arora G, "Tracking Accidental Contamination in Water Distribution System" 40 th AIT Sym., 08-12 Nov., Bangkok, (1999).
73. Kumar, A, **Kansal, M L** and Kumar Sanjay, "Stochastic Hydraulic Reliability of a Water Distribution Network", Seventh IAHR International Sym. on Stochastic Hydraulics, July, 29-31, Mackay, Qld, Australia, (1996).
74. Kumar, A, **Kansal, M L** and Arora G, "Identification of Monitoring Stations in Water Distribution System" Water-Asia 1997, Delhi, Oct., (1997), (reproduced from ASCE, Vol. 123, No. 8, pp 746-52).
75. **Kansal, M L** and Goel, A, "Role of Computers in Water Resources Education and Training in India", Int. Conf. on Education and Training in Water Resources, Aurangabad (India), 4-8 Dec., pp 329-331, (1989).
76. **Kansal, M L**, "Institute-Industry Link in Engineering Education for Upgradation - An Indian Perspective", Int. Conf. on Engineering Education -An Indian Perspective, Vishakhapatnam (India), 21-23 Nov., pp I-68-71, (1994).
77. Kumar, A, Arora G and **Kansal, M L**, "Risk Analysis of Chloride Corrosion in Concrete Bridges" Sixth International Conf. on Deterioration & repair of RCC in the Arabian Gulf held on November 23-25, 2000, Bahrain.

78. Thatte, C D, **Kansal, M L**, and Sahasrabudhe, S J, "*Sustainable Development of Water Resources – need for Performance Based Adaptive Management*" International Conf. On Sustainable Development of Water Resources – Socio-Economical, Institutional and Environmental Aspects, November 27-30, 2000, pp 29-39, New Delhi.
79. Kumar, Sanjay, **Kansal, M L** and Chakravorty, B, "*Hydraulic Reliability Analysis of Small Water Distribution Networks*", International conference on Water and Wastewater : Perspectives of Developing Countries, Dec. 11-13, New-Delhi, pp 259-267, (2002).
80. **Kansal, M L** and Kumar, Sanjay, "*Cutset-Based Reliability Analysis of Water Distribution Networks*", International conference on Water and Environment, WE-2003, Dec. 15-18, Bhopal, pp 330-342, (2003).
81. Mishra, G C, Kumar, Sudhir, and **Kansal, M L**, "*Performance of Radial Collector Well Running Parallel to a River*", International conference on Hydrological Perspectives for Sustainable Development, HYPESD-2005, Feb. 23-25, Roorkee, pp 770-781, (2005).
82. Mishra, G C, and **Kansal, M L**, "*Performance of Radial Collector Well*", EU-India Workshop on Riverbank Filtration, April 04, IIT Roorkee, (2005).
83. Roy P Perdede, and **Kansal, M L**, "*Application of Search Techniques in Optimal Design of Water Distribution Networks*", Indian International Conference on Artificial Intelligence (IICAI-05), December 20-22, Pune, pp 1067-1077 (2005).
84. **Kansal, M L** and Heru Setiadi, "*Simulation Based Performance Evaluation of an Urban Water Distribution Network*", International conference on Public Private Partnership in Water Sector, Nov. 10-11, Nagpur, pp 42, (2006).
85. Kusum Deep, **Kansal, M L** and K P Singh, "*An Interactive Method for Multi Objective Reliability Optimization Problems*", 3rd International conference on Reliability and Safety Engineering, Udaipur, Dec. 17-19, pp 566-571, (2007).
86. Kusum Deep, **Kansal, M L** and K P Singh, "*A Fuzzy Interactive Method for Multiobjective Engineering Design Problems*", 1st International Conference on Emerging Trends in Engineering and Technology- ICETET-08, Nagpur (India), July, 16-18th, pp 559-563, (2008).
87. **Kansal, M L** and Heru Setiadi, "*Issues and challenges of Flood Management in Jakarta City of Indonesia*", International seminar on Management and Mitigation of Water Induced Disasters, April 21-22, Kathmandu, Nepal, (2008), pp 23-38.
88. **Kansal, M L** and Rajeev Kumar Giri, "*Fault Tree Analysis of a Water Treatment Plant*", International Congress on Environmental Research, ICER-08, BITS Goa, 18-20 Dec., (2008).
89. **Kansal, M L** and Recardo C Olarte, 'Optimal Operation of Pumps for Urban Water Distribution Systems', (2009), Asia Pacific Water and Sewer Systems Modelling Seminar, April 27-28, 2009, Gold Coast, Australia, Session III.
90. **Kansal, M L** and Tyagi, A, "*Threat Perceptions and Risk Management In Urban Water Supply Schemes*" World Environmental & Water Resources Congress, ASCE, May 17-21, 2009, Kansas, Missouri, USA pp. .
91. **Kansal, M L**, "*Sustainable Development & Management of Rural Water Supply Systems in India*" Regional Conference on Appropriate Water Supply, Sanitation and Hygiene (WASH) Solutions for Informal Settlements and Marginalized Communities, May 19-21, Kathmandu, Nepal, pp 122-140, (2010).
92. **Kansal, M L** and Gaur Abhishek, "Expert Systems Based Water Sustainability Index" World Environmental & Water Resources Congress, ASCE, May 22-26, 2011, Palm Springs, CA, USA.
93. Roshan R., Abdolahpour M. and **Kansal M. L.**, "Design of Stilling Basin with Stepped End Sill", 9th International Congress on Civil Engineering (9th ICCE), Isfahan University of Technology, Isfahan, Iran, May, 8-10, 2012, pp. 1-8.
94. **Kansal, M L**, Chandniha, S K, Dorje, T, and Tyagi, A., "Identifications of Optimal Monitoring Locations to Detect Accidental Contaminations" World Environmental & Water Resources Congress, ASCE, May 20-24, 2012, Albuquerque, New Mexico, USA pp. 758-776.
95. Agarwal, S S, and **Kansal, M L**, "Fuzzy Fault Tree Analysis of a Power Transformer" QR2MSE-2012, IEEE, Chengdu, Sichuan, China, pp. 1000-1004.

96. Bisnoi, Kailash, and **Kansal, M L**, "Flow Estimation to a Horizontal Collector Pipe Placed Below the River Bed", IGWC-2012, Dec. 18-21, Aurangabad (India), pp 396-409.
97. **Kansal, M L**, "AHP and Fuzzy Inference Based Sustainable Development Contribution Assessment of Renewable Energy Projects", Sustainable Development & Governance : Building Commerce & Communities, ICSDG-2012, Dec. 12-14, Amrita Viswa Vidyapeetham, Coimbatore, (2012), pp 123-134.
98. **Kansal, M L**, Mulenga Musonda, and Sharma, Aman, "Estimation of Environmental Flow for Sustainable Hydropower Development", International Exhibition and Conference on Water Technologies, and Renewable Energy, WATECH-2013, Feb. 13-14, Mumbai, (2013), Vol. 4, Issue 1, pp56.
99. **Kansal, M L**, Sharma, Aman, and Mulenga Musonda, "Release of Environmental Flow for Sustainable Hydropower Development, International Seminar on Hydropower & Sustainable Development, Feb. 21-22, Bhubneshwar, (2013), pp .
100. Sharma, SK, **Kansal, M L** and Tyagi, Aditya, "Augmentation Strategies for Sustainable Water Supply to Shimla - A Hill Station in India" World Environmental & Water Resources Congress, ASCE, May 19-23, 2013, Cincinnati, Ohio, USA pp. .
101. **Kansal, M L**, and Agarwal, S S, "Fuzzy Based Transformer Failure Analysis under Uncertainty" ICROIT-2014, IEEE, MRIU, Faridabad, India, pp. .
102. **Kansal, M L**, Shukla, Sandeep, and Tyagi, Aditya, "Role of Anthropogenic Activities in Recent Flood Disaster of Uttarakhand (India)" World Environmental & Water Resources Congress, ASCE, June 1-5, 2014, Portland, Orelando, USA.
103. Dereje, A, **Kansal, M L**, and Tyagi, Aditya, "Challenges of Sustainable Development and Management of Water Resources in Ethiopia" World Environmental & Water Resources Congress, ASCE, June 1-5, 2014, Portland, Orelando, USA.
104. Chandniha, S K, **Kansal, M L**, and Gunjuluri, Anvesh, "Watershed Sustainability Index Assessment of a watershed in Chhattisgarh, India", International Conference (ICES'14), 15-16th March, Vellore (India) (2014), pp .
105. G, Anvesh, **Kansal, M L**, Gurjar, B R, and Sharma, Aman, "Greenhouse Gas Diffusive Flux Assessment from Indian Reservoirs", International Conference (ICES'14), 15-16th March, Vellore (India) (2014), pp .
106. **Kansal, M L**, "Sustainable Urban Water Supply Management - Need for Holistic Approach" *3rd India water Week 2015*, Jan. 13-17, New Delhi. pp. 72.
107. **Kansal, M L**, and Agarwal, S S, "Uncertainties in Sustainable Development of Hydropower Projects in Uttarakhand (India)", ICHPSD-2015, *Dehradun, India*, pp.498-510.
108. **Kansal, M L**, Tyagi, Aditya, and Chandniha, S K, "Distance Based Water Sustainability Assessment using SPI for the State of Chhatisgarh in India", World Environmental & Water Resources Congress, ASCE, May 17-21, 2015, Austin, Texas, USA.
109. Samal, Rajat, and **Kansal, M L**, "Sustainable Development Contribution Assessment of Renewable Energy Projects", ICEPE-2015, June 12-13, Shillong (2015), pp .
110. **Kansal, M L**, "Issues & Challenges of River Health assessment in India", International Conference (ICWEES'2016), 15-18th March, Bhopal (India) (2016).
111. Chandniha, S K, and **Kansal, M L**, "Water sustainability Assessment under Climatic Uncertainty - A case Study of Chhattisgarh (India)", International Conference (ICWEES'2016), 15-18th March, Bhopal (India) (2016).
112. Agarwal, S S, **Kansal, M L**, and Rheinheimer, David, "Issues and Challenges of Sustainable Hydropower Development in the Indian Himalayan Region", 19th International Symposium, September, 12-14, New Delhi, India, (2016).
113. **Kansal, M L**, "Sustainable Irrigation through Piped Network - Issues of Hydraulic Design", International Conference on Modeling of Environmental and Water Resources Systems (ICMEWRS'2017), March, 24-26th, Kanpur (India) (2017).
114. **Kansal, M L**, Silas, Ekadu, "Hydro-politics in Water Governance of the Nile River in Africa" World Environmental & Water Resources Congress, ASCE, June 3-7, 2018, Minneapolis, MN, USA.

115. **Kansal, M L**, Amara, Augustini, "Resilience Study of Water Supply System in Freetown of Sierra Leone" World Environmental & Water Resources Congress, ASCE, June 3-7, 2018, Minneapolis, MN, USA.
116. **Kansal, M L**, Sridhar, V, and Singh, Neetu, "A Study of Urban Supply System Resilience for the Capital City of Delhi (India)" World Environmental & Water Resources Congress, ASCE, June 3-7, 2018, Minneapolis, MN, USA.
117. Amara, Augustini and **Kansal, M L**, "Challenges of Water Supply Management in Harbour City of Freetown in Western Sierra Leone" International Conference on Sustainable Technologies for Intelligent Water Management, Feb., 16-19, 2018, Roorkee, India.
118. Saramadie Thorlu-Bangura, Surendra Kumar Chandniha and **Mitthan Lal Kansal**, "Rainfall Variability Assessment over Rokel-seli River Basin in Sierra Leone" International Conference on Sustainable Technologies for Intelligent Water Management, Feb., 16-19, 2018, Roorkee, India.
119. Deogratus Nyamsha and **Mitthan Lal Kansal**, "Challenges of Food Security in Tanzania: Need for Precise Irrigation" International Conference on Sustainable Technologies for Intelligent Water Management, Feb., 16-19, 2018, Roorkee, India.
120. Alemayehu Yadesa and **Mitthan Lal Kansal**, "Design of pressurized Irrigation system to Improve Irrigation water use efficiency in Canal Command" International Conference on Sustainable Technologies for Intelligent Water Management, Feb., 16-19, 2018, Roorkee, India.

National Workshop/ Symposium/ Conf./Seminar

121. Goel, A and **Kansal, M L**, "Role of Engineers in Combating the Effect of Drought Menace", National Seminar, HAU, Hissar (India), May, pp 74-79, (1988).
122. Arun Kumar, **Kansal, M L** and Arora, G, "Technological Upgradation of Water Distribution Systems of India - Need for Inter-Institute Collaboration", National Workshop on Challenges in the Manag. of Water Res. & Env. in the Next Millennium - Need for Inter-Inst. Collaboration, Delhi (India), 8-9 Oct., pp 336-344, (1999).
123. **Kansal, M L** and Arun Kumar, "Are Engineering Institutions Producing Effective Engineers- Need for Introspection", National Workshop on Challenges in the Management of Water Res. & Env. in the Next Millennium. - Need for Inter-Inst. Collaboration, Delhi (India), 8-9 Oct., pp 431-439 (1999).
124. Arun Kumar and **Kansal, M L**, "Proposed BE(Civil Engg.) Scheme for Delhi College of Engineering", National Workshop on Challenges in the Management of Water Res. & Env. in the Next Millennium - Need for Inter-Inst. Collaboration, Delhi (India), 8-9 Oct., pp 452-456 (1999).
125. **Kansal, M L** and Arora, G, "Effect of Pumping Schedule on Chlorine Decay in Storage Tanks", Proc. of Recent Advances in Hydraulics & Water Resources Engg. - HYDRO 2000, Kurukshetra (India), Oct. 6-8, (2000), 181-185.
126. Mishra, G C, Chahar, B R, and **Kansal, M L**, "Need for Ground Water Planing for Sustainable Use of Narmada Water in Rajasthan", 9th National Water Convention, Bangalore (India), 3rd - 5th Nov., (2001), 269-279.
127. **Kansal, M L**, and Sahasrabudhe, S J, "Threat Perceptions to Water Resources Projects - Need for Review of Preparedness" All India Seminar on Water and Environment - Issues and Challenges, Roorkee, Oct. 12-13, 2002, pp. 187-192.
128. **Kansal, M.L.**, and Verma, Shuchi "Use of Chemical disinfectant in Drinking Water - Need for Cautious Approach", 11th National Symposium on Hydrology, NIH Roorkee, November 22-23, 2004, pp 476-485.
129. Biswal, R K, **Kansal, M.L.**, and Sharma, N., "Inter Basin Water Transfer and Water Balance Study of Mahanadi Basin", Proc. of National Conference on Hydraulics & water Resources - HYDRO 2004, Nagpur (India), Dec. 27-28, (2004), pp 79-84.
130. Mishra, G C, and **Kansal, M L**, "Performance of Radial Collector Well Running Parallel to a Partially Penetrating Stream", National Workshop on Emerging Technology for Controlling Groundwater Pollution : Drinking Water Perspectives, May 19-20, New-Delhi, (2005).

131. Kusum Deep, K P Singh, and **Kansal, M L**, "*An Interactive Method for Multi Objective Engineering Design Problems*", 40th Annual Convention of Operational Research Society of India, New Delhi, Dec. 4-6, pp 81, (2007).
132. **Kansal, M L**, Rajiv Kumar Giri, and Isaac Lalchhuanmawia, "*A Proposed Augmentation of Water Treatment Plant for Almora Town* ", Water India - V, New Delhi, India, Nov., 3-4, (2008).
133. Saha, A, Mishra, G C, and **Kansal, M L**, "*Groundwater Recharge through a Pond*", National Workshop on Ground Water Resources Estimation, Feb. 23-24, IIT New-Delhi, (2010), pp. 109-118.
134. Bal Krishna, Aggarwal, J D, and **Kansal, M L**, "*Storm Generated Wave Prediction Using Neural Network*", HYDRO-2010, Dec. 16-18, pp 217-223, Mullana, (2010).
135. Chandniha S K, and **Kansal, M L**, "*Issue and Challenges of Sustainable Drinking Water in Koriya District of Chhattisgarh*", Ground Water Pollution around Industrial Clusters : Mitigation & Management, Feb. 23, pp 55-65, NCCR Raipur, (2011).
136. Kuji, Murtiningrum, S K Jain and **Kansal, M L**, '*Downscaling Of Climate Variables Using Support Vector Machine*', National Symposium on "Water Resources Management in Changing Environment (WARMICE 2012), 8th -9th February, 367-384, NIH, Roorkee, (2012).
137. **Kansal, M L**, and Samal, R K, "Identification and Weight Determination of Sustainable Development Indicators for a CDM based Renewable Energy Project", Emerging Challenges for Sustainable Business (ECSB), 1-2nd June, 575-590, IIT Roorkee, (2012).
138. **Kansal, M L**, and Sharma, S K, "Water and Health : Issues and Challenges of Ground Water Quality in Rural India", National Conf. on Hydrology and Water Quality Management (NCHWQM 2012), 20-22nd Sept., Moregaon (Assam), ISBN 978-81-927242-0-1, (2012), pp 36-44.
139. **Kansal, M L**, "Impact of Water Bodies on Greenhouse Gas Emissions", National seminar on Green Chemistry, 23-24th September, Ahmedabad, (2013).
140. **Kansal, M L**, and Chandniha, S K, "Impact of Climate Change on Water Resources", National Seminar on Climate Change Impacts on Water Resources Systems, 27-29th Nov., Vadodara, (2013), pp 89-92.
141. **Kansal, M L**, "Hydropower and its Impact on Greenhouse Gas Emission", National Workshop on Environmental Clearances – Issues, Constraints, Compliances & Solutions, 7th Feb., PHD House New Delhi, (2014).
142. **Kansal, M L**, "Sustainable Urban Water Supply Management – Need for Holistic Approach", National seminar on Green Chemistry, 22-23rd March, Ahmedabad, (2015).
143. **Kansal, M L**, "River Health Assessment and Need for Comprehensive Guidelines for River Health Policy", National seminar on Rejuvenation of River Gomti, 9-10th May, 2015, Lucknow, (2015).
144. Agarwal, S S, Rheinheimer, David, and **Kansal, M L**, "Issues and Challenges of Hydropower Development in Uttarakhand", Conference & 8th Power Awards, Council of Power Utilities, Nov., 6, New Delhi, India, (2015).
145. **Kansal, M L**, Kumar, P, Kishore, K A, "Need of Integrated Flood Risk Management (IFRM) in Bihar", National conference on Water Resources and Flood Management with special reference to Flood Modelling (WRFM-2016), Surat, Oct. 14-15, (2016).
146. **Kansal, M L**, Kishore, K A, Kumar, P, "Flood Impacts and its Management in Bihar", 32nd National Convention of Civil Engineers on Role of Civil Engineering in Sustainable Development, Goa, Oct. 21-22, (2016).
147. **Kansal, M L**, Kishore, K A, Kumar, P, "Impact of Flood on Sustainable Development and its Management in Bihar", 31st Indian Engineering Congress, Kolkata, Dec. 16-18, (2016).

Research Guidance

Post-doctoral

1. David Rheinheimer, 'Hydropower Development in the Himalaya', (2015-16), Under Fulbright Nehru Award, *guided by Kansal, M L.*

Ph.D. Thesis

1. Arora, G, 'Water Quality Modelling and Monitoring in Distribution Systems' (2004), Delhi University, *guided by Kansal, M L.*
2. Mohd. Fahimuddin, 'Performance Assessment of a Radial Collector Well near a Stream' (2007), IIT Roorkee, *guided by Kansal, M L & G C Mishra.*
3. Muthukrishna Vellaisamy K., 'A Study on Pollutant Transport in a Stream' (2007), IIT Roorkee, *guided by G C Mishra, Kansal, M L & N C Ghosh.*
4. Krishna Pratap Singh, 'Multi-Criteria Decision Making for Optimal Resource Management', (2009), IIT Roorkee, *guided by Kusum Deep & Kansal, M L.*
5. K K Mahanta, 'Irrigation Performance and Water Management Practices in Salt affected Area', (2010), IIT Roorkee *guided by Kansal, M L. & G C Mishra*
6. Bisnoi, Kailash, 'A Study on Design Aspects of Radial Collector Wells', (2016), IIT Roorkee *guided by Kansal, M L.*
7. Chandniha, Surendra Kumar, 'Sustainability Assessment Management of a Watershed', (2016), IIT Roorkee *guided by Kansal, M L, and Tyagi, Aditya.*
8. Dereje Adeb, 'Feasibility Study of Inter-basin Transfer for Sustainable Water Management in Ethiopia', (2016), IIT Roorkee *guided by Kansal, M L & Sen Sumit.*
9. Sharma, Sham Kumar, 'Performance Evaluation and Strategic Planning of Water Supply in Hilly Areas', (2017), IIT Roorkee *guided by Kansal, M L and Tyagi, Aditya.*
10. Shukla, Sandeep, 'Snowpack Estimation and its Impact on River Flow Regime', (On-going), IIT Roorkee *guided by Kansal, M L & Jain, Sanjay Kumar.*
11. Sanchit Saran Agarwal, "Sustainable Hydropower Management under Different Risk Scenarios in Uttarakhand (India)", (On-going), IIT Roorkee *guided by Kansal, M L.*
12. Lingaraj Dhal, "Soil Health Assessment and Management for Improving Productivity", (On-going), IIT Roorkee *guided by Kansal, M L.*

M.Tech. Projects

1. Raheja, N, 'Computer Aided Simulation and Optimization of the Water Distribution Network Systems' (1991-92), *guided by Arun Kumar & Kansal, M L.*
2. Sanjay Kumar, 'An Analytic Approach for Reliability Assessment of Water Distribution Networks' (1993-94), *guided by Arun Kumar & Kansal, M L.*
3. Kumari Indu Jaiswal, 'Optimal Design of a Water Distribution Network' (1998-99), *guided by Kansal, M L & Arun Kumar.*
4. Rofel Hmar, 'Performance Based Reservoir Operation for Sustainable Management of Water Resources' (2000-2001), *guided by Kansal, M L.*
5. Din Din, 'Optimal Design of Well-Point System for Dewatering', (2001), *guided by G C Mishra & Kansal, M L.*
6. Shyam Bahadur Karki, 'Strategies for Efficient Use of Irrigation Water in Bhairhawa Lumbini Ground Water Irrigation Project, Nepal', (2001), *guided by Raj Pal Singh & Kansal, M L.*
7. Boun Hom Silimanotham, 'Study to Improve Operation and Maintenance of Nam Huam Irrigation System in Lao PDR', (2001), *guided by Raj Pal Singh & Kansal, M L.*
8. Vivarath Sihabouj, 'A study of Water measuring Devices on Irrigation Channels', (2001), *guided by Raj Pal Singh & Kansal, M L.*

9. Temesgen Abebe, 'An Appropriate Forecasting Technique for Electrical Energy Demand', (2002), *guided by* Devadutta Das & **Kansal, M L**.
10. Kiswarman, 'Reliability Based Design of Pumping Station for an Urban Water Supply Scheme', (2004), *guided by* **Kansal, M L** & Gopal Chauhan.
11. Dwi Agus Rahsetiyo, 'Optimization of Dewatering and Excavation Cost for Construction of Power Plant', (2004), *guided by* G C Mishra & **Kansal, M L**.
12. Agustini Ernawati, 'Seepage Losses from a Canal Conveying a Varying Discharge', (2004), *guided by* G C Mishra & **Kansal, M L**.
13. Rajnikanta Biswal, 'Inter Basin Water Transfer and Water Balance Study of Mahanadi Basin at Manibhadra', (2004), *guided by* Nayan Sharma & **Kansal, M L**.
14. Jeebachh Mandal, 'Reliability Evaluation of a Hydropower Station', (2004), *guided by* Devadutta Das & **Kansal, M L**.
15. Anggara Wiyono Wit Saputra, 'Use of Fuzzy Logics for Reservoir Operation Policy', (2005), *guided by* **Kansal, M L**.
16. Heru Setiadi, 'Simulation Based Performance Evaluation of an Urban Water Distribution Network', (2005), *guided by* **Kansal, M L**.
17. Roy P Perdede, 'Design of Water Distribution Network using Non Linear Programming', (2005), *guided by* **Kansal, M L** & Kusum Deep.
18. Yakob Tamu Ama Lay, 'Computer Aided Design of Aggregate Production for a Concrete Plant', (2005), *guided by* Gopal Chauhan & **Kansal, M L**.
19. Sinha, Amit Kumar, 'EIA as applied to Water Resources Projects', (2006), *guided by* **Kansal, M L** & Aman Sharma.
20. Long, V T, 'Hydrologic and Hydraulic Design of Bridges', (2006), *guided by* **Kansal, M L** & G C Mishra.
21. Eko Murwanto, 'Hydrological Analysis for a Multi-Purpose Water Resources Project – A Case Study', (2007), *guided by* **Kansal, M L**.
22. Hasbi Assidiqi, 'Optimal Scheduling of Activities in a Construction Project', (2007), *guided by* **Kansal, M L**.
23. Joni Rahalsyah Putra, 'Urban Drainage Planning of Palembang City – A Case Study', (2007), *guided by* S K Mishra and **Kansal, M L**.
24. Fery Moun Hepy sbi Assidiqi, 'Determination of Critical Velocity for Slurry Transport in Pipeline', (2008), *guided by* **Kansal, M L**, and Z. Ahmad.
25. Issac L Ralte, 'Design of Water Treatment Plant for a Hilly Terrain', (2008), *guided by* **Kansal, M L**.
26. I Nyoman Suwarno, 'Agricultural Risk Management', (2008), *guided by* **Kansal, M L**.
27. Mohd. Elfaitih Khalil Yousif, 'Design & Operation of a Pumping Station for a Water Supply System', (2008), *guided by* Gopal Chauhan, and **Kansal, M L**.
28. Dwi Asika Sari, 'Slurry Transport in a Pipe line', (2009), *guided by* **Kansal, M L**, and Z. Ahmad.
29. Recardo C Olarte, 'Optimal Operation of Pumps for Urban Water Distribution Systems', (2009), *guided by* **Kansal, M L**.
30. Bayu Kusuma, 'Performance Evaluation of a Collector well using MODFLOW', (2009-10), *guided by* **Kansal, M L**.
31. Jefry Luna, 'Basin Study for Environmental Flow Assessment in Hydropower Development', (2009-10), *guided by* **Kansal, M L**, and Devadutta Das.
32. Bal Krishna, 'Long term Wave Forecasting Using ANN', (2010-11), *guided by* **Kansal, M L**., and Agarwal, J D.
33. Navavi, Achmad, 'Hydropower and Flood Year Prediction Using Grey Models', (2010-11), *guided by* **Kansal, M L**, and Devadutta Das.
34. Kuji, Murtiningrum, 'Downscaling of Climate Variables using Support Vector Machine', (2010-11), *guided by* **Kansal, M L**, and S K Jain.
35. Dorje, Tandin, 'Distribution Network in Urban Water Supply', (2010-11), *guided by* **Kansal, M L**.
36. Gupta, Nitin, 'Long Term Electricity Demand Forecasting for Uttarakhand', (2010-11), *guided by* **Kansal, M L**, and Devadutta Das.

37. Eka Prasetyawati, 'Assessment of Rice Production under Changing Climatic Conditions of Karawang (Indonesia)', (2011-12), *guided by Kansal, M L*, and S K Jain.
38. Sanchit Agarwal, 'Performance Evaluation of Power System Components using Fault Tree Analysis', (2011-12), *guided by Kansal, M L*, and C Thangaraj.
39. Rajat Samuel, 'Sustainable Development Contribution Assessment of CDM based Renewable Energy Projects, (2011-12), *guided by Kansal, M L*
40. Kebebe, Mengistu 'Optimization of Construction Equipment Selection for Earth Moving Operations', (2011-12), *guided by Kansal, M L*, and Gopal Chauhan.
41. Derese Admasu Tessema, 'Estimation of Hydraulic Roughness Parameters for Boulder Streams', (2012-13), *guided by Kansal, M L*, and Z. Ahmed.
42. Mulenga, Musonda, 'A Study on Environmental Flow Estimation for a Cascade Type Hydropower Development', (2012-13), *guided by Kansal, M L* and Sharma, Aman.
43. Stuti Gupta, 'Reliability Assessment of a Power System - A Case Study of IIT Roorkee Campus', (2013-14), *guided by Kansal, M L*.
44. Navin Kumar Jha, 'Computer Aided Design of a Penstock', (2013-14), *guided by Kansal, M L*.
45. Ivor Joseph Ndimbe, 'Assessment of Customers' Satisfaction for Water Supply in Few Cities of Tanzania', (2013-14), *guided by Kansal, M L*.
46. Gunjuluri Anvesh, 'Assessment of Green House Gas Emissions from Storage Based Hydropower Schemes', (2013-14), *guided by Gurjar, B R*, and **Kansal, M L**.
47. Nitu Singh, 'Drinking Water Sustainability Assessment for an Indian Metropolitan City - A Case Study of Delhi', (2013-15), *guided by Kansal, M L*.
48. Hemant Joshi, 'Sustainability Assessment of Rural Water Supply Schemes in Uttarakhand', (2014-15), *guided by Kansal, M L* and Khare, Deepak.
49. Patrick, N, Y, 'Assessment of Urban Water Quality Service - A Case Study of Cape Town in Ghana', (2014-15), *guided by Kansal, M L*.
50. Manan, Ulhas, 'Energy Extraction from Wastes in High Rise Buildings', (2014-15), *guided by Kansal, M L*.
51. Sethi, Suhash, 'Travelling Salesman Problem Solution using Ant Colony Optimization Technique', (2014-15), *guided by Kansal, M L*.
52. Thakur, Avinash, 'Flood Risk Analysis and Mapping for a Himalayan River', (2015-16), *guided by Kansal, M L*.
53. Benny, Komba, 'River Water Quality Index Assessment - A Case Study', (2015-16), *guided by Kansal, M L*.
54. Mehga, Salve, 'Drought Assessment using SPI in Marathwada Region of India', (2015-16), *guided by Kansal, M L* and Chaube, U C.
55. Kumar, Prashant, 'Flood Hotspot Identification and Mitigation - A Case Study of Bihar', (2016-17), *guided by Kansal, M L*.
56. Kumar, Abhishek Kishore, 'Flood Impact on Hydrology, Environment, Life and Policy (HELP) in Bihar', (2016-17), *guided by Kansal, M L*.
57. Lamichhane, Ashish Mani, 'Sustainability Assessment of Water Supply Schemes in Nepal - A Case Study of Khairnitaar and Parsa Water Supply Schemes', (2016-17), *guided by Kansal, M L*.
58. Sharma, Anurag, 'Rainwater Harvesting as a Renewable Source of Drinking Water in Saline Groundwater Areas - A Case Study of Mewat, Haryana', (2016-17), *guided by Kansal, M L*.
59. Kalyani, Nidhi, 'Rainfall-runoff modelling using ANN', (2016-17), *guided by Kansal, M L*.
60. Eman, Alemayehu Yadesha, 'Conjunctive water use planning in irrigation system for enhancing water use and water productivity', (2017-18), (on going) *by Kansal, M L*.
61. Ekadu, Silas, 'Sustainability assessment of an irrigation system -A case study of Doho in Eastern Uganda', (2017-18), (on going) *by Kansal, M L*.
62. Nyamsha, Deogratius, 'Irrigation planning and scheduling for improving water productivity-A case study of Msange irrigation scheme in Tanzania', (2017-18), (on going) *by Kansal, M L*.
63. Nagarwal, Nitin Kumar, 'A study of urban drainage system-A case study of Gurgaon', (2017-18), (on going) *by Kansal, M L*.
64. Gupta, Umesh Kumar, 'River training structures using Trial Dykes and Jack Jetty system', (2017-18), (on going) *by Kansal, M L*.

65. Fazeli, Abbas S, 'Study of Amu River Bank protection in Afghanistan', (2017-18), (on going) *by Kansal, M L.*
66. Amara, Augustine, 'Design and implementation of a low cost grid connected hydro power system', (2017-18), (on going) *by Kansal, M L.*
67. Nikpai, Esmatullah, 'Water balance study of Taloqan sub river basin in Afghanistan', (2017-18), (on going) *by Kansal, M L.*
68. Bangura, Saramadie Thorlu, 'Assessment and Management of watershed sustainability using GIS and remote sensing-A case study of Guma watershed in Sierra Leone', (2017-18), (on going) *by Kansal, M L.*
69. Mahenge, Christover Charles, 'Performance evaluation of an urban water distribution network, a case study of IIT- Roorkee', (2018-19), (on going) *by Kansal, M L.*
70. Mwanga, Elibariki E., 'A Study of Pangani River Health in Tanzania', (2018-19), (on going) *by Kansal, M L.*
71. Sam, Dwoki Justin, 'Reservoir Sedimentation Pattern and Assessment of its Residual Life', (2018-19), (on going) *by Kansal, M L.*
72. Kombi, Mayamiko Mathews, 'Performance Evaluation of Water Supply Scheme to Salima District in Malawi', (2018-19), (on going) *by Kansal, M L.*
73. Loboso, Richard Nyombe, 'Sustainable Management of Sudd Swamp', (2018-19), (on going) *by Kansal, M L.*
74. Faizi, Naseer Ahmad, 'Sustainable Water Supply Management to Charikar City in Parwan Province of Afghanistan', (2018-19), (on going) *by Kansal, M L.*
75. Cole, Patrick Claudius Idowu Cole, 'Sustainability of WASH Conditions and its Impact on Human Development Index (HDI) in Eastern Sierra Leone', (2018-19), (on going) *by Kansal, M L.*
76. Mekete, Teshome, 'A study of Water Supply to Durame Twon in Ethiopia', (2018-19), (on going) *by Kansal, M L.*

B.E. Projects

1. 'Design of Storage Works for a Water Supply Scheme' (1991-92), *guided by Roy, N & Kansal, M L.*
2. 'Design of Storage Works for an Irrigation System' (1992-93), *guided by Roy, N & Kansal, M L.*
3. 'Design of Storage Works for an Irrigation System' (1993-94), *guided by Roy, N & Kansal, M L.*
4. 'Contamination Propagation Modelling in Water Distribution System' (1994-95), *guided by Arun Kumar & Kansal, M L.*
5. 'Optimization of a Water Treatment Plant Design' (1994-95), *guided by Arun Kumar, Kansal, M L & Madan, Geeta.*
6. 'Fuzzy Analysis in Civil Engineering Systems' (1995-96), *guided by Arun Kumar & Kansal, M L.*
7. 'Heuristic and Neural Networks System for Real Time Flood Forecasting' (1995-96), *guided by Arun Kumar & Kansal, M L.*
8. 'Forecasting using Neural Network Architectures - Rental Level Prediction; Real Time Flood Forecasting' (1996-97), *guided by Arun Kumar & Kansal, M L.*
9. 'Modelling of Atmospheric Dispersion Using Artificial Neural Networks' (1996-97), *guided by Arun Kumar & Kansal, M L.*
10. 'Financing of a B.O.T. Project - A Case Study' (1997-98), *guided by Arun Kumar & Kansal, M L.*
11. 'Finance and Resource Optimization in a Construction Schedule' (1997-98), *guided by Arun Kumar & Kansal, M L.*
12. 'Application of Storm Water Management Model' (1998-99), *guided by Arun Kumar & Kansal, M L.*
13. 'Cut-set based Reliability Analysis of Water Distribution System' (1998-99), *guided by Arun Kumar & Kansal, M L.*

14. 'Flood Frequency Analysis of a Gauged Catchment - A Comparison of L-Moments with Other Statistical Methods' (1999-2000), *guided by* **Kansal, M L.**
15. 'A Programming Model for Reservoir Operating Policies for Optimal Performance of a Water Resource System' (1999-2000), *guided by* **Kansal, M L.**

(M L Kansal)