

MINAKSHI SHARMA

Assistant Professor of Physics | **Researcher in Materials & Optoelectronic Devices**
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PROFILE & RESEARCH INTERESTS

- **Research Experience:** 7.5 years (Material Synthesis and Device Testing)
- **Teaching Experience:** 3.5 years (Assistant Professor, Physics)
- **Research Associate:** 1 year in DST-STUTI sponsored project.
- Research interests include material synthesis and fabrication/testing of optoelectronic devices based on organic polymers and inorganic materials;
- Graphene and Graphene-derived materials; thin-film semiconductors; photodetectors; perovskite devices; machine learning; Oghma Nano; and SCAPS-1D.
- **15** Published international research papers in Q1/Q2 journals, **5** book chapters and a granted Indian patent.
- **237 citations, h-index 8, i10-index 8.**

PROFESSIONAL EXPERIENCE

- Assistant Professor, School of Sciences, Noida International University, Uttar Pradesh **Nov 2024 – Present**
- Assistant Professor, Department of Physics, Om Sterling Global University, Hisar, Haryana **Apr 2024 – Oct 2024**
- Assistant Professor, Department of Physics, Shri Kushal Das University, Hanumangarh, Rajasthan **8 Apr 2023 – 10 Apr 2024**
- Research Associate, Department of Physical Sciences, Banasthali Vidyapith; DST-STUTI Project — **Apr 2022 – Mar 2023**
- Research Scholar, Department of Physical Sciences, Banasthali Vidyapith **Jul 2018 – Mar 2022**
- M.Sc. Research Project, Department of Physical Sciences, Banasthali Vidyapith — **6 months, 2016**

PATENT

- **Layer-Engineered Perovskite Solar Energy Conversion Device** — Granted by the Government of India (2026).

RESEARCH PUBLICATIONS — JOURNAL ARTICLE

Sr.No.	Publication	Authors	Journal (Impact Factor)	Date
1.	Optoelectronic Properties of G and rGO doped Polymer based Nanocomposites: A Comparative Study	Kanika Sharma, M.Sharma , C. M. S.Negi, P. A. Alvi, S. K. Dwivedi, Vikram Singh	Physica B: Condensed Matter (3.2) Q2 Wos/Scopus/SCIE	July 2026
2.	Ensemble Machine Learning Digital Twin for Bulk and Porous g-C3N4 Photodetectors	M.Sharma , Pradyut Anand, C. M.S Negi, P. A. Alvi, D. M. Sekban, E. U. Yaylac, M. Yaylac	Optical Materials (4.3) Q1 Wos/Scopus/SCIE	June 2026
3.	Carbon-based electron transport layer to improve the organic photodetector performance	M. Sharma , C. M. S. Negi, P. Diwakar, P. A.Alvi	J. Mater. Sci.: Mater. Electron (3.2) Q2 Wos/Scopus/SCIE	April 2026
4.	Photoelectric properties of PANI:ICBA bulk heterojunction: effect of solvent additive	M. Sharma , C. M. S. Negi, S. K. Gupta, P. A.Alvi	Synthetic Metals (4.5) Q1 Wos/Scopus/SCIE	January 2026
5.	P3HT:Fullerene-Based Composite as Active Layer for Optoelectronic Applications	M. Sharma , C. M. S. Negi, P. A. Alvi	Journal of Electronic Materials, (2.8) Q2 Wos/Scopus/SCIE	2025
6.	Organic Photodiode based on PTB7-Th:PCBM as photoactive layer	M. Sharma , P. Diwakar, Varsha Yadav, C. M.S. Negi, P. A. Alvi	Indian Journal of Physics (1.7) Q3 Wos/Scopus/SCIE	2025
7	Carbon and its derivative-based ternary composites as a photoactive layer for optoelectronic application	M. Sharma , C. M. S. Negi, P. A. Alvi	Indian Journal of Physics (1.7) Q3 Wos/Scopus/SCIE	2023

8	Comprehensive study of CsGeBr ₃ perovskite: optical, electronic, and thermoelectric properties	S. N. S. Srinivas, M. Sharma , V. Yadav, U. Kumar	Emergent Materials, (4.0) Q2 Wos/Scopus/SCIE	2023
9	Carbon nanomaterial-based composites as an active layer for optoelectronic device application: A comparative study	M. Sharma , C. M. S. Negi, P. A. Alvi, Varsha Yadav, Upendra Kumar	J. Mater. Sci.: Mater. Electron (3.2) Q2 Wos/Scopus/SCIE	2023
10	Synthesis and investigation of structural, morphological and dielectric properties of Ba-ordered BaTiO ₃ perovskite oxide	R. S. Maurya, V. Yadav, H. Cheema, M. Sharma , P. A. Alvi, S. Kumar, P. K. Sonkar	Energy Storage (4.0) Q2 Wos/Scopus/SCIE	2023
11	P3HT-rGO composites for High-Performance Optoelectronic Devices	M. Sharma , Nidhi Sharma, P. A. Alvi, S. K. Gupta, C. M. S. Negi	Optical Materials (4.3) Q1 Wos/Scopus/SCIE	2022
12	Study of structural, optical, dielectric, and electric properties of homovalently substituted Ce in SrTiO ₃ perovskite oxide	V. Yadav, H. Cheema, R. S. Maurya, S. Kumar, P. A. Alvi, M. Sharma , U. Kumar	Ionics (3.4) Q2 Wos/Scopus/SCIE	2022
13	Structural, Dielectric and Electrical Properties of Homovalent Doped SrSn _{1-x} Ti _x O ₃ (0 ≤ x ≤ 0.08) System	A. Kumar, M. K. Singh, M. Sharma , U. Kumar	Indian Journal of Physics (1.7) Q3 Wos/Scopus/SCIE	2022
14	The optoelectronic behavior of reduce graphene oxide-carbon nanotube nanocomposites	M. Sharma , P. A. Alvi, S. K. Gupta, C. M. S. Negi	Synthetic Metals (4.5) Q1 Wos/Scopus/SCIE	2021
15	A comparative analysis of the optoelectronic performance of conventional and inverted design organic photodetectors	Nidhi Sharma, C. M. S. Negi, M. Sharma , A. S. Verma, S. K. Gupta	Optical Materials (4.3) Q1 Wos/Scopus/SCIE	2019

➤ CONFERENCE PROCEEDING

- **Bulk heterojunction PTB7-Th: ICBA-based Optoelectronic Devices** — M. Sharma, C. M. S. Negi, P. A. Alvi, S. K. Gupta; 5th International Conference on Multimedia, Signal Processing and Communication Technologies (IMPACT), 2022. DOI: 10.1109/IMPACT55510.2022.10029022.

BOOK CHAPTERS

Sr.No.	Chapter	Authors	Publisher
1.	Fabrication and Characterization tools for organic semiconductors as smart materials in Optoelectronic device applications	M. Sharma , C. M. S. Negi, P. A. Alvi, S. K. Gupta	Wiley-Scrivener Publishing, SMES-CH02
2.	Carbon Based 2D materials: Synthesis, Characterization and their Green Energy Applications	M. Sharma , P. Diwakar, V. Yadav, C. M. S. Negi, P. A. Alvi	Wiley-Scrivener Publishing
3.	Synthesis and Characterization of Graphene based nanomaterials for green energy Applications	M. Sharma , M. Kumar Yadav, K. Singh, B. Prabhakar, N. Panwar, V. Singh	Springer Nature
4.	Synthesis and fabrication of Nitride based materials for Optoelectronic Applications	K. Sharma, M. Sharma , Prachi Diwakar, Sarita Yadav, varsha Yadav	Springer Nature
5.	Piezoelectric, Pyroelectric, and Dielectric Properties of PZT: Nylon 11 and Graphite Doped PZT: Nylon11 Composites	A. Sharma, M. Sharma , V. Yadav	Wiley-Scrivener Publishing

CONFERENCES, WORKSHOPS & CERTIFICATIONS

- Organised International Conference on Data-Driven Insights for National Security (DINS-2026).
- Presented papers at ICRE-2022, RAFM-2022, ICMSS-2021 and NCRABSR-2018.
- Coordinator, guest lecture on Radiotherapy Practice and the Role of Technologists, NIU, 16 Feb 2026.
- Hands-on Training on Characterization of Solar Cells, INUP-i2i, IIT Delhi, Dec 2022.
- Workshop on Fabrication and Characterization Facility for Nanotechnology, IIT Delhi, Jan 2023.
- Workshop on NanoDCAL Software for Nanoelectronics Materials and Device Simulation, Aug 2022.

TECHNICAL SKILLS

Experimental: XRD, FESEM, RF/DC sputtering, Raman spectroscopy, solar simulator, two-/four-probe electrical measurements, UV-visible-NIR spectroscopy, photoluminescence, EIS, refractometer, glove box, thermal evaporation unit. **Software:** EIS Spectrum Analyzer, Origin, Microsoft Office, Oghma Nano, SCAPS-1D.

AWARDS & Achievements

- **CSIR-UGC JRF (AIR-80), December 2023.**
- Second Prize, Vice Chancellor Innovation Challenge, Banasthali Vidyapith, 2018.
- First Prize, Model Presentation on Golden Ratio, National Science Day, 2016.
- Reviewer, American Journal of Physics and Applications.
- Board Member, PriMera Scientific Engineering (PSEN) Journal.

SUPERVISION

- Co-supervisor: Kanika Sharma — Synthesis and fabrication of 2D materials for optoelectronic applications, Om Sterling Global University(**Thesis Submitted**).

EDUCATION

Program	Institution	Percentage	Year
Ph.D. (Physics)	Banasthali Vidyapith	-	2022
M.Sc. (Physics)	Banasthali Vidyapith	70.81	2016
B.Sc.(Non-Medical)	Kurukshetra University, Kurukshetra	69.7	2014

REFERENCES

Dr. Parvez Ahmad Alvi, Associate Professor, Department of Physical Sciences, Banasthali Vidyapith, Rajasthan. Email: parveznihal@gmail.com | Mob.: +91-9887776956
Dr. Chandra Mohan Singh Negi, Associate Professor, Department of Physical Sciences, Banasthali Vidyapith, Rajasthan. Email: nchandra@banasthali.in | Mob.: +91-8058505354
Dr. Gaurav Sharma, Principal Project Scientist, IIT Delhi. Email: gks107@gmail.com | Mob.: 9023925400