

BIO-DATA

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Current Area of Specialization Wireless Sensor Networks, Optical Networks, Cloud Computing

Academic Qualifications:

Sr. no.	Degree Held	Year	Board/Univ./Inst.	Subjects Taken
1	High School		HP Board, Dharmshala	
2	Intermediate		HP Board, Dharmshala	
3	B.Sc		HP University, Shimla	Non- Medical
4	MCA		Guru Jambheshwar University, Hissar	
5	Ph.D.		IK Gujral Punjab Technical University, Jalandhar	

Details of Experience: (Refer Appendix - I)

Total Experience (Teaching/Research and Development) : 10 years 5 months

Theses Guided/Under Guidance: (Computer Science and Engineering)(Refer Appendix-II)

Ph.D.Guided: 1 Under Guidance : 05
M. Tech/ M.Phil.. : 30

Papers Published(in Journals) : (Refer Appendix-III)
Conference Papers : (Refer Appendix -III)

List of papers taught at Undergraduate and Postgraduate Levels:

i) Operating System ii) Soft Computing iii) Computer System Architecture
iv) Computer Networks v) Research Methodology vi) Management Information System
vii) Software Engineering viii) Computer Based Optimization Techniques

APPENDIX- I

DETAILS OF EXPERIENCE

<i>Sr. No</i>	<i>Name of Instistute</i>	<i>Position Held</i>	<i>Period</i>	<i>Major Job Responsibilities and Nature of Experience</i>
1	Desh Bhagat University (Formerly DBIMCS) Mandi Gobindgarh	Lecturer	16 July 2007-15 July 2008	Teaching
2	RIMT, Mandi Gobindgarh	Assitant Professor	16 July 2008-30 Dec 2010	Teaching
3	RBGI, Bhedpura Patiala Formerly Shri Balaji Literary & Charitable Society Group of Institutions)	Associate Professor	31 Dec 2010-27 July 2011	Teaching, Head Of Department
4	Department of Computer Science, Punjabi University Patiala	Assitant Professor	28 July 2011-Till Date	Teaching

APPENDIX-II

Ph. D. THESIS/M. TECH. THESIS GUIDED/UDER

GUIDANCE

PH. D Student Guided

1. Umesh Gupta, “Optimization of EDFA and RAMAN Amplifiers for WDM Systems”, April 2017, Faculty of Engineering, I.K. Gujral Punjab Technical University, Kapurthala

Ph. D. STUDENTS UNDER GUIDANCE

1. Anish Soni, “An Optimized and secure Approach of Data Aggregation in wireless Sensor Network”, 25 October 2012, Faculty of Computing Sciences.
2. Harshpreet Singh, “Development of Workflow resource model for effective of workflows in cloud” Registered in 23 January 2014 , Faculty of Computing Sciences. (Thesis Submitted)
3. Karuna Babber, “Cross Layer Approach for Energy Efficient Wireless Sensor Networks” 9 March 2015, Faculty of Computing Sciences.
4. Gaurav Bhatla, “Development of Energy Efficient routing techniques in wireless sensor networks”, 20 January 2015, Faculty of Computing Sciences.
5. Anil Bhasin, “Performance evaluation and design of hybrid passive optical networks”, 3 February 2016, Faculty of computing Sciences.

APPENDIX-III

LIST OF PUBLICATIONS

IN JOURNALS:

1. Karuna Babber, and Rajneesh Randhawa, "A Cross-Layer Optimization Framework for Energy Efficiency in Wireless Sensor Networks", *Wireless Sensor Network*, Vol 9, No. 6, pp:189, 2017
DOI: [10.4236/wsn.2017.96011](https://doi.org/10.4236/wsn.2017.96011)
2. Priyanka Sharma, Rajesh Kumar Bawa, Rajneesh Randhawa, "Evaluation of Process to Bay Level Networking Delay in IEC 61850 Substation Communication System", *International Journal of Advance Research, Ideas and Innovations in Technology*. Vol: 3, No: 2, pp:251-257, 2017.
3. Harshpreet Singh and Rajneesh Randhawa, "Dynamic Resource Prediction and Allocation in Clouds using Pattern Matching", *Indian Journal of Science and Technology*, 2016, DOI: [10.17485/ijst/2016/v9i47/106800](https://doi.org/10.17485/ijst/2016/v9i47/106800)
4. Umesh Gupta, and Rajneesh Randhawa, and Harbhajan Singh, "Mitigation of Rayleigh backscattering in RSOA-based WDM using MZI switching", *Optoelectronics And Advanced Materials-Rapid Communications*, Vol: 10, No: 1-2, pp: 5-8, 2016 Thompson Retuers, Impact Factor: 0.46
5. Umesh Gupta, and Rajneesh Randhawa, and Harbhajan Singh, "Evaluation of 16×10 Gbps semiconductor optical amplifier based bidirectional WDM system using different dispersion compensating techniques", *Journal of Nanoelectronics and Optoelectronics*, Vol: 10, No: 6, pp: 806-809, 2015 Thompson Retuers Impact Factor: 0.49 DOI: <https://doi.org/10.1166/jno.2015.1842>
6. Harshpreet Singh, Rajneesh Randhawa, "CPSEL: Cloud provider selection framework for ranking and selection of cloud provider" *International Journal of Applied Engineering Research*, 2015, SCImago, Impact Factor: 0.15
7. Umesh Gupta, and Rajneesh Randhawa, and Harbhajan Singh, "Effect of pump configuration on Raman amplifier as function of input power for multiplexed wavelengths", *Optoelectronics And Advanced Materials-Rapid Communications*, Vol: 9, No: 5-6, pp: 567-569, 2015, Thompson Retuers, Impact Factor: 0.46
8. Komal Preet Kaur and Rajneesh Randhawa, and RS Kaler, "Performance analysis of WDM-PON architecture using different receiver filters", *Optik-International Journal for Light and Electron Optics*, Vol: 125, No: 17, pp:4742–4744, 2014, Elsevier Thompson Retuers, Impact Factor: 0.835 doi: <https://doi.org/10.1016/j.ijleo.2014.04.070>
9. Komal Preet Kaur and Rajneesh Randhawa, and RS Kaler, "Low cost architecture to integrate multiple PONs to a long reach spectrum sliced WDM network", *Optik-International Journal for Light and Electron Optics*, Vol: 125, No: 16, pp:4513-4516, 2014, Elsevier Thompson Retuers, Impact Factor: 0.835 doi: <https://doi.org/10.1016/j.ijleo.2014.02.017>
10. Deeksha Kocher, and RS Kaler, and Rajneesh Randhawa, "Simulation of fiber to the home triple play services at 2 Gbit/s using GE-PON architecture for 56 ONUs", *Optik-International Journal for Light and Electron Optics*, Vol: 124, No: 21, pp: 5007–5010, 2013, Elsevier Thompson Retuers, Impact Factor: 0.835 DOI: [10.1016/j.ijleo.2013.03.065](https://doi.org/10.1016/j.ijleo.2013.03.065)
11. Deeksha Kocher, and RS Kaler, and Rajneesh Randhawa, "50 km bidirectional FTTH transmission comparing different PON standards", *Optik-International Journal for Light and Electron Optics*, Vol: 124, No: 21, pp: 5075–5078, 2013, Elsevier Thompson Retuers, Impact Factor: 0.835 DOI: <https://doi.org/10.1016/j.ijleo.2013.03.071>
12. Ramandeep Kaur, and Rajneesh Randhawa and RS Kaler, "Performance evaluation of optical amplifier for 16 × 10, 32 × 10 and 64 × 10 Gbps WDM system", *Optik-International Journal for Light and Electron Optics*, Vol: 124, No: 8, pp: 693–7002, 2013,

- Elsevier Thompson Retuers, Impact Factor: 0.835 DOI: <https://doi.org/10.1016/j.ijleo.2012.01.008>
13. Rajneesh Randhawa , RS Kaler, and Anuj Singal, ,“Performance evaluation of algorithms for wavelength assignment in optical ring network” , Optik-International Journal for Light and Electron Optics, Vol: 124, No: 1, pp: 78-81, 2013, Elsevier Thompson Retuers, Impact Factor: 0.835 DOI: <https://doi.org/10.1016/j.ijleo.2011.11.070>
 14. Kamaljit Singh Bhatia, and RS Kaler, and TS Kamal, and Rajneesh Randhawa, “Simulative analysis of integrated DWDM and MIMO-OFDM system with OADM”, Optik-International Journal for Light and Electron Optics, Vol: 124, No: 1, pp: 117-121, 2013, Elsevier Thompson Retuers, Impact Factor: 0.835 DOI: <https://doi.org/10.1016/j.ijleo.2011.11.081>
 15. Rakesh Goyal, and Rajneesh Randhawa and RS Kaler, “Single tone and multi tone microwave over fiber communication system using direct detection method”, Optik-International Journal for Light and Electron Optics, Vol: 123, No: 10, pp: 917-923, 2012, Elsevier Thompson Retuers, Impact Factor: 0.835 DOI: <https://doi.org/10.1016/j.ijleo.2011.01.018>
 16. Kamaljit Singh Bhatia, and Rajinder Singh Kaler, and Tara Singh Kamal, and Rajneesh Randhawa, “Monitoring and compensation of optical telecommunication channels by using optical add drop multiplexers for optical OFDM system”, Vol: 33, No: 1, pp: 9-13, 2012, SCImago, Impact Factor: 0.144 DOI: <https://doi.org/10.1515/joc-2011-0001>
 17. Rajneesh Randhawa, RS Kaler, " Investigation of four wave mixing effect at different channel spacing" , Optik-International Journal for Light and Electron Optics, Vol: 123, No: 4 , pp: 352-356, 2012, Elsevier Thompson Retuers, Impact Factor: 0.835 DOI: <https://doi.org/10.1016/j.ijleo.2011.01.017>
 18. Rajan Manro, Rajneesh Randhawa, A Joshi, " Security Issues in Cloud based e-Governance model.", International Journal of Computers & Distributed Systems, Vol: 1, No: 1, PP: 14-16, 2012
 19. Rajneesh Randhawa and RS Kaler “Implentation of optical encoder and multiplexer using Mach-Zehnder inferometer”, Optik-International Journal for Light and Electron Optics, Vol: 122, No: 15, pp: 1399–1405, 2011, Elsevier Thompson Retuers, Impact Factor: 0.835 doi: <https://doi.org/10.1016/j.ijleo.2010.09.030>
 20. Rajneesh Randhawa and RS Kaler, “Comparative investigation and suitability of various data formats for 10 Gb/s optical AWG multiplexer and AWG demultiplexer based transmission links”, Optik-International Journal for Light and Electron Optics, Vol: 122, No: 7, pp: 610-615, 2011, Elsevier Thompson Retuers, Impact Factor: 0.835 doi: <https://doi.org/10.1016/j.ijleo.2010.03.024>
 21. Rajneesh Kaler, RS Kaler, "Performance analysis of metro WDM network based on an optical cross connects and arrayed waveguide grating demultiplexer", Optik-International Journal for Light and Electron Optics, Vol: 122, No: 7, pp: 620-625, 2011, Elsevier Thompson Retuers, Impact Factor: 0.835 DOI: <https://doi.org/10.1016/j.ijleo.2010.03.026>
 22. Rajneesh Kaler, RS Kaler, "Gain and Noise figure performance of erbium doped fiber amplifiers (EDFAs) and Compact EDFAs", Optik-International Journal for Light and Electron Optics, Vol: 122, No: 5, pp: 440-443, 2011, Elsevier Thompson Retuers, Impact Factor: 0.835 DOI: <https://doi.org/10.1016/j.ijleo.2010.02.028>
 23. Rajneesh Kaler, Pradeep Teotia, RS Kaler, " Simulation of FTTH at 10Gbit/s for 8 OTU by GE-PON Architecture" , Optik-International Journal for Light and Electron Optics, Vol: 122, No: 22, pp: 1985-1989, 2011, Elsevier Thompson Retuers, Impact Factor: 0.835 DOI: <https://doi.org/10.1016/j.ijleo.2010.12.015>
 24. Rajneesh Kaler, RS Kaler, " Simulation of FTTH at 10Gbit/s for 8 OTU by GE-PON Architecture" , Optik-International Journal for Light and Electron Optics, Vol: 122, No: 15, pp: 1362–1366, 2011, Elsevier Thompson Retuers, Impact Factor: 0.835 DOI: <https://doi.org/10.1016/j.ijleo.2010.09.010>

25. Kamaljit Singh Bhatia, RS Kaler, TS Kamal, Rajneesh Kaler, "Coded OFDM in fiber-optics communication systems with optimum biasing of laser" , Signal Processing: An Int J (SPIJ), Vol: 5, No: 2, pp: 33-43 , 2011
26. Rajneesh Randhawa, RS Kaler, "Comparison of dispersion mapping techniques with fiber nonlinearities in carrier suppressed RZ systems", Optik-International Journal for Light and Electron Optics, Vol: 121, No: 16 pp: 1472-1477, 2010, Elsevier Thompson Retuers, Impact Factor: 0.835 DOI: <https://doi.org/10.1016/j.ijleo.2009.02.017>
27. Rajneesh Randhawa, RS Kaler, "Capacity enhancement in packet switched slotted ring wavelength division multiplexed transport networks", Optik-International Journal for Light and Electron Optics, Vol: 121, No: 11, pp: 1027-1032, 2010, Elsevier Thompson Retuers, Impact Factor: 0.835 DOI: <https://doi.org/10.1016/j.ijleo.2008.12.002>
28. Rajneesh Randhawa, JS Sohal, RS Kaler, "Protection and restoration of ring in packet switched wavelength division multiplexed transport networks", Optik-International Journal for Light and Electron Optics, Vol: 121, No: 11, pp: 1013-1018, 2010, Elsevier Thompson Retuers, Impact Factor: 0.835 DOI: <https://doi.org/10.1016/j.ijleo.2008.12.014>
29. Rajneesh Randhawa, RS Kaler, "Pre-,post and hybrid dispersion mapping techniques for CSRZ optical networks with nonlinearities", Optik-International Journal for Light and Electron Optics, Vol: 121, No: 14 pp: 1274-1279, 2010, Elsevier Thompson Retuers, Impact Factor: 0.835 DOI: <https://doi.org/10.1016/j.ijleo.2009.01.032>
30. Rajneesh Randhawa, JS Sohal, "Comparison of optical network topologies for wavelength division multiplexed transport networks ", Optik-International Journal for Light and Electron Optics, Vol: 121, No: 12 pp: 1096-1110, 2010, Elsevier Thompson Retuers, Impact Factor: 0.835 DOI: <https://doi.org/10.1016/j.ijleo.2008.12.035>
31. Rajneesh Randhawa, JS Sohal, " Comparison and performance of routing protocols in SONET based networks " , Optik-International Journal for Light and Electron Optics, Vol: 121, No: 11, pp: 997-1002, 2010, Elsevier Thompson Retuers, Impact Factor: 0.835 DOI: <https://doi.org/10.1016/j.ijleo.2008.12.015>
32. Rajneesh Randhawa, JS Sohal, Amit Kumar Garg, RS Kaler, "An Efficient Network Utilization Scheme for Optical Burst Switched Networks " , Journal of Information Technology Research , Vol: 3, No: 2 pp: 34-49, 2010, DOI: 10.4018/jitr.2010040103
33. Rajneesh Randhawa, JS Sohal, " Comparison and performance of routing protocols in SONET based networks " , Optik-International Journal for Light and Electron Optics, Vol: 121, No: 5, pp: 462-466, 2010, Elsevier Thompson Retuers, Impact Factor: 0.835 DOI: <https://doi.org/10.1016/j.ijleo.2008.08.007>

IN CONFERENCE PROCEEDINGS:

1. Gaurav Bathla, Rajneesh Randhawa, "Enhancing WSN Lifetime Using TLH: A Routing Scheme", In: Perez G., Mishra K., Tiwari S., Trivedi M. (eds) Networking Communication and Data Knowledge Engineering. Lecture Notes on Data Engineering and Communications Technologies, vol 3, pp:25-35 ,2018 Springer, Singapore
DOI: https://doi.org/10.1007/978-981-10-4585-1_3
2. Harshpreet Singh, Rajneesh Randhawa, "Cuckoo search based workflow scheduling on heterogeneous cloud resources", Proceedings of the 7th International Conference Confluence 2017 on Cloud Computing, Data Science and Engineering , 65-70, 2017, IEEE , DOI: [10.1109/CONFLUENCE.2017.7943125](https://doi.org/10.1109/CONFLUENCE.2017.7943125)
3. Karuna Babber, Rajneesh Randhawa, "Optimization of physical layer parameters for energy efficient wireless sensor networks", Communication and Computing Systems: Proceedings of the International Conference on Communication and Computing Systems (ICCCS 2016), Gurgaon, India, 9-11 September, 2016
4. Karuna Babber, and Rajneesh Randhawa, "Energy efficient clustering with secured data transmission technique for Wireless Sensor Networks ", Proceedings of the 10th INDIACom;

2016 3rd International Conference on Computing for Sustainable Global Development, INDIACom 2016 , 3023-3-25, IEEE

5. Karuna Babber, and Rajneesh Randhawa, “Power saving modulation techniques for Wireless Sensor Networks” Proceedings of the 2016 IEEE International Conference on Wireless Communications, Signal Processing and Networking, WiSPNET 2016, 1129–1132, IEEE DOI: [10.1109/WiSPNET.2016.7566312](https://doi.org/10.1109/WiSPNET.2016.7566312)
6. RS Kaler, and Rajneesh Randhawa, and Simranjit Singh, “Flat-Gain C+ L Split-Band Hybrid Waveguide Amplifier for Dense Wavelength Division Multiplexed System at Reduced Channel Spacing” Integrated Photonics Research, Silicon and Nanophotonics” , Optical Society of America. 2013 DOI: <https://doi.org/10.1364/IPRSN.2013.IM2A.2>
7. Richa Kalra, and Ankur Singhal, and Rajneesh Kaler, and Promila Singhal, “Performance analysis of proposed MAES cryptographic techniques”, International Conference, High Performance Architecture and Grid Computing. Communications in Computer and Information Science, vol 169. Springer, Berlin, Heidelberg, pp:316-321, 2011 DOI: https://doi.org/10.1007/978-3-642-22577-2_43

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