

## A. Detail of Patents

### Indian Patent (Granted)

- i. Jitendra Bahadur Maurya, **Y. K. Prajapati\***, "Method to determine beam width of a dip in surface plasmon resonance sensor and its application," (Patent No.: 407708, Application No.: 201611005417, Date of Grant: 29.09.2022)
- ii. Subha Sarkar, **Yogendra Kumar Prajapati\*** and Rajeev Tripathi, "Low Power, Uniform Frequency Resolution and High Sampling Speed Arbitrary Waveform Generator," (Patent No.: 461154, Application No.: 201811032831, Date of Grant: 20.10.2023)
- iii. **Yogendra Kumar Prajapati**; Piyus Sil; Piyus, "Integrated health-monitoring device and a method of real time transfer of health condition data collected," (Patent No.: 469442, Application No: 201611025089, Date of Grant: 16.11.2023)

### Indian Patent (Published)

- i. Rajeev Kumar, Sarika Pal, **Yogendra Kumar Prajapati**, "A device for detection of an analyte," Dec.2025

### International Patent (Published)

- i. Sarika Pal, **Yogendra Kumar Prajapati**, Maneesh Kumar Singh, Vipin Kumar Verma, "A system for an improved long-range surface plasmon resonance (LR-SPR) sensor with extremely high imaging sensitivity," (App. No.: DE 202022100430U12022.03.17) Published on March, 2022.

## B. Book as an Editor

- i. R.K. Nagaria, V.S.Tripathi, C.R. Zamarreno, and Yogendra Kumar Prajapati, eds., "VLSI, Communication and Signal Processing: Select Proceedings of the 5th International Conference," VCAS 2022 (Vol. 1024), 2023. Springer Nature.
- ii. Yogendra Kumar Prajapati, Santosh Kumar, "Materials and Devices with Magneto-Optical Properties for Communication and Sensing," Magnetochemistry 2023, MDPI Publication, As a Guest Editor, ( **Impact Factor: 2.5**)

## C. Detail of Funded Research Projects

- i. "A Simulation and Experimental Study on Screening the Best Materials Combination for Specific Target Detection in Plasmonic Sensors Using Machine Learning Techniques," **Funding Agency:** Council of Science & Technology U.P., Rs. 15 Lakhs, Duration: 3 Years (2024-27) (**Status:** Ongoing) (PI),
- ii. "Design and development of a non-invasive, smart, and portable device for real-time assessment of bone fracture healing progression," **Funding Agency:** Core Research Grant, SERB, Rs. 49 Lakhs, Duration: 3 Years (2023-26) (**Status:** Ongoing) (Co-PI),
- iii. "Prototype development of a photovoltaic solar cell with a high conversion efficiency: An application of two-dimensional materials," **Funding Agency:** Council of Scientific & Industrial Research (CSIR), India, Rs. 25 Lakhs, Duration: 2 Years (2023-25) (**Status:** Completed) (PI),
- iv. To strengthen the post-graduate Teaching and Research in the Department," **Funding Agency:** DST-FIST, Rs. 1.06 Crores, (**Status:** Completed), (**Convener & PI**)
- v. "Investigations on surface plasmon resonance (SPR) based optical sensing with an emphasis on the role of spin waves and magnonics in related materials," **Funding Agency:** Core Research Grant, SERB, Rs. 20.44 Lakhs, Duration: 3 Years (2019-22) (**Status:** Completed) (Co-PI),
- vi. "Role of graphene and MoS2 on performance of surface plasmon resonance-based sensors: An application to biosensing," **Funding Agency:** Research Grant, DAE-BRNS, Rs. 24.00 Lakhs,

- Duration: 3 Years (2017-21) (Status: Completed) (PI)
- vii. "Phosphorene based fiber optic plasmonic sensor for biomedical application," Funding Agency: Collaborative Research Scheme Under NPIU Rs. 15.00 Lakhs, Duration: 3 Years (2019-22) (Status: Completed) (Co-PI)
  - viii. "Design and Analysis of Optical Waveguide for Biosensing Application," Funding Agency: Collaborative Research Scheme Under NPIU, Rs. 13.00 Lakhs, Duration: 3 Years (2019-22) (Status: Completed) (Co-PI)
  - ix. "Design and Study of Sensitivity of optical biosensors having Metamaterials", Funding Agency: ECR, SERB, Rs. 23.39 Lakhs, Duration: 3 Year (2014-17), (Status: Completed) (PI)
  - x. "Design of biosensors using metal clad for sensing application," Ref.No.146/R&C/13-14 dated on 02/09/2013, Funding Agency: Motilal Nehru National Institute of Technology (MNNIT), Allahabad, India under TEQIP-II, Duration (2013-14) (Status: Completed) (PI)
  - xi. "Simulation and numerical analysis of optical microstructure fibers: Dispersion characteristic," Ref.No.134/R&C/13-14 dated on 23/08/2013&Ref. No. 360/R & C/13-14, dated 07/03/2014, Funding Agency: Motilal Nehru National Institute of Technology (MNNIT), Allahabad, India under seed grant, Duration (2013- 14) (Status: Completed) (PI)

#### D. Publications (*List of papers published in IEEE Journals, in year wise descending order*)

1. Saumya Pandey, Harshit Shukla, Vimal Mishra, Sarika Pal, Alka Verma, **Yogendra Kumar Parajapati**, Alka Verma, "Highly Sensitive Magneto-Optical SPR Sensor Based on the Photonic Spin Hall Effect with CeYIG and Graphene," *IEEE Transactions on Magnetism*, DOI: 10.1109/TMAG.2025.3650609 (Accepted Dec. 2025) (Impact factor 2.1, Quartile Score:Q1)
2. Nitesh Kumar, Rakesh Kumar, Narendra Pal, Sarika Pal, Alka Verma, **Yogendra Kumar Parajapati**, "Advances and Strategies in the Development of High-Performance Cortisol Sensors: A Comprehensive Review," *IEEE Sensors Reviews*, DOI: 10.1109/SR.2025.3638316, 2025
3. Kumar, Rakesh, Sarika Pal, Narendra Pal, Alka Verma, Anuj K. Sharma, and **Yogendra Kumar Prajapati\***, "High-Performance SPR-PCF Sensor Using GZO/TiO<sub>2</sub> for Broad-Range Detection." *IEEE Sensors Journal*, vol. 25, no. 22, pp. 41494-41501, 15 November 2025, DOI: [10.1109/JSEN.2025.3618924](https://doi.org/10.1109/JSEN.2025.3618924), (Impact factor 4.5, Quartile Score:Q1)
4. Kumar, Vinit, Ajit Kumar, Rupam Srivastava, Anuj K. Sharma, and **Yogendra Kumar Prajapati\***, "High Magnitude Spin-Dependent Shift and Field Enhancement in BaTiO<sub>3</sub>-based Plasmonics for Quantum Photonic Applications." *IEEE Journal of Quantum Electronics*, vol no. 61, no. 5, 24 July 2025, (Impact factor 2.1, Quartile Score:Q1)
5. Kumar, Virendra, Nitesh Kumar, Sarika Pal, Bela Goyal, Anuj K. Sharma, and **Yogendra Kumar Prajapati\***, "Highly sensitive and accurate cortisol sensor based on long-range surface plasmon resonance." *IEEE Sensors Journal*, vol no. 25, no. 10, pp. 17324-17331, 03 April 2025, DOI: <https://doi.org/10.1109/JSEN.2025.3555704>, (Impact factor 4.5, Quartile Score:Q1)
6. Kumar, Vinit, Jitendra Bahadur Maurya, and **Yogendra Kumar Prajapati\***, "Piezoplasmonic System for Enhanced Photonic Spin Hall Effect for Applications in Optical Refractive Index Sensing." *IEEE Journal of Selected Topics in Quantum Electronics*, vol no. 31, no. 5, 1 April 2025, DOI: <https://doi.org/10.1109/JSTQE.2025.3556890>, (Impact factor 5.1, Quartile Score:Q1)
7. Shukla, Harshit, Alka Verma, Anuj K. Sharma, and **Yogendra Kumar Prajapati\***, "Thin Film Magneto-Optic Plasmonic Sensor with the Photonic Spin Hall Effect." *IEEE Sensors Letters*, vol no. 9, no. 4, 4 April 2025, DOI: <https://doi.org/10.1109/LSENS.2025.3547745>, (Impact factor 2.2, Quartile Score:Q1)
8. Kumar, Rajeev, Sarika Pal, Narendra Pal, Alka Verma, J. P. Saini, and **Yogendra Kumar Prajapati\***, "MXene-Enhanced Plasmonic Sensor Utilizing Planar Waveguide Modes and Long-Range Surface Plasmon Polaritons for Ultra-Sensitive Detection." *IEEE Sensors Journal*, 3

- January 2025, DOI: [10.1109/JSEN.2024.3523178](https://doi.org/10.1109/JSEN.2024.3523178) (Impact factor:4.3 ,Quartile Score:Q1)
9. Kumar, Virendra, Sarika Pal, Vivek Singh, Bela Goyal, Lalit Kumar Awasthi, and **Yogendra Kumar Prajapati\*** "On the Feasibility of Thallium Bromide in Long-Range Plasmonic Sensing for Enhancement of Performance." *IEEE Transactions on Plasma Science*, 8 October 2024 , DOI: [10.1109/TPS.2024.3468954](https://doi.org/10.1109/TPS.2024.3468954), ( Impact Factor : 1.3 ,Quartile Score:Q2)
  10. Rana, Jatin, Anuj K. Sharma, and **Yogendra Kumar Prajapati\***. "Intervention of machine learning and explainable artificial intelligence in fiber optic sensor device data for systematic and comprehensive performance-optimization." *IEEE Sensors Letters*, vol. 8, no. 10, 21 August 2024, DOI: [10.1109/LENS.2024.3445324](https://doi.org/10.1109/LENS.2024.3445324), (Impact factor 2.2 ,Quartile Score:Q2)
  11. Yesudasu, Vasimalla, Rupam Srivastava, Sarika Pal, MS Mani Rajan, and **Yogendra Kumar Prajapati\***. "Surface-Plasmon and Titanate Material-Assisted Sensor Structure for Pseudomonas Bacteria Detection With Increased Sensitivity." *IEEE Transactions on AgriFood Electronics*, 8 April 2024, DOI: [10.1109/TAFE.2024.3379378](https://doi.org/10.1109/TAFE.2024.3379378).
  12. S. Agarwal, R. Srivastava, S. Kumar and **Yogendra Kumar Prajapati\***, "COVID-19 Detection Using Contemporary Biosensors and Machine Learning Approach: A Review," *IEEE Transactions on NanoBioscience*, vol. 23, no. 2, pp. 291-299, April 2024, doi: [10.1109/TNB.2023.3342126](https://doi.org/10.1109/TNB.2023.3342126) (Impact factor: 3.9, Quartile Score: Q1)
  13. Srivastava, Rupam, Vinit Kumar, Shrayansh Tyagi, Sarika Pal, Anuj K. Sharma, and **Yogendra Kumar Prajapati\***. "On the Feasibility of Particle Swarm Optimization Method for Inverse Design of High-Performance SPR Biosensor." *IEEE Sensors Journal*, 2 April 2024, DOI:[10.1109/JSEN.2024.3381250](https://doi.org/10.1109/JSEN.2024.3381250), (Impact factor:4.3 ,Quartile Score:Q1)
  14. Harshit Tiwari; Yogendra S. Dwivedi; Rishav Singh; **Yogendra Kumar Prajapati**; Richa Krishna; Nitin Singh Singha, Anuj K Sharma, "Exploring deep learning models aimed at favorable optimization and enhancement of fiber optic sensor's performance," *IEEE Sensors Journal*, August 2023, DOI [10.1109/JSEN.2023.3296199](https://doi.org/10.1109/JSEN.2023.3296199), (Impact factor: 4.3, Quartile Score: Q1)
  15. Vinit Kumar, Rupam Srivastava, **Yogendra Kumar Prajapati\***, "Improved photonic spin Hall effect by an induced polarization gradient in anisotropy- black phosphorous and its application to NO<sub>2</sub> gas detection," *IEEE Sensors Journal*, August 2023, DOI :[10.1109/JSEN.2023.3301965](https://doi.org/10.1109/JSEN.2023.3301965) (Impact factor: 4.3, Quartile Score: Q1)
  16. Rajeev Kumar, Alka Verma, Sarika Pal, **Yogendra Kumar Prajapati\***, "Enhancing the Gas detection sensitivity of Surface Plasmon Resonance Sensor based on MXene and Black phosphorus," *IEEE Transction on Plasma Science*, Vol. 51 (6), pp. 1427-1433, June 2023,[10.1109/TPS.2023.3276371](https://doi.org/10.1109/TPS.2023.3276371). (Impact factor: 1.368, Quartile Score: Q3)
  17. Shivam Singh, **Yogendra Kumar Prajapati\***, "Novel Bottom-Side Polished PCF-Based Plasmonic Biosensor for Early Detection of Hazardous Cancerous Cells," *IEEE Transactions on Nanoscience*, vol. 22 (1), pp. 647- 654, July 2023, [https://doi:10.1109/TNB.2023.3233990](https://doi.org/10.1109/TNB.2023.3233990) (Impact factor: 2.967, Quartile Score: Q1)
  18. Maneesh Kumar Singh, Sarika Pal, and **Yogendra Kumar Prajapati\***, "Design and Analysis of an SPR Sensor based on Antimonene and Platinum for the Detection of Formalin," *IEEE Transactions on NanoBioscience*, vol. 22, no. 1, pp. 106-112, Jan. 2023, [https://doi:10.1109/TNB.2022.3159532](https://doi.org/10.1109/TNB.2022.3159532) (Impact factor: 3.9, Quartile Score: Q1)
  19. Rupam Srivastava, **Yogendra Kumar Prajapati\***, Sarika Pal, Santosh Kumar, "Micro-channel Plasmon Sensor Based on a D-Shaped Photonic Crystal Fiber for Malaria Diagnosis with Improved Performance," *IEEE Sensors Journal*, [https://DOI:10.1109/JSEN.2022.3181198](https://doi.org/10.1109/JSEN.2022.3181198) June 2022, (Impact factor: 4.3, Quartile Score: Q1)
  20. Rajeev Kumar, Sarika Pal, **Yogendra Kumar Prajapati\***, Santosh Kumar, "Sensitivity Improvement of a MXene-immobilized SPR Sensor with Ga-doped-ZnO for Biomolecules Detection," *IEEE Sensors Journal*, vol. 22, no. 7, pp. 6536-6543, April 2022. (Impact factor: 4.3, Quartile Score: Q1)
  21. V.A. Popescu, **Yogendra Kumar Prajapati**, Anuj K. Sharma, "Highly Sensitive Magnetic Field Detection in Infrared Region with Photonic Spin Hall Effect in Silicon Waveguide Plasmonic

- Sensor," *IEEE Transactions on Magnetics*, Vol. 57, no. 10, pp. 4002210, August 2021. <https://doi.org/10.1109/TMAG.2021.3103651> (Impact factor: 2.1, Quartile Score: Q2)
22. [14]. Maneesh Kumar Singh, Sarika Pal, **Yogendra Kumar Prajapati**, J.P. Saini, "Sensitivity Improvement of Surface Plasmon Resonance Sensor on using BlueP/MoS<sub>2</sub> Heterostructure and Antimonene," *IEEE Sensors Letters*, vol.4, no. 7, pp. 1-4, July 2020, <https://doi.org/10.1109/LENS.2020.3005942> (Impact factor: 2.8, Quartile Score: Q2)
  23. J. B. Maurya, **Yogendra Kumar Prajapati**<sup>\*</sup>, "Experimental Demonstration of DNA Hybridization Using Graphene-Based Plasmonic Sensor Chip," *IEEE Journal of Lightwave Technology*, Vol. 38, issue 18, pp. 5191-5198, DOI: 10.1109/JLT.2020.2998138, September 15, 2020. (Impact factor: 4.439, Quartile Score: Q1)
  24. J.B.Maurya, **Yogendra Kumar Prajapati**<sup>\*</sup>, "A Novel Method to Calculate Beam Width of SPR Reflectance Curve: A Comparative Analysis," *IEEE Sensor Letters*, Vol. 1, issue 4, pp. 1-4, <https://doi.org/10.1109/LENS.2017.2709549>, August 2017. (Impact factor: 2.8, Quartile Score: Q1)
  25. Sajal Agarwal, Pushpa Giri, **Yogendra Kumar Prajapati**<sup>\*</sup>, P. Chakrabarti, "Effect of Surface Roughness on the Performance of Optical SPR Sensor for Sucrose detection: Fabrication, Characterization and Simulation Study," *IEEE Sensors Journals*, Vol. 16, No. 24, pp. 8865 – 8873, December 2016, (Impact factor: 4.3, Quartile Score: Q1).
  26. Sajal Agarwal, **Yogendra Kumar Prajapati**<sup>\*</sup>, J.B.Maurya, "Effect of Metallic Adhesion Layer Thickness on the Sensor Performance," *IEEE Photonics Technology Letters*, 28(21), pp. 2415-2418, Nov. 2016. <https://doi.org/10.1109/LPT.2016.2597856> (Impact factor: 2.414, Quartile Score: Q2)

**E. Publications (List of papers published in Other SCI/ESCI Journals, in year wise descending order)**

27. Varunika Dixit, Kamal Agarwal, **Yogendra Kumar Prajapati**<sup>\*</sup>, "On the modeling and performance enhancement of underwater wireless optical communication: impairments, throughput, and ergodic capacity," *Optical and Quantum Electronics*, DOI: 10.1007/s11082-025-08643-w, 2026 (Impact factor 4.0, Quartile Score: Q2)
28. Kumar, Rakesh, Sarika Pal, **Yogendra Kumar Prajapati**, and J. P. Saini. "Rhenium disulfide (ReS<sub>2</sub>) and halide perovskite mediated plasmonic sensor for biosensing." *Physica Scripta*, vol. 100, no. 11, pp.115608, 13 November 2025, DOI: 10.1088/1402-4896/ae1b46, (Impact factor 2.6, Quartile Score: Q2)
29. Chauhan, Sweetly, Anuj K. Sharma, Nitin Singh Singha, and **Yogendra Kumar Prajapati**, "Sb<sub>2</sub>S<sub>3</sub> as Hole Transport Layer Material Massively Enhances the Performance and Stability of Tin-Based Perovskite Solar Cell." *Journal of Electronic Materials* (2025): pp.1-14, 4 November 2025, (Impact factor 2.5, Quartile Score: Q2)
30. Kumar, Vikas, Rupam Srivastava, Anuj K. Sharma, and **Yogendra Kumar Prajapati**<sup>\*</sup>. "Enhanced photovoltaic performance of lead-free Cs<sub>2</sub>SnI<sub>6</sub> double perovskite solar cells: SCAPS-1D simulation and optimization." *Physica Scripta*, vol. 100, no. 10, pp. 105017, 16 October 2025, DOI 10.1088/1402-4896/ae0fc8 (Impact factor 2.6, Quartile Score: Q2)
31. Veluchamy, Devika, Murugan Senthil Mani Rajan, and **Yogendra Kumar Prajapati**. "Sensitive Detection of Formalin Adulteration in Fish Using a Square-Core Photonic Crystal Fiber Sensor." *Sensing and Imaging*, vol. 26, no. 1, pp. 128, 08 October 2025, (Impact factor 2, Quartile Score: Q3)
32. Popescu, Vasile A., Priyanshu Singh, **Yogendra Kumar Prajapati**, and Anuj K. Sharma. "High-Performance Plasmonic Sensor with Photonic Spin Hall Effect for NaCl Detection: Role of an Active Voltage Biasing of Graphene Monolayer in Near Infrared." *Sensing and Imaging*, vol no. 26, no. 1, pp. 67, 20 May 2025, (Impact factor 2, Quartile Score: Q3)
33. Kumar, Nitesh, Sarika Pal, and **Yogendra Kumar Prajapati**. "Dual Polished-Based Dual Core



- LRSPR Sensor for Stress Monitoring Using Cortisol Biomarker in Human Saliva." *Sensing and Imaging*, vol no. 26, no. 1, pp. 57, 14 May 2025, (Impact factor 2, Quartile Score:Q3)
34. Daher, Malek G., Sofyan A. Taya, Osama S. Faragallah, Shobhit K. Patel, **Yogendra Kumar Prajapati**, and Ammar Armghan. "Detection of protozoa in drinking water using SPR biosensor employing titanium dioxide and MXene nanomaterial." *Journal of Computational Electronics*, vol no. 24, no. 2, pp. 45, 24 April 2025, (Impact factor 2.5, Quartile Score:Q3)
  35. Alhawari, Adam RH, Abdulkarem HM Almawgani, Malek G. Daher, Sofyan A. Taya, **Yogendra Kumar Prajapati**, and Samer H. Zyoud. "Design of a novel plasmonic sensor for the determination of uric acid concentration with ultra-high figure of merit." *Plasmonics*, pp. 1-10, 17 February 2025, (Impact Factor 4.3 ,Quartile Score:Q3)
  36. Gumaih, Hussein S., Abdulkarem HM Almawgani, Malek G. Daher, Yousif S. Adam, Sofyan A. Taya, and **Yogendra Kumar Prajapati**. "Theoretical Optimization of Silver-Based Surface Plasmon Resonance Sensor with Perovskite and Graphene Composite Structure for the Rapid Detection of Breast Cancer Cells." *Plasmonics*, vol no. 20, pp. 1-9, 06 February 2025, DOI: <https://doi.org/10.1007/s11468-024-02753-z> , (Impact Factor 4.3 ,Quartile Score:Q3)
  37. Chauhan, Sweety, Anuj K. Sharma, Nitin Singh Singha, Alok Kumar Patel, and **Yogendra Kumar Prajapati** "Simulation of ZnO (window layer)-ZnS (buffer)-SDL-CIGS (absorber)-Sb2S3 (back surface field layer) solar cell design achieving 35.82% power conversion efficiency with low thermal effect." *Journal of Optics*, pp. 1-9, 03 February 2025, DOI: <https://doi.org/10.1007/s12596-025-02514-z> , (Impact Factor 2.5 ,Quartile Score:Q3)
  38. Abohassan, Khedr M., Malek G. Daher, Sofyan A. Taya, Abinash Panda, and **Yogendra Kumar Prajapati** "Narrow bandpass filter using octonacci photonic quasicrystal." *Journal of Optical Communications*, vol no.; 45, no. s1, pp. s1683-s1691, 27 January 2025, (Quartile Score:Q3)
  39. Alhawari, Adam RH, Abdulkarem HM Almawgani, Malek G. Daher, Sofyan A. Taya, and **Yogendra Kumar Prajapati**. "A Novel Surface Plasmon Resonance (SPR) Sensor Based on Beryllium Oxide and Graphene Layers for Fuel Adulteration Discovery." *Plasmonics*, pp. 1-10, 6 January 2025 , DOI: <https://doi.org/10.1007/s11468-024-02657-y> (Impact Factor 3.3 ,Quartile Score:Q3)
  40. Alhawari, Adam RH, Abdulkarem HM Almawgani, Sofyan A. Taya, Malek G. Daher, **Yogendra Kumar Prajapati**, and Hussein S. Gumaih. "Highly sensitive protein sensor based on surface plasmon resonance nanostructure employing titanium dioxide and graphene layers." *Diamond and Related Materials* Vol 151, pp. 111867, 1 January 2025, DOI: <https://doi.org/10.1016/j.diamond.2024.111867> (Impact Factor 4.3 ,Quartile Score:Q2)
  41. Kumar, Rajeev, Sajal Agarwal, Narendra Pal, Sarika Pal, and **Yogendra Kumar Prajapati**. "Platinum diselenide (PtSe<sub>2</sub>) mediated heterostructure based SPR sensor for the detection of formalin: a theoretical analysis." *Physica Scripta*, Vol 100, no. 1, pp. 015546, 30 December 2024, DOI: [10.1088/1402-4896/ad9e46](https://doi.org/10.1088/1402-4896/ad9e46)(Impact Factor 2.6, Quartile Score: Q2)
  42. Daher, Malek G., Sofyan A. Taya, Osama S. Faragallah, Mohammed A. AlZain, Abdulkarem HM Almawgani, Ahmad Alzahrani, **Yogendra Kumar Prajapati**, Ammar Armghan, and Samer H. Zyoud. "Supersensitive Novel Detector using Surface Plasmon Resonance Nanostructure Based on Black Phosphorus/Graphene for the Discovery of Various Pathogens in Drinking Water." *Plasmonics* , pp:1-9, 27 December 2024, DOI: <https://doi.org/10.1007/s11468-024-02678-7> (Impact Factor 3.3 ,Quartile Score:Q3)
  43. Gumaih, Hussein S., Abdulkarem HM Almawgani, Malek G. Daher, Yousif S. Adam, Sofyan A. Taya, and **Yogendra Kumar Prajapati**, "Novel detection of progesterone and estradiol levels in blood using sensitive SPR biosensor employing cerium oxide and MXene nanomaterial." *Journal of Optics* pp: 1-11, 14 December 2024, DOI: <https://doi.org/10.1007/s12596-024-02352-5> ( Impact Factor 1.6 ,Quartile Score:Q3)
  44. Tiwari, Harshit, Yogendra S. Dwivedi, Rishav Singh, Anuj K. Sharma, Ajay Kumar Sharma, Richa Krishna, Nitin Singh Singha, **Yogendra Kumar Prajapati**, and Carlos Marques. "Deep Learning-Enabled De-Noising of Fiber Bragg Grating-Based Glucose Sensor: Improving Sensing Accuracy of Experimental Data." *Photonics*, vol. 11, no. 11, pp. 1058. MDPI,

November 2024, DOI: <https://doi.org/10.3390/photonics11111058> (Impact Factor: 2.1, Quartile Score:Q2)

45. Srivastava, Saarthak, Rupam Srivastava, Deepak Punetha, Anuj K. Sharma, and Yogendra Kumar Prajapati\*. "Enhancing the efficiency of lead-free Cs<sub>2</sub>AgBiBr<sub>6</sub> based double perovskite solar cells with optimizing ETLs and HTLs using SCAPS-1D." *Chemical Physics Letters*, vol. 854, pp. 141557, November 2024. DOI: <https://doi.org/10.1016/j.cplett.2024.141557>, (Impact Factor: 2.8, Quartile Score: Q2)
46. Yesudasu, Vasimalla, Rupam Srivastava, Sarika Pal, Alka Verma, and Yogendra Kumar Prajapati\*. "Performance Enhancement of SPR Sensor for Dengue Virus Detection: Influence of Aluminum Nitride and 2D Materials." *Plasmonics*, pp. 1-14, 23 October 2024, DOI: <https://doi.org/10.1007/s11468-024-02574-0>, (Impact Factor 3.3 ,Quartile Score:Q3)
47. Daher, Malek G., Sofyan A. Taya, Osama S. Faragallah, Shobhit K. Patel, Yogendra Kumar Prajapati, and Ammar Armghan. "Optical Detection of Urea Level in Blood Using Novel SPR Sensor Employing Silicon and Tungsten Diselenide Nanomaterial for the Early Diagnosis of Heart and Kidney Diseases." *Plasmonics*, pp. 1-10, 21 October 2024, DOI: <https://doi.org/10.1007/s11468-024-02588-8>, (Impact Factor 3.3 ,Quartile Score:Q3)
48. Agarwal, Sajal, Rahul Raparia, Vinit Kumar, Rupam Srivastava, and Yogendra Kumar Prajapati. "Analytical Study of SPR Sensor with Black Phosphorus and Tungsten Diselenide Heterostructure for Milk Adulteration Detection." *Plasmonics*, pp. 1-10, 02 October 2024, DOI: <https://doi.org/10.1007/s11468-024-02496-x> (Impact factor 3.3 ,Quartile Score:Q3)
49. Srivastava, Rupam, Vinit Kumar, and Yogendra Kumar Prajapati\*. "Highly sensitive SPR based PCF sensor for broader analyte detection range including blood compositions detection." *Optik*, vol 314, pp. 172010, 1 October 2024, DOI: <https://doi.org/10.1016/j.ijleo.2024.172010>, (Impact factor: 3.1, Quartile Score: Q2)
50. Kumar, Virendra, Rajeev Kumar, Sarika Pal, and Yogendra Kumar Prajapati. "Development of surface plasmon resonance sensor utilizing GaSe and WS<sub>2</sub> for ultra-sensitive early detection of dengue virus." *Optik*, vol. 313 pp. 171975, October 2024, DOI: <https://doi.org/10.1016/j.ijleo.2024.171975>, 1 (Impact factor: 3.1, Quartile Score: Q2)
51. Veluchamy, Devika, Murugan Senthil Mani Rajan, and Yogendra Kumar Prajapati\*. "Enhancing Breast Cancer Biomarker Detection with a Portable Biosensor Utilizing Flower Core Photonic Crystal Fiber Architecture." *Plasmonics*, pp. 1-13, 07 August 24, DOI: <https://doi.org/10.1007/s11468-024-02470-7>, ( Impact Factor 3.3 ,Quartile Score:Q3)
52. Daher, Malek G., Youssef Trabelsi, Ahmed Nabih Zaki Rashed, Ibrahim S. Yahia, Yogendra Kumar Prajapati, Abdulkarem HM Alkawgani, and Ahmad Alzahrani. "Optical Sensitive Detection of Cervical Cancer Based on Surface Plasmon Resonance Nanostructure." *physica status solidi (a)* vol. 221, no. 16, pp. 2300567, July 2024, DOI: <https://doi.org/10.1002/pssa.202300567>(Quartile Score: Q3)
53. Dubey, Dheeraj, Yogendra Kumar Prajapati\*, and Rajeev Tripathi. "Optimization of LDPC-coded power series MIMO/FSO link with hybrid-SIM based on machine learning in satellite downlink for 5G and beyond applications." *Telecommunication Systems*, pp. 1-17, 1 July 24, DOI: <https://doi.org/10.1007/s11235-024-01178-7>, ( Impact Factor : 1.7 ,Quartile Score:Q2)
54. Kumari, Sindhu, and Yogendra Kumar Prajapati\*. "Refractive index sensor with extensive detection range using photonic crystal fiber based on surface plasmon resonance." *Journal of Optics*, pp. 1-7, 19 June 2024, DOI: <https://doi.org/10.1007/s12596-024-01974-z>, (Impact factor:1.6 ,Quartile Score:Q3)
55. Kumar, Rajeev, Sajal Agarwal, Sarika Pal, Yogendra Kumar Prajapati, and J. P. Saini. "Enhanced refractive index sensing using a surface plasmon resonance sensor with heterostructure." *Micro and Nanostructures*, vol. 183 ,pp. 207656, 1 April 2024, DOI: <https://doi.org/10.1016/j.micna.2023.207656> (Impact factor 3.1 ,Quartile Score:Q2)
56. Agarwal, Sajal, Rajeev Kumar, Sarika Pal, Yogendra Kumar Prajapati, and J. P. Saini. "Magnesium fluoride and black phosphorus mediated long-range surface plasmon resonance biosensor for enhanced sensing of SARS-CoV-2 virus." *Journal of Optics*, pp. 1-13, 28 March

2024, DOI: <https://doi.org/10.1007/s12596-024-01772-7> ( Impact Factor 1.6 ,Quartile Score:Q3)

57. Shukla, Prachi, Rajeev Tripathi, and Yogendra Kumar Prajapati\*. "Analysis of an M-ary quadrature amplitude modulated underwater optical wireless communication system considering geometrical loss by laser, turbulence, and receiver diversity." *Optical Engineering*, vol. 63, no. 3, pp. 038102-038102., 1 March 2024, DOI: <https://doi.org/10.1117/1.OE.63.3.038102>, (Impact factor 1.1 ,Quartile Score:Q2)
58. Kumar, Rajeev, Sarika Pal, Narendra Pal, Alka Verma, and Yogendra Kumar Prajapati. "MXene-Graphene MXene-Mediated Heterostructure-Based Surface Plasmon Resonance Sensor for the Detection of Leptospirosis Bacteria in Rodent Urine." *Plasmonics*, pp.1-11., 28 February 2024, DOI: <https://doi.org/10.1007/s11468-024-02246-z> ( Impact factor 3.3 ,Quartile Score:Q3)
59. Yesudasu, Vasimalla, Rupam Srivastava, Sarika Pal, Alka Verma, and Yogendra Kumar Prajapati\*. "Numerical analysis of an advanced surface plasmon resonance biosensor utilizing nitride material tungsten ditelluride-black phosphorus." *Physica B: Condensed Matter*, vol. 675, pp.415619., 15 february 2024, DOI: <https://doi.org/10.1016/j.physb.2023.415619>, (Impact factor:2.8 ,Quartile Score:Q2)
60. Yadav, Ajay Kumar, Pritam Keshari Sahoo, and Yogendra Kumar Prajapati "A companding approach for PAPR suppression in OFDM based massive MIMO system." *Journal of Optical Communications*, vol. 44, no. s1, pp. S1551-s1555, 13 February 2024, DOI: <https://doi.org/10.1515/joc-2020-0255>, (Quartile Score:Q3)
61. Kumar, Rajeev, Sajal Agarwal, Sarika Pal, Alka Verma, and Yogendra Kumar Prajapati. "Refractive index sensing using MXene mediated surface plasmon resonance sensor in visible to near infrared regime." *Measurement*, vol. 224, pp. 113682. 1 January 2024 DOI: <https://doi.org/10.1016/j.measurement.2023.113682>, (Impact factor 5.2 ,Quartile Score:Q3)
62. Malek G. Daher, Youssef Trabelsi, Naser M. Ahmed, Yogendra Kumar Prajapati, Ahmed Nabih Zaki Rashed, Shobhit K. Patel, "Detection of Escherichia coli using highly sensitive surface plasmon resonance nanostructure (SPRN) based on MXene 2D nanomaterial, *Plasmonic Journal*, July 2023, DOI: <https://doi.org/10.1007/s11468-023-01970-2>, (Impact factor: 2.726, Quartile Score: Q2)
63. Kinjal Chauhan; Krzysztof Szulc; Maciej Krawczyk; Yogendra Kumar Prajapati, Anuj Sharma, "Spin wave based weak magnetic field sensing at room temperature by using magnonic crystal," *Journal of Physics D: Applied Physics*, (Impact factor: 3.409, Quartile Score: Q1)
64. Rupam Srivastava, Sarika Pal, Yogendra Kumar Prajapati\*, "MXene-assisted D-shaped photonic crystal fiber probe with high sensitivity for detection of tuberculosis," *Plasmonic Journal*, June 2023, <https://doi.org/10.1007/s11468-023-01924-8>, (Impact factor: 2.726, Quartile Score: Q2)
65. Rajeev Kumar, Sarika Pal, Yogendra Kumar Prajapati\*, "MXene mediated Long-Range Surface Plasmon Resonance (LRSPR) Sensor at Infrared Wavelength," *Plasmonic journal*, 10.1007/s11468-023-01896-9, (Impact factor: 2.726, Quartile Score: Q2)
66. Bitu Roumi, Mehmet Erzen, Harun Akkus, Yuanguo Zhou, Yogendra Kumar Prajapati, Yijun Cai, Jitendra Bahadur Maurya, Reza Abdi-Ghaleh, "Thermally switchable terahertz absorber based on a VO<sub>2</sub>-included one-dimensional photonic crystal," *Applied Physics A*, Vol.129, 407 (2023). <https://doi.org/10.1007/s00339-023-06686-y> (Impact factor: 2.983, Quartile Score: Q2)
67. Shambhu Kumara, Jitendra Bahadur Maurya, Yogendra Kumar Prajapati, Bitu Roumi, Reza Abdi-Ghaleh, "Design and Analysis of D-shaped Fiber Optic Plasmonic Sensors using Planar and Grating Structure of Silver and Gold," *Applied Optics*, Vol. 62, No. 16, 1 June 2023, DOI [10.1364/AO.481145](https://doi.org/10.1364/AO.481145) (Impact factor: 1.905, Quartile Score: Q2)
68. Kusharga Rastogi, Anuj K Sharma, Yogendra Kumar Prajapati\*, "Demonstration of Graphene-Assisted Tunable Surface Plasmonic Resonance Sensor Using Machine Learning Model," *Applied Physics A*, 129, 351 (2023). <https://doi.org/10.1007/s00339-023-06630-0> (Impact factor: 2.983, Quartile Score: Q2)



69. Narendra Pal, Jitendra Bahadur Maurya, and Yogendra Kumar Prajapati\*, Santosh Kumar, "LiF-Ag-Si TMDs based Long-range SPR Sensor in Visible and Near Infrared Regime," *Optik*, pp. 170556, 3 January 2023, (Impact factor: 3.1, Quartile Score: Q2)
70. Palestine Malek G. Daher, Youssef Trabelsi; Y. K. Prajapati; Zbigniew Jaroszewicz; Abinash Panda; Naser M. Ahmed; Ahmed Nabih Zaki Rashed, "Highly Sensitive Detection of Infected Red Blood Cells (IRBCs) with Plasmodium Falciparum using Surface Plasmon Resonance (SPR) nanostructure," *Optical and Quantum Electronics*, 55, 199 (Jan.2023). <https://doi.org/10.1007/s11082-022-04466-1> (Impact factor: 3, - Quartile Score: Q2)
71. Naghi Shaban; Yogendra Kumar Prajapati; Ramin Mohammadkhani, "Performance enhancement of waveguide-coupled and metamaterial surface plasmon resonance sensors based on Silver-Bismuth Ferrite and Graphene," *Journal of Materials Science: Materials in Electronics*, 34:309, January 25, 2023, <https://doi.org/10.1007/s10854-022-09721-5> (Impact factor: 2.8, Quartile Score: Q2)
72. Vasile A. Popescu, K Chauhan, Yogendra Kumar Prajapati, and Anuj K. Sharma, "Design and analysis of graphene- and germanium-based plasmonic probe with photonic spin Hall effect in THz frequency region for magnetic field and refractive index sensing", *Optical and Quantum Electronics*, 55(2), 1-16, 2023 (Impact factor: 3, Quartile Score: Q2)
73. Jitendra B. Maurya, Nikki, J.P. Saini, Anuj K. Sharma, Yogendra Kumar Prajapati, "A Localized SPR D Shaped Fiber Optic Sensor utilizing Silver Grating Coated with Graphene: Field Analysis", *Optical Fiber Technology*, vol.75, pp.103204, Dec.2022. (Impact factor: 2.7, Quartile Score: Q2)
74. Ahmed Nabih Zaki Rashed, Malek G. Daher, Naser M. Ahmed, Y. K. Prajapati, Vishal Sorathiya, Sk Hasane Ahammad, Osama S. Faragallah, "Detection of Basal Cancer Cells using Photodetector Based on A novel Surface Plasmon Resonance Nanostructure Employing Perovskite Layer with an Ultra High Sensitivity," *Plasmonic*, October 2022, <https://doi.org/10.1007/s11468-022-01727-3> (Impact factor: 2.726, Quartile Score: Q2)
75. Sajal Agarwal, G. Srivastava, Yogendra Kumar Prajapati, "Dual band Vis-IR absorber using bismuth based helical metamaterial surface," *Optical and Quantum Electronics*, 54, 772 (2022). <https://DOI:10.1007/s11082-022-04185-7> September 16, 2022. (Impact factor: 3, Quartile Score: Q2)
76. Vipin Kumar Verma, Rajeev Kumar, Sarika Pal, Yogendra Kumar Prajapati, "Highly Sensitive MXene immobilized Long Range SPR Sensor for Biomolecule Detection," *Optical Materials*, Vol.133, November 2022, 112977, (Impact factor: 3.9, Quartile Score: Q1)
77. Sanat Kumar Pandey, Shivam Singh, J.B. Maurya, R. N. Verma, Y.K. Prajapati\*, "Design of a broadband dispersion compensated ultra-high nonlinear photonic crystal fiber," *Optical and Quantum Electronics*, 54:503, July (2022) (Impact factor: 3, Quartile Score: Q2)
78. Narendra Pal, Jitendra Bahadur Maurya, Yogendra Kumar Prajapati, "Long-Range SPR Imaging Sensor Mediated by Antimonene for Biomolecule Sensing with Ultrahigh Imaging Sensitivity and Figure of Merit," *Plasmonic*, <https://doi.org/10.1007/s11468-022-01644-5> May 2022 (Impact factor: 2.726, Quartile Score: Q2)
79. S. K. Jaiswal, J. B. Maurya, and Yogendra Kumar Prajapati, "Field Dependent Performance Parameters of Plasmonic Structure: An Analysis of Penetration Depth, and Propagation Length," *Journal of the Optical Society of America B*, 39 (4), 1003-1009, April 2022. (Impact factor: 2.05, Quartile Score: Q2)
80. Vipin Kumar Verma, Sarika Pal, Conrad Rizal, Yogendra Kumar Prajapati\*, "Tunable and Sensitive Detection of Cortisol using Anisotropic Phosphorene with a Surface Plasmon Resonance Technique: Numerical Investigation," *Magnetochemistry*, vol. 8, no.3, pp.31, March 2022. (Impact factor: 3.336, Quartile Score: Q2)
81. Vasile A. Popescu, Anuj K. Sharma, and Yogendra Kumar Prajapati, "Graphene-Based Plasmonic Detection of Magnetic Field and Gaseous Medium with Photonic Spin Hall Effect in a Broad Terahertz Region," *Journal of Electronic Materials*, 51, 2889–2899 June 2022. (Impact factor: 2.07 Quartile Score: Q3)



82. Anuj K. Sharma; Parmod Kumar; Yogendra Kumar Prajapati, "Plasmonics-based gas sensor with photonic spin hall effect in broad terahertz frequency range under variable chemical potential of graphene," *Optical and Quantum Electronics*, 54 (6), 1-13, June 2022. (Impact factor: 3, Quartile Score: Q2)
83. Anand Sharma, Ajay Kumar Dwivedi, Nagesh Kallollu Narayaswamy, Yogendra Kumar Prajapati, Devendra Kumar Tripathi, "Ceramic material-based optical antenna for multiband photonics applications," *Optical Engineering*, 61(1), 017104 Jan.2022, <https://doi.org/10.1117/1.OE.61.1.017104> (Impact factor: 1.352, Quartile Score: Q2)
84. Shivam Singh, Yogendra Kumar Prajapati\*, "Antimonene-gold based twin-core SPR sensor with a side polished semi-arc groove dual sensing channel: An investigation with 2D material," *Optical and Quantum Electronics*, Vol.54, 114, Feb. 2022. (Impact factor: 3, Quartile Score: Q2)
85. Parmod Kumar, Anuj K. Sharma, and Yogendra Kumar Prajapati, "Graphene-based plasmonic sensor at THz frequency with Photonic spin Hall effect assisted by magneto-optic phenomenon," *Plasmonics*, 17, 957–963, June 2022. (Impact factor: 2.72, Quartile Score: Q2)
86. Yogendra Kumar Prajapati\*, J.B. Maurya, Anuj K. Sharma, "Tunable and enhanced performance of graphene-assisted plasmonic sensor with photonic spin Hall effect in near infrared: Analysis founded on graphene's chemical potential and components of light polarization," *Journal of Applied Physics-D*, Vol. 55, no.9, 095102, Nov. 2021. (Impact factor: 3.4, Quartile Score: Q1)
87. Ajay Kumar Yadav, Yogendra Kumar Prajapati "A Novel Hybrid Technique for PAPR Reduction of Rayleigh Fading Channel based OFDM system", *Wireless Personal Communications*, 123, 3327–3346 April 2022. <https://doi.org/10.1007/s11277-021-09291-5> (Impact factor:2.2, Quartile Score: Q2)
88. Sanat Kumar Pandey, Shivam Singh, Yogendra Kumar Prajapati\*, "Photonic crystal fiber with high nonlinearity and extremely negative dispersion," *Optical and Quantum Electronics*, Vol. 53:724, Nov. 2021 <https://doi.org/10.1007/s11082-021-03376-y> (Impact factor: 3, Quartile Score: Q2)
89. Maneesh Kumar Singh, Sarika Pal, Alka Verma, Ritwick Das, Yogendra Kumar Prajapati\*, "A nanolayered structure for sensitive detection of Hemoglobin Concentration using Surface Plasmon Resonance," *Applied Physics A*, Vol. 127, pp. 832, Oct. 2021, <https://doi.org/10.1007/s00339-021-04985-w>, (Impact factor: 2.983, Quartile Score: Q2)
90. Maneesh Kumar Singh, Vipin Kumar Verma, Sarika Pal, Yogendra Kumar Prajapati\*, J. P. Saini, "Antimonene mediated Long-Range SPR Imaging Sensor with Ultrahigh Imaging Sensitivity and Figure of Merit," *Optical Materials*, Vol. 121, pp. 111484, Nov. 2021 (Impact factor: 3.9, Quartile Score: Q1) [SR/FST/ETI-418/2016]
91. Dheeraj Dubey, Rajeev Tripathi, and Yogendra Kumar Prajapati, "Optimization of hybrid high-throughput MIMO system with misaligned FSO link under varied weather," *Optical Engineering*, 60(8), 086106, August 2021, <https://doi.org/10.1117/1.OE.60.8.086106> (Impact factor: 1.352, Quartile Score: Q2)
92. Alka Verma, Anuj Kr. Sharma, Y. K. Prajapati\*, "On the sensing performance enhancement in SPR-based Biosensor using specific two-dimensional materials (Borophene and Antimonene)," *Optical Materials*, Vol. 119, September 2021, 111355(Impact factor: 3.9, Quartile Score: Q1)
93. Maneesh Kumar Singh, Sarika Pal, Alka Verma, Vimal Mishra, Yogendra Kumar Prajapati\*, "Sensitivity enhancement using anisotropic black phosphorus and antimonene in bi-metal layer-based surface plasmon resonance biosensor," *Superlattices and Microstructures*, Vol. 156, pp. 106969, June 2021(Impact factor: 3.22, Quartile Score: Q2)
94. Anuj K. Sharma, Baljinder Kaur; Y. K. Prajapati, "Plasmonic sensor for magnetic field detection with chalcogenide glass and ferrofluid materials under thermal variation in near infrared" *Optical Materials*, Vol. 117, 111175, May 2021. (Impact factor: 3.9, Quartile Score: Q1)
95. Akash Srivastava; Y.K. Prajapati, "Surface Plasmon Resonance (SPR) based biosensor using

- MXene as a BRE layer and Magnesium Oxide (MgO) as an Adhesion layer," *Journal of Materials Science: Materials in Electronics*, 33, 8519–8528, 04/2022. <https://doi.org/10.1007/s10854-021-06436-x>, (Impact factor:2.8, Quartile Score: Q2)
96. Sanat Kumar Pandey, Shivam Singh, Y. K. Prajapati\*, "A novel PCF design with an ultra-flattened dispersion and low confinement loss by varying tiny air-hole concentration at core and cladding," *Optical Review*, Vol. 28, pp. 304–313, May 2021. (Impact factor: 1.04, Quartile Score: Q4).
  97. Yogendra Kumar Prajapati\*, "Photonic spin Hall effect detection using weak measurement in the SPR structure using antimonene: A sensing application," *Microstructure and superlattice*, Vol. 155, 106886, July 2021 (Impact factor: 3.22, Quartile Score: Q2)
  98. Artika Srivastava, Anuj K. Sharma, Yogendra Kumar Prajapati\*, "On the sensitivity-enhancement in plasmonic biosensor with photonic spin Hall effect at visible wavelength" *Chemical Physics Letters*, Vol. 774, 138613, July 2021 (Impact factor: 2.719, Quartile Score:Q2)
  99. Rajeev Kumar, Sarika Pal, Narendra Pal, Alka Verma, J.P. Saini, Yogendra Kumar Prajapati\*, "Figure of merit enhancement of Ti3C2Tx Graphene-based Long-range surface plasmon sensor at Telecommunication wavelength," *Optical and Quantum Electronics*, 53:218, May (2021) <https://doi.org/10.1007/s11082-021-02862-7>, (Impact factor: 3, Quartile Score:Q2)
  100. Rajeev Kumar, Sarika Pal, Narendra Pal, Vimal Mishra, Yogendra Kumar Prajapati\* "High performance bimetallic surface plasmon resonance biosensor using black phosphorus-Mxene hybrid structure," *Applied Physics A*, 127, 259, March 2021) (Impact factor:2.983, Quartile Score: Q2)
  101. Shivam Singh, Y.K. Prajapati, "Highly Sensitive Dual-Core Symmetrical Side-Polished Modified D-shaped SPR Based PCF Refractive Index Sensor with Deeply Etched Micro Openings," *Optik*, Vol. 235, 166657, June 2021. (Impact factor :3.1, Quartile Score: Q2).
  102. Sanat Kumar Pandey, J.B. Maurya, R. N. Verma, Y. K. Prajapati\*, "Multimode Hexagonal Photonic Crystal Fiber for Extremely Negative Chromatic Dispersion and Low Confinement Loss," *Optical and Quantum Electronics*, Vol. 53 (130), Feb. 2021.<https://doi.org/10.1007/s11082-021-02779-1>(Impact factor: 3,Quartile Score:Q2)
  103. Surjeet Raikwar, Dinesh Kumar Srivastava, Jai Prakash Saini, Yogendra Kumar Prajapati\*, "2D Antimonene based Surface Plasmon Resonance Sensor for Improvement of Sensitivity," *Appl. Phys. A*, 127, 92, January (2021) <https://doi.org/10.1007/s00339-020-04248-0>. (Impact factor:2.7, Quartile Score:Q2)
  104. Shikha Devi, Divya Sharma, and Y. K. Prajapati\*, Rajeev Tripathi, "Independent and mixed transmission of 166.5Gb/s PM-8QAM and 222Gb/s PM-16QAM Nyquist-WDM superchannel for long haul metro network," *International Journal of Communication Systems*, DOI: 10.1002/DAC.4735, Feb. 2021, <https://doi.org/10.1002/dac.4735> (Impact factor: 1.882, Quartile Score: Q2)
  105. Akash Srivastava, Alka Verma, Y. K. Prajapati\*, "Theoretical study of hazardous Carbon-di-Oxide gas sensing using MIM structure based SPR sensing scheme," *IET Optoelectronics*,<https://doi.org/10.1049/ote2.12035>, March 2021 (Impact factor:1.691, Quartile Score :Q3)
  106. Maneesh Kumar Singh, Sarika Pal, Alka Verma, Y.K. Prajapati\*, J.P. Saini, "Highly Sensitive Antimonene Coated Black Phosphorous based Surface Plasmon Resonance Biosensor for DNA Hybridization: Design and Numerical Analysis," *Journal of Nanophotonics*, 14(4), 046015 Dec. (2020) <https://doi.org/10.1117/1.JNP.14.046015> (Impact factor:1.179, Quartile Score:Q3)
  107. Pritam Keshari Sahoo, Y.K. Prajapati\*, Rajeev Tripathi, "Performance Enhancement of Gaussian Minimum Shift Keying Using Optimum Phase Sampling Technique for Turbulent Free-Space Optical Communication," *Wireless Personal Communications*, 118, pp. 855–872, Jan. 2021. <https://doi.org/10.1007/s11277-020-08047-x> 2020. (Impact factor:2.2, Quartile Score: Q2)
  108. Akash Srivastava, Ritwick Das, Y. K. Prajapati\*, "Effect of sulfosalt and polymers on

- performance parameter of SPR biosensor" *Optical and Quantum Electronics*, Vol. 52, pp.440, September 2020. (Impact factor: 3, Quartile Score: Q2)
109. Pritam Keshari Sahoo, Y.K. Prajapati, Rajeev Tripathi, "Hybrid mapped optical-OFDM using nonlinear companding technique for indoor visible light communication application", *IET Communication*, Volume 14, Issue 17, 27 October 2020, p. 3073 – 3079 <https://doi:10.1049/iet-com.2020.0041> 2020. (Impact factor:1.345, Quartile Score: Q2)
  110. Dheeraj Dubey, Yogendra Kumar Prajapati, Rajeev Tripathi, "Performance Enhancement of Hybrid-SIM for Optical Wireless Downlink Communication with Aperture Averaging and Receiver Diversity," *IET Communications*, Volume 14, Issue 18, pp. 3194 – 3202, November 2020, (Impact factor: 1.345, Quartile Score:Q2)
  111. Sarika Pal, Alka Verma, Y.K. Prajapati\*, J.P. Saini, "Sensitive detection using heterostructure of black phosphorus, transition metal di-chalcogenides and MXene in SPR sensor," *Applied Physics A*, Vol. 126, pp. 809, September 2020. (Impact factor: 2.983, Quartile Score: Q2)
  112. Shivam Singh, Yogendra Kumar Prajapati\*, "TiO<sub>2</sub>/gold-graphene hybrid solid core SPR based PCF RI sensor for sensitivity enhancement," *Optik*, Vol. 224, 165525, December 2020 (Impact factor: 3.1, Quartile Score: Q2)
  113. Rajeev Kumar, Sarika Pal, Y.K. Prajapati\*, J.P. Saini, "Sensitivity Enhancement of MXene based SPR Sensor using Silicon: A Theoretical Analysis," *Silicon*, 13, 1887–1894 (June 2021) <https://DOI:10.1007/s12633-020-00558-3>, July 2020. (Impact factor: 2.941, Quartile Score: Q2)
  114. Rajeev Kumar, Sarika Pal, Alka Verma, Y.K. Prajapati\*, J.P. Saini, "Effect of Silicon on Sensitivity of SPR Biosensor using Hybrid Nanostructure of Black Phosphorus and MXene" *Superlattices and Microstructures*, vol. 145, pp. 106591, September 2020. (Impact factor: 3.22, Quartile Score: Q2)
  115. Anurag Upadhyay, Shivam Singh, Y.K. Prajapati\*, R.Tripathi, "Numerical Analysis of Large Negative Dispersion and highly Birefringent Photonic Crystal Fiber," *Optik*, Vol. 218, 164997, September 2020, <https://DOI:10.1016/j.jleo.2020.164997>. (Impact factor: 3.1, Quartile Score: Q2)
  116. Surjeet Raikwar, Yogendra Kumar Prajapati\*, D.K. Srivastava, J.B. Maurya, J.P. Saini, "Graphene-based Surface Plasmon Resonance Sensor for Examination of Rodent Urine," *Photonic Sensors*, 11, 305- 313 2021, <https://DOI:https://doi.org/10.1007/s13320-020-0587-2> (Impact factor:2.814, Quartile Score: Q2)
  117. Dheeraj Dubey, Yogendra Kumar Prajapati, Rajeev Tripathi, "Error Performance Analysis of PPM- and FSK- Based Hybrid Modulation Scheme for FSO Satellite Downlink," *Optical and Quantum Electronics*, 52:286, June 2020, <https://doi.org/10.1007/s11082-020-02404-7> (Impact factor:3, Quartile Score: Q2)
  118. Divya Sharma, Shrish Bajpai, Y. K. Prajapati\* R. Tripathi, "112 Gb/s Coherent NG-PON2 Downstream Transmission using Advance Polarization Multiplexed Modulation Formats," *Optoelectronics and Advanced Materials-Rapid Communications*, Vol. 14, No. 5-6, pp. 224 – 232, May-June 2020. (Impact factor:0.556, Quartile Score: Q4)
  119. Effect of sulfosalt and polymers on performance parameter of SPR biosensor Akash Srivastava, Ritwick Das, Y. K. Prajapati\*, "Effect of Perovskite Material on the Performance of SPR Biosensor," *IET Optoelectronics*, 14(5):256-65 April 2020, <https://doi.org/10.1049/iet-opt.2019.0122> (Impact factor:1.691, Quartile Score: Q3)
  120. Sajal Agarwal, Y.K. Prajapati\*, "Metamaterial Based Sucrose Detection Sensor Using Transmission Spectroscopy," *Optik*, vol. 205, pp.164276, March 2020. (Impact factor:3.1, Quartile Score: Q2)
  121. Kamal Rudra, Y.K. Prajapati, "Effect of Mn doping on defect-related photoluminescence and nanostructure of dense 3-D Nano-root Network of ZnO," *Ceramics International*, vol. 46, pp. 10135-10141, Jan. 2020. (Impact factor:5.532, Quartile Score: Q1)
  122. Shivam Singh, Y.K. Prajapati\*, "Dual-polarized ultrahigh sensitive Gold/MoS<sub>2</sub>/Graphene based D-shaped PCF refractive index sensor in near to mid- IR region," *Optical & Quantum Electronics*, 52(1), January 2020. (Impact factor: 3, Quartile Score: Q2)



123. Divya Sharma, Y.K. Prajapati\*, Rajeev Tripathi, "0.55 Tb/s heterogeneous Nyquist-WDM superchannel using different polarization multiplexed subcarriers," *Photonic Network Communications*, vol. 39, pp. 120- 128, April 2020. (Impact factor: 1.768, Quartile Score: Q3)
124. Sarika Pal, Y.K. Prajapati\*, J.P. Saini, "Influence of Graphene's Chemical Potential on SPR Biosensor using ZnO for DNA Hybridization", *Optical Review*, Vol. 27, pp. 57-64, Feb.2020. (Impact factor: 1.04, Quartile Score: Q4)
125. Akash Srivastava, Alka Verma, Ritwick Das, Y. K. Prajapati\*, "A Theoretical Approach to Improve the Performance of SPR Biosensor using MXene and Black Phosphorus," *Optik*, Vol. 203, February 2020, 163430. (Impact factor: 3.1, Quartile Score: Q2)
126. Y. K. Prajapati\*, Rahul Kumar, Vivek Singh, "Design of a photonic crystal fiber for dispersion compensation and sensing using modified air holes of the cladding," *Brazilian Journal of Physics*, Vol. 49, issue: 5, pp.745- 751, October 2019. (Impact factor: 1.364, Quartile Score: Q4)
127. Ajay Yadav, Pritam Keshari Sahoo, Y.K. Prajapati, "PAPR Reduction and Improved BER Performance of OFDM System Using DFT Precoder and Root-Based Nonlinear Companding," *Optical Engineering*, 58(7), 076106 Jul 2019. (Impact factor: 1.352, Quartile Score: Q2)
128. Pritam Keshari Sahoo, Ajay Kumar Yadav, Y.K. Prajapati, Rajeev Tripathi, "Phase Sampled Detection of Hybrid Modulation Impaired by Gamma-gamma Turbulence," *Microwave and Optical Technology Letters*, Vol. 61, issue 9, pp. 2182-2189 Sept., 2019. (Impact factor: 1.311, Quartile Score: Q2)
129. Shivam, Y.K. Prajapati\*, "Highly sensitive refractive index sensor based on D-shaped PCF with gold graphene layers on the polished surface," *Applied Physics A*, Vol. 125, pp.437. DOI:<https://doi.org/10.1007/s00339-019-2731-5>, May 2019. (Impact factor: 2.983, Quartile Score: Q2)
130. Y.K. Prajapati\*, Akash Srivastava, "Effect of BlueP/MoS<sub>2</sub> Heterostructure and Graphene Layer on the Performance Parameter of SPR Sensor", *Superlattice and Microstructure*, Vol.129, pp. 152-162, May 2019. (Impact factor: 3.22, Quartile Score: Q2)
131. J. B. Maurya, Y.K. Prajapati\*, "Comparative Analysis of Silicon and Black Phosphorous as an Add-Layer in Nanomaterial based Plasmonic Sensor," *Optical and Quantum Electronics*, Vol. 51: 93, April 2019. <https://doi.org/10.1007/s11082-019-1814-z> (Impact factor: 3, Quartile Score: Q2)
132. Ajay Kumar Yadav, Y.K. Prajapati, "PAPR Minimization of Clipped OFDM Signals Using Tangent Rooting Companding Technique," *Wireless Personal Communications*, Vol. 105, no. 4, pp.:1435-1447, April 2019. <https://doi.org/10.1007/s11277-019-06151-1> (Impact factor: 2.2, Quartile Score: Q2)
133. Akash Srivastava, Y.K. Prajapati\*, "Performance Analysis of Silicon and Blue Phosphorene/MoS<sub>2</sub> Hetero Structure Based SPR sensor," *Photonic sensors*, Vol. 9, issue 3, pp 284–292, Sept. 2019. (Impact factor: 2.814, Quartile Score: Q2)
134. Sajal Agarwal, Y.K. Prajapati\*, "Multifunctional Metamaterial Surface for Absorbing and Sensing Applications," *Optics Communications*, Vol. 439, pp. 304-307, May 2019. (Impact factor: 2.31, Quartile Score: Q2)
135. Pritam Keshari Sahoo, Y.K. Prajapati, Rajeev Tripathi, "Performance analysis of pulse position modulation based hybrid technique for cellular backhaul free-space optical link," *Optical Engineering* 58(1), 016119, Jan. 2019 (Impact factor: 1.352, Quartile Score: Q2)
136. Divya Sharma, Y.K. Prajapati\*, R. Tripathi, "Success Journey of Coherent PM-QPSK Technique With Its Variants: A Survey," *IETE Technical Review*, Vol. 37, no. 1, pp. 36-55, 2020. (Impact factor: 1.932, Quartile Score: Q2)
137. Sarika Pal, Alka Verma, J.P. Saini, Y.K. Prajapati\*, "Sensitivity Enhancement using heterostructure of Silicon-Black Phosphorus-TDMC layer Coated Surface Plasmon Resonance Biosensor," *IET Optoelectronic*, Vol. 13, issue:4, pp. 196-201, August 2019. (Impact factor: 1.691, Quartile Score: Q3)
138. Divya Sharma, Y.K. Prajapati\*, Rajeev Tripathi, "Spectrally Efficient Nyquist-WDM



- Superchannel with MLR Approach using PM-QPSK and PM-16QAM," *Optical Engineering*, 57(7), 076102 (1-6), July 2018. (Impact factor:1.352, Quartile Score: Q2)
139. Pritam Keshari Sahoo, Y.K.Prajapati, Rajeev Tripathi, "PPM and GMSK based Hybrid Modulation Technique for OWC cellular backhaul channel" *IET Communications*, Vol.12 (17), pp. 2158-2163, July 2018. (Impact factor:1.345, Quartile Score: Q2)
  140. Sarika Pal, Alka Verma\*, S. Raikwar, Y.K. Prajapati, J.P. Saini, "Detection of DNA Hybridization using Black Phosphorus-Graphene Coated Surface Plasmon Resonance Sensor" *Applied Physics A*, 124:394, May 2018. (Impact factor:2.983, Quartile Score:Q2)
  141. J. B. Maurya, A. François, Y.K. Prajapati\*, "Two-Dimensional Layered Nanomaterial Based One Dimensional Photonic Crystal Refractive Index Sensor," *Sensors*, 18(3), 857; March 2018, <https://doi.org/10.3390/s18030857> (Impact factor: 3.847, Quartile Score: Q1)
  142. J.B.Maurya, Y.K.Prajapati\*, "Influence of Adhesion layer on Performance of Surface Plasmon Resonance Sensor," *IET Optoelectronics*, 12 (4), pp.168 –175, August 2018, (Impact factor: 1.691, Quartile Score:Q3)
  143. J. B. Maurya, S. Raikwar, Y.K. Prajapati\*, J.P. Saini, "A Silicon-Black Phosphorous based Surface Plasmon Resonance Sensor for the detection of NO<sub>2</sub> Gas," *Optik*, <https://doi.org/10.1016/j.ijleo.2018.02.002> Feb. 2018. (Impact factor: 3.1, Quartile Score: Q2)
  - [101] Sajal Agarwal, Y.K. Prajapati\*, "Design of a Broadband Electromagnetic Absorber using 2-D Materials," *Optics Communication*, Vol. 413, pp. 39-43, April 2018. (Impact factor: 2.31, Quartile Score: Q2)
  144. Y.K. Prajapati\*, V.K.Srivastava, Vivek Singh, J.P. Saini, "Effect of germanium doping on the performance of silica based photonic crystal fiber," *Optik*, Vol. 155, pp. 149-156, Jan. 2018. (Impact factor: 3.1, Quartile Score: Q2)
  145. Sarika Pal, Alka Verma, Y.K. Prajapati, J.P. Saini, "Influence of Black Phosphorous on Performance of Surface Plasmon Resonance biosensor" *Optical and Quantum Electronics*, Vol.49, pp. 403, Dec. 2017. (Impact factor: 3, Quartile Score: Q2)
  146. Anurag Upadhyay, Y.K. Prajapati\*, Rajeev Tripathi, "Analytical study of planar waveguide sensor having metamaterial as a guiding layer," *Photonic Sensors*, Vol. 7, issue 4, pp 377–384, December 2017. (Impact factor: 2.814, Quartile Score: Q2)
  147. Y.K. Prajapati\*, Sarika Pal, J.P.Saini, "Effect of Metamaterial and Silicon layers on Surface Plasmon Resonance Biosensor," *Silicon*, Vol. 10, number 4, pp. 1451-1460, July 2018. (Impact factor: 2.941, Quartile Score:Q2)
  148. J. B.Maurya, Y.K.Prajapati\*, "Influence of Dielectric Coating of Metal Layer in Surface Plasmon Resonance Sensor," *Plasmonics*, 12 (4), pp. 1121-1130, August 2017. (Impact factor: 2.72, Quartile Score: Q2)
  149. Sajal Agarwal, Y.K.Prajapati\*, "Analysis of Metamaterial based Absorber for Thermo-photovoltaic Cell Applications," *IET Optoelectronics*, 11(5), pp. 208 – 212, June 2017. (Impact factor: 1.691, QuartileScore:Q3)
  150. Pooja Lohia, Y.K.Prajapati\*, J.P. Saini and B.S. Rai, "Analytical investigation of dispersion characteristics of elliptically cored multilayer waveguides with two different refractive index profile," *Journal of optics*, Volume 46, Issue 4, pp 499–505, Dec. 2017 (Impact factor: 1.8, Quartile Score: Q3)
  151. Sajal Agarwal, Y. K. Prajapati\*, and Vivek Singh, "Influence of Metal Roughness on SPR Sensor Performance," *Optics Communications*, 383(15), pp. 113–118, January 2017. (Impact factor: 2.31, Quartile Score: Q2)
  152. J.B.Maurya, Y.K.Prajapati\*, and Rajeev Tripathi, "Effect of Molybdenum Disulfide Layer on Surface Plasmon Resonance Biosensor for the Detection of Bacteria," *Silicon*, Vol. 10, pp. 245–256, March 2018 (Impact factor: 2.941, Quartile Score:Q2)
  153. Sajal Agarwal, Y.K.Prajapati\*, "Broadband and Polarization Insensitive Helix Metamaterial Absorber using Graphene for Terahertz Region," *Applied Physics A.*, 122(6), 1-9, June 2016. (Impact factor: 2.983, Quartile Score: Q2)
  154. J.B.Maurya, Y.K.Prajapati\*, "A Comparative Study of Different Metal and Prism in the Surface

Plasmon Resonance Biosensor having MoS<sub>2</sub>-Graphene," *Optical and Quantum Electronics*, 48(5), pp. 1-12, May 2016. <https://doi.org/10.1007/s11082-016-0562-6> (Impact factor:3, Quartile Score: Q2).

155. Anurag Upadhyay, Y.K.Prajapati\*, Rajeev Tripathi, Vivek Singh and J.P. Saini, "Analysis of metal clad waveguide sensor having metamaterial as a guiding layer," *Opto-Electronics Review*, Vol.24(2), pp. 47– 57, April 2016. (Impact factor: 2.227, Quartile Score: Q3)
156. Sarika Pal, Y.K.Prajapati\*, J. P. Saini and V. Singh, "Sensitivity enhancement of Metamaterial based Surface Plasmon Resonance Biosensor for near infrared," *Optica Applicata*, Vol. 46, issue 1, pp.131-143, Feb.2016. (Impact factor:0.505, Quartile Score: Q4)
157. J.B.Maurya, Y.K.Prajapati\*, Vivek Singh, J. P. Saini, and Rajeev Tripathi "Improved Performance of the Surface Plasmon Resonance Biosensor Based on graphene or MoS<sub>2</sub> using Silicon," *Optics Communications*, Vol. 359, pp. 426–434, January 2016. (Impact factor: 2.31, Quartile Score: Q2)
158. Sarika Pal, Y.K. Prajapati\*, J.P.Saini and V. Singh, "Resolution enhancement of optical SPR sensor using Metamaterial," *Photonics Sensors*, Vol. 5, issue 4, pp. 330–338. December 2015, Springer publication. (Impact factor: 2.814, Quartile Score: Q2).
159. Sajal Agarwal, Y. K. Prajapati\*, and Vivekanand Mishra, "Thinned Fiber Bragg Grating as a Fuel Adulteration Sensor: Simulation and Experimental," *Opto- Electronics Review*, Vol. 23, issue 4, Pages 231– 238, Dec. 2015. (Impact factor: 2.227, Quartile Score: Q3)
160. Sajal Agarwal, Y.K.Prajapati\*, Vivek Singh, J. P. Saini, "Polarization Independent Broadband Metamaterial Absorber Based on Tapered Helical Structure," *Optics Communications*, Vol. 356, pp. 565-570, December 2015, (Impact factor: 2.31, Quartile Score: Q2)
161. AnuragUpadhyay, Y.K.Prajapati\*, Rajeev Tripathi, Vivek Singh and J.P. Saini, "Metal Clad Waveguide Sensor with Metamaterial Layer for Refractometric Sensing Application," *J. Nanoelectron. Optoelectron.* 10, pp.749-754 Dec.2015, [American Scientific Publishers](#). (Impact factor: 0.697)
162. V.K.Srivastava, Y.K.Prajapati\*, Vivek Singh, J.P. Saini, "Enhancement of Effective Area of Bragg Waveguide using Plasma for Communication Systems" *Microwave and Optical Technology Letters*, 57 (11), pp. 2491-2496, Nov. 2015. (Impact factor:1.311, Quartile Score: Q2)
163. J.B.Maurya, Y.K.Prajapati\*, Vivek Singh, J. P. Saini, "Sensitivity Enhancement of Surface Plasmon Resonance Sensor Based on Graphene-MoS<sub>2</sub> Hybrid Structure with TiO<sub>2</sub>-SiO<sub>2</sub> Composite Layer," *Applied Physics A-Materials Science & Processing*, Vol. 121, Issue 2, pp 525-533, Nov. 2015 (Impact factor: 2.983, Quartile Score: Q2)
164. J.B.Maurya, Y.K.Prajapati\*, Vivek Singh, J. P. Saini and Rajeev Tripathi, "Performance of Graphene-MoS<sub>2</sub> based Surface Plasmon Resonance Sensor using Silicon layer," *Optical and Quantum Electronics*, Springer publication, Volume 47, issue 11, pp.3599-3611, Nov. 2015 (Impact factor:3, Quartile Score: Q2)
165. Anurag Upadhyay, Y.K. Prajapati\*, Vivek Singh and J.P. Saini, "Sensitivity estimation of metamaterial loaded planar waveguide," *Optical and Quantum Electronics*, Volume 47, Issue 7, Page 2277-2287, July 2015 (Impact factor:3, Quartile Score: Q2)
166. Sarika Pal, Y.K. Prajapati\*, J.P. Saini, Vivek Singh, "Sensitivity enhancement of metal clad planar waveguide sensor using metamaterial layer as a guiding layer," *Optik - International Journal for Light and Electron Optics*, Volume 126, Issue 14, July 2015, Pages 1372-1376. (Impact factor: 2.84, Quartile Score: Q2)
167. Y.Prajapati\*, J.B.Maurya, Vivek Singh, J. P. Saini, "Modal Analysis and Dispersion Curves of an Elliptical W-type Single Mode Fiber," *Optics and spectroscopy*, Vol. 118, No. 5, pp. 821– 828, May 2015 (Impact factor: 0.74, Quartile Score: Q4)
168. AnuragUpadhyay, Y. K. Prajapati\*, Vivek Singh and J.P. Saini, "Comprehensive study of reverse index waveguide-based sensor with metamaterial core," *Optics Communication*, Vol. 348, pp.71–76, March 2015. (Impact factor: 2.31, Quartile Score: Q2)
169. Pooja Lohia, Y.Prajapati\*, J.P. Saini and B.S. Rai, "Enhancement of single mode operation in

- Coaxial Optical waveguide using DB boundary conditions”, *Infrared Physics and Technology*, Vol.67, pp. 462–466, Sept. 2014. (Impact factor: 2.997, Quartile Score:Q2)
170. Y.Prajapati\*, Vivek Singh, and J. P. Saini, “Computing Eigenvalue equation and modal dispersion characteristics of an Elliptical Bragg waveguide” *International Journal for Light and Electron Optics (OPTIK)*, volume-125, pp. 5461–5466, Oct.2014 (Impact factor: 3.1, Quartile Score :Q2)
  171. Y.Prajapati\*, J. P. Saini, D.S.Chauhan and Vivek Singh, “Effect of Plasma on Modal Dispersion Characteristic of Elliptical Bragg Waveguide” *Optoelectronics Review*, Vol. 22, no. 1, pp.16–23, March 2014, (Impact factor: 2.227, Quartile Score:Q3)
  172. Y.Prajapati\*, Vivek Singh and J. P. Saini, “Analysis of dispersion relation of the elliptical dielectric waveguides having M-type refractive index profile” *International Journal for Light and Electron Optics (OPTIK)*, volume-124, pp.1736-1740, July 2013. (Impact factor: 3.1, Quartile Score: Q2)
  173. Y.Prajapati\*, A.Yadav, A. Verma, V. Singh and J.P.Saini, “Effect of Metamaterial layer on optical surface plasmon resonance Sensor” *International Journal for Light and Electron Optics*, Vol.124, issue-18, pp.3607- 3610, September 2013. (Impact factor: 3.1, Quartile Score: Q2)
  174. J.B.Maurya, Y.Prajapati\*, Vivek Singh, J. P. Saini, “Effect of cladding layers on the mode of circular optical waveguides” *International Journal for Light and Electron Optics (OPTIK)*, volume-124, issue-11, pp.1066- 1069, June-2013. (Impact factor: 3.1, Quartile Score: Q2)
  175. D.Sharma, A.Verma Y. Prajapati\*, V. Singh and J.P.Saini, “Forward and Backward wave propagation in multilayer planar waveguide using Metamaterials layer” *Optical and Quantum Electronics*, Volume-45, pp. 105–114, Feb. 2013. (Impact factor: 3, Quartile Score: Q2)
  176. Y.Prajapati\*, J. P. Saini, D.S.Chauhan and Vivek Singh, “Analytical solution of the scalar wave equation for slightly deformed optical Bragg waveguide” *Journal of Russian Laser Research*, volume-34, number-2, pp.110-116, March 2013. (Impact factor: 0.81, Quartile Score: Q3)
  177. Y.Prajapati, Vivek Singh and J. P. Saini, “Modal characteristic equation and dispersion characteristics for an elliptical Bragg waveguide with a small number of claddings” *Microwave and optical Technology Letters*, ISSN: 1098-2760, Wiley publication, Volume 53, Issue 4, April 2011, Pages: 932–938. (Impact factor:1.311, Quartile Score: Q2)
  178. Y.Prajapati, Vivek Singh and J. P. Saini, “Modal Analysis of a Super Elliptical Bragg Waveguide with a Small Number of Periodic Cladding Layers Based on a Very Simple Analytical Technology,” *International Journal for Light and Electron Optics (OPTIK)*, volume-120, issue-1, pp.14-19, January 2009. (Impact factor: 3.1, Quartile Score: Q2)
  179. Y.Prajapati, Vivek Singh, and J. P. Saini, “Modal Analysis and Dispersion Curves of a Bragg Fiber Having Asymmetric loop boundary,” *International Journal of Progress In Electromagnetics Research*, U.S.A., ISSN: 1559-8985, E-ISSN: 1070-4698, vol. 87, pp. 117–130, 2008 (Impact factor: 6.00, Quartile Score:Q2)
  180. Vivek Singh, Y.Prajapati, and J. P. Saini, “Modal Analysis and Dispersion Curves of a New Unconventional Bragg Waveguide Using a Very Simple Method,” *International Journal of Progress In Electromagnetics Research*, U.S.A., ISSN: 1559-8985, vol. 64, pp. 191–204, 2006. (Impact factor: 6.00, Quartile Score: Q2)

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## G. Books/Reports/Chapters

- 1 Dubey, Dheeraj, Jahnvi Tiwari, Ajay Kumar Yadav, Yogendra Kumar Prajapati, and Rajeev Tripathi. "BER Efficiency of Outdoor Optics Links Using Hybrid-SIM with Pointing Errors Operating on Extreme Turbulence Regime." In *International Conference on VLSI, Communication and Signal processing*, pp. 13-22. Singapore: Springer Nature Singapore, 2022. DOI: [https://doi.org/10.1007/978-981-99-0973-5\\_2](https://doi.org/10.1007/978-981-99-0973-5_2)
- 2 Pandey, Sanat Kumar, Priyanka Dwivedi, Shivam Singh, and Y. K. Prajapati. "Design of a



Dispersion Compensating Hexagonal Photonic Crystal Fiber (DC-HPCF) for High Nonlinearity and Birefringence." In *Advances in VLSI, Communication, and Signal Processing: Select Proceedings of VCAS 2021*, pp. 187- 199. Singapore: Springer Nature Singapore, 2022. DOI: [https://doi.org/10.1007/978-981-19-2631-0\\_17](https://doi.org/10.1007/978-981-19-2631-0_17)

- 3 Kumar, Rajeev, Sarika Pal, J. P. Saini, and Y. K. Prajapati. "Sensitivity Enhancement of Ti3C2Tx Based Bimetallic SPR Biosensor Using SiO2." In *Advances in VLSI, Communication, and Signal Processing: Select Proceedings of VCAS 2021*, pp. 151-164. Singapore: Springer Nature Singapore, 2022. DOI: [https://doi.org/10.1007/978-981-19-2631-0\\_14](https://doi.org/10.1007/978-981-19-2631-0_14)
- 4 Agarwal, Sajal, and Y. K. Prajapati. "Metal-Insulator-Metal Metamaterial Helical Absorber." In *Advances in VLSI, Communication, and Signal Processing: Select Proceedings of VCAS 2021*, pp. 25-30. Singapore: Springer Nature Singapore, 2022. DOI: [https://doi.org/10.1007/978-981-19-2631-0\\_3](https://doi.org/10.1007/978-981-19-2631-0_3)
- 5 Pal, Narendra, Sarika Pal, Y. K. Prajapati, and J. P. Saini. "A Comparative Performance Analysis of SPR Biosensor Using Metamaterial and Different Metal Oxides." In *Advances in VLSI, Communication, and Signal Processing: Select Proceedings of VCAS 2021*, pp. 11-23. Singapore: Springer Nature Singapore, 2022. DOI: [https://doi.org/10.1007/978-981-19-2631-0\\_2](https://doi.org/10.1007/978-981-19-2631-0_2)
- 6 Kumar, Rajeev, Maneesh Kumar Singh, Sarika Pal, Narendra Pal, and Y. K. Prajapati. "Sensitivity Enhancement of SPR Sensor Based on Ti3C2Tx (MXene) with Composite Layers of TiO2-SiO2." In *Advances in VLSI, Communication, and Signal Processing: Select Proceedings of VCAS 2021*, pp. 457- 466. Singapore: Springer Nature Singapore, 2022. DOI: [https://doi.org/10.1007/978-981-19-2631-0\\_40](https://doi.org/10.1007/978-981-19-2631-0_40)
- 7 Singh, Rukmani, Rupam Srivastava, Y. K. Prajapati and Dharmendra Kumar. "Silicon on Insulator-Based Ultra-Small Micro-Ring Resonator for Temperature Sensing." In *VLSI, Microwave and Wireless Technologies: Select Proceedings of ICVMWT 2021*, pp. 747-756. Singapore: Springer Nature Singapore, 2022. DOI: [https://doi.org/10.1007/978-981-19-0312-0\\_74](https://doi.org/10.1007/978-981-19-0312-0_74)
- 8 Singh, Shivam, Sanat Kumar Pandey, and Y. K. Prajapati. "Active Metal Coated Dual-Side Polished Plasmonic PCF Biosensor." In *Advances in VLSI, Communication, and Signal Processing: Select Proceedings of VCAS 2021*, pp. 85-96. Singapore: Springer Nature Singapore, 2022. DOI: [https://doi.org/10.1007/978-981-19-2631-0\\_8](https://doi.org/10.1007/978-981-19-2631-0_8)
- 9 Srivastava, Akash, Alka Verma, and Y. K. Prajapati. "Bloch Surface Wave (BSW) Based Biosensor-An Alternative of SPR Technique." In *Advances in VLSI, Communication, and Signal Processing: Select Proceedings of VCAS 2021*, pp. 555-563. Singapore: Springer Nature Singapore, 2022. DOI: [https://doi.org/10.1007/978-981-19-2631-0\\_48](https://doi.org/10.1007/978-981-19-2631-0_48)
- 10 Mankala, Rohith, and Y. K. Prajapati. "Machine Learning-Based FSO Link Performance Estimation." In *International Conference on VLSI, Communication and Signal processing*, pp. 1-12. Singapore: Springer Nature Singapore, 2022. DOI: DOI: [https://doi.org/10.1007/978-981-99-0973-5\\_1](https://doi.org/10.1007/978-981-99-0973-5_1)
- 11 Dubey, Dheeraj, Jahnvi Tiwari, Ajay Kumar Yadav, Y. K. Prajapati, and Rajeev Tripathi. "BER Efficiency of Outdoor Optics Links Using Hybrid-SIM with Pointing Errors Operating on Extreme Turbulence Regime." In *International Conference on VLSI, Communication and Signal processing*, pp. 13-22. Singapore: Springer Nature Singapore, 2022. DOI: DOI: [https://doi.org/10.1007/978-981-99-0973-5\\_2](https://doi.org/10.1007/978-981-99-0973-5_2)
- 12 Singh, Shivam, Akash Srivastava, Sanat Kumar Pandey, and Y. K. Prajapati. "Single-side-polished gold coated SPR-based PCF RI sensor." In *Recent Trends in Electronics and Communication: Select Proceedings of VCAS 2020*, pp. 299-307. Springer Singapore, 2022, DOI: [https://doi.org/10.1007/978-981-16-2761-3\\_28](https://doi.org/10.1007/978-981-16-2761-3_28)
- 13 Upadhyay, Anurag, Y. K. Prajapati, and Rajeev Tripathi. "Numerical analysis of transversely porous core pcf with square airhole cladding." In *Recent Trends in Electronics and Communication: Select Proceedings of VCAS 2020*, pp. 289-297. Springer Singapore, 2022, DOI: [https://doi.org/10.1007/978-981-16-2761-3\\_27](https://doi.org/10.1007/978-981-16-2761-3_27)



- 14 Srivastava, Akash, Alka Verma, and Y. K. Prajapati. "Effect of 2D, TMD, perovskite, and 2D transition metal carbide/nitride materials on performance parameters of SPR biosensor." In *Handbook of Nanomaterials for Sensing Applications*, pp. 57-90. Elsevier, 2021. DOI: <https://doi.org/10.1016/B978-0-12-820783-3.00005-1>
- 15 Agarwal, Sajal, and Y. K. Prajapati. "Effect of Structural Metal on Metamaterial-Based Absorber Performance." In *Advances in VLSI, Communication, and Signal Processing: Select Proceedings of VCAS 2019*, pp. 403-407. Springer Singapore, 2021. DOI: [https://doi.org/10.1007/978-981-15-6840-4\\_31](https://doi.org/10.1007/978-981-15-6840-4_31)
- 16 Sharma, Divya, Shikha Devi, and Y. K. Prajapati. "832.5 Gb/s PM-8QAM superchannel with 5 b/s/Hz spectral efficiency." In *Advances in VLSI, Communication, and Signal Processing: Select Proceedings of VCAS 2019*, pp. 67-74. Springer Singapore, 2021. DOI: [https://doi.org/10.1007/978-981-15-6840-4\\_6](https://doi.org/10.1007/978-981-15-6840-4_6)
- 17 Yadav, Ajay Kumar, Dheeraj Dubey, and Y. K. Prajapati. "Minimization of Peak-to-Average Power Ratio in DHT Precoded OFDM System by A-Law Companding." In *Advances in VLSI, Communication, and Signal Processing: Select Proceedings of VCAS 2019*, pp. 623-629. Springer Singapore, 2021. DOI: [https://doi.org/10.1007/978-981-15-6840-4\\_51](https://doi.org/10.1007/978-981-15-6840-4_51)
- 18 Srivastava, Akash, Shivam Singh, and Y. K. Prajapati. "Application of Carbon Nanotube (CNT) in Glucose Liquid Sample Sensing Using SPR Technique." In *International Conference on VLSI, Communication and Signal processing*, pp. 309-321. Singapore: Springer Nature Singapore, 2020. DOI: [https://doi.org/10.1007/978-981-16-2761-3\\_29](https://doi.org/10.1007/978-981-16-2761-3_29)
- 19 Yadav, Ajay Kumar, Pritam Keshari Sahoo, and Y. K. Prajapati. "DFT Precoder Technique Combined with  $\mu$ -Law Companding for PAPR Reduction in OFDM System." In *Advances in VLSI, Communication, and Signal Processing: Select Proceedings of VCAS 2018*, pp. 23-35. Springer Singapore, 2020. DOI: [https://doi.org/10.1007/978-981-32-9775-3\\_3](https://doi.org/10.1007/978-981-32-9775-3_3)
- 20 Sahoo, Pritam Keshari, Ajay Kumar Yadav, Y. K. Prajapati, and Rajeev Tripathi. "Optimum APD gain evaluation of FSO system for inter-building laser communication application." In *Advances in VLSI, Communication, and Signal Processing: Select Proceedings of VCAS 2018*, pp. 307-314. Springer Singapore, 2020. DOI: [https://doi.org/10.1007/978-981-32-9775-3\\_29](https://doi.org/10.1007/978-981-32-9775-3_29)
- 21 Sarika Pal, Narendra Pal, Y.K. Prajapati, J.P. Saini, "Sensitivity analysis of surface Plasmon resonance biosensor based on Heterostructure of 2D BlueP/MoS<sub>2</sub> and MXene", *Layered 2D advanced materials and their allied applications*, pp. 103-29, 18 May 2020, Wiley-Scrivener. DOI: <https://doi.org/10.1002/9781119655190.ch5>
- 22 Agarwal, Sajal, and Y. K. Prajapati. "Chip-Level Optical Interconnect in Electro-optics Platform." *Nanoscale VLSI: Devices, Circuits and Applications*, pp. 203-223, Springer Singapore, 2020. DOI: [https://doi.org/10.1007/978-981-15-7937-0\\_11](https://doi.org/10.1007/978-981-15-7937-0_11)
- 23 Sarika Pal, Y. K. Prajapati and J.P. Saini "Analyzing the Sensitivity of Heterostructure of BP Graphene/TMDC Layer Coated SPR Biosensor." In *Advances in VLSI, Communication, and Signal Processing: Select Proceedings of VCAS 2018*, pp. 663-671, 04 December 2019, Springer Singapore, 2020. DOI: [https://doi.org/10.1007/978-981-32-9775-3\\_61](https://doi.org/10.1007/978-981-32-9775-3_61)
- 24 Maurya, J. B., Alka Verma, and Y. K. Prajapati. "Phosphorene: A Worthy Alternative of Graphene and MoS<sub>2</sub> in Surface Plasmon Resonance Sensor", In *Advances in VLSI, Communication, and Signal Processing: Select Proceedings of VCAS 2018*, pp. 569-578, December 2019, Springer Singapore, 2020. DOI: [https://doi.org/10.1007/978-981-32-9775-3\\_51](https://doi.org/10.1007/978-981-32-9775-3_51)
- 25 Maurya, Jitendra Bahadur, Alka Verma, and Y. K. Prajapati. "Plasmonic Sensor Based on Graphene, Black and Blue Phosphorous in the Visible Spectrum", In *Modelling, Simulation and Intelligent Computing: Proceedings of MoSiCom 2020*, pp. 48-55, 29 July 2020, Springer Singapore, DOI: [https://doi.org/10.1007/978-981-15-4775-1\\_6](https://doi.org/10.1007/978-981-15-4775-1_6)

#### H. Publications (List of papers published in Conferences)

1. Kumar, Rakesh, Sarika Pal, and Y. K. Prajapati. "MPS Modified CeO<sub>2</sub> Oxide (Ceria) Mediated Surface Plasmon Resonance Sensor for Biomedical Application." *International Conference on*

*Signal Processing and Integrated Networks*, Singapore: Springer Nature Singapore, vol no. 1453, pp. 145-154, 16 October 2025

2. Verma, Alka, Aditya Kumar Maurya, Vimal Mishra, and Yogendra Kumar Prajapati. "Plasmonic effect-based dual-core PCF sensor for refractive index sensing." *2024 International Conference on Photonics Solutions (ICPS2024)*, vol. 13518, pp. 5-12. SPIE, 19 February 2025, DOI: <https://doi.org/10.1117/12.3058047>.
3. Kumar, Ajit, Sanjay Kumar, Vikram Pratap Singh, Vinit Kumar, Amritanshu Pandey, and Yogendra Kumar Prajapati. "Highly Sensitive Black Phosphorous and Si-Based SPR Sensor for Formalin Detection Applications." *2025 Third International Conference on Microwave, Antenna and Communication (MAC)*, pp. 1-6. IEEE, 27 June 2025, DOI: [10.1109/MAC64480.2025.11139880](https://doi.org/10.1109/MAC64480.2025.11139880),
4. Gaur, Samta, Rupam Srivastava, Vinit Kumar, Sarika Pal, and Yogendra Kumar Prajapati. "Magnetite-Based Surface Plasmon Resonance Sensor for Pseudomonas Bacteria Detection." *2025 Third International Conference on Microwave, Antenna and Communication (MAC)*, pp. 1-5. IEEE, 27 June 2025, DOI: [10.1109/MAC64480.2025.11140387](https://doi.org/10.1109/MAC64480.2025.11140387)
5. Dixit, Varunika, and Yogendra Kumar Prajapati. "Scintillation Effects on Plane and Spherical Waves in Oceanic Turbulence from Weak to Strong Regimes." *2025 Third International Conference on Microwave, Antenna and Communication (MAC)*, pp. 1-6. IEEE, 27 June 2025, DOI: [10.1109/MAC64480.2025.11140459](https://doi.org/10.1109/MAC64480.2025.11140459)
6. Agarwal, Sajal, Rahul Raparia, and Yogendra Kumar Prajapati "Graphene-Based Surface Plasmon Resonance Sensor for Milk Adulteration Sensing", *2024 IEEE Applied Sensing Conference (APSCON)*, pp. 1-4, IEEE, 2024, DOI: [10.1109/APSCON60364.2024.10466161](https://doi.org/10.1109/APSCON60364.2024.10466161)
7. Vinit Kumar, Rupam Srivastava, Anuj K Sharma, Yogendra Kumar Prajapati "Tunable plasmonic refractive index sensor based on enhanced photonic spin Hall effect", *In 2024 IEEE Applied Sensing Conference (APSCON)*, pp. 1-4, IEEE, 2024, DOI: [10.1109/APSCON60364.2024.10465867](https://doi.org/10.1109/APSCON60364.2024.10465867)
8. Srivastava, Rupam, Vinit Kumar, and Yogendra Kumar Prajapati. "Highly sensitive dual-side polished SPR based PCF sensor for blood compositions detection." *In 2023 IEEE Workshop on Recent Advances in Photonics (WRAP)*, pp. 1-3. IEEE, 2023. DOI: [10.1109/WRAP59682.2023.10712897](https://doi.org/10.1109/WRAP59682.2023.10712897)
9. Kumar, Virendra, Rajeev Kumar, Sarika Pal, and Yogendra Kumar Prajapati. "Early Detection of Dengue Virus Using GaSe and WS<sub>2</sub> Mediated Surface Plasmon Resonance Sensor With Ultrahigh Sensitivity." *In 2023 IEEE Workshop on Recent Advances in Photonics (WRAP)*, pp. 1-4. IEEE, 2023, DOI: [10.1109/WRAP59682.2023.10713006](https://doi.org/10.1109/WRAP59682.2023.10713006)
10. Kumar, Rajeev, Sarika Pal, Narendra Pal, J. P. Saini, and Y. K. Prajapati. "Performance Evaluation of Bimetallic Surface Plasmon Resonance Sensor Based on Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub> (MXene)", *In Recent Trends in Electronics and Communication: Select Proceedings of VCAS 2020*, pp. 13-25, Springer Singapore, 2022, DOI: [https://doi.org/10.1007/978-981-16-2761-3\\_2](https://doi.org/10.1007/978-981-16-2761-3_2)
11. Pal, Narendra, Jitendra Bahadur Maurya, and Yogendra Kumar Prajapati. "Figure of Merit Analysis of LRSPR Sensor using Graphene in NIR Regime." *In 2021 8th International Conference on Signal Processing and Integrated Networks (SPIN)*, pp. 434-439. IEEE, 2021. DOI: [10.1109/SPIN52536.2021.9566024](https://doi.org/10.1109/SPIN52536.2021.9566024)
12. Devi, Shikha, Divya Sharma, and Y. K. Prajapati. "5× 222 Gb/s PM-16QAM Nyquist-WDM Superchannel." *In Proceedings of International Conference on Sustainable Computing in Science, Technology and Management (SUSCOM)*, Amity University Rajasthan, Jaipur-India. 2019. DOI: <http://dx.doi.org/10.2139/ssrn.3351800>
13. Sharma, Divya, Vinit Jaiswal, Y. K. Prajapati, and Rajeev Tripathi. "Performance Optimization of Carving Signal RZ-DQPSK Modulation Scheme." *In Recent Trends in Communication, Computing, and Electronics: Select Proceedings of IC3E 2018*, pp. 27-33. Springer Singapore, 2019. DOI: [https://doi.org/10.1007/978-981-13-2685-1\\_3](https://doi.org/10.1007/978-981-13-2685-1_3)

14. Sharma, Divya, Y. K. Prajapati, and A. Upadhyay. "16× 40 Gb/s, 32× 40 Gb/s And 64× 40 Gb/s DWDM network." In *2018 international conference on computational and characterization techniques in engineering & sciences (CCTES)*, pp. 173-176. IEEE, 2018. DOI: [10.1109/CCTES.2018.8674065](https://doi.org/10.1109/CCTES.2018.8674065)
15. Kumar, Rahul, and Yogendra Kumar Prajapati. "Comparative Study of Photonic Crystal Fiber Using Different Structures." In *2018 3rd IEEE International Conference on Recent Trends in Electronics, Information & Communication Technology (RTEICT)*, pp. 2589-2593. IEEE, 2018. DOI: [10.1109/RTEICT42901.2018.9012299](https://doi.org/10.1109/RTEICT42901.2018.9012299)
16. Pal, Sarika, Narendra Pal, Y. K. Prajapati, and J. P. Saini. "Performance evaluation of SPR biosensor using metamaterial over conventional SPR and graphene based SPR biosensor." In *2018 5th International Conference on Signal Processing and Integrated Networks (SPIN)*, pp. 696-701. IEEE, 2018. DOI: [10.1109/SPIN.2018.8474060](https://doi.org/10.1109/SPIN.2018.8474060)
17. Sharma, Divya, and Y. K. Prajapati. "Terabit Nyquist superchannel transmission using PM-QPSK subchannels." In *2018 3rd International Conference on Microwave and Photonics (ICMAP)*, pp. 1-2. IEEE, 2018. DOI: [10.1109/ICMAP.2018.8354503](https://doi.org/10.1109/ICMAP.2018.8354503)
18. Agarwal, Sajal, and Y. K. Prajapati. "Effect of substrate on the performance of metamaterial based absorber." In *2018 3rd International Conference on Microwave and Photonics (ICMAP)*, pp. 1-2. IEEE, 2018. DOI: [10.1109/ICMAP.2018.8354500](https://doi.org/10.1109/ICMAP.2018.8354500)
19. Sharma, Divya, Shrish Bajpai, and Y. K. Prajapati. "Next generation PON using PM-BPSK and PM-QPSK modulation." In *2017 International Conference on Multimedia, Signal Processing and Communication Technologies (IMPACT)*, pp. 10-12. IEEE, 2017. DOI: [10.1109/MSPCT.2017.8363963](https://doi.org/10.1109/MSPCT.2017.8363963)
20. Singh, Anand, Divya Sharma, and Y. K. Prajapati. "Comparison of DPSK and QAM modulation schemes in Passive optical network." In *International Conference on Fibre Optics and Photonics*, pp. Tu4A-56. Optica Publishing Group, 2016. DOI: <https://doi.org/10.1364/PHOTONICS.2016.Tu4A.56>
21. Maurya, J. B., and Y. K. Prajapati. "Sensitivity Improvement of Graphene-Silicon Based One-Dimensional Photonic Crystal Biosensor." In *International Conference on Fibre Optics and Photonics*, pp. W3A-22. Optica Publishing Group, 2016. DOI: <https://doi.org/10.1364/PHOTONICS.2016.W3A.22>
22. Sharma, Divya, Jitendra Bahadur Maurya, and Yogendra Kumar Prajapati. "Effect of noise on constellation diagram of 100 Gbps DP-QPSK systems under influence of different digital filters." In *2015 International Conference on Microwave and Photonics (ICMAP)*, pp. 1-2. IEEE, 2015. DOI: [10.1109/ICMAP.2015.7408787](https://doi.org/10.1109/ICMAP.2015.7408787)
23. Maurya, J. B., Y. K. Prajapati, Vivek Singh, and J. P. Saini. "Field Confinement of Stacked Multilayer Slab Waveguide Using Graphene", In *International Conference on Fibre Optics and Photonics*, pp. M4A-25. Optica Publishing Group, 2014. DOI: <https://doi.org/10.1364/PHOTONICS.2014.M4A.25>

#### **I. Conferences & Workshop Organized**

- i. As a Coordinator organized "Workshop on High-End Optoelectronics Devices: Fabrication, Characterization, and Functionalization" January 1-8, 2024, under Karyashala, Science and Engineering Research Board (SERB), New Delhi
- ii. As a Coordinator organized Two-days' Workshop (Online) On Advances in Photonic Devices, Sensors, and Systems (APDSS), June 2-3, 2022, Under Scientific Social Responsibility (SSR) Scheme – SERB (India)
- iii. As a Coordinator DST Sponsored National Level Training Programme on Hands on Training on Microwave & Photonics Related Sophisticated Equipment and Components (HTMPRSEC22), under DST STUTI Programme-2022, June 06 -12, 2022, at Motilal Nehru National Institute of Technology (MNNIT) Allahabad, Uttar Pradesh, India
- iv. As an Organizing Secretary organized "Fourth International Conference on VLSI, Communication and Signal Processing (VCAS 2021)," during 24-26 September 2021, at Motilal

- Nehru National Institute of Technology (MNNIT) Allahabad, Uttar Pradesh, India
- v. As a Coordinator organized “2<sup>nd</sup> National workshop on Advances in Wireless and Optical Networks (AWON 2019)” during May 27, 2019 to June 01, 2019 at Motilal Nehru National Institute of Technology (MNNIT), Allahabad, Uttar Pradesh, India.
  - vi. As a Co-coordinator organized “National workshop on Advances in Wireless and Optical Networks (AWON 2014)” during 2<sup>nd</sup> to 7<sup>th</sup> June-2014 at Motilal Nehru National Institute of Technology (MNNIT), Allahabad, Uttar Pradesh, India.
  - vii. As an organizing secretary organized Students Conference on Engineering and Systems (SCES2014)”, from May, 28- 30, 2014, at Motilal Nehru National Institute of Technology (MNNIT), Allahabad, Uttar Pradesh, India.
  - viii. As a Co-coordinator organized “Mobile, Ad hoc and Vehicular Communication MAVECOM-2013” at MNNIT, Allahabad, during July 22-27, 2013.
  - ix. As a Coordinator organized “3G Wireless Networks, MIMO Systems and Antenna Design” at MNNIT, Allahabad, during July 08-13, 2013.
  - x. As a convener organized “Techzion-12” at B.I.E.T., Jhansi, during 6-7, April 2012.

#### **J. Outreach Activities**

1. Delivered an expert talk on “Introduction to Bragg waveguide” in the Faculty Development Program on Advanced in Microwave communication at B.I.E.T., Jhansi, during Dec.07-08, 2007.
2. Delivered an expert talk on “Metamaterials and its application in Optical Networks & Sensors” in the National workshop on “Advances in Wireless and Optical Networks (AWON-2014)” during 2<sup>nd</sup> to 7<sup>th</sup> June-2014 at M.N.N.I.T Allahabad.
3. Delivered an expert talk on “Metamaterials and its application in Optical devices” in the National workshop on “recent trends in Optical and Wireless Networks” during 3<sup>rd</sup> to 7<sup>th</sup> November 2014 at Sam Higginbottom Institute of Agriculture, Technology & Sciences, Naini, Allahabad.
4. Delivered an expert talk on “Innovative photonic for communication and sensing application” in the 6<sup>th</sup> International Conference on “Technology Innovation & Management for Sustainable Development (TiMS-16)” during 11-13 February 2016 at ITM University, Gwalior, M.P.
5. Delivered an expert talk on “Role of Materials in SPR Sensing” in STC on “Emerging Trends in Materials Science (STCETMS-2017)” during March 23-29, 2017 at Madan Mohan Malaviya University of Technology, Gorakhpur, UP.
6. Delivered an expert talk on “Laser for Optical Communication and Sensors” in STC on “Laser and its Applications-LAP 2017” during March 27-31, 2017 at M.N.N.I.T Allahabad.
7. Delivered an expert talk on “Advances in Surface Plasmon Resonance Sensing” in workshop on “Recent Trends in Photonics Technology (RTPT 2017)” during October 07-11, 2017 at IIT (ISM) Dhanbad. viii. Delivered an expert talk on “Advances on Optical Communication and Devices” in STC on “Advances modelling of microwave and photonics devices (AMMPD-2018)” during March 06, 2018 at Madan Mohan Malaviya University of Technology, Gorakhpur, UP.
8. Delivered an expert talk on “Advances in Free Space Optical Communication” in STC on “Recent Advances in Communication Engineering” during December 26-30, 2018 at Bundelkhand Institute of Engineering and Technology, Jhansi, UP.
9. Delivered an expert talk on “Advances in Optical Wireless Communication” in 2<sup>nd</sup> National Workshop on Advances in Wireless and Optical Networks (AWON-2019) during May 28, 2019 at M.N.N.I.T Allahabad, Prayagraj, UP.
10. Delivered an expert talk on “Materials and Structures for Sensing Applications” in STC on Smart Materials, Devices and Sustainable Technologies” (SMDST-19)” Department of Applied Science (Physics), during March 15–16, 2019 at Madan Mohan Malaviya University of Technology Gorakhpur (UP)-273010, UP.



11. Delivered an expert talk on “Advanced Modulation Techniques for Lower and Higher Optical Transmission Rates” in Workshop on Optical Fiber Communication and its Applications during September 7, 2019 at Department of Electronics, MITS Gwalior (M.P.) India
12. Delivered an expert talk on “Role of Photonic spin Hall effect in the Photonic devices: An sensing application” in Recent trends in Optical Engineering (RTOE 2020) September 23, 2020, S. V. National Institute of Technology, Surat.
13. Delivered an expert talk on “Free space optical communication” in Online Short-Term Course on Recent Trends in Wireless Communication on July 21, 2020, Department of Electronics Engineering, National Institute of Technology, Uttarakhand
14. Delivered an expert talk on “Wireless Optical Communication and its applications” May 21, 2021, Department of Electronics Engineering, MITS, Gwalior, MP.
15. Delivered an expert talk on “Nanotechnology and Nanomaterials for Circuits and Devices” GIAN course on Advances in Nanotechnology & its Application in Future Electronics March 9, 2022, Department of Electronics and Communication Engineering Motilal Nehru National Institute of Technology Allahabad, Prayagraj, India.
16. Delivered an expert talk on “Free Space Optics: Emerging beyond Conventional RF Communication” Atal Workshop on Photonics and its application, February 17, 2022, Department of Electronics Engineering Sardar Vallabhbhai National Institute of Technology, Surat-India
17. Delivered an expert talk on “Spin–Orbit Interactions (SOI) Light and its Applications” 6th IEEE International Workshop on Recent Advances in Photonics, 7-9<sup>th</sup> Dec. 2023, IIIT-Allahabad, Prayagraj, India
18. Delivered an expert talk on “Photonic Spin Hall Effect and its Applications on Sensing” October 23, 2023, 4<sup>th</sup> International Electronic Conference on Applied Sciences, Italy
19. Delivered an expert talk on “Photonic Spin Hall Effect and its Potential Applications in Field of Communication and Sensing” February 08, 2023, ECED, NIT Uttarakhand
20. Delivered an expert talk on “Piezoelectric Assisted High Photonic Spin Hall Effect” January 04, 2024, Workshop on High-End Optoelectronics Devices: Fabrication, Characterization, and Functionalization, ECED, MNNIT Allahabad, Prayagraj.
21. Delivered an expert talk on “Strong Spin-Orbit Interaction of Light in Plasmonic Nanostructures” February 09, 2024, Kalinga Institute of Industrial Technology, (KIIT) is Deemed to be University, Bhubaneswar, Odisha.
22. Delivered an expert talk on “Let's Commence the Research with Mindfulness” March 09, 2024, Shri Rama Krishna Group of Institution Satna, M.P. 485001.
23. Delivered an expert talk on “Photonic Spin Hall effect and its applications in Piezoelectric & Plexcitonic System” March 2, 2024, at Powering Progress: The International Conference on Energy, Functional Materials and Photonics (PPICEFP-2024), MMMUT Gorakhpur, UP.
24. Delivered an expert talk on “Role of the Engineers for Digital Innovation in Advancing Sustainable Development for Society” The Institution of Engineers (India) local chapter Prayagraj, May 17, 2024,
25. Delivered an expert talk on “Prospects for Forthcoming Technologies in Optical Communication,” International Conference on VLSI and Microwave and Wireless Technologies (ICVMWT 2024), Madan Mohan Malaviya University of Technology, Gorakhpur (U.P.) India. May 18, 2024.
26. Delivered an expert talk on “Strong Spin-Orbit Interaction of Light in Plasmonic Nanostructures for Advanced Optical Sensing,” One-week Online STTP on Recent Trends in Sensors and Internet of Things, NIT Surat, May 28, 2025
27. Delivered an expert talk on “Spin-Driven Light: Advancing Sensing Technologies through the Photonic Spin Hall Effect,” FDP on VLSI Devices, Circuit Design & Semiconductor Materials MNNIT Allahabad, Prayagraj, 20 July 2025.
28. Delivered an expert talk on “Manipulating Light with Spin-Orbit Interaction for Sensing Applications,” ECED, NIT Patna, October 08, 2025.

29. Delivered an invited expert talk on “Photonic Spin Hall Effect for Advancing Sensing Applications,” Symposium on Advanced Photonics (SAP 2025), IIT Indore, November 17, 2025.

**K. Details of Ph.D. Thesis Supervised**

1. Ms. Rupam Srivastava (Reg. No.2020REL11): Simulation and Experimental Investigation of Optical Sensors for Different Applications, Awarded Year: 2024.
2. Mr. Surjeet Raikwar (Reg. No. PhD/17/ECE/2215): Nanomaterials based design of SPR sensor: an application toward biosensing, Awarded Year: 2023.
3. Mr. Shivam (Reg. No.:2018REL13): Investigations Towards the Development of Plasmonic Sensors based on Photonic Crystal Fiber for Refractometric Sensing, Awarded Year: 2022.
4. Mr. Akash Srivastava (2018REL08): Sensing Performance Enhancement in SPR Based Sensor Using Two Dimensional and Related Nanomaterials, Awarded Year: 2022.
5. Mr. Dheeraj Dubey (2018REL04): Performance Analysis of Hybrid FSO/RF for Satellite and Terrestrial Communication, Awarded Year: 2021.
6. Mr. Vivek Kumar Srivastava (Enrolment No.:Ph.D/11/ECE/1078): Propagation of Electromagnetic waves in a Bragg wave guide having unconventional materials, Awarded Year: 2020.
7. Mr. Ajay Kumar Yadav (Reg. No.: 2016REL10): A Study on Some Hybrid Techniques for PAPR Reduction in OFDM System, Awarded Year: 2020.
8. Mr. Pritam Keshari Sahoo (2016REL16): Hybrid Modulation Techniques under Diverse Turbulence Conditions of Outdoor and Indoor FSO Channel, Awarded Year: 2020.
9. Ms. Sajal Agarwal (2014REL52): Design, Fabrication, and Characterization of Optical Devices: Absorber and Sensor, Awarded Year: 2019
10. Ms. Divya Sharma (2018REL53): Performance Evaluation of Advanced Modulation Techniques for Lower and Higher Optical Transmission Rates, Awarded Year: 2018.
11. Mr. Jitendra Bahadur Maurya (2018REL05): Design and Fabrication of Plasmonic Sensor Based on Graphene and MoS<sub>2</sub> for Biosensing, Awarded Year: 2017.
12. Ms. Sarika Pal (Enrolment No.: Ph.D/11/ECE/1075): To Study the Sensitivity of Optical Sensor in Layered Media Using Unconventional Material, Awarded Year: 2017.
13. Ms. Pooja Lohia (Enrolment No.: Ph.D/13/ECE/1136): Single Mode Optical Fiber Design for High-Speed Optical Communication Using Transfer Matrix Technique, Awarded Year: 2016.
14. Mr. Anurag Upadhyay (2013REL01): Analysis of Optical Waveguide Sensors having Metamaterial for Refractometry and Immunosensing Application, Awarded Year: 2016.

**L. Details of Consultancy Work**

- i. A third-party audit of Electrical work related to electrification at Devipattan, Project Manager, Office of Project Manager Unit-34, Uttar Pradesh Jal Nigam (Urban) Basti-272002, Rs. 1.50 Lakh, February 2025-March 2025 **(As a PI)**
- ii. A third-party audit of Electrical work related to electrification at Balrampur, Uttar Pradesh under Uttar Pradesh Rukhiya Nirman Nigam, Rs. 1.35 Lakh, December 2022-January 2023 **(As a PI)**
- iii. Third party audit of Electrical work related to the quality at Siddharthnagar, Uttar Pradesh under Uttar Pradesh Rajkiya Nirman Nigam, Rs. 2.89 Lakh, December 2022-January 2023 **(As a PI)**
- iv. Third party evaluation of CCTV, Wi-Fi, and Solar Light work in District- Kushinagar, Uttar Pradesh, under Uttar Pradesh Rajkiya Nirman Nigam, Rs. 1.50 Lakh, October 2021-November 2021 **(As a PI)**
- v. Veekay Connectors(P) Ltd., Naini, Allahabad for Confirmatory tests of fiber optical splitter with microlens chip, Rs. 50,000/- (As a member)

**M. Listed among the world's top 2% scientists every year since 2021, as published by Stanford University.**