

डॉ. अमितेश कुमार

(संयुक्त प्राध्यपक)

इलेक्ट्रॉनिक्स अभियांत्रिकी विभाग, भारतीय प्रौद्योगिकी संस्थान
(भारतीय खनि विद्यापीठ) धनबाद, भारत

DR. AMITESH KUMAR

(Associate Professor)

Department of Electronics Engineering,
Indian Institute of Technology (Indian
School of Mines) Dhanbad, India



Contact Information:

Website: https://www.iitism.ac.in/current_faculty_details

Email: amitesh@iitism.ac.in; amitesh.ism@gmail.com

Phone: (+91) 9431166555, (0326) 2235759; Fax: (0326) 2414 6217

Research Interests:

- ✱ **Fiber Optic Sensors**
- ✱ **Microwave Photonics**
- ✱ **Radio-over fiber technologies for 5G and beyond**
- ✱ **Photonic Integrated Circuits.**

Educational qualification:

Degree	Year of Passing	Subject	Institute/University
Bachelor of Engineering (BE)	2008	Electronics and Communication Engineering	Magadh University, Bodh Gaya, India
Master of Technology (M. Tech)	2010	Electronics and Communication Engineering	Indian Institute of Technology (Indian School of Mines) Dhanbad, India.
Ph.D	2017	Microwave Photonics	Indian Institute of Technology (Indian School of Mines) Dhanbad, India.

Ph.D thesis title, Guide's Name, Institute/Organization/University, Year of Award:

Studies on Microwave Photonic Devies, Prof. Vishnu Priye, IIT (ISM) Dhanbad, 2017.

Work Experience:

Organization	Positions held/Pay band	From	To
Indian Institute of Technology (ISM) Dhanbad, India (Under MHRD, Govt. of India)	Associate Professor	13/04/2022	Continuing
	Assistant Professor (Pay band: PB-4)	10/06/2021	12/04/2022
	Assistant Professor (Grade-II & I)	27/12/ 2011	09/06/2021
National Institute of Technology, Jamshedpur, India (Under MHRD, Govt. of India)	Assistant Professor	15/04/2011	26/12/ 2011

Award/Professional Accomplishment/Recognitions:

- * Mentored a Ph.D. student who won the **SRISTI Gandhian Young Technological Innovation Award 2020** for the project Psychophysiological Monitoring of a Subject using Optical Respiration Rate Measurement System.
- * Senior Member IEEE
- * Senior Member OPTICA (formerly Optical Society of America)
- * **Reviewer:** IEEE Transactions on Instrumentation and Measurement, IEEE Sensors, Optics Express, Applied Optics, etc.

Research work and funding from external/internal agencies:

- * Principal Investigator of the research project entitled " Microseismic Wave Detection in Coal Mines Using Fiber Optic Geophones for Artificial Intelligence-Based Structural Health Monitoring", funded by TEXMiN under Department of Science and Technology (DST), Government of India. **Recommended grant: Rs. 16 Lakhs (Ongoing)**
- * Principal Investigator of the research project entitled " Design and Development of Artificial Intelligence Based Fiber Optic Respiration Rate Measurement System for Psychophysiological Health Monitoring", funded by SERB, Department of Science and Technology (DST), Government of India. **Recommended grant: Rs. 21 Lakhs (Completed)**
- * Principal Investigator of the research project entitled " Design and Development of Non- Invasive Optical Respiration Rate Measurement System for Psychophysiological Health Monitoring in MRI Environment", funded by the Department of Biotechnology, Ministry of Science and Technology, Government of India. **Recommended grant: Rs. 18.359 Lakhs (Completed)**
- * Co-Principal Investigator of the research project entitled "FIST-2019 Project of Department of Electronics Engineering", funded by the Department of Science and Technology (DST), Government of India. **Sanctioned grant: Rs. 190 Lakhs (Completed)**
- * Principal Investigator of the research project entitled "Study On Opto-electronics Devices And System Processing Signals at Microwave Frequencies", funded by IIT (ISM) Dhanbad under the Faculty Research Scheme. **Sanctioned grant: Rs. 8.0 lakhs (Completed)**
- * Principal Investigator of the minor research project on "Analysis of Chromatic Dispersion in Radio over Fiber System", funded by TEQIP-III. **Sanctioned grant: Rs. 2.31 lakhs (Completed)**
- * Member project implementation group of the research project entitled "Optical Sensors Based Traffic Weighbridge", funded by the Department of Science and Technology (DST), Government of India. **Sanctioned grant: Rs. 42.39 lakhs (Completed).**

Ph. D. Supervision (Supervised/Ongoing): 12

S. N	Name of research scholars	Research area of Ph. D. Work	Status of work/ Sole or Joint
(i)	Dr. Saurabh Agarwal	Design and Modeling of MOEMS Photonic Crystal Waveguide Based Devices	Completed
(ii)	Dr. Abhinav Gautam	Fiber Optic Sensors	Completed
(iii)	Dr. Annapurna Kumari	Microwave Photonic Measurements	Completed
(iv)	Dr. Deep Pal	Advanced Optical Sensors for Biomedical Applications: A Machine Learning Approach	Completed
(v)	Dr. Randhir Kumar Sah	Development of Fiber Bragg Grating Based Sensors for Structural Health Monitoring	Completed
(vi)	Mr. Sumit Sagar	Design and Optoelectronic Analysis of III-V Semiconductor-Based Thin-Film and Nanowire Solar Cells	Pre-submission completed
(vii)	Mrs. Kritika Awasthi	Silicon Photonics	Joint
(viii)	Mrs. Kavita Jha	Microwave Photonics	Sole
(ix)	Mr. Sanjay Kumar Gupta	Design of Fiber Optic Sensors for Structural Health Monitoring of Underground Coal Mines	Sole

(x)	Mr. Jaskaran Singh Phull	Microwave Photonic Sensors	Sole
(xi)	Mr. Ashish Ranjan Yadav	Fiber Optic Bio-sensors	Sole
(xii)	Mr. Shashi Kumar	PIC based Microwave Photonic Sensors	Sole

Supervised M. Tech Dissertations: 23

S. N	Name of the Students	Title of Master Thesis Guided	Year of Completion
(xxiii)	Ms. Geetha Mandalapu	Design of Diaphragm-coupled Fiber Optic Bio-sensors	2026
(xxii)	Mr. Saurav Suman	Design and Analysis of Different Types Of Ring Modulators for Microwave Photonic Links	2026
(xxi)	Ms. Ilika Mitra	Frequency Multiplication for FMCW Photonic Radar System	2025
(xix)	Mr. Vikas Kumar	Body Posture Monitoring using Fiber Optic Sensors	2024
(xx)	Ms. Sakshi Basangar	Detection of Milk Fat Adulteration using Fiber Optic Sensor	2024
(xviii)	Mr. Suman Saurav	Design of FBG FP Based Fiber Optic Sensors.	2023
(xvi)	Ms. Jyoti Kumari	Study on Range Detection using FMCW Lidar	2022
(xvii)	Mr. Pradeep Tomar	Design of Hand Glove to Count 1 to 10 in ASL using OTDR	2022
(xv)	Mr. Amit Kumar Mandal	Microwave Photonics Based Optical Sensing	2021
(xii)	Mr. Kumar Kinjalk	Fiber Bragg Grating Based Optical Sensors	2020
(xiii)	Ms. Tanooja Mishra	Microwave Photonic Filters and its Performance Analysis for Digital Modulation Schemes	2020
(xiv)	Ms. Kumari Akansha	Microwave Photonics Based Sensing using Multiplexed Fiber Bragg Gratings	2020
(xi)	Mr. N. Arun Revanth	Design and Analysis of Phase Noise Measurement Technique	2019
(viii)	Ms. Anuradha Kumari	Study on High-Frequency Electric Field Measurement Using Electro-Optic Sensor	2018
(ix)	Mr. Pankaj Patel	Microwave Photonic Filters Based On Coherent Detection of sidebands	2018
(x)	Mr. Pritam Paul	Microwave Phase Noise Measurement Using Photonic Methods	2018
(v)	Ms. Anju kumari	Study on Multiple Microwave Frequency Measurement Using Photonic Technique	2017
(vi)	Mr. Uttam Chetri	Study on Silicon Nanowire Optical Waveguides	2017
(vii)	Mr. Nikhil Bhatwalka	Development of Multimode Tracking Feed and Shaping Algorithm for Cassegrain Antenna	2017
(iii)	Mr. Abhinav Gautam	Microwave Photonic Filters using FBG and its Application in Pipeline Sensing Architectures	2016
(iv)	Mr. Akash Uchani	Modelling and Analysis of FBG Based Temperature Sensor for Centralized Cooling System	2016
(ii)	Mr. Ritu Raj Singh	Study of Microwave Photonic Frequency Measurements	2015
(i)	Mr. Santosh Kumar Shukla	Study of Microwave photonic Filter	2014

Administrative/ Professional Activities at IIT (ISM) Dhanbad:

✳ **Convener DPGC-Department of Electronics Engineering**

- * **Member DPGC, and PG program coordinator (Optical Communication and Integrated Photonics) till June, 2026**
- * **Member DFSC**
- * **Convener DUGC-Department of Electronics Engineering till October, 2024**
- * **Associate Dean (Faculty) – Administration & Career Progression till October, 2023**
- * **Faculty In-charge of Electronics and IoT lab, NVCTI, IIT (ISM) Dhanbad till May, 2024**
- * **Coordinator MPDI, NVCTI, IIT(ISM), Dhanbad till April 9, 2023**
- * **Chief Warden Jasper hostel (Capacity 1200 rooms) till June, 2022**
- * **Member Central time-table committee till May, 2022**
- * **FIC Departmental time-table till May, 2022.**
- * **Member M. Tech. Admission committee at IIT (ISM) Dhanbad (2019-2020).**
- * **FIC training for B. Tech. ECE students (2017-2019).**
- * **Faculty Advisor, B. Tech. ECE (2015-2019).**
- * **Faculty Advisor OSA (the optical society) student chapter, IIT(ISM) Dhanbad.**
- * **Tabulator for Monsoon/Winter semester examination for B. Tech (ECE) and M. Tech (ECE) students (2013-16).**
- * **Faculty Treasurer, OSA (The International Optical Society).**
- * **Visited Rome, Italy, in February 2016 to present one research paper at the reputed 4th International Conference on Photonics, Optics and Laser Technology (PHOTOPTICS 2016).**
- * **Guided student for summer training in the ECE department.**
- * **Reviewer for the IEEE-ICMAP-15 conference.**

Countries Visited:

- * **Rome, Italy**

Workshop /Conferences Organized:

- * **Successfully organized refreshers course on Advanced Optical Communication for 6G and Beyond (2026) at IIT (ISM) Dhanbad.**
- * **Successfully organized Workshop on Fiber Optic Sensor and Its Applications WFOSA-2024 at IIT (ISM) Dhanbad.**
- * **Successfully organized IEEE International Conference on Microwave and Photonics (ICMAP-2018) in the local arrangement & hospitality chair capacity at IIT (ISM) Dhanbad.**
- * **Successfully organized RTPT- 2018 workshop under the banner of OSA & SPIE at IIT (ISM) Dhanbad.**
- * **Members of the organizing committee of the International OSA Network of Students (IONS) conference organized by the Optical Society (OSA) held at Indian Institute of Technology (ISM) Dhanbad, India, from September 7 to 10, 2016.**
- * **Served as coordinator for a three-day workshop on "Optical Communication, Network, and Photonic Devices" on 18th -20th December 2015, held at Indian Institute of Technology (ISM) Dhanbad, India.**

- * One of the organizing committee members of IEEE Technically Co-Sponsored International Conference on Microwave and Photonics 2015 (ICMAP 2015), held at ISM Dhanbad, India during 11-13 Dec 2015.
- * One of the organizing committee members of IEEE Technically Co-Sponsored International Conference on Microwave and Photonics 2013 (ICMAP 2013), held during 13-15 Dec. 2013 at ISM Dhanbad India.

Industrial Training / Workshop

- * Attended a two-day Workshop on Recent Advances in Photonics (WRAP2013) organized at IIT Delhi, December 17-18, 2013.

Courses Taught:

* *Under Graduate Level*

- Analog Communication
- Analog Interface Electronics
- Basic of Electronics Engineering
- Digital Circuit
- Electronic Devices
- Fiber Optics and Laser Instrumentation
- Microprocessors and their application
- Network Theory and filter Design

* *Post Graduate Level*

- Optoelectronics and Photonics Devices
- Advanced Optical Communication
- Microwave Photonics
- Fiber optic sensors
- Photonic Sensors

Publications:

Patents:

1. **Amitesh Kumar**, Abhinav Gautam, Jaisingh Thangaraj, and Vishnu Priye "An Optical Weighbr with Multiple Optical Load Cells Based on Cantilever Structure for Measuring Weight" Indian patent, **Application no.- 202131058195 (Granted).**
2. **Amitesh Kumar** and Randhir Kumar Sah "Temperature Independent 2-D Optical Tilt Sensor" Indian patent, **Application no.- 202531011041 (Granted).**
3. **Amitesh Kumar**, Deep Pal, Ashish Ranjan Yadav and Jaisingh Thangaraj "Pulmonary Disease Detection using FBG based Optical Spirometer" Indian patent, **Application no.- 202531041270. (Published).**
4. **Amitesh Kumar** and Sanjay Kumar Gupta "Temperature-Independent Fiber Optic Displacement Sensor for Structural Health Monitoring of Underground Coal Mine Roofs and Walls" Indian patent **(Submitted).**
5. **Amitesh Kumar**, Kritika Awasthi and Nishit Malviya "Bow-Tie Shaped Subwavelength Grating Slot Waveguide for Photonics Bio Sensing" Indian patent, **Application no. - 202631039381 (Submitted).**

International Journals:

S.N.	Name of Journal	Pub. Year	Journal Quartile	Research Paper
1.	IEEE Transactions on Instrumentation and Measurement	2022	Q1	Abhinav Gautam and Amitesh Kumar , "Highly Sensitive FBG Based Tilt Sensor Using PM-IM Conversion and EFD Interrogation Technique," in <i>IEEE Transactions on Instrumentation and Measurement</i> , Vol. 71, pp. 1-9, May 11, 2022. DOI: 10.1109/TIM.2022.3172430
2.	IEEE Transactions on Instrumentation and Measurement	2020	Q1	Kumar Kinjalk, Amitesh Kumar and Abhinav Gautam "High-Resolution FBG based Inclination Sensor using Eigen Decomposition of Reflection Spectrum," <i>IEEE Transactions on Instrumentation and Measurement</i> , vol. 69, no. 11, pp. 9124-9131, Nov. 2020. DOI: 10.1109/TIM.2020.2999116
3.	IEEE Sensors Journal	2023	Q2	Deep Pal, Amitesh Kumar , Vikas Kumar, Sakshi Basangar and Pradeep Tomar, "Development of an OTDR-Based Hand Glove Optical Sensor for Sign Language Prediction," in <i>IEEE Sensors Journal</i> , Vol. 24, No. 3, Feb. 01, 2024. DOI: 10.1109/JSEN.2023.3339963
4.	IEEE Sensors Journal	2022	Q2	Deep Pal, Amitesh Kumar , Abhinav Gautam, and Jaisingh T. "FBG Based Optical Weight Measurement System and Its Performance Enhancement Using Machine Learning", <i>IEEE Sensors Journal</i> , Vol. 22, No. 5, 1 March 1, 2022. DOI: 10.1109/JSEN.2022.3144173
5.	IEEE Sensors Journal	2020	Q2	Abhinav Gautam, Kumar Kinjalk, Amitesh Kumar and Vishnu Priye, "FBG Based Respiration Rate Sensing with Arduino Interface," <i>IEEE Sensors Journal</i> , Vol. 20, No. 16, August 15, 2020. DOI: 10.1109/JSEN.2020.2989004
6.	IEEE Sensors Journal	2020	Q2	Abhinav Gautam, Amitesh Kumar , Kumar Kinjalk, Jaisingh Thangaraj, and Vishnu Priye, "A Low-Cost FBG Based Online Weight Monitoring System," <i>IEEE Sensors Journal</i> , Vol. 20, No. 8, April 15, 2020. DOI: 10.1109/JSEN.2019.2961688
7.	Optical Fiber Technology	2022	Q2	Randhir Kumar Sah, Amitesh Kumar , Abhinav Gautam, Vinay Kumar Rajak, "Temperature independent FBG based displacement sensor for crack detection in civil structures", <i>Optical Fiber Technology</i> , Volume 74, 103137, 2022. DOI: 10.1016/j.yofte.2022.103137
8.	Optical Fiber Technology	2020	Q2	Abhinav Gautam, Amitesh Kumar , Jaisingh Thangaraj, Devendra Chack, Vishnu Priye, "Optical weight measurement system using FBG based D-IM edge filter detection", <i>Optical Fiber Technology Elsevier</i> , Nov. 2020. DOI: 10.1016/j.yofte.2020.102386
9.	Optik	2016	Q2	Abhinav Gautam, Amitesh Kumar , R.R. Singh, and Vishnu Priye, " Optical Sensing and Monitoring Architecture for Pipelines using Optical Heterodyning and FBG, Filter", <i>Optik Int. J. Light Electron Elsevier</i> Volume 127, Issue 20, (Oct. 2016) Pages 9161–9166. https://doi.org/10.1016/j.ijleo.2016.06.133
10.	Optik	2021	Q2	Annapurna Kumari, Amitesh Kumar , Abhinav Gautam, "Photonic generation and theoretical investigation of phase noise in quadrupling and 12-tupling millimeter wave Signal using optical selfheterodyne system", <i>Optik, Int. J. Light Electron Elsevier</i> , Volume 231, Feb. 2021. https://doi.org/10.1016/j.ijleo.2021.166432
11.	Journal of Biomedical Optics	2023	Q2	Deep Pal, Amitesh Kumar , Nave Avraham, Yoram Eisenbach, Yevgeny Beiderman, Sergey Agdarov, Yafim Beiderman, Zeev Zalevsky, "Noninvasive Blood Glucose Sensing by Secondary Speckle Pattern Artificial Intelligence Analyses," <i>Journal of Biomedical Optics</i> 28(8) 087001, August 2023. https://doi.org/10.1117/1.JBO.28.8.087001
12.	Journal of Biomedical Optics	2022	Q2	Deep Pal, Sergey Agadarov, Yevgeny Beiderman, Yafim Beiderman, Amitesh Kumar , Zeev Zalevsky, "Non-invasive Blood Glucose Sensing by Machine Learning of Optic Fiber-based Speckle Pattern Variation," <i>Journal of Biomedical Optics</i> 27(9) 097001, September 2022. https://doi.org/10.1117/1.JBO.27.9.097001
13.	Solar Energy	2025	Q2	Sumit Sagar, Sagar Bhattarai, Jitendra Kumar, Amitesh Kumar , Samrat Mukhopadhyay, "High-efficiency GaAs solar cells with ordered nano-

				conical frustum arrays for enhanced light trapping and photovoltaic performance", Solar Energy, Volume 288, 2025. DOI: 10.1016/j.solener.2025.113299
14.	Frontiers in Physics	2021	Q2	Sunil N. Thool, Devendra Chack and Amitesh Kumar "Coherent Detection-Based Optical OFDM, 60 GHz Radio-over-Fiber Link Using Frequency Quadrupling, and Channel and Carrier Phase Estimation" <i>Frontiers in physics</i> , 9:749497, October 2021. https://doi.org/10.3389/fphy.2021.749497
15.	Frontiers in Physics	2023	Q2	Annapurna Kumari, Amitesh Kumar and G. S. T. Reddy, "Performance analysis of the coherent FMCW photonic radar system under the influence of solar noise," <i>Frontiers in Physics</i> , Vol. 11, no. June, pp. 1–14, 2023, doi: 10.3389/fphy.2023.1215160. https://doi.org/10.3389/fphy.2023.1215160
16.	IEEE Transactions on Nanotechnology	2024	Q2	Saurabh Agarwal, Kurmendra, Chandra Prakash, Sumar Kumar Mitra, and Amitesh Kumar , " Ultra-High Quality Factor NOMS Device Incorporating Photonic Crystal Cavity for Femto-Gram Sensing," in <i>IEEE Transactions on Nanotechnology</i> , VOL. 24, pp. 1-7, 2025. DOI: 10.1109/TNANO.2024.3509444
17.	IETE Technical Review	2026	Q3	Kavita Jha, Amitesh Kumar , Randhir Kumar Sah, and Sanjay Kumar Gupta "FBG-Based Strain Sensing for Low-Weight Measurement Applications" <i>IETE Technical Review</i> 43 (5): 638–49, 2026. https://doi.org/10.1080/02564602.2026.2692720
18.	Journal of Optics	2026	Q3	Sumit Sagar, Jitendra Kumar, Amitesh Kumar and Samrat Mukhopadhyay, "Optoelectronic modeling of a thin-film InP solar cell with carrier-selective contacts and double antireflection coatings," <i>Journal of Optics</i> , 2026. https://doi.org/10.1007/s12596-026-03222-y
19.	Applied Optics	2016	Q3	Amitesh Kumar , and Vishnu Priye, "Photonic generation of high frequency millimeter-wave and transmission over optical fiber," <i>Applied Optics (OSA)</i> Vol. 55, No. 22, PP. 5830-5839, 2016. https://doi.org/10.1364/AO.55.005830
20.	Fiber and Integrated Optics	2024	Q3	Saakshi Basangar, Amitesh Kumar , Deep Pal, Kavita Jha, and Vikas Kumar, "Enhanced Detection of Milk Fat Adulteration Using SMS Fiber Sensor Enhanced Detection of Milk Fat Adulteration Using SMS Fiber Sensor," <i>Fiber and Integrated Optics</i> , Taylor & Francis, vol. 00, no. 00, pp. 1–19, 2024. https://doi.org/10.1080/01468030.2024.2442289
21.	Fiber and Integrated Optics	2025	Q3	Randhir Kumar Sah, Amitesh Kumar , and Deep Pal, "Design and Analysis of FBG-Based Vibration Sensor for Low Frequency Applications," <i>Fiber and Integrated Optics</i> , Taylor & Francis, vol. 44, no. 01, pp. 29–49, 2025. https://doi.org/10.1080/01468030.2024.2432244
22.	Applied Optics	2023	Q3	Annapurna Kumari, and Amitesh Kumar , " Impact of laser phase noise on the ranging accuracy of a cooperative MIMO FMCW photonic radar system," <i>Applied Optics (OSA)</i> Vol. 62, No. 36, PP. 9523-9535, 2023. https://doi.org/10.1364/AO.505755
23.	IETE Technical Review	2023	Q3	Kritika Awasthi, Nishit Malviya and Amitesh Kumar , "Silicon Subwavelength Grating Slot Waveguide based Optical Sensor for Label Free Detection of Fluoride Ion in Water," <i>IETE Technical Review</i> , Taylor & Francis, August 2023, doi: 10.1080/02564602.2023.2246429. https://doi.org/10.1080/02564602.2023.2246429
24.	Fiber and Integrated Optics	2020	Q3	Amitesh Kumar , Abhinav Gautam and Vishnu Priye "Microwave Photonic Mixer Using DP-DDMZM for Next Generation 5G Cellular Systems", <i>Fiber and Integrated Optics</i> , Taylor & Francis, Vol. 39 No. 4, 149-168, 2020. https://doi.org/10.1080/01468030.2020.1826068
25.	Opto-Electronics Review	2016	Q4	Amitesh Kumar , Vishnu Priye, and R.R. Singh, "All optical measurement of unknown wideband microwave frequency," <i>Opto-Electronics Review</i> , Volume 24, Issue 4, PP. 191–195, 2016. https://www.degruyterbrill.com/document/doi/10.1515/oere-2016-0021/html

26.	IETE Journal of Research	2026	Q4	Kritika Awasthi, Nishit Malviya, Amitesh Kumar , and Devendra Chack. "Optimisation Framework of Subwavelength Grating Double Slot Waveguides for Biochemical Sensing Applications" <i>IETE Journal of Research</i> 72 (4): 952–64, 2026. https://doi.org/10.1080/03772063.2025.2590749
27.	Laser Physics	2021	Q4	Devendra Chack, Shamsul Hassan and Amitesh Kumar (2021) "Broadband and Mode insensitive MMI based mode power splitter for MDM" <i>Laser Physics (IOP)</i> Volume 31, 126205, December 2021. DOI: 10.1088/1555-6611/ac312c
28.	Optical Engineering	2019	Q4	Abhinav Gautam, Amitesh Kumar , Vishnu Priye, "Microseismic wave detection in coal mines using differential optical power measurement," <i>Optical Engineering</i> . 58(5), 056111 (2019). DOI: https://doi.org/10.1117/1.OE.58.5.056111

International Conferences:

29. Presented one paper at the 4th International Conference on Photonics, Optics and Laser Technology (PHOTOPTICS 2016, 27-29 February 2016, Rome, Italy).
30. Nitu Kumari, **Amitesh Kumar** and Annapurna Kumari, "Photonic Measurement of Multiple Microwave Frequencies via Frequency Shifting and Four-Wave Mixing in a Semiconductor Optical Amplifier" , *IEEE Microwaves, Antennas, and Propagation Conference (MAPCON)*, Kochi, India, 2025.
31. Sumit Sagar, Jitendra Kumar, **Amitesh Kumar** and Samrat Mukhopadhyay, "Optical and Electrical Performance of Crossed-Ellipsoid GaAs Nanowire Solar Cells," *2025 IEEE 6th India Council International Subsections Conference (INDISCON)*, Rourkela, India, 2025.
32. Shivam Bhutiani, Ilika Mitra and **Amitesh Kumar**, "Performance analysis of an LFM-based FMCW photonic RADAR for multi-target detection," *2025 IEEE International Conference on Electronics, Computing and Communication Technologies (CONECCT)*, Bengaluru, India, 2025.
33. Sumit Sagar, Manisha Rautela, Jitendra Kumar, **Amitesh Kumar** and Samrat Mukhopadhyay, "GaAs Truncated Cone Nanowire Array-Based Solar Cells with Carrier Selective Contacts", *International Conference on Numerical Simulation of Optoelectronic Devices (NUSOD)*, New Delhi, India, 2024.
34. Deep Pal and Amitesh Kumar, "Designing Hand Glove to Predict Sign Language Using OTDR and Machine Learning", *Conference on Lasers and Electro-Optics Pacific Rim (CLEO-PR)*, Incheon, Korea, Republic of, 2024.
35. Abhinav Gautam, **Amitesh Kumar**, Vishnu Priye and Jaisingh Thangaraj, "Optical Weight Measurement System Using FBG based Edge Filter Detection Technique", *Workshop on Recent Advances in Photonics (WRAP)*, Guwahati, India, 2019.
36. Abhinav Gautam, **Amitesh Kumar**, and Vishnu Priye. "Highly sensitive FBG-based low-strain sensing system using carrier-suppressed phase modulation". SPIE Photonics West, 2 - 7 February 2019, **San Francisco, California, United States**.
37. Abhinav Gautam, Ritu Raj Singh, **Amitesh Kumar**, Jaisingh Thangaraj, Vishnu Priye. "FBG Based Optical Surveillance Network for Oil and Gas Pipelines". *Frontiers in Optics/Laser Science* 2018, 16-20 Sept. 2018, **Washington, DC, USA**.
38. Abhinav Gautam, **Amitesh Kumar**, Vishnu Priye, and Jaising Thangaraj, "Optical Weight Measurement System Using FBG based Edge Filter Detection Technique," *2019 Workshop on Recent Advances in Photonics (WRAP)*, Guwahati, India, 2019, pp. 1-3.
39. Tanooja Mishra, Abhinav Gautam, and **Amitesh Kumar** "Performance Analysis of Microwave Photonic Filter for Digital Modulation Scheme," *2019 Workshop on Recent Advances in Photonics (WRAP)*, Guwahati, India, 2019, pp. 1-3.
40. E. S. Rohit, A. Gautam, R. R. Singh, **A. Kumar**, and V. Priye, "Analysis and Optimization of Edge-Filter Interrogation Scheme for FBG Sensors," in *Frontiers in Optics / Laser Science*, OSA Technical Digest (Optical Society of America, 2018), paper JTU2A.83.
41. Gautam, R. R. Singh, **A. Kumar**, and J. Thangaraj, "FBG based sensing architecture for traffic surveillance in railways," *2018 3rd International Conference on Microwave and Photonics (ICMAP)*, Dhanbad, 2018, pp. 1-2.DOI: 10.1109/ICMAP.2018.8354567.

42. R. Kumar, **A. Kumar**, and A. Kumari, "Frequency shifter for photonic multiple microwave frequency measurement," 2018 3rd International Conference on Microwave and Photonics (ICMAP), Dhanbad, 2018, pp. 1-2.
43. **Amitesh Kumar**, and V. Priye, "Photonic generation of microwave signal using a dual-parallel dual-drive Mach-Zehnder modulator," in 12th International Conference on Fiber Optics and Photonics (Optical Society of America, 2014), paper S5A-66.
44. **Amitesh Kumar**, R. C. Vissampalli, and V. Priye, "Photonic microwave Up-converter Based on four-wave mixing in an SOA Using single laser source," in 12th International Conference on Fiber Optics and Photonics (Optical Society of America, 2014), Paper S5A-62.
45. **Amitesh Kumar**, R.R. Singh, and V. Priye, "Instantaneous microwave frequency measurement using dual-drive Mach Zehnder Modulator," IEEE Conference, pp. 1 - 4, ISBN: 978-1-4799-6499-4, Dec. 2014.
46. **Amitesh Kumar**, V. Priye, and Kowshik Moyya, "Performance analysis of photonic generated microwave signal using a dual-parallel dual-drive Mach-Zehnder modulator in Dispersive Media," 4th International Conference on Photonics, Optics, and Laser Technology (IEEE, 2016), pp. 266-271, Rome, Italy.
47. Jaisingh T, **Amitesh Kumar**, Vishnu Priye, "Heuristic Approach For Survivability in WDM Optical Networks With The Impact of Four Wave Mixing", IEEE ICMAP,13, December 2013
48. **Amitesh Kumar**, and V. Priye, "Optimization of wavelength converter in WDM networks using genetic algorithm," in IEEE International Conference on Electronics, Computing and Communication Technologies, January, (IEEE CONECCT2013 1569684119) 2013.
49. R.R. Singh, **Amitesh Kumar**, Abhinav Gautam, and Vishnu Priye, "Microwave Frequency Estimation with high Accuracy based on Mach-Zehnder Modulator and Phase Modulator", IEEE ICMAP,15, December 2015.
50. Abhinav Gautam, R.R. Singh, **Amitesh Kumar**, and Vishnu Priye, "Architecture of Optical Sensing and Monitoring for Pipelines using FBG," 3rd International Conference (RAIT 2016), March, 2016.

Book Chapter:

51. Kritika Awasthi, Nisit Malviya, **Amitesh Kumar** (2026). Subwavelength Grating Slot Waveguide Based Refractometric Chemical Sensor with Improved Sensitivity. In: Kumar, D., Kumar, S. (eds) VLSI, Microwave and Wireless Technologies. ICVMWT 2024. Lecture Notes in Electrical Engineering, vol 1484. Springer, Singapore.