

Dr. R.SANGEETHA

Assistant Professor,
Department of Physics,
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ACADEMIC QUALIFICATION

Doctoral Research

- **University:** Madurai Kamaraj University, Madurai
- **Topic:** Optical Properties of Excitons in Strained CdZnTe/ZnTe Nano Structures
- **Year:** 2015

Master of Philosophy

- **University:** Bharathidhasan University, Trichy
- **Topic:** Growth and Characterization of L- Methionine Hydrochloride Single Crystal
- **Year:** 2008

Post - Graduation

- **University:** Madurai Kamaraj University, Madurai
- **Year:**2006

Bachelor of Education

- **University:** Madurai Kamaraj University, Madurai
- **Year:**2004

Under - Graduation

- **University:** Madurai Kamaraj University, Madurai
- **Year:**2002

Teaching Experience

Total years of Experience: 14 years

- **2006-2008-** Worked as a Lecturer in Bharath Niketan Engineering College, Theni .
- **2011-2016 -** Worked as Assistant Professor in NPR College of Engineering Technology Dindigul
- **From February 2016-** Worked as Assistant Professor in mannar Thirumalai Naicker College, Madurai

Research Publications

1. X.Vasanth Winston, S. Pugazhendhi², K. SenthilKannan², R. Sangeetha³, P.Sasikumar, T.Rajeshkumar, Khalid Mujasam Batoo, Sajjad Hussain, S. Jeyaram, K. Ganesh Kumar and M.Vimalan "Investigations on gamma ray irradiated CMTC single crystals for opto-electronic application. *J Mater Sci: Mater Electron* 2024.
2. T.Rajesh Kumar, K. Langeswaran, **R. Sangeetha**, Sangavi P Chemical, Molecular docking, and Molecular dynamics studies on (2-methoxy-4-prop-2-enylphenyl) n-(2-methoxy-4-nitrophenyl)carbamate: A novel inhibitor of Hepatocellular Carcinoma. *Journal of Bio molecular Structure & Dynamics*. 2023.
3. C. Kirubhanand, J. Merciline Leonora, S. Anitha, **R. Sangeetha**, K. T. Nachammai, K. Langeswaran and S. Gowtham Kumar Targeting potential receptor molecules in non-small cell lung cancer (NSCLC) using in silico approaches. *Frontiers in Molecular Biosciences* 2023.
4. Abraham Hudson Mark J, Premkumar R, **Sangeetha R**, Lakshmi A, Langeswaran K. Structural, Quantum Chemical, Molecular Docking and Dynamics Studies of Quercetin – A Potent Inhibition for Colon Cancer. *Journal of Polycyclic Aromatic Compounds*. 2022.
5. Sangavi P, **Sangeetha R**, Langeswaran K. Identification and validation of Hydroxychavicol from Betel leaf as a promising Breast cancer inhibitor – An in vitro and in silico analysis. *Journal of Current Enzyme Inhibition*. 2022; 18(2): 127-134.
6. Sangavi P, Langeswaran K, **Sangeetha R**, Gowthamkumar S, Senthilkumar R. Screening of Potential Breast Cancer inhibitors through Molecular Docking, and Molecular Dynamics Simulation. *BiomedResearchInternational Journal*. 2022;3338549.
7. **Sangeetha**, R. Premkumar, S.S. Maithili, C. Kirubhanand, S. Gowthamkumar, P. Sangavi, K. Langeswaran. Quantum Chemical, Vibrational, Spectroscopic, UV-Vissolvent effect, Molecular Docking and Molecular Dynamics Simulation investigation on phytocompounds from *Elettariacardamomum* against Covid – 19. *Journal of Polycyclic Aromatic Compounds*. 2022;
8. Shaslinah N, Sangavi P, **Sangeetha R**, Gowtham Kumar S, Sindhu Varghese, Langeswaran K. Screening and identification of potential inhibitor for visceral leishmaniasis through computational analysis. *Journal of Genetic Engineering and Biotechnology* 2022; 20: 35
9. Anitha R, **Sangeetha R**, ArockiaJeyaYasmiPrabha E, Sangavi P, Langeswaran K. Synthesis crystallization, XRD, Hirshfeld surface, vibrational spectra, and quantum chemical studies and Computational investigation of Caffeinium bisulfate: a new non centro symmetric form. *Journal of Biomolecular Structure and Dynamics*. doi.org/10.1080/07391102.2021.2015445.

10. **Sangeetha R**, ArockiaJeyaYasmiPrabhaE, A.Lakshmi, Sangavi P, Langeswaran K. Molecular docking and dynamic simulations of Ocimumbasilicum compounds against HCC and structural, vibrational, quantum, and chemical investigation of campesterol. *Journal of Biomolecular Structure and Dynamics* 2021 doi.org/10.1080/07391102.2021.1997816.
11. ArockiaJeyaYasmiPrabha E, **Sangeetha R**, Sangavi P, Langeswaran K, Athimoolam S. Experimental, and Theoretical Investigations on the Structure and Vibrational spectral analysis of oxalate complex of Nicotinamide and Computational scrutiny against Prostate cancer. *Journal of Biomolecular Structure and Dynamics* 2021 doi.10.1080/07391102.2021.1938231
12. ArockiaJeyaYasmiPrabha E, **Sangeetha R**, Langeswaran K, Athimoolam S. Structural, Vibrational, Quantum chemical and Thermal investigation of a nutraceutical drug in new zwitterionic crystal form (Nicotinic acid: Catechol) with enhanced cytotoxic activity in Cervical cancer HeLa cell line. *Journal of Biomolecular Structure & Dynamics* 2021; 1-14.
13. **R. Sangeetha**, K. Karthigaivel, P.S. Satheesh Kumar. Magnetic field induced donor binding energy of a GaN/AlGaN quantum dot. *Materials Today: Proceedings*. 2020
14. Satheesh Kumar PS, **Sangeetha R**, Sivakumar R, Amalraj L. Effects of substrate temperature on structural and ptoelectronic properties of SnSe thin films by nebulized spray deposition for solar cell applications. *Materials Today: Proceedings*. 2020.
15. **Sangeetha R**. Modified growth technique and characterization of SCN Ligand based NLO CMTc and MMTC single crystals. *Journal of Applied Science and Computations*, 2019; 6(4):
16. **Sangeetha R**. Influence of KDP on the growth and Charactrization of NLO Single Crystal of LADI. *GTN Multidisciplinary journal* 2018;
17. **Sangeetha R**, John Peter A. Band Alignment of Strained ZnCdTe/ZnTe Quantum dot, *The Mannar Scroll* 2017; 5: 3.
18. Francis S, **Sangeetha R**, John Berchmans L. Charge Density in High Temperature Grown Zn_xFe_xO Powder. *The Mannar Scroll* 2017; 5: 3.
19. Honest Arul Raj J, Rajeshkumar T, **Sangeetha R**. The Structural and Optical Properties of Urea Doped Lasc NLO Single Crystal 2017; 4(10).
20. Gowri M, Sathya G, John Berchmans L, **Sangeetha R**, Francis S, Lakshmi A. The effect of chemical composition of molten flux in the structural evolution of CeVO₄, *The Mannar Scroll* 2017; 4: 1.

21. **Sangeetha R**, John Peter A, Chang KyooYoo. Electric field induced third order susceptibility of third order harmonic generation in a Cd_{0.2}Zn_{0.8}Te/ZnTe quantum dot. *Quantum Matter* 2015;4: 1.
22. **Sangeetha R**, John Peter A. Effects of strain on the band alignment and the optical gain of a CdTe/ZnTe quantum dot. *Canadian J Phys* 2014; 92: 1-9.
23. **Sangeetha R**, John Peter A, Chang Woo Lee. Effects of quantum confinement and magnetic field strength on Landé g-factor in a Cd_{0.8}Zn_{0.2}Te/Zn Te strained quantum dot, *J ComputTheorNanosci* 2014; 11: 1.
24. **Sangeetha R**, John Peter A, Chang kyooYoo. Strain induced optical properties of CdTe/ZnTe quantum dots. *Super lattices and micro structures* 2014; 66: 54.
25. **Sangeetha R**, John Peter A. Strain induced optical gain in a Zn_xCd_{1-x}Te/ZnTe quantum dot nanostructure. *AIP ConfProc*2013; 1512: 1014.
26. **Sangeetha R**, John Peter A. Pressure induced nonlinear optical rectification of a confined exciton in a Cd_{0.8}Zn_{0.2}Te/ZnTe strained quantum dot. *Elixir Nuclear & Radiation phys*2013; 64: 19071.
27. **Sangeetha R**, John Peter A. Dielectric Confinement on Exciton Binding Energy in a II-VI Semiconductor. *Elixir Semiconductor Materials* 2012; 50: 10517

Book Chapter

- ✿ GowthamKumar Subbaraj, SindhuVarghese, Langeswaran Kulanthaivel, Lakshmi Alagarsamy, **sangeethaRajaram** and SangeethaRamanathan. Cardiovascular and Coronary Artery Imaging "Gene Polymorphism and the risk of coronary artery disease" **Elsevier Academic Press. 2021 ISBN: 9780128227060.**
- ✿ Sangavi J, Geevaprabhakaran G, **Sangeetha R**, Vijayalakshmi P, Gowtham Kumar S, LANGESWARAN K. Perspectives of Stem Cell Therapy: a promising therapeutic for cancer model and Alzheimer's disease. Book Title: Handbook of Animal Models and its Uses in Cancer Research. **Springer Nature 2022. ISBN: 978-981-19-1282-5.**
- ✿ K.T. Nachammai, R. Srinithi, P. Sangavi, **R. Sangeetha**, S. Gowtham Kumar, R. Lakshmi Sundarame, and Kulanthaivel. Langeswaran Phospholipase A2 and hepatocellular carcinoma progression. Book Title: PHOSPHOLIPASES IN PHYSIOLOGY AND PATHOLOGY. **Elsevier 2023 ISBN: 978-0-323-95687-0.**

✿ Text Book Published

T. Rajesh Kumar, K. Langeswaran, **R. Sangeetha**. Nano Physics. 2022. New Century Book Century, Tamil Nadu, India. ISBN: **978-81-2344-240-2.**

Paper presented in Conference/Seminar

- 1 Presented a paper in the National Level Conference on Recent Advancement in Nanoscale Research (NCRNR 2012), organized by Anna University, Madurai in Aug 2012. **Title:** "Dielectric confinement on exciton binding energy in an II-VI semiconductor.
- 2 Presented a paper in the National Level Conference on New Materials Research and Nanotechnology (NSNMRN-2012) organized by Government Arts College Ooty in Sep 2012. **Title:** Investigations on the optical gain of a CdTe/ZnTe quantum dot.
- 3 Presented a paper in the 57th DAE Solid State Physics Symposium at Indian Institute of Technology Bombay in Dec 2012. **Title:** Strain induced optical gain in a $Zn_xCd_{1-x}Te$ / ZnTe quantum dot nanostructure.
- 4 Presented a paper in the National Conference on Recent Development in Physics organized by the Department of physics Government Arts College, Melur in Jan 2013. **Title:** Nonlinear optical properties in a wide band gap semiconductor.
- 5 Presented a paper in the National Level Conference on Recent Trends in Advanced Materials organized by Jayaraj Annapackiam College for Women Periyakulam Feb 2013. **Title:** Effects of hydrostatic pressure on nonlinear optical properties of an excitation in II-VI Semiconductor Nano-dot.
- 6 Presented a paper in the National Level Conference on Recent Development in Nanomaterials organized by Mohamed Sathak Engineering College, Kilakarai in March 2013. **Title:** Magnetic field induced Landé g-factor in a CdZnTe/ZnTe dot.
- 7 Presented a paper in the International Level Seminar on Materials Science and Technology organized by Mother Teresa Women's University, Kodaikanal Aug 2017. **Title:** Structural and Optical Properties of V_2O_5 Thin film.
- 8 Presented a paper in the National Level Conference on Preparation and Characterization of Crystalline Materials organized by Govt. Arts College, Tiruvannamalai in Sep 2017. **Title:** Structural, Electrical Optical Properties of KDP doped LADI NLO Crystal.
- 9 Presented a paper in the National Level Conference on Recent Advances in Materials Science organized by G.T.N Arts College, Dindigul in March 2019. **Title:** Modified Growth Technique and Characterization of Blue Light Emitting SCN Ligand based NLO Single Crystal.
- 10 Presented a paper in the International Level Conference on Advanced Materials for Sustainable Energy and Sensors organized by Alagappa University, Karaikud in Sep 2019. **Title:** Synthesis and Optical Characterization of SCN Ligand Non Linear Optical Single Crystal.
- 11 Presented a paper in the State Level Seminar on Emerging Trends in Chemical Science and Technology Sciences organized by G.T.N Arts College, Dindigul in Oct 2019. **Title:** Synthesis and Characterization of Bis (Thiourea) Nickel Chloride Non Single Crystal.
- 12 Presented a paper in the International Level Seminar on Emerging Trends in Chemistry & Energy Science organized by Saraswathi Narayanan College, Madurai in Feb 2020. **Title:** Fabrication and Characterization of CdS/CdTe.

- 13 Presented a paper in the International Conference on Frontiers in Chemistry and Material Science organized by Mannar Thirumalai Naicker College, Madurai in Jan 2021. **Title:** Preparation & Conductivity Characteristics Na⁺ ions conducting electrolytes based on PVA & PVP.
- 14 Presented a paper in the International Conference Recent Advancement in material science and its applications organized by Mannar Thirumalai Naicker College, Madurai in Jan 2023. **Title:** Synthesis and Characterization of Zinc Sulfide thin films By chemical Bath Deposition
- 15 Presented a paper in the International Conference Recent Advancement in material science and its applications organized by Mannar Thirumalai Naicker College, Madurai in Jan 2023. **Title:** Effect Of Capping Agent on SnS Nanoflower By Solvo thermal Method .
- 16 Presented a paper in the International Conference Advanced Nanomaterials for Energy and Environment Applications organized by Alagappa University in Feb 2023. **Title:** Quantum Chemical, Vibrational Spectroscopic, and Molecular Docking Studies on 4-Fluorochalcone: A Potent Cervical Cancer.

Projects Completed

S.No	Title of the Project	Funding Agency	Amount in ₹
1	Preparation and Characterization of novel Oxide Materials for Energy and Environmental Applications	Mannar Thirumalai Naicker College	25,000.00
2	Modified Growth Technique and Characterization of SCN Ligand based NLO CMTC and MMTC Single Crystal	Mannar Thirumalai Naicker College	25,000.00
3	Investigation and screening of novel inhibitor for hepatocellular carcinoma from Ocimum basilicum using bioinformatic tools	Mannar Thirumalai Naicker College	25000.00
4	Spectroscopic Characterization and Molecular Docking Studies on 4 – Fluorochalcone and 4 – Hydroxychalcone: A novel cervical cancer drug	Mannar Thirumalai Naicker College	25000.00
5	DFT Calculations, Molecular Reactivity, in Silico and in Vitro Anticancer activity Studies on 4-Nitrochalcone: A potential cervical cancer drug	TNSCST	7500.00

Distinctive Achievements /Awards

- ⊕ Received SIR CV Raman Best Young Scientist Award from Bose Science Society and sponsored by Tamil Nadu Scientific Research Organization, Tamil Nadu, India on 2019
- ⊕ Received Dr.APJ Abdul Kalam Award for Scientific Excellence for the Year 2020 from Marina Labs, Chennai on March 2021.
- ⊕ Bose Science society fellowship 2019

Orientation Programmes & Refresher Courses

- ➡ 100th Orientation Program at Bharathidasan University, Tiruchirappalli (15.11.2017-12.12.2017), Tamil Nadu, India.
- ➡ Refresher Course in Recent Trends in Physics for Energy and Environment at Madurai Kamaraj University, Madurai. (13.02.2020 -26.02.2020), Tamil Nadu, India.
- ➡ Refresher Course in Inter Disciplinary online two-week Refresher Course / Faculty Developgramme on “Managing Online Classes & Co – creating MOOCS 7.0” at CMS College (Autonomous) Kottayam(05.08.2021-19.08.2021),Kerala, Tamil Nadu
- ➡ Refresher Course in Recent Advances in the in Physics of Materials at Madurai Kamaraj University, Madurai. (7.10.2022 -20.10.2022), Tamil Nadu, India.

FDP, Conference, Symposium and Workshop Attended

- ISTE National workshop on Aakash for Education in Nov 2011 conducted by NPR College of Engineering and Technology, Dindigul.
- ISTE National workshop on Engineering Thermodynamics conducted in Dec2012 by NPR College of Engineering and Technology, Dindigul collaboration with IIT Remote Center.
- Two Week ISTE National workshop on Fluid Mechanics in May 2014 conducted by NPR College of Engineering and Technology, Dindigul collaboration with IIT Remote Center.
- Conference on Introduction to Theoretical Physics in Aug 2016 conducted by Govt Arts College, Melur.

- Science Academies Lecture Workshop on Interaction of Radiation with Matter in Dec 2017 conducted by Govt Arts College, Melur.
- Faculty Development Programme in Mar2017conducted by Mannar Thirumalai Naicker College, Madurai.
- Faculty Development Programme on online Teaching, Learning and Assessment using Moodle, MOOC platform, open educational resources & Education Technology Tools in Oct 2017 conducted by Mannar Thirumalai Naicker College, Madurai.
- Faculty Development Programme on E-content Development and Digital Tools in Mar 2018 conducted by MannarThirumalaiNaicker College, Madurai.
- Workshop on Technicalities of writing research proposal in Jun 2018 conducted by Mannar Thirumalai Naicker College, Madurai.
- Workshop on Intellectual Property Rights, Skill Development Programmes, Innovations, Patents and Setting Up Incubation Centers in Jan2019 conducted by Mannar Thirumalai Naicker College, Madurai.
- Promotion of API Score and CAS Filling in Mar 2019 conducted by MannarThirumalai Naicker College, Madurai.
- Training and Production Workshop on Prospects of outcome based curriculum in Mar 2019 conducted by Mannar Thirumalai Naicker College, Madurai.
- Workshop on Outcome Based Education in Aug 2019 conducted by Mannar Thirumalai Naicker College, Madurai.
- Workshop on Research Writing and Publications: Theory and Practice in Oct 2019 conducted by MannarThirumalai Naicker College, Madurai.
- Faculty Development Programme on “Promotion of API Score and Career Advancement Scheme” in Mar 2020 conducted byMannarThirumalaiNaicker College, Madurai.
- Faculty Development Programme on “21st Century Skills” in Mar 2020conducted byMannarThirumalaiNaicker College, Madurai.
- Workshop on Quality Assurance and Sustenance in Higher Education in Mar 2020 conducted by MannarThirumalai Naicker College, Madurai.
- Online Faculty Enrichment Programme in Mar 2020 conducted by Mannar Thirumalai Naicker College, Madurai.

- Two days In- Service Teacher Training Programme in May 2022 to organized by Tamilnadu State Council For Science and Technology.

Webinar Participated

- ★ Participated in National Faculty Enrichment Programme organized by Internal Quality Assurance Cell of MannarThirumalaiNaicker College May 2020.
- ★ Participated in Faculty Development Programme on Data analysis & visualisation of COVID 19 Dataset using Python in May 2020 organized by Department of CSE in association with CC+ Computational intelligence research foundation, Chennai.
- ★ Participated in Micro & Nanotechnology and its Applications in May 2020 organized by Department of Physics, G.N.T Arts and College, Dindigul
- ★ Participated in Bio Diversity in May 2020 organised by ECO Club, MannarThirumalaiNaicker College, Madurai
- ★ Participated in the series of online lectures in Solid State Physics – Series I: Electrons in Solids in May 2020 organized by Department of Theoretical Physics, University of Madras
- ★ Participated in Thin Flim Technologies in our daily life in May 2020 organized by the PG and Research Department of Physics, Nadar MahajanaSangam S. Vellichamy Nadar College, Madurai.
- ★ Participated in FDP on Applications of Molecular Techniques in Biomedical Research in May 2020 organized by RUSA 2.0 Entrepreneurship and career hub, University of Madras
- ★ Faculty Development Programme on “Innovations in Applied Research for Science and Technology” Oct 2021 organized by KDK College of Engineering ,Nagpur.
- ★ Participated inWorkshop on “Sustainable Materials Advances and Application” July 2022 organized bySRM Institute of Science and Technology, Ramapuram, Chennai.
- ★ Participated inInternational Virtual Conference on “Material Science and Applications” Feb 2023organized bySeethalakshmiRamaswami College, Tiruchirappalli.
- ★ Participated in National Virtual Workshopon Machine Learning: An IceB, in April SSN ResearchCentre, SSN Insitutions Chennai.reaker Between Materials Research and Data Science.

- ★ Participated in Five days online FDP on “Theoretical & Experimental Physics” in May & June 2023 Organized by School of Advanced Sciences and G.T.N Arts College Dindigul at Vellore Institute of Technology, Chennai.

Reviewer for Journals

- ❖ Materials Today: Proceedings
- ❖ Journal of Physics Conference Series

Events organized

S. No	Date	Name of the Programme	Role	Funding Agency
1	17.02.2017	National level Seminar on “Nano Science and Technology for Energy and Environment	Organizing Member	Mannar Thirumalai Naicker College
2	07.10.2017	National level Seminar on “Developments in Advanced Materials and their Applications	Organizing Convenor	Mannar Thirumalai Naicker College
3	12.2.2019	“Analytical Techniques in Preparation of Nano Materials”	Organizing Member	Mannar Thirumalai Naicker College
4	25.03.2022	Emerging Technologies in Material Science	Organizing Convenor	Mannar Thirumalai Naicker College
5	21&22.12.2022	National Science Day	Organizing Convenor	TNSCST (₹ 2,00,000)
6	12.01.2023	International Conference Recent Advancement in material science and its applications	Organizing Member	Mannar Thirumalai Naicker College

Invited Lectures

- ★ Guest Lecture on “Device fabrications of potentially viable materials” on 08-03-13 organized by Department of Physics, Rama Prabha College of Arts and Science, Dindigul

- ★ Guest Lecture on “Some Interesting optical properties of II-VI nano Semiconductors” on 22-01-13 organized by Department of Physics, V.V.VanniaPerumal College for Women, Virudhunagar.

- ★ Guest Lecture on “Electronic and Optical Properties of Wide Bandgap Semiconductors” on 18-02-13 organized by Department of Physics, JayarajAnnapackiam College for Women, Periyakulam

- ★ Guest Lecture on “Shape Memory Alloys ” on 22-02-23 organized by Department of Physics, V.V.VanniaPerumal College for Women, Virudhunagar.

- ★ Guest Lecture on “Trouble Shooting of Electronic Gadgets” on 26-03-24 organized by Department of Physics, G.T.N Arts College, Dindigul.

Member in Academic Bodies

- ▶ Question Paper Setter for UG, Examination Evaluation Board
- ▶ External Practical Examiner for Saraswathi Narayanan College, Madurai
- ▶ External Practical Examiner for SVN College, Madurai
- ▶ External Practical Examiner for Yadava College, Madurai
- ▶ Bos Member – S.Vellaichamy Nadar College
- ▶ External Practical Examiner for The American College, Madurai
- ▶ DC Member in SRNM College & Govt. Arts College Melur.

Other Responsibilities in Institution

- ❖ Research Cell Member - 2015-16 to 2019
- ❖ IQAC Member - 2015 to 2016

- ❖ Certificate Course In charge - 2016 to 2017
- ❖ Criterion V (NAAC) Member - 2016 to 2019
- ❖ Science Club Convener - 2017 to 2019
- ❖ Women Development Cell Member - 2017 to 2019
- ❖ Bridge Course Member - 2018 to 2019
- ❖ Gandhian Thought Course Member - 2018 to 2019
- ❖ Nodal Officer (Community College &B.Voc) - 2018 to 2021
- ❖ Director (Community College &B.Voc) - 2019 to 2021
- ❖ Criterion III (NAAC) Member - 20120 to till date
- ❖ Red Ribbon Club Convenor (2022-2023)
- ❖ Science Club Convener – 2022 to 2023
- ❖ Eco Club Convenor- 2023 to 2024
- ❖ Certificate & Add-on-Courses Committee member – 2023 to 2024