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Department of Electronics and Communication Engineering  
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Academic Qualifications (Matriculation till Post Graduation)

Examination	Name of the Board/ University	Year of Passing
Matric	Punjab School Education Board, Mohali <u>Merit holder</u>	1987
(10+2)	Punjab School Education Board, Mohali <u>Merit Holder</u>	1989
B. Tech.	Guru Nanak Dev University, Amritsar <u>S. Ravneet Singh Memorial Gold Medal</u>	1994
M.E.	Thapar Institute of Engg. & Technology, Patiala <u>Institute Medal</u>	2001
PGDIM	Indira Gandhi National Open University, New Delhi	2000

Research Degree (s)

Degree	Title	Date of Award	University
Ph.D.	Theoretical Investigations for Optimizing System Parameters of Optical Dense Wavelength Division Multiplexed Systems	February 14, 2011	Guru Nanak Dev University, Amritsar

Period of Teaching Experience

U.G. 28 years    P. G. 14 years

Administrative Experience

Dean, Faculty of Engineering and Technology, Punjabi University, Patiala	May 2023-till date
Head, Department of ECE, Punjabi University, Patiala. 2015-2018	3 years
Warden, Girls Hostel, BBSB Engineering College, Fatehgarh Sahib, Punjab. 1996-1998	2 years

Research Guidance: Annexure-I attached for details

Degree	Under Guidance	Guided
M. Tech.	0	12
Ph.D.	1	5

## Fields of Specialization under the Subject/Discipline

a) Electronics and Communication Engineering b) Optical Communication

### Academic Staff College Orientation/Refresher Course Attended

S. No.	Nature of the Course/Summer School	Place	Duration	Sponsoring Agency
1.	STC on “Generic Skills in Technical Education”	University of Roorkee, Roorkee	June 19- July 3, 1997	Quality Improvement Program Center, University of Roorkee, Roorkee
2.	STC on “Automation in Industrial Process Control”	Technical Teacher’s Training Institute, Chandigarh	July 10-21, 2000	ISTE
3.	STC on “Wireless Communication Technologies & Systems”	Thapar Institute of Engineering & Technology, Patiala	June 4-15, 2001	AICTE-ISTE
4.	STC on “Induction Programme for Faculty of Engg. Colleges”	Technical Teacher’s Training Institute, Chandigarh	June 25- July 6, 2001	AICTE-ISTE
5.	One Day Workshop on VHDL	Baba Banda Singh Bahadur Engg. College (BBSBEC), Fatehgarh Sahib.	April 25, 2003	BBSBEC, Fatehgarh Sahib
6.	FDP on “Industrial Tribology”	Indian Institute of Technology Ropar, Rupnagar	January 3-8, 2011	IIT Ropar
7.	STC on “Environment Management in Process Industries”	National Institute of Technology, Jalandhar	June 5-9, 2011	AICTE
8.	QIP course on “Medical Signals & Image Processing”	Indian Institute of Technology Roorkee, Roorkee	June 13-17, 2011	IIT Roorkee

### Professional Memberships

S. No.	Name of Professional Body	Type of Membership	Year
1.	Indian Society for Technical Education (ISTE)	Life Member (LM 30920)	2001
2.	Institution of Engineers India (IEI)	Life Member (AM089279-6)	2002
3.	Institute of Electronics and Telecommunication Engineers India (IETE)	Life Member (M 174558)	2004
4.	Punjab Academy of Sciences	Life Member (M-501)	2004

Publications Details: Annexure-II attached for details

Journals: 61, Conferences: 88, Books: 02, Lecture Notes: 03

Invited Lectures at national or international conferences/ seminar etc.

S.No.	Title of Lecture/ Academic Session	Title of Conference/Seminar/FDP etc	Organised by	Whether International/ National/State
1.	Invited Talk, Title: “Applications of Fuzzy Logic in Engineering” March 11, 2005.	National Conference on “Advances in Communication Systems” March 11-12, 2005.	Seth Jai Parkash Mukand Lal Institute of Engineering & Technology (JMIT) Radaur, Haryana	National
2.	Resource Person, Title: “Optical Communication: Past, Present and Future” June 05, 2012.	FDP on “Advances in Wireless, Image & Optical Communication” June 4-8, 2012.	Rayat Institute of Engg. And Tech. Rail Majra, Ropar PTU sponsored	National
3.	Resource Person, Title: “Microwave Photonics”, Nov. 2, 2013.	Refresher course on “Information Technology, Electronics and Computers,” Oct. 22, 2013-Nov. 11, 2013.	G.N.D.U. Amritsar	National
4.	Distinguished Speaker, Title: “Familiarization with Artificial Intelligence: The inevitable future partner” June 10, 2023.	FDP on “Women in Indian Society: Navigating Challenges and Opportunities” June 6-13, 2023.	Women’s Studies Centre, Punjabi University, Patiala	National

Chairmanships at national or international conferences/ seminar etc

S.No.	Title of Lecture/ Academic Session	Title of Conference/Seminar/FDP etc	Organized by	Whether International/ National/State
1.	Chairperson, May 28, 2011	International Conference on Information and Electronics Engineering (ICIEE 2011), Bangkok, Thailand, May 28-29, 2011.	International Association of Computer Sciences & Information Technology (IACSIT)	International

2.	Chairperson, March 7, 2014	International Conference on Recent Advances in Engineering and Computational Sciences, March 6-8, 2014.	UIET, Panjab University, Chandigarh.	International
3.	Coordinator, Oct. 30, 2014	Sixth Annual Conference on Promoting Excellence in Women Development : The Way Forward for Progress, Oct. 30-31, 2014.	Punjabi University, Patiala	National
4.	Chairperson, April 22-24, 2021	WREC-21 (Online International Conference Women Researchers in Electronics and Computing), April 22-24, 2021	Dr B R Ambedkar National Institute of Technology, Jalandhar	International
5.	Chairperson, April 21-23, 2023	WREC-23 ( International Conference Women Researchers in Electronics and Computing), April 21-23, 2021	Dr B R Ambedkar National Institute of Technology, Jalandhar	International

## Annexure-I: Research Details

### M. Tech Details (12)

Sr. No. Title of the thesis	Name of the candidate	Year
1. Performance Analysis of Diagonal matrix codes in Optical Code Division Multiple Access Systems	Sarnjit Kaur	2019
2. Design and implementation of efficient sequential digital system	Ramanpreet Kaur	2016
3. Design and analysis of an algorithm for an efficient digital system design	Ishan	2015
4. A new pseudo-random number generator using combination of chaotic functions	Tanu	2015
5. Brain tumour segmentation using brightness preserving dynamic fuzzy histogram equalization	Hemant Kaur	2014
6. Detection of defects in printed circuit board using fuzzy logic	Neha Koul	2014
7. Analysis and comparison of sign-sign LMS and RLS algorithm in feed-forward equalizer for mitigation of chromatic dispersion	Gurpreet Kaur	2014
8. Performance comparison of fuzzy time series based AODV and conventional AODV routing protocols in manets	Amandeep Kaur	2012
9. Performance enhancement of optical communication system using pulse shaping filters	Vivek Sharma	2012
10. Performance comparison of multi-level random early detection (MRED) schemes for congestion control in differentiated services networks	Karamdeep Singh	2012
11. Performance enhancement of a radio on free space optics (RoFSO) system by optimizing system parameters	Harmeet Singh	2011
12. Intersymbol interference compensation using raised cosine filter in optical wavelength division multiplexed networks	Shivinder Devra	2011

PhD Details (Awarded=5, Submitted=1)

Sr. No.	Title of the thesis	Name of the candidate	Year
1.	Development of drought stress detection technique for wheat crop using image processing	Ankita Gupta	2023 (Submitted)
2.	Development of an efficient indoor optical wireless communication system	Ankita Aggarwal	2022 (Awarded)
3.	Development of an improved equalization technique for the performance enhancement of coherent optical systems	Gurpreet Kaur	2020 (Awarded)
4.	Design and Analysis of an optical logic module for alloptical signal processing	Karamdeep Singh	2018 (Awarded)
5.	Development of an efficient technique for detection of printed circuit board defects	Beant Kaur	2018 (Awarded)
6.	Investigations on four wave mixing in optical systems	Gaganpreet Kaur	2017 (Awarded)

## Annexure-II: Publication List

### Journal Publications (61)

1. A. Gupta, L. Kaur, and G. Kaur, "Drought stress detection technique for wheat crop using machine learning", *Peer J Computer Science*, vol. 9, pp. 2–24, May 2023. SCI IF 2.41
2. A. Gupta, L. Kaur, and G. Kaur, "Inferring Agronomical Insights for Wheat Canopy Using Image-Based Curve Fit K-Means Segmentation Algorithm and Statistical Analysis", *International Journal of Genomics*, vol. 2022, pp. 1–15, Jan 2022. SCI IF 2.75
3. A. Gupta, L. Kaur, and G. Kaur, "Investigations on drought stress detection technique for wheat crop using image processing", *Science Technology and Development*, vol. 10, pp. 942–950, Feb 2021. UGC CARE list II
4. G. Kaur and G. Kaur, "WRELM based CO-OFDM system with improved performance, spectral efficiency and computational complexity", *Optical and Quantum Electronics (Springer)*, Vol. 53, 373, 2021.
5. A. Aggarwal and G. Kaur, "Optical Wireless Channel Characterization Using Discrete And Stationary Wavelet Transform" *International Journal of Advanced Research in Engineering and Technology (IJARET)*, volume 12, issue 1, pp. 785-791, 2021.
6. A. Aggarwal and G. Kaur, "DWT, SWT AND DWT-SWT FOR INDOOR OPTICAL WIRELESS COMMUNICATION", *International Journal of Electrical Engineering and Technology (IJEET)*, volume 12, issue 2, pp. 81-89, 2021.
7. G. Kaur, G. Kaur and S. Sharma, "New dispersion-compensated Raman-amplifier cascade with a single-pump parametric amplifier for dense wavelength-division multiplexing", *Ukrainian Journal of Physical Optics*, , vol. 21, issue 1, pp 35-46, 2020 (SCI I. F. 0.804).
8. G. Kaur and G. Kaur, "Nonlinearities mitigation with Fuzzy Neural Networks using machine learning algorithm in a CO-OFDM system", *IET Optoelectronics*, vol. 14, issue 1, p. 44 – 51, DOI: 10.1049/iet-opt.2018.5116, February 2020 (SCI- I. F.: 1.506).
9. S. Kaur, G. Kaur and B. Kaur, "Comparison of Non Zero Cross Correlation and Diagonal Identity Matrix codes in Optical Code Division Multiplexed System," *International Journal of Engineering and Applied Sciences (IJEAS)*, vol. 6, Issue 8, pp 80-83, ISSN:2394-3661, August 2019.
10. G. Kaur and G. Kaur, "Performance analysis of Wilcoxon-based machine Nonlinear Equalizers for Coherent optical OFDM", *Optical and Quantum Electronics (Springer)*, 50: 256, DOI: 10.1007/s11082-018-1519-8, 2018, (I.F. =1.055).
11. G. Kaur and G. Kaur, "Nonlinearities Compensator based on SORBFNN in Ultra-Long-Haul High Capacity CO-OFDM systems", *Photonic network communications (Springer)*, 36(3): 316325, DOI: 10.1007/s11107-018-0782-8, 2018, (I.F. =1.210).
12. G. Kaur and G. Kaur, "Various types of functional link artificial neural network based nonlinear equalizers used in CO-OFDM system for nonlinearities mitigation" *International Journal of Electronics and Communication Engineering in association of Seventh Sense Research Group (SSRG-IJECE)*, vol. 5, issue 2, 2018.
13. K. Singh, G. Kaur and M. L. Singh, "A simultaneous all-optical half/full-subtraction strategy using cascaded highly non-linear fibers (HNLF)," *Journal of Modern Optics (Taylor & Francis)*, Vol. 65, No.4, pp 465-479, 2018, (I.F.=1.328).
14. B. Kaur, G. Kaur and A. Kaur, "Detection of defective printed circuit boards using image processing", *International Journal of computer vision and robotics, (Inderscience Publication)*, Vol. 8, No. 4, pp 418 – 434, 2018.
15. K. Singh, G. Kaur and M. L. Singh, "Enhanced performance of all-optical half subtracter based on cross-gain modulation (XGM) in semiconductor optical amplifier (SOA) by accelerating its gain recovery dynamics," *Photonic Network Communications (SPRINGER)*, Vol. 34, No. 1, pp. 111130, 2017, (I.F.=1.210).
16. B. Kaur, G. Kaur, A. Kaur, "Comparative analysis of image registration for Printed Circuit Boards", *International journal of engineering and technology*, Vol. 9 no. 3, pp.2076-2082, 2017.

17. B. Kaur, A. Kaur, G. Kaur, "Application of image processing using computer in detection of defective Printed circuit boards", *International journal of advanced research in computer science*, Vol. 8, No.5, pp.1043-1046, May-June 2017.
18. G. Kaur and G. Kaur, "Application of Functional Link Artificial Neural Network for Mitigating Nonlinear Effects in Coherent Optical OFDM", *Optical and Quantum Electronics (Springer)*, Vol. 49, No. 6, June 2017 (11082-017-1065-9), (I.F. =1.055).
19. B. Kaur, A. Kaur, G. Kaur "Inspection of defective Printed circuit boards using image processing", *Indian Journal of computer science and engineering*, Vol.8, No.2, April May 2017.
20. K. Singh, G. Kaur and M. L. Singh, "Performance analysis of an all-optical halfsubtractor based on cross-gain modulation (XGM) in semiconductor optical amplifier (SOA) at 20 Gbps," *Optoelectronics and Advanced Materials-Rapid Communications*, Vol. 11, pp. 189-196, March/April 2017 (I.F.=0.470).
21. G. Kaur and G. Kaur, "A Radial Basis Function Network for Adaptive Channel Equalization in Coherent Optical OFDM Systems" *An International Journal of Engineering Sciences*, Special Issue, vol. 20, 2016. ISSN: 2229-6913 (Print), ISSN: 2320-0332 (Online).
22. K. Singh, G. Kaur and M. L. Singh, "A cascadable all-optical half-subtractor based on crossmodulation effects in a single highly non-linear fiber (HNLF)," *Optical & Quantum Electronics (SPRINGER)*, Vol. 48, pp. 418 (1-21), Aug. 2016, (I.F.=1.055).
23. K. Singh, G. Kaur and M. L. Singh, "Simultaneous all-optical half-adder, halfsubtractor, comparator , and decoder based on nonlinear effects harnessing in highly nonlinear fibers" *Optical Engineering*, Vol. 55, No.7 : 077104, 2016, (I.F.=1.082).
24. B. Kaur, G. Kaur, A. Kaur, "Applications of Image Registration" , *Research Cell: An International Journal of Engineering Sciences* , Vol.17, pp.112-118, Jan. 2016.
25. B. Kaur, G. Kaur, A. Kaur, "Survey on Image Registration", *Research Cell: An International Journal of Engineering Sciences* , Vol.17, pp.192-198, Jan. 2016.
26. G. Kaur, S. Sharma and G. Kaur, "Novel Raman Parametric Hybrid L-Band Amplifier with Four Wave Mixing Suppressed Pump for Terabits Dense Wavelength Division Multiplexed Systems," *Advances in Optical Technologies*, Vol. 2016, 2016.
27. G. Kaur, G. Kaur and S. Sharma, "Multisection optical parametric-Raman hybrid amplifier for terabit+ WDM systems," *Journal of Modern Optics (TAYLOR & FRANCIS)*, Vol. 63, No. 9, pp 819-825, 2016, (I.F.=1.328).
28. R. Kaur and G. Kaur, "A survey on power minimization techniques in digital systems," *An International Journal of Engineering Sciences*, Vol. 1, 2016.
29. K. Singh and G. Kaur, "Interferometric architectures based All-Optical logic design methods and their implementations," *Optics & Laser Technology (ELSEVIER)*, vol.69, pp 122-132, 2015, (I.F.=2.109).
30. K. Singh, G. Kaur and M. L. Singh, "A single As<sub>2</sub>Se<sub>3</sub> chalcogenide Highly non-linear fiber (HNLF) based simultaneous all-optical half-adder and half-subtractor," *Optical Fiber Technology (ELSEVIER)*, Vol. 24, pp. 56-63, 2015, (I.F.=1.678)
31. G. Kaur and G. Kaur, "Performance evaluation of the Recursive Least Square Algorithm in electronic dispersion compensation", *Open Journal of Communications and Software*, vol. 1, no. 2, pp 10-17, August 2014.
32. N. Koul, G. Kaur and B. Kaur, "Fuzzy Based Defect Detection in Printed Circuit Boards", *SOP transactions on signal processing*, vol.1, no. 1, pp 18-24, October 2014
33. G. Kaur and G. Kaur, "Electronic Dispersion Compensation Using Sign-Sign LMS Algorithm for 10 Gb/s Link", *SOP Transactions on Signal Processing*, vol.1, no. 1, pp 10-17, October 2014.
34. N. Koul, G. Kaur and B. Kaur, "Detection of Defects in Printed Circuit Boards Using Fuzzy Logic and correlation coefficient", *International Journal of Engineering and Management Research*, vol. 4, issue 4, pp. 143-146, August 2014.
35. H. Kaur, G. Kaur and B. Kaur, "Brain Tumour Segmentation using Brightness Preserving Dynamic Fuzzy Histogram Equalization", *The International Journal of Engineering Research & Innovation (IJERI)*, ISSN: 2348-6481, vol. 1, Issue-7, pp. 69-72, August 2014.



36. G. Kaur and G. Kaur, "Simulation and Comparative Analysis of SS-LMS & RLS Algorithms for Electronic Dispersion Compensation", Open Access Library, (Online): 1: e676. <http://dx.doi.org/10.4236/oalib.1100676>, July 2014.
37. G. Kaur and G. Kaur, "Investigation of dispersion penalty for optical fiber link at different values of fiber dispersion", Journal of Advanced Engineering Research, pp. 32 -35, vol. 1, issue 1, July 2014.
38. G. Kaur and G. Kaur, "Mitigation of chromatic dispersion using different compensation methods in optical fiber communication", International Journal of Engineering and Management Research, vol. 4, issue 3, pp.21-25, June 2014.
39. K. Singh and G. Kaur, "All-Optical Half-Adder and Half-Subtractor based on Semiconductor Optical Amplifier," Open Journal of Communications and Software, vol. 1, No. 1, pp. 42-51, May 2014.
40. B. Kaur, G. Kaur and A. Kaur, "Detection and Classification of Printed Circuit Boards Defects", Open Transactions on Information Processing, vol. 1, no. 1, pp. 8-16 May 2014.
41. N. Koul, G. Kaur and B. Kaur, "Use of Fuzzy In Various Applications of Digital Image Processing", International Journal of Advanced Research in Computer Science and Software Engineering, vol. 4, issue 3, pp. 571-574, March 2014.
42. H. Kaur, G. Kaur and B. Kaur, "Detection of Brain Tumour using Brightness Preserving Dynamic Fuzzy Histogram Equalization" International Journal of Electrical, Electronics and Computer Systems (IJEECS), ISSN (Online): 2347-2820, vol. 2, Issue-5,6, pp. 78-82, 2014.
43. G. Kaur, "Microwave Photonics: An Introduction", International Journal of Advanced Engineering & Computing Technologies, Special Edition, ISSN 2249-4928, RCEW, pp 1-4, December 2013.
44. V. Sharma and G. Kaur, "Performance Enhancement of an Optical Communication System Using Pulse Shaping Filters" International Journal on Advances in Computational Research, ISSN: 0975-3273, 2012.
45. K. Singh and G. Kaur "Comparison of Random Early Detection (RED) Techniques for Congestion Control in Differentiated Services Networks Based on Packet Droppings" International Journal of Neural Networks, ISSN:2249-2763 & E-ISSN: 2249-2771, vol.2, Issue 1, pp 25-29, 2012.
46. G. Kaur, M. L. Singh, and M. S. Patterh, "Analytical Analysis of Long-Haul DWDM Optical Transmission Systems in the Presence of Fiber Nonlinearities", Journal of Engineering, Design and Technology (EMERALD), vol. 9, Issue3, pp. 336-46, 2011.
47. S. Devra, G. Kaur, "Memristor: Resistor with Memory," An International Journal of Engineering Sciences, no. 1, ISSN: 2229-6913, pp. 62-69, 2011.
48. S. Devra, G. Kaur, "Optical Computing," An International Journal of Engineering Sciences, no. 1, ISSN: 2229-6913, pp. 361-367, 2011.
49. H. Singh, G. Kaur, "Silicon Photonics: An introduction", An International Journal of Engineering Sciences, no.1, ISSN: 2229-6913, pp. 354-360, 2011.
50. S. Devra and G. Kaur, "Different Compensation Techniques to Compensate Chromatic Dispersion in Fiber Optics", International Journal of Engineering and Information Technology, vol.3, no. 1, pp. 1-4, 2011.
51. S. Devra, G. Kaur, "Dispersion Compensation using Raised Cosine Filter in optical fibers", International Journal on Information and Electronics Engineering, vol. 1, no. 1, pp. 47-51, July 2011.
52. G. Kaur, M.L. Singh, and M.S. Patterh, "Analysis of Significant Factors in DWDM Optical Communication Systems", Journal of Engineering, Design and Technology (EMERALD) vol.8, issue1, pp. 28-44, 2010, (I.F.=0.85).
53. G. Kaur, M.L. Singh, and M.S. Patterh, "Impact of Fibre Nonlinearities in Optical DWDM Transmission Systems at Different Data Rates", Opt. International Journal of Light Electron. Optik (ELSEVIER) vol. 121, pp. 2166-2171, 2010, (I.F.=1.016).
54. G. Kaur, M.L. Singh, and M.S. Patterh, "Effect of Fibre Nonlinearities in a WDM Transmission System", Opt. International Journal of Light Electron. Optik (ELSEVIER) vol. 121, pp. 889-896, 2010, (I.F.=1.016).
55. G. Kaur, M. L. Singh, "Effect of Four Wave Mixing in WDM Optical Fibre Systems", International Journal of Light Electron. Optik (ELSEVIER), vol.120, pp. 268-273, 2009, (I.F.=1.016).

56. G. Kaur, M. L. Singh, and M.S. Patterh, "Theoretical Investigations to Minimize Bit Error Rate by Optimizing System Parameters at Different Data Rates", *Journal of Nonlinear Optical Physics & Materials*, vol. 18, no. 3, pp. 501-519, 2009, (I.F.=1.491).
57. G. Kaur, M.L. Singh, and M.S. Patterh, "Investigations of Fibre Nonlinearities in Long-haul Optical WDM Transmission Systems", *Journal of Nonlinear Optical Physics & Materials*, vol. 18, no. 2, pp. 301-308, 2009, (I.F.=1.491).
58. G. Kaur, M.L. Singh, and M.S. Patterh, "Theoretical Investigations of the Combined Effect of Fibre Nonlinearities, Amplifier and Receiver Noise in a DWDM Transmission System", *Journal of Optical and Fiber Communication Research (SPRINGER)* vol. 6, no. 1, pp. 1-10, 2009.
59. G. Kaur, M. L. Singh, "A Survey of Recent Advances in Fuzzy Logic in Communication Systems", *International Journal of Applied Engineering Research*, vol.4, no.2, pp. 139-151, 2009.
60. G. Kaur, M.L. Singh, and M.S. Patterh, "Theoretical Analysis of the Combined Effect of Fibre Nonlinearities and Amplifier Noise in a DWDM Transmission System", *International Engineering and Technology Journal of Communication Techniques*, ISSN: 0973-8053, vol. 3, no. 1, pp. 1419, 2009.
61. G. Kaur, M.L. Singh, and M.S. Patterh, " Optimization of Interamplifier Separation in WDM Transmission Systems in the presence of Fibre Nonlinearities", *International Journal of Applied Engineering Research*, vol. 3, no. 10, pp. 1353-1375, 2008.

### **Conference Publications (88)**

1. G. Kaur and G. Kaur, "CO-OFDM system with Self-Organizing Map (SOM) for improving the spectral efficiency by compensation of Phase Noise", WREC-23 (Second International Conference Women Researchers in Electronics and Computing), organized by Dr B R Ambedkar National Institute of Technology, Jalandhar, April 21-23, 2023.
2. A.Gupta, L. Kaur, and G. Kaur, "Impact of Image Pre-processing Operations on Wheat Canopy Segmentation", *Proceedings of the 2022 Fourteenth International Conference on Contemporary Computing (IC3 2022)*, Jointly Organized by Jaypee Institute of Information Technology, Noida, U.P, India and University of Florida USA, pp. 396-403, August 4-6, 2022.
3. Aggarwal and G. Kaur, "Development of an Efficient Indoor Optical System using different wavelet transforms", WREC-21 (Online International Conference Women Researchers in Electronics and Computing), organized by Dr B R Ambedkar National Institute of Technology, Jalandhar, April 22-24, 2021.
4. Gupta, L. Kaur and G. Kaur, "Comparitive Analysis of Segmentation Methods for Wheat Canopy Extraction", WREC-21 (Online International Conference Women Researchers in Electronics and Computing), organized by Dr B R Ambedkar National Institute of Technology, Jalandhar, April 22-24, 2021.
5. G. Kaur and G. Kaur, "Fuzzy-Neuro Network in a CO-OFDM system: Various Membership Functions Comparison", WREC-21 (Online International Conference Women Researchers in Electronics and Computing), organized by Dr B R Ambedkar National Institute of Technology, Jalandhar, April 22-24, 2021.
6. Aggarwal and G. Kaur, "Comparison between Different Wavelet Transform Techniques for Indoor Optical Wireless Communication System Employing Pulse Position Modulation & OnOFF Keying" *Proc. 35th Indian Engineering Congress*, organized by The Institution of Engineers, India, Dec 18-20, 2020.
7. Aggarwal and G. Kaur, "Optical Wireless Channel Characterization Based on OOK Modulation for Indoor Optical Wireless Communication System Using WT-ANN", presented in International Conference on MRCN organised by UIET, Kurukshetra University, Kurukshetra, July 13-15, 2020.
8. Aggarwal and G. Kaur, "Indoor Optical Wireless Communication System Using Wavelet Transform and Neural Network Based on Pulse Position Modulation Intended for Optical Wireless Channel Characterization" presented in International Conference on MRCN organised by UIET, Kurukshetra University, Kurukshetra, July 13-15, 2020.
9. G. Kaur and G. Kaur, "Comparison of Algorithms used for training of Artificial Neural Network based Nonlinear Equalizer in a CO-OFDM system", *Advances in Electronics, Electrical & Computational Intelligence – 2019*, Indian Institute of Information Technology- Allahabad, Prayagraj, India, ELSEVIER SSRN Digital Library , May 31- June 01, 2019.

10. G. Kaur and G. Kaur, "Various types of functional link artificial neural network based nonlinear equalizers used in CO-OFDM system for nonlinearities mitigation" Proc. International Conference on Multidisciplinary Research, Practices & Studies, organized by Shimla University, Shimla, India, February 23-24, 2018.
11. G. Kaur and G. Kaur, "Comparison of various functional link artificial neural networks to mitigate the nonlinearities in Coherent Optical OFDM" Proc. Punjab Science Congress, Punjab Agriculture University, Ludhiana, February 7-9, 2018.
12. Kaur, A. Kaur, G. Kaur, "Statistical Measure and Its Application in Detection of Defective Printed Circuit Boards", Proc. International conference on advancements in engineering and technology, pp.188-191, 2017.
13. G. Kaur and G. Kaur, "A Radial Basis Function network for adaptive channel equalization in Coherent Optical OFDM Systems" Proc. of 2ICITEE, Punjabi university, Patiala, Nov. 24-25, 2016.
14. G. Kaur and G. Kaur, "Linear and non-linear equalizer for chromatic dispersion compensation in coherent optical receiver- A comparison using different QAM modulation formats" Proc. of ICRTC, Punjabi university, Patiala, Aug. 30-31, 2016.
15. R. Kaur and G. Kaur, "Modified D Fuzzy flip-flops: Design and implementation," Proc. IEEE 1<sup>st</sup> International conference on power electronics, intelligent control and energy systems, DTU, Delhi, July 2016.
16. R. Kaur and G. Kaur, "A survey on Power Optimization Techniques in digital systems," Proc. International conference on innovative trends in electronics engineering, Patiala, January 2016.
17. K. Singh and G. Kaur, "Four-Wave Mixing (FWM) based all-optical logic design strategies," Proc. International conference on research and innovations in engineering and technology, ACET, Amritsar, vol. 1, pp. 40-45, Dec. 2014.
18. G. Kaur and G. Kaur, "Investigation of dispersion penalty at 10Gb/s link with different values of dispersion", Proc. International conference on International Multi Track Conference (IMTC 2014), pp.142-145, Jalandhar, vol. 1, June 3-4, 2014.
19. K. Singh and G. Kaur, "All Optical Logic Design Techniques Based on Sagnac Interferometers", Proc. International conference on International Multi Track Conference (IMTC 2014), pp.146150, Jalandhar, vol. 1, June 3-4, 2014.
20. Tanu and G. Kaur, "Algorithm for tracking channel performance of optical networks to enhance security", Proc. National Conference on Embedded Systems and Wireless Technologies (WEST 2014), IET Bhaddal, May 8-9, 2014.
21. Ishan Gupta and G. Kaur, "Low power state assignment for Finite state Machine Design", Proc. National Conference on Embedded Systems and Wireless technologies (WEST 2014), IET Bhaddal, May 8-9, 2014.
22. Kaur, G. Kaur and A. Kaur, "Detection and Classification of Printed Circuit Board Defects Using Image Subtraction Method", Proc. International Conference on Recent Advances in Engineering and Computational Sciences, UIET, Panjab University, Chandigarh, March 6-8, 2014.
23. R. Garg, H. Kaur, G. Kaur and B. Kaur, "Applications of Image Processing with Fuzzy Logic: A Review" Proc. 17<sup>th</sup> Punjab Science Congress organized by Punjab Technical University, pp. 245, Jalandhar, February 14-16, 2014.
24. Kaur, G. Kaur and A. Kaur, "Detection and Classification of Defects in Printed Circuit Boards", Proc. 17<sup>th</sup> Punjab Science Congress organized by Punjab Technical University, pp. 242243, Jalandhar, February 14-16, 2014.
25. N. Koul, G. Kaur and B. Kaur, "Applications of Image Processing using Fuzzy Logic", Proc. National Conference on Emerging Horizons In Science and Technology 14/CE001, Fatehgarh Sahib, January 17-18, 2014.
26. G. Kaur and G. Kaur, "Performance enhancement of optical transmission system by compensating the dispersion using electronic compensation methods: A review", Proc. National Conference on Emerging Horizons in Science and Technology14/CE008, pp. 106, Fatehgarh Sahib, January 17-18, 2014.
27. R.Garg, G. Kaur and B. Kaur, "Applications of Fuzzy Image Processing: A Review" Proc. National Conference on Emerging Horizons in Science and Technology 14/CE008, pp. 103, Fatehgarh Sahib, January 17-18, 2014.
28. H. Kaur, G. Kaur and B. Kaur, "Image Enhancement using Fuzzy Logic: A Review", Proc. National Conference on Emerging Horizons in Science and Technology 14/CE008, pp. 107, Fatehgarh Sahib, January 17-18, 2014.

29. G. Kaur, "Microwave Photonics: An Introduction", Proc. International Conference on Emerging Trends in Engineering and Applied Sciences, ICETEAS'13, RCEW, Jaipur December 27-28, 2013.
30. K. Singh and G. Kaur, "Multi-Core Fibers: An Overview", Proc. International Conference on Emerging Technologies in Electronics & Communication (ICETEC13), pp. 224-228, GNDU Amritsar, India, December 20-22, 2013.
31. Kaur, G. Kaur and A. Kaur, "Study and Analysis of Defect Detection in Printed Circuit Boards using Image Subtraction Method," Proc. International conference on Control, Communication and Computer Technology, pp.15-18, Chandigarh, March 24,2013.
32. V. Sharma and G. Kaur, "Performance Enhancement of an Optical Communication System Using Pulse Shaping Filters" Proc.Third International Conference on Next Generation Communication and Computing Systems(ICNGC2S-12), Ghaziabad, India, September 22-23, 2012.
33. K. Singh and G. Kaur "Comparison of Random Early Detection (RED) Techniques for Congestion Control in Differentiated Services Networks Based on Packet Droppings" Proc. Third International Conference on Next Generation Communication and Computing Systems (ICNGC2S-12), Ghaziabad, India, September 22-23, 2012.
34. K. Singh and G. Kaur, "Connection Admission Control Methods Based on Fuzzy Logic," Proc. International MultiConference on Intelligent Systems, Sustainable, New and Renewable Energy Technology and Nanotechnology (IISN-2012), pp. 68-70, Institute of Science and Technology Klawad, Haryana, India, March 16-18, 2012.
35. A.Kaur and G. Kaur, "Fuzzy Logic Based AODV Routing Protocol for MANETs: A Review," Proc. International MultiConference on Intelligent Systems, Sustainable, New and Renewable Energy Technology and Nanotechnology (IISN-2012),pp. 37-41, Institute of Science and Technology Klawad, Haryana, India, March 16-18, 2012.
36. K. Singh and G. Kaur, "Radio Frequency identification: Applications and Security Issues," Proc. Second International Conference on Advanced Computing & Communication Technologies (ACCT), pp. 490-494, Rohtak, Haryana, India, January 7-8, 2012.
37. V. Sharma and G. Kaur "Comparison of Pulse Shaping Filters for Dispersion Compensation in Optical Fiber" Proc. International Conference on Recent Advancements in Electronics and Computer Engineering, pp. 27, Baru Sahib , Himachal Pradesh, December 17-18, 2011.
38. K. Singh and G. Kaur "Some Fuzzy Logic Based Congestion Control Methods: A Review" Proc. International Conference on Recent Advancements in Electronics and Computer Engineering, pp. 29, Baru Sahib, Himachal Pradesh, December 17-18, 2011.
39. V. Sharma and G. Kaur "Security Concerns in Mobile Ad-Hoc Networks" Proc. International Conference on Recent Advancements in Technology and Management (ICTM), November 5, 2011.
40. Kaur and G. Kaur, "Overview of 3G and 4G Technologies", Proc. Second International Conference on Recent Advancements in Technology and Management, Jalvehra ,Fatehgarh Sahib, November 5, 2011.
41. S. Devra, G. Kaur, "Dispersion Compensation using All Pass Filters in Optical Fibers", Proc. International Conference on Information and Electronics Engineering, IACSIT press, vol. 6, no. 5, pp. 218-222, Bangkok, Thailand, 2011, WON BEST PAPER AWARD.
42. S. Devra and G. Kaur, "Optical Wavelength interleaving", Proc. International Conference on Nanoscale, Engineering & Advanced Computing, Swarnandhra College of Engineering and Technology, Andhra Pradesh, India, July 8-10, 2011.
43. H. Singh and G. Kaur, "Inter-channel Interference in Free Space Optical System", Proc. National Conference on Recent advances in Electronics and Communication Technology, GNDEC, no. 3, pp. 16-21, Ludhiana, March 2011.
44. G. Kaur, M.S. Patterh and M.L. Singh, "Impact of Pulse Walk off Effect on Stimulated Raman Scattering in a DWDM Transmission System", Proc. International Conference on Emerging Trends in Electronics and Photonic Devices & Systems (ELECTRO-2009), Banaras Hindu University, Varanasi, India, December 22-24, 2009.
45. G. Kaur, M.L. Singh and M.S. Patterh, "Simulation of 10 Gbps DWDM Transmission System in the Presence of Fiber Nonlinearities", Proc. International Conference on Optics and Photonics (ICOP-2009), Central Scientific Instruments Organisation (CSIO), Chandigarh, India October 30November 1, 2009.
46. G. Kaur, M.L. Singh and M.S. Patterh, "Analytical Study of Fiber Nonlinearities in Long-haul DWDM Optical Transmission Systems at High Data Rate", Proc. International Conference on Optics and Photonics (ICOP-2009), Central Scientific Instruments Organisation (CSIO), Chandigarh, India , October 30-November 1, 2009.

47. G. Kaur, M.L. Singh and M.S. Patterh, "Theoretical Investigations of Fibre Nonlinearities in a DWDM Transmission System in the Presence of Amplifier Noise," Proc. International Conference on Telecommunications, ICTEL, August 19-21, 2008, Bandung, Indonesia, 2008.
48. G. Kaur and M.L. Singh, "Effect of Four Wave Mixing in Optical Communication", Proc. International Conference on High Performance Computing, Networking and Communication Systems (HPCNS-07), pp.1-6, Orlando, Florida, USA, July 9-12, 2007.
49. G. Kaur and M.L. Singh, "Optimization of Interchannel Separation in WDM Transmission Systems in the presence of Fibre Nonlinearities", Proc. International Conference on Wireless and Optical Communications Networks (WOCN), Singapore, pp.1-6, July 2007.
50. G. Kaur and M.L. Singh, "An Algorithm for Optimization of inter-amplifier Separation in a WDM Transmission Systems," Proc. International Conference on Intelligent Systems and Networks (IISN-2007), pp. 705-709, Society for Education and Research, Jagadhari, Haryana, India, February 23-25, 2007.
51. Kaur, G. Salaria and G. Kaur, "Artificial Intelligence- Concepts and Applications," Proc. National Conference on Emerging Trends in Communication & IT (ETCIT'07), Rayat Institute of Engineering & Information Technology, Railmajra, Punjab, India, February 24-25, 2007.
52. A.Mehta, T. Kaur and G. Kaur, "UMTS- Advantages and Future Scope", Proc. National Conference on Emerging Trends in Wireless Communication & E-Security (WCES-2007), UIET, Panjab University, Chandigarh, January 11-12, 2007.
53. G. Kaur and M. L. Singh, "Optimization of Interamplifier Separation in a WDM Transmission Systems in the presence of Fiber Nonlinearities" Proc. International Conference on Advances in Electronics and Communication Technology, (ICTAECT-2006), K.C. College of Engineering & Technology, Nawanshahr, Punjab, India, December 15-16, 2006.
54. G. Kaur, N. Kaur and P. Sharma, "Working Woman: An Engine of Globalization", Proc. Global meet and the workshop on "Sustaining Global Pressures: Women in Science and Engineering, World forum of Engineers, New Delhi, November 5-8, 2006.
55. T. Kaur, G. Salaria and G. Kaur, "Wimax-A Wireless Revolution", Proc. National Conference on Recent Advances in Electronics and Communication Technology, (RAECT-06), pp. 391-393, GND Engineering College, Ludhiana, Punjab, 2006.
56. G. Kaur and M.L. Singh, "Intelligent Handoff for FSO/RF Hybrid Systems", Proc. Asian Conference on Intelligent Systems & Networks (AISN-2006), pp. 413-417, Jagadhari, India, February 24-25, 2006.
57. G. Kaur and M.L. Singh, "Hybrid FSO and mm-Wave Wireless Communication Links: The Best Solution to Problems of Free Space Optics", Proc. Asian Conference on Intelligent Systems & Networks (AISN-2006), pp. 407-412, Jagadhari, India, February 24-25, 2006.
58. G. Kaur and H. Singh, "Diagnosing Disabilities in the Fetus", Proc. 9<sup>th</sup> National Conference of Punjab Science Congress, Sunam, Punjab, February 7-9, 2006.
59. G. Kaur and M.L. Singh, "A Survey of Recent Advances in Fuzzy Logic in Communication Systems", Proc. National Conference on Electronics Circuits and Communication Systems, (ECCS2006), TIET, Patiala, India, February 6, 2006.
60. S. Kaur and G. Kaur, "Fuzzy Logic: A Solution of Reasoning about Uncertainty In Pervasive Computing Environments", Proc. National Conference on Electronics Circuits and Communication Systems", TIET, Patiala, Punjab, February 2006.
61. G. Kaur and M.L. Singh, "Free Space Optics – Technical Challenges & Solutions", Proc. International Conference on Optics & Optoelectronics, Dehradun, India, December 12-15, 2005.
62. G. Kaur and M.L. Singh, "An Application of Fuzzy Logic in Vertical Handoff for FSO/RF Hybrid Systems", Proc. International Conference on Optics & Optoelectronics, Dehradun, India, December 12-15, 2005.
63. Singh P. Singh and G. Kaur, "Wearable Computers", Proc. National Conference on Emerging Trends in Wireless Technologies, pp.79, Institution of Electronics and Telecommunication Engineers Chandigarh center, April 16-17, 2005, WON BEST PAPER AWARD.
64. A.Singh, A. Sharma and G. Kaur, "Missile Guided Systems", Proc. National Conference on Emerging Trends in Wireless Technologies", pp. 49-50, Institution of Electronics and Telecommunication Engineers Chandigarh center, April 16-17, 2005.
65. H. Kaur, V. Arora and G. Kaur, "Future Wireless Technology- Zigbee", Proc. National Conference on Emerging Trends in Wireless Technologies", pp. 49, Institution of Electronics and Telecommunication Engineers Chandigarh center, April 16-17, 2005.

66. R. Kaur and G. Kaur, "Scope of Wireless in Future", Proc. National Conference on Emerging Trends in Wireless Technologies", pp. 53, Institution of Electronics and Telecommunication Engineers Chandigarh center, April 16-17, 2005.
67. H. Singh and G. Kaur, "Fuzzy logic based Anesthesia Monitoring System", Proc. National Seminar on Modern Trends in Automation, pp. 24, Trauba Institute of Engineering and Information Technology, Bhopal, March 19-20, 2005.
68. G. Kaur, "Fuzzy Logic in Computational Intelligence", Proc. 2nd National Conference on Intelligent Systems & Networks, pp.25-29, Haryana Engineering College, Jagadhari, February 25-26, 2005.
69. G. Kaur and M.L. Singh, "Current Trends Towards Using Fuzzy Logic in CDMA Systems", Proc. 8<sup>th</sup> National Conference of Punjab Science Congress, Punjabi University, Patiala, February 7-9, 2005.
70. G. Kaur and M.L. Singh, "Intelligent CDMA Systems", Proc. International Conference on Optoelectronics, Fiber Optics and Photonics, pp. 422, Kochi, India, December 9-11, 2004.
71. G. Kaur, "Inside Fuzzy Air Conditioner", Proc. IX All India Meeting of Women in Science Expanding Frontiers Of Science With Information Technology, November 26-28, 2004.
72. G. Kaur and M.L. Singh, "Reliable Nanoelectronic Design based on Neural Networks", Proc. International Conference on Nano-materials: Synthesis, Characterization and Application, Kolkata, India, November 4-6, 2004.
73. G. Kaur, "Linguistic Computing", Proc. National Conference on Trends in Computational Techniques in Engineering (TCTE), pp. 136-138, SLIET, Longowal, October 15-16, 2004.
74. G. Kaur and S. Kaur and K. Kaur, "Fuzzy Control: When to Use", Proc. National Conference on Electronics Circuits and Communication Systems", pp. 162-165, TIET, Patiala, September 23-24, 2004.
75. G. Kaur, "Fuzzy Flip-Flop" Proc. National Conference on Electronics Circuits and Communication Systems, pp. 159-161, TIET, Patiala, September 23-24, 2004.
76. G. Kaur, "Intelligent Control with Fuzzy Logic", Proc. National Seminar ESHTP, pp. 41-45, SLIET, Longowal, September 15, 2004.
77. K. Kaur and G. Kaur, "Industrial Controllers", Proc. National Conference on Recent Trends in Control Systems, pp. 97-102, BBSB Engineering College, Fatehgarh Sahib, May 21-22, 2004.
78. G. Kaur and K. Duvedi, "The Biological Neuron", Proc. National Conference on Recent Trends in Control Systems, pp. 175-178, BBSB Engineering College, Fatehgarh Sahib, May 21-22, 2004.
79. Kaur and G. Kaur, "Moisture Measurement Meter", Proc. National Conference on Recent Trends in Control Systems, pp. 187-191, BBSB Engineering College, Fatehgarh Sahib, May 21-22, 2004.
80. G. Kaur, "Neural Network on a Chip", Proc. National Conference on Recent Trends in Control Systems, pp. 192-195, BBSB Engineering College, Fatehgarh Sahib, May 21-22, 2004.
81. G. Kaur, "VLSI Implementation of Neural Networks", Proc. National Conference on Optoelectronics and MEMS Technologies, pp. 45, CSIO, Chandigarh, April 16-17, 2004.
82. G. Kaur, S. Kaur and K. Kaur, "Intelligent Manufacturing with Fuzzy Logic", Proc. National Conference on Advanced Manufacturing Systems, pp. 129-133, BBSB Engineering College, Fatehgarh Sahib, March 26-27, 2004.
83. G. Kaur, "Micro Controller based Furnace Temperature Controller", Proc. National Seminar CETEC, pp. 76, SLIET, Longowal, March 14, 2004.
84. G. Kaur and S. Kaur, "Is the Glass Ceiling disappearing? A study in an Engg. College", Proc. International Conference on Women in Science: Is the Glass Ceiling Disappearing, NISTADS, New Delhi, India, March 8-10, 2004.
85. G. Kaur, "Fuzzy Logic: A New Horizon", Proc. National Conference of Punjab Science Congress, pp. DP-5, GNDU, Amritsar, February 7-9, 2004.
86. G. Kaur and H. Singh, "Integrating Human Values in Technical Education", Proc. Annual Convention & National Seminar on Integrating Human Values in Technical Education, pp. 102106, BBSB Engineering College, Fatehgarh Sahib, April 26, 2002.
87. G. Kaur and H. Singh, "Teacher and Information Technology", Proc. National Seminar on Role and Place of Teacher in the Age of IT & Humanism, pp. 77-83, SLIET, Longowal, September 5, 2000.
88. H. Singh and G. Kaur, "Teacher-Student Relationship", Proc. National Seminar on Role and Place of Teacher in the Age of IT & Humanism, pp. 84-88, SLIET, Longowal, September 5, 2000.

### **Books (02)**

1. Title: Random Early Detection (Red) Based Congestion Control Strategies  
Authors: Karamdeep Singh, Gurmeet Kaur  
Publisher: 1 09/2014; Lap Lambert Academic Publishing, ISBN: 978-3-659-58294-3
2. Title: Optical Dense Wavelength Division Multiplexing Systems: Theoretical Investigations for Optimization of System Parameters  
Authors: Gurmeet Kaur, M.L. Singh, M.S. Patterh  
Publisher: VDM Verlag Dr. Müller, Germany, ISBN-10: 639376196

### **Lecture Notes (03)**

1. Title: “Development of a two-layer meta classifier-based drought stress detection system for wheat crop sustainability”,  
Authors: A. Gupta, L. Kaur, and G. Kaur,  
Publisher: Wiley Scrivener Publishing, Accepted in the book chapter “Sustainable development using geospatial techniques”, March 12, 2023
2. Title: Indoor Optical Wireless Communication System Using Wavelet Transform and Neural Network Based on Pulse Position Modulation Intended for Optical Wireless Channel Characterization  
Authors: Ankita Aggrawal, Gurmeet Kaur  
Publisher: Springer, Marriwala N., Tripathi C.C., Kumar D., Jain S. (eds) ,  
Mobile Radio Communications and 5G Networks. Lecture Notes in Networks and Systems, vol 140. Singapore. [https://doi.org/10.1007/978-981-15-7130-5\\_49](https://doi.org/10.1007/978-981-15-7130-5_49)
3. Title: Optical Wireless Channel Characterization Based on OOK Modulation for Indoor Optical Wireless Communication System Using WT-ANN  
Authors: Ankita Aggrawal, Gurmeet Kaur  
Publisher: Springer, Marriwala N., Tripathi C.C., Kumar D., Jain S. (eds),  
Mobile Radio Communications and 5G Networks. Lecture Notes in Networks and Systems, vol 140. Singapore. [https://doi.org/10.1007/978-981-15-7130-5\\_48](https://doi.org/10.1007/978-981-15-7130-5_48)