

Dr. SUSHA N (Ph.D in Physics)

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Nationality : INDIAN

Scholar: <https://scholar.google.com/citations?user=rwMq6fAAAAAJ&hl=en>

Objectives

I believe, everything around us follows the laws of science. Emerging technology, especially in the field of nanotechnology enable us to discover unknown facts about atomic and molecular structures. I am fortunate to have been able to work in scientific research field especially in the field of material science and characterization. I define myself as a highly motivated person with deep passion towards research.

Educational qualifications

- **Ph. D** in Physics from Central University of Kerala, Kasargod, Kerala-INDIA (2014 -21).
- **M. Phil** (Physics) from Central University of Kerala, Kasargod, Kerala - INDIA with first rank (CGPA 8.70/10) (2013)
- **M.Sc** (Physics) from Central University of Kerala, Kasargod, Kerala - INDIA with first rank (CGPA 8.42/10) (2010 - 12)
- **B.Sc** (Physics) from Nehru Arts & Science College, Kanhangad, Kasaragod, Kerala - INDIA (Affiliated to Kannur University) with first class with distinction (82.8%) (2007-10)
- **Higher Secondary** (Science) from G.H.S.S Madikai, Kanhangad, Kasaragod (Board of Higher Secondary Examination, Kerala) with first class with distinction (80.67%)(2005 - 07)
- **Secondary** from G. H. S. S Balla East, Kanhangad, Kasaragod (SSLC, Kerala) with first class with distinction (82.37%) (2005).

Synthesis and characterization skills

- **Synthesis techniques**
- **Fabrication of thin films:** Chemical bath deposition, dip coating, SILAR, spray-pyrolysis, and spin coating.

- **Synthesis of Nanostructures (Quantum dots):** Chemical precipitation method, hydrothermal method, Sol-gel method

➤ **Hands-on experience**

- Structural characterization using X-Ray diffraction (Rigaku Miniflex 600) and FT-IR spectroscopy (Perkin Elmer)
 - Magnetic characterization using VSM (VersaLab, Quantum Design)
 - Optical characterization using UV-Vis spectrophotometer (Perkin Elmer), Fluorescence spectrometer (Perkin Elmer)
 - Dielectric characterization (Wayne Kerr 6500 B)
 - Thermal characterization using TGA (Perkin Elmer)
- Expertise in analysing samples using SEM, TEM, XPS, VSM, and EDS.

➤ **Software skills**

LaTeX, QtiPlot, ImageJ, Origin, Inkscape, GIMP, Expert in handling Ubuntu OS as well as Windows, Basics of python

Research interests

- Semiconductor nanoparticles
- Optical properties of nanomaterials
- Solarcells based on nanomaterials and organic materials
- Energy harvesters, 2D materials

Research projects

- ✓ **Ph. D** - (Fabrication and Characterization of CdS based Organic-Inorganic Heterostructures for Optoelectronic Applications)
- ✓ **M. Phil.** (Synthesis and Characterization of CdS and Nickel doped CdS thinfilms for Solarcell Applications)

➤ **Achievements**

- (i) First position among the list of Top scorers in the **M.Sc. Physics** examination held in May 2012.
- (ii) First position among the list of Top scorers in the **M.Phil. Physics** examination held in November 2013.

- (iii) Worked as research scholar in the department of Physics as an INSPIRE FELLOW (funded by DST, INDIA).
- (iv) Selected for KSCSTE Fellowship (by Govt. of Kerala)

➤ Publications

- (1) N Susha, K. Nandakumar and Swapna S. Nair, "Enhanced photoconductivity in CdS/betainin composite nanostructures", **RSC Adv.**, vol. 8, no. 21, pp. 11330–11337, 2018.
- (2) N Susha, Rejo Joseph Mathew and Swapna S. Nair, "Tuning of optical and magnetic properties of nanostructured CdS thin films via nickel doping", **J. Mater. Sci.**, vol. 51, no. 23, pp. 10526–10533, 2016.
- (3) N Susha, P. B. Aravind, M. R. Anantharaman and Swapna. S. Nair, "Tailoring growth conditions for efficient tuning of band edge of CdS nanoparticles", **AIP Conference Proceedings**, 2015, vol. 1667, no. 50128, p. 50128.
- (4) N Susha, Ajith S.Kumar, S.Vivek, Swapna. S.Nair, Defect induced magnetism in green synthesized Cadmium Sulfide nanoparticles for spintronics applications, **Materials Science and Engineering: B**, Vol. 265, 2021, 114998
- (5) N Susha, Prajit Janardhanan, Rajendra Pilankatta, Swapna. S.Nair, "Green synthesis of engineered CdS nanoparticles with reduced cytotoxicity for enhanced bio-imaging application" , **ACS Omega** 2021, 6, 12, 8646–8655

. ➤ Conference Publications

- (1) Presented a Paper (Poster) entitled "Structural and Optical Studies of CdS thin films for Solar Cell Applications " in an International Conference on Advanced Functional Materials (ICAFM 2014) organized by CSIR-NIIST (December 19-21, 2013)
- (2) Presented a paper (Oral) titled "Colloidal CdS nanoparticles for Solar Cell Applications " in an International Conference on Light (Optics '14) organized by NIT Calicut (March 19-21, 2014)
- (3) Presented a Paper (Poster) entitled "Tailoring Growth Conditions For Efficient Tuning of Band Edge of CdS Nanoparticles " in 59th DAE-Solid state Symposium Sponsered by BRNS, Dept of Atomic energy, Govt of INDIA(on December 16-20, 2014).
- (4) Presented a Paper (Oral) entitled "Effect of synthesis parameters and incorporation of natural dyes on the Band structure of CdS nanoparticles for dye sensitized solarcell applications " in 8th International Conference on Materials for Advanced Technologies ICMAT2015 & IUMRS-ICA2015 at Suntec - Suntec Singapore (on 8 June, 2015 to 03 July, 2015.)

(5) Presented a Paper by co-author (Oral) entitled "Synthesis of one dimensional lead free composite coreshell magnetoelectrics based on nanoscale niobates and CoFe_2O_4 " in 8th International Conference on Materials for Advanced Technologies - ICMAT2015 & IUMRS-ICA2015 at Suntec - Suntec Singapore (on 8 June, 2015 to 03 July, 2015.)

Declaration

I hereby declare that the details furnished in this CV are true to the best of my knowledge.

Place: Kanhangad

INDIA

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