

## Bio Data

### **Dr. Abhilash Mandloi**

#### **Associate Professor**

Department of Electronics Engineering,  
S. V. National Institute of Technology  
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### **Qualification:**

- Ph. D (year 2016) from SVNIT Surat.  
Thesis Title: “*Segmentation based Channel Scheduling Algorithms with FDLs for Improving Channel Utilization in Optical Burst Switching*”.
- M. Tech. (Digital Communication) in 2006 from MANIT Bhopal with 8.01 CGPA.
- B. E. (Electronics and Communication Engineering) in 2001 from UIT (BU), Bhopal with 72.3 %

### **Research Area of Interest:**

- Optical communication and Networks
- Communication systems
- Free space optics, Li-Fi systems
- Photonic Devices
- Antenna Design of 5G and mm wave applications
- ML and AI for communication systems
- Video Processing and compression

### **Professional Experience:**

Total: 16 Years of Teaching and Research Experience

S. No	Post	Department	Organization	From	To
01	Associate Professor	Electronics Engineering	SVNIT, Surat	20.12.2023	Continue

02	Asst. Professor	Electronics Engineering	SVNIT, Surat	29.01.2019	19.12.2023
03	Assistant Professor (Level 10)	Electronics Engineering	SVNIT, Surat	06.08.2007	28.01.2019

### **Subjects Taught at PG Level (Last Five Years):**

- Optical Networks (M.Tech)
- Advance Optical Communication Systems (M.Tech)
- Digital Satellite Communications

### **Subjects Taught at UG Level (Last Five Years):**

- Electronic Instrumentation
- Satellite Communication
- Digital Circuits
- Optical wireless communications
- Optical Fiber Communication
- Electronic Devices and Circuits

### **Journal Publications of Last Five Years (Indexed Journals):**

#### **➤ International Journals:**

- Vasundhara, A. Mandloi, “Routing and dynamic core allocation with fragmentation optimization in EON-SDM” , Optical Fiber Technology 83 (2024) 103658, pp 1-13.
- Vasundhara, Mandloi A., “Dispersion aware first random fit spectrum allocation approach in elastic optical network (EON)” Journal of Optical Communications, 2022.
- Tripathi, A., Gupta, S., Mandloi, A., Soni, G.G. “Optically assisted mm-wave-based multi-Gbps RoFSO transmission link under channel fading models” (2022) Journal of Modern Optics, 69 (8), pp. 419-426.
- Patel, D.K., Mandloi, A. “Investigation of RS coded DP-16-QAM DWDM FSO link under various atmospheric conditions”, (2022) Optical and Quantum Electronics, 54 (1), art. no. 28.
- Srivastava, V., Mandloi, A. “Performance investigation of wavelength diversity based BPSK-SIM FSO system under Gamma–Gamma fading and misalignment error” (2021) Optical and Quantum Electronics, 53 (11), art. no. 649.
- Patel, D.K., Mandloi, A.S. “Data reliability enhancement using RS coded DP-16-QAM based FSO system under different weather conditions”, (2021), Optical and Quantum

Electronics, 53 (6), art. No. 338.

- Tripathi, A., Gupta, S., Mandloi, A. “Investigation of weather effects towards convergence of wired and wireless gigabit services over hybrid free-space optical link”, (2021), Optical Engineering, 60 (2), art. no. 026102.
- Srivastava, V., Mandloi, A., Patel, D. Analysis of Outage Probability in Wavelength Diversity Based FSO Link Under Gamma–Gamma Fading with Varying Atmospheric Attenuation, (2021) Wireless Personal Communications, 116 (3), pp. 1933-1947.
- Tripathi, A., Gupta, S., Mandloi, A. Performance of orthogonal frequency division multiplexing based 60-GHz transmission over turbulent free-space optical link, (2021) Journal of Optical Communications, DOI: 10.1515/joc-2020-0242.
- Tripathi, A., Soni, G.G., Gupta, S., Mandloi, A. An Optical Architecture of  $12 \times 2.5$  Gbps Wavelength-Interleaving Free Space Hybrid Distribution, System Under Turbulent Atmosphere (2020) Wireless Personal Communications, 115 (3), pp. 2615-2626.
- Tripathi, A., Gupta, S., Mandloi, A. “Orthogonally polarized and 60 GHz dual-channel based  $18 \times 2.5$  Gb/s DWDM-interleaved hybrid FSO system under atmospheric turbulence” (2020), Optical and Quantum Electronics, 52 (4), art. no. 220.
- Tripathi, A., Gupta, S., Mandloi, A., Soni, G.G., “An investigation of 16-QAM signal transmission over turbulent RoFSO link modeled by gamma-gamma distribution”, (2020) Journal of Optical Communications. DOI: 10.1515/joc-2020-0126.
- Srivastava, V., Mandloi, A., Patel, D.K. “Comparative analysis of SISO and wavelength diversity-based FSO systems at different transmitter power levels” (2020) Journal of Optical Communications, DOI: 10.1515/joc-2020-0119.
- Soni, G.G., Tripathi, A., Mandloi, A., Gupta, S. “Compensating rain induced impairments in terrestrial FSO links using aperture averaging and receiver diversity” (2019) Optical and Quantum Electronics, 51 (7), art. no. 244, DOI: 10.1007/s11082-019-1962-1.
- Srivastava, V., Mandloi, A., Soni, G.G., “Outage probability and average BER estimation of FSO system employing wavelength diversity” (2019) Optical and Quantum Electronics, 51 (7), art. no. 229
- Pradhan, D.D., Mandloi, A., “Design Optimization of EDFA for  $16 \times 10$  Gbps Data Rate DWDM System Using Different Pumping Configurations”, (2019) Wireless Personal Communications, 106 (4), pp. 2079-2086.
- Soni, G.G., Tripathi, A., Mandloi, A., Gupta, S.,” Effect of wind pressure and modulation schemes on rain interrupted optical wireless links under tropical climates”, (2019) Optical

and Quantum Electronics, 51 (6), art. no. 172, DOI: 10.1007/s11082-019.

- Pradhan, D.D., Mandloi, A., Panda, A., Palai, G. “Efficient hetero amplifier for DWDM system” (2019) Optik, Vol. 179, pp. 315-322.
- Tripathi, A., Soni, G.G., Gupta, S., Mandloi, A.S., “Experimental investigation of wind and temperature induced scintillation effect on optical wireless communication link”, (2019) Optik, 178, pp. 1248-1254.
- Soni, G., Mandloi, A., Gupta, S.,” Feasibility Analysis of Optical Wireless Communication for Indian Tropical and Subtropical Climates” (2019) Journal of Optical Communications, DOI: 10.1515/joc-2019-0235.
- Pradhan, D.D., Mandloi, A., “Performance Analysis of Flat Gain Wideband Raman Amplifier for S+C and C+L Band DWDM System”, (2018) Advances in Opto Electronics, 2018, art. no. 5703805, DOI: 10.1155/2018/5703805.
- 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.
- 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.

#### **International/National Conferences (India and Abroad):**

- Vasundhara, Abhilash Mandloi, M. C. Patel, Fragmentation Coefficient (FC) conscious routing, core and spectrum allocation in SDM, EON based on multi core fiber: 2<sup>ND</sup> International Conference, PCEMS-2023, VNIT Nagpur, 5-6 April, 2023.
- Dhiraj Kumar Patel, Abhilash Mandloi, Varun Srivastava, Abhishek Tripathi , “Investigation of RS-Code DP-QPSK enabled FSO Communication Link under various Atmospheric Conditions” , 2022/7/20 Conference 2022 13th International Symposium on Communication Systems, Networks and Digital Signal Processing (CSNDSP), Pages 223-228 Publisher IEEE, Portugal Pourto.
- Srivastava, V., Mandloi, A., Patel, D., Shah, P., “Performance Analysis of Negative Exponential Turbulent FSO Links with Wavelength Diversity” (2020) 2020 12th International Symposium on Communication Systems, Networks and Digital Signal Processing, CSNDSP 2020, art. no. 9249618, Pourto, Portugal.
- Pradhan, D.D., Mandloi, A. “Parabolic pulse generation at 1550nm Raman amplifier

utilizing high power pump laser” (2020) Lecture Notes in Electrical Engineering, 546, pp. 253-259. OWT 2018, LNEE, volume 546, 12 April 2019.

- Pradhan, D., Mandloi, A., Shaikh, S., “ Performance analysis of  $32 \times 10$  Gbps WDM system based on hybrid amplifier at different transmission length and dispersion”, (2018) Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, LNICST, 220 LNICST, pp. 225-229.
- D. Pradhan, Abhilash Mandloi , "Performance analysis of backward multi pumped Raman amplifier in DWDM system, Procedia computer Science, Volume 115, 2017, Pages 182-187
- D. Pradhan, Abhilash Mandloi, "Efficient utilization of Er<sup>+3</sup>-Yb<sup>+3</sup>/Raman Hybrid amplifier for 40Gbps data rate WDM system”, International Conference on Fiber Optics and Photonics 2018, FP003, December 12-15.
- Girish Soni, Abhilash Mandloi, N. Nayak, , Abhishek Tripathi, Shilpi Gupta, “Experimental Analysis of Rain Induced Attenuation for Free Space Optical Links”, 41<sup>st</sup> OSI, ICOAP-2017, DoP, GJUST Hisar, PP 134-138, Article number OP-60
- D. Pradhan, Abhilash Mandloi , "Design optimization of EDFA in DWDM system, the International Conference on Fiber Optics and Photonics 2016, IIT Kanpur, Optical Society of America, Tu4A.54.
- Sudheer, V.V., Mandloi, A., “ Enhanced coherent optical OFDM FSO link using diversity for different weather conditions” (2017) 2016 IEEE International Conference on Recent Trends in Electronics, Information and Communication Technology, RTEICT 2016 - Proceedings, art. no. 7808026, pp. 1221-1225
- 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.
- A Sankaliya, V Mishra, Abhilash Mandloi “Implementation of Cryptographic Algorithms for GSM Cellular Standard” National conference on Knowledge Intelligence and Telematics (KITE), Ganpat University, U.V. Patel college of Engg, Mehsana, Guj.
- 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.

- IEEE Sensors Journal
- Optical and Quantum Electronics
- International Journal of Light and Electron Optics
- Journal of Optical Communications
- Journal of Geography, Environment and Earth Science
- Wireless Personal Communications
- Discover Electronics
- Asian Journal of Research in Computer Science
- Journal of the National Science Foundation of Sri Lanka

#### **Short Term Training Programmes/Workshops/International Conferences organized:**

- One day Hindi Workshop for the nominated teaching staff of SVNIT on 29<sup>th</sup> April, 2024 sponsored by SVNIT-Surat.
- One day Hindi workshop for the nominated non-teaching staff of SVNIT on 13<sup>th</sup> March, 2024, sponsored by SVNIT-Surat.
- Two days' self-sponsored online Workshop on "Research Paper Writing in Hindi" On 23<sup>rd</sup>-24<sup>th</sup> March-2023.
- One Week online ATAL Sponsored FDP On "Photonics and Its Application" From 14/02/2022 To 18/02/2022 at SVNIT.
- TEQIP II Sponsored One Week STTP on Recent Trends in Optical Engineering 19<sup>th</sup> To 23<sup>rd</sup> October, 2020
- One Week Self Sponsored Short Term Training Program on Recent Advancements In Communication Networks And Systems, From 2<sup>nd</sup> - 6<sup>th</sup> Feb, 2018.
- TEQIP II sponsored One week STTP on "Holistic empowerment in Education, Roll of Teachers" as co-coordinator" from 12<sup>th</sup>-16<sup>th</sup> September, 2016 organized by DECE, SVNIT
- TEQIP II Sponsored Two Days Finishing School on Photonic Integrated Circuits On 8<sup>th</sup> - 9<sup>th</sup> June, 2015.
- TEQIP II Sponsored Three Days Workshop on Recent Advancements in Antennas And Metamaterials During 27<sup>th</sup> To 29<sup>th</sup> March, 2014.
- TEQIP II Sponsored One Week STTP on Wireless and Optical Communications, June 24<sup>th</sup>- 28<sup>th</sup> –June 2013 Sponsored By TEQIP II, At ECED SVNIT Surat.
- TEQIP II Sponsored Three Days Workshop on RECENT ADVANCEMENTS IN OPTICAL ENGINEERING, 26-28<sup>th</sup> December 2013.
- Two Week ISTE Sponsored Workshop on Basic Electronics at SVNIT Surat, From 28<sup>th</sup>

June-July 8<sup>th</sup> 2011.

- 4<sup>th</sup> International conference ET2ECN2021 (online) organized by Department of Electronics Engineering, SVNIT-Surat as General Chair during November 2021.

**STTP/FDPs attended:**

- STTP on PLC programming in CITD Hyderabad from 24<sup>th</sup> Dec-29<sup>th</sup> Dec 2007 at CITD Hyderabad.
- AICTE sponsored Induction training at SVNIT Surat by EQUATE, 15<sup>th</sup>- 17<sup>th</sup> January, 2008.
- STTP on Pedagogy at SVNIT, organized EQUATE, New Delhi, 12<sup>th</sup>-15<sup>th</sup> May 2008.
- Research methodology at SVNIT SURAT organized by EQUATE, from 16/5/2008 to 17/5/2008.
- AICTE sponsored STTP on Advanced Engineering Optimization through Intelligent Techniques, 13<sup>th</sup> -17<sup>th</sup> July, 2009. Organized by MED, SVNIT Surat.
- AICTE sponsored STTP on, Optics and Photonics, organized by APD, SVNIT Surat from 22-26 Feb, 2010.
- One week ISTE sponsored coordinator workshop on basic electronics at IIT Bombay from 1<sup>st</sup> to 5<sup>th</sup> march 2011.
- TEQIP II Sponsored one week STTP on Rajbhasha Niyam and Software Training organized by SVNIT Surat from 9-13 June 2014.
- University of Pune sponsored three day workshop on “Network simulator 2 for communication” from 23<sup>rd</sup>-25<sup>th</sup> February, 2012, organized by DYPIET Pune
- TEQIP II sponsored short term training program on “Design of experiment and artificial neural network”, organized by Chemical Engineering Department, SVNIT, Surat from 22<sup>nd</sup> – 26<sup>th</sup> June , 2015.
- TEQIP II sponsored short term training program on “Design of experiment and artificial neural network”, organized by Chemical Engineering Department, SVNIT, Surat from 22<sup>nd</sup> – 26<sup>th</sup> June , 2015.
- STTP on Transforming engineering education system to match global standards-objective and outcome based education system, by EQUATE New Delhi from 2<sup>nd</sup> – 5<sup>th</sup> June, 2015 at SVNIT Surat.
- AICTE sponsored STTP on Microwave integrated circuits organized by Electronics Engineering Department, SVNIT, Surat, from 16<sup>th</sup>- 20<sup>th</sup> June 2008.
- Self sponsored STTP on “waste to wealth” organized by DoCHE NIT SURAT from 26<sup>th</sup>- 30<sup>th</sup> sept. 2016.



- TEQIP-II sponsored STTP on “Mathematical Modeling and Simulation” by DOME, SVNIT DURING 21<sup>st</sup>-26<sup>th</sup> June, 2016.
- CET IIT KHRAGPUR sponsored workshop on “Outcome based teaching and learning” at SVNIT Surat from 3<sup>rd</sup>-6<sup>th</sup> June, 2016.
- TEQIP-II sponsored STTP on Advances in control & instrumentation engineering during 12<sup>th</sup>-16<sup>th</sup> Dec, 2016, organized by DOEE, SVNIT.
- Self sponsored STTP on “Life Long Researcher” during 5<sup>th</sup>-9<sup>th</sup> March, 2018 organised by DoME, SVNIT-Surat.
- TEQIP-III sponsored STTP on “Research methodology and Academic Engg.” from 1<sup>st</sup>-7<sup>th</sup> Jily-2019 organized by DOCHE, NIT Surat

### **Ph.D Supervision (Completed):**

- Gireesh Soni (D16EC007): Thesis Title: “Experimental Investigation of Optical Wireless Links under Heavy Rain Weather Conditions”, Year 2021.
- Dipika Pradhan (D14EC004): Thesis Title: “Experimental Analysis of Erbium Doped Fiber Amplifier and Design Optimization of EDFA, Raman, TDFA and Hybrid Amplifier for DWDM system, Year 2021”.
- Varun Shrivastava (DS16EC004) Thesis Title: “Performance analysis of FSO systems with wavelength Diversity under Turbulent Atmospheric Conditions” Year 2022.
- Abhishek Tripathi (D17EC002) Thesis Title: “Experimental Investigation of Optical Wireless Links under Heavy Rain Weather Conditions”, Year 2023.
- Dhiraj Patel (D17EC005): Thesis Title: “Investigation of Forward Error Correction Enabled Free Space Optical Link for High Data Rate Transmission
- Ongoing Ph.D Supervision : Four (04)
  - M.Tech Dissertation Guided** : Twenty one (21)
  - B.Tech Projects guided** : Twenty three (23)

### **Book chapters:**

Chapter Name	Author Name	Book Name	Publisher Name	Year	ISSN/ ISBN/pages
Generation of 1550 nm Raman Amplifier Utilizing High Power Pump Laser	Dipika Pradhan and Abhilash Mandloi	Optical and wireless Technologies	Springer	2020	ISBN: 978-981-16-2818-4



Acoustics in Optical Fiber	Abhilash Mandloi and Vivekanand Mishra	Modeling and Measurement Methods for Acoustic Waves and for Acoustic Micro devices	Intech open	2013	ISBN978-953-51-1189-4
Future Internet Technologies and Trends	Dipika Pradhan, Abhilash Mandloi, and Sajid Shaikh	Future Internet Technologies and Trends	Springer	2017	ISSN 1867-8211
Applications of Machine Learning and 5G New Radio Vehicle-to-Everything Communication in Smart Cities	Raunit Raj, Amit Kumar, Abhilash Mandloi, Raghavendra Pal	Internet of Everything for Smart City and Smart Healthcare Applications	Springer Nature Switzerland	2024	75-92

### **Professional Body Memberships:**

- Life member - Institute of Electronics & Telecommunications (IETE)
- Member IEEE

### **Patents:**

- Design Patent entitled Trainer Kit: Number: 364384-001 Date of Issue: 23/03/2023 1.Sardar Vallabhbhai National Institute of Technology 2. Abhishek Tripathi 3.Gireesh G. Soni 4.Shilpi Gupta 5.Abhilash Mandloi, issued by Government of India.
- Design Patent entitled Laser Diode Mount: Number: 357679-001 in the name of 1.Sardar Vallabhbhai National Institute of Technology 2.Abhishek Tripathi 3.Gireesh G. Soni 4.Shilpi Gupta 5.Abhilash Mandloi, Date of Issue: 09/03/2023, , issued by Government of India.
- Design Patent entitled Indoor Rainfall Testbed, Number: 367903-001 , 1.Sardar Vallabhbhai National Institute Of Technology 2. Gireesh G. Soni 3.Abhishek Tripathi 4.Abhilash Mandloi 5.Shilpi Gupta, date of grant: 02/02/2023, issued by Government of India.
- Design Patent: Atmospheric Turbulence Chamber: Number: 360949-001 warded on 21.03.2022 by Government of India: Abhishek Tripathi, Shilpi Gupta, Abhilash Mandloi,

Girish Soni, issued by Government of India.

- Innovation patent entitled “System And Method of Polarization Shift Keying Signaling With Wavelength Diversity for Free Space Optics” Abhilash Mandloi, Varun Srivastava , Dhiraj Kumar Patel , Tarun Kumar Gupta,
- **Major Institute Level Portfolios (SVNIT):**
  - Presently acting as Faculty in charge Hindi Cell since 01-03-2022: [Continue]
  - Chief Warden Bhabha Bhavan Hostel (year 2018-2020)
  - Prof. In charge gardening and campus beautification (year 2018-2019, 1.5 years)
  - Chief Warden Bhabha Bhavan Hostel (year 2016-2018)
  - Chief Warden Bhabha Bhavan Hostel (year 2014-2016)
  - Warden Bhabha Bhavan Hostel (year 2012-2014)
  - Warden Gajjar Bhavan Hostel (year 2010-2012)
  - Associate Warden Raman Bhavan hostel (year 2007-2010)

**Department Level portfolios (ongoing) :**

**Presently holding Position of (2023 onwards, ongoing)**

- PG In charge M.Tech (CS)
- Lab In charge: Microwave and Optical Lab
- Lab Co In charge: Sensor Research Lab
- I-STEM Departmental Nodal officer
- Departmental Purchase committee co chairman
- In charge: Departmental Xerox room facility

**Departmental portfolios held:**

- Lab In charge, Microwave and Optical Lab (2021-23)
- Ph.D co-In charge (2021-23)
- Departmental Purchase committee co chairman (four years) (2019-2023)
- I-STEM Departmental Nodal officer (2022-23)
- Lab co in charge, Basic Electronics Lab (six years)
- Departmental Exam Coordinator (five years)
- DAAC Secretary, DECE (two years)
- Lab co in charge: sensor research lab (four years)
- IEEE Students chapter committee member (two times)
- Lab co in charge: Electronic circuit lab
- Coordinator industry interaction

- Coordinator industry tour, expert lecture, internship
- In charge multimedia room, DECE
- Departmental TEQIP II coordinator

**Other Contributions and activities:**

- Acted as in-charge Head DECE for one month during the Covid 19 pandemic. This is one of the longest duration for in-charge headship of the Department of Electronics Engineering, SVNIT.
- I have delivered several expert lectures in Short term training programmes and in faculty development programmes at SVNIT and other Engineering Institutes.
- Session chairs in many International and national conferences at Institutes of repute.
- Technical program committee (TPC) member in many reputed Scopus International conferences.
- Acted as Honorary Secretary for IETE Surat Sub centre during 2020-2022
- Acted as zonal and officer and preceding officer in various parliamentary and assembly elections.
- Vice Chairman for IETE Surat Sub centre during 2022-24
- Acted as Ph.D research committee member for at Gujarat Technical University for several students.
- I have been Ph.D thesis reviewer for several central and state universities.
- I have been M.Tech external examiner in other NITs and state university and engineering colleges.
- Worked as Observer in NEET and JEE examination.
- I have acted as Book Reviewer to some books in the subject of optical fiber communication.
- Result verification committee member for 05 years.
- Chairman for various Ph.D credit seminar and M.Tech dissertation exams at other Departments in SVNIT-Surat
- Anti ragging committee member for six years
- Anti ragging squad member for five years
- Scrutiny committee member for non teaching recruitment 2022 and 2023
- SPARSH and Mind bend committee member
- Member-Department Ph.D. and PG Admission Committee.
- Verifying officer -JoSAA Admission Committee 2022 and 2023.
- Verifying officer-CCMT Admission Committee, 2014

- Member-Institute level Physical Stock Verification Committee 2014, 2015, 2019, 2021, 2022, and 2023.
- Executive Body Member of IETE, Surat Centre