

## ACHIEVEMENTS DURING 2016-17

### Short term training program organized

Department of Electronics and Communication organized STTP on “Frontiers in ECE”, during September 19-23, 2016.



Electronics and Communication department organized TEQIP sponsored 2 days workshop on MEM's System and Design during October 24-25, 2016. The event was coordinated by Dr. Dilip Kumar, Associate Professor (ECE) and co-coordinated by Dr. Ajay Pal Singh, Associate Professor (ECE) under the guidance of Prof. JS Ubhi, HOD (ECE).



### **Books/Chapters authorized by faculty**

- Baljit Singh Khehra, Arjan Singh, Amar Partap Singh Pharwaha and Parmeet Kaur, "Image Segmentation Using Two-Dimensional Renyi Entropy", Proceeding of the International Congress on Information and communication Technology (ICICT-2015) vol.1 (Eds.Suresh Chandra Satapathy et.al.), Advances in Intelligent Systems and Computing, 2016, vol.438, Springer Science + Business Media, Singapore, pp. 521-530, Print ISSN: 2194-5357, Online ISSN: 2193-5365, Print ISBN: 978-981-10-0766-8, Online ISBN: 978-981-10-0767-5. <http://dx.doi.org/10.1007/978-981-10-0767-5>.
- Harinderjit Singh and Dilip Kumar, "Non-invasive cuffless blood monitoring system", Computational tools and techniques for bio medical signal processing, IGI Global USA, ISSN/ISBN No.9781522506607, pp. 174-194, August 2016.
- Dilip Kumar, Rajeev Kumar and Tony Singla, "Energy efficient particle optimized compressed ECG data over zigbee environment", Computational tools and techniques for bio medical signal processing, IGI Global USA, 9781522506607, pp. 314-332, August, 2016.

### **List of research papers published in journals**

- Baljit Singh Khehra,, and Amar Partap Singh Pharwaha. "Comparison of Genetic Algorithm, Particle Swarm Optimization and Biogeography-based Optimization for Feature Selection to Classify Clusters of Microcalcifications." *Journal of The Institution of Engineers (India): Series B*, Vol. 98, Issue.2 pp.189-202, 2017.
- Sivia, Jagtar Singh, Amar Partap Singh Pharwaha, and Tara Singh Kamal. "Neurocomputational Models for Parameter Estimation of Circular Microstrip Patch Antennas." *Procedia Computer Science*, Vol.85, pp.393-400. 2016.

- Ashwani Kumar and Amar Partap Singh. "Transistor level fault diagnosis in digital circuits using artificial neural network." *Measurement*, Vol.82, pp.384-390. 2016. (Impact Factor: 0.1.)
- Rajni Bala, Anupma Marwaha, Sanjay Marwaha, "Mathematical Formulation of Surface Conductivity for Graphene Material", *Journal of Engineering Science and Technology (JESTEC)*, Paper Id EE15\_083, 2017, (*SJR 0.042*).
- Rajni and Anupma Marwaha, "CSC-SR Structure Loaded Electrically Small Planar Antenna", Vol. 31, Issue 5, 2016, (*SJR 0.54*).
- Lovkesh and Anupma Marwaha, "Design and Analysis of various Multifunctional operations at Ultra High Speed by using SOA-MZI", *Optical Engineering*, Vol. 55, Issue 3, 2016, (*Impact factor: 0.954*).
- Rajni and Anupma Marwaha, "An Accurate Approach of Mathematical Modeling of SRR and SR for Metamaterials, *Journal of Engineering Science & Technology Review*, Vol. 9, Issue 6, 2016, (*SJR 0.16*).
- Lovkesh and Anupma Marwaha, "Reconfiguration of optical logics gates at 160 Gb/s based on SOA-MZI", *Journal of Computational Electronics*, Vol. 15, Issue 4, pp. 1473-1483, 2016, (*Impact Factor 1.520*).
- Lovkesh and Anupma Marwaha, "Design of Photonics Half Subtractor Logics for Photonics Signal Processing", *Optik-International Journal for Light and Electron Optics*, Vol. 127, Issue 14, pp. 5647-5653, 2016, (*Impact factor 0.677*).
- Rajni, Anupma Marwaha and Gurwinder Singh, "Magnetic resonance of microstrip line loaded with Split Ring Resonator and Spiral Resonator", *Indian Journal of Science and Technology*, Vol. 9, Issue 48, Dec 2016, (*SJR 0.27*).
- Rajni Bala and Anupma Marwaha, "Development of Computational Model for Tunable Characteristics of Graphene Based Triangular Patch Antenna in THz Regime", *Journal of Computational Electronics*, Vol. 15, Issue 1, pp. 222-227, 2016, (*Impact factor 1.520*).
- Rajni Bala, Anupma Marwaha and Sanjay Marwaha, "Graphene Antenna Design for Terahertz Regime with Exact Formulation of Surface Conductivity", *Journal of Nanoelectronics and Optoelectronics*, Vol. 11, Issue 4, pp. 459-464, 2016, (*Impact factor 0.39*).
- Rajni Bala, Anupma Marwaha, Sanjay Marwaha and Rajdeep Singh, "Wearable Graphene Based Curved Patch Antenna for Medical Telemetry Applications", *Applied Computational Electromagnetics Society Journal*, Vol. 31, Issue 5, 2016, (*Impact factor 0.806*).
- Inderbir Kaur, Rajni, and Anupma Marwaha, "ECG Signal Analysis and Arrhythmia Detection using Wavelet Transform", *Journal of The Institution of Engineers (India): Series B*, Vol. 97, Issue 4, pp. 499-507, 2016.
- Candy Goyal, Jagpal Singh Ubhi, Balwinder Raj, "Design and Analysis of Low Leakage 64-bit DVL Adder at 32nm Technology", 11th INDIACOM; 2017 4th International Conference on Computing For Sustainable Global Development, IEEE Conference ID-40353, March, 2017.
- Candy Goyal, Jagpal Singh Ubhi, Balwinder Raj, "Design of Nano Scale CMOS Full adder with Low Leakage and Ground Bounce Noise Reduction", IEEE International Conference on signal Processing and Communication(ICSC), Jaypee Institute of Information Technology, Noida, Dec. 2016.
- Manoj Pandey, Jagpal Singh Ubhi and K S Raju, "Computational Acceleration of Real-Time Kernel-Based Tracking System", *Journal of Circuits, Systems and Computers*, Volume 25, No. 04, 1650030 (21), April 2016.

- V. K. Verma, Surinder Singh, N. P. Pathak, “Analytical Event Based Investigations over Delphi Random Generator Distributions for Data Dissemination Routing Protocols in Highly Dense Wireless Sensor Network,” *Wireless Personal Communication*, Vol. 87, Issue 4, pp. 1209-1222, April 2016, *Springer*, (Impact factor: 0.653).
- Yadwinder Kumar, Surinder Singh, “Performance Analysis of Coaxial Probe Fed Modified Sierpinski–Meander Hybrid Fractal Heptaband Antenna for Future Wireless Communication Networks” *Wireless Personal Communication*, Online Published. Sep. 2016. DOI 10.1007/s11277-016-3775-x
- Sukhbir Singh and Surinder Singh, “Performance analysis of hybrid WDM-OTDM optical multicast overlay system employing 120 Gbps polarization and subcarrier multiplexed unicast signal with 40 Gbps multicast signal” *Optics Communication*, vol. 385, pp. 36-42, 2016. (Impact factor: 1.480).
- Lakhvinder Singh Solanki, Surinder Singh and Dharmendra Singh, “Modified Wideband Bowtie Antenna for WLAN and High Speed Data Communication Applications” *Wireless Personal Communication*, Online Published, January, 2017. (DOI 10.1007/s11277-017-3946-4).
- Lakhvinder Singh Solanki, Surinder Singh, Dharmendra Singh, " Development and modelling of the dielectric properties of tissue-mimicking phantom materials for ultra-wideband microwave breast cancer detection," *Optik - International Journal for Light and Electron Optics*, vol 127, issue 4, pp 2217-2225, February 2016. <http://dx.doi.org/10.1016/j.ijleo.2015.10.215>.
- Surinder Singh, Sukhbir Singh, Nada Badraoui, Tibor Berceci, AkramAlomainy, “Design and Analysis of All Optical Up and Down Wavelength Converter Based on FWM of SOA-MZI For 60 Gbps RZ Data Signal” Accepted for publish in *Photonics Network Communications*, Springer, Feb. 2017. (Impact Factor: 0.557)
- Dilip Kumar and Rajeev Kumar “EACO and FABC to multi-path data transmission in wireless sensor networks”. *IET Communications*, Vol. 11, no. 4, March 2017pp. 522-530. (Cited by 1, SCI index, Impact Factor-1.06)
- Varun Kohli, Rajeev Kumar, Dilip Kumar, “[Modified fitness-based swarm intelligence approach for routing in wireless sensor networks](#)” *International Journal of Advanced Intelligence Paradigms*, Vol.9, Issue 2-3, March 2017, pp. 263-277, Inderscience Publishers (IEL)
- Dilip Kumar, “Heterogenous Multichain Pegasis with Mobility in Base Station”, *International Journal of basis and Applied Research*, Vol.14, Issue 1, pp. 42-51, 2016
- Dilip Kumar, “Analysis of Homogenous HEED Routing Protocol in Hexagonal Grid Deployment,” *Asian Journal of Mathematics and Computer Research*, Vol. 9, Issue 2, pp. 119-129, 2016. (Scimgo Index)
- Neha & Ajay Pal Singh, “Design of Optimized Transition Width Linear Phase FIR Filter using PSO Algorithm with Constriction Factor Approach” published in *Communications on applied electronics*, Volume5, Number7, (2016).
- Lakhvinder Singh Solanki, S. Singh, and D. Singh, “Modified Wideband Bowtie Antenna for WLAN and High-Speed Data Communication Applications,” *D. Wirel. PersCommun*, pp. 1–15, 2017.

### **List of research papers published in International/National Conferences**

- Sukhbir Singh and Surinder Singh, “Multi-wavelength conversion based on FWM in SOA-MZI with 2nm spaced dual pump signals” *International Conference on Fibre*

Optics and Photonics, Paper# Th3A.51, 2016. (<https://doi.org/10.1364/PHOTONICS.2016.Th3A.51>)

- Sukhbir Singh and Surinder Singh, "Multiple Access Interference Limits the Capacity Performance of Hybrid WDM-OCDMA System" International Conference on Fibre Optics and Photonics, Paper# W3A.85, 2016. (<https://doi.org/10.1364/PHOTONICS.2016.W3A.85>).
- Kaur, Veerpal, and Surinder Singh. "Hybrid Design of Photonic crystal fiber Sensor for Lower Indexed Chemicals." In International Conference on Fibre Optics and Photonics, pp. Th3A-53. Optical Society of America, 2016.
- Kaur, Veerpal, and Surinder Singh. "Performance Comparison of High Index Ring Defected Core PCF Air Sensor." In International Conference on Fibre Optics and Photonics, pp. W3A-89. Optical Society of America, 2016.
- Surinder Singh, Meenakshi Kapoor and Veerpalkaur. "Performance Analysis of Optical Add Drop Multiplexer for Higher Bit Rate by Using Different Modulation Format." In International Conference on Fibre Optics and Photonics, pp. Tu4A-88. Optical Society of America, 2016.
- Vishadeep Bansal, Surinder Singh and Sukhbir Singh, "Study of laser beam welding" Trends in Welding and Manufacturing Research TWMR-16, Deptt of Mechanical Engg., SLIET Longowal, 13-14 Oct. 2016.
- Lakhvinder Singh Solanki, Surinder Singh, Dharmendra Singh, "An ANN Approach for False Alarm Detection in Microwave Breast Cancer Detection", IEEE World Congress on Computational Intelligence, 24-29 July 2016, Vancouver, Canada.
- Nandini Garg, Lakhvinder Singh Solanki, Surinder Singh, " Design of Rectangular Microstrip Patch Antenna using DMS", 3<sup>rd</sup> DAV National Congress, Science Technology, Engineering, Humanities & Management (STEHM)-May 20-21, 2016.
- Tarunpreet Kaur and Dilip Kumar, "AMQoS: ACO based Multi-Constrained QoS Routing Protocol for Wireless Sensor Networks", In Proceeding of International Conference on Communication, Computing and Networking (ICCN 2017), March 2017.
- Tarunpreet Kaur and Dilip Kumar, "TDMA-based MAC protocols for wireless sensor networks: A survey and comparative analysis", 5<sup>th</sup> IEEE International Conference on Wireless Networks and Embedded Systems, October, 2016.