

Name : Dr. N. Rajkumar

Designation : Assistant Professor

Department : Physics

Date of Joining : 04/03/2014

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Educational Qualification:

Degree	Subject	College/University & Place	Year Completed
Ph.D.	PHYSICS	MADURAI KAMARAJ UNIVERSITY, MADURAI	2011
M.Sc.	PHYSICS	MADURAI KAMARAJ UNIVERSITY, MADURAI	2006
B.Sc.	PHYSICS	VIVEKANANDA COLLEGE, MADURAI	2004

Fields of Specialization:

- (a) MATERIAL SCIENCE
- (b) SPECTROSCOPY
- (c) OPTICS

Work Experience:

Designation	Institution / Company	Year
ASSISTANT PROFESSOR	THE AMERICAN COLLEGE, MADURAI	2014 – Present
DR. D. S. KOTHARI POSTDOCTORAL FELLOW	INDIAN INSTITUTE OF SCIENCE, BANGALORE	2011 - 2014
UGC - SENIOR RESEARCH FELLOW	SCHOOL OF PHYSICS, MADURAI KAMARAJ UNIVERSITY, MADURAI	2010 - 2011
UGC - JUNIOR RESEARCH FELLOW		2007 - 2010

Administrative Responsibilities:

1. Programme Officer, National Service Scheme (NSS)
2. Member, NAAC Committee – Criterion V: Student Support and Progression
3. Member, ICTACT
4. Member, Social Committee

Ph.D. Supervision:

- (i) Mr. B. Rajesh (Reg. No.: MKU23PFOS10854), Part-Time
- (ii) Mr. S. Alaguraja (Reg. No.: MKU23PFOS10848), Part-Time

Orientation / Refresher / Other Courses attended:

Name of the course	Academic Staff College University	Duration in Days	From – To
ORIENTATION PROGRAMME	HRDC, MADURAI KAMARAJ UNIVERSITY, MADURAI	28 DAYS	26/05/2016 to 22/06/2016
REFRESHER COURSE IN PHYSICS	HRDC, BHARATHIDASAN UNIVERSITY, TIRUCHIRAPPALLI	14 DAYS	23/10/2019 to 05/11/2019
REFRESHER COURSE IN PHYSICS	HRDC, SAMBALPUR UNIVERSITY, ODISHA	14 DAYS	16/09/2021 to 29/09/2021
REFRESHER COURSE IN PHYSICS	TEACHING LEARNING CENTRE, RAMANUJAN COLLEGE, UNIVERSITY OF DELHI	14 DAYS	31/10/2022 to 14/11/2022
REFRESHER COURSE IN PHYSICS	MALAVIYA MISSION TEACHER TRAINING CENTRE, DEVI AHILYA VISHWAVIDYALAYA, INDORE	14 DAYS	03/12/2024 to 16/12/2024
EXPOSURE CAMP IN PHYSICS	HOMI BHABHA CENTRE FOR SCIENCE EDUCATION (TIRF), MUMBAI	5 DAYS	20/11/2023 TO 24/11/2023
EXPOSURE CAMP IN ASTRONOMY	HOMI BHABHA CENTRE FOR SCIENCE EDUCATION (TIRF), MUMBAI	5 DAYS	05/11/2024 TO 09/11/2024

Articles Published in International Journals:

- Room temperature ammonia gas sensor using Nd-doped SnO₂ thin films and its characterization, S. Maheswari, M. Karunakaran, L. Bruno Chandrasekar, K. Kasirajan & N. Rajkumar, Journal of Materials Science: Materials in Electronics, **31**, 12586–12594 (2020)
- Solvatochromism of 9, 10-phenanthrenequinone: An electronic and resonance Raman spectroscopic study, Venkatraman Ravi Kumar, Nagappan Rajkumar, Siva Umapathy, The Journal of Chemical Physics, **142**, 024305 (2015)
- Effect of chlorine substitution on triplet state structure of thioxanthone: A time-resolved resonance Raman study, R. Pandey, N. Rajkumar and S. Umapathy, J. Raman Spectroscopy, **44**, 270–276 (2013)
- Oxygen deficiency and room temperature ferromagnetism in undoped and cobalt doped TiO₂ nanoparticles, N. Rajkumar and K. Ramachandran, IEEE Trans. Nanotechnol., **10**, 513-519 (2011)
- Ethanol gas sensing of Mn-doped CoFe₂O₄ nanoparticles, P. Indra Devi, N. Rajkumar, B. Renganathan, D. Sastikumar, and K. Ramachandran, IEEE Sensors J., **11**, 1395-1402 (2011)
- On the possibility of ferromagnetism in CdO:Mn at room temperature, N.Rajkumar, V.M. Susila, and K. Ramachandran, J. Exp. Nanosci., **6**, 389-398 (2011)
- Dumb bell shaped ZnO nanorods: Growth and Characterization, N. Rajkumar, M. Prabhu, and K. Ramachandran, Int. J. Nanosci., **10**, 87-92 (2011)
- On the phonon confinement and particle size in TiO₂:ZnO nanocomposite, S.S.Kanmani, N. Rajkumar, and K. Ramachandran, Int. J. Nanosci., **10**, 227-231 (2011)
- Performance of dye-sensitized solar cell based on TiO₂:ZnO nanocomposites, N. Rajkumar, S.S. Kanmani, and K. Ramachandran, Adv.Sci.Lett., **4**, 627-633 (2010)
- Structural Characterization and Magnetic Properties of Zn_{1-2x}Mn_xCo_xO Nanostructures, N. Rajkumar, V. Parthibaraj and K. Ramachandran, J. Nanosci. Nanotechnol., (2010)
- Structural, optical, and magnetic investigations on undoped and Mn-doped ZnO nanoparticles, N. Rajkumar and K. Ramachandran, Int.J.Nanosci., **9**, 495-502 (2010)

12. Photoacoustics and magnetic studies of Fe_3O_4 nanoparticles, N. Rajkumar, D. Umamaheswari, and K. Ramachandran, *Int. J. Nanosci.*, **9**, 243-250 (2010)
13. Synthesis and characterization of dye (Phenosafranine) sensitized flower-type ZnO nanorods, N. Rajkumar, R.N. Mariammal, and K. Ramachandran, *Int. J. Mod. Phys. B*, **24**, 1289-1298 (2010)
14. Observation of ferromagnetism in Mn-doped nano ZnO, N.Rajkumar and K. Ramachandran, *Int. J. Mod. Phys. B*, **23**, 5881-5890 (2009)
15. On the ferromagnetic phase transition in nano ZnO:Mn by electron paramagnetic resonance, P. Vinotha Boorana Lakshmi, B. Ranganathan, N. Rajkumar, and K. Ramachandran, *Int. J. Mod. Phys. B*, **23**, 3221-3229 (2009)
16. On the heat transfer of the anatase titanium dioxide nanocrystals, P. Vinotha Boorana Lakshmi, N.Rajkumar, B. Ranganathan, and K. Ramachandran, *Int. J. Nanomanu facturing*, **2**, 181-191 (2008)

Conference Proceedings / Seminars / Presentations:

1. Published an article entitled “Study the Closed and Open Quantum State Using Matlab - Application In Quantum Optics and Condensed Matter Physics” in Proceedings of the International Conference on Recent Advances in Physics (ICRAP'24) ISBN: 978-93-92995-93-4, P. 12
2. Co-Editor of Proceedings of International Conference on Role of Physics in Modern Technologies (ICRPMT-2025) ISBN: 978-93-90084-77-7
3. Published an article entitled “Evaluation of Radiation Shielding Properties of the Polyvinyl Alcohol/Tungsten Oxide Polymer Composite” in Proceedings of International Conference on Role of Physics in Modern Technologies (ICRPMT-2025), ISBN: 978-93-90084-77-7, P. 11
4. Published an article entitled “Enhanced Photovoltaic Solar Cell Performance with Activated Carbon Nanoparticles Derived from Bio Resources” in Proceedings of International Conference on Role of Physics in Modern Technologies (ICRPMT-2025), ISBN: 978-93-90084-77-7, P. 71
5. Published an article entitled “Simulation of microwave broadband Meta material Absorber” in Proceeding of International Multidisciplinary Conference 2026 – Innovate, Integrate & Impacts, ISBN:978-93-6163-595-3 234, P. 6
6. Published an article entitled “Spectroscopic Investigation of Size – Tunable ZnO Nanoparticles” in Proceeding of International Multidisciplinary Conference 2026 – Innovate, Integrate & Impacts, ISBN:978-93-6163-595-3 234, P. 234
7. National workshop and conference on Monte Carlo Simulation, School of Physics, Madurai Kamaraj University, Madurai, Aug. 9-13, 2010.
8. Workshop on Recent Trends in Astrophysics, Madurai Kamaraj University, Madurai, Jan.28-29, 2010
9. 4th Advanced School on Nanoscience and Technology, S.N. Bose National Centre for Basic Sciences, Kolkata, Jan. 12-24, 2009
10. School on Spintronic and Magneto electronic Materials and Device, Harish-Chandra Research Institute, Allahabad, Jan. 5-7, 2009
11. Magnetism in $\text{Zn}_{1-2x}\text{Mn}_x\text{Co}_x\text{O}$ ($x = 0.00, 0.01, 0.02, \text{ and } 0.03$) Nanostructures, N. Rajkumar and K.Ramachandran, 5th DAE Solid State Physics Symposium, Manipal University, Manipal, Dec.26-30, 2010
12. Absence of ferromagnetism in $\text{Zn}_{1-x}\text{Gd}_x\text{O}$ ($x=0.00, 0.01, 0.03 \text{ and } 0.05 \text{ at.}\%$) nanoparticles, N. Rajkumar and K. Ramachandran, National Seminar on Recent Advances in Inorganic and Nano Chemistry, Madurai Kamaraj University, Madurai, Mar. 29-30, 2010
13. Observation of ferromagnetism in $\text{Zn}_{1-2x}\text{Mn}_x\text{Co}_x\text{O}$ ($x= 0.00, 0.01, 0.02 \text{ and } 0.03$) nanostructures, N. Rajkumar, V. Parthibaraj, and K. Ramachandran, International Conference on Nano Science and Technology, IITB, Mumbai, Feb. 17-20, 2010
14. Dumbbell-like ZnO nanorods: Growth and Characterization, N. Rajkumar, M. Prabhu, and K. Ramachandran, International Conference on Advanced Nanomaterials and Nanotechnology, IITG, Guwahati, Dec. 9-11, 2009
15. Observation of ferromagnetism in Co-doped nano TiO_2 , N. Rajkumar and K. Ramachandran, National Conference on Spintronic and Magneto electronic Materials and Device, Harish-Chandra Research Institute, Allahabad, Jan. 8-9, 2009

16. On the Optical study of dye (Phenosafranine) sensitized flower-type ZnO nanorods, N. Rajkumar, R.N. Mariammal and K. Ramachandran, 53rd DAE Solid State Physics Symposium, Bhabha Atomic Research Center, Mumbai, Dec.16-20, 2008
17. Thermal properties of nano ZnO and nano ZnO:Mn with annealing temperature, N. Rajkumar and K.Ramachandran, 52nd DAE Solid State Physics Symposium, University of Mysore, Mysore, Dec. 27-31, 2007.
18. Synthesis, optical and thermal studies of anatase titanium dioxide nanocrystal, N. Rajkumar, P. Vinodh Boorana Lakshmi, and K. Ramachandran, National Conference on Recent Advances in Materials Science, Periyar University, Salem, Feb. 16-17, 2006

Awards and Fellowships:

Dr. D. S. Kothari Postdoctoral Fellowship, University Grants Commission (UGC), India.