

Dr. Manoj Kumar
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Currently working as:

- i) Principal, DAV Institute of Engg. & Technology, Jalandhar (Since September 7, 2015)**
- ii) Coordinator, IKG PTU Regional Centre-DAVIET**

Registrations, Certifications, Professional Affiliations and Special Honors:

- 1.** CMI Level 5 Certified in Management & Leadership from Chartered Management Institute UK. He was selected under AICTE-UKIERI Technical Leadership Development Program supported by British council for the AY 2018-19.
- 2.** Selected for UK study tour by AICTE & British Council under UKIERI project in 2019 to represent India.
- 3.** Chairman & Member, Board of Studies; Electronics & Communication Engineering, I K G Punjab Technical University, Jalandhar (2003-09) & (2018-21).
- 4.** Assessor for NBA and NAAC accreditation.
- 5.** Application for grant of patent titled INTEGRATED DIGITAL COMMUNICATION SYSTEM FOR SENDING, RECEIVING AND MANAGING EMAILS AND SHORT MESSAGES numbered as PA202011044438 published by Patent Office.
- 6.** Received best PI coordinator award from Secretary, D.O.E, Govt. of India under IMPACTS SS project sponsored by D.O.E, GOI; World Bank and Swiss Development Cooperation, Switzerland. Recognized amongst top 25 Academic Leaders in the country by WiproMission10X. Wipro Mission 10X in its endeavour of identifying top25 academic leaders of the country organized 03 leveled Academic Leadership Workshops PAN India. I have the distinction of being one of the top 25 academic leaders, recognized by Wipro Mission 10X.
- 7.** Honoured by District Administration, Jalandhar with a Medallion and a Certificate of Merit on the Independence Day 2018 for outstanding contribution to education and various government programs.
- 8.** Honoured with “LMA – Dayanand Munjal Award for Manager of the year 2017”, the most prestigious annual award instituted by LMA since 1984 & sponsored by Hero Cycles Limited, Ludhiana, for outstanding Innovative and Leadership Achievements.
- 9.** “Jewel of India” award by Indian Solidarity council for the year 2006.
- 10.** Fellow, The Institution of Engineers (India).
- 11.** Fellow, The Institution of Electronics & Telecommunication Engineers.
- 12.** Life Member, Indian Science Congress Association.

13. Life Member, Computer Society of India.
14. Life Member, Indian Society of Technical Education.
15. Life Member, Punjab Academy of Sciences & Member, Executive Council (2009-12) & (2018-21)
16. Member, FICCI North Region Task Force on Higher Education.
17. Academic Advisor for National Cyber Safety and Security Standards.
18. Nominated as Head, National Conferences & Conclaves by the Jalandhar Management Association (JMA) Advisory Board as a part of the JMA Core Team Formation for the year 2015-16.
19. Silver Medalin M.Tech. (Electronics & Communication Engg.) from Punjab Technical University, Jalandhar.
20. Reviewer for Elsevier Science's International Journal-Optical Fiber Technology, Springer, ICFAI Journals and World Scientific & Engineering Academy and Society (WSEAS) for international conferences.
21. HMM10: Leading and Motivating
Harvard Manage Mentor & MISSION 10X-LEVEL2
22. HMM10: Goal Setting
Harvard Manage Mentor & Mission 10X-LEVEL2
23. HMM10: Time Management
Harvard Manage Mentor & MISSION 10X-LEVEL2
24. HMM10: Difficult Interactions
Harvard Manage Mentor & MISSION 10X-LEVEL2

Significant Distinctions:

1. 119 Research Publications in leading International and National Journals & Conferences.
2. Authored 08 Engineering Text Books and reviewed 05 Engineering Books.
3. Under my leadership, DAVIET, Jalandhar ranked 10th in the category of Outstanding Engineering Colleges of Excellence in India CSR-GHRDC Survey-2016 conducted by Global Human Resource Development Centre.
4. DAV Institute of Engineering & Technology (DAVIET), Jalandhar has been accredited with grade 'A' by NAAC in October, 2017; and recognized by UGC under section 2(f) under my stewardship.
5. Under my leadership, DAVIET has been conferred with 'Award for Education Excellence' by The Indus Foundation during Indo-Global Education Summit & Expo 2017.
6. Under my guidance DAVIET has been ranked 57th in the dream list of top 165 Private Engineering Colleges in India in 'India Today Group-MDRA Survey, 2018' for Best Colleges; and also ranked 11th in India in the Nationwide survey of Top Engineering Colleges of Excellence conducted by Competition Success Review (CSR), July 2018.

7. Under my leadership, the Institute has been conferred with 'Outstanding Institution Award (Engineering Colleges)' by National Institute of Technical Teachers Training and Research, Chandigarh (NITTTR) in September, 2018.
8. Under my stewardship, DAVIET has been conferred with the status of 'Host Institution (HI)/ Business Incubator (BI)' by MSME, New Delhi, under the scheme "Support for Entrepreneurial and Managerial Development of SMEs through Incubators" in 2018. The objective of the scheme is to provide early stage funding to nurture innovative business ideas that could be commercialized in a year. The scheme provides financial assistance that may vary from Rs. 4 to 8 lacs for each incubate /idea subject to overall ceiling of Rs. 62.5 lacs for each business incubator.
9. Under my guidance DAVIET has been ranked 15th amongst "The Best Private Engineering Colleges of North India" by India Today-MDRA Survey 2019.
10. Member, IKG PTU Rational Policy Framing Committee for awarding internal marks to students.
11. Member, IKG PTU committee constituted to propose regarding the endowment fund deposited by the affiliated Colleges/Institutions.
12. Signed MoU with Texas Instruments for establishing Analog Electronics Lab at DAVIET, Jalandhar.
13. Signed MoU with University of Ontario Institute of Technology, Oshawa (Canada), Trent University, Canada, SAIT, Canada, NIT Delhi, NIT, Hamirpur, NIT Jalandhar for collaborative research project and faculty/student exchange program, co-sponsored and jointly organized seminars, conferences and workshops.
14. Established Centre of Excellence with M/s Sofcon India Pvt. Ltd. on 'Industrial Automation & Embedded Systems' at DAVIET.
15. Established "Centre of Excellence in Cyber Security & Cyber Forensics" at DAVIET, Jalandhar with M/s Sedulity Solutions & Technologies, New Delhi to organize various Research & Development and Training programs based on latest and emerging technologies for Students, Faculties, Law-Enforcement Agencies, Corporate Professionals, and Research Scholars.
16. Organized International Interdisciplinary Conference on Science Technology Engineering Management Pharmacy and Humanities jointly by DAVIET, Jalandhar, and Nanyang Technological University, Singapore on April 22 & 23, 2017 at Singapore.
17. Conference Chair and Moderated Panel discussions on "Leveraging Technology for Smart & Digital India" in 3rd DAV National Congress on Science, Technology, Engineering, Humanities & Management (STEHM-2016) "Transforming India into a Knowledge Economy" on May 20-21, 2016 at DAV Institute of Engineering & Technology, Jalandhar.
18. Organized International Interdisciplinary Conference on Engineering Science and Management jointly by DAVIET, Jalandhar, Biju Patnaik University of Technology, Odisha and IRP on Dec 17 & 18, 2016 at Goa.
19. Conference Chair, ISRO & PTU sponsored International Multi Track Conference on Sciences, Engineering and Technical Innovations (IMTC15) at CT Group of Institutions on May 22 & 23, 2015.

20. Convener, DST & PTU sponsored International Multi Track Conference on “Sciences, Engineering and Technical Innovations (imtc14)” at CT Group of Institutions on June 2&3, 2014.
21. Organized National Conference on “Recent Trends in Information & Communication Technologies”, organized by Deptt(s) of CSE & ECE, CT Institute of Engg., Management & Technology, Jalandhar on February 22 & 23, 2013.
22. Organized National Conference on “Higher Education in India-The Changing Facet” at CT Institute of Engg., Management & Technology, Jalandhar on January 4&5, 2013, that was inaugurated by Member Secretary, AICTE, New Delhi.
23. Earned Grant-in-Aid worth Rs.3.22 lac and Rs1.25lac from AICTE for National Conference and Short Term Training Programme in the year 2008-09 at DAVIET, Jal.
24. Session Chair, Conference: EHAC: Optical & Wireless Communications II during 7th WSEAS International Conference on Electronics, Hardware, Wireless and Optical Communications (EHAC'08), Organized at University of Cambridge, UK from Feb 20-22, 2008.
25. Convener, National Conference on Optical and Wireless Communication (NCOW- 2008), Organized by Department of Electronics & Communication Engineering, DAV Institute of Engineering & Technology, Jalandhar in association with Institution of Engineers (India) & Rsoft Design Group, USA from November 27–28, 2008.
26. Selected as chairman for three sessions in WSEAS international conference at Cambridge University, U.K from Feb. 20-22, 2008.
27. Co-chaired a panel discussion session on “Next Generation Wireless Technologies” and chaired paper presentation session in the International Conference (ICCSA-2006) held during June 27-29, 2006 at National University, San Diego, California, USA.
28. Lead the faculty delegation to explore the collaborative interactions between Rsoft Design Group, USA & DAVIET and succeeded in signing of MoU between Rsoft, USA & DAVIET during Dec. 2004.
29. Interacted with the Research Scholars & Faculty of Light Wave Technology Labs at Columbia University & Princeton University in USA for exchange of Know How in the frontier & emerging areas of Technology during Dec. 2004.

Education:

- B.E (ECE) from Gulbarga University (1990).
- M.Tech. (ECE) from Punjab Technical University, Jalandhar (2001).
- Ph.D from Punjab Technical University, Jalandhar (2007)

Job Profile: Education, Administration, Vocational Training & Research

Targeted Trainee(s):

1. Under Graduate & Post Graduate students in Electrical, Electronics, Telecommunication, Computer Sci. Engg. & Information Technology.
2. Faculty of other Institutions.
3. Professionals from Industry.

Subjects Taught : Optical Fiber Communication, Analog & Digital Communication, Cellular & Mobile Communication, Data Communication

Specialization : Optical Fiber Communication, Wireless Communication.

Countries Visited : U.S.A, U.K, Canada, France, Italy, Ireland, Pakistan, Singapore, and Dubai.

Employment History: Teaching & Research: 30 years

- Principal, DAV Institute of Engg. & Tech. Jalandhar since Sep. 07, 2015.
- Professor & Director, CT Institute of Engg. Management & Technology, Jalandhar from July 1, 2010 to September 7, 2015.
- Professor & Faculty Head in Department of Electronics & Communication Engg. and Research Centre at DAV Institute of Engg. & Tech. from October 12, 2007 to July 01, 2010.
- Assistant Professor & Faculty Head in Department of Electronics & Communication Engg. at DAV Institute of Engg. & Tech. from May 01, 2003 to October 11, 2007.
- Lecturer (Sr. Scale) & Faculty Head in Department of Electronics & Communication Engg. at DAV Institute of Engg. & Tech. from July 10, 2001 to April 30, 2003.
- Lecturer at Mehr Chand Polytechnic, Jalandhar from February 1992-July 2001.
- Lecturer at Seth Jai Prakash Polytechnic, Damla (Yamuna Nagar) from August 1991-January 1992.

Major Research Activities:

Optical soliton transmission system (long-distance, high-speed optical transmission): The term soliton (formed from Latin solitaries – solitary) is one of the fundamental unifying ideas in modern theoretical physics and mathematics. An impressive practical implementation of the soliton concept has been achieved in fiber optics, where soliton pulses are used as the information carriers to transmit digital signals over long-haul. Optical soliton research, full of innovative spirit, has recently arrived at the stage of a first real-world implementation of the soliton concept in communication systems. Realization of soliton-based transmission will clearly demonstrate how the results of the fundamental soliton theory can be successfully exploited in very important practical applications.

- Practical and research interest is directed mostly towards two main goals: development of effective high capacity long-haul transmission systems and the upgrade of existing terrestrial fiber networks. There are two principal approaches to overcome these limitations in the first (that can be called “linear”) both the chromatic dispersion and nonlinearity are considered to be detrimental factors while in the second, the nonlinear and dispersive effects are counter balanced

(such systems can be called “nonlinear”). Nonlinear effects that are detrimental in the “linear” systems can be used to improve transmission characteristics of optical communication systems.

- Our investigations have been focused to suggest alternative optical soliton based designs that are suitable for already installed optical transmission links. Based on our investigations, it is recommended that one of the promising ways to upgrade installed optical network is to exploit the 1.3 μ m optical window, where the step-index fibers have their zero dispersion wavelength, using wide-bandwidth polarization-insensitive SOAs. The pattern effect and the impact of chirp on pulse propagation after amplification have been investigated. The observations are based on modeling and simulation optical soliton transmission link. Optical soliton pulse transmission over distances of the order of several hundreds of kilometers has been shown with and without initial chirp.
- We investigated that the Kerr non-linearity stabilizes solitons against splitting due to birefringence. The birefringence induced time delay between X and Y polarization components reduces to 200 ps from 440 ps when the Kerr non-linearity is taken into account at polarization angle and fiber length of 631.72 km (10 soliton periods) & 1264.344 km (20 soliton periods) for both the linear and nonlinear soliton transmission.
- Our research goal was to realize long-haul, large capacity optical transmission by taking advantage of optical nonlinear effects, including optical solitons and nonlinear techniques for generating ultra short optical pulses. The soliton is a wave that exists in nature that can propagate over long distances without any distortion of its waveform. We have developed several novel path-averaged long-haul soliton transmission techniques, such as the use of path averaged soliton, dispersion-managed (DM) soliton, loss-managed soliton transmission systems. By adopting these techniques, we can increase the transmission capacity and upgrade installed terrestrial or submarine cables. The investigations demonstrate the robustness of path-averaged soliton in a long-haul transmission link of 17,000 km at a bit rate of 10 Gbps. It has been investigated that relatively stable pulses can propagate over longer distances in long-haul dispersion managed soliton regime in a fiber link with loss and periodic amplification by keeping the average dispersion small but non-zero. It has been shown that the dispersion management is achieved through soliton pulse narrowing in anomalous dispersion fiber and broadening at DCF. In conclusion, we have reported that the pulse propagation in dispersion-managed soliton transmission link is similar to conventional transform-limited soliton transmission link.
- We have also carried out performance evaluation of the Optical Soliton Transmission Systems under the influence of various linear and non-linear fiber parameters & performance measures. Performance evaluation has been carried out for the different modulation formats viz. NRZ, RZ Soliton, RZ Raised Cosine and RZ Super Gaussian.
- Simulations for data formats Return to Zero (RZ), Non Return to Zero (NRZ), RZ Soliton, Duobinary and their subcategories has been done with and without ideal dispersion compensation for optical communication systems. The results show that in general dispersion compensation improves timing jitter. RZ-Rectangular pulses show the smallest value of jitter without compensation. It has been observed that the RZ Raised cosine and Soliton gives minimum jitter after ideal compensation. It has been reported that the BER performance of optical communication

system using duobinary data format is $10e-8$ and $10e-37$ before and after dispersion compensation respectively.

- Further the comparative study show that the timing jitter is lowest in case of RZSoliton (0.0127 ns) after dispersion compensation and 0.0135 ns for RZ-Rectangular data format before dispersion compensation.

Academic Achievements:

a) Research Publications: 119

Journal Publications

International:

1. Shipu Sachdeva, Jagjit Singh, **Manoj Kumar**, “Energy Efficient Hybrid WDM – TDM Passive Optical Networks with access-load Difference between ONUs using FBGs, SOA and DWS,” accepted for publication in Optical and Quantum Electronics (SCI), April 2021
2. V. Dhiman, **Manoj Kumar**, and A. K. Sharma, “HANET : A Remote Sensing Airborne Architecture for Multi-Function Adhoc,” Indian Journal of Computer Science and Engineering, Vol. 11, No. 5, pp. 454–470, 2020.
3. Ria Kalra, **Manoj Kumar**, “Parametric Analysis and Optimization on Modified Hexagon Shaped Antenna Amalgamated with Staircase to Accomplish Wide Impedance Bandwidth suitable for Wireless Portable Applications,” in International Journal of Future Generation Communication and Networking (IJFGCN), Vol. 12, No. 3, pp. 44-53, 2019, ISSN: 2233-7857(**E-SCI Indexed**)
4. Ria Kalra, **Manoj Kumar**, “Design of Novel UWB Antenna With Desired Band Notch Characteristics By Introducing Defects in the Antenna Geometry Suitable for Biomedical and Wireless Personal Area Network Applications”, Sustainable Humanosphere, Vol. 16, No. 1, March 2020, ISSN: 1880-6502(**Scopus & E SCI Indexed**)
5. Ria Kalra, **Manoj Kumar**, “Performance Investigation of A Novel UWB Antenna Incorporated with Defects in The Ground Structure To Miniaturize The Size Of Antenna”, International Journal of Creative Research Thoughts (IJCRT), Vol. 6, No. 2, April 2018, ISSN: 2320-2882(**UGC Indexed**)
6. V. Dhiman, **Manoj Kumar**, and A. K. Sharma, “A radical study of energy efficient hierarchical cluster-based routing protocols for WSN,” International Journal on Electrical Engineering and Informatics, Vol. 12, No. 3, 2020, doi: 10.15676/ijeei.2020.
7. Varsha, Manju bala, **Manoj Kumar**, Neeraj Kumar, “Energy Efficient TABU Optimization routing protocol for WSN”, in IngenieríaSolidaria, Vol. 16, No. 3, pp. 1-31, September 2020, e-ISSN:2357-6014. (**E-SCI Journal**)

8. Varsha, Manju bala, **Manoj Kumar**, “Enhanced MSEEC routing protocol using TABU search with static and mobile nodes in WSNs”, in Recent Advances in Computer Science and Communications, Vol. 12, No. 1, pp. 1-15, 2020, ISSN: 2213-2759 (**Scopus**)
9. Varsha, Manju bala, **Manoj Kumar**, Neeraj Kumar, “Development of QoS optimized routing using Artificial bee colony in Wireless Sensor Network”, in International Journal of Innovative Technology and Exploring Engineering (IJITEE), Vol. 9, No. 1, pp. 926-933, Nov 2019, ISSN: 2278-3075. (**Scopus**)
10. Varsha, Manju bala, **Manoj Kumar**, Neeraj Kumar, “Hybrid TABU-GA Search for energy efficient routing in WSN”, in International Journal of Recent Technology and Engineering (IJRTE) Vol. 8, No. 4, pp. 3250-3256, November 2019, ISSN: 2277-3878. (**Scopus**)
11. Varsha, Manju bala, **Manoj Kumar**, “Randomization of Node Scheme with Optimization in Wireless Sensor Network”, in International Journal Advanced Networking and Applications, Vol. 10, No. 5, pp. 3999-4006, 2019, ISSN: 0975-0290.(**UGC Care**)
12. Varsha, Manju bala, **Manoj Kumar**, “An Energy-Efficient routing protocol based on TABU-Genetic Strategy in Wireless Sensor Network”, in International Journal Advanced Networking and Applications, Vol. 10, No. 6, pp. 4099-4104, 2019, ISSN: 0975-0290.(**UGC Care**)
13. Kumar S., Singh A. & **Kumar M.**, “Covert communication integrates into wavelet packet transform OFDM system over Rayleigh fading channel”, Wireless Networks, Springer, Vol. 26, No.1, pp: 1-9, 2018, <https://doi.org/10.1007/s11276-018-1775-3>
14. Kumar S., Singh A., **Kumar M.**, “Information hiding with adaptive steganography based on novel fuzzy edge identification”, Defence Technology, Elsevier, Vol.15, No. 2, pp: 1-8, 2018, <https://doi.org/10.1016/j.dt.2018.08.003>.
15. Kumar S., Singh A., **Kumar M.**, “Covert Information Sharing with Novel Fuzzy Adaptive Edge Detection”, Security and Privacy, Wiley, Vol. 1, No. 6, pp: 1-11, 2018, DOI: 10.1002/spy2.47
16. Singh M, **Manoj Kumar**, Malhotra J., “Energy efficient cognitive body area network (CBAN) using lookup table and energy harvesting”, Journal of intelligent & fuzzy system, Vol. 35, No. 2, pp. 1253-1265, 2018, doi. <http://doi.org/10.3233/JIFS-169669>.
17. Harpreet Kaur, **Manoj Kumar**, Ajay K. Sharma and Harjit P. Singh, "Design and Analysis of SRRC filter in wavelet based multiuser environment of mobile WiMax" International Journal of Advanced Intelligence Paradigms, Inder science Publishers Ltd., doi: 10.1.10.1504/IJIP.2018.10023307, ISSN : 1755-0386
18. Kaur, Harpreet, Manoj Kumar, Ajay K. Sharma, and Harjit P. Singh. "Implementation of SRRC Filter in Mobile WiMax with DWT Based OFDM System." International Journal of Computer Network and Information Security, Vol. 8, No. 4, pp. 62-69, 2016

19. Singh M., **Manoj Kumar**, Malhotra J., "Cooperative Sensing using LUT: A powerful method to overcome shadowing problem and maximizing Throughput in CRN's" International Journal of Creative Research Thoughts (IJCRT), Vol. 5, No. 4, pp. 2320-2882, November 2017 (**UGC Approved journal**). IF-5.97. DOI. <http://doi.one/10.1727/IJCRT.17101>.
20. Singh M., **Manoj Kumar**, Malhotra J., "An Energy Efficient Spectrum Sensing, Access and Handoff Concept using Look Up Table for Cognitive Radios Networks", International Journal of Advanced Research in Computer Science, Vol. 8, No. 5, pp. 228-238, May-June 2017. (**UGC Approved journal**)
21. Vikram Dhiman, **Manoj Kumar**, Ajay Sharma, "Comprehensive Review of Open Source Tools and Cross Layer Approach for Fast Growing Android Market", International Journal on Recent and Innovation Trends in Computing and Communication, Vol. 5, No. 1, pp. 62 - 68, 2017, <https://doi.org/10.17762/ijritcc.v5i1.88>.
22. Vikram Dhiman, **Manoj Kumar**, Ajay Sharma, "Comprehensive Review of Open Source Tools and Cross Layer Approach for Fast Growing Android Market", International Journal on Recent and Innovation Trends in Computing and Communication, Vol. 5, No. 1, pp 62-68, May 2017.
23. Vikrma Dhiman, Ikjot Saini, **Manoj Kumar** "A Comprehensive Survey of Location Based Routing inn Vehicular Network", International Journal of Wireless and Microwave Technologies , Vol. 7, No. 1, pp 40-48, January 2017, DOI: 10.5815/ijwmt.2017.01.05
24. Harpreet Kaur, **Manoj Kumar**, Ajay K. Sharma and Harjit P. Singh, "Performance analysis of DWT based OFDM over fading environments for mobile WiMax", Optik - International Journal for Light and Electron Optics, Vol. 127, No. 2, pp. 544–547, 2016, ISSN:0030-4026,. ISSN: 2321–5151.
25. Harpreet Kaur, **Manoj Kumar**, Ajay K. Sharma and Harjit P. Singh, "Implementation of SRRC filter in Mobile WiMax with DWT based OFDM System", International Journal of Computer Network and Information Security (IJCNIS), Vol. 8, No. 2, pp. 62-69, April 2016. ISSN: 2074-9090 (Print), ISSN: 2074-9104 (Online) (Modern Education & Computer Science Press, Hong Kong).
26. Bharti, Manisha, Ajay K. Sharma, and **Manoj Kumar**, "Design and Performance Analysis of 2D OCDMA System with Polarization States." Journal of Optical Communications, Vol. 37, No. 4 pp. 363-370, 2016
27. Bharti, Manisha, **Manoj Kumar**, and Ajay K. Sharma. "Comparative analysis of optical 2D codes using $(n, w, \lambda a, \lambda c)$ optical orthogonal codes for optical CDMA." Optical Memory and Neural Networks, Vol. 25, No. 3, pp. 149-159, 2016
28. Bharti, Manisha, **Manoj Kumar**, and Ajay K. Sharma. "A novel technique to detect code for SAC-OCDMA system." Journal of Optical Communications, Vol. 39, No. 2, pp.215-221,2018

29. Bhupinder Singh, Manju Bala, **Manoj Kumar**, "A Modified Weight Balanced Algorithm for Influential Users Community Detection in Online social Network (OSNs)", International Journal of Advanced Engineering, Management and Science (IJAEMS), Vol. 2, No. 6, June 2016, ISSN : 2454-1311
30. Singh, M., **Kumar, M.**,& Malhotra, J, "A review on cognitive radios network," Amity journal of Engineering and Technology (AJET Dubai). Vol. 1, No. 1, pp. 15-23, 2016
31. Narpat Singh, **Manoj Kumar**, Manju Bala "Face Recognition System based on SURF and LDA Technique," I.J. Intelligent Systems and Applications, Vol. 2, pp. 13-19, Published Online February 2016 in MECS, DOI: 10.5815/ijisa.2016.02.02
32. Priya, **Manoj Kumar**, Harjit Pal Singh, "Compression based Energy aware routing algorithm for WSN", International Journal of Advanced Research in Computer Engineering & Technology (IJARCET), Vol. 4, No. 9, September 2015, ISSN: 2278 – 1323
33. Sooraj Parkash, Anurag Sharma, **Manoj Kumar**, Harsukhpreet Singh, "Performance Enhancement of WDM-PON FTTH Network by Using Decision Feedback and Feed forward Equalizations," International Journal of Signal Processing, Image Processing and Pattern Recognition, Vol.8, No.8 pp.99-106, 2015, ISSN: 2005-4254
34. Harpreet Kaur, **Manoj Kumar**, Ajay K. Sharma and Harjit P. Singh, "Performance Analysis of Different Wavelet Families Over Fading Environments for Mobile WiMax System", International Journal of Future Generation Communication and Networking, Vol. 8, No. 1, pp. 87-98, ISSN: 2233-7857, 2015. (SERCE South Korea).
35. Narpat Singh, **Manoj Kumar**, Manju Bala "To improve the accuracy in face recognition system" International Journal of Engineering Research, Vol.3 , No. 2, pp. 295-298 , 2015, ISSN:2321-7758.
36. Gurminder Kaur, Manju Bala, **Manoj Kumar** "Performance Analysis of DYMO FSR & GSR Using Wromhole attack under Vanet's", "International Journal of computer Science & Information Technologies", Vol. 6, No. 2, 2015, ISSN (Print):0975-9646 ISSN (Online): 1765-1768.
37. Sooraj Parkash, Anurag Sharma, **Manoj Kumar**, "Performance investigation of CRZ modulation format in high speed 15X48GB/s WDM-PON", Australian Journal of Information Technology and Communication, Vol. II, No. II, pp. 26-30, June 2015. ISSN 2203-2843.
38. Gurkirat Kaur, **Manoj Kumar**, Manju Bala, "Comparing Ethernet & Soft RoCE over 1 Gigabit Ethernet", International Journal of Computer Science and Information Technologies (IJCSIT), Vol. 5, No. 1, pp. 323-327, 2014, ISSN: 0975-9646.
39. Gurminder Kaur, Manju Bala, **Manoj Kumar** "Review on Various Routing Protocols Based on VANET's: A Survey", International Association of Scientific Innovaiton and Research (IASIR)" Internal Journal of Software and Web Sciences, Vol. 11, No.1, pp. 16-24 December 2014- February 2015, ISSN (Print): 2279-0063 ISSN (Online): 2279-0071

40. Balwinder Kaur, Manju Bala, **Manoj Kumar**, Comparative Analysis of Fuzzy based Wildfire Detection Techniques, published in International Journal of Scientific & Engineering Research, Vol. 5, No. 7, , pp 813-818, July-2014, ISSN 2229-5518
41. Harjit Singh, Manju Bala, **Manoj Kumar**, “Performance Evaluation of Zrp Star and Dsr under Vanet's”, published in IOSR Journal of Computer Engineering (IOSR-JCE), Vol. 16, No. 3, Ver. II, pp. 85-89, May-Jun. 2014, e-ISSN: 2278-0661, p- ISSN: 2278-8727
42. Anurag Sharma, Dinesh Kumar, Rahul Malhotra, **Manoj Kumar**, “Investigation of Delivery of Triple Play Service in GE-PON Fiber to the Home Network”, International Science Index Vol. 2014, No. 10, Part XVII, 2014
43. Jagjit Singh Malhotra, **Manoj Kumar**, Ajay K. Sharma, “Low cost solution to high capacity 32 x 32 channel FTTH duplex link employing triple play services,” International Journal for Light and Electron Optics, Optik, Germany, Vol. 125, No.1, pp. 93 -96, January 2014, ISSN 0030-4026.
44. Singh M., **Kumar M.**, & Malhotra, J, “Analysis of Various Quality of Service (QoS) provisioning techniques in Cognitive Radios Networks”, International Journal on Emerging Technologies, Vol. 4, No. 2, pp. 136-141, 2013
45. Manwinder Singh, **Manoj Kumar**, Jyoteesh Malhotra, “Review on Cognitive Radios: A revolutionary idea behind optimum spectrum utilization”, CT International Journal of Information & Communication Technology (IJCT), Vol. 1, Issue 1, pp 16-22, 2013
46. Gurkirat Kaur, **Manoj Kumar**, Manju Bala, “Performance Evaluation of Soft RoCE over 1 Gigabit Ethernet”, IOSR Journal of Computer Engineering (IOSR-JCE), Vol. 15, No. 4, pp 81-87,(Nov. - Dec. 2013), e-ISSN: 2278-0661, p- ISSN: 2278-8727.
47. Jagjit Singh Malhotra, **Manoj Kumar**, Ajay K. Sharma, “Performance evaluation and PMD tolerance of PM-QPSK at 100 Gb/s in dispersion managed 64 channel long haul DWDM optical communication lin”, Journal of Optical Communication, Vol. 34, No.4, pp. 351-356, 2013.
48. Jagjit Singh Malhotra, **Manoj Kumar**, Ajay K. Sharma, “Performance evaluation of 16 channel DWDM radio-over-fiber link”, Elsevier Science’s International Journal for Light and Electron Optics, Optik, Germany, Vol. 124, No.20, pp. 4120-4122, October 2013, ISSN 0030-4026.
49. Jagjit Singh Malhotra, **Manoj Kumar**, Ajay K. Sharma, “Estimation and mitigation of FWM penalties in dispersion managed 32 channel long haul DWDM soliton link”, International Journal for Light and Electron Optics, Optik, Germany, Vol. 124, No.17, pp. 3029-3032, September 2013, ISSN 0030-4026.
50. Jagjit Singh Malhotra, **Manoj Kumar**, Ajay K. Sharma, “Performance optimization of high capacity long reach 32 channel FTTH downstream link employing triple play services”, International Journal for Light and Electron Optics, Optik, Germany, Vol. 124, No.16, pp 2424-2427, August 2013, ISSN 0030-4026.

51. ParambirSingh, **Manoj Kumar**, Anurag Sharma, "Design and performance investigation of multi user OCDMA network", International Journal of Scientific & Engineering Research, Vol. 4, No. 7, July 2013. ISSN 2229-5518.
52. Jagjit Singh Malhotra, **Manoj Kumar**, Ajay K. Sharma, Performance comparison of PSQPSK and PM-QPSK modulation schemes in high capacity long haul DWDM optical communication link. International Journal of Engineering Sciences, Vol.2, No. 5,pp. 154-15, May 2013
53. Singh M., **Kumar M.**, Malhotra J., "Review on Cognitive Radios: A revolutionary idea behind optimum spectrum utilization", CT International Journal of Information & Communication Technology (I2CT), Vol. 1, Issue 1, pp 16-22, 2013.
54. Singh M., **Manoj Kumar**, Malhotra J., "Analysis of Various Quality of Service (QoS) provisioning techniques in Cognitive Radios Networks" published in International Journal on Emerging Technologies, Vol. 4, No. 2, pp. 136-141, 2013 ISSN: 0975-8364
55. Manwinder Singh, **Manoj Kumar**, Jyooteesh Malhotra, "Research Gaps in Cognitive Radios Networks", International Journal of advanced and innovative research(IJAIR), Vol. 2, No. 2, pp 121-125, Feb. 2013, ISSN: 2278-7844.
56. Jagjit Singh Malhotra, **Manoj Kumar**, Ajay K. Sharma , "Performance enhancement of 32 channel long haul DWDM soliton link using electronic dispersion compensation", International Journal of Electronics Communication & Instrumentation Engineering Research and Development, Vol. 2, No. 4, pp. 11-16, Dec- 2012.
57. VanitaKamra and **Manoj Kumar**, "Power penalty in multi tone radio-over fibre system employing direct and external modulation with optical amplifiers", International Journal for Light and Electron Optics, Optik, Germany, Vol. 122, No.1, pp. 44-48, January 2011, ISSN 0030-4026.
58. Bindiya Jain, **Manoj Kumar**, "Simulative analysis of pre- and post-compensation using CRZ format in WDM optical transmission link", International Journal for Light and Electron Optics, Optik, Germany, Vol.121, No.21, pp. 1948-1954, November 2010, ISSN 0030-4026.
59. Parvinder Singh Sandhu, **Manoj Kumar**, "Performance analysis of high data rate multiple users TR-UWB system using AWGN channel", International Journal of Information and Telecommunication Technology Vol. 1, No. 1, 2010, (ISSN: 0976-5972).
60. Jagjit Singh Malhotra and **Manoj Kumar**, "Performance Analysis of NRZ, RZ, CRZ & CSRZ data formats in 10 Gb/s optical soliton transmission link under the impact of chirp and TOD", International Journal for Light and Electron Optics, Optik, Germany, Vol. 121, No.9, Pages 800-807, May 2010,. doi:10.1016/j.ijleo.2008.08.010. ISSN 0030-4026.
61. Neeru Malhotra and **Manoj Kumar**, "Investigations on PMD Induced Penalties in 40 Gbps Optical Transmission Link", International Journal for Light and Electron Optics, Optik, Germany, Vol. 121, No.3, pp. 217-306, February 2010, ISSN 0030-4026, doi:10.1016/j.ijleo.2008.07.007..
62. **Manoj Kumar**, Ajay K Sharma and T S Kamal, "Performance Evaluation of Path-averaged Soliton Pulses in Loss-Managed 10 Gbps Soliton Transmission Link over a Long Haul", International

Journal for Light and Electron Optics, Optik, Germany, Vol. 121, No.1, pp. 68-76, January 2010., Tdoi:10.1016/j.ijleo.2008.05.017T. ISSN0030-4026.

63. Manju Sharma, **Manoj Kumar** and Ajay K Sharma, "HTTP and FTP Statistics for Wireless and Wire-line Network with and without Load Balance Based on OPNET", International Journal of Information and Systems Sciences, Vol. 5, No. 1, pp 112-125, 2009, ISSN 1708-296X.
64. **Manoj Kumar** and Ajay K Sharma, "Performance improvement by positioning DCF non symmetrically in a periodic amplified re-circulating loop for long-haul optical soliton transmission link", International Journal for Light and Electron Optics, Optik, Germany, Vol. 120, No. 14, pp. 710-714, September 2009,ISSN 0030-4026. doi:10.1016/j.ijleo.2008.02.022..
65. **Manoj Kumar**, Ajay K Sharma, T S Kamal and Jagjit Singh Malhotra, "Comparative Investigation and Suitability of Various Data Formats for 10 Gbps Optical Soliton Transmission Links at Varied Chirp", International Journal for Light and Electron Optics, Optik, Germany, Vol. 120, No. 7, pp. 330-336, March 2009, ISSN 0030-4026, doi:10.1016/j.ijleo.2007.09.008.
66. **Manoj Kumar**, Ajay K Sharma and T S Kamal, "Simulative demonstration of soliton pulse stability over nonlinear regime in birefringent optical fiber".International Journal for Light and Electron Optics, Optik, Germany, Vol. 120, No. 2, Pages 93-96, January 2009, ISSN 0030-4026. doi:10.1016/j.ijleo.2007.07.003.
67. **Manoj Kumar**, Ajay K Sharma and T S Kamal, "Significance of Pre-chirping on Long-haul Path-Averaged Soliton Impulse in Re-Circulating Loop at 10 & 20 Gb/s with TOD". International Journal for Light and Electron Optics, Optik, Germany, Vol. 120, No. 3, pp. 106-114, January 2009, ISSN 0030-4026, doi:10.1016/j.ijleo.2007.06.015.
68. Manjit Singh, Ajay K Sharma, R. S. Kaler and **Manoj Kumar**, "Timing jitter dependence on data format for ideal dispersion compensated 10 Gbps optical communication systems", International Journal for Light and Electron Optics, Optik, Germany, Vol. 119, No. 7, pp. 309-314, May 19, 2008. ISSN0030-4026, doi:10.1016/j.ijleo.2007.01.007.
69. **Manoj Kumar**, Ajay K Sharma and T. S. Kamal, "10 Gbps Optical Soliton Transmission Link using SOA In-Line Amplifier on Standard SMF at 1.3mm", International Journal for Light and Electron Optics, Optik, Germany, Vol. 118, pp 34-37, 8 January 2007. ISSN 0030-4026doi:10.1016/j.ijleo.2006.01.008.

National:

1. Manwinder Singh, **Manoj Kumar**, Jyootesh Malhotra, "Review on Cognitive Radios: A revolutionary idea behind optimum spectrum utilization", CT International Journal of Information & Communication Technology (I2CT) Vol. 1, Issue 1, 2013, pp 16-22. ISSN (Online): 2321:7316
2. Harpreet Kaur, **Manoj Kumar**, Ajay K. Sharma and Harjit P. Singh, "Performance Analysis of DWT Based OFDM System using SRRC Filter in Mobile WiMax over Fading Environment,"

Journal of Communication Engineering & Systems, Vol 7, No. 1,2017. ISSN: 2321–5151(STM Publication).

3. Manwinder Singh, **Manoj Kumar**, JyooteeshMalhotra,“Research Gaps in Cognitive RadiosNetworks”, International Journal of advanced and innovative research.(IJAIR), Vol. 2,No. 2, pp121-125, Feb. 2013. ISSN: 2278-7844.
4. Kiran Ahuja, **Manoj Kumar**, “Significance of empirical and physical propagation models to calculate the excess path loss”, Journal of Engineering Research and Studies, Vol. 2, No. 2, pp. 1-6, April-June 2011. ISSN 0976-7916.
5. Navneet Gill, **Manoj Kumar**, Manju Sharma, “Comparative Investigations on Response of E- mail, HTTP,FTP, Remote Login for Hybrid and IPv6 Networks”, Journal of Computer Science and Applications, Vol. 2, No. 1, pp. 31-40 , 2010
6. Sandeep Kath, **Manoj Kumar**, Ajay Sharma, “CDN DNS - An Efficient DNS Request Routing Technique in Content Delivery Networks”, Published in Journal on Advances in Computational Sciences and Technology, Vol. 3, No. 2, pp. 147–154, 2010. ISSN 0973-6107.
7. Kiran Ahuja, **Manoj Kumar**,“Link budget optimization of propagation models at 900/1800MHz”, The Icfai Journal of Electrical and Electronics Engineering, Vol.3, No.1,pp 25-37, January 2010. ISSN No. 0974-17014.
8. Bindiya Jain, **Manoj Kumar**, Performance improvement with dispersion compensation in conjunction with pre-chirping using RZ format in WDM optical transmission link, Journal of Punjab Academy of Sciences, Vol. 4, No. 1&2, pp. 23-27, 2007.
9. Neeru Malhotra, **Manoj Kumar**, “Illustrative Investigations on PMD Induced Penalties in 80Gbps Optical Transmission Link”, The Icfai Journal of Electrical and Electronics Engineering, Vol.1, No.3, pp. 30-42, 2008. ISSN No. 0974-17014.
10. **Manoj Kumar**, Ajay K Sharma and T S Kamal, “Long-haul Dispersion Managed Soliton Transmission Link Over a Fiber Length of 18000 km with Loss and Periodic Amplification”, The Icfai Journal of Electrical and Electronics Engineering Vol.1, No.4, pp. 33-38, 2008. ISSN No. 0974-17014.
11. **Manoj Kumar**, Ajay K Sharma, T S Kamal and Moin Uddin, “Demonstration of Robustness of Path-Averaged Soliton Pulses in Loss-Managed Soliton Transmission Link over a Long Haul with10-Gb/s Modulated Signal”, Invertis Journal of Science & Technology, Vol. 1, No. 1, pp 55-60, 2007. ISSN 0973-8940.
12. Ajay K Sharma, **Manoj Kumar** and T S Kamal, “Investigations on 24,500 km Long-haul Path-Averaged Soliton Transmission Link at 10 & 20 Gbit/s with Higher order Dispersion at Varied Chirp”, International Journal of physical sciences, Ultra Science Vol. 19 (1) M, pp 211-216,2007. ISSN 0970-9150.

Conference Proceedings: International Conference:

1. Varsha, Manju Bala, **Manoj Kumar**, “Comparative analysis of TABU search and genetic algorithm in wireless sensor network”, International Conference on Emerging trends and innovations in Social Sciences, Engineering, Management, Agriculture and Medical sciences held on 26th April, 2019 by universal group of institute jointly with Globally multidisciplinary research and education association, Vol. 6, No. 2, pp. 71-78, ISSN: 2394-7780
2. V. Dhiman, Himakshi, A. Kaur, and **Manoj Kumar**, “Pragmatic approach to conquer security perturbation in cloud computing using level classification,” in 2nd International Conference for Convergence in Technology, I2CT 2017, Vol. 2017-Janua, doi: 10.1109/I2CT.2017.8226119.
3. Manisha Bharti, Ajay K Sharma and **Manoj Kumar**, “Effect and Suppression of Noise in 2D PC/OOC Scheme for Optical CDMA System”, Published as Lecture Notes in Electrical Engineering, Proceedings of ICSNCS-2016, Springer, pp: 261-268, Vol. 395, 2016.
4. Manisha Bharti, **Manoj Kumar**, Ajay K. Sharma, “Design and Analysis of OCDMA System using W/T Codes at Different Bit Rates,” International Conference on Communication, Information & Computing Technology (ICCICT), Mumbai, India. Jan. 16-17, 2015.
5. Manisha Bharti, **Manoj Kumar**, Ajay K. Sharma, “Comparative Analysis of FBGs as Encoders for Optical CDMA Systems”, IEEE International Conference on Signal Processing and Communication (ICSC), Noida, India. March 16-18, 2015, doi: 10.1109/ICSP Com.2015.7150627
6. Narpat Singh, **Manoj Kumar**, Manju Bala, “To minimize the error rate in face recognition System using DWT & LDA” ISRO & PTU sponsored International Multi Track Conference on Sciences, Engineering and Technical Innovations(IMTC 15) at CT Group of Institutions on May 22 & 23, 2015.
7. Gurminder Kaur, **Manoj Kumar**, Manju Bala, “Highway propagation modeling using DYMO, FSR & GSR under VANETS,” ISRO & PTU sponsored International Multi Track Conference on Sciences, Engineering and Technical Innovations(IMTC15) at CT Group of Institutions on May 22 & 23, 2015, pp 270-272.
8. Priya, **Manoj Kumar**, Harjit Pal Singh, “Data Aggregation Schemes for wireless sensor Networks,” ISRO & PTU sponsored International Multi Track Conference on Sciences, Engineering and Technical Innovations(IMTC15) at CT Group of Institutions on May 22 & 23, 2015, pp 307-311.
9. Harjit Singh, **Manoj Kumar**, Manju Bala, “Performance evaluation of STAR ZRP, POVRP based on VANETS”, DST & PTU sponsored International Multi Track Conference on Sciences, Engineering and Technical Innovations (IMTC14) at CT Group of Institutions on June 2 & 3, 2014, pp 52-55.
10. Prabhpreet Kaur Bhatia, Vineet Anand, Anurag Sharma, **Manoj Kumar**, “Analysis and Augmentation of IMD in Multi tone Analog CATV Transmission system”, DST & PTU sponsored International Multi Track Conference on Sciences, Engineering and Technical Innovations (IMTC14) at CT Group of Institutions on June 2 & 3, 2014, pp 151-155.

11. Balwinder Kaur, **Manoj Kumar**, Manju Bala, “Wildfire Detection System Technique: A Survey”, DST & PTU sponsored International Multi Track Conference on Sciences, Engineering and Technical Innovations (IMTC14) at CT Group of Institutions on June 2 & 3, 2014, pp 528 - 531.
12. Manisha Bharti, Ajay K. Sharma, **Manoj Kumar**, “Simulative Analysis of 2-Code Keying Approach using Walsh Hadamard codes to Enhance Security and Reduce Dispersion in OCDMA System”, International Conference on Data Mining and Intelligent Computing (ICDMIC) 2014, doi:10.1109/icdmic.2014.6954260
13. Singh M., **Manoj Kumar**, Malhotra J., “MAC layer protocol & Dynamic access Design using Hybrid CSMA-CA” in International conference on emerging technologies in Electronics Technology GNDU Amritsar (India) from 20-22 Dec 2013 , pp.285-289, ISBN -978-93-82880-92-9.
14. Singh M., **Manoj Kumar**, Malhotra J., “Review On Cognitive Radios: A Revolutionary Idea Behind Optimum Spectrum Utilization” published in Proceedings of National Conference on Recent Trends in Information & Communication Technologies in Association with PTU (RTICT- 2013) pp-207-14., Feb 22-23,2013.
15. Rishi Singh, **Manoj Kumar**, “Trade-off between fiber dispersion & effective length v/s FWM Penalties in WDM Networks”, 6th IEEE International Symposium on High Capacity Optical Networks and Enabling Technologies (HONET), held on 28-30 December, 2009, pp 236-239, at Alexandria, Egypt, doi: 10.1109/HONET.2009.5423065
16. Kamaljit Singh and **Manoj Kumar**, “Simulative analysis of operating conditions for Raman Amplifier in a hybrid amplification system”, 8th IASTED International conference on wireless and optical communications, May 26-28, 2008, Quebec, Canada.
17. Kamaljit Singh, **Manoj Kumar**, “RIN evaluation for optimum performance of optical transmission system with dispersion compensation”, International computer Science and Technology conference ICSTC 2008), April 1-3, 2008, San Diego California, USA.
18. Kamaljit Singh, **Manoj Kumar**, “Simulative Analysis of operating conditions for Flat amplitude Multi wavelength Brillouin-Raman comb fiber laser”, International Computer Science and Technology conference ICSTC 2008, April 1-3, 2008, San Diego, California, USA.
19. Gaurav Sethi and **Manoj Kumar**, “Performance analysis of AODV and DSR in MANET- A simulative study”, International computer Science and Technology conference, ICSTC 2008, April 1-3, 2008, San Diego, California, USA.
20. Gaurav Sethi and **Manoj Kumar**, “Performance analysis of AODV, DSR and TORA in mobile ad hoc network – a simulative study”, International technology, education and development conference INTED 2008, 3rd – 5th March 2008, Valencia, Spain.
21. Gaurav Sethi and **Manoj Kumar**, “Simulation and comparison of communication protocols in ad hoc networks “Paper ID Number: 575- 778, International Conference, WSEAS 2008- 09, February, 18-22, 2008, University of Cambridge, UK.
22. Vasudha, Ajay K Sharma and **Manoj Kumar**, “Investigations on Routing Protocols for Inbound/Outbound Traffic” Accepted for publication in The Fifth International Conference on

Computer Tsecurity, ICCNS-2008, Paper ID: CP21,September 26-28, 2008 at Vishwakarma Institute of Technology, Pune, India.

23. Vasudha, Ajay K Sharma and **Manoj Kumar**, “Performance Evaluation of E-mail, FTP and Database Traffic for RIPv2 with EIGRP”, IEEE Sponsored Ninth ACIS International Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing T(SNPD2008) August 6-8, 2008 at Phuket, Thailand.
24. Gaurav Sethi and **Manoj Kumar**, “Simulative analysis of routing protocols in mobile adhoc networks”, IEEE sponsored International conference- “4th International Symposium on High Capacity Optical Networks and Enabling Technologies” HONET-2007, November 18 - 20, 2007, Dubai.
25. Manju Sharma and **Manoj Kumar**, “Comparative Investigation on the Media access Delay in Wireless LAN for a Switched and Routed Network based on OPNET”, IEEE sponsored International conference- “4th International Symposium on High Capacity Optical Networks and Enabling Technologies” HONET-2007, November 18 - 20, 2007, Dubai.
26. Sudhir Sharma &**Manoj Kumar**, “Impact of Harmonics in Electrical Distribution Systems”, International Conference on Energy & Environmental Technologies for Sustainable Development, Paper Code: TP-209, NIT, Jaipur, October 8-10, 2003.

National Conferences:

1. Rishi Singh and **Manoj Kumar**, “Performance Evaluation of Modulation Data Formats in Standard Single Mode and Dispersion Shifted Fibers” 13th Punjab Science Congress, Punjab University, Chandigarh. Feb, 7-9, 2010.
2. Sheetal Nave and **Manoj Kumar**, “Understanding the Radio Revolution”, published in the proceedings of the National Conference on Optical and Wireless Communication (NCOW-2008) ,Organized by Department of Electronics & Communication Engineering, DAV Institute of Engineering & Technology, Jalandhar from November 27–28, 2008.
3. Manju Sharma and **Manoj Kumar**, “HTTP and FTP Statistics for Wireless and Wire-Line Network with and without Redundancy Based on OPNET”, published in the proceedings of the National Conference on Optical and Wireless Communication (NCOW- 2008),organized by Department of Electronics & Communication Engineering, DAV Institute of Engineering & Technology, Jalandhar from November 27–28, 2008.
4. Vanita Kamra and **ManojKumar**, “Performance Analysis of Single Tone Radio-Over-Fibre System Set-Ups using Different Combinations of Laser Modulation & Optical Pre amplifiers”, published in the proceedings of the National Conference on Optical and Wireless Communication (NCOW-2008),Organized by Department of Electronics & Communication Engineering, DAV Institute of Engineering &Technology, Jalandhar from November 27–28,2008.
5. Harsimran Jit Kaur and **ManojKumar**, “Performance Evaluation of Digital Modulation Techniqueson Radio Over Fiber for 3G and Beyond”, published in the proceedings of the National Conference on Optical and Wireless Communication (NCOW- 2008), Organized by Department of

Electronics & Communication Engineering, DAV Institute of Engineering & Technology, Jalandhar from November 27–28, 2008.

6. Harpreet Kaur, Neeru Malhotra and **Manoj Kumar**, “FTTH using PON-An Emerging Broadband Network”, published in the proceedings of the National Conference on Optical and Wireless Communication (NCOW-2008), Organized by Department of Electronics & Communication Engineering, DAV Institute of Engineering & Technology, Jalandhar from November 27–28, 2008.
7. Bindiya Jain and **Manoj Kumar**, “Performance Evaluation of NRZ, RZ, CSRZ, CRZ Modulation Formats in UltraLong Haul WDM System”, published in the proceedings of the National Conference on Optical and Wireless Communication (NCOW- 2008), Organized by Department of Electronics & Communication Engineering, DAV Institute of Engineering & Technology, Jalandhar from November 27–28, 2008.
8. Harpreet Kaur, Neeru Malhotra, **Manoj Kumar** and Aarti Kochher, “Performance Analysis of FTTHBPON System with Triple Play”, published in the proceedings of the National Conference on Optical and Wireless Communication (NCOW- 2008), Organized by Department of Electronics & Communication Engineering, DAV Institute of Engineering & Technology, Jalandhar from November 27–28, 2008.
9. Manju Sharma and **Manoj Kumar**, “Comparative Investigation on Through put and Client Response Time for a Switched and Routed Wireless LAN based on OPNET” presented and published in National conference on Emerging Technologies in Computing and Communication, ETCC-2007, pp 436-440, held at NIT Hamirpur during July 27-28, 2007.
10. Jagjit Singh, **Manoj Kumar**, “Comparative study of data formats for high bitrate Light wave transmission systems,” 10th Punjab Science Congress, DAV Institute of Engg. & Technology, Jalandhar, February, 7-9, 2007.
11. Kamaljit Singh, **Manoj Kumar**, “Studies on the impact of RI Non the performance of optical transmission,” 10th Punjab Science Congress, DAV Institute of Engg. & Technology, Jalandhar, February, 7-9, 2007.
12. Manju Sharma and **Manoj Kumar**, “Radio-over-Fiber for Cellular Systems: Benefits & Future Trends”, National Conference on “Electronic Circuits & Communication Systems (ECCS-06)”, pp 317-323, February 9-10, 2006.
13. **Manoj Kumar** & Ajay K Sharma, “Recent Progress in Dispersion Managed Soliton Transmission Technologies”, IDSS-BC-2003.
14. Sudhir Sharma & **Manoj Kumar**, “Effects of Harmonics on Power Quality” in National Conference on Power Systems & Energy Management at IET Baddal, 23rd May, 2003.

b. Text Books Authored/ Co-Authored : 08

1. Manoj Kumar, "Principles of Communication Engineering", M/s. Satya prakashan, New Delhi. ISBN 81-7684-445-4
2. Dr. Ajay Sharma & Manoj Kumar, "Communication Systems-I", M/s. Satya Prakashan, New Delhi. ISBN 81-7684-099-8
3. Manoj Kumar, "Troubleshooting & Maintenance of Electronics Equipment", M/s. Satya Prakashan, New Delhi. ISBN 81-7684-387-3
4. Manoj Kumar, "Electronic Components & Materials", M/s. Satya Prakashan, New Delhi. ISBN 81-7684-148-X
5. K.D. Prasad & Manoj Kumar, "Electronic Devices & Circuits –I", M/s. Satya Prakashan, New Delhi. ISBN 81-7684-173-3
6. Manoj Kumar, "Applied Power Electronics", M/s. Satya Prakashan, New Delhi. ISBN 81-7684-080-7
7. Manoj Kumar, Sudhir Sharma & Jagjit Singh Malhotra, "Basic Electrical & Electronics Engineering", M/s Jaico publishers, Bombay. ISBN 81-7992-360-6
8. Manoj Kumar & Manisha, "Analog Communication Systems", M/s. Satya Prakashan, New Delhi. ISBN 81-7684-431-4

c. Text Books Reviewed: 05

1. Taub & Scheling, "Principles of Communication Systems," Tata McGraw Hill. (International Edition)
2. K.N. Bhat, M.K. Achuthan "Fundamentals of Semiconductor Devices", Tata McGraw Hill.
3. Ravish R Singh, "Electrical Networks", Tata McGraw Hill.
4. Salivahanan, Vallavaraj & Ganapriya "Digital Signal Processing", Tata McGraw Hill.
5. A. Bruce Carlson & Paul B. Crilly, "Communication Systems-An Introduction to Signals and Noise in Electrical Communication" 5th Edition. Tata McGraw Hill.

d. MoUs /Centre of Excellence established:

1. MoU with Texas Instruments for having established two labs at the institute viz. Embedded Systems Lab and Analog Electronics Lab(s).
2. Siemens Centre of Excellence & Authorised Training Center (ATC) for imparting training on Solid Edge at CT Group of Institutions.
3. Oracle Academy at DAVIET Jalandhar.
4. Established IBM Centre of Excellence at CT Group of Institutions.
5. Established Centre of Excellence with M/s Sofcon India Pvt. Ltd. on Industrial Automation & Embedded Systems at DAVIET.
6. Signed MoU with Texas Instruments for having established (donation) Analog Electronics Lab at DAVIET, Jalandhar

7. MoU with M/s Sedulity Solutions & Technologies (SEDULITY), New Delhi to establish "Centre of Excellence in Cyber Security & Cyber Forensics" to organize various Research & Development and Training programs based on latest and emerging technologies for Students, Faculties, Law-Enforcement Agencies, Corporate Professionals, and Research Scholars.
8. MoU with Lahti University of Applied Sciences, Finland at CT Group of Institutions.
9. MoU with University of Sri Jayewardenepura, Sri Lanka at CT Group of Institutions.
10. MoU with University of Ontario Institute of Technology, Oshawa (Canada), NIT Delhi, NIT, Hamirpur, NIT Jalandhar for Collaborative research project, co- sponsored and jointly organized seminars, conferences and workshops at DAVIET, Jalandhar.

e. Workshop/Conferences/FDP/STTP/Seminars organized:

1. Organized International Interdisciplinary Conference on Engineering Science and Management jointly by DAVIET, Jalandhar, Biju Patnaik University of Technology, Odhisa and IRP on Dec. 17 & 18, 2016 at The Crown Goa.
2. Conference Chair and Moderated Panel discussions on "Leveraging Technology for Smart & Digital India" in 3rd DAV National Congress on Science, Technology, Engineering, Humanities & Management (STEHM-2016) titled "Transforming India into a Knowledge Economy" on May 20-21, 2016 at DAV Institute of Engg. & Technology, Jalandhar.
3. Organized one week Faculty Development Program on "Make in India-Role of IT Services" from June 22-28, 2015 organized at CT Institute of Engineering Management Technology, Shahpur, Jalandhar.
4. Conference Chair, ISRO & PTU sponsored International Multi Track Conference on Sciences, Engineering and Technical Innovations (imtc15) at CT Group of Institutions on May 22 & 23, 2015.
5. Moderator & Panelist in Panel Discussion Session on "Make in India- A Call for Initiatives" during International Multi Track Conference on Sciences, Engineering and Technical Innovations (IMTC 15) at CT Group of Institutions on May 22, 2015.
6. Organized National Student Symposium, "Managing Innovations in Sciences & Technology" (MIST-15) on March 30 & 31, 2015.
7. One-week Faculty Development Program on "New Approaches of Applied Sciences for making better Engineers" on March 24-28, 2015 organized at CT Institute of Engineering Management Technology, Shahpur, Jalandhar.
8. "Texas Instruments Analog Maker Competition 2014" organized by CTIEMT from September 1 to 5, 2014.
9. Convener, DST & PTU sponsored International Multi Track Conference on Sciences, Engineering and Technical Innovations (IMTC14) at CT Group of Institutions on June 2 & 3, 2014.
10. Moderator & Panelist in Panel Discussion Session on "India's Preparedness to be amongst the Top 100 Universities of the World" during International Multi Track Conference on Sciences, Engineering and Technical Innovations (IMTC14) at CT Group of Institutions on June 2, 2014.
11. National Seminar on "RECENT TRENDS" in Mechanical Engineering, organized by Deptt. of ME, CT Institute of Engg., Management & Technology, Jalandhar, March 8, 2013.
12. Patron, Two days Hands-on workshop on "Prologue and Relevance of Mentor DSP" organized by Deptt. of ECE CT Institute of Engg., Management & Technology, Jalandhar, Feb 7 & 8, 2013.

13. Conference Director, National Conference on “Recent Trends in Information & Communication Technologies”, organized by Dept(s) of CSE & ECE, CT Institute of Engg., Management & Technology, Jalandhar, February 22&23, 2013.
14. One Day Workshop on “Innovation in Solar Thermal Technologies”, Deptt. Of Electrical Engg., CT Institute of Engg., Management & Technology, Jalandhar, January 30, 2013.
15. Convener, National Conference on “Higher Education in India- The Changing Facet” Organized at CT Institute of Engg., Management & Technology, Jalandhar on January 4&5 2013.
16. Moderated Panel discussions on “Campus to Corporate-Industry Academia Connect” in association with IBM on Oct 17, 2012.
17. Convener, FDP on “Optical & Wireless Systems and Networks” organized by Department of Electronics & Communication Engg., CT Institute of Engg. .Management & Technology, Jalandhar held from May 28-June 1, 2012.
18. Patron, FDP on “Importance of Applied Sciences In Engineering” by the Department of Applied Sciences, CT Institute of Engg., Management & Technology, Jalandhar on May 15-19, 2012.
19. FDP on “Wipro Mission 10 X Certification Program (Level II) held from March 26-27, 2012.
20. FDP on “Faculty Empowerment Program” under Wipro Mission 10x (Level I), held from March 14-18, 2011.
21. AICTE sponsored STTP on “Generic Skills Development” organized by the Department of Applied Sciences, CT Institute of Engg., Management & Technology, Jalandhar in association with NITTTR held on December 19-23, 2011.
22. Convener, National Conference on “Optical and Wireless Communication (NCOW-2008)”, Organized by Department of Electronics & Communication Engineering, DAV Institute of Engineering & Technology, Jalandhar in association with Institution of Engineers (India) & Rsoft Design Group, USA from November 27–28, 2008.
23. Co-ordinator, 10th Punjab Science congress held at DAV Institute of Engg. & Tech. Jalandhar in collaboration with PTU, Jalandhar & Punjab Academy of Sciences of Patiala, Feb, 7-9, 2007.

f. Presentations/Conferences/workshops/seminars attended:

1. Resource Person during Workshop for faculty for the “Preparation of NAAC Process” org. by Khalsa College of Engineering & Technology, Amritsar on 3rd Oct., 2019.
2. Delivered Key Note Address in National Conference on High Performance Networks and Communication” organized by Khalsa College of Engineering & Technology, Amritsar in association with Department of Science & Technology, Govt. of India on November 6-7, 2017..
3. Presented paper on “Internet of Things and its Smart Applications: A Review” in the National seminar on “Scientific and Technical Terminology in Science & Technology” held on September 13-14, 2017 at DAVIET, Jalandhar.
4. Delivered Keynote Address on "Recent Trends In Optical Transmission Networks" in International Inter-Disciplinary Conference on Engineering Science & Management held in Goa-India on December 17-18, 2016.
5. Attended Workshop on "Quality Initiatives in Technical & Higher Educational Institutions (in compliance with NBA & NAAC Accreditation) On May 03-05, 2016 organized by Engineering staff college of India, Hyderabad.

6. Participated as delegate in 3rd World Summit on Accreditation (WOSA-2016) on the theme “Quality Assurance through Outcome Based Accreditation” held on March 18-20, 2016.
7. Attended “National Leadership Conclave” on the theme “From Agenda To Action: Meeting New Expectations” 29 – 30 April, 2015 at New Delhi organized by AIMA.
8. Participated in Panel Discussion Session on “Technology Management” in SME Conclave - Pathway to Business Success- A Way Forward: Flagship National Programme of AIMA, New Delhi as Panelist and Moderator on Friday, February 27, 2015 at Hotel Cabbana, Jalandhar.
9. Delivered Invited Talk on “Creativity & Innovation” in FDP programme on "Entrepreneurship Development" sponsored by DST & EDII, Ahmadabad organized by GNDU College, Ladowali Road, Jalandhar from 18th Dec, 2014 to 29th Dec, 2014.
10. Delivered Invited Talk on “Essentials of Academic Leadership” in NAAC sponsored 2-Day National Conference on “Role of Governance, Leadership and Management for Quality Enhancement in Higher Educational Institutions” on September 5-6, 2014 Organized by Hans Raj Mahila Mahavidyalya, Jalandhar.
11. Delivered an expert lecture during PTU sponsored National Conference on “Innovation in Engineering & Information Technology (IEIT-14)” held at Khalsa College of Engineering & Technology, Amritsar on March 28-19, 2014.
12. Attended National Conference on “Changing Landscape of Higher Education” organized by Joint Action Committee, Punjab on March 28, 2010
13. Delivered Key Note Address in UGC Sponsored National Conference on “Role of IT in Education”, Organized by Department of Computer Science at DAV college Amritsar from Feb. 28-March 1, 2009.
14. Delivered an expert talk on “Wimax” in winter school on “Recent trends in Mobile Computing & Communication Technologies”, Organized by Department of Computer Science & Engg., N.I.T Jalandhar from Dec. 22, 2008 to Jan. 02, 2009.
15. Convener, National Conference on Optical and Wireless Communication (NCOW- 2008), Organized by Department of Electronics & Communication Engineering, DAV Institute of Engineering & Technology, Jalandhar in association with Institution of Engineers (India) & Rsoft Design Group, USA from November 27–28, 2008.
16. Conducted a ZOPP planning workshop at Doaba Institute of Engg. & Technology, Kharar in Sept. 2008.
17. Attended National Conference on “Innovation in Education”, July 27-28, 2008 at India Habitat Centre organized by DIEMR at Mumbai, India.
18. Selected as chairman for three sessions in WSEAS International Conference at Cambridge University, U.K from Feb. 20-22, 2008.
19. Participated in INTEL sponsored International Conference “Intel Developer Forum India”, Oct. 10-11, 2006 at Bangalore.
20. Co-chaired a panel discussion session on “Next Generation Wireless Technologies” and chaired paper presentation session in the International Conference (ICCSA-2006) held during June 27-29, 2006 at National University, San Diego, California, USA.
21. Attended National Conference on “Quality in Education: Challenges & Responses”, April 7-9, 2006 organized by DIEMR at Mumbai, India.
22. Lead the faculty delegation to explore the collaborative interactions between Rsoft Design Group, USA & DAVIET and succeeded in signing of MOU between Rsoft, USA & DAVIET during Dec. 2004.

23. Interacted with the Research Scholars & Faculty of Light Wave Technology Labs at Columbia University & Princeton University in USA for exchange of Know How in the frontier & emerging areas of Technology during Dec. 2004.
24. Attended Two-Day Conference on Field Programmable System on Chip World Semiconductor Forum GOSPL from 30-31 Oct.2004.
25. Attended Microsoft Academia Summit-2004 at Bangalore on April 14-15, 2004.
26. Attended International Conference (INAE) on Nanotechnology (ICON-2003) organized by Indian National Academy of Engg. at CSIO, Chandigarh.
27. Delivered expert talk on “Optical Soliton Transmission System” in ISTE sponsored STTP on Optical Communications-emerging Trends; It’s Role and Technology appreciation from March 31st to April 11th 2003 at Punjab Engineering College, Chandigarh.
28. Attended International Conference on “Culture of Peace & Non-Violence” at Hans Raj Mahila Maha Vidyalaya, Jalandhar from 19th –21st December, 2002.
29. Delivered expert talk on “E-Learning” during one day seminar on “Softwrae Solutions” at HansRaj Mahila Maha Vidyalaya, Jalandhar on 30th January, 2002.
30. Delivered expert talk on “Role of Electronics in our life”, during eFest” at DAV College, Amritsar on 9th February, 2003.

g. Training, courses attended:

- Training on OptSim Simulation Tools at Rsoft, USA.
- Training Courses, Teaching-Learning Evaluation, Technology Programmes, Faculty Development Programmes (not less than oneweek duration)

S.No.	Programme	Duration	Organizedby
1.	Electronic Components & Materials	08 weeks May25 to July19, 1992	Indian Institute of Technology (IIT), New Delhi
2.	Maintenance of Electronic Equipment	08 weeks March 01 to April 23, 1993	NTTF Electronics Training Centre, Bangalore
3.	Electronic Communications	08 weeks Nov 21 to Jan 11, 1993	Indian Institute of Technology (IIT), New Delhi
4.	Analog Electronics-II	08 weeks Oct 30 to Dec22, 1995	Indian Institute of Technology (IIT), New Delhi
5.	Microprocessors & Telecom Equipment	04 weeks May20, 1996 to Jun 14,1996	CEDT, Mohali
6.	7 DayWorkshop in VLSI Design Using VHDL	01 week Feb 28 to Mar 06,2005	M/s. AdvanceTechnology, Chandigarh

7.	AICTE sponsored STTP on “Generic Skills Development”	01week December 19-23, 2011.	NITTTR Chandigarh atCTInstitute of Engg., Management & Technology, Jalandhar
8.	AICTE/MHRD collaborative summer school on “Instrumentation and Signal Processing	01Week June21-25, 2010	Jointly organized by Dr. BR Ambedkar National Institute of Technology, Jalandhar and National Institute of Technology, Srinagar.
9.	TEQIP-II sponsored FDP/STTP on ICT for Computing & Signal Processing	02 Weeks June03-14, 2013	Jointly organized by Dr. BR Ambedkar National Institute of Technology, Jalandhar and CT Institute of Engg. Management & Technology, Jalandhar.

h. M.Tech.Thesis (Supervised):19

1. Manju Bala, “Performance Analysis of Switched and Routed Network in Wireless Communication Based on OPNET” (2007)
2. Jagjit Singh Malhotra, “Performance Analysis of Data Formats in Optical Soliton Transmission Link under the impact of TOD & chirp”(2007)
3. Gaurav Sethi, “Simulative Analysis of Routing Protocols in Mobile Ad-hoc Networks” (2007)
4. Kamaljit Singh Bhatia, “Investigations on Design issues for Long-haul Optical Transmission System” (2007)
5. Neeru Malhotra, “Investigations on PMD Induced Penalties in High Bit Rate Optical Transmission Links” (2008)
6. Vasudha, “Performance Enhancement of Routing Internet Protocols using OPNET”(2008)
7. Harsimran Jit Kaur, “Performance Evaluation of Digital Modulation Techniques on Radio over Fiber for 3G and Beyond” (2009)
8. Bindiya Jain, “Performance analysis of data formats in Pre-and Post-compensated dispersion managed long-haul WDM optical transmission link” (2009)
9. Vanita Kamra, “Analysis of a Single & Multi-tone Radio over Fibre system comparing four different system set-ups”(2009)
10. Sandeep Kath, “Improving the request routing mechanism in CDN”(2010)
11. Navneet Gill, “Comparative Studies on Hybrid and IPv6 Networks”(2010)
12. Parwinder Singh, “High Data Rate TR-UWB system with resolved inter-frame inter face using AWGN channel model”(2010)
13. Gurkirat Kaur, “Performance Evaluation of Soft RoCE over 1 gigabit Ethernet”(2014)
14. Parambir Singh, “Design & Performance Investigation of Multiuser OCDMA Network”(2014)
15. Harjit Singh, “Investigation of Routing Protocols Based on VANETS”(2014)
16. Balwinder Kaur, “Fuzzy Based Probability and Direction of Wildfire Detection With Wireless Sensor Networks” (2014)

17. Gurminder Kaur, "Performance Evaluation of Routing Protocols Using Wormhole Attack under VANET's" (2015)
18. Narpat Singh, "Face Recognition and Detection Technique Based on SURF & LDA" (2015)
19. Bhupinder Singh, "A Modified Weight Balanced Algorithm For Influential Users Community Detection in Online Social Network" (2016)

i. Ph.D. (Supervised) : 06

1. Jagjit Singh Malhotra, "Performance evaluation of multi-channel optical transmission systems & networks" (2014)
2. Manisha, "Simulative Performance Investigations on OCDMA System based on Advance Modulation & coding Techniques" (2017)
3. Manwinder Singh, "Development of Quality of Service (QoS) Provisioning in Cognitive Radios", (2018)
4. Harpreet Kaur, "Investigations on Mobility Management of Wireless Networks" (2019)
5. Sanjeev Kumar, "Information security through Robust and secure Image Steganography technique without perceptual distortion for Secret communication system" (2021)
6. Varsha, "Hybrid Energy Efficient Protocol in WSN" (2021)

(Undersupervision) : 03

1. Ria Kalra, "Optimization and performance investigation of a Noval UWB Planar Antenna for UWB applications".
2. Vikram Dhiman, "Performance Investigation of Wireless Sensor Network on SDN SMAC Network"
3. Shipu Sachdeva, "Investigations on High Capacity Long Reach Passive Optical Networks"

(Dr. Manoj Kumar)