

Muhammad Sajeer P

Joint PhD Scholar and Senior Research Fellow

University of Manchester, UK- CeNSE, Indian Institute of Science, Bangalore

Mail: muhammads@iisc.ac.in | ☎: +91-8330084783 / +44-07469499124

[Website](#) | [LinkedIn](#)

(a) Education

University of Manchester, UK	Joint PhD Programme (2024-25)	Biosensing using nanochannels
National Graphene Institute, UK	Part of PhD (2023-25)	2D materials (e.g., Graphene)
Indian Institute of Science (IISc)	PhD-Senior Research Fellow (2020–25)	Solid state Nanopore Sequencing
CeNSE, IISc Bangalore	MTech (2020-22), CGPA: 8.2/10	Nanoscience and Engineering
Pondicherry Central University	MSc (2018-20), CGPA: 8.42/10	Physics (Laser Specialization)
University of Calicut	BSc (2015-18), CGPA: 8.70/10	Physics

(b) Skills

- **Clean Room Experience:** Class 100 and 1000 Clean Room (National Graphene Institute, UK; CeNSE, India)
- **Micro/Nanofabrication:** Optical Lithography, Thermal Scanning Probe Lithography, Thin film deposition, Dry/Wet etching
- **Characterization Tools:** AFM, DC Probe, TEM, SEM, FIB, LDV, Optical Profilometer, DLS, Raman
- **Simulation/Design:** COMSOL Multiphysics, CleWIN, Blender (3D Design), LTSpice, Dr. Probe, Canva, Origin
- **Programming:** Python, MATLAB,
- **Additional Skills:** Relecura (Patent Analysis), Experience in handling biological samples, DaVinci Resolve (Video Editing), Prompt engineering (LLMs), Digital Marketing, Microsoft Office 365, Teamwork, Logical reasoning & Problem-Solving,

(c) Awards, Grants, and Fellowship

1. British Council UK-India student exchange fellow (2022) at the Institute for Manufacturing, University of Cambridge
2. Commonwealth Split-site Fellowship (2023) at Department of Chemistry, University of Manchester, UK
3. Selected for Researcher to Innovator Program, UoM Innovation Factory, and the Masood Entrepreneurship Centre.
4. CSIR-NET Junior Research Fellowship (JRF) in Physics with All India Rank **222** out of **50,000** Applicants.
5. Awarded with Swiss Excellence Fellowship, University of Fribourg, Switzerland
6. Selected for Silicon Valley Fellowship, 2024
7. People's Choice Award in UK-China International Photography Competition, 2024
8. Travel Grant Winner (2023) from International Union for Pure and Applied Biophysics
9. Magma M Scholar, one among 50 students selected across India based on merit (2015-18)

(d) Outstanding Achievements

1. Selected for TEEP 2020 at National Changhua University, Taiwan.
2. Qualified GATE with a rank **798** out of **17000** applicants
3. Top **5** world wide in CAMvsCOVID Hackathon organised by Cambridge Business School, UK
4. Selected for the Long term fellowship at OAR UK CIC.
5. One among 7 shortlisted for AScl Trainee at Aalto University, Finland out of 1073 applicants from 73 countries.

(e) Publications & Conference presentations

1. Self-referenced Readout of Nanopore Translocation Signals Using Localized Electrometry, Under Preperation
2. Practical guide for in-house solid-state nanopore fabrication and characterization, Anumol Dominic*, Muhammad Sajeer Parambath*, Simran Nasa, Manoj Varma, JVSTB, <https://doi.org/10.1116/6.0002682> (*equal first author)
3. Demystifying PCR tests, challenges, alternatives, and future: A quick review focusing on COVID and fungal infections, Muhammad Sajeer Paramabth, Manoj Varma, <https://doi.org/10.1002/bmb.21771>
4. TEM based applications in solid state nanopores: from fabrication to liquid in-situ bio-imaging, Muhammad Sajeer P, Manoj Varma, The Micron, <https://doi.org/10.1016/j.micron.2022.103347>

5. Disruptive technology: Exploring the ethical, legal, political, and societal implications of nanopore sequencing technology, Muhammad Sajeer P, EMBO Reports, <https://doi.org/10.15252/embr.202256619>
6. Poster Presentation on Ultramicrotomy fabricated device for DNA sensing, Spectroscopy for the disease diagnostics RSC conference in London, 21/05/2024
7. Oral presentation on "The emerging landscape of nanopore technology: Social, Ethical and Political aspects", [International conference](#) on Integration of Social Science, Science, Engineering and Technology, Conducted by Texas Christian University, USA, with 2 other universities in India and Japan [10-11 March 2022]
8. Poster presentation on "Exploring Electric field sensing as an alternative to current blockade measurements for solid-state nanopores", [Physics of Life 2023](#), 27-30 March 2023 Harrogate Convention Centre, UK
9. Poster presentation on "failure analysis of microheaters embedded in ultra thin silicon nitride membranes", [Graphene 2023](#), 27-30 June 2023 Manchester, UK
10. Unveiling philosophy and social aspects of nanotechnology, Muhammad Sajeer P, International Journal of Science, Education [Under Review], [Arxiv link](#)
11. [Invited talk](#) on "Towards safe and sustainable innovations in Nanotechnology" at KSR College, Tamilnadu
12. 'Open Automated Interpretation of Social Awareness Videos', Cambridge Judge Business School Journal, [CAMvsCOVID Series](#), June 2020.
13. Poster presentation on "Exploring Electric field sensing as an alternative to current blockade measurements for solid-state nanopores", [Single Molecular Protein Sequencing](#), 31 October - 3 November 2022, Delft, The Netherlands
14. Poster presentation on "Submerged air plasma jet; a potential tool for toxic liquid waste treatment", [ICAPST 2020](#), Sri Shakthi Institute of Engineering and Technology, Coimbatour, India. [link](#)
15. Effect of diffraction on EM field reflecting between two mirrors, Muhammad Sajeer P, Pritam Pai, [Annual Report of Open Academic Research 2017-18](#), Page number: 63, OAR Press, 2018

(f) Leadership and Guidance Positions

1. Co-Founder of [Eduzeal](#), featured in the, The Indian Express ([News link](#))
2. International Association of Physics Students ([iaps](#))-Recruitment Working Group Coordinator for INDIA, 2019-20
3. Placement Student Coordinator, OCCAP, IISc Bangalore
4. Guided two Undergraduate Project at Univ. of Manchester
5. Marketing and Sales Intern at GAIUS Network affiliated to Microsoft and Facebook Accelerator
6. Placement cell Coordinator, Pondicherry Central University [2018-20]
7. Secretary, Astronomy club, Farook College (autonomous), Kerala.

(g) Relevant courses

Advanced electron microscopy, Semiconductor Devices and Integrated Circuits, Micro and nanocharacterization, Introduction to machine learning [Kaggle], Electron Microscopy and 3D Image processing for life science, Solid state physics, MATLAB Onramp, COMSOL Basics, Image Processing [MATLAB], Electron Microscopy in Material characterization, Microfluidics, Data Scientists Toolbox [Coursera], Applied Solid state physics, Marketing Management, Fundamentals of Management, Python Programming Essentials [Coursera], Digital Marketing [Google certified]

(h) Extracurricular activities

1. Invited Talk on Higher Education at Dayapuram College, Calicut [05/03/2021]
2. Creative Thinker at [OAR](#), which is an idealistic non-profit academic environment
3. Member of Strategy and outreach cell of Entrepreneurship cell of IISc, Bangalore.
4. Member-One Note Drive, IISc, Bangalore
5. Member of [Walk with scholar](#) by Govt. of Kerala, India
6. [National Service Scheme Volunteer](#) [2015-18]
7. Volunteer at eBird and Robin Hood Army
8. Our Work on "Digital literacy for manual scavengers against COVID19" is featured in Mumbai daily.

(i) Other Academic Projects

1. Efficient Synthesis of Ammonia using gliding arc Plasma [MSc Thesis, Score: **97/100**].
2. COVID19 Induced changes in Food habits: A study based on Swiggy Data.
 - Course project of Marketing Management course offered by Dept. of Management Studies, IISc Bangalore
3. Simulation of heat conduction in materials using Python programming.
 - Mini Project supervised by Dr. T Abhilash from BMPI, University of Twente, Netherlands, and supported by OAR.

4. Theoretical prediction of the Trajectory of Electro-Magnetic waves in a medium of varying refractive indices using the variational principle.
 - Undergraduate thesis supervised by Dr. P. A. Subha, Dept. of Physics, Farook College, India
5. Dye doped nematic liquid crystals for the detection of Gravitational waves.
 - A self mini-project, bagged the best paper award in the National student space challenge by IIT Kharagpur.
 - Abstract got accepted in American Physical Society spring 2017 meeting, Texas, [Link](#)

(j) Reference available on request