Dr. Shweta Tripathi
Associate Professor
Department of Electronics & Communication Engineering
Motilal Nehru National Institute of Technology, Allahabad, UP-211014
Email: shtri@mnnit.ac.in, stripathi.rs.ece@iitbhu.ac.in
Phone: +91-532-2271467

PATENTS GRANTED

1. Title: Microfabrication Annealing Furnace with Integrated Magnetic Field and Electric Field Application and Affixable Hall Measurement Setup therein
Status: Granted **Grant Date:** 01/06/2022
Inventors: Mr. Brijesh Kumar Singh, Dr. Shweta Tripathi and Prof. P. Chakrabarti
Application No.: 201611018593 **Filing Date:** 30/05/2016

2. Title: A method for attaining p-type zinc oxide (ZnO) thin film
Inventors: Brijesh Kumar Singh, Lucky Agarwal and **Shweta Tripathi**
Status: Granted **Grant Date:** 21/12/2023
Filing Date: 13/12/2017 **Application No.:**201711044846

List of Publications

Publication	No.
Publication in IEEE Journals	38
International Publication in other reputed SCI/SCOPUS INDEXED journals	46
Publication in Conferences	26
Publication in Non SCI Journals	09

INTERNATIONAL JOURNALS (SCI/SCOPUS):

2025

1. Tulika Bajpai and Shweta Tripathi, "Al/PCBM/WSe2:MXene/PTPD/ITO Flexible Broadband Photodetector," in *IEEE Photonics Technology Letters*, vol. 37, no. 24, pp. 1397-1400, 15 Dec.15, 2025, doi: 10.1109/LPT.2025.3605019. **(I.F 2.3)**

2. Shweta Tripathi, S.Jit, " A glucose sensor based on a Fe_3O_4/LiF/Fe_2NiO_4 magnetic tunnel junction and its use in diabetes monitoring" *Discov. Sens.* **1**, 22 (2025). https://doi.org/10.1007/s44397-025-00023-z

3. Kiran Khaitan and Shweta Tripathi"MoS_2, Alq3 and PEDOT: PSS based nanocomposite for CO_2 gas sensing application. *Discov. Sens.* **1**, 17 (2025). https://doi.org/10.1007/s44397-025-00017-x

4. T. Bajpai and **Shweta Tripathi,** "WSe2 and rGO Heterojunction-Based UV-Visible Photodetector," in *IEEE Sensors Letters*, vol. 9, no. 8, pp. 1-4, Aug. 2025, **(I.F 2.2)**

5. Akshay Yadav, T. Bajpai, S. Jit and **Shweta Tripathi,** "'SnS2 and SnS Heterostructure Based High Responsivity Broadband Photodetector," in IEEE Photonics Technology Letters, vol. 37, no. 20, pp. 1149-1152, 15 Oct.15, 2025 **(I.F 2.3)**

6. T. Bajpai and **Shweta Tripathi, "**PEDOT: PSS: MoS_2: Alq3 Nanocomposite Based Wideband Photodetector," in IEEE Electron Device Letters, vol. 46, no. 8, pp. 1377-1380, Aug. 2025, doi: 10.1109/LED.2025.3577522. **(I.F 4.1)**

7. Lucky Agarwal, Ajay Kumar Dwivedi, Tulika Bajpai, Uvanesh Kasiviswanathan and **Shweta Tripathi**, "MXenes as a Tool to Control p-Type Conductivity in ZnO Thin Film," in IEEE Transactions on Semiconductor Manufacturing, vol. 38, no. 3, pp. 588-595, Aug. 2025, doi: 10.1109/TSM.2025.3575857. **(I.F 2.874)**

8. Saumya Tripathi, Ajay Kumar Dwivedi and Shweta Tripathi**,** "Effect of WSe_2 and PEDOT:PSS as Hole Transport Layers in SnS2/CuO-Based Photodetectors", in *Physics of the Solid State*, vol. 67, Issue 5, pp. 396-401, May 2025, doi: 10.1134/S1063783425600116 **(I.F 0.9)**

9. T. Bajpai and **Shweta Tripathi**, "m-MTDATA: WSe_2: Alq3 Nanocomposite Based Broadband Photodetector" in *IEEE Sensors Letters*, vol: 36, Issue 18, pp. 1101 – 1104, September 2024, doi**:** 10.1109/LPT.2024.3441749 **(I.F 2.2)**

10. T. Bajpai, Sunny and **Shweta Tripathi**, " WSe_2 and CuO Blend-Based Broadband Photodetector With Poly-TPD (HTL) and PCBM (ETL)", in *IEEE Transactions on Electron Devices,* vol: 72, Issue 4, pp. 1948 – 1953, 06 March 2025, doi**:** 10.1109/TED.2025.3545607 **(I.F 2.9)**

11. T. Bajpai, Sunny and **Shweta Tripathi**, "Performance Analysis of Wse_2 And Mxene Nanocomposite-Based Flexible Photodetector" in *IEEE Photonics Technology Letters*, vol: 37, Issue 6, pp. 345 - 348, 28 February 2025, doi: 10.1109/LPT.2025.3546715. **(I.F 2.3)**

12. U. Kasiviswanathan, Lucky Agarwal, Chandan Kumar, Ajay Kumar Dwivedi and **Shweta Tripathi**, "SnS_2 based extended gate Field Effect Transistor for low voltage pH sensing" accepted in *Material Letters*, vol: 391, pp. 138475, March 2025, doi: 10.1016/j.matlet.2025.138475 **(I.F 2.7)**

2024

13. A. K. Dwivedi, T. Bajpai, and **Shweta Tripathi**, "Either Poly (3, 4-Ethylenedioxythiophene) Polystyrene Sulfonate or Tungsten Diselenide is the First Choice For the Hole Transport Layer in Tin disulfide-Copper Oxide Heterojunction

Equipped With Erbium Doped Zinc Oxide Electron Transport Layer Based Photodetector", Optical Materials vol.159, , p.116584, doi: 10.1016/j.optmat.2024.116584, December 2024. **(I.F 3.8)**

14. T. Bajpai, A. Kumar Dwivedi, S. Tripathi, L. Agrawal and **Shweta Tripathi**, "CuO and MoS_2 Nanocomposite-Based High-Performance Wideband Photodetector," in *IEEE Transactions on Electron Devices*, vol. 71, no. 11, pp. 6799-6803, Nov. 2024, doi: 10.1109/TED.2024.3462657. **(I.F 2.9)**

15. Abhinav Pratap Singh, **Shweta Tripathi** and Satyabrata Jit, "Effect of MoO_3 HTL on the Performance of ITO/ZnO CQDs/F8BT:TIPS-Pentacene/MoO_3/Ag UV-Visible Photodetector," in IEEE Transactions on Electron Devices, vol. 71, no. 10, pp. 6104-6109, Oct. 2024, doi: 10.1109/TED.2024.3438109. **(I.F 2.9)**

16. T. Bajpai, S. Tripathi, A. K. Dwivedi, R. K. Nagaria and **Shweta Tripathi**, "WSe_2 and MoS_2 Nanocomposite-Based Efficient Broadband Photodetector," in *IEEE Photonics Technology Letters*, vol. 36, no. 18, pp. 1101-1104, 15 Sept.15, 2024, doi: 10.1109/LPT.2024.3441749. **(I.F 2.3)**

17. Ajay Kumar Dwivedi, Lucky Agarwal, Satyabrata Jit, and **Shweta Tripathi,** "Performance Analysis of CuO/MoS_2/SnS_2 Multilayer Broadband Photodetector," in IEEE Sensors Letters, vol. 8, no. 8, pp. 1-4, Aug. 2024, Art no. 3501804, doi: 10.1109/LSENS.2024.3421560. **(I.F 2.2)**

18. Ajay Kumar Dwivedi, Lucky Agarwal, Tulika Bajpai and **Shweta Tripathi,** "Er Doped ZnO/SnS2/PEDOT:PSS Double Heterostructure Photodetector and Its Application as Optocoupler," in *IEEE Sensors Journal*, vol. 24, no. 16, pp. 25609-25616, 15 Aug.15, 2024, doi: 10.1109/JSEN.2024.3421572. **(I.F 4.325)**

19. Tulika Bajpai, Ajay Kumar Dwivedi, Rajendra Kumar Nagaraia, and **Shweta Tripathi, "**High Performance Er-Doped ZnO (EZO)/WSe_2 Heterostructure-Based Wideband Photodetector," in *IEEE Journal on Flexible Electronics*, vol. 3, no. 5, pp. 214-220, May 2024, doi: 10.1109/JFLEX.2024.3384944

20. Tulika Bajpai, Ajay Kumar Dwivedi, Rajendra Kumar Nagaraia, and **Shweta Tripathi, "**High performance Al/WSe_2/CuO/ITO structure based broadband photodetector"Sensors and Actuators A: Physical,Volume 375,p.115525, January 2024. **(I.F 4.1)**

21. Saumya Tripathi, Ajay Kumar Dwivedi and **Shweta Tripathi**, "Broadband Photodetection in WSe_2 and Er Doped ZnO(EZO) Heterostructure," in *IEEE Photonics Technology Letters*, vol. 36, no. 9, pp. 581-584, 1 May1, 2024, doi: 10.1109/LPT.2024.3380516.**(I.F 2.6)**

22. Ajay Kumar Dwivedi, Satyabrata Jit, and **Shweta Tripathi, "**SnS_2 and ZnO Nanocomposite Prepared by Dispersion Method for Photodetector Application,"

in *IEEE Transactions on Semiconductor Manufacturing*, vol. 37, no. 1, pp. 129-136, Feb. 2024, doi: 10.1109/TSM.2023.3347606.**(I.F 2.79)**

23. Tulika Bajpai, Ajay Kumar Dwivedi, Rajendra Kumar Nagaria and **Shweta Tripathi,** Redphosphorus/WSe2 heterojunction based self-powered UV photodetector, accepted in *Optical and Quantum Electronics*, 56(3), p.335,(2024). https://doi.org/10.1007/s11082-023-05976**-2(I.F 2.79).**

24. Kavindra Kumar Kavi, **Shweta Tripathi**, Ram Awadh Mishra, and S. Kumar Analytical Modeling for Electrical Characteristics of Source Pocket-Based Hetero Dielectric Double-Gate TFETs. *Silicon16*(3), pp.1273-1282, 2024. https://doi.org/10.1007/s12633-023-02754-3.**(I.F 3.4)**

2023

25. **Ajay Kumar Dwivedi, Tulika Bajpai, Saumya Tripathi and Shweta Tripathi "**WSe_2 /MoS_2 /SnS_2 Flexible Heterostructure for Broadband Photodetector **"**in *IEEE Journal on Flexible Electronics,* vol. 2, no. 6, pp. 486-491, Nov. 2023, doi: 10.1109/JFLEX.2023.3307057.

26. Ajay Kumar Dwivedi, Satyabrata Jit, and **Shweta Tripathi**, High-Responsivity PEDOT:PSS/SnS_2/MoS_2 Double-Heterostructure-Based Organic–Inorganic Broadband Photodetector "in *IEEE Transactions on Electron Devices,* vol. 70, no. 9, pp. 4694-4699, Sept. 2023, doi: 10.1109/TED.2023.3298317."**(I.F 3.1)**

27. Ajay Kumar Dwivedi, Satyabrata Jit and **Shweta Tripathi**, "WSe2/Al2O3/SnS2 SIS Structure Based Self Powered UV-Vis Photodetector," in *IEEE Photonics Technology Letters*, vol. 35, no. 15, pp. 805-808, 1 Aug.1, 2023, doi: 10.1109/LPT.2023.3281257.**(I.F 2.6)**

28. Ajay Kumar Dwivedi and **Shweta Tripathi**, "High-Performance SnS2 and CuO Nanocomposite-Based Broadband Photodetector," in *IEEE Transactions on Electron Devices*, vol. 70, no. 5, pp. 2378-2383, May 2023, doi: 10.1109/TED.2023.3262491.**(I.F 3.1)**

29. Lucky Agarwal, Varun Mishra, Ravi Dwivedi, Vishal Goyal, and **Shweta Tripathi** , "Si-Ge based Vertical TFET Junction-Less Structure with improved sensitivity using Dielectric Modulation for Bio-Sensing Applications," in *Chinese physics B*, March 2023, DOI: 10.1088/1674-1056/acc7f6. **(I.F 1.7)**

30. Tulika Bajpai, Ajay Kumar Dwivedi, Rajendra Kumar Nagaria, and **Shweta Tripathi**, " High Performance WSe2 and CuO Heterojunction based Photodetector for wearable devices", in *Optical Materials, 143, p.114230, 2023*.**(I.F 3.9)**

2022

31. Ajay Kumar Dwivedi, R. Tripathi, Saumya Tripathi, Satyabrata Jit and **Shweta Tripathi**, "SnS2/PEDOT:PSS Heterostructure-Based High Performance UV-Visible Photodetectors," in *IEEE Electron Device Letters*, vol. 43, no. 11, pp. 1913-1916, Nov. 2022, doi: 10.1109/LED.2022.3207421. **(I.F 4.9).**

32. Richa Singh, Anshika Srivastava, Ajay Kumar Dwivedi and **Shweta Tripathi**, "Photoconductive and Photovoltaic Properties of Dual-Junction Thin-Film-Based Er-Doped ZnO/MoS/P-Si Heterostructure," in *IEEE Transactions on Electron Devices*, vol. 69, no. 11, pp. 6171-6177, Nov. 2022, doi: 10.1109/TED.2022.3206174 **.(I.F 3.1)**

33. Ajay Kumar Dwivedi, Saumya Tripathi, R. Tripathi, Satyabrata Jit and **Shweta Tripathi**, "PEDOT:PSS/Yb-Doped ZnO Heterojunction Based Flexible UV Photodetector," in *IEEE Photonics Technology Letters*, vol. 34, no. 18, pp. 949-952, 15 Sept.15, 2022, doi: 10.1109/LPT.2022.3195784. **(I.F 2.6)**

34. Ajay Kumar Dwivedi, Anshika Srivastava, and **Shweta Tripathi**, "Tin di-selenide and zinc oxide based SPR biosensor for detection of DNA hybridization, anemia and abnormality in urine," in *Opt Quant Electron* , vol. 54, pp. 366 ,2022, https://doi.org/10.1007/s11082-022-03759-9. **(I.F 3.0)**

35. Anshika Srivastava and **Shweta Tripathi**," Spectral response optimization in Pentacene and cupric oxide-based photodetector using structural engineering: Planar and bulk heterostructure", in *Optical Materials*, vol. 126, pp. 112136, 2022, doi: 10.1016/j.optmat.2022.112136.**(I.F 3.9)**

36. Lucky Agarwal, K. S. Rao, Anshika Srivastava, and **Shweta Tripathi**," Ytterbium doped ZnO nanolaminated planar waveguide for ring resonator applications", in *Journal of Physics D: Applied Physics*, vol. 55, no. 22, pp.225106, Mar. 2022, doi: 10.1088/1361-6463/ac57dd. **(I.F 3.4)**

37. Kavindra Kumar Kavi, **Shweta Tripathi**, Ram Awadh Mishra, and S. Kumar, "Design, Simulation, and Work Function Trade for DC and Analog/RF Performance Enhancement in Dual Material Hetero Dielectric Double Gate Tunnel FET", in *Silicon*, vol.14, 19 Feb. 2022, doi: 10.1007/s12633-022-01765-w**. (I.F 3.4)**

38. Ajay Kumar Dwivedi, T. Baliyan, &**Shweta Tripathi**, "Surface Potential Modeling of DG SOI MoS2 FET (MFET) and Gate Misalignment Effect Analysis Therein", in *Semiconductors* , vol. 55, pp. 717-725, 2022, doi: 10.1134/S106378262109003. **(I.F 0.7)**

39. Saumya Tripathi, Anshika Srivastava, A. Raman and **Shweta Tripathi**, "CuO/Pentacene Type-II Planar Heterojunction for UV-Vis-NIR Photodetection With High EQE," in *IEEE Transactions on Electron Devices*, vol. 69, no. 2, pp. 722-728, Feb. 2022, doi: 10.1109/TED.2021.3137374 **.(I.F 3.1)**

2021

40. Richa Singh and **Shweta Tripathi**, "Low Intensity UV Light Detection by Al2O3 Separated MoS2/CuO Junction," in *IEEE Photonics Technology Letters*, vol. 33, no. 24, pp. 1427-1430, 2021, doi: 10.1109/LPT.2021.3122803. **(I.F 2.6)**

41. Anshika Srivastava, Satyabrata Jit and **Shweta Tripathi**, "Er-Doped ZnO, CuO and Pentacene Based Broadband Photodetector With High External Quantum Efficiency," in *IEEE Electron Device Letters*, vol. 42, no. 12, pp. 1802-1805, Dec. 2021, doi: 10.1109/LED.2021.3121768. **(I.F 4.9)**

42. Anshika Srivastava and **Shweta Tripathi**, "Robustness of Pentacene:MoS2:ZnO Ternary Blend for Optoelectronic Devices," in *IEEE Transactions on Device and Materials Reliability*, vol. 21, no. 4, pp. 528-535, Dec. 2021, doi: 10.1109/TDMR.2021.3113761. **(I.F 2.0)**

43. Anshika Srivastava, Satyabrata Jit and **Shweta Tripathi**, "Pentacene and Er-Doped ZnO Nanocomposite Based UV-Visible-NIR Wideband Photodetector," in *IEEE Photonics Technology Letters*, vol. 33, no. 21, pp. 1193-1196, Nov. 2021, doi: 10.1109/LPT.2021.3113459. **(I.F 2.6)**

44. Anshika Srivastava, Satyabrata Jit and **Shweta Tripathi**, "High-Performance Pentacene/ZnO UV-Visible Photodetector Using Solution Method," in *IEEE Transactions on Electron Devices*, vol. 68, no. 7, pp. 3439-3445, July.2021, doi: 10.1109/TED.2021.3077348 **(I.F 3.1)**

45. Anshika Srivastava, Richa Singh, Satyabrata Jit and **Shweta Tripathi**, "Pentacene and CuO Nanocomposite Based Self-Powered Broadband Photodetector," in *IEEE Electron Device Letters*, vol. 42, no. 6, pp. 875-878, June 2021, doi: 10.1109/LED.2021.3075345. **(I.F 4.9)**

46. A. Pathak, M. Meena, and **Shweta Tripathi**, "Performance Analysis of Graphene-Coated GaAs SPR Sensor for Detection of DNA Hybridization," in *Phys. Solid State*, vol. 63, pp. 453–459, March. 2021, https://doi.org/10.1134/S1063783421030124. (**I.F 0.6)**

47. Anshika Srivastava, and **Shweta Tripathi**, "Responsivity Spectrum Tailoring of Pentacene:ZnO Multi-Nano Film based Bulk Heterojunction Photodetector," in *IEEE Transactions on Nanotechnology*, vol.20, pp.143-150,January. 2021 doi: 10.1109/TNANO.2020.3049055. **(I.F 2.4)**

2020

48. Richa Singh, Satyabrata Jit and **ShwetaTripathi**, "MoS2, rGO, and CuO Nanocomposite-Based High Performance UV-Visible Dual-Band Photodetectors," in *IEEE Photonics Technology Letters*, vol. 33, no. 2, pp. 93-96, 15 Jan.15, 2021, doi: 10.1109/LPT.2020.3045065. **(I.F 2.6)**

49. Anshika Srivastava, Richa Singh, Satyabrata Jit and **Shweta Tripathi**, "Fabrication of MoS2/ZnO Hybrid Nanostructures for Enhancing Photodetection," in *IEEE Photonics Technology Letters*, vol. 32, no. 24, pp. 1527-1530, 15 Dec.15, 2020, doi: 10.1109/LPT.2020.3039299. **(I.F 2.6)**

50. Richa Singh, Anshika Srivastava and **Shweta Tripathi**, "Ferromagnetism in Molybdenum Disulfide Thin Films Annealed in Magnetic Fields," in *IEEE Magnetics Letters*, vol. 11, pp. 1-5, 2020, Art no. 7104905, doi: 10.1109/LMAG.2020.3022613.**(I.F 1.2)**

51. Anshika Srivastava, Satyabrata Jit and **Shweta Tripathi**, "High-Performance Solution-Processed Pentacene/Al Schottky Ultraviolet Photodiode With Pseudo Photovoltaic Effect," in *IEEE Transactions on Electron Devices*, vol. 67, no. 10, pp. 4300-4307, Oct. 2020, doi: 10.1109/TED.2020.3013557. **.(I.F 3.1)**

52. Richa Singh, Anshika Srivastava, Satyabrata Jit and **Shweta Tripathi**, "Modulation of Room-Temperature Ferromagnetism in Copper Oxide Thin Films by Magnetic Field-Assisted Annealing," in *IEEE Transactions on Magnetics*, vol. 56, no. 7, pp. 1-8, July 2020, Art no. 2000408, doi: 10.1109/TMAG.2020.2994517 **(I.F 2.1)**

53. Richa Singh, Anshika Srivastava, Satyabrata Jit and **Shweta Tripathi**, "High Responsivity Visible Blind Pd/Al2O3/MoS2/ITO MISM UV Photodetector," in *IEEE Photonics Technology Letters*, vol. 32, no. 12, pp. 733-736, 15 June15, 2020, doi: 10.1109/LPT.2020.2993444. **(I.F 2.6)**

54. Lucky Agarwal, **Shweta Tripathi**, "High responsivity ZnO based p–n homojunction UV-photodetector with series Schottky barrier," in *Semiconductor Science and Technology*, vol.35, no.6, April 2020, doi:10.1088/1361-6641/ab7b0a. **(I.F 1.9)**

55. Anshika Srivastava, Richa Singh, **Shweta Tripathi**, "A Two-Dimensional (2D) Analytical Model for Sub-threshold Current and Sub-threshold Swing for Short Channel Triple Material Gate-Double Halo (TMG-DH) DG MOSFET" , in *Int. J. Thin. Fil. Sci. Tec* , vol. 9, no. 2, pp. 111-118, May 2020, doi: 10.18576/ijtfst/090204**(SCOPUS INDEXED)**

56. Lucky Agarwal, Richa Singh, Gaurav Varshney, K. Sambasiva Rao, and **Shweta Tripathi**, "Design and Analysis of Yb doped ZnO (YZO) and P-Si Bilayer Nano-Stacked Reflector for Optical Filter Applications", in *Superlattice and Microstructures* , vol. 146, October. 2020, doi: https://doi.org/10.1016/j.spmi.2020.106670. **(I.F 3.22)**

57. Srijan Pathak, Spriha Singh, Tanya Jha, Ankush Agarwal and **Shweta Tripathi**, "Analytical Modeling and Simulation of Highly Sensitive n-RADFET Dosimeter", in*Int. J. Thin. Fil. Sci. Tec*, vol.9 , no.1, pp. 41-49, Jan. 2020, DOI: 10.18576/ijtfst/090107. **(SCOPUS INDEXED)**

2019

58. Anshika Srivastava, Richa Singh and **Shweta Tripathi**, "Design and Analysis of visible photonics resonators coated with CuO thin film", in *Nanotechnology*, vol.31, no.15, Jan.2020, **DOI** 10.1088/1361-6528/ab6469. **(I.F 3.5)**

59. Richa Singh and **Shweta Tripathi**, "Evaluation of Optical Parameters and Characterization of few layer sputtered MoS2 film by Spectroscopic Ellipsometry", in *Optical and Quantum Electronics*, vol. 51, no.326, 2019, https://doi.org/10.1007/s11082-019-2041-3. **(I.F 3.0)**

60. Shrey and **Shweta Tripathi**, "Comparative Analysis of Double Gate Junction Less (DG-JL) and Gate Stacked Double Gate Junction Less (GS DG JL) MOSFETs," in *Semiconductors,* vol. 53, pp. 1804–1810, 2019 , https://doi.org/10.1134/S1063782619130190 **(I.F 0.7)**

61. Sapna Patel, Dushyant Kumar, Nitesh Kumar Chaurasia and **Shweta Tripathi**, "Analytical Modeling of Surface Potential and Drain Current of Hetero-Dielectric DG TFET and its Analog and Radio-Frequency Performance Evaluation," in *Semiconductors*, Vol. 53 , pp. 1797–1803, 2019, https://doi.org/10.1134/S1063782619130153. **(I.F 0.7)**

62. Richa Singh, Lalu Yadav, Shrey and **Shweta Tripathi,** "Effect of Annealing Time on the Structural and Optical Properties of n-CuO thin films deposited by sol-gel spin coating technique and its application in n-CuO/p-Si heterojunction diode," in *Thin Solid Films,* vol. 685, pp. 195-203, September 2019, https://doi.org/10.1016/j.tsf.2019.06.026. **(I.F 2.1)**

63. AkanshaVerma, Shrey, Shweta Tripathi, "Magnetic annealing temperature modulated room temperature ferromagnetism in Zn doped ZnO thin film," in *Journal of Magnetism and Magnetic Materials*, vol. 478, pp. 28-37, 15 May. 2019, https://doi.org/10.1016/j.jmmm.2019.01.059. **(I.F 2.7)**

64. Richa Singh and **Shweta Tripathi**, **"**Structural and optical properties of few-layer MoS_2 thin films grown on various substrates using RF sputtering process," in*Journal of Materials Science: Materials in Electronics*,vol.30, pp. 7665-7680, March .2019,https://doi.org/10.1007/s10854-019-01082-w. **(I.F 2.8)**

2018

65. Brijesh Kumar Singh, and **Shweta Tripathi** , "Performance analysis of Schottkydiodes based on Bi doped p-ZnO thin films," in *Superlattices and Microstructure*, Vol. 120, Pages 288-297, Aug. 2018, https://doi.org/10.1016/j.spmi.2018.05.054. **(I.F 3.22)**
66. Narendar Vadthiya, **Shweta Tripathi**and R. Bhavani Shankar Naik, "A Two-Dimensional (2D) Analytical Modeling and Improved Short Channel Performance of Graded-Channel Gate-Stack (GCGS) Dual-Material Double-Gate (DMDG)

MOSFET," in *Silicon*, vol. 10, pp. 2399–2407, July 2018, https://doi.org/10.1007/s12633-017-9683-1. **(I.F 3.4)**

67. Brijesh Kumar Singh, and **Shweta Tripathi** "Optical and Electrical Characterization of Stable p-Type ZnO Thin Films Obtained by Bismuth Doping" in *Journal of Nanoscience and Nanotechnology*, vol. 18, no. 6, pp. 4160-4166, June 2018, https://doi.org/10.1166/jnn.2018.15258**(I.F 1.35)**

68. Brijesh Kumar Singh, and **Shweta Tripathi** "p-n homojunction based on Bi doped p-type ZnO and undoped n-type ZnO for optoelectronic application in yellow-red region of visible spectrum," in *Journal of Luminescence*, vol.198, pp. 427-432, June 2018, https://doi.org/10.1016/j.jlumin.2018.02.072. **(I.F 3.6)**

2017

69. Lucky Agarwal, B.N. Naik., and **Shweta Tripathi**, "Highly Reflective Er doped ZnO thin film coating for application in UV Optical Ring Resonator", in *Nanotechnology*, Vol. 28, no. 46, Nov. 2017, **DOI** 10.1088/1361-6528/aa8ec0 **(I.F 3.5)**

70. Lucky Agarwal, **Shweta Tripathi** and P.Chakrabarti, "Analysis of Structural, Optical and electrical properties of Metal /p-ZnO based Schottky Diode", *in Journal of semiconductors*, Vol.38, no.10, October 2017, **DOI** 10.1088/1674-4926/38/10/104002. **(SCOPUS INDEXED)**

71. Brijesh Kumar Singh, Lucky Agarwal and **Shweta Tripathi** "Fabrication and Characterization of Cu Doped ZnO/Bi Doped ZnO Nanolaminates as Mirror for Application in Optical Devices, " in *IEEE transaction on Nanotechnology*, Vol. 16, No. 2, pp.-203-208, March 2017. doi: 10.1109/TNANO.2017.2649546. **(I.F 2.4)**

72. Bukke Naresh Naik, Lucky Agarwal and **Shweta Tripathi**, "Microstructural and Electrical Characterization of Pt/Si Nanowires Schottky Diode Grown by Metal Assisted Chemical Etching Method, " *International Journal of Thin Films Science and Technology*, vol. 6, no. 3, pp. 107-111, September 2017, DOI: 10.18576/ijtfst/060302. **(SCOPUS INDEXED)**

2016

73. **Shweta Tripathi** "A Two-Dimensional Analytical Modeling for Channel Potential and Threshold Voltage of Short Channel Triple Material Symmetrical Gate Stack (TMGS) DG-MOSFET" in *Chinese Physics B*,vol. 25, no.10, pp. 108503-1-7, August, 2016, DOI: 10.1088/1674-1056/25/10/108503. **(I.F 1.7)**

74. Lucky Agarwal, Brijesh Kumar Singh, **Shweta Tripathi** and P. Chakrabarti, "Fabrication and characterization of Pd/Cu doped ZnO/Si and Ni/Cu doped ZnO/Si Schottky Diodes" *Thin solid films*, vol. 612, no.1, pp. 259-266, August, 2016, https://doi.org/10.1016/j.tsf.2016.06.027. **(I.F 2.1)**

75. Brijesh Kumar Singh and **Shweta Tripathi** "Influence of Bi Concentration on Structural and Optical Properties of Bi Doped P-Type ZnO Thin Films Prepared by Sol Gel Method,"in*Journal of Materials Science: Materials in Electronics*, vol. 27, no.3, pp. 2360-2366, March, 2016, DOI: 10.1007/s10854-015-4033-9. **(I.F 2.8)**

76. Satyendra Kumar Singh, Purnima Hazra, **Shweta Tripathi**, P.Chakrabarti "Performance analysis of RF-sputtered ZnO/Si heterojunction UV photodetectors with high photo-responsivity", *Superlattices and Microstructures*, vol. 91, pp. 62–69, March 2016, https://doi.org/10.1016/j.spmi.2015.12.036.**(I.F 3.22)**

2015

77. Brijesh Kumar Singh and **Shweta Tripathi**, "Fabrication and characterization of Au/p-ZnO Schottky contacts", in*Superlattices and Microstructures*, vol.85, pp.697–706, September 2015, https://doi.org/10.1016/j.spmi.2015.06.038 . **(I.F 3.22)**

78. Satyendra Kumar Singh, Purnima Hazra, **Shweta Tripathi**, P.Chakrabarti, "Fabrication and experimental characterization of a sol–gel derived nanostructured n-ZnO/p-Si heterojunction diode", in *Journal of Materials Science: Materials in Electronics*, vol. 26, no.10, pp. 7829-7836, July 2015, DOI: 10.1007/s10854-015-3432-2. **(I.F 2.8)**

79. **Shweta Tripathi** and V. Narendra, "A Three-Dimensional (3D) Analytical Model for Subthreshold Characteristics of Uniformly Doped FinFET", in *Superlattices and Microstructures*, vol.83, pp.476–487, July 2015, DOI: 10.1016/j.spmi.2015.03.048.**(I.F 3.22)**

2014

80. **Shweta Tripathi**, "A Two-Dimensional (2D) Analytical Model for Channel Potential and Threshold Voltage of Short Channel Dual Material Gate-Lightly Doped Drain (DMG-LDD) MOSFET" *in Chinese Physics B*,vol. 23, no.11, pp.118505-1-6, September 2014,**DOI** 10.1088/1674-1056/23/11/118505. **(I.F 1.7)**

2013

81. **Shweta Tripathi** and S. Jit, "Analytical Modeling of the Current (I)-Voltage (V) Characteristics of Sub-Micron Gate-Length Ion-Implanted GaAs MESFETs under Dark and Illuminated Conditions", *IET-CDS*, vol. 7, pp. 42-60, 2013, DOI: 10.1049/iet-cds.2012.0145**(I.F 1.65)**

2011

82. **Shweta Tripathi** and S. Jit, "A two-dimensional analytical model for the gate-source and gate-drain capacitances of ion-implanted short-channel GaAs MESFETs under dark and illuminated conditions" *J. Appl. Phys.*, vol.109, pp. 053102-1-10, March 2011, DOI: 10.1063/1.3549257**(I.F 3.2)**

83. **Shweta Tripathi** and S. Jit, "A two-dimensional (2D) analytical model for the potential distribution and threshold voltage of short-channel ion-implanted GaAs MESFETs under dark and illuminated conditions" *Journal of Semiconductor Technology and Science*, vol.11, no.1, pp.40-50March, 2011, DOI: 10.5573/JSTS.2011.11.1.040**(I.F 0.4)**

84. **Shweta Tripathi** and S.Jit, "A two-dimensional (2D) potential distribution model for the short gate-length ion-implanted GaAs MESFETs under dark and illuminated conditions" *J. Nano-Electron. Phys.*, vol.3, pp.868-877, December 2011. **(SCOPUS INDEXED).**

INTERNATIONAL JOURNALS (NON-SCI):

85. **Shweta Tripathi**,A Two-Dimensional (2D) Analytical Model for Channel Potential and Threshold Voltage of Short Channel Triple Material Gate-Double Halo (TMG-DH) DG MOSFET, Journal of Microelectronics and Solid-State Devices ISSN: 2455-3336 (Online) Volume 6, Issue 2,pp.13-25, September 2019.

86. Lucky Agarwal, **Shweta Tripathi** and P.Chakrabarti,"Effects of Copper concentration on structural and optical properties of Copper doped ZnO prepared by Sol-Gel spin coating method, Materials focus, February 2018.

87. Sutirtho Boral and **Shweta Tripathi**, Modeling and Analysis of Sputtering Process Parameter Dependence on Optical and Structural Properties of ZnO Thin Film, Material Focus,April 2018.

88. **Shweta Tripathi** and S.Jit, "Depletion Layer Modeling For Short Gate-Length Non-Uniformly Doped GaAs MESFET Under Dark And Illuminated Condition" Journal of Atomic, Molecular, Condensate and Nano Physics (JAMCNP),pp.37-43,2014.

89. Brijesh Kumar Singh, Lucky Agarwal and **Shweta Tripathi, "**Work Function estimation of Bismuth doped ZnO thin films**",** Advanced Nanoscience and Technology: An International Journal (ANTJ), Vol. 2, No.2/3, September 2016.

90. Brijesh Kumar Singh, Lucky Agarwal and **Shweta Tripathi, "**Refractive index and dielectric constant evaluation of Bi doped p-ZnO thin film deposited by sol gel method", Journal of electron devices, vol.23, no.1,2016, pp 1917-1921.

91. Kritika Singh and **Shweta Tripathi**, Optimization of Resonant Frequency of Piezoelectric Energy Harvester, National Conference On "S&T Review - an international journal of Science and Technology, vol.2, no.2, 2013.

92. **Shweta Tripathi** and S. Jit, " A capacitance model for the optically controlled short-gate length non-self-aligned GaAs MESFETs with a vertical Gaussian-Like doping profile " *Journal of Electron Devices*, vol. 9, pp. 352-361, 2011.

93. **Shweta Tripathi** and S.Jit, "Transit-Time model for short-gate length ion-implanted GaAs OPFETs" *International Journal of Computer Applications* (IJCA), pp.22-24, December 2011.

INTERNATIONAL CONFERENCE:

1. Ajay Kumar Dwivedi, Tulika Bajpai, Ravi Raj and Shweta Tripathi "Study and Characterization of Pentacene and Pentacene:MoS2 Nanocomposite Based ReRAM by a Low Cost Spin Coating Technique" presented in VCAS conference and published as book chapter in springer in January 2026.

2. Ajay Kumar Dwivedi, Richa Singh and Shweta Tripathi "Effect of Annealing on the Absorbance of MoS2 Thin Films Deposited on ITO Substrate by RF Sputtering Technique" presented in VCAS conference and published as book chapter in springer in January 2026.

3. Tulika Bajpai, R.K.Nagaria, Shweta Tripathi, "WSe2:ZnO nanocomposite based UV Photodetector with PMMA (HTL)and PCBM (ETL), presented in IEEE Region 10 Conference (TENCON 2024).

4. Anshika Srivastava, Harsh Jain and **Shweta Tripathi,** Organic Pentacene-Based Vertical Organic Tunnel Field Effect Transistor (TFET): Simulation Study,June 2023, DOI: 10.1109/ICICAT57735.2023.10263733,International Conference on IoT, Communication and Automation Technology (ICICAT).

5. Performance Analysis of MoS2FET for Electronic and Spintronic Application, January 2021, Published in book Advances in VLSI, Communication, and Signal Processing.

6. Lucky Agarwal, Richa Singh and **Shweta Tripathi**, Structural and Optical Characterization of EZO Thin Film for Application in Optical Waveguide, January 2021, Published in book Advances in VLSI, Communication, and Signal Processing.

7. Anshika Srivastava and **Shweta Tripathi**, Structural and Optical Analysis of Bulk-Hetero Interface Between MoS2: Pentacene, January 2021, Published in book Advances in VLSI, Communication, and Signal Processing.

8. Kavindra Kumar Kavi, R.A. Mishra and **Shweta Tripathi**, Performance Analysis of MoS2FET for Electronic and Spintronic Application, January 2021

9. Richa Singh, **Shweta Tripathi**, (2020) Refractive Index and Dielectric Constant Evaluation of RF Sputtered Few Layer MoS_2 Thin Film. In: Dutta D., Kar H., Kumar

C., Bhadauria V. (eds) Advances in VLSI, Communication, and Signal Processing. Lecture Notes in Electrical Engineering, vol 587. Springer, Singapore

10. Lucky Agarwal , B.K. Singh, **Shweta Tripathi** , P.Chakrabarti (2020) Work Function Estimation of Copper-Doped ZnO Thin Film. In: Dutta D., Kar H., Kumar C., Bhadauria V. (eds) Advances in VLSI, Communication, and Signal Processing. Lecture Notes in Electrical Engineering, vol 587. Springer,2020, Singapore

11. Lucky Agarwal, Brijesh Kumar Singh, **Shweta Tripathi** and P.Chakrabarti," Fabrication and Characterization of Thin Film Heterojunction diodes for Smart System" IEEE Conference on emerging devices and smart systems – ICEDSS 2017, Proceeding available on line at www.ieee.org.

12. Lucky Agarwal, Brijesh Kumar Singh, R.A. Mishra and **Shweta Tripathi**, "Short Channel Effects (SCEs) Characterization of Underlaped Dual-k Spacer in Dual-Metal Gate FinFET Device" ICCCM 2016, Proceeding available on line at www.ieee.org.

13. Rishi Tripathi, Brijesh Kumar Singh, Lucky Agarwal and **Shweta Tripathi,"** Analytical Modeling and Simulation of Surface Potential of Short Channel Double Halo Strained-Si (DHS)-DG MOSFET", ICCCM 2016.

14. Brijesh Kumar Singh, and **Shweta Tripathi**. "Determination of optical parameters of p-ZnO thin film obtained by Bi doping." *2015 Annual IEEE India Conference (INDICON)*. IEEE, 2015.

15. Satyendra Kumar Singh, Purnima Hazra, **Shweta Tripathi**, P. Chakrabarti, "Fabrication and Characterization of Mg Doped ZnO Nanostructures Thin Film by RF Magnetron Sputtering Technique" ETMN 2015, AIP proceedings.

16. Lucky Agarwal, Brijesh Kumar Singh, **Shweta Tripathi** and P.Chakrabarti, "Determination of Optical Properties of Copper Doped ZnO Thin Films" ETMN 2015, AIP proceedings.

17. Satyendra Kumar Singh, Purnima Hazra, **Shweta Tripathi**, P. Chakrabarti, "Optical Characterization of Mg Doped ZnO Nanostructures Thin Film deposited by RF Magnetron Sputtering Technique" published in the AIP proceeding of ICC,Bikaner Rajashtan, 2015.

18. Satyendra Kumar Singh, Purnima Hazra, **Shweta Tripathi**, P.Chakrabarti, Performance analysis of RF sputtered ZnO /Si heterojunction UV photodiode, 4th International conference on Current Development in Atomic, Molecular, Optical & Nano Physics with Application (CDAMOP-2015) held at Dept. of Physics & Astrophysics, University of Delhi, Delhi India, March 11-14, 2015.

19. Jitendra Rastogi and **Shweta Tripathi**, Comparative Study of Methane(CH4) Adsorption on (12,0) and (5,5) Bamboo Like Carbon Nano Tubes (BCNTs),

International Conference on Power, Control and Embedded System (ICPCES-2014) held at MNNIT, Allahabad, India during December 26-28, 2014. Proceeding to be available on line at www.ieee.org.

20. Nidhi Singh and **Shweta Tripathi**, "Analytical Modeling of the Surface Potential of Triple Material Symmetrical Gate Stack Double Gate (TMGS-DG) MOSFET" *International Conference On Recent Advances and Innovation in Engineering* (ICRAIE-2014), 09-11 May – 2014, Jaipur, Proceeding to be available on line at www.ieee.org.

21. Nidhi Singh, Vipin Kumar Singh and **Shweta Tripathi**, Design and Optimization of Tunnel Field Effect Transistor (TFET) Based on ATLAS™ Simulation, students' Conference on Engineering and Systems, SCES-2014,May 28-30, 2014

22. **Shweta Tripathi** and S.Jit, "Threshold Voltage Model for Ion-Implanted Short Gate-Length GaAs MESFET under Dark and Illuminated Conditions" published in the proc. of *Spanish Conference on Electron Devices* (CDE) at Palma, Spain, Feb. 2011, available on line at www.ieee.org.

23. **Shweta Tripathi** and S.Jit, "Depletion Layer Modeling For Short Gate-Length Non-Uniformly Doped Gaas MESFET Under Dark And Illuminated Condition" published in the proc. of Current Developments in Atomic, Molecular, Optical & Nano physics(CDAMOP) at Delhi, India, December, 2011. (**Paper presented and also published in non-sci journal**)

24. **Shweta Tripathi** and S.Jit, "Modeling of Photodependent Capacitance for Short Gate-length Ion-implanted GaAs MESFETs" published in the proc. of*International Workshop on the Physics of Semiconductor Devices* (IWPSD) at IIT Kanpur, India, December, 2011.

25. **Shweta Tripathi** and S.Jit, "I-V Model for Short Gate Length Ion-implanted GaAs OPFETs" published in the proceeding of *International Conference on Multimedia, Signal Processing and Communication Technologies* (IMPACT) at Aligarh, India, will be available online at www.ieee.org, pp. 80-82, December, 2011.

26. **Shweta Tripathi** and S.Jit, "Analytical Modeling of Frequency dependent characteristics of an Ion-Implanted short channel GaAs OPFET" published in the proc. of *International Conference on Electronic Systems* (ICES 2011) at NIT-Rourkela, pp.135-138, January 2011.

PROFESSIONAL ACTIVITIES

- Warden Incharge (Girls Hostel) Since 18 October 2025
- Warden of KNGH Hostel MNNIT 06 May 2023-17 October 2025.
- Senior Member IEEE from 20 Feb 2021.
- Life Member of Indian Society for Technical Education (M. No. : LM90626).
- Reviewer of Scientific Reports, Journal of materials in electronics, journal of applied physics D and many other reputed journals.
- Coordinator NPMASS Project from December 2013 to till end.

WORK EXPERIENCE:

- Worked as Assistant Professor (AGP-7000) in MNNIT, Allahabad from 15/10/2012 to 27/03/2018.
- Worked as Assistant Professor (AGP-8000) in MNNIT, Allahabad from 27/03/2018 to 11/08/2023.
- U.G.C. junior research fellowshipwas awarded for 2 year during research work.
- U.G.C. senior research fellowshipwas awarded for 2 year during research work

WORKSHOPS/SHORT TERM PROGRAMS COORDINATED:

- Coordinated a short term course on Microelectronic Device Modeling & TCAD Simulation (MICROMOTS) during 14-18 April 2014 organized at MNNIT Allahabad.
- Coordinated Workshop on scientific contributions of Acharya Jagadish Chandra Bose & Acharya Prafulla Chandra Ray (December 23-24, 2013) organized at MNNIT Allahabad.
- Coordinated Workshop on multiphysics simulation using COMSOL (January 8, 2014) organized at MNNIT Allahabad.
- Coordinated Short term training program on self defense (October 22-27, 2013) organized under the aegis of Women Grievance cell MNNIT Allahabad.
- Coordinated Hand-on Training on multiphysics simulation using various modules of COMSOL (September 18-19, 2014) organized at MNNIT Allahabad.

RESEARCH STUDENT ADVISING

- PhD supervision: 7 completed, 2 on-going
- M.Tech supervision: 18 completed, 2 on-going
- B.Tech projects: 26 groups completed

MAIN COURSES TAUGHT:

- Optoelectronics Devices & Application
- VLSI Technology
- VLSI Technology & Device Modeling
- Solid state devices & Circuit
- Semiconductor Devices & Modeling