

Dr. NANDAPRAKASH M B

Assistant Professor

Department of Studies & Research in Physics

Karnataka State Open University

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Qualification : **M.Sc, M.Phil, KSET, Ph.D.**

Areas of Specialization : **Solid State Physics**

Areas of Research Interest : **X-ray diffraction, Bio-degradable Polymer Composites, NLO, Liquid Crystals**

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nandaprakash_mb@rediffmail.com

➤ Citations: 74 h-index: 5

EDUCATIONAL QUALIFICATIONS

Ph.D. Physics March 2018

(Guide: Prof. Somashekar R), DOS in Physics, University of Mysore, Mysuru, India.

KSET (Physics) March 2015

University of Mysore, Mysuru, India.

M.Phil. Physics March 2009

Periyar University, India.

M.Sc. Physics July 1998

DOS in Physics, University of Mysore, Mysuru, India.

B.Sc. (PCM) May 1996

Yuvaraja's College, University of Mysore, Mysuru, India.

PROFESSIONAL EXPERIENCE

Teaching Experience : 22 Years

Research Experience : 10 Years

October 2015 - Senior Project Fellow

January 2018 Title: " Processing, Characterization and Applications of Advanced Functional Nanomaterials".

Funded by: University Grants Commission, New Delhi, Government of India

November 2013 - Junior Project Fellow

October 2015 Title: " Processing, Characterization and Applications of Advanced Functional Nanomaterials".

Funded by: University Grants Commission, New Delhi, Government of India

TECHNICAL SKILLS

- **Analytical Instruments:** Powder XRD, IR, UV-Vis Spectrophotometer.
- **Mathematical models on Physical Parameters :** Whole Powder Pattern Fitting (WPPF), Stochastic Analysis, Functional Data Analysis, GULP
- **Software's:** Linux, Latex, OriginPro 9.0, MS office.

JOURNAL PUBLICATIONS

1. **M B Nanda Prakash**, A Manjunath, R Somashekar. "Studies on AC Electrical Conductivity of CdCl₂ Doped PVA Polymer Electrolyte" **Advances in Condensed Matter Physics**, 07/2013; 2013(6), DOI:10.1155/2013/690629.
2. S S Mahesh, **M B Nanda Prakash**, R Somashekar. "Stacking faults and micro structural parameters in nano magnesium oxide (MgO) particles using whole pattern fitting technique" (2013).
3. S S Mahesh, K S Prashanth, S Ananda, **M B Nanda Prakash**, R Somashekar. "Micro structural parameters of Silver Nano particles using whole pattern fitting technique" (2013).
4. H T Ananda, Thejas Urs G, **M B Nanda Prakash**, R Somashekar: Characterization of HPMC/GLY: Na₂SO₄ Polymer Composite Using X-Ray Technique. Bulletin of Pure and Applied Sciences (2013), Vol. 32 D (Physics) Issue (No.2):P. 165 – 173.
5. **M B Nanda Prakash**, G Thejas Urs, H T Ananda, R Somashekar : 1 – D Paracrystalline Model to Simulate a Bragg Reflection : Computation of Crystallite Size and Lattice Strain. Crystal Structure Theory and Applications 06/2014;3(3):48–55., DOI:10.4236 /csta. 2014.32006.
6. T Niranjana Prabhu, S S Mahesh, **M B Nanda Prakash**, T Demappa, R Somashekar : Stacking Faults and Microstructural Parameters in Epoxy – Nylon Fabric – Clay Hybrid Laminates Using X – Ray Whole Powder Pattern Fitting Technique.
7. G Thejas Urs, H T Ananda, **M B Nanda Prakash**, K Byrappa, R Somashekar: Crystal and molecular structure of muga wild silk fibres based on [Ala-Gly] n sequence using LALS technique. Indian Journal of Fibre and Textile Research 07/2015; 40:131-136.
8. G Thejas Urs, **M B Nanda Prakash**, H T Ananda, R Somashekar: Radial distribution function of natural fibres and synthetic water soluble polymers using X – ray diffraction. Indian Journal of Fibre and Textile Research 03/2016; 41(2):9-12.
9. K S Prashanth, S S Mahesh, **M B Nanda Prakash**, S Ningaraju, H B Ravikumar, R Somashekar, B M Nagabhushana: Whole-Pattern Fitting and Positron Annihilation Studies of Magnetic PVA/ α -Fe₂O₃ Nanocomposites. Brazilian Journal of Physics 03/2016; 46(3)., DOI:10.1007/s13538-016-0409-4.
10. Thejas G Urs, G K Gowtham, **M B Nandaprakash**, D Mahadevaiah, Y Sangappa, R Somashekar: Determination of force constant and refractive index of a semiconducting polymer composite using UV/visible spectroscopy: a new approach. 08/2016;, DOI:10.1007/s12648-016-0905-y.
11. K S Prashanth, S S Mahesh, **M B Nanda Prakash**, L M Munirathnamma, S Ningaraju, H B Ravikumar, R Somashekar, B M Nagabhushana: Solution Combustion Synthesis of Cr₂O₃ Nanoparticles and Derived PVA/Cr₂O₃ Nanocomposites-Positron Annihilation Spectroscopic Study. DOI:10.1016/j.matpr.2016.11.008.
12. B Shameer Ahmed, K Namratha, **M B Nandaprakash**, R Somashekar, K Byrappa: Effect of gamma irradiation on hydrothermally synthesized barium titanate nanoparticles. Radiation Effects and Defects in Solids 04/2017;, DOI:10.1080/10420150.2017.1303835.
13. B Shameer Ahmed, **M B Nandaprakash**, K Namratha, K Byrappa, R Somashekar : Structure and Electrical Conductivity of Irradiated BaTiO₃ Nanoparticles. *Phys. Status Solidi B* **2018**, 1700581.

14. Dinesha Vasanta Hegde, Mahesha Bhavanishankar, Gowtham G Kariyappa, Thejas G. Urs, **Nandaprakash M. Basavaraju**, Mahadevaiah Dasaiah, and Somashekar Rudrappa : Studies on physical properties of wine palm and Roselle natural fibers. *Journal of Natural Fibers*: <https://DOI.org/10.1080/15440478.2018.1455619>.
15. K S Mallikarjuna, S S Mahesh, **M B Nanda Prakash** and R Somashekar : Stacking Faults And Micro Structural Parameters In Nano Cerium Oxide (CeO₂) Particles Using Whole Pattern Fitting Technique. *International Journal of Research and Analytical Reviews (IJRAR)*. December 2018 5(4).
16. S S Mahesh, K S Prashanth, **M B Nanda Prakash**, R Somashekar and B M Nagabhushana : Nano mechanical, Optical, and Microstructural analysis of PVA/NaCl/Cr₂O₃ Nano composites. *Journal of Emerging Technologies and Innovative Research (JETIR)* 2019 JETIR June 2019, Volume 6, Issue6.
17. H B Uma, Sannaiah Anand, **M B Nandaprakash** : High efficient photocatalytic treatment of textile dye and antibacterial activity via electrochemically synthesized Ni-doped ZnO nano photocatalysts. *Chemical Data Collections* 24 (2019) 100301. <https://DOI.org/10.1016/j.cdc.2019.100301>.
18. B N Anantha Kumar, M Ramegowda, **M B Nandaprakash**, H Somashekarappa, R Somashekar: Physical properties of prop-2-en-1-one based single crystals using molecular mechanics. *SN Applied Sciences* (2020) 2:1097 <https://DOI.org/10.1007/s42452-020-2724-1>.
19. K P Samskruthi, Sannaiah Anand, **M B Nandaprakash**, K S Chandrakantha: Synthesis and Characterization of SnO₂ and SnO₂/ZnO Nanoparticles by Electrochemical Method: Evaluation of their Performance in Photodegradation of Indigo Carmine Dye and Antibacterial Activity. *Asian Journal of Chemistry* (2020) 32(9):2119 – 2124. DOI: 10.14233/ajchem.2020.22645.
20. B N Anantha Kumar, J Mahadeva, **M B Nandaprakash**, G C Bharath and R Somashekar : Computation of Phonon Density of States, Atomic Electrostatic Potential and Electric Field Gradient Tensor using Single Crystal Data of Six Benzene Sulfonamide Based Compounds. *Bulletin of Pure and Applied Science* (2022) 41D(2):1 – 7.
21. Gowtham Guttikatte Kariyappa, Thejas Gopal Krishne Urs, Manju Varanchi Venkata Shetty, **Nandaprakash Mysore Basavaraju**, Mahadeviah, Somashekarappa Hanumanthappa, Somashekar Rudappa : Crystallite Shapes and Functional Data Analysis of Silk forms using X-ray Diffraction: Microwave Irradiation Effects. *Biointerface Research in Applied Chemistry* (2022) Volume 13, Issue 3, 2023, 241. doi.org/10.33263/BRIAC133.241
22. P Srinivas, J Mahadeva, K Hemalatha, **M B Nandaprakash** and R Somashekar: Thermodynamic Morphological Study of Liquid Crystalline Compounds. *European Journal of Applied Physics* (2022) 4(6): 1 – 8.
23. P Srinivas, J Mahadeva, K Hemalatha, **M B Nandaprakash** and R Somashekar: Topological analysis and Molecular modelling of liquid crystalline p-azoxyanisole and azobenzene compounds. (2023) ([Accepted for publication in Pramana journal](#)).

PAPERS UNDER COMMUNICATION

24. M Sushma, J Mahadeva, **M B Nandaprakash** and R Somashekar: Simulations of physical properties of alkoxy-azoxybenzene liquid crystalline homologous series and comparison with experimental results. (2023) ([Under Review in Physica Scripta Journal](#)).

25. M Sushma, J Mahadeva, V V Manju, **M B Nandaprakash** and R Somashekar: Computation of inter-molecular potentials and odd-even effect for a homologous series of alkyl azoxybenzene compounds to understand intersic molecular dynamics has been communicated for journal. (2023) (**Under Review in Liquid Crystals Journal**).
26. M Maurya, H Somashekarappa, **M B Nandaprakash**, K Hemalatha, S R Kumaraswamy and R Somashekar: Molecular dynamic study of abrasive wear, viscosity and moduli of UDMA: A component of dental composite. (2023) (**Communicated for the Journal of Computational Physics**).

BOOKS PUBLISHED

1. H T Ananda, **M B Nandaprakash** and R Somashekar : Studies on Water Soluble Polymer Blends with Inorganic Salts using X-ray Method (2018), **SciMedTech Publishing, Delhi**, ISBN: 978-93-87631-13-7.

TECHNICAL TRAININGS AND SYMPOSIUM / WORKSHOPS PARTICIPATED

1. Participated in **“One-day State Level Seminar on Nano Science and Technology”** held on 25th March 2013, organized by Department of Physics, JSS College for Women (Autonomous), Saraswathipuram, Mysore.
2. Participated in **“One-day workshop on Astronomy and Astrophysics”** held on 16th November 2013 at Department of Studies in Physics, University of Mysore, Manasagangothri, Mysore – 570006.
3. **“Workshop on Powder, Nano and Thin Film Characterization using X-ray Diffraction”** held on 29th – 30th August 2013, organized by Crystal Growth Centre, Anna University, Chennai – 600025, India.
4. Participated in **“One-day workshop on “Computational Materials Science”** held on 24th January 2014 at Department of Studies in Physics, University of Mysore, Manasagangothri, Mysore – 570006.
5. Participated in **POLYCON 2014, 6th National Conference on Advances in Polymeric Materials (Energy, Environment and Health)** jointly organized by Department of Polymer Science and Technology and Indian Rubber Institute, Karnataka Branch at SJCE, Mysore, during 25th – 26th, April 2014.
6. Participated and presented a paper in **60th DAE Solid State Physics Symposium** during 21st – 25th, December 2015, Amity University, Uttar Pradesh, Noida, India.
7. Participated in National Conference on **Recent Trends in Physics, Mathematics and Engineering** during 20th – 21st, 2015 organized by Department of Physics and Mathematics, Sarada Vilas College, Mysore.
8. Participated in a Three day Lecture workshop in **Quantum Mechanics – Basics to Advanced** organized by Regional Institute of Education (NCERT) Mysore, during 28th – 30th, January 2016.
9. Participated in **“One-day State Level Seminar on Astrophysics – Recent Developments”** held on 12th February 2016, organized by Department of Physics, MMK and SDM Mahila Maha Vidyalaya, Mysore.

10. Participated and presented a paper in **61st DAE Solid State Physics Symposium** during 26th – 30th, December 2016, KIIT University, Bhubaneswar, India.
11. Participated and presented a poster presentation in **24th Congress and General Assembly of the International Union of Crystallography (IUCr)** held on 21st – 28th, August 2017 at HICC, Hyderabad, India.
12. Participated in a Four – Day Frontier Lecture Series on **Physical Sciences, Biological Sciences, Social Sciences and Humanities and Commerce and Management** held on 25th February 2020, organized by JSS College of Arts, Commerce and Science, Ooty Road, Mysuru,
13. Participated in a Two-day workshop on **Design and Development of Self Learning Material for Open Distance Learning** held on 15th – 16th November 2021, organized by Karnataka State Open University, Mysuru – 570006.
14. Participated in One day National Level Panel Discussion on “**NEP – 2020 – Changed Scenario of Teacher Education**” held on 12th November 2021, organized by the Department of Studies and Research in Education, Karnataka state open University, Mysuru – 570006.
15. Participated in **23rd National Symposium on Radiation Physics**, organized by the Department of Studies in Physics, University of Mysore and Indian Society for Radiation Physics during 19th – 21st January 2023 at the University of Mysore, Manasagangothri, Mysuru – 570006.
16. Participated in One day Faculty Development Programme on “**Financial Statement Analysis**” held on January 25th, 2023, organized by Department of Studies and Research in Commerce, Karnataka State Open University, Mysuru – 570006.

CONFERENCE PROCEEDINGS / PAPERS PRESENTED

1. **M B Nanda Prakash**, G Thejas Urs, H T Anand, R Somashekar : Pair Correlation Studies of CdCl₂ Doped PVA Polymer Films Using X-ray Data. *DAE SOLID STATE PHYSICS SYMPOSIUM* 816/2014; 1591(1)., DOI:10.1063/1.4872766.
2. G Thejas Urs, **M B Nanda Prakash**, H T Ananda, R Somashekar : Radial Distribution studies on water soluble polymers using XRD line profile data. *DAE SOLID STATE PHYSICS SYMPOSIUM* 170/2014; 1591(1)., DOI:10.1063/1.4872532.
3. K S Prashanth, S S Mahesh, B M Nagbhushana, **M B Nanda Prakash**, R Somashekar: Determination of Stacking Faults and Micro Structural Parameters in PVA/ZnO Nanocomposite Films using Whole Pattern Fitting Technique. *POLYCON – 2014* Mysore; 04/2014.
4. **M B Nanda Prakash**, G Thejas Urs, H T Ananda, R Somashekar : Variation of Crystallite Ellipsoids for Varieties of Cotton Fibers Using Whole Powder Pattern Fitting Technique. *POLYCON – 2014* ; Mysore; 04/2014, DOI:10.13140/2.1.3827.6489.
5. M K Usha, H V Deepak, H T Srinivas, **M B Nanda Prakash**, R Somashekar, D Revannasiddaiah: Synthesis and X-ray Studies of Liquid Crystalline 2- Cyanonaphthalen-6-yl 4-(3,7-Dimethyloctyloxy)– Benzoate. *The Third National Conference on Applied Physics and Materials Science* (APMS-2015); 08/2015.

6. **M B Nanda Prakash**, Gopal Krishne Urs, R Somashekar: Functional data analysis of experimental parameters obtained in PVA doped CdCl₂ polymer composites. *DAE SOLID STATE PHYSICS SYMPOSIUM 2015*; 05/2016, DOI:10.1063/1.4947863.
7. **M B Nandaprakash** and R Somashekar : Structural Parameters in PVA: CdCl₂ Using Functional Data Analysis. *Acta Cryst.* (2017), A70, C938.
8. **M B Nandaprakash**, S Divakara, S S Mahesh and R Somashekar : Comparison Of Pair Correlation Values In Variety Of Cotton Fibers. *DAE SOLID STATE PHYSICS SYMPOSIUM 1832*, 040023 (2017); doi: 10.1063/1.4980225.
9. K S Prashanth, S S Mahesh, **M B Nandaprakash**, R Somashekar and B M Nagabhushana: PVA/NaCl/MgO nanocomposites-microstructural analysis by whole pattern fitting method. *AIP Conference Proceedings* (2018) 1957(1):030002. DOI: 10.1063/1.5034326.

ADDITIONAL INFORMATION

1. Reviewer for Polymer Bulletin Journal.