Dr. Mohd. Mubashshir Hasan Farooqi

Assistant Professor, Department of Computer Science and Engineering, School of Engineering Sciences and Technology (SEST), Jamia Hamdard University, Hamdard Nagar, New Delhi -110062 (India)

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Research Focus: Nanomaterials for Optoelectronic Devices

Specialized in synthesis and characterization of II-VI nanomaterials, with applications in photoconductivity, thin films, and hybrid nanostructures like ZnO/CNT for advanced optoelectronics.

Professional Summary

Experienced and dedicated Assistant Professor with a robust academic and research background in Electronics and Communication Engineering (ECE), along with integrated teaching experience in Computer Science and Engineering (CSE). Specialized in the synthesis and characterization of II-VI nanomaterials for optoelectronic device applications, with several impactful publications in reputed international journals. Demonstrates excellence in teaching both foundational and advanced subjects such as Artificial Intelligence, Computer Architecture, Microprocessors, Data Communication and Computer Networks, and ECE core areas including VLSI Design, Microwave Engineering, and Antenna & Wave Propagation.

Committed to delivering high-quality education, fostering student engagement, and guiding academic projects. Adept at designing effective curricula, developing lab-based learning experiences, and contributing to institutional growth through research and mentorship. Recognized for a student-centered teaching approach and a strong commitment to academic excellence.

Key Skills and Expertise

- Extensive Teaching Experience across undergraduate and postgraduate programs in ECE and CSE domains.
- Curriculum Design & Assessment: Proficient in preparing lectures, lab modules, and customized assessments aligned with academic objectives.
- Research Proficiency: Expertise in II-VI nanomaterials synthesis and characterization for optoelectronic devices.
- Experimental Skills: Skilled in experimental setup, materials analysis, and interpreting research data.
- Technical Proficiency: Deep knowledge of VLSI Design, Antenna & Wave Propagation, Microwave Engineering, Embedded Systems, Artificial Intelli-

gence, Computer System Architecture, Microprocessors, and Computer Networks.

- Student Mentorship: Experienced in guiding student research projects, internships, and providing academic counseling.
- Publication & Peer Review: Authored and reviewed several papers in international journals; active in academic conference engagement.
- ECE/CSE Integrated Teaching: Demonstrated ability to teach interdisciplinary subjects bridging ECE and CSE concepts.

Education

Degrees	Name of University	Year of Passing/Date of award	Subject/ Title of thesis
Doctor of Philosophy (D. Phil)	University of Allahabad, Allahabad (A Central University)	2017	Subject: Electronics and Communication Title of thesis: Synthesis and Characterization of II-VI Nano and Bulk Materials for Optoelectronic Device Applications
Master of Philosophy (M. Phil.)	The Global Open University, Nagaland	2010	Electronics
Master of Technology (M. Tech.)	JRN Rajasthan Vidyapeeth (Deemed) University, Udaipur	2006	Electronics and Telecommunication Engineering (Digital VLSI Design)
Master of Science (M. Sc.)	Jamia Millia Islamia, New Delhi. (A Central University)	1998	Electronics
Bachelor of Science (B. Sc.)	Rohilkhand University, Bareilly	1994	Physics, Mathematics and Chemistry

Professional Experience (Teaching)

- Assistant Professor, Department of Computer Science and Engineering, School of Engineering Sciences and Technology (SEST), Jamia Hamdard University,

New Delhi
- Founder and Academic Consultant, Online Scholarly Support Network
- Assistant Professor (contractual), M.Sc. Electronics programme, Department of Applied Sciences and Humanities, Jamia Millia Islamia, New Delhi
- Guest Faculty, M.Sc. Electronics programme, Department of Applied Sciences and Humanities, Jamia Millia Islamia, New Delhi
- Assistant Professor, Department of Physics, MAS Degree College, Kunda (UP)
- Assistant Professor, Faculty of Electronics, Informatics and Computer Engineering, Shobhit University, Meerut
- Lecturer, Department of Electronics and Communication Engineering, College of Engineering & Technology, IILM Academy of Higher Learning, Greater Noida
- Demonstrator, Department of Physics, College of Engineering & Technology, IILM Academy of Higher Learning, Greater Noida
- Lecturer (contract) and part-time lecturer (Physics) at school and polytechnic level

Professional Experience (Research)

- Senior Research Fellow (SRF), Department of Electronics and Communication, University of Allahabad
- Junior Research Fellow (JRF), Department of Electronics and Communication, University of Allahabad

Total Experience: More than 15 years.

Publications

Journal Articles

- Mohd. Mubashshir Hasan Farooqi and Rajneesh Kumar Srivastava, Effect of Annealing Temperature on Structural, Photoluminscence and Photoconductivity Properties of ZnO Thin Film deposited on Glass Substrate by Sol-Gel Spin Coating Method, Proceedings of the National Academy of Sciences, India A:Physical Sciences 90, 845-859, (2020) (https://doi.org/10.1007/s4001 019-00648-x) (IF 1.544) (SCI and Scopus indexed Q3)
- Mohd. Mubashshir Hasan Farooqi and Rajneesh Kumar Srivastava, Structural, optical and photoconducting properties of ZnO nanoparticles synthesized by annealing of ZnS nanoparticles Journal of Alloys and Compounds 691, 275-286 (2017), (https://doi.org/10.1016/j.jallcom.2016.08.24 (I.F.5.316) (SCI and Scopus indexed-Q1)
- Mohd. Mubashshir Hasan Farooqi and Rajneesh Kumar Srivastava, Enhanced UV-vis Photoconductivity and photoluminescence by doping of samarium in ZnO nanostructures synthesized by solid state reaction method, Optik, 127, 3991-3998, (2016) (https://doi.org/10.1016/j.ijleo.2016.0 (IF = 2.443) (SCI and Scopus indexed-Q2)

- Mohd. Mubashshir Hasan Farooqi and Rajneesh K. Srivastava, Structural, Optical and Photoconductivity Study of ZnS Nanoparticles Synthesized by Low Temperature Solid State Reaction Method, Materials Science in Semiconductor Processing, 20, 6167 (2014), (https://doi.org/10.1016/j (IF=3.927) (SCI and Scopus indexed-Q2)
- M. M. Hasan Farooqi, Rajneesh K. Srivastava and S. G. Prakash, Study of Photosensitive ZnO Thin film synthesized by Sol gel Method International Journal of Electronics and Electrical Engineering, 5(10) 967-970 (2012), ISSN 0974-2174.
- Mohd Mubashshir Hasan Farooqi, R. K. Srivastava, S. G. Prakash Study of UV-vis Photo response of ZnO Nano-Particles Synthesized by Solid State Reaction Method in Presence of Triethanolamine (TEA) , IJPAS , International Journal of Pure & Applied Sciences, 2 (1) 35-38 (2013) ISSN No. 2250- 2289
- Mohd Mubashshir Hasan Farooqi, R. K. Srivastava, and S. G. Prakash Photoconductivity and Dark-Conductivity of ZnO Nanoparticles under UV Illumination by Solid State Reaction Method Journal of International Academy of Physical Sciences, 181-187, (2012) ISSN 0974-9373
- Syed Ghause Ibrahim, S. A.Waghuley, M. M. Hasan Farooqi, A.V. Kadu Structural and Morphological Properties of Spray Deposited Lead Telluride Thin Films, International Journal of Scientific Research in Science and Technology 9(4), 100-103, (2021) ISSN: 2395-6011

Conference Papers

- Mohd Mubashshir Hasan Farooqi, R. K. Srivastava, S. G. Prakash Study of Rise and Decay of ZnS Nanoparticles synthesized by Solid State Reaction Method under UV-vis Illumination, AIP Conf. Proc. 1536, 179 (2013); doi: 10.1063/1.4810159 (Scopus indexed)

Book Chapters

- Syed Jafar Mustafa, Mohammad Mubashshir Hasan Farooqi, and M. Nizamuddin, Memristor Based Devices For Hardware Security Applications (chapter 3), Nanoscale Memristor Device and Circuits Design Balwinder Raj, Ahmed Hemani, Abusaleh M. Jabir, Saurabh Khandelwal , (Elsevier) 08th November 2023
- Syed Jafar Mustafa, Mohd Mubashshir Hasan Farooqi, Memristor-Based Nanoelectronic Circuits for Computational Applications (chapter 6), Advances in Electronics and Communication Engineering, Haung Xiao, Vol.3, AkiNik Publications, New Delhi, 2022
- Mohd Mubashshir Hasan Farooqi, Syed Jafar Mustafa, Synthesis, Properties and Applications of Nano-Fluids (chapter 2), Research Trends in Multidisciplinary Research , R. Jaykumar, Raja Reddy.Duvvurv Volume 32 ,AkiNik Publications, New Delhi, 2022)
- Mohd Mubashshir Hasan Farooqi, Monika Aggarwal, Gas Sensing Properties and Applications of Metal Oxide Thin Film Transistors (chapter 4), Nanomaterials for Sensors and Sustainable Energy Volume 2 , Sadia Ameen ů Shaheer M. Akhtar ů Ing Kong Editors, Springer (17th April 2025 First Online)
- Syed Ghause Ibrahim, M.M.Hasan Farooqi, Spray pyrolyzed prepared thin films of tetragonal indium sulphide Futuristic Trends in Chemical, Material Science & Nano Technology IIP Series, Volume 3, Book, Part, (April 2024)

Conference Presentations

- Mohd Mubashshir Hasan Farooqi, R. K. Srivastava, Investigation of Photoconductivity in Sm-doped ZnO nanopowder, 18th International conference

on Recent Trends in Physical Sciences organized by International Academy of Physical Sciences (CONIAPS XVIII), Faculty of Science, University of Allahabad, Allahabad and United Group of Institutions, Allahabad - India., Dec 22nd 24th, 2015

- Mohd Mubashshir Hasan Farooqi, R. K. Srivastava, Photoresponse of ZnS nanoparticles, National Conference on Chemistry and Life, CMP Degree College, University of Allahabad, Allahabad, 16-17 September, 2012
- Mohd Mubashshir Hasan Farooqi, Syed Ghause Ibrahim, Synthesis and Characterization of Indium Phosphide (InP): A Versatile Semiconductor Material, National virtual conference on popularity of Science Among the society, Department of Physics, Bundelkhand University (BU), Jhansi, 12- 14 October 2020

Invited Talks

- Mohd Mubashshir Hasan Farooqi, Photoconductivity Properties of ZnO nanoparticles fabricated by ZnS nanoparticles, National Conference on Nanoscience & Technologies in Digital India-2018 (NANOTCON- 18), Department of Electronics & Electrical Engineering, Shobhit Institute of Engineering &Technology, Meerut, 28th April 2018

Research Skills

- Expertise in photoconductivity measurements, spin coating, and chemical synthesis.
- Skilled in XRD analysis for crystal structure and phase identification.
- Proficient in UV-vis, FTIR, and PL spectroscopy for optical and molecular characterization.
- Experienced in interpreting PL and FTIR spectra for bandgap, bonding, and structural analysis.
- Hands-on experience with SEM, HRSEM, TEM, and HRTEM imaging and sample preparation.
- Skilled in microstructural analysis, particle size distribution, and lattice imaging.
- Proficient in EDS for elemental analysis and SAED for crystallographic studies.

Research Areas / Future Directions (Brief)

- Thin-Film Optoelectronics & Photonics: Design, fabrication, and characterization of thin-film devices for optical sensing and communication.
- Photovoltaic Devices: Simulation, fabrication, and enhancement of solar cell technologies using diverse materials.
- Photoconductive Microstrip Antennas: Development of antennas for RF energy harvesting with photoconductive materials.
- MEMS-Based Sensors: Fabrication and experimental validation of MEMS sensors with advanced materials.
- Nanoelectronics Modeling & Simulation: Computational modeling of nanoscale devices for electronic applications.
- Memristor-Based Circuits: Design and simulation of memristor circuits for neuromorphic and intelligent computing.
- ZnO/CNT Combinations: Synthesis and characterization of ZnO/CNT hybrid nanomaterials for enhanced optoelectronic devices and flexible electronics applications.

Professional Development/Training Programs

- NPTEL-AICTE Faculty Development Programme on "Fabrication Techniques for MEMs- based Sensors: Clinical Perspective, July- October 2021 (12 weeks)
- NPTEL-AICTE Faculty Development Programme on "Microelectronics: Devices to Circuits, September- December 2020 (12 weeks)
- MHRD sponsored Faculty Development Programme on MANAGING ONLINE CLASSES AND CO-CREATING MOOCS 3.0", Teaching Learning Centre, Ramanujan College University of Delhi., 25th July 2020-10.08.2020 (2 weeks)
- AICTE Recognized Refresher Course on Application of Nanoscience in Modern Day Research and Technology, Applied Science Department NITTTR, Chandigarh, 19-06.2020-02.07.2020 (2 weeks)
- AICTE-ATAL Scheme Faculty Development Programme on Nanotechnology for Electronic and Photonic Devices (NanoDev 2021), Department of Electronics and Communication Engineering, Punjab Engineering College, Chandigarh, 12.07.2021-16.07.2021 (01 week)
- AICTE-ATAL Scheme Faculty Development Programme on "Electrets Applications in Sensors, Microelectronics and Actuators", Shree G.S. Institute of Technology and Science, Indore, 05.07.2021-09.07.2021 (01 week)
- AICTE-ATAL Scheme Faculty Development Programme on "Energy Engineering", School of Energy and Environment Management, RGPV Bhopal, 08.02.2021 -12.02.2021 (01 week)

- AICTE-ATAL Scheme Faculty Development Programme on "Green energy and Sustainability Engineering", Department of Electrical Engineering, Gautam Buddha University (GBU), Greater Noida, 19.01.2021 - 23.01.2021 (01 week)
- AICTE recognized Faculty Development Programme on Programming using MATLAB , Department of Electrical Engineering, NITTTR Chandigarh, 08.06.2020 - 12.06.2020 (01 week)
- AICTE recognized Faculty Development Programme on Research Trends in VLSI Design , Department of Electronics and Communication Engineering, NITTTR Chandigarh, 25.05.2020 - 29.05.2020 (01 week)
- AICTE recognized Faculty Development Programme on Quantum and Energy Materials: Potential & Applications, Applied Science Department, NITTTR Chandigarh, 18.05.2020 - 22.05.2020 (01 week)
- AICTE recognized Faculty Development Programme on Nanomaterials and Devices, Applied Science Department, NITTTR Chandigarh, 11.05.2020 - 15.05.2020 (01 week)
- AICTE sponsored short term training program (STTP) on Role of Teacher in Creating Effective Learning Environment for Students, Department of Electronics and Communication Engineering, North Eastern Regional Institute of Science and Technology (NERIST), Nirjuli, Arunachal Pradesh, 25.10.2021-30.10.2021 (01 week)
- AICTE sponsored short term course on Nanotechnology for Electronic and Photonic Devices (NanoDev 2020), Department of Electronics and Communication Engineering, Punjab Engineering College, Chandigarh, 15.06.2020-19.06.2020 (01 week)
- MHRD sponsored short term course on NANOTECHNOLOGY: OPPORTUNITY & CHALLENGES, Applied Science Department, NITTTR Chandigarh, 04.05.2009 - 08.05.2009 (01 week)
- Workshop on Nano and Advanced Materials and their applications (WONAMA-2012), Department of Physics, BHU Varanasi, 10.04.2012-16.04.2012 (01 week)
- Workshop on Scientific/Research paper writing National Academy of Sciences, India at Allahabad., 08.11.2012-10.11.2012
- Workshop on Chip Design Testing and Testability, School of Electronics Engineering & SCEIT, Shobhit University, Meerut, 23rd November 2010
- Workshop on Recent Trends in Image Processing, School of Electronics Engineering, Shobhit University, Meerut, 23rd October 2010
- Workshop on Recent Trends in Biomedical Engineering Center for Biomedical Engineering, Shobhit University, Meerut, 11- 12th Feb. 2010
- Workshop on Recent Trends in Nanoscience & Nanotechnology School of Basic

& Applied Sciences, Shobhit University, Meerut, 3rd October 2009.

- Participated in International webinar (e-conference) on Recent Development in Material Science, Department of Physics, St. Andrews College, Gorakhpur, UP n 02-03rd June 2020.
- Participated in National Conference on Nanoscience and Nanotechnology (Aligarh Nano-II), Department of Applied Physics, Z.H.College of Engineering and Technology, AMU, Aligarh, 10-12th March, 2012

Academic and Administrative Responsibilities at Jamia Hamdard

- Admission Committee Member B.Tech ECE program (2024-25)
- Faculty Coordinator International Conference on ICT for Digital, Smart and Sustainable Development (ICIDSSD 2025)
- Conference Reviewer/Repeater ICIDSSD 2024 and 2025
- Internal Examiner and Project Evaluator UG Programs
- Question Paper Setter For university-level theory and lab examinations in ECE and BCA subjects
- Invigilation Duty
- Result Tabulator

Professional Membership/ Activities

- Senior Member - Universal Association of Computer and Electronics Engineers, 2012-present
- Editorial Board Member-International Journal of Advancements in Electronics and Electrical Engineering Journal Code: IJAEEE Electronic ISSN : 2319-7498 (2012- present)
- Guest Editor for the Special Issue Synthesis of Advanced Nanocomposites for Environmental Applications in the journal International Journal of Photochemistry and Photobiology (IJPP); ISSN: 2640-4281 (Print); ISSN: 2640-429X (Online) (2019)
- Editorial Board Member - Journal of Photonic Materials and Technology (JPMT); ISSN Print: 2469-8423 ISSN Online: 2469-8431 (2019)
- Editorial Board Member -American Journal of Nano Research and Applications(NANO); ISSN Print: 2575-3754 ISSN Online: 2575-3738 (2020)
- Reviewer - Material Science in Semiconductor Processing
- Reviewer - Journal of Material Science: Materials in Electronics
- Reviewer - National Academy of Science Letters, India

References

Available upon request.

Declaration

I certify that above information is correct and complete to the best of my knowledge.

(Dr. M. M. Hasan Farooqi)

24.09.2025