

## **Dr. PIYUSH N. PATEL**

### **Assistant Professor**

Electronics Engineering Department  
S. V. National Institute of Technology  
Ichchhanath, Surat-395007, Gujarat.  
Phone: +91-261-2201732 (Office)  
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**Date of Joining:** 1st August, 2000

### **Qualifications:**

Ph. D. (Nano Scale Optical Sensors)  
M. Tech. (Electronics)  
B. E. (Electronics)

### **Research Area:**

- Optical Communication and Networks
- RF and Photonic Devices
- Optical Sensor: Nano-Porous Silicon Sensors, Surface Plasmon Resonance Sensor
- RF/Microwave Sensors: Metamaterial, Electromagnetic Bandgap

### **Teaching Experience:**

- Assistant Professor, Electronics Engineering Department, SVNIT, From August 2000.

### **Subjects Taught:**

- Optical Communication
- Optical Networks
- Sensors and Transducers
- Electronic Devices and Circuits
- Analog and Digital Communication Systems

### **Professional Membership:**

- Member IEEE
- Fellow - Optical Society of India (OSI)
- Fellow - Institute of Electronics & Telecommunications (IETE)

### **Award & Honours:**

- “Young Faculty Research Fellowship (YFRF) of Visvesvaraya PhD Programme of Ministry of Electronics & Information Technology, MeitY, Govt. of India”.

## **Funded Research Projects:**

1. Title of the Project: “Research Contingency Grant “ of Young Faculty Research Fellowship  
Funding Agency: MeitY, Govt. of India  
Amount: 25 lacs  
Duration: 5 Years (January 2018-2023)  
Status: Ongoing
2. Title of the Project: “Design and Fabrication of Photonics Corrugated Device”  
Funding Agency: Visvesvaraya PHD Scheme, DEITY, New Delhi  
Amount: 5.0 lacs  
Duration: 5 Years (July 2015-2020)  
Status: Ongoing
3. Title of the Project: “Fabrication, characterization and application of porous silicon as optical biosensor device”  
Funding Agency: DRDO, New Delhi  
Amount: 30 lacs  
Duration: 4 Years (May 2011-2015)  
Status: Completed
4. Title of the Project: “Characterization of porous silicon structures”  
Funding Agency: INUP, IIT Bombay  
Duration: 6 months (January-July 2014)  
Status: Completed
5. Title of the Project: “Electromagnetic Bandgap Inspired Sensor Device for Detection of Adulteration in Dietary Supplements”  
Funding Agency: TEQIP-II, SVNIT, Surat  
Amount: Rs. 75,000/-  
Duration: 01 Year (March 2016-17)  
Status: Completed
6. Title of the Project: “Design and Fabrication of Metamaterial Inspired Microwave Device for Biosensing Application”  
Funding Agency: TEQIP-II, SVNIT, Surat  
Amount: Rs. 75,000/-  
Duration: 01 Year (March 2016-17)  
Status: Completed
7. Title of the Project: “Algorithm Development for Analysis of Biochemical compound using Optical Probing Technique”  
Funding Agency: TEQIP-II, SVNIT, Surat  
Amount: Rs. 50,000/-  
Duration: 6 months (January-July 2014)  
Status: Completed

8. Title of the Project: “Development of Porous Silicon based Optical Sensor for the Detection of Target Molecule in Analyte”  
Funding Agency: TEQIP-II, SVNIT, Surat  
Amount: Rs. 50,000/-  
Duration: 6 months (January-July 2014)  
Status: Completed

#### Patents:

- 01 Filed

#### List of Publications:

##### Publication in Journals:

1. Ratnesh Kumari, Piyush N. Patel, Rahul Yadav “An ENG Resonator-Based Microwave Sensor for the Characterization of Aqueous Glucose,” *Journal of Physics D: Applied Physics*, Vol.51, No.7, Jan, 2018. (SCI).
2. Rahul Yadav, Piyush N. Patel, V. N. Lad, “Highly Selective Colorimetric Detection of Cd<sup>2+</sup> Ions Using Cysteamine Functionalized Gold Nanoparticles with Cross-Linked DL-Glyceraldehyde,” *Research on Chemical Intermediates-Springer*, 1-13, Dec-2017. (SCI).
3. Rahul Yadav, Piyush N. Patel, “Characterization of High-Frequency Dielectric Laminates Using a Scanning-Probe Based on EBG Structure,” *IEEE Transactions on Instrumentation and Measurement*, 1-9, 2017. (SCI).
4. Rahul Yadav, Piyush N. Patel, Ratnesh Kumari. Virang N. Lad, “Development of a MPBG-Inspired Probe for Detection of Low pKa Value Drug in Bio-Fluid,” *IEEE Sensor Journal*, Vol.17, No.17, Sep. 2017. (SCI).
5. Rahul Yadav, Piyush N. Patel, V. N. Lad, “Detection of vasodilator drugs through microwave spectroscopy of Au NPs colorimetric probes using a microwave metallic photonic crystal-inspired resonant probe,” *RSC Advances*, vol. 7, issue 47, pp. 30784-30791, June-2017. (Publisher: Royal Society of Chemistry) (SCI).
6. Rahul Yadav, Piyush N. Patel, “EBG-Inspired Reconfigurable Patch Antenna for Frequency Diversity Applications,” *International Journal of Electronics and Communications (AEU)*, vol. 76, pp. 52-59, March-2017. (SCI).
7. Ratnesh Kumari, Piyush N. Patel, “A Low-Cost Dielectric Spectroscopic System Using Metamaterial Open Horn-Ring Resonator-Inspired BSF And Detection Circuitry,” *Applied Physics A: Material Science and Processing*, vol.122, pp. 1-10, June-2016. (SCI).
8. Rahul Yadav, Piyush N. Patel, “Experimental Study of Adulteration Detection in Fish Oil Using Novel PDMS Cavity Bonded EBG Inspired Patch Sensor,” *IEEE Sensor Journal*, vol. 16, no. 11, pp. 4354-4361, June-2016. (SCI).
9. V. Mishra, P. N. Patel, A. Sharma, T. Dinesh kumar, V. Garg, T. Bafna, D. Maheshwar, “Detection of bioanalyte using porous silicon based optical biosensor”, *Journal of Optoelectronics and Advanced Materials (JOAM)*, vol. 11, no. 11-12, pp. 269-275, November-December-2015 (SCI).
10. V. Mishra, Vidushi Tiwari, P. N. Patel, “Nanoporous Silicon Microcavity Based Fuel Adulteration Sensor”, *Silicon*, Springer, , vol.1, issue 1, pp. 1-7, July 2015 (SCI).
11. V. Mishra, P. N. Patel, Suchitra kumari, Gaurav Mishra, "Dengue NS1 Detection used Chemically Modified Porous Silicon Microcavity (PSMC)", *Silicon*, Springer, vol.1, issue 1, pp.1-7, April-2015 (SCI).

12. V. Mishra, P.N. Patel, Vidushi Tiwari, "Nanoporous silicon microcavity based optical sensor to detect adulteration of petrol by organic solvents", *Optical and Quantum Electronics*, Springer, vol.47, issue 1, pp. 2299-2310, Jan-2015 (SCI).
13. V. Mishra, P. N. Patel, T. Vohra, "Realization of porous silicon nano structures for Optical detection of petrol adulteration", *Digest Journal of Nanomaterials and Biostructures (DJNB)*, vol. 9, No. 3, pp. 967-974, July-September 2014, ISSN 1842-3582 (SCI).
14. J. Singh, V. Mishra, P. N. Patel, Pushpa Gilawat, "Simulation and Analysis of Dispersion Compensation Schemes for 100 Gbps PDM-OFDM Optical Communication System" *Optik-International Journal for Light and Electron Optics*, vol. 125, pp. 2026-2030, May-2014. (SCI).
15. P. N. Patel, V. Mishra, "Realization of Porous Silicon Photonic Bandgap Optical Sensor Devices" *Journal of Optoelectronics and Advanced Materials (JOAM)*, vol. 16, no. 3-4, pp. 269-275, March - April 2014. (SCI).
16. P. N. Patel, V. Mishra, A. K. Panchal, "Nano Porous Silicon Microcavity Optical Sensor Device For The Detection Of Methyl Parathion", *Digest Journal of Nanomaterials and Biostructures (DJNB)*, vol. 7, No. 4, pp. 1817-1823, ISSN 1842-3582, October-December 2012. (SCI).
17. P. N. Patel, V. Mishra, A. K. Panchal, "Nano Porous Silicon Microcavity Optical Biosensor Device For Glucose Detection", *Digest Journal of Nanomaterials and Biostructures (DJNB)*, vol. 7, No. 3, pp. 973-982, ISSN 1842-3582, September-2012. (SCI).
18. M. Shanmugam, S. Vadawale, Y.B. Acharya, V. Mishra, P.N. Patel, S.K. Goyal, "Design and performance evaluation of SDD based X-ray spectrometer for future planetary exploration", *Radiation Measurements*, Elsevier, Volume 47, Issue 5, Pages 375-382, May-2012. (SCI).
19. P. N. Patel, V. Mishra, A. K. Panchal, "Synthesis And Characterization Of Nano Scale Porous Silicon Photonic Crystals For Optical Device And Sensing Applications", *Journal of Optoelectronics and Biomedical Materials (JOBM)*, vol. 4, Issue 1, pp. 19-28, March-2012, ISSN 2066-0049. (SCI).
20. V. Mishra, Vinay Verma, A. S. Mandloi, P. N. Patel, "A heuristic algorithm for reducing wavelength number of optical WDM networks", *Optik - International Journal for Light and Electron Optics*, vol. 122, no. 22, pp. 1971-1974, ISSN: 0030-4026 November-2011. (SCI).
21. P. N. Patel, V. Mishra, A. K. Panchal, "Theoretical And Experimental Study Of Nano Porous Silicon Photonic Microcavity Optical Sensor Devices", *Advances in Natural Sciences: Nanoscience and Nanotechnology (ANNS)*, IOP Publications, vol. 3, 035016 (7 pp.), August-2012, ISSN 2043-6262. (Scopus).
22. P. N. Patel, V. Mishra, A. K. Panchal, N. H. Maniya, "Realization Of Porous Silicon Distributed Bragg Reflector For Optical Sensing Applications", *Sensors & Transducers Journal (S & T)*, vol. 139, Issue 4, pp. 79-86, April-2012, ISSN: 2306-8515. (Scopus)
23. M. Shanmugam, Y. B. Acharya, V. Mishra, P. N. Patel, S. K. Goyal, "A Compact X-ray Spectrometer Using Silicon Drift Detector", *Sensors & Transducers Journal*, vol. 138, No. 3, pp.22-34, March-2012, ISSN: 2306-8515. (Scopus).
24. B.Prasanth, Piyush N Patel, Keta Raval, "Advanced optical communication system design with FBG dispersion compensation technique", *International Journal of Engineering Applied Sciences and Technology*, Vol. 2, Issue 5, ISSN No. 2455-2143, Pages 215-220, July 2017.
25. P. N. Patel, V. Mishra, A. K. Panchal, John D'Cruz, "Nano Scale Porous Silicon Photonic Microcavity Structures For Optical Sensing Of Ethanol", *Armenian Journal of Physics (AJP)*, vol. 6, iss. 2, pp. 103-110, May-2013, ISSN 1829-1171.
26. P. N. Patel, V. Mishra, A. K. Panchal, N. H. Maniya, "Optical Sensing Of Ethanol Using Porous Silicon Photonic Bandgap Microcavity Structure", *Journal of International*

- Academy of Physical Sciences, vol. 16, no.2 pp. 163-170, December-2012, ISSN: 19921950.
27. P. N. Patel, V. Mishra, A. K. Panchal, "Modelling And Analysis Of Porous Silicon Microcavity Using Ni Lab View", International Journal of Advances in Management, Engineering, Technology and Social Sciences, vol.1, Issue 1, pp.26-29, December-2012, ISSN: 2249-7455.
  28. P. N. Patel, Vivekanand Mishra, "Simulations And Analysis Of Nano Scale Porous Silicon Structures For Optical Sensor Applications", International Journal of Computer Applications (IJCA), vol. 56, No.10, pp. 14-18, October-2012 (Impact Factor 0.8), ISSN 0975 - 8887.
  29. P. N. Patel, V. Mishra, A. S. Mandloi, "Optical Biosensors: Fundamentals & Trends", Journal of Engineering Research and Studies (JERS), vol. I, Issue I, pp. 15-34, Sept- 2010.
  30. P. N. Patel, V. Mishra, A. S. Mandloi, Amit Runiar, "Best Fit Void Filling Segmentation Based Algorithm in Optical Burst Switching Networks" , International Journal of Information Technology and Network Application (IJITNA), June-2011, ISSN : 2168-2178.
  31. Mr. P. N. Patel & Mrs. U.D. Dalal ; "Investigation of Transmission Performance of OC-768 DWDM Link using Photonics CAD 1.6", International Journal of Engineering Research and Industrial Applications, vol. 2, no. 1, pp.23-34 ; Feb-2009.

#### **Publications in Conferences:**

1. Ratnesh Kumari, Piyush N. Patel, Rahul Yadav, "ENG Resonators Based Reconfigurable Microwave Filter for Stop band Frequency Diversity", INDICON-2017, 1-4, 2017.
2. Rahul Yadav, Piyush N. Patel, "A Microwave Metallic Photonic Crystal-Based RF-Probe for the Characterization of Colloidal Gold Nanoparticles", Asia Pacific Microwave Conference 2017, 1-4, 2017.
3. Ratnesh Kumari, Piyush N. Patel, Rahul Yadav, "Artificial Epsilon Negative Structure-Inspired Microwave Bandstop Filter for Wide Frequency Diversity," Asia Pacific Microwave Conference 2017, 1-4, 2017.
4. Ratnesh Kumari, Piyush N. Patel, "A low-cost Sensitive Dielectric Spectroscopic System Inspired by Metamaterial Open Ring Resonators over Millimeter Wave Technology," BIT's 5<sup>th</sup> Annual Congress of AnalytiX: Emerging Trends in Analytical Science, 1, 2017.
5. Piyush N. Patel, Rahul Yadav, Meghayu Adhvaryu, "Design and Analysis of Diversified Mico-Cantilever Structure for Sensor Applicataion", 2nd IEEE International Conference on Emerging Technological Trends in Electronics, Communication and Networking, pp. 195, Dec-2014.
6. Piyush N. Patel, Vivekanand Mishra, Vivek Singh, "Performance analysis of Co-OFDM FSO system under different weather conditions", 2nd IEEE International Conference on Emerging Technological Trends in Electronics, Communication and Networking, pp.227 Dec-2014.
7. Aditya Prajatapi, Piyush N. Patel, "Design and Deployment of Wi-Fi Service Inside Running Metro Train", 2nd IEEE International Conference on Emerging Technological Trends in Electronics, Communication and Networking, pp.343, Dec-2014.
8. Pradeep Paswan, Vivekanand Mishra, P. N. Patel, Surabhi Dwivedi, "Performance Enhancement of Coaxial Feed Microstrip Patch Antenna Using Left-Handed Metamaterial Cover", IEEE students' conference on Electrical, Electronics and Computer Science, , MANIT, Bhopal, 1-2 March, 2014.

9. P. N. Patel, V. Mishra, "Modelling And Analysis Of Porous Silicon Photonic Crystals", IEEE International Conference on ET2ECN 2012, SVNIT, Surat, India, pp. 1-4, Dec. 29-21, 2012 (DOI: 10.1109/ET2ECN.2012.6470058), ISSN: 08952477.
10. V. Mishra, P. N. Patel, Jasvir Singh, "Performance Comparison of CO-OFDM in the DWDM Topology", National Conference on Technological Research in Electrical & Electronics engineering (TRIEECON-2012), Sri Aurobindo institute of Technology, Indore, October-2012.
11. P. N. Patel, V. Mishra, A. K. Panchal, N. H. Maniya, J. N. Sarvaiya "Optical Sensing Of Organic Chemicals Using Porous Silicon Distributed Bragg Reflector", 3rd International Conference on Sensors and Related Networks, SENNET'12, pp. 106, VIT, Vellore, India, January-2012.
12. P. N. Patel, V. Mishra, A. K. Panchal, N. H. Maniya, "Optical Sensing Of Ethanol Using Porous Silicon Photonic Bandgap Microcavity Structure", 14th International Conference of International Academy of Physical Sciences on Physical Sciences Interface with Humanity, PO-42, SVNIT, Surat, India, Dec-2011.
13. P. N. Patel, V. Mishra, A. S. Mandloi, "Comparative study of Spectral response of etched single mode fiber with acoustic wave input and high birefringence fiber loop mirror sensor", Fifth International conference ICIIS-2010, page 658-661, July-2010.
14. P. N. Patel, V. Mishra, A. S. Mandloi, "Comparative study of micro bend induced grating with pressed and etched fibers and its effect on mode coupling" National conference, MVP-NCEC-2010, PP-85-88, MARCH-2010.

#### **Ph.D. Supervision:**

- 07 Ongoing.

#### **M Tech Dissertation:**

1. Nitin Kumar (P15EC012), "Design and Performance Analysis of WDM Passive Optical Networks", 2017
2. Badisa Prasanth (P15EC009), "Design and Analysis of Different Dispersion Compensation Techniques in Optical Fiber Communication System", 2017.
3. Mukesh Lohar (P13EC005), "Characterization of FBG as Temperature Sensors", 2016.
4. Mayank Tyagi (P14EC005), "Design And Analysis Of Thermo-Optic Switch For Protection Switching in Double Ring Optical Networks" 2016.
5. Paresh Sagar (P14EC015), "Design And Analysis of Metamaterial Inspired Microstrip Patch Antenna", 2016.
6. Kuldeep Tayaed (P13VI006), "TCAD Implementation of Porous Silicon based Dielectric Sensor", 2015.
7. Jay Thakur (P13EC007), "Pre-Silicon Verification of GSM Channels", 2015.
8. Arun G. (P13EC014), "Efficiency improvements to INTEL Reliability Verification Flows for Faster and Quality IP Delivery:", 2015.
9. Vivek Singh (P12EC019), "Performance Analysis of CO-OFDM FSO System Under Different Weather Conditions", 2014.
10. Vidushi Tiwari (P12EC014), "Fabrication and Characterization of Porous Silicon and Its Applications as an Optical Sensor".2014.
11. Paswan Pradeep (P12EC011) "Characterization and Application of Negative-Index Metamaterial", 2014.
12. Jasvir Singh (P11EC001), "Performance Analysis of Optical OFDM in of Long Haul Fiber Link", 2013.

13. M. Shanmugam (R10EC901), "Design and Development of SDD based Spectrometer for Surface Chemistry Measurement", 2012.
14. John D' Cruze (P10EC917), "Porous Silicon based Optical Sensor Devices", 2012.
15. Ruchi Agarawal (P10EC932), "Simulation and Analysis of Sub Carrier Multiplexing in High Speed Optical Transmission Line", 2012.
16. Kamal M. Captain (P09EC930), "Modelling and Fabrication of Porous Silicon for Optical Devices and Sensor Applications", 2011.
17. Milan Chaudhary (P09EC919), "Characterization of Helical Winding Optical Waveguide with Application of WDM", 2011.
18. Amit Kumar Runiar (P09EC931), "Comparative Study of Channel Scheduling Algorithms in Optical Burst Switching Networks", 2011.
19. Vinay Verma (P08EC920), "Study of Different RWA Algorithms and Comparative Analysis of Call Blocking in All Optical Networks", 2010.

#### **STTP/Workshop Organized:**

- "Internet Of Things", 31<sup>st</sup> Aug 2017.
- "Training cum Workshop for Supervisors and Technicians of Indian Railways For Upgrading Their Skills", 6-11 February 2017.
- "Training cum Workshop for Supervisors and Technicians of Indian Railways For Upgrading Their Skills", 13-18 February 2017.
- "Sensor System Design for Automation", 11-12 March 2016
- "Embedded Systems in Robotics", 9-10 October 2015
- "Photonic Integrated Circuits", 10-11 April 2015
- "Curriculum Revision UG and PG", 9-10 January 2015
- "Recent Advancements in Optical Engineering", 26-28 December 2013
- "Wireless and Optical Communication", 24-28 June 2013

#### **Organizing Committee Members in Conference/STTP/Workshop:**

- Two Weeks Training and Workshop on "Supervisors and Technicians of Indian Railways", 6-18 Feb-2017, SVNIT, Surat, India.
- 2<sup>nd</sup> IEEE International Conference on "Emerging Technological Trends in Electronics, Communication and Networking", 26-27 Dec-2014, SVNIT, Surat, India.
- IEEE International Conference on "Emerging Technological Trends in Electronics, Communication and Networking", 19-21 Dec-2012, SVNIT, Surat, India.
- National Conference on "Advancements in Wireless Technologies and Applications- AWTA08", SVNIT, 2008, Surat.
- National Workshop on "VLSI Design Tools", 28 Feb.-1 March 2009.
- Short Term Training Programme on "Advance Laboratory Techniques in RF and Microwave", 22-26 December 2008.

#### **Editorial Board Member/ Reviewer in Journal:**

- "Optics Communications", Elsevier.
- "IEEE Sensors Journal", UK.
- "WSEAS Transactions on Communications", Athens, Greece.
- "WSEAS Transactions on Systems and Control", Athens, Greece.
- "Journal of Electrical Engineering", David Publications, USA

- “Journal of Advanced Electrical and Computer Engineering”, Columbia International Publishing, USA.
- “Journal of VLSI Design Tools and Technology”, STM Journals, India
- “ICTACT Journal on Microelectronics”, India
- “Progress in Science in Engineering Research Journal”, India
- “Global Journal of Engineering and Scientific Research”, India
- “Journal of Advanced Engineering Research and Studies”, India
- “International Journal of Engineering Research and Study”, India

#### **Reviewer/ Programme Committee Member in Conferences:**

- International Conference on Global trends in Signal Processing, Information Computing & Communication (ICGTSPICC 2016) during 22-24 December 2016, SSBT's College of Engg. & Tech., Jalgaon, India.
- The Sixth International Conference on Sensor Device Technologies and Applications, SENSOR DEVICES 2016 is scheduled to be July 24 - 28, 2016 - Nice, France.
- IEEE International Conference on Microelectronics, Computing and Communication (MicroCom 2016) during 23-25 January, 2016, NIT Durgapur, India.
- 2nd IEEE International Conference on Recent Advances and Innovations in Engineering (ICRAIE– 2016), 23-25 December 2016, Poornima College of Engineering and Poornima University, Jaipur, Rajasthan, India.
- 2nd International Conference on Recent Advances in Engineering and Computational Sciences (RAECS-2015), 21-22 December 2015, UIET, Panjab University, Chandigarh, India.
- 13th International Conference on Data Networks, Communications, Computers (DNCOCO '15), December 12-14, 2015, Hungary.
- IEEE international conference on Man And Machine Interfacing (MAMI 2015), 17-19 December, 2015, C. V. Raman College of Engineering, Bhubaneswar, India.
- 1st International Conference on Sensors Engineering and Electronics Instrumental Advances (SEIA; 2015), 22-23 November 2015, Dubai, UAE.
- Fourth International Conference on Advances in Computing, Communication and Control (ICAC3'15), 3-4 April 2015, Fr. Conceicao Rodrigues College of Engineering, Mumbai, India.
- National Conference on Innovative and Emerging Technologies (NCIET-2015), 17<sup>th</sup>-18<sup>th</sup> April, 2015, Mahesana, India.
- National Conference on “Emerging Trends in Communication and VLSI Design, 10th March 2015, Kings College of Engineering, Chennai, India.
- 2nd MGI international Conference on Recent trends in engg and tech. (ICRTIET-14), 19-20 December 2014, Nagpur, India
- 2nd IEEE International Conference on Emerging Technological Trends in Electronics, Communication and Networking, Dec-2014, SVNIT, Surat, India.
- IEEE International Conference on Advances in Electronics, Computers and Communications (ICAECC), 10-11 October 2014, Reva Institute of Technology and Management, Bangalore, India.
- 3rd international Conference on Computer Communication, Control & Info. Tech. (C3IT-15), 7-8 July 2014, West Bengal, India
- 1<sup>st</sup> International Conference on contemporary Issues in Engineering and Technology” on 19-21 March 2014, Mahesana, India.



### **Session Chair in Conferences/Technical Events:**

- 2nd IEEE International Conference on Emerging Technological Trends in Electronics, Communication and Networking, Dec-2014, SVNIT, Surat, India.
- 1<sup>st</sup> International Conference on contemporary Issues in Engineering and Technology” on 19-21 March 2014, Mahesana, India.
- Project Proposal Competition under IETE ISF, SVNIT, 2014.

### **Book/Book Chapters Reviewed:**

- ‘Optical Communications’, Oxford University Press, May 2015.
- ‘Optical fiber Communication’, Cambridge Publication, March 2015.
- ‘Optical Fiber Communication’, McGraw-Hill Publication, February 2014.
- ‘Optical Fiber Communication’ by Keser, McGraw-Hill Publication, October 2013.
- ‘Pulse & Digital Circuits’ by M. S. Prakash Rao, McGraw-Hill Publication, August 2006.
- ‘Power Electronics’ by Dr. Singh & Khanchandani, McGraw-Hill Publication, April 2005.
- ‘Pulse & Digital Circuits’, McGraw-Hill Publication, September 2004.

### **Expert Lectures Delivered:**

1. “Sensors & Transducers in Indian Railways” in “Training cum Workshop for Supervisors and Technicians of Indian Railways For Upgrading Their Skills”, ECED, SVNIT 6-18 February 2017.
2. Nano Scale Porous Silicon: Fundamentals to Applications”, STTP on “Advances in Materials Science and Engineering (AMSE 2016)”, MED SVNIT, 10-14 October, 2016.
3. “Research Methodology”, Ph.D. students of ECED, SVNIT, Surat, 5<sup>th</sup> August 2014.
4. “Nano Scale Optical Sensor Devices”, 1st International Conference on Contemporary Issues in Engineering & Technology (ICCIET-2014), Merchant Education Campus-Mehsana, Gujarat, India, 19-21 March-2014.
5. “Photonic Bandgap Structures”, Workshop on “Recent Advancements in Optical Engineering”, Electronics Engineering Department, SVNIT, Surat, 26-28 December 2013.
6. “Nano Scale Optical Sensor Devices”, STTP on “Nano Scale Integration, Fabrication and Characterization ”, Electronics Engineering Department, SVNIT, Surat, 21-25 October 2013.
7. “Nano Scale Porous Silicon Based Optical Sensor Devices” STTP on “Wireless & Optical Communication”, Electronics Engineering Department, SVNIT, Surat, 24-28 June-2013.
8. “Nano Scale Porous Silicon Based Photonic Bandgap Structures: Fabrication, Characterization and Applications”, STTP on “Advances in Material Sciences and Technology”, Department of Applied Physics, SVNIT, Surat, 3-7 June 2013.
9. “Fiber Optic Sensors Fundamentals & Applications”, STTP on “Optics & Photonics”, Department of Applied Physics, SVNIT, Surat (22-25 February 2010).
10. “Introduction to Fiber Optic Communication System”, STTP on “Optics & Photonics”, Department of Applied Physics, SVNIT, Surat (22-25 February 2010).

### **Major Administrative Responsibilities/Involvement:**

- PG Incharge-Communication Systems (June 2014-16)
- Executive Body Member of IETE, Surat Centre (From 2012)
- Incharge-Sensor Research/Optical Devices & Sensor Laboratory (June 2015 Onwards)

- Co-chairman-Department Accreditation Committee for M. Tech. (CS) 2014.
- Member-Institute level Manpower Committee (June 2015)
- Member-JoSAA 2015 Institute UG admission Committee (June-August 2015).
- Member-Physical Stock Verification Committee (2013-15).
- Departmental Co-ordinator for Student's Council Election 2014 and 2015.
- Member-Mindbend (Technical Fest.) Committee, (2012-14).
- Co-Incharge Department Time Table Committee (2006-2014).
- Faculty Advisor of B. Tech. II/III EC (2006-2013).
- Member-Department Ph.D. and PG Admission Committee.
- Member-JoSAA Admission Committee (2015-2016).
- Member-CCMT Admission Committee (2015-2016).