

MOHANBABU

Academic | Materials Researcher | Scientific Editor | R&D & Innovation Consultant

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Professional Profile

Physics academic and materials researcher with experience in higher education, postdoctoral research, scientific publishing, research ethics, editorial management, research advisory work, and collaborative R&D. Research interests include nonlinear optical materials, nanomaterials, nanodevices, memristive systems, computational chemistry/electronics, functional materials, and interdisciplinary research synthesis.

Current Professional Roles

- Associate Professor, PPG Institute of Technology, Coimbatore (from 17 June 2025).
- Ethics Editor, Asian Research Association (from 17 June 2025).
- Adjunct Research Faculty, Chitkara University (from 10 April 2025).
- Scientific Advisor, IRRD Automations - research planning, innovation development, technology translation, and academia-industry collaboration.

Education & Research Training

Qualification / Role	Institution	University / Location	Year / Period
Ph.D. (Physics)	SRMV College of Arts and Science, Coimbatore	Bharathiar University	2017
M.Phil. (Physics)	SRMV College of Arts and Science, Coimbatore	Bharathiar University	2010
M.Sc. (Physics)	SRMV College of Arts and Science, Coimbatore	Bharathiar University	2009
B.Sc. (Physics)	Government Arts College, Coimbatore	Bharathiar University	2007
Postdoctoral Research Scientist	Xiamen University	China	2019-2021

Academic & Editorial Experience

- Managing Editor and Publishing Director, International Research Journal of Multidisciplinary Technovation (01 Jan 2024 - 16 Jun 2025).
- Assistant Professor, Nehru Institute of Technology, Coimbatore (02 Nov 2022 - 19 May 2023).
- Assistant Professor, Sri Shakthi Institute of Engineering and Technology, Coimbatore (10 Nov 2014 - 30 Jun 2019).
- Lecturer, Coimbatore Institute of Engineering and Technology, Coimbatore (13 Feb 2012 - 31 May 2012).
- Assistant Professor, Sri Ramakrishna Mission Vidyalaya College of Arts and Science, Coimbatore (05 Jan 2011 - 27 Sep 2011).

Research Areas

- Memristors and resistive switching

- Nanodevices and nanomaterials
- Nonlinear optics and crystal growth
- Computational chemistry and electronics
- Functional and energy materials
- Biological applications of materials
- Research and publication ethics

Selected Research Publications

1. **Dual-Functional PANI/CeO Nanocomposites for Enhanced ROS-Mediated Apoptosis in HCT-116 Human Colon Cancer Cells and Antibacterial Applications.** Journal of Applied Polymer Science, 2026.
2. **From Champion Cells to Bankable Modules: Stability, Scalable Manufacturing, and Standardized Reliability Testing for Perovskite Photovoltaics.** International Research Journal of Multidisciplinary Technovation, 2026.
3. **Chitosan-based nanocomposite membranes for dye removal via membrane filtration: A review.** International Journal of Biological Macromolecules, 2026.
4. **A critical review on decade progress and future prospects of P3HT: PCBM bulk heterojunction solar cells.** Solar Energy, 2025.
5. **An efficient phase matching second harmonic generation of 2-amino-4-methylpyridinium quinoline-2-carboxylate organic single crystal: Structural, optical, thermal, and computational investigations.** Journal of Molecular Structure, 2025.
6. **Correlation between morphology and resistive switching behaviour of WO₃ nanostructures.** Materials Letters, 2022.
7. **Effect of Ag doping on bipolar switching operation in molybdenum trioxide (MoO₃) nanostructures for non-volatile memory.** Journal of Alloys and Compounds, 2021.
8. **Memristors: Understanding, utilization and upgradation for neuromorphic computing.** Nano, 2020.

Books Published

9. **Research Ethics in India: Principles, Practices, Policies, and Professional Integrity.** 2025. ISBN: 978-81-987992-0-3.
10. **The Indian Researcher's Compass: Navigating Modern Academia, Global Frontiers, and the Industry Renaissance.** 2025. ISBN: 978-81-987992-3-4.
11. **Physicochemical Properties of Pyridine Based Third Order Nonlinear Crystals.** 2017. ISBN: 978-81-934691-1-8.
12. **Physical Science Laboratory Manual.** 2017. ISBN: 978-81-934691-5-6.

Honors, Awards & Qualifications

- State Eligibility Test (SET) qualified in Physical Science, 2017.
- Prof. S. Sri Raman Award, SRMV College of Arts and Science, 2009.
- Young Researcher Award, IOR Press, 2019.
- Fellow Membership Award, Asian Research Association, 2020.
- Innovative Teaching Award, ACT Academy, 2025.
- Served as Associate NCC Officer (ANO) for two years; NCC C Certificate.

Research Funding, Project & Advisory Experience

- Handled and processed competitive funding proposals under the Asian Research Association.
- Processed four programme sponsorship proposals; CV records total funds disbursed as INR 85,000.
- Supported technical evaluation, approval, and fund release of INR 50,000 for an independent research project.
- Provided scientific and technical guidance to IRRD Automations in research planning, innovation development, and technology translation.

Teaching & Academic Activities

- Subjects taught: Electronics; Atomic Physics and Spectroscopy; Allied Physics; Engineering Physics; Environmental Studies.
- Additional teaching experience in NET/SLET Physics, NEET/JEE Physics, and UPSC/TNPSC aptitude/science-related preparation.
- Institutional responsibilities have included admission work, class advising, lab manual preparation, affiliation coordination, accreditation work, and student activity coordination.

Selected Professional Profiles

ORCID: <https://orcid.org/0000-0003-3489-5191>

Google Scholar: [https://scholar.google.com/citations?](https://scholar.google.com/citations?hl=en&user=SSJq5Q8AAAAJ&view_op=list_works&sortby=pubdate)

[hl=en&user=SSJq5Q8AAAAJ&view_op=list_works&sortby=pubdate](https://scholar.google.com/citations?hl=en&user=SSJq5Q8AAAAJ&view_op=list_works&sortby=pubdate)

Scopus: <https://www.scopus.com/pages/authors/57190134949>

Web of Science: <https://www.webofscience.com/wos/author/record/AAS-3941-2021>

LinkedIn: <https://www.linkedin.com/in/bmohanbabu/>

GitHub: <https://github.com/drmohanbabu>