Dr. Piyush N. Patel

Professor

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Qualifications:

- Ph.D. (Electronics Engineering), January 2014.
- M.Tech. in Electronics Engineering, 2009.
- B.E. in Electronics Engineering, 1998.

Area of Interest:

- Optical Communication & Networks
- Sensors and MEMS
- Microwave Communication
- Electromagnetics and Antenna
- VLC/LiFi/Free Space Optics
- Metamaterial/E-Textile based Antenna Design and Fabrication
- Predictive Analysis using Machine Learning Techniques

Professional Experience:

- **Current Designation:** Professor, Department of Electronics Engineering, SVNIT-Surat

- **Date of Joining the SVNIT-Surat:** 1st August, 2000
  - Professor: From 21st December 2023 to till date
  - Associate Professor: January 2019 to 20th December 2023
  - Assistant Professor: August 2000 to January 2019

Subjects Taught:

- Optical Fiber Communication
- Advance Optical Communication Systems
- Sensors and Transducers
- Electromagnetic Waves and Radiating Systems
- Electronic Devices and Circuits
- Analog and Digital Communication

Awards & Honors:

- “Young Faculty Research Fellowship (YFRF) of Visvesvaraya PhD Programme of Ministry of Electronics & Information Technology, MeitY, Govt. of India”.
- "IEEE Chapter Award-2022” in the field of Antenna/Microwave Technology by IEEE AP/MTT Joint Chapter, Gujarat Section, 2022.
- Vice Chairman- IETE Surat sub center, From June 2024
- Honorary Treasurer- IETE Surat sub center, 2017-19

Professional Memberships:

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

Funded Research Projects (12):

1. Title of the Project: “Capacity Building for human resource development in Unmanned Aircraft System (Drone and Related Technology)"
   Funding Agency: MeitY, Govt. of India
   Amount: 187 lakhs
   Duration: 5 Years (May 2023-May 2028)
   Role: Team Member
   Status: Ongoing

2. Title of the Project: “Design and Development of Co-Planar Waveguide-based WearableBio-Sensor for Medical Application"
   Funding Agency: Department of Bio-Technology, Govt. of India
   Amount:18 lakhs
   Duration: 2.5 Years (March 2020-September 2022)
   Role: Principal Investigator
   Status: Completed

3. Title of the Project: “Research Grant” of Young Faculty Research FellowshipFunding Agency: MeitY, Govt. of India
   Amount: 25 lacs
   Duration: 3.5 Years (January 2018-September 2021)
   Role: Principal Investigator
   Status: Completed

4. Title of the Project: “Fabrication, characterization and application of porous silicon as an optical biosensor device”
   Funding Agency: DRDO, New Delhi
   Amount: 30 lacs
   Duration: 4 Years (May 2011-2015)
   Role: Co-Investigator
   Status: Completed

5. Title of the Project: “Design and Fabrication of Corrugated Waveguides for Fusion PlasmaDiagnostics”
   Funding Agency: Visvesvaraya Ph.D. Scheme, DEITY, New Delhi
   Amount: 5.0 lacs
   Duration: 5 Years (July 2015-2020)
   Role: Mentor
   Status: Completed

6. Title of the Project: “Design and Development of Metamaterial inspired Sensor devices forAccurate Soil testing”
   Funding Agency: TEQIP III
   Amount: Rs. 50,000/-
   Duration: 1 year (April-March 2020)
   Role: Mentor
   Status: Completed

7. Title of the Project: “Fabrication of Co-Planar Waveguide Inspired Sensor Device for Medical Applications”
   Funding Agency: TEQIP III, SVNIT, Surat
   Amount: Rs. 50,000/-
   Duration: 1 year (April-March 2020)
   Role: Mentor
   Status: Completed

8. Title of the Project: “Design and Development of Surface Plasmon Resonance based Optical Biosensor
   Funding Agency: TEQIP III
   Amount: Rs. 50,000/-
   Duration: 1 year (April-March 2020)
   Role: Mentor
   Status: Completed

9. 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)
   Role: Mentor
   Status: Completed

10. Title of the Project: “Design and Fabrication of Metamaterial Inspired Microwave Device for Bio-sensing Application”
    Funding Agency: TEQIP-II, SVNIT, Surat
    Amount: Rs. 75,000/-
    Duration: 01 Year (March 2016-17)
    Role: Mentor
    Status: Completed

11. 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)
    Role: Mentor
    Status: Completed

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

Consultancy Projects (02):

1. Title of the Project: “Consultancy Service for checking of report and any other suggestions related to satisfy and stability of bridge joining Athwa-Adajan in Surat on EPC basis."
   Funding Agency: Surat Municipal Corporation, Surat-Gujarat
   Amount: 12 lakhs
   Role: Co-Investigator
   Status: Completed

2. Title of the Project: “Selection of implementation agency for supply, installation, testing, commissioning, integration, and maintenance of various hardware components for the intelligent transit management system (TMS) for BRTS stations"
   Funding Agency: Surat Smart City Development Limited, Surat-Gujarat
   Amount: 7.35 lakhs
   Role: Co-Investigator
   Status: Completed

Ph. D. Awarded/Completed (08):

1. Golak Santra (D20EC011), “Design and Analysis of Single and Dual-band Horizontally Polarised Omnidirectional Antenna Using Slotted Patch and Ground for ISM Band”, August 2024.
2. Paresh Sagar (D18EC002), “Design, Fabrication and Testing of ENG Metamaterial Based Microwave Devices for Soil Characterization by Dielectric Measurements”, August 2023.
3. Shailesh Gheewala (DS14EC004), “Development of Porous Silicon Structure by Pulsed Fiber Laser for Capacitive Sensing Applications”, June 2023.
4. Arpan Shah (D18EC004), “Development of Different Types of E-Textile Antennas for Various Applications”, December-2022.
5. Meghayu Adhvaryu (D14EC011), “Design, Fabrication and Development of Various Prototype Parametric Sensors for Civil Structural Health Monitoring (SHM)”, November-2022.
6. Hiren V Dhuda (DS15EC005), “Design, Fabrication and Testing of Circular Corrugated Waveguide Components for Fusion Plasma Diagnostics Applications”, December-2021.
7. Ratnesh Kumari (DS14EC001), “Realization of ENG Metamaterial- Based Planer ModularDevices for Sensor Applications”, July-2019.
8. Rahul Yadav (D14EC008), “Modeling, Fabrication and Testing of Electromagnetic Bandgap-Inspired Microwave Devices for Sensor Applications”, October-2018.

Ph. D. Ongoing (03):

1. Kalindi Shinde (D17EC008), “Design and Performance Analysis of Microwave Sensing Devices to Identify Raw, Ripe and Spoilt Fruits”.
2. Rajat Paliwal (DS19EC002), Visible Light Communication
3. Ansari Fahad Bilal Zaheeruddin (D23EC004), E- Textile antenna based sensors

Process/Product Patents (02):

1. Dr. Piyush N. Patel, Arpan Shah (2024), “A Wearable Electronic Textile Device”, (India, Patent No. 553883, 05/11/2024). (Granted).
2. Dr. Piyush Patel, Paresh Sagar (2024), Metamaterial Integrated Radio Frequency Waveguide for Soil Characterization (India, Patent No. 523876, 12/03/2024). (Granted)

Design Registration Patents (06):

1. Dr. Piyush Patel, Paresh Sagar (2021), Microwave Sensor Based Soil Analyzer (India, Patent No. 333573-001). (Granted)
2. Dr. Piyush Patel, Paresh Sagar (2021), Metamaterial Based Sensor Device for Material Characterizations (India, Patent No. 344476-001). (Granted)
3. Dr. Piyush Patel, Paresh Sagar (2021), Metamaterial Based Sensor for Characterizations of Soil Properties (India, Patent No. 350760-001). (Granted)
4. Dr. Piyush Patel, Arpan Shah (2021), Wearable Textile Antenna for Telemedicine Application (India, Patent No. 352584-001). (Granted)
5. Dr. Piyush Patel, Hiren V. Dhuda (2021), Waveguide for Fusion Plasma Diagnostic (India, Patent No. 334362-001). (Granted)
6. Dr. Piyush Patel, Arpan Shah (2021), Antenna Sensor for detection of Knee Effusion (India, Patent No. 344476-001). (Granted)

Journal Publications (55):

1. Rajat Paliwal, Piyush Patel, and Ahmad Atieh, “Investigating 16QAM Signal transmission in Underwater Communication Systems Using High Power LEDs”, International journal of Communication Systems (Wiley). (Under Review)
2. G. Santra and P. N. Patel, “Designing a dual-band omnidirectional horizontally polarised patch antenna using slotted patch and ground rectangular patch and defected ground structure”, IETE Journal of Research. (Under Review)
3. G. Santra and P. N. Patel, “A novel technique to design miniaturized dual-band horizontally polarised omnidirectional antenna for Wi-Fi applications”, International Journal of Microwave and Wireless Technologies. (Under Review)
4. Kalindi S Shinde, Shweta N Shah, Piyush N Patel, “Development of a novel microwave planar sensor for the fruit quality detection using free space transmission method”, Analog Integrated Circuits and Signal Processing (AICSP), Vol. 122, no. 2, Springer, 2025. (SCI)
5. Rajat Paliwal, Piyush Patel, and Ahmad Atieh, “Investigating orthogonal frequency division multiplexing using high-power LED for visible light communication”, Microwave and Optical Technology Letters, Vol 66, Page. 8, 2024. (SCI)
6. G. Santra and P. N. Patel, “A novel dual-band horizontally polarized omnidirectional antenna using slotted ground for Wi-Fi applications.”, IETE Journal of Research, vol. 1, JUNE 2024. (SCI)
7. Kalindi S. Shindea, Shweta N. Shah, Piyush N. Patel, “Design and simulation of planar microwave sensor for food industry”, Journal of the Korean Physical Society, Springer, Vol.85, no. 1, Pages. 35-46, 2024. (SCI)
8. G. Santra and P. N. Patel, " Designing an omnidirectional horizontally polarized circular patch antenna implementing unequal open-circuited stubs”, Microwave and Optical Technology Letters, vol. 66, no. 1, January 2024. (SCI)
9. Rajat Paliwal, Piyush Patel, and Ahmad Atieh, “Implementation of 16 QAM Radio-Over-Visible Light Communication (RO-VLC) System Using High Power LEDs”, Journal of Optical Communications, vol. 1, no. 1, AUGUST 2023. (Scopus)
10. G. Santra and P. N. Patel, "Horizontally Polarized Omnidirectional Antenna Using Slotted Rectangular Patch and Defected Ground Structure”, IEEE Antennas and Wireless Propagation Letters, vol. 22, no. 4, APRIL 2023. (SCI)
11. A. Shah, P. Patel, “Embroidered Annular Elliptical E-Textile Antenna Sensor for Knee Effusion Diagnosis”, IEEE Sensors Journal, vol. 23, no. 5, pp. 4809-4818, 2023. (SCI)
12. Paresh Sagar, P. Patel, “A Planar RF-Sensor Using Concentric Complementary Open-Ring Resonator for Dielectric Characterization & On-Field Testing of Soil,” IETE Journal of Research, pp. 1-10, 2023. (SCI)
13. A. Shah, P. Patel, “Modeling and Optimization of CPW-fed E-Textile Antenna using Machine Learning Algorithms,” Progress In Electromagnetics Research C, vol. 130, pp. 31-42, 2023. (Scopus)
14. Paresh Sagar, P.N. Patel, Metamaterial Integrated Rectangular Waveguide with EM Wave Localization for Dielectric & Moisture Estimation of Soil, IEEE Sens. J. 21, 22661-22669, March 2021. (SCI)
15. Shailesh M. Gheewala, Chinthakunta Parmesh, Piyush N. Patel, & Rasika Dhavse, “Design & Development of Laser Etched Porous-Silicon Capacitive Chip for Rapid Sensing of Pesticide Solvents.” Silicon Journal, Sep. 2021. (SCI).
16. Shailesh M. Gheewala, Chinthakunta P, P. N. Patel, R. Dhavse, “Development of Micro-Machined Porous-Silicon Capacitive Chip for Quantification & Sensing of Organic Solvents.” Journal of Solid State Technology vol. 64 (2), 4725-4739, March 2021. (Scopus).
17. A. Shah, P. Patel, “E-textile slot antenna with spurious mode suppression and low SAR for medical wearable applications,” Journal of Electromagnetic Waves and Application, vol. 35 no. 16, pp. 2224-38, Nov. 2021. (SCI)
18. A. Shah, P. Patel, “Broadband CPW-fed stub loaded pot shape E-textile antenna equipped with Perfect Electric Conductor,” International Journal of RF and Microwave Computer-Aided Engineering, vol. 31, no. 05, pp. e22591, May 2021. (SCI)
19. A. Shah, P. Patel, “Suspended Embroidered Triangular E-textile Broadband antenna loaded with shorting pins,” AEU-International Journal of Electronics and Communication, vol. 130, p. 153573, Feb. 2021. (SCI)
20. Meghayu Adhvaryu, Piyush N. Patel, Chetan D Modhera, “Development of Interdigitated-Type Planar Capacitive Flex-Sensor Array for the Detection of Damages in Civil Engineering Structures”, Sensor

letters, Vol. 18, pp 1-6, August 2020. (Scopus)

21. H. V. Dhuda, P. N. Patel, and H. B. Pandya, "Modified Corrugation-Based W-Band Waveguide with Selective Notched Operation for Fusion Plasma Diagnostics," IEEE Transactions on Plasma Science, vol. 48, pp. 2502-2508, 2020. (SCI)
22. H. V. Dhuda, P. N. Patel, and H. B. Pandya, "A Constant Corrugation Circular Waveguidefor High-Pass Signal Diagnostics in ECEI System at 75–110 GHz," Journal of Infrared, Millimeter, and Terahertz Waves, 2020/06/24 2020. (SCI)
23. H. V. Dhuda, P. N. Patel, and H. B. Pandya, "Design and development of the W-band corrugated waveguide mode converter for fusion plasma experiments," International Journal of RF and Microwave Computer-Aided Engineering, vol. 30, p. e22024, 2020. (SCI)
24. H. V. Dhuda, P. N. Patel, and H. B. Pandya, "Design of Surface Defects Loaded SelectivelyNotched W-Band Waveguide Filter for Millimeter Wave Diagnostic in Fusion Reactor," Wireless Personal Communications, vol. 110, pp. 69-83, 2020/01/01 2020. (SCI)
25. Meghayu Adhvaryu, Piyush N. Patel, Chetan D. Modhera, "Apertured EBG-Based Microwave Patch Antenna for Characterization of Corrosion in Steel Rebar of Civil Structures" Sensing and Imaging, Spinger, Vol. 20 (34), pp 1-12, June-2019 (SCOPUS).
26. Ratnesh Kumari, Rahul Yadav, Piyush N. Patel, "A Complementary Patch Loaded EpsilonNegative Artificial Material to Facilitate Miniaturization of S-Band Microwave Devices", Wireless Personal Communications, Volume 107, Issue 2, pp 923-938, July 2019 (SCI).
27. Ratnesh Kumari, Piyush N. Patel, Rahul Yadav, "An ENG-Inspired Microwave Sensor and Functional Technique for Label-Free Detection of Aspergillus Niger," IEEE SensorJournal, vol. 18, no. 10, pp. 3932-3939, 2018. (SCI).
28. 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).
29. Rahul Yadav, Piyush N. Patel, V. N. Lad, "Highly Selective Colorimetric Detection of Cd2+ Ions Using Cysteamine Functionalized Gold Nanoparticles with Cross-Linked DL- Glyceraldehyde," Research on Chemical Intermediates-Springer, 1-13, Dec-2017. (SCI).
30. Rahul Yadav, Piyush N. Patel, "Characterization of High-Frequency Dielectric Laminates Using a Scanning-Probe Based on EBG Structure," IEEE Transactions on Instrumentationand Measurement, 1-9, 2017. (SCI).
31. 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).
32. 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).
33. Rahul Yadav, Piyush N. Patel, "EBG-Inspired Reconfigurable Patch Antenna for FrequencyDiversity Applications," International Journal of Electronics and Communications (AEU), vol. 76, pp. 52-59, March-2017. (SCI).
34. Ratnesh Kumari, Piyush N. Patel, "A Low-Cost Dielectric Spectroscopic System Using Metamaterial Open Horn-Ring Resonator-Inspired BSF and Detection Circuitry," AppliedPhysics A: Material Science and Processing, vol.122, pp. 1-10, June-2016. (SCI).
35. Rahul Yadav, Piyush N. Patel, "Experimental Study of Adulteration Detection in Fish OilUsing Novel PDMS Cavity Bonded EBG Inspired Patch Sensor," IEEE Sensor Journal, vol. 16, no. 11, pp. 4354-4361, June-2016. (SCI).
36. 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).
37. 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).
38. V. Mishra, P. N. Patel, Suchitra kumari, Gaurav Mishra, "Dengue NS1 Detection usedChemically Modified Porous Silicon Microcavity (PSMC)", Silicon, Springer, vol.1, issue 1, pp.1-7, April-2015 (SCI).
39. 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).

40. V. Mishra, P. N. Patel, T. Vohra, "Realization of porous silicon nano structures for Opticaldetection of petrol adulteration", Digest Journal of Nanomaterials and Biostructures (DJNB), vol. 9, No. 3, pp. 967-974, July-September 2014, ISSN 1842-3582 (SCI).
41. 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).
42. 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).
43. 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-December2012. (SCI).
44. P. N. Patel, V. Mishra, A. K. Panchal, "Nano Porous Silicon Microcavity Optical BiosensorDevice for Glucose Detection", Digest Journal of Nanomaterials and Biostructures (DJNB), vol. 7, No. 3, pp. 973-982, ISSN 1842-3582, September-2012. (SCI).
45. 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).
46. 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).
47. V. Mishra, Vinay Verma, A. S. Mandloi, P. N. Patel, "A heuristic algorithm for reducingwavelength number of optical WDM networks", Optik - International Journal for Light andElectron Optics, vol. 122, no. 22, pp. 1971-1974, ISSN: 0030-4026 November-2011. (SCI).
48. 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).
49. 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)
50. 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).
51. B. Prasanth, Piyush N Patel, Keta Raval, "Advanced optical communication system designwith 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.
52. 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.
53. 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.
54. 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.
55. P. N. Patel, Vivekanand Mishra, "Simulations and Analysis of Nano Scale Porous SiliconStructures 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.
56. 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.
57. 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.

58. 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.

Conference Publications (25):

1. Jobin Dann, Piyush N. Patel, “Design and Performance Analysis of MIMO VLC for Vehicular Communication Systems”, 3rd International Conference PCEMS-2024, 11-12 November 2024.
2. Jobin Dann, Piyush N. Patel, “Performance and Design Analysis of Visible Light Communication Systems amidst Optical Background Noise Utilizing Filtering Techniques”, 3rd International Conference PCEMS-2024, 11-12 November 2024.
3. Ajay Shanmukh Goteti, Piyush Patel, “Performance Analysis of Multi-user MIMO Indoor Visible Light Communication Systems”, 2nd International Conference on the Paradigm shifts in Communication, Embedded Systems, Machine Learning and Signal Processing (PCEMS) 2023, 5-6 April2023.
4. Meghayu Adhvaryu, Piyush N. Patel, Chetan D. Modhera, "A Novel EBG Superstrated Slotted Rectangular Microwave Patch Antenna Sensor with Enhanced Gain for Non Destructive Corrosion Monitoring of Steel Rebar in Civil Structures, Virtual International Conference on Sustainable Building Materials and Construction, ICSBMC-2021.
5. Shailesh M. Gheewala, Piyush N. Patel, & Rasika Dhavse. “Macro Porous Structure Silicon Capacitive Sensor for Aqueous Methyl Alcohol.” Proceeding of the 49th International School & Conference on the Physics of Semiconductors, “Jaszowiec 2021”, 1-10 September 2021 (Selected, Journal: - Acta Physica Polonica A). (SCI, Impact factor, 0.577).
6. Gheewala S.M., Piyush N Patel, Rasika Dhavse, “Fabrication of Macro Porous Silicon Structures Using Pulsed Fiber Laser Technique for Capacitive Sensor Application”, Emerging Technology Trends in Electronics, Communication and Networking Third International Conference, ET2ECN 2020, 7-8 February 2020.
7. Paresh Sagar, Piyush Patel, “Design and Analysis of Miniaturized Double Negative Metamaterial in Microwave S-Band for Sensing Applications”, 3rd InternationalConference on Emerging Technology Trends in Electronics Communication and Networking (ET2ECN 2020), 7-8 February 2020.
8. Kalindi S. Shinde, Shweta Shah, Piyush Patel, “A review on opportunities and challenges of Nano antenna for THz communication”, IEEE International Conference On Computing, Communication, Control and Automation (ICCUBEA), PCCOE, Pune, Sept. 2019.
9. Chandresh Sindal, V. Yesu Dasu, Piyush N. Patel, “Performance Analysis of Surface Plasmon Resonance Sensor having Multi layers Structures of MoS2 and Graphene in NIRregion” 3rd International Conference on Electronics, Materials Engineering & Nano- Technology 2019 (IEMENTECH-2019), pp1-4, Kolkata, 2019.
10. Arpan Shah and Piyush N. Patel, “Compact CPW-Fed Square Ring Annular Slot Antenna for WBAN Applications”, International Conference on Communication and Signal Processing-2019, 1-4, April 2019.
11. H. V. Dhuda, P. N. Patel, and H. B. Pandya, "A Selective Notched W-Band Corrugated Bragg Reflector for Plasma Signal Diagnostics in ITER," European Microwave Conferencein Central Europe (EuMCE), pp. 66-69, May 2019.
12. Ratnesh Kumari, Piyush N. Patel, Rahul Yadav, “ENG Resonators Based Reconfigurable Microwave Filter for Stop Band Frequency Diversity”, INDICON-2017, 1-4, 2017.
13. 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.
14. 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.
15. Ratnesh Kumari, Piyush N. Patel, “A low-cost Sensitive Dielectric Spectroscopic System Inspired by Metamaterial Open Ring Resonators over Millimeter Wave Technology,” BIT’s 5th Annual Congress of AnalytiX: Emerging Trends in Analytical Science, 1, 2017.
16. 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.

17. 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.
18. 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.
19. 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.
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22. 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.
23. 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.
24. 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.
25. 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.

M. Tech. Dissertation Supervision (31):

1. Jobin Dann (P22EC003), “Design and Performance Analysis of MIMO VLC for Vehicular Communication Systems”
2. Raju Sah (P22VL015), “Design and Simulation of Cu2SnS3-based Perovskite Photodetector for NIR Detection”
3. Ajay Shanmukh Goteti (P21EC010), “Design and Performance Analysis of Multi user MIMO Indoor Visible Light Communication Systems”
4. Himanshi Soni (P20EC015), “Antenna circuit design for RFID application”.
5. Shelza Sondhi (P19EC010), “Design and Performance Analysis of Wearable Textile Antenna for Bone Crack Detection”, 2021.
6. Mr. Amit Pal (P18EC008), “Design and Performance Analysis of Metamaterial Inspired RF Sensor for Soil Moisture Measurement”, 2020.
7. Mr. Dhruv Barodia (P18EC017), “Design and Performance Analysis of Angle Interrogation and Wavelength Interrogation Inspired Surface Plasmon Resonance forSensor Applications”, 2020.
8. V. Yesu Dasu (P16EC010), “Modeling and Performance Analysis of Surface Plasmon Resonance”, 2019.
9. Aditya Reajendra Thoke (P16EC012), “Design and Fabrication of Compact Multiband Antenna”, 2019.
10. Parmesh Chinthakunta (P16EC015), “Numerical and Experimental Analysis of Porous Silicon Based Capacitive Sensors Devices, 2019.
11. Nitin Garde (P16EC008), “Design and Performance Analysis of Hybrid Reconfigurable Antenna for Wireless Application”, 2018.
12. Amit Sharma (P16EC005), “Design and Performance Analysis of Next Generation Passive Optical networks”, 2018.
13. Nitin Kumar (P15EC012), “Design and Performance Analysis of WDM Passive Optical Networks”, 2017.
14. Badisa Prasanth (P15EC009), “Design and Analysis of Different Dispersion CompensationTechniques

in Optical Fiber Communication System", 2017.

15. Mukesh Lohar (P13EC005), "Characterization of FBG as Temperature Sensors", 2016.
16. Mayank Tyagi (P14EC005), "Design and Analysis of Thermo-Optic Switch for ProtectionSwitching in Double Ring Optical Networks" 2016.
17. Paresh Sagar(P14EC015), "Design and Analysis of Metamaterial Inspired Microstrip PatchAntenna", 2016.
18. Kuldeep Tayaed (P13Vl006), "TCAD Implementation of Porous Silicon based DielectricSensor", 2015.
19. Jay Thakur (P13EC007), Pre-Silicon Verification of GSM Channels", 2015.
20. Arun G. (P13EC014), "Efficiency improvements to INTEL Reliability Verification Flowsfor Faster and Quality IP Delivery: 2015.
21. Vivek Singh (P12EC019), "Performance Analysis of CO-OFDM FSO System UnderDifferent Weather Conditions", 2014.
22. Vidushi Tiwari (P12EC014), "Fabrication and Characterization of Porous Silicon and ItsApplications as an Optical Sensor", 2014.
23. Paswan Pradeep (P12EC011) "Characterization and Application of Negative-IndexMetamaterial", 2014.
24. Jasvir Singh (P11EC001), "Performance Analysis of Optical OFDM in of Long Haul FiberLink", 2013.
25. M. Shanmugam (R10EC901), "Design and Development of SDD based Spectrometer forSurface Chemistry Measurement", 2012.
26. John D' Cruze (P10EC917), "Porous Silicon based Optical Sensor Devices", 2012.
27. Ruchi Agarawal (P10EC932), "Simulation and Analysis of Sub Carrier Multiplexing inHigh Speed Optical Transmission Line", 2012.
28. Kamal M. Captain (P09EC930), "Modelling and Fabrication of Porous Silicon for OpticalDevices and Sensor Applications", 2011.
29. Milan Chaudhary (P09EC919), "Characterization of Helical Winding Optical Waveguide with Application of WDM", 2011.
30. Amit Kumar Runiar (P09EC931), "Comparative Study of Channel Scheduling Algorithmsin Optical Burst Switching Networks", 2011.
31. Vinay Verma (P08EC920), "Study of Different RWA Algorithms and ComparativeAnalysis of Call Blocking in All Optical Networks", 2010.

Expert/Guest/Invited Lectures:

- Delivered more than 20 expert/guest/invited talks on the modern areas of electronics and communication engineering such as Drone Sensors, Antenna based Sensors and Applications, Porous Silicon: Fabrication and Characterizations, Photonics Devices & Sensors, Recent Advancements in Optical Sensors, WDM Components and Systems, Sensors & Transducers, Nano Scale Porous Silicon: Fundamentals to Applications, , Nano Scale Optical Sensor Devices, Photonic Bandgap Structures, Fiber Optic Sensors Fundamentals & Applications, Introduction to Fiber Optic Communication System, Research Methodology etc.

Conferences/STTPs/Workshops Organized:

- Organized 02 International Conferences and 13 STTP/FDP/Workshops in the modern area of Electronics & Communication Engineering.
- Also contributed as organizing committee member in many International Conferences and STTPs.

Editorial Board Member/ Reviewer in Journals:

- Contributed as a reviewer/editorial board member in the reputed journals such as IEEE Transactions on Test and Measurement, Frontier in Physics, Journal of optics, Optics Communications, IEEE Sensors Journal, WSEAS Transactions on Communications, WSEAS Transactions on Systems and Control, Journal of Electrical Engineering, Journal of Advanced Electrical and Computer Engineering, Journal of VLSI Design Tools and Technology, ICTACT Journal on Microelectronics, Progress in Science in Engineering Research Journal etc.

Session Chair/Reviewer/Track Chair/ Programme Committee Member in International Conferences:

- ICCCNT-2024, ICRAIE-2020, VCAS-2020, ICGTSPICC 2016, SENSORDEVICES 2016, MicroCom 2016, ICRAIE- 2016, RAECS-2015, DNCOCO-2015, MAMI 2015, SEIA-2015, ICAC3-2015, NCIET-2015, C3IT-2015, ICRTIET-2014, ET2ECN 2014, ICAECC-2014 etc.

Administrative Contribution:

- Contributed as Associate Dean R&C, Head of the Electronics Engineering Department, OBC Liaison Officer, Member-Guest House Committee, Chairman-Department NEP-2020 Implementation Committee, Co-chairman-Department NBA committee, Chairman-Department Magazine Committee, Chairman - Department Research & Consultancy Committee, Chairman-Department Scrutiny Committee Faculty Recruitment, Member-Committee for procurement for workstation under seed money grant, Chairman-IEEE Student's Council, Chairman-CEV student chapter, Member-Committee for Implementation of Electronic surveillance-based security system, In charge- Department PhD and M. Tech. (CS), Chairman-Children Felicitation Programme, Administrator-ERP-SMILE Project, Faculty Verification Officer-CCMT Admission, Member-JoSAA-admission and many more Institute and Department level academic and administrative committees.

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