Dr.Simranjit **Singh**

Ph.D (ECE), Raman Fellow UGC, SMIEEE, MOSA, MSPIE, MIEI, MOSI

linkedin.com/in/simranjitsingh87 +91-9872552898 simrankatron@gmail.com, sjsingh@pbi.ac.in
Patial, Punjab
ORCID : 0000-0002-6245-1590
Google Scholar:https://scholar.google.com/citations?user=1ZjokGwAAAAJ
ResearchGate : https://www.researchgate.net/profile/Simranjit_Singh10
Scopus : https://www.scopus.com/authid/detail.uri?authorId=54981173800
Website : simranresearchgrou.wix.com/srgroup

Academics

PHD (Electronics and Communication Engineering)	**9.28/ 10 CGPA** from Thapar University, Patiala, Punjab, India. (2011-2014)
M.E. (Electronics and Communication Engineering)	Thapar University, Patiala, Punjab, India with **7.24 CGPA**.(2008-2010)
B.Tech (Electronics and Communication Engineering)	Guru Nanak Dev Engineering College, Ludhiana, Punjab with **68.9%**.(2004-2008)

Work Experience

Assistant Professor
(Stage-2/Senior Scale) , AGP, -7000/-
- Department of Electronics and Communication Engineering, Punjabi University, Patiala, Punjab, India
- 23rd December 2015 to till date

Postdoc Associate
The Institute of Optics, University of Rochester, Rochester, NY, USA
- 27thJuly 2016 to 23rd July 2017

Assistant Professor
(Stage-1), AGP, 6000/-
- Department of Electronics and Communication Engineering, Punjabi University,Patiala, Punjab, India.
- 23rd Dec. 2011 to 22nd Dec. 2015

Teaching Associate
Department of ECE, Thapar University, Patiala
- 20th July 2011 to 22nd Dec. 2011

Assistant Professor
Department of ECE, B.G.I.E.T, Sangrur, Punjab, India
- 14th July 2010 to 19th June 2011

Research Interest

- Optical fiber communication
- Information security
- Optical Sensors
- Communication Systems
- Free Space Optics
- Antenna Design

Thesis

Masters of Engineering
Thesis title:, Performance Evaluation of Hybrid Optical Amplifier for WDM Systems,
- Duration : 9 months
- Tools : Optsim, VPI systems, OptiSystem
- Position : Individual

Ph.D | **Thesis title:, Performance Optimization of Hybrid Optical Amplifiers for DWDM System,**
- Duration : 3.5 Years
- Tools : VPI systems, Matlab, Optisystem, Optsim, various experimental kits
- Position : Individual

Research Projets

Principal Investigator of project under Empowerment and Equity Opportunities for Excellence in Science, SERB, Government of India. File Number : EEQ/2019/000115 Status : Ongoing (Dec.2019 to Dec.2022)

Sanctioned amount : Rs. 52,67,500/-
- Tittle : Design, Optimization and Fabrication of a low SAR Compact MIMO Patch Antenna Array for Next Generation millimeter Wave Wireless Applications

Principal Investigator of project under ASEAN-India STI Cooperation, of Department of Science and Technology (International Multilateral and Regional Cooperation Division), Government of India. File Number : CRD/2018/000071 Status : Ongoing (Sept.2019 to Sept. 2021)

Sanctioned amount : Rs.17,32,000/-
- Tittle : Design and Fabrication of an Optimized Compact MIMO Patch Antenna Array for 5G Technology
- **International Collaborators :**
- 1. **Prof. M. Tariqul**, Professor, Universiti Kebangsaan Malaysia,Bangi, Selangor Malaysia
- 2. **Prof. Nguyen Quoc Dinh**, Head of Fundamental Radio Electronic Engineering Laboratory, Faculty of Radio-Electronics, Le Quy Don Technical University 236 Hoang Quoc Viet, Bac Tu Liem, Vietnam

Principal Investigator of project under Visvesvaraya PhD Scheme for Electronics and IT, funded by MeitY, Government of India. Status : Ongoing (Jan.2015 to Jan.2021)

Sanctioned amount : Rs. 36,20,100/-
- Tittle : Generalized Multi Protocol Label Switched Optical Networks With Improved Quality of Service.

Principal Investigator of project under Visvesvaraya PhD Scheme for Electronics and IT, funded by MeitY, Government of India Status : Ongoing (Jan.2015 to Jan.2021)

Sanctioned amount : Rs. 36,20,100/-
- Tittle : Planar Antenna for Millimeter and Sub millimeter Wave Applications

Principal Investigator of project under Raman fellowship funded by the University Grants Commission (India) Status : Completed (July 2016 to July 2017)

Sanctioned amount : Rs. 26,20,100/-
- Tittle : Security Enhancement in All-Optical Networks

Host Scientist of C V Raman International Fellowship for African Researchers 2016 of FICCI, Government of India . Status : Completed (Oct. 2017 to March 2018)

Sanctioned amount : Rs. 2,85,000/-
- Tittle : Compensation of Nonlinear Impairments in Optical Fiber Transmission System Based on Wavelength Division Multiplexing

Publications

Book :

- [1] **Simranjit Singh**, Rajneesh Randhawa and R. S. Kaler, "Handbook on Optical Amplifiers", Lambert Academics Publishing, Saarbrücken, Germany, Feb 2015, ISBN 978-3-659- 68032-8.
- [2] Mandeep Singh, **Simranjit Singh**, Tariqul Islam, "Highly Efficient Ultra-Wide Band MIMO Patch Antenna Array for Short Range THz Applications", Emerging Trends in Terahertz Engineering and System Technologies to be published, Springer. (Accepted).
- [3] **Simranjit Singh**, Gurpreet Kaur, M. Tariqul Islam, R. S. Kaler, "Broadband Connectivity for 5G and Beyond", Springer. (Book proposal accepted).

SCI Journals with Impact factor :

- [1] **Simranjit Singh**and R. S. Kaler, "Novel Optical Flat Gain Hybrid Amplifier for Dense Wavelength Division Multiplexed System",**IEEE** Photonics Technology Letters, vol. 26, no. 2, pp. 173-176, Jan. 2014. (IF : 2.553)
- [2] **Simranjit Singh** and R. S. Kaler, "Flat Gain L-band Raman-EDFA Hybrid Optical Amplifier for Dense Wavelength Division Multiplexed System", **IEEE** Photonics Technology Letters, vol. 25, no. 3, pp. 250-252, Feb. 2013. (IF : 2.553)
- [3] Djima Kassegne, **Simranjit Singh**, S. Sanoussi Ouro-Djobo and Barerem-Melgueba Mao, "Influence of Nonlinear Effects on 6.4 Tb/s Dual Polarization Quadrature Phase Shift Keying Modulated Dense Wavelength Division Multiplexed System", **Wiley** : International Journal of Communication Systems, vol. 32, no. 12, pp e4021, August 2019. (IF : 1.278)
- [4] Djima Kassegne, **Simranjit Singh**, S. Sanoussi Ouro-Djobo and Barerem-Melgueba Mao, "Dispersion and nonlinear compensation in 32×200 Gb/s phase conjugated twin waves dense wavelength division multiplexed system", **OSA** : Journal of Optical Technology, Vol. 86, no. 3, pp. 160-165, 2019. (IF : 0.517)
- [5] Simarpreet and **Simranjit Singh**, "A Review on Developments in All-Optical Spectral Amplitude Coding Techniques", **SPIE** : Optical Engineering, vol. 57, no. 11, pp. 116102, 2018. (IF : 1.209)
- [6] **Simranjit Singh** "Performance Investigation of 1.68 Tb/s Spectral Efficient HybridOTDM-WDM System using Orthogonal Modulation Format", **Springer** : National Academy Science letters, vol. 41, no. 3, pp. 151-154, June 2018. (IF : 0.331)
- [7] **Simranjit Singh** and Kanwarpeet Singh, "Design of an Integrated Multi-arm Power Splitter Using Photonic Crystal Waveguide", **Elsevier** : Optik-International Journal of Electron and Optics, vo. 145, pp. 495-502, 2017. (IF=1.914)
- [8] Gurpreet Kaur, R. S. Kaler, and **Simranjit Singh**, "Performance Investigation of Suppression of Four Wave Mixing Using Optical Phase Conjugation with Different Modulation Format in DWDM Soliton Communication System", **Springer** : JETP Letters, Vol. 105, No. 5, pp. 279–282, May2017. (IF : 1.412)
- [9] **Simranjit Singh**, "Bandwidth Efficient Hybrid Modulation Technique in the Scenario of 3.5 Tb/S Dense Wavelength Division Multiplexed System", Optoelectronics and AdvancedMaterials-Rapid Communications, vol. 11, no. 1-2, pp. 51-53, Jan-Feb. 2017. (IF : 0.452)
- [10] **Simranjit Singh** Simarpreet Kaur, Ramandeep Kaur and R. S. Kaler, "Photonic Processing of Alloptical Johnson Counter using Semiconductor Optical Amplifiers", **IET** Optoelectronics, vol. 15, no. 1, pp. 8-14, Feb. 2017. (IF : 1.667)
- [11] **Simranjit Singh**and Harmandeep Kaur, "Far Field Detection of Different Elements Using Photonic Crystals", Journal of Optoelectronics and Nanoelectronics, vol. 12, pp. 400-403, Feb. 2017. (IF : 1.069)
- [12] **Simranjit Singh**, Chanekya and Ramandeep Kaur, "Performance Investigation of Hybrid Optical Amplifier Using Recycled Residual Pumping", **OSA** : Journal of Optical Technology, vol. 83, no. 8, pp. 498-501, 2016. (IF : 0.517)
- [13] **Simranjit Singh**, Chanakya Chandel and Ramandeep Kaur, "Performance Enhancement of Recycling Residual Pumped hybrid Raman-EDFA in Bi-directional Wavelength Division Multiplexedpassive Optical Network", Optoelectronics and Advanced Materials-Rapid Communications, vol. 11, no. 12-13, Nov-Dec 2016. (IF : 0.452)
- [14] **Simranjit Singh** and Kawalpreet Kaur, "Security Enhancement in Optical Code Division Multiplexed System using Anti jamming Technique", Optoelectronics and Advance Materials : Rapid Communication, vol. 10, no. 9-10, pp. 680-684, Sep.-Oct-2016. (IF : 0.452)
- [15] **Simranjit Singh**and Gauravdeep, "Optimum Placement of Optical Amplifiers in a OTDMA/OCDMA Based Hybrid Network Topology" Journal of Optoelectronics and Advance Materials-Rapid Communication, vol. 10, no. 7-8, p. 490 – 496, July-August 2016. (IF : 0.452)
- [16] **Simranjit Singh**, "Novel and Secure Bandwidth Efficient Optical Code Division Multiplexed System for Future Access Networks", **Elsevier** : Optical Fiber Technology, vol. 32, pp. 123-128, December 2016. (IF:1.824)
- [17] **Simranjit Singh** and R. S. Kaler, "A Review on Recent Developments in Hybrid Optical Amplifier for Dense Wavelength Division Multiplexed System", **SPIE** : Optical Engineering, vol. 54, no. 10, pp. 100901, Oct 2015. (IF:1.209), Top Downloads from SPIE Journals and Proceedings as per `http://spiedigitallibrary.org/?WT.mc_id=KDL1215INDVE`, displayed on 17/01/2016.
- [18] **Simranjit Singh** , Gauravpreet Singh, Gurpreet Kaur, Ramandeep Kaur and R. S. Kaler, "Optimum placement of optical amplifiers in a multi-wavelength hybrid network topology", Optoelectronics and Advanced Material-Rapid Communication, vol. 9, no. 7-8, Aug. 2015. (IF : 0.452)
- [19] **Simranjit Singh**, Ramandeep Kaur, Amanvir Singh and R. S. Kaler, "Novel Security Enhancement technique against Eavesdropper for OCDMA System using 2-D Modulation Format with Code Switching Scheme", **Elsevier** : Optical Fiber Technology, vol. 22, pp. 84-89, Feb. 2015. (IF:1.824)
- [20] **Simranjit Singh** , Sukhbir Singh, Ramandeep Kaur and R. S. Kaler, "Performance Investigation of Optical Multicast Overlay System using Orthogonal Modulation Format", **Elsevier** : Optics Communications, vol. 338, pp. 58–63,March 2015. (IF:1.961)
- [21] **Simranjit Singh** and R. S. Kaler, "Performance Optimization of EDFA-Raman Hybrid Optical Amplifier Using Genetic Algorithm", **Elsevier** : Optics and Laser Technology, vol. 68, pp. 89-95, 2015. (IF:3.319)
- [22] **Simranjit Singh**, Ramandeep Kaur Kaur and R. S. Kaler, "Photonic Processing and Realization of All-Optical

Digital Comparator Based on Semiconductor Optical Amplifiers", **SPIE** : Optical Engineering, vol. 54, no. 1, pp. 016104 (1-5), Jan 2015. (IF:1.209)

- [23] **Simranjit Singh**, R. S. Kaler and Rupinder Kaur, "Realization of High Speed All-Optical Half Adder and Half Subtractor Using SOA Based Logic Gates", **OSA** : Journal of Optical Society of Korea, vol. 18, no. 6, pp. 639-645 December 2014. (IF:0.827)
- [24] **Simranjit Singh** and R. S. Kaler, "Optimizing the Net Gain of a Raman-EDFA Hybrid Optical Amplifier using a Genetic Algorithm", **OSA** : Journal of Optical Society of Korea, vol. 18, no. 5, pp. 442-448, Oct. 2014. (IF:0.827)
- [25] **Simranjit Singh**, Rupinder Kaur and R. S. Kaler, "Photonic Processing for All-Optical logic Gates Based on Semiconductor Optical Amplifier", **SPIE** : Optical Engineering, Vol. 53, no. 11, pp. 116102 (1-8), Nov. 2014. (IF:1.209)
- [26] **Simranjit Singh** and R. S. Kaler, "Flat-gain Characteristics of C+L Split-band Hybrid Waveguide Amplifier for Dense Wavelength Division Multiplexed System at Reduced Channel Spacing", Optoelectronics and Advanced Materials-Rapid Communications, vol. 8, no. 9-10, pp. 980 – 984, Sep-Oct 2014. (IF : 0.452)
- [27] **Simranjit Singh**, "Performance Evaluation of Bi-directional Passive Optical Networks in the Scenario of Triple Play Service", **Elsevier** : Optik-International Journal of Light and Electron Optics, vol. 125, no. 19, pp 5837-5841, Oct. 2014. (IF : 1.914)
- [28] **Simranjit Singh**, Raman and R. S. Kaler, "Investigation of Wavelength Division Multiplexed Hybrid ring-tree-star Network Topology to Enhance the System Capacity", **Elsevier** : Optik International Journal of Light and Electron Optics, vol. 125, no. 21, pp. 6516-6519. Nov. 2014. (IF:1.914)
- [29] **Simranjit Singh** and R. S. Kaler, "Placements of Hybrid/Conventional Optical Amplifiers in a Multiwavelength Dense Metropolitan Area Network", Optoelectronics and Advanced Material-Rapid Communication, vol. 8, no. 7-8, pp. 762-769, August 2014. (IF : 0.452)
- [30] **Simranjit Singh**, "Investigation of Wavelength Division Multiplexing Ring Network Topology to Enhance the System Capacity" **Elsevier** : Optik-International Journal of Light and Electron Optics, vol. 125, no. 21, pp. 6527-6529, Nov. 2014. (IF:1.914)
- [31] **Simranjit Singh**, and R. S. Kaler, "Multistage Gain-Flattened Hybrid Optical Amplifier at Reduced Wavelength Spacing", **Elsevier** : Optik, vol. 125, no. 18, pp. 5357-5359, Sep. 2014. (IF:1.914)
- [32] **Simranjit Singh** and Raman, "Performance Investigation on DWDM Optical Ring Network to Increase the Capacity with Acceptable Performance", **Elsevier** : Optik-International Journal of Light and Electron Optics, Vol. 125, no. 19, pp. 5750-5752, Oct 2014. (IF:1.914
- [33] **Simranjit Singh**, Amit Kapoor, Gurpreet Kaur, R. S. Kaler and Rakesh Goyal, "Investigation on Wavelength Re-Modulated Bi-directional Passive Optical Network for different Modulation Formats", **Elsevier** : Optik-International Journal of Light and Electron Optics, Vol. 125, no. 18, pp 5378-5382, Sep 2014. (IF:1.914)
- [34] **Simranjit Singh**, Sonak Saini, R. S. Kaler and Ramandeep Kaur, "Multi Parameter Optimization of Raman Fiber Amplifier using Genetic Algorithm for S band Dense Wavelength Division Multiplexed System", **Elsevier** : Optik-International Journal of Light and Electron Optics, vol. 125, no. 17, pp. 4694-4699, Sep. 2014. (IF:1.914)
- [35] **Simranjit Singh** and R. S. Kaler, "Power Transient and Its Control in Raman- EDFA Hybrid Optical Amplifier Subject to Multi-Channel Bursty Traffic", **OSA** : Journal of Optical Technology, vol. 81, no. 10, pp. 590-593, Oct. 2014. (IF : 0.517)
- [36] **Simranjit Singh** and R. S. Kaler, "Performance Evaluation and Characterization of Hybrid Optical Amplifiers for DWDM System at Ultra-narrow Channel Spacing", **Springer** : Journal of Russian Laser Research, vol. 35, no. 2, pp. 111-118, March 2014. (IF : 0.777)
- [37] **Simranjit Singh**, Sonak Saini, Gurpreet Kaur and R. S. Kaler, "On the Optimization of Raman Fiber Amplifier Using Genetic Algorithm in the scenario of 64 nm 320 channels Dense Wavelength Division Multiplexed System", **OSA** : Journal of Optical Society of Korea, vol. 8, no. 2, pp. 118- 123, April 2014. (IF:0.827)
- [38] **Simranjit Singh**, and R. S. Kaler, "Performance Investigation of Raman-EDFA Hybrid Optical Amplifier in the Scenario of High Speed Orthogonal Modulated Signals", **SPIE** : Optical Engineering, vol. 53, no. 3, pp. 036102 (1 to 4), March 2014. (IF:0.993)
- [39] **Simranjit Singh**, Sonak Saini, Gurpreet Kaur and R. S. Kaler, "Multi Parameter Optimization of Raman Fiber Amplifier using Genetic Algorithm for L band Dense Wavelength Division Multiplexed System", **SPIE** : Optical Engineering, vol. 53, no. 1, pp. 016103 (1-7), Jan. 2014. (IF : 1.209)
- [40] **Simranjit Singh**, and R. S. Kaler, "Performance Evaluation of Hybrid Optical Amplifier for High Speed DPSK Modulated Optical Signals", **SPIE** : Optical Engineering, vol. 52, no. 9, pp. 096102 (1-6), Sep. 2013. (IF:1.209)
- [41] **Simranjit Singh** and R. S. Kaler, "Investigation of Hybrid Optical Amplifiers for Dense Wavelength Division Multiplexed System with Reduced Spacing at Higher Bit Rates", **Taylor and Francis** : Fiber and Integrated Optics, vol. 31, no. 3, pp. 208-220, June 2012. (IF:0.525)
- [42] **Simranjit Singh**, and R. S. Kaler, 'Influence of the Word Length and Input Power on Nonlinear Crosstalk Induced by Hybrid Optical Amplifiers', **Elsevier** : Optical Fiber Technology, vol. 19, no. 5, pp. 428-431, Oct. 2013. (IF:1.824)
- [43] **Simranjit Singh**, and R. S. Kaler, "Placement of Hybrid Optical Amplifier in Fiber Optical Communication Systems", **Elsevier** : Optik-International Journal of Light and Electron Optics, vol. 123, no. 18, pp. 1636–1639, Sep. 2012. (IF:1.914)

- [44] **Simranjit Singh**, and R. S. Kaler, "Performance Evaluation of 64x10 Gbps and 96x10 Gbps DWDM System with Hybrid Optical Amplifier for Different Modulation Formats", **Elsevier** : OptikInternational Journal of Light and Electron Optics, vol. 123, issue 24, pp. 2199-2203, Dec. 2012. (IF:1.914)
- [45] **Simranjit Singh**, Amanpreet Singh and R. S. Kaler "Performance Evaluation of EDFA, RAMAN and SOA Optical Amplifier for WDM Systems", **Elsevier** : Optik-International Journal of Light and Electron Optics, vol. 124, no. 2, pp. 95-101, Jan. 2013. (IF:1.914)
- [46] **Simranjit Singh** and R. S. Kaler, "Hybrid Optical Amplifiers for 64 × 10 GbpsDense Wavelength Division Multiplexed System", **Elsevier** : Optik-International Journal of Light and Electron Optics, vol. 124, no. 12, pp. 1311-1313, June 2013. (IF:1.914)
- [47] **Simranjit Singh**, and R. S. Kaler, "Comparison of Pre-, Post- and Symmetrical Compensation for 96 Channel DWDM System using PDCF and PSMF", **Elsevier** : Optik-International Journal of Light and Electron Optics, vol. 124, no. 14, pp. 1808-1813, July 2013. (IF:1.914)
- [48] **Simranjit Singh**, and R. S. Kaler, "Investigation of Hybrid Optical Amplifiers with Different Modulation Formats for DWDM Optical Communication System", **Elsevier** : Optik-International Journal of Light and Electron Optics, vol. 124, no. 15, pp. 2131-2134, Aug. 2013. (IF:1.914)
- [49] T. Shabbir, M. Tariqul Islam, N. Misran, S. S. Bawri and **Simranjit Singh**, ""Broadband Single-Layer Reflectarray Antenna Loaded with Meander-delay-lines for X-band Applications", Elsevier : Alexandria Engineering Journal, Accepted on 7th Oct. 2020. (IF 2.46)
- [50] K. H. Alharbi, M. Moniruzzaman, R.W. Aldhaheri, A. J. Aljohani, **Simranjit Singh**, Md. Samsuzzaman, M. Tariqul Islam, "Ultra-Wideband Monopol Antenna with U and L Shaped Slotted Patch for Applications in 5G and Short Distance Wireless Communication", International Journal of Applied Electromagnetics and Mechanics, Accepted on 21 Oct. 2020 (IF 0.684)

Other Journals :

- [1] Simarpreet Kaur and **Simranjit Singh**, "Performance Optimization of Diagonal Identity Matrix and Enhanced Double Weight Codes in Terms of Security for Short Haul Communication", International Journal of Recent Technology and Engineering (IJRTE), Vol. 8. No. 5, January 2020, (Scopus Indexed and UGC care listed).
- [2] Monika, **Simranjit Singh** and Amit Wason, "Reduction of Blocking Probability in Generalized Multi-Protocol Label Switched Optical Networks", **Degruyter** : Journal of Optical Communications, Oct. 2019. https://doi.org/10.1515/joc-2019-0173
  2020, (Scopus Indexed and UGC care listed).
- [3] Maninder Kaur, **Simranjit Singh** and Gurpreet Kaur, "An Efficient Method of Resource Allocation In Optical Networks using Quantum Key Distribution and OSTBC Encoding Process", International Journal of Innovative Technology and Exploring Engineering, vol. 8, no. 12, 2019. (Scopus Indexed)
- [4] Vivek Takhi and **Simranjit Singh**, "Free Space Optical Communication System under all weather conditions using DWDM", International Journal for Research in Applied Science Engineering Technology, vol. 6, no. 2, pp. 137-149, Feb. 2018. (UGC Approved Journal)
- [5] Harmanpreet Kaur and **Simranjit Singh**, "Far-Field Pattern of a Photonic Crystals Structure", International Journal In Applied Studies And Production Management, vol. 2, no. 3, pp. 24-28, May-August 2016
- [6] Kanwarpreet Singh and **Simranjit Singh**, "Review on Advancement in Power Splitter for Photonic Integrated Circuits", International Journal In Applied Studies And Production Management, vol. 2, no. 3, pp. 29-31, May-August 2016
- [7] Simarpreet Kaur and **Simranjit Singh**, "Various Security Impediments of All-Optical Networks : A Review", An International Journal of Engineering Sciences, vol. 17, pp. 458-463, Jan. 2016
- [8] Rajbir Kaur and **Simranjit Singh**, "Pump Sharing Hybrid Optical Amplifier In The Scenario Of C+L Band Dense Wavelength Division Multiplexed System" An International Journal of Engineering Sciences, vol. 17, pp. 415-419, Jan. 2016
- [9] Simarpreet Kaur and **Simranjit Singh** , "Analysis of Semiconductor Optical Amplifier Based XOR gate", International Journal of Applied studies and Production Management, vol. 1, no. 3, pp. 134-143, May-Aug 2015.
- [10] Chanakya Chandel, Ramandeep Kaur and **Simranjit Singh**, "Recycling Residual Pump in Raman/EDFA Hybrid Amplifier in DWDM", International Journal of Applied studies and Production Management, vol. 1, no. 2, pp. 269-275, Feb-May 2015. 2020, (Scopus Indexed and UGC care listed).
- [11] Rupinder Kaur and **Simranjit Singh**, "Ultrafast All-Optical Invert Logic Gate Derived From Single SOA Based Structure", International Journal For Technological Research In Engineering, vol. 1, no. 11, pp. 1339-1341, July-2014
- [12] Prabhjyot Singh and **Simranjit Singh**, "Power Transient Response of EDFA as a Function of Wavelength in the Scenario of Wavelength Division Multiplexed System", International Journal for Scientific Research Development, vol. 1, no. 9, pp. 1861-1866, 2013.
- [13] S. Saini and **Simranjit Singh**, "Multi Parameter Gain Optimization of Raman Fiber Amplifier for Dense Wavelength Division Multiplexed Systems", International Journal of Innovative Research in Science, Engineering and Technology, vol. 2, no. 4, pp. 988-993, April 2013.
- [14] Amit Kapoor and **Simranjit Singh**, "Performance Comparison of Modulation Formats for Wavelength Re-

modulated Bi-directional Passive Optical Network", International Journal of Engineering, Business and Enterprise Applications, vol. 5, no. 2, pp. 169-172, June 2013

- [15] Raman and **Simranjit Singh**, "Investigation of Hybrid WDM/TDM PON in the Presence of Optical Amplifiers to enhance the System Capacity", International Journal of Advanced Research in Computer Science and Software Engineering, vol. 3, no. 9, pp. 90-96, Sep. 2013

International Conferences :

- [1] **Simranjit Singh**and Vivek Takhi, "Dense Wavelength Division Multiplexed Free Space Optical Communication Network in Patiala, India under Different Weather Conditions", National Conference on Biomedical Engineering (NCBE-2020) at NITTTR Chandigarh, 22nd to 24th Jan 2020, paper ID 33.
- [2] Harpreet Singh, **Simranjit Singh**, Mandeep Singh, Ramandeep Kaur and Amandeep Kaur Brar, "MIMO CIRCULAR Slotted Patch Antenna For S-Band Application", National Conference on Biomedical Engineering (NCBE-2020) at NITTTR Chandigarh, 22nd to 24th Jan 2020, paper ID 34.
- [3] Mandeep Singh and **Simranjit Singh**, "Design and Performance Investigation of Printed Antenna by using Different Substrates at Millimeter Wave", National Conference on Biomedical Engineering (NCBE-2020) at NITTTR Chandigarh, 22nd to 24th Jan 2020, paper ID 39.
- [4] Harmanjot Singh, **Simranjit Singh** and S. S. Tiwana, "Design And Performance Analysis Of Long Reach Bidirectional Radio Over Fiber Multi-User Next Genration Passive Optical Network Using 4 QAM/ APD OFDM", National Conference on Biomedical Engineering (NCBE-2020) at NITTTR Chandigarh, 22nd to 24th Jan 2020, paper ID 38
- [5] Simarpreet Kaur and **Simranjit Singh**, "Design of Hybrid Double Diagonal Identity Matrix Codes with Variable Cross-correlation for Multimedia Services", National Conference on Biomedical Engineering (NCBE-2020) at NITTTR Chandigarh, 22 nd to 24th Jan 2020, paper ID 30.
- [6] Simarpreet, **Simranjit Singh** and Gurpreet Kaur, "Performance comparison of integrated modified differential phase shift keying (MD-DQPSK) and DQPSK in DIM integrated OCDMA system",in 3rd International Conference on Innovation in Computing (ICIC 2019), paper id ICIC_2019_paper_64, at CGC College of Engineering, Mohali, Punjab, India, 12-13 Dec. 2019
- [7] Monika, **Simranjit Singh** and Amit Wason, "Dynamic Bandwidth Allocation in GMPLS Optical Networks using Minimum Execution Time Technique", in IEEE Sponsored IndoTaiwan Conference on Computing, Analytics and Networks (ICAN2020), at Chitkara University, Punjab, paper ID 46, Feb. 14-15 2020
- [8] Mandeep Singh and **Simranjit Singh**, "Triple Band 2×2 Slotted MIMO Patch Antenna for Next Generation Wireless Applications", in IEEE Sponsored Indo-Taiwan Conference on Computing, Analytics and Networks (ICAN2020), at Chitkara University, Punjab, paper ID 58, Feb. 14-15 2020.
- [9] Simarpreet Kaur and **Simranjit Singh**, "HIGHLY SECURED ALL OPTICAL DIM CODES USING AND GATE", in IEEE Sponsored Indo-Taiwan Conference on Computing, Analytics and Networks (ICAN2020), at Chitkara University, Punjab, paper ID 48, Feb. 14-15 2020..
- [10] **H**arpreet Singh, **Simranjit Singh**, Mandeep Singh, Ramandeep Kaur, Amandeep Kaur Brar, "MIMO Triangular Patch Antenna For Multiple Applications", 6th IEEE Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON-2019) to be held from 8th -10th November 2019 at ZHCET, Aligarh Muslim University, Aligarh, India, paper number : 242 page 105.
- [11] Hussanpreet Singh, **Simranjit Singh**, Mandeep Singh, Gurpreet Kaur, "Design of Single-Band MIMO Patch Antenna Array For Ku-Band Applications", 6th IEEE Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON-2019) to be held from 8th -10th November 2019 at ZHCET, Aligarh Muslim University, Aligarh, India, paper number : 236, page 104
- [12] Tajinderpal Singh, **Simranjit Singh**, Mandeep Singh and Rajbir Kaur, "Design of Patch Antenna to Detect Brain Tumor", IEEE International Conference on Issues and Challenges in Intelligent Computing Techniques. KIET Group of Institutions. Ghaziabad, India, paper number : 79, pp. 12, Nov 16, 2019 - Nov 17, 2019. (Best paper and presentation award)
- [13] Jayawant Krishna, **Simranjit Singh** and Mandeep Singh, "Design and Fabrication Of Multiband Sierpinski Fractal Patch Antenna For X And Ku-Band Applications", IEEE International Conference and 10th conference in sequence on Information Systems Computer Networks, Organized byDepartment of Computer Engineering Applications GLA University Mathura-281406(UP), INDIA, pp. 1-6, paper number 299, November 21st-22nd 2019.
- [14] Jayawant Krishna, **Simranjit Singh** and Mandeep Singh, "Flexible H-Shaped Triple Band Antenna For C-Band Applications", in Proceedings of 7th International Conference on Advancements in Engineering and Technology (ICAET-2019) at BGIET, Sangrur, India, pp. 539-543, 15-16 March 2019.
- [15] Mandeep Singh, **Simranjit Singh** and H. Singh, "Multiband Reconfigurable Patch Antenna for Millimeter Wave Applications", IEEE International Conference on Information Technology, Electronics and Mobile Communication Conference held at University of British Columbia, Vancouver, Canada, pp.1025-1028, Nov 1, 2018 - Nov 3, 2018.
- [16] Monika, **Simranjit Singh** and H. Singh, "Blocking Probability Reduction in Optical Networks to enhance the Quality of Service", IEEE International Conference on Information Technology, Electronics and Mobile Com-

munication Conference held at University of British Columbia, Vancouver, Canada, pp.1025-1028, paper no. 1570477022, Nov 1, 2018 - Nov 3, 2018

- [17] Simarpreet Kaur and **Simranjit Singh**, "Various Security Impediments of All-Optical Networks : A Review", International conference in innovative trends in Electronics Engineering, organized by Punjabi University, Patiala, on 29/01/2016. (Also published in special issue of An International Journal of Engineering Sciences).
- [18] Rajbir Kaur and **Simranjit Singh**, "Pump Sharing Hybrid Optical Amplifier In The Scenario Of C+L Band Dense Wavelength Division Multiplexed System", International conference in innovative trends in Electronics Engineering, organized by Punjabi University, Patiala, on 29/01/2016. (Also published in special issue of An International Journal of Engineering Sciences).
- [19] **Simranjit Singh**, "Performance Investigation of OTDM-WDM System using Hybrid Modulation Format", Invited paper in 4th International Conference on Wireless Networks Embedded Systems : An Approach towards Clean Sustainable Technology, School of Electronics and Electrical Engineering, Chitkara University, India, paper no. 21, Page2, 20-21 March 2015.
- [20] Kawalpreet Kaur and **Simranjit Singh**, "Multi-Diagonal (MD) Codes for Spectral Amplitude Coding-Optical Code Division Multiple Access", 4th International Conference on Wireless Networks Embedded Systems : An Approach towards Clean Sustainable Technology, School of Electronics and Electrical Engineering, Chitkara University, India, paper no. 48, Page 15, 20-21 March 2015. (Best paper award)
- [21] . S. Kaler, R. Randhawa and **Simranjit Singh**, "Flat-Gain C+L Split-Band Hybrid Waveguide Amplifier for Dense Wavelength Division Multiplexed System at Reduced Channel Spacing", **OSA** : Integrated Photonics Research, Silicon and Nanophotonics (Lasers and Amplifiers (IM2A)), Puerto Rico United States, July 14-17, 2013 (ISBN : 978-1-55752-981-7)
- [22] Rajneesh Randhawa, and **Simranjit Singh**, 'Performance Evaluation of Hybrid Optical Amplifier for Multi-channel DWDM system', International Conference held at R.I.M.T. Mandigobindgarh, Feb. 2011
- [23] **Simranjit Singh**, Ramandeep Kaur and Gauravpreet Singh, "Optimization of Optical Amplifier Placement : A Review", International Conference on Emerging Technologies in Electronics and Communication, Held at GNDU Amritsar (Punjab, India), Paper number : OF09, pp, 250-254, 20 to 22 Dec 2013.
- [24] Sukhvir Singh, Amanvir Singh, Gurpreet Kaur and **Simranjit Singh**, "Orthogonal Modulation Techniques for High Capacity Optical Communication System : A Review", International Conference on Emerging Technologies in Electronics and Communication, Held at GNDU Amritsar (Punjab, India), Paper number : OF-10, pp. 255-256, 20 to 22 Dec. 2013.

Congress/Symposium presented :

- [25] **Simranjit Singh** and Govind P. Agrawal, "Secure Optical Mixed Line Rates Communication", Symposium : Frontiers in Material Science of the 21st Century organized by University of Rochester on 26th May 2017.
- [26] **Simranjit Singh** and Govind P. Agrawal, "Security Enhancement Using All-Optical MultiCode Keying", Symposium : Frontiers in Material Science of the 21st Century organized by University of Rochester on 26th May 2017
- [27] **Simranjit Singh**, "Photonic Processing In All-Optical Tunable Frequency Shifter Using Stimulated Brillouin Scattering" 19th Punjab Science Congress on Influence of Science and Technology on Environment and Human Health, held at SUS Tangori, 07-09 Feb. 2016.

National Conferences :

- [1] Mandeep Singh and **Simranjit Singh**, "Performance Investigation of Flexible Slotted Circular Patch Antenna for S and C- Band Applications", National Conference on Computing, Communication Electrical Systems at SBSIET Ferozpur, December 2017.
- [2] Simarpreet Kaur and **Simranjit Singh**, "Photonic Processing of Semiconductor Optical Amplifier Based NOT Gate", National Conference on Communication Computing and Systems, held at SBSSTC Ferozpur, Aug. 24-25, 2015
- [3] S. Saini and **Simranjit Singh**, "On the Gain Optimization of Raman Fiber Amplifier using Genetic Algorithm at Reduced Channel Spacing", **National Conference** on Recent Trends in Electronics and Telecommunication Design (NCRTETD), pp. 33, July 2013.
- [4] **Simranjit Singh**, Ramandeep Kaur and R. S. Kaler, Performance Evaluation of Hybrid Optical Amplifier for WDM System, **National Conference** : IDEA-2011 held at B.G.I.E.T Sangrur, May. 2010.
- [5] **Simranjit Singh** and R.S. Kaler, Performance Model for Wavelength Selection in Packet Switched Network, **National Conference** : RACTEE-2010 held at SLIET, Longowal, 2010

Symposium/Seminar/Conference/Workshops attended :

- [1] **Optics Colloquium :** Seminar by Ritesh Agrawal, Professor, University of Pennsylvania on "Novel classical and quantum photonic devices by manipulating light-matter interactions in lowdimensional systems" on Sept. 19, 2016 at The Institute of Optics, University of Rochester, NY, USA.
- [2]**Optics Colloquium** : Seminar by Anna Swan, Professor, Boston University on "Optical signatures from 2D

materials- charge, strain, real and pseudo magnetic field signatures", on Sept. 26, 2016 at The Institute of Optics, University of Rochester, NY, USA.

- [3]**Online Learning Symposium** on Online Learning Initiative at Vanderbilt University, organized by University of Rochester on 10th November 2016
- [4] **Symposium** organized by University of Rochester's Center for Integrated Research Computing (CIRC) on Friday, November 18th 2016. At this symposium, two talks were presented : "Learning Models for Robot Decision Making" by Thomas Howard, Ph.D. and "Model- Based Clustering of Text Documents Over Social Networks" by Joseph T. Ciminelli.
- [5] **Optics Colloquium** : Seminar by Bo Zhan, MIT (USA) on "Nanophotonics in Systems of Large Sizes" on January 4, 2017 at The Institute of Optics, University of Rochester, NY, USA
- [6]**Optics Colloquium** : Seminar by Dr. Galan Moody National Institute of Standards and Technology (USA) on "2D Spectroscopy of 2D Materials : Deciphering the Quasiparticle Zoo in AtomicallyThin Semiconductors", on January 11, 2017 at The Institute of Optics, University of Rochester, NY, USA. Sizes" on January 4, 2017 at The Institute of Optics, University of Rochester, NY, USA
- [7]**Seminar** by Lisa Brown, Director IT centre University of Rochester (NY, USA) "Using Zoom to make virtual connections starts" on January 12, 2017
- [8]**Optics Colloquium** : Seminar by Dr. Tyler Cocker University of Regensberg, Germany on "Subcycle terahertz microscopy on the atomic scale" on January 18, 2017 at The Institute of Optics, University of Rochester, NY, USA
- [9]**Optics Colloquium** : Seminar by Dr. Viktoriia Babicheva, Georgia State University on "Novel Material Platforms for Metasurfaces and Metaphotonic Devices" on January 23, 2017 at The Institute of Optics, University of Rochester, NY, USA
- [10]**Workshop** on "Getting Started with Online Learning in 3 Easy Steps" organized by University of Rochester on 9th Feburary 2017 at Genrich Rusling Room, LeChase Hall. Sizes" on January 4, 2017 at The Institute of Optics, University of Rochester, NY, USA
- [11]**Workshop** on "Engaging Learners with Web Tools and Online Resources" organized by University of Rochester on 2nd March 2017 at Genrich Rusling Room, LeChase Hall Sizes" on January 4, 2017 at The Institute of Optics, University of Rochester, NY, USA
- [12] **Optics Colloquium** : Seminar by Dr. René-Jean Essiambre, Bell Labs, NOKIA (New Jersey) on "Limits to the Transport of Information over Optical Fibers" on March 9, 2017 at The Institute of Optics, University of Rochester, NY, USA Sizes" on January 4, 2017 at The Institute of Optics, University of Rochester, NY, USA
- [13]**Workshop** on "Conflict Management" organized by University of Rochester on 29th March 2017 at River Campus, Rush Rhees Library, Humanities Center, Conference Room D Sizes" on January 4, 2017 at The Institute of Optics, University of Rochester, NY, USA
- [14] **Workshop** on "Flipping the Classroom to Engage Students in Active Learning Workshop" organized by University of Rochester on 30th March 2017 at Genrich Rusling Room, LeChase Hall Sizes" on January 4, 2017 at The Institute of Optics, University of Rochester, NY, USA
- [15]**Symposium** : "HIV : Getting to Zero" organized by Miller School of Medicine, University of Miami, FL, USA on 6th April 2017.
- [16]**Workshop** on "Connecting with Learners in Virtual Classrooms and Meeting Spaces" organized by University of Rochester on 13th April 2017 at Genrich Rusling Room, LeChase Hall. Sizes" on January 4, 2017 at The Institute of Optics, University of Rochester, NY, USA
- [17] **Workshop** on "Ensuring a High QualityExperience Throughout Best Practicesin Online Teaching" organized by University of Rochester on 24th April 2017 at Genrich Rusling Room, LeChase Hall
- [18]**Seminar** by Dr. Zachary Lapin, Associate Editor, Nature Communications on "Publishing with Nature Communications" on May 15, 2017.
- [19]**Workshop** by Dean Research office of Punjabi University on "Capacity Building" on 20/02/2018 at Conference Hall, Punjabi University, Patiala.
- [20]**Workshop** by IQAC cell Punjabi University Patiala on "New Aging of Teaching" on 22/02/2018 at Senate Hall, Punjabi University, Patiala.

Research Visit

Name	Department and Institute	Dates	Purpose
Prof. Wendi Heinzelman	Department of Electrical and Computer Engineering, University of Rochester, USA.	3^{rd} Jan 2017	Lab visit and Research Collaboration (specifically under DSTIntel real time water and air monitoring)
Dr. Cristiano Tapparello	Department of Electrical and Computer Engineering, University of Rochester, USA.	31^{st} Jan 2017	Lab visit and Research Collaboration (specifically under DSTIntel real time water and air monitoring)

Prof. V. Muthuramakrishnan	Department of Computer Engineering, University of Rochester, USA	14^{th} Feb 2017	Research visit for future collaboration for interdisciplinary research on Digital Electronics and Optics for security enhancement
Prof. Jie Xu	Department of Electrical Computer Engineering, University of Miami, USA	7^{th} April 2017	Research visit for future collaboration for interdisciplinary research on network security.
Prof. J. Kim	Department of Electrical Computer Engineering, University of Miami, USA	7^{th} April 2017	Research visit for future collaboration for interdisciplinary research on optical sensors
Prof. Bishawnath Mukherhjee	Department of Computer Science, University of California, Davis, USA	19^{th} May 2017	Research visit for future collaborations.
Dr. Umesh Tiwari	CSIO-CSIR Chandigarh	25^{th} Sept. 2017	Research collaboration
Dr. B. C. Chaudari	Department of Applied Science, NITTTR Chandigarh	21st June 2018	Research collaboration
Dr. M. Tariqul Islam	UKN (National University of Malaysia), Malaysia	21st Dec 2019 to 31st Dec 2019	Research visit under ASEAN India Collaboration scheme.

Awards/ Honors/Achievements

- **Senior Member of IEEE :** Dr. Singh has elevated to grade of IEEE Senior Member on 17th August 2020 .
- **Best paper award** to the paper published in Optics and Laser Technology Journal on the basis of citations by Thapar Institute of Engineering and Technology in Nov. 2019.
- **Best paper and presentation award** : Tajinderpal Singh, Simranjit Singh, Mandeep Singh and Rajbir Kaur, "Design of Patch Antenna to Detect Brain Tumor", IEEE International Conference on Issues and Challenges in Intelligent Computing Techniques, KIET Group of Institutions, Ghaziabad, India, paper number : 79, pp. 12, Nov 16, 2019 - Nov 17, 2019
- Honored by an **Appreciation Letter** from Head of the Department of ECE for the achievements in Research and Administration on 13/12/2017.
- **Host Scientis**t of C V Raman International Fellowship for African Researchers 2016 of FICCI, Govt. of India.
- Selected for **Marquis Who's Who : 2017 Albert Nelson Marquis Lifetime Achievement Award**. Email from info@marquisww.com on May 30th 2017.
- **Outstanding Reviewer Status** awarded by Elsevier on 7th Oct 2016 via journals@mail.elsevier.com
- **Nominated** from The Institute of Optics of University of Rochester for **Steadman Interdisciplinary award for Postdocs during Postdoc** Appreciation week from 19/09/2016 to 23/09/2016.
- **Project reviewer** of National Science Centre, Government of Poland (Requested on 3/11/2015 and 11/10/2016 via email osf_administracja@opi.org.pl)
- Punjabi University Vice Chancellor award by Dr. Jaspal Singh (Vice Chancellor, Punjabi University Patiala) for the research and academics achievements in International conference on Innovative Trends in Electronics Engineering-2016 (29/01/2016).
- **Best paper award** : Kawalpreet Kaur and **Simranjit Singh**, "Multi-Diagonal (MD) Codes for spectral amplitude coding-optical code division multiple access", 4th International Conference on Wireless Networks Embedded Systems : An Approach towards Clean Sustainable Technology, School of Electronics and Electrical Engineering, Chitkara University, India, paper no. 48, Page 15, 20-21 March 2015.
- **Fellowship** under teaching associateship during Ph.D from Thapar University, Patiala, Punjab, India (July 2011 to Dec. 2011).
- Biography included in "Who's Who in the World" 2016 (33rd Edition)
- Biography included in **Dictionary of International Biography**. (Notification number : DIB38/c, dated : 05/02/2016).
- Biography included in **2000 Outstanding Intellectuals**. (Published in 10th edition, Notification Number : TINT10/c, dated : 19th Feb. 2016)
- **H-Index** : Scopus : 15, ResearchGate : 14 and Google Scholar : 17 (i10 : 26)
- **Citations** : Scopus : 714, ResearchGate : 670 and Google Scholar : 854
- **ResearchGate Score** : 24.52
- **Total Impact factor of papers published in SCI indexed journals** : 65.156

Keynote/expert talk/session chair/ resource person

- **Keynote Speaker : Publishing Academic Research in Scholarly Journals Principles of Transparency and Best**

Practices in Scholarly Publishing on 9th Oct. 2020 in Webinar on Knowledge sharing on A to Z of Journal Publication organized by IFERP.

- **Resource person : "How to Become a Senior Member of IEEE**" on 1st Sept. 2020 in Transformational Tuesday Webinar Series organized by Department of Electronics and Communication Engineering, Chitkara Univeristy, Punjab, India.
- **Resource person : "Security Enhancement in Next Generation All-Optical Networks**" in FDP on Advances in Optical Networks (on 7th Aug. 2020) organized by Department of Electronics and Communication Engineering, Chitkara Univeristy, Punjab, India from 3rd Aug.2020 to 7th Aug. 2020
- **Resource person : "Optical Networks For 5G And Beyond**" in FDP on Advances in Optical Networks (on 3rd Aug. 2020) organized by Department of Electronics and Communication Engineering, Chitkara Univeristy, Punjab, India from 3rd Aug.2020 to 7th Aug. 2020
- **Session Chair (Optical Fiber) :** National Conference on Biomedical Engineering on 24th Jan. 2020 organized by NITTTR Chandigarh from January 22 to 24 January 2020.
- **Expert Talk : "High Speed Optical System for Future Generation networks"**, in National Conference on Biomedical Engineering on 24th Jan. 2020 organized by NITTTR Chandigarh from January 22 to 24 January 2020.
- **Expert Talk : "Optical Component For Future Low Profile Setup"**, in AICTE sponsored Faculty Development Program on Futuristic Trends in FPGA ASIC Design on 16/12/2019. Organized by Academics Consultancy Services Division (ACSD) of Centre for Development of Advanced Computing (C-DAC), Mohali, 10th – 20th December, 2019.
- **Resource Person : "Trends in Optical Communication : Research Aspects"**, in the STC on Enabling Technologies for Wireless and Optical Networks organized by G.N.D.E.Con 13th June 2019.
- **Expert Talk : "Trends in Optical Amplification of Signals in OFC Links"**, in the STC on Advances in OFC Technology organized by NITTTR Chandigarh on 21st June 2018
- **Resource Person** : A talk on **"Opportunities in Low Power Optics and its Applications"** in the QIP short term course on Design Issues in Low Power Applications in Electronics organized by G.N.D.E.C Ludhiana on 15th March 2018 (evening session)
- **Resource Person** : A talk on **"High Power Optics for Next Generation Optical Networks"** in the QIP short term course on Design Issues in Low Power Applications in Electronics organized by G.N.D.E.C Ludhiana on 15th March 2018 (morning session)
- **Seminar : "Next Generation Fiber Optics and Applications"** in the Department of Electrical Engineering, IIT Ropar on 28th Feb. 2018.
- **Talk : "Security Enhancement in All-Optical Networks"** in Symposium of Frontiers in Material Science of the 21st Century organized by University of Rochester on 26th May2017.
- **Seminar : "Secure Optical Communication"** at Department of Electrical and Computer Engineering, University of Toronto, Ontario, Canada on 7th December 2016.
- **Expert Talk : "Progress in Optical Networks : A Research Approach"** at Department of Computer Science and Engineering, Chandigarh University, Gharooah, Punjab on 26- 03- 2015.
- **Keynote Speaker : "Photonics Processing in Optical Amplifiers"** at 4th International Conference on Wireless Networks Embedded Systems : An Approach towards Clean Sustainable Technology organized School of Electronics and Electrical Engineering, Chitkara University, India, 20-21 March 2015.
- **Session Chair (Poster presentation) :** 4th International Conference on Wireless Networks Embedded Systems : An Approach towards Clean Sustainable Technology organized by School of Electronics and Electrical Engineering, Chitkara University, India, 20-21 March 2015.
- **Resource person : "Optical Components and DWDM Systems**" in Department of Applied Science, MIMIT Malout, Sponsored by NITTTR Chandigarh, 7-11 July 2014.

Ph.D/ Master's/ B.Tech Project Supervision :

S. No.	Candidate Name	Ph.D/ Masters/ B.Tech	Tittle	Month and Year	Guided/ Under guidance
1.	Mr. Harmanjot Singh	Ph.D	Performance investigations of high capacity hybridoptical- wireless access network	Jan 2015 to till date	Under Guidance
2.	Mr. Shamandeep Singh	Ph.D	Development of Efficient Burst Assembly and Contention Resolution Algorithms for Secure Optical Burst Switching Network	Jan 2016 to till date	Under Guidance
3.	Ms.Simarpreet Kaur	Ph.D	Security Enhancement for OCDMA system using different coding schemes	Aug. 2015 to Aug. 2020	Guided

4.	Mr. Mandeep Singh (under Visvesvaraya PhD Scheme)	Ph.D	Planner Antenna for Millimeter and Sub- Millimeter Wave Applications	19/08/2015 to till date	Under Guidance
5.	Mrs. Monika (under Visvesvaraya PhD Scheme)	Ph.D	GMPLS with Improved Quality of Service	10/11/2015 to till date	Under Guidance
6.	Ms. Harpreet Kaur	Ph.D	Next Generation Passive Optical Networks for 5G Fronthaul by Optimizing Resource Allocation Using Machine Learning	Aug/2018	
7.	Mr. Djima Kassegne	CV Raman Fellow of FICCI, Govt. of India.	Compensation of nonlinear impairments in optical fiber transmission system based on Wavelength Division Multiplexing	24th April 2018	Guided
8.	Ms. Sonak Saini	Masters	Multi-parameter optimization of RFA using Genetic Algorithm for DWDM optical communication system	Sep/2013	Guided
9.	Mr. Amit Kapoor	Masters	Performance investigation of high capacity bi-directional passive optical networks.	Oct/2013	Guided
10.	Ms. Raman	Masters	Performance investigation of high capacity passive optical networks.	Nov/2013	Guided
11.	Mr.Prabhjyot Singh	Masters	Investigation and suppression of transience response in Erbium Doped Fiber Amplifier	07/Feb/2014	Guided
12.	Mr.Gauravpreet Singh	Masters	Optimization of placement of optical amplifier in LAN/ MAN.	26/Aug/2014	Guided
13.	Ms. Rupinder Kaur	Masters	Realization of all optical logic gates and combinational circuits using SOA.	26/Aug/2014	Guided
14.	Mr.Sukhbir Singh (co-guide-Ramandeep Kaur)	Masters	On the investigation of spectral efficient orthogonal modulation formats.	26/Aug/2014	Guided
15.	Mr. Amanveer Singh	Masters	Security enhancement of OCDMA system using orthogonal modulation	04/Sep/2014	Guided
16.	Ms. Kawalpreet Kaur	Masters	Security issues OCDMA system	22/Jul/2015	Guided
17.	Mr. Awampreet Singh	B.Tech Training Project	Realization of All- Optical logic gates	01/May/2015	Guided
18.	Ms. Simarpreet Kaur	Masters	Performance evaluation of all optical operations using SOAs	22/Jul/2015	Guided
19.	Mr. Chanekeya (Co-guide)	Masters	Recycle residual pumping in Hybrid Raman-EDFA for DWDM system	23 Sep. 2015	Guided
20.	Ms. Rajbir Kaur (PT)	Masters	Residual pumped hybrid optical amplifier in the scenario of DWDM system	25/May/2016	Guided
21.	Ms. Harman	Masters	Far Field Detection of Different Elements Using Photonic Crystals	Aug/2016	Guided
22.	Mr. Kanwarpreet Singh	Masters	Photonic Crystal Waveguide based Optical Splitter	Aug/2016	Guided
23.	Mr. Vivek	Masters	Performance Investigation of Free Space Optical Communication Network Under All Weather Condition	Mar/2018	Guided
24.	Ms. Maninder Kaur	Masters	An Efficient Method to Resource Allocation in Optical Networks Using Quantum Key Distribution and OSTBC Encoding Process	06/11/19	Guided

25.	Mr.Husanpreet Singh Co-supervisor Dr. Gurpreet Kaur, CGC Landra	Masters	Design of Single-Band MIMO Patch Antenna Array For Ku-Band Application	06/11/19	Guided
26.	Ms. Suman Singh, Co-supervisor Dr. Gurpreet Kaur, CGC Landra	Masters	MIMO Antenna for Future Generation Network		Under Guidance
27.	Mr. Jayawant	B.Tech Training Project	Design and Fabrication of Multi-Band Sierpinski Fractal Patch Antenna for X and Ku Band Applications	May/2019	Guided
28.	Ms. Kumkum	B.Tech Training Project	Fabrication and Testing of Quadrature Wave Transmission Feed Microstrip Patch Antenna for C Band Applications	May/2019	Guided
29.	Ms. Twinkle Rana	B.Tech Training Project	Design and Fabrication of Micro strip Patch Antenna for S and X Band Applications	May/2019	Guided
30.	Ms. Jaspreet	B.Tech Training Project	Design and Fabrication of Patch Antenna for S Band Applications	May/2019	Guided
31.	Mr. Tajinder Singh (as co-supervisor)	M.Tech	Design of a Compact Triple Band MIMO Patch Antenna For Biomedical and Wireless Applications	30th August 2019	Guided
32.	Mr. Harpreet Singh (as co-supervisor)	M.Tech	Fabrication of MIMO Patch Antenna for 5G Applications	Mar/2020	Guided
33.	Ms. Suman Singh (co-supervisor : Dr. Gurpreet Kaur)	M.Tech	Design and Analysis of Slotted Patch Antenna for C,X,K and Ku Band Applications	24th Dec. 2020	Guided

Course Taught

Theory :

- Artificial Neural Networks (B.Tech : July to Dec. 2018)
- Artificial Neural Networks and Fuzzy Logic (M.Tech : Jan. to May 2018, M. Tech : Jan to May 2011, Jan to May 2018)
- Wireless Communication (Ph.D course work : Sep. 2015 to Jan 2016.)
- Optical Communications (M.Tech : July to Dec 2015)
- Digital Electronics (B.Tech)
- Electronic Devices (B.Tech)
- Satellite Communication (B.Tech:July to Dec 2013, July to Dec 2014, July to Dec 2015, July to Dec 2017)
- Radar Satellite Communication (ECE 416) (B.Tech : July to Dec. 2019)
- Optical Fiber Communication (B.Tech : Jan to May 2014, Jan to May 2013, Jan-May 2016, Jan to May 2018, Jan. 2019 to May 2019, Jan to June 2020)
- Data and Computer Communication Networks (Mtech : July to Dec 2012 ; Jan to June 2015 ; Jan to June 2015, July to Dec 2017 ; August to Dec. 2020)
- Telecommunication Switching and Networks (M.Tech : Jan to July 2014)
- Wireless Communication (B.Tech : July to Dec 2014)
- Research Methodology (Ph.D course work : August to Dec. 2020)

Labs

- Optical Communication (B.Tech Jan to June 2019 ; B.Tech Jan to June 2020)
- Wireless Communication (B.Tech July to Dec 2019 ; July to Dec. 2020).
- Ph.D Research Methodology Lab (July to Dec. 2020)

Professional Memberships

- Senior Member IEEE (17.08.2020 to till date), Membership Number- 94469456
- Member SPIE (8th Sept 2020 onwards), Memebership Number : 3453930

- Member IEEE (Sept. 2018 to 17.08.2020), Membership Number- 94469456
- Member OSA, Membership Number- 1054809
- Member IEEE Photonic Society, Membership Number- 94469456
- Regular Fellow of Optical Society of India from 29/08/2020, Memebrship Number- 1724
- Life Member Punjab Science Academy
- Life Member IEI, Membership Number- M-16994655

Editorial/Technical Review

- **Editorial Board Member** of An International Journal of Engineering Sciences, since August 2020.
- **Technical Reviewer** of various SCI with impact factor journals such as : **IEEE** J. of Lightwave Technology, **IEEE** Photonics Journal, **IET** Communications, **IET** Optoelectronics, IEEE Selected Topics in Quantum Electronics, Applied Optics **(OSA)**, Chinese Optics Letters **(OSA)**, J. of Fiber and Integrated Optics (**Taylor and Francis**), J. of Optics **(Optical Society of India : Springer)**; J. of Nanophotonics (**SPIE**), **IET** Micro and Nano Letters, J. of Optical Engineering (**SPIE**), Journal of Modern Optics (**Taylor and Francis**), Journal of Nanoelectronics and Optoelectronics, International Journal of Communication Systems (**Wiley**), Optoelectronics and Advanced Materials – Rapid Communications, International Journal of Electronics (Taylor and Francis), Defence Technology (**Elsevier**), International Journal of Electronics Letters (**Taylor and Francis**), Journal of Physical Sciences, Journal of Optical Communications, Frontiers of Optoelectronics (**Springer**), Journal of Optical and Quantum Electronics (**Springer**), Journal of Engineering Research, Journal of Optics (**Hindawi**), **IET** Journal of Engineering, **IOP Science** : Physica Spectra
- **Technical reviewer** of various international conferences such as : Optical Engineering and Photonic Technology 2014 (Orlando, USA); International Conference on Electronic Design, Computer Networks Automated Verification 2015 (NIT Meghaliya, India); 4th International Conference on Wireless Networks and Embedded Systems 20-21 March 2015 (Chitkara University, Chandigarh, Inida); International Conference on Innovative Trends In Electronics Engineering2016 (Punjabi University, Patiala, India); 8th International Conference on Electronics, Communicaion and Networks, Nov. 16-19, 2018 at Bangkok; 2nd IEEE International Conference on Power Electronics, Intelligent Control, and Energy Systems (ICPEICES-2018), DTU Delhi, 22 to 24 Oct. 2018; 9th International Conference on Electronics, Communications and Networks, Kitakyushu City, Japan during October 18-21, 2019.

Academic Activities

- **Potential Reviewer** of IEEE Senior Member Application.
- **Coordinator** of a Webinar on "How to Write a Good Research Project Proposal" organized by Department of ECE, Punjabi University Patiala. (31st May 2020).
- **Coordinator** of a Faculty Development Programme on "Microcontrollers and Embedded Systems" organized by Department of ECE, Punjabi University Patiala in association of NITTTR Chandigarh. (25th Nov. 2019 to 06 Dec 2019).
- **Convener** Crispolania 2019 (Cultural and Technical fest) organized by Departments of Engineering from 7th Nov. to 9th Nov. 2019. (Budget 8 Lakh approx.)
- **Coordinator** : SPARC, MHRD and IIT Kharagpur since 23rd Sept. 2019.
- **Faculty Coordinator of Research and Sponsored Projects :** Feb. 2018 to July 2018
- **Member** of Academic Counsel of the Department (ACD 2019-2020) from 01/05/2019 to till date
- **Coordinator** of Souvenir Committee of the ECE Department since March 2019 to 1 st Oct. 2019
- **Coordinator** of an orientation program on "Python Language" organized by Department of ECE, Punjabi University Patiala. (1st Oct. 2018)
- Member of **AICTE Team** (for affiliation) Jan 2019
- **Coordinator** of SPIC MACAY Punjabi University Chapter since Sept. 2018
- **Coordinator** of a Short Term Couse on "Microcontroller and Its Applications" organized by Department of ECE, Punjabi University Patiala in association of NITTTR Chandigarh. (07th Jan. 2019 to 11th Jan. 2019)
- **Coordinator** of a Short Term Couse on "Embedded System Design (ICT mode)" organized by Department of ECE, Punjabi University Patiala in association of NITTTR Chandigarh. (17th Sept. 2018 to 21st Sept. 2018).
- **Coordinator** of a Short Term Couse on "Wireless Communication" organized by Department of ECE, Punjabi University Patiala in association of NITTTR Chandigarh. (2nd May 2016 to 6th May 2016).
- **Member Optical Communication Group** : FIST 2016-DST
- **Nodal officer** of Visvesvaraya PhD Scheme for Electronics and IT and avail near 1,08,70,000/- during this project including fellowship, research grant etc. (May 2015 to till date).
- **Senior Member** of Buddy 2018 (an initiative of Government of Punjab)
- **Member** of Departmental **Resource Generation Committee** 05/09/2018 to till date.
- **President Photography Club** of Department of ECE from Nov. 2018 to till date

- **President Technical Club** of Department of ECE from May 2015 to July 2016, Spt. 2017 to August 2018.
- **President Cultural Club** of Department of ECE from Jan. 2017 to August 2018.
- **Member of Scholarship committee** from Aug 2015 to till date.
- **Member** Sponsorship committee in International Conference on Innovative Trends In Electronics Engineering-2016, Organized by Punjabi University (allotted 75000/- from SERB-DST).
- **Student counselor** : M.Tech 2 nd year from May 2015 to July 2016, B.Tech Final year Sept. 2017 to August 2018, B.Tech 4th Year (Group 2) : August 2018 to December 2018.
- **Research project reviewer** of government of Poland (National Academy of Science, Poland).
- **Member of technical advisory committee** in 4th International Conference on Wireless Networks and Embedded Systems 20-21 March 2015 (Chitkara University, Chandigarh, Inida)
- **Member of Fee Concessions Committee** for BTech 2nd year (Interview held on 26/10/2015) ; B.Tech 4th year (Nov. 2018).
- **Centre Superintendent** : December 2014 end semester examinations (ECE), December 2017 ESE.
- Member of various Department level and University level committees (Member of BOS committee : Jan 2011 to Jan 2013 ; LEET Counseling Document varifiction-14 to 16/08/2014, in core committee of farewell Jan 2015, Fee concession committee : Jan 2013)
- **Technical club Convener** of Engineering Departments, Punjabi University, Patiala : Oct. 2013- Sep. 2014
- **Student industrial training Convener** : Jan 2013 to July 2018.
- **Member IQAC committee** : Jan 2013 to July 2015.

Other Activities

- Supervisor of Publons Academy to mentor early carrier researchers in peer review since 05 Oct. 2020.
- Member Technical Program Committee of International Conference on the theme of Applications of AI and Machine learning organized by Department of CSE, Punjabi University, Patiala, 21-22 May 2020.
- Member Technical Program Committee of IEEE International Conference on Intelligent Engineering and Management (ICIEM)-2020, held at London under IEEE United Kingdom and Ireland Section, on the dates 22-24, April, 2020.
- **Member of International Advisory Committee** in Collaborative Conference on Optical Network and Communication (CCONC 2016) held in Bangkok, Thailand from November 9th -13th , 2016.
- **Member** of Technical Committee for IEEE IEMCON (17 to 19 Oct. 2019) held at The University of British Columbia, Vancouver, Canada.
- Technical reviewer of Bentham Science Publishers (hiraaftab@benthamscience.org).
- Passed CITI Training at The University of Rochester, NY, USA on 31st March 2017
- Organized (as member of the committee) an event in contact with 550th Birthday of Guru Nanak Dev Ji, Oct. 2019.
- Organized students (in the capacity of president Photography club of ECE) to install display boards and motivational quotes in the Department of ECE, March 2019.
- Organized a cultural event of Mr. Langa and team under SPIC MACAY Punjabi University Chapter on 5th Oct. 2018 at Kala Bhawan, Punjabi University, Patiala.
- Organized Head's Farewell party, August 2018
- Organized a seminar on "Optical Communication and Interesting Applications of Optical Fiber" delivered by Prof. M. L. Singh, GNDU Amritsar, on 26th March 2018 in Conference Hall, Engineering Building, Punjabi University Patiala.
- Organized a one day workshop on "RF and Microwave Integrated Circuits and Antenna" on 20th March 2016 in Conference Hall, Engineering Building, Punjabi University Patiala.
- Organized **Freshers Party 2K18** on 26th April 2018 in Sunny Oboroi Auditorium Punjabi University, Patiala.
- Organized a Seminar on **"Opportunities in Material and Devices Research"** by Functional Materials and Devices Laboratory of Prof. Madhusudan Singh, IIT Delhi.
- Organized placement event of Telcocrats Technologies Pvt Ltd. for the selection of B.Tech final year students for six months training internship.
- Coordinator of the Organizing committee of **Research Scholar Meet 2017.**
- Organized **Alumni Meet cum Farewell Party** on 19/11/2017 (Budget approx.. 65000/-)
- Organized **Engineer's Day 2K17** (under Technical Club of Electronics and Communication Engineering Department, PUP) on 27 Sep. 2017 (Budget approximately 17000/-).
- Organized **Engineer's Day 2K15** (under Technical Club of Electronics and Communication Engineering Department, PUP) on 22 Sep. 2015 (Budget approximately 30000/-).
- International Exchange **Alumni Member** of US Department of State (New York, USA).
- **Member Star Night and DJ Committee** in Crispo-2015 (5-7 Nov, 2015).
- Paper setter : Punjabi University, Patiala ; Punjab Technical University, Jalandhar, Guru Granth Sahib World University Fatehgarh Sahib
- Attended UGC sponsored 16th Orientation Program held at Academic Staff College, Punjabi University, Patiala, from 02/05/2013 to 29/05/2013.
- Attended 50th Refresher Course held at Human Resource Development Centre, Punjabi University, Patiala

from 04/05/2015 to 23/05/2015.
- Won gold medal in Short-Put at Punjabi University sports meet 2014.
- Won gold medal in Discus Throw at Punjabi University sports meet 2014.
- Won Bronze medal in Long Jump at Punjabi University sports meet 2014.
- Won overall trophy for Department of Electronics and Communication Engineering in Punjabi University sports meet 2014.
- Joined NSS camp at school level.
- Active general secretary of beshara seva society shergarh cheema

References

- **1. Prof. Govind P. Agrawal ;** James C. Wyant Professor of Optics ; 515 Goergen Hall, The Institute of Optics,University of Rochester, NY 14627,USA ; Email : gpa@optics.rochester.edu ; Contact : +15852754846
  2. Prof. R. S. Kaler ; Senior Professor and Dean Faculty ; Thapar Institute of Engineering and Technology, Patiala, Punjab, 147001, India ; Email : rskaler@thapar.edu ; Contact : +918288008129
  3. Prof. Gurmeet Kaur ; Professor ; Punjabi University, Patiala, Punjab, 147002, India ; Email : gurmeet-kece@pbi.ac.in ; Contact : +919814816441