

Dr. TINTU.R.

Head & Associate Professor of Physics

International Publications – 18

Conferences (International – 21) (National – 06)

<u>Citation indices</u>	<u>All</u>
Citations	283
h-index	06
i10-index	06



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QUALIFICATION

M.Sc., Ph.D,PDF

DATE OF JOINING

12.10.2012

EXPERIENCE IN YEARS

13 years

AREA OF RESEARCH

Material Science,
Nanophotonics,Biophotonics

ADMINISTRATIVE DISTINCTION

- Head of the Department of Physics, TKMM College Nangiarkulungara June 2024 onwards.
- Council member
- DST FIST Co ordinator 2023 onwards
- CLMC Co-ordinator 2022 onwards.
- RUSA research group member
- IQAC core member

AWARDS OR ACHIEVEMENTS

- Qualified GATE 2007.
- Qualified NET (All India rank 30).
- UGC D S Kothari Post Doctoral Fellow
- Member of Fostering Linkages in Academic Innovation and Research (FLAIR), Kerala Government.
- Apporoved as research guide (Physics) as per No.Ac.EVI(4)/29606/2017 dated 02/11/2017.

PUBLICATIONS

- 1) R. Tintu, V.P.N. Nampoori, P. Radhakrishnan, Sheenu Thomas, “*Photoinduced changes in optical properties of Ga-Sb-Ge-Se glasses*”, Optics Communications., 284, 222–225 (2011).
- 2) R. Tintu, V. P. N. Nampoori, P. Radhakrishnan, and Sheenu Thomas, “*Nonlinear optical studies on nanocolloidal Ga-Sb-Ge-Se chalcogenide Glass*”, Journal of Applied Physics., 108, 073525 (2010).
- 3) R. Tintu, V.P.N. Nampoori, P. Radhakrishnan, Sheenu Thomas, “*Preparation and optical characterization of novel Ge-Se-Sb/PVA composite films for optical limiting application*”, J. Phys. D: Appl. Phys., 44, 025101 (2011).
- 4) R. Tintu, K Sulakshna, K Saurav, V P N Nampoori, P Radhakrishnan and Sheenu Thomas, “*Ge₂₈Se₆₀Sb₁₂ /PVA Composite Films For Photonic Applications*”, Journal of Non-Oxide Glasses., 2, 167- 174 (2010).
- 5) R. Tintu , V.P.N. Nampoori, P. Radhakrishnan, Sheenu Thomas, “*Non linear Optical Characterization of erbium doped Ge- Sb- Se thin films*, Discourse - Science (In press).
- 6) R. Tintu , V.P.N. Nampoori, P. Radhakrishnan, Sheenu Thomas “*Nanocomposite thin films of Ga₅Sb₁₀Ge₂₅Se₆₀ chalcogenide glass for optical limiting applications*”, Optical Materials., 33, 1221–1225 (2011).
- 7) R. Tintu, V.P.N. Nampoori, P. Radhakrishnan, Sheenu Thomas, “*Reverse saturable absorption in nano colloidal Ge₂₈ Sb₁₂ Se₆₀ chalcogenide glass*”, Journal of Non-Crystalline Solids., 357, 2888–2891(2011).
- 8) Nithyaja, V.K Jisha , R.Tintu , A.V Saramma and V. P N. Nampoori, “*Kinetics of bacterial colony growth by laser induced fluorescence*”, Laser Physics B., 19, 468-472 (2009).
- 9) T.S Abhilash, Ch Ravi Kumar, R Tintu, P V Lajna and G Rajaram, “*Wet Chemical Etching Characteristics of GaAs and GaAs/AlGaAs using different etch solutions with some process variations*”, Solid State Physics, Proceedings of the DAE Solid State Symposium, Volume 51, ISBN [818372030-7](#) (2006).
- 10) R. Tintu, V.P.N. Nampoori, P. Radhakrishnan, Sheenu Thomas, N V Unnikrishnan, Stacked chalcogenide and polymer structures for photonic applications, DOI [10.1109/ICOE.2012.6409601](#), 2012
- 11) R. Tintu, V.P.N. Nampoori, P. Radhakrishnan, Sheenu Thomas, N V Unnikrishnan, Cluster size and Excitation wavelength dependent Photoluminescence behavior of nano colloidal Ge- Se- Sb- Ga chalcogenide glass solutions , JOAM, vol.14, iss.11- 12/2012.
- 12) R. Tintu, V.P.N. Nampoori, P. Radhakrishnan, Sheenu Thomas, N V Unnikrishnan, Laser induced photoluminescence from Ge₂₈Se₆₀Sb₁₂ chalcogenide nano colloids, Physica B 41412–15(2013)
- 13) R. Tintu, V.P.N. Nampoori, Sheenu Thomas, N V Unnikrishnan, Photodarkening in Ge₂₈Se₆₀Sb₁₂ chalcogenide glass thin film, The Journal of Physics (accepted) 2014
- 14) Free standing Chalcogenide /Polymer nano composites for photonic applications Int. J. Adv. Rcesearch in Sci. Engg. Vol. 6. No.3(2017) 05-12.
- 15) Arya Surendran and R. Tintu ,”*Green innovation: cool white light emission from inorganic ZnS nanoparticles with tunable structural and optical properties* “J Mater Sci: Mater Electron (2024) 35:812.

- 16) Arya Surendran and R. Tintu Biomedical and Anticancer Potential of Green Synthesized Chalcogenide Zinc Sulfide Nanoparticles Using Different Plant Extracts as the capping Agent, Brazilian Journal of Physics (2024) 54:224.
- 17) Surendran, A., Tintu, R. (2025). *Annealing Temperature Dependent Structural and Optical Tunability in Green Synthesized ZnS Quantumdots*, Lecture Notes in Networks and Systems, vol 1247. Springer, Cham • 15464056 Springer book
- 18) Tintu R., Arya Surendran, Printy Varghese, Green Synthesized ZnO Nanoparticles: Characterization and Evaluation of Antimicrobial and Cytotoxic Potentials for Pharmaceutical Applications, Int. J. of Pharm. Sci., 2025, Vol 3, Issue 5, 3223-3232. <https://doi.org/10.5281/zenodo>.

Papers presented in International /National Conferences

- 1) R.Tintu, V. P. N. Nampoori, P. Radhakrishnan and Sheenu Thomas, "Optical properties of optical properties of erbium doped Ge-Sb-Se thin films", International Conference On Materials For the Millennium, MATCON 2010, Department of Applied Chemistry, CUSAT, Jan 11-13, 2010.
- 2) R.Tintu, V P N Nampoori, P Radhakrishnan and Sheenu Thomas, "Spectral and optical Characterization of Ga-Sb-Ge-Se and polyvinyl alcohol amorphous composite", International conference on Advances in Polymer Technology (APT-2010), EOP 04 .JJ Murphy Research Centre, Rubber Park [P] Ltd, Feb 26-27, 2010.
- 3) B Nithyaja, V.K Jisha, R.Tintu, A.V Saramma and V P N Nampoori, "Laser Bacterial Interaction By using Laser Induced Fluorescence Technique", Photonics 2008, International Conference on Fiber Optics and Photonics., IIT Delhi, Dec 13-17, 2008.
- 4) R.Tintu, K Sulakshna, K Saurav, V P N Nampoori, P Radhakrishnan and Sheenu Thomas, "Amorphous composite chalcogenide glass films for nonlinear optical applications", The International Conference on Fiber Optics and Photonics–PHOTONICS-2010, Indian Institute of Technology Guwahati (IIT Guwahati), Dec 11-15, 2010.
- 5) R.Tintu, V. P. N Nampoori, P. Radhakrishnan and Sheenu Thomas "Fabrication of Ga-Sb-Ge-Se /PVA composite films with strong optical limiting", International Conference on Recent Trends in Materials Science and Technology(ICMST), IIST, Thiruvananthapuram, Kerala, Thiruvananthapuram, Oct 29-31, 2010.
- 6) R.Tintu, V. P. N. Nampoori, P. Radhakrishnan and Sheenu Thomas, "Laser induced Photo-darkening in Ga- Sb-Ge-Se thin film", National laser Symposium (NLS-09), BARC, INDIA, Jan 13-16, 2010.
- 7) R.Tintu, V. P. N. Nampoori, P. Radhakrishnan and Sheenu Thomas, "Optical Characterization of Ga-Sb- Ge-Se and polyvinyl alcohol amorphous composite", National Seminar on Nano Structured materials and Nano photonics, Department of Physics, ST.Teresa's college, Kerala, Feb 4-5, 2010.
- 8) R.Tintu, V. P. N. Nampoori, P. Radhakrishnan and Sheenu Thomas, "Laser induced photodarkening in chalcogenide thin films", Kerala Women's Science Congress 2010, St. Teresa's College, Ernakulam, Aug 10- 12, 2010.

properties of nano colloid Ge-Se-Sb-Ga chalcogenide glass”, DAE-BRNS National Laser Symposium, RRCAT, Indore, Dec.1-4, 2010.

R.Tintu, K. Sulakshna, K. Saurav, V. P. N. Nampoori, P. Radhakrishnan and Sheenu Thomas, “Third- Order Optical Nonlinearity of nano composite Ge₂₈Se₆₀Sb₁₂ /PVA films”, icmf2011, Second International Conference on materials for the future, Government Engineering College, Thrissur, Feb 23-25, 2011.

- 10) R Tintu,” Visible luminescence from “Proceedings of the National Seminar on ‘New Frontiers in Nanotechnology and Material Science’ on 20 March 2015,organised by Department of Physics, S.N. College, Chengannur, Kerala
- 11) Participated and presented a paper on “National Seminar on Recent Trends in Alternate Energy - 2017”, jointly organized by Department of Physics, Government college Kottayam, sponsored by the Directorate of Collegiate Education, Government of Kerala, India (5-6 October 2017)
- 12) Presented a Paper on Free standing Chalcogenide /Polymer nano composites for photonic applications.Tintu.R,Aparna V, Hema Vijayan S, Sreena CVKSCSTE sponsored National Seminar (AFM 2017) at All saints College, TVM
- 13) Participated and presented a paper on "Green synthesised QD doped chalcogenide colloids for optoelectronic applications" at National Conference on Advances in Nanomaterials & Nanotechnology August 6 &7, 2019Department of Physics, Mar Thoma College, Tiruvalla.
- 14) Coordinated and presented paper on “Luminescence from erbium doped semiconductor nano colloids” UGC sponsored NSST 2020, January 31 organized by department of Physics, TKMM college Nangiarkulangara.
- 15) Participated and presented a paper on “Defect centre mediated optical tuning in chalcogenide glasses” at UGC sponsored National Seminar –NSST 2020 organized by department of Physics, TKMM college Nangiarkulangara on January 2020.
- 16) Participated and presented a paper on “Defect centre mediated optical tuning in chalcogenide glasses” at UGC sponsored National Seminar –NSST 2020 organized by department of Physics, TKMM college Nangiarkulangara on January 2020.
- 17) Presented a paper entitled “Green Synthesis of ZnS Nanoparticle: Characterization and analysis of cytotoxicity properties” at the International Conference on Advanced Materials ICAM 2021) organized by the Department of Physics, University of Calicut (July 2021).
- 18) Poster Presentation on “Deffect Center Mediated Luminescence From Green Synthesized Zinc Sulphide Doped Ge-Se-Sb Nanocolloids” at 3 rd Indian Conclave (IndMac) and 32 nd Annual General Meeting of MRSI, organized by Indian Institute of Technology, Madras (December 2021).
- 19) Presented a Poster Entitled “Structural and optical Characterization of ZnO

Nanoparticles with antibacterial and cytotoxic activity Synthesized using Aloe Vera Extract” at the Golden Jubilee International Conference NANOicon 2022 organized by Inter University Center for Nanomaterials and Devices & Cochin University of Science and Technology, Kerala (January 11-15 ,2022).

- 20) Presented a paper entitled “The Influence of Annealing Temperature on Structural and Optical Properties of Green Synthesized ZnS Nanoparticle” at the International Conference on Materials- Properties, Measurements and Application (ICMPMA 2022) organized by the Research and Postgraduate Department of Physics, Fatima Mata National College (Autonomous), Kerala during 9-13 May 2022.
- 21) Paper Presentation on the topic “Annealing Temperature dependent Structural and Optical tenability in Green synthesized ZnS quantum dots” at the 15th World Congress on Nature and Biologically Inspired Computing Onsite and on the World Wide Web organized by Machine Intelligence Research Lab, Scientific Network for Innovation and Research Excellence Auburn, Washington, USA (14-15 December 2023).
- 22) Presented a paper entitled “ Green synthesis of ZnS nanoparticle with excellent color rendering index for light emitting diodes (LEDs) applications” at the DST sponsored International conference on Recent Advances in Physical Science (ICRAPS-2023) organized by Postgraduate and Research Department of Physics, Bharath Mata College, Thrikkakara, Kerala (28-30 November 2023)
- 23) Presented a paper entitled “ Structural, Optical and antimicrobial investigation on Pure CeO₂ and RGO/CeO₂ nanocomposite prepared via coprecipitation” at the DST sponsored International conference on Recent Advances in Physical Science (ICRAPS2023) organized by Postgraduate and Research Department of Physics, Bharath Mata College, Thrikkakara, Kerala (28-30 November 2023).
- 24) Paper presentation on the topic “Exploring the structural, emission and electrochemical properties of ZnS nanoparticles for multifunctional applications.” at the International Conference RICERCA 2024 organized by IQAC & Research & Development Cell, St. Joseph’s College for Women, Alappuzha in association with Christ University Bangalore during 12th December to 20th December 2024.
- 25) Presented a Paper on the topic “Structural investigation on pure CeO₂ and RGO–CeO₂ nanocomposite prepared via coprecipitation method.” at the International Conference RICERCA 2024 organized by IQAC & Research & Development Cell, St. Joseph’s College for Women, Alappuzha in association with Christ University Bangalore during 12th December to 20th December 2024.
- 26) Presented a paper entitled “Synergistic enhancement of electrochemical performance in chalcogenide nanocomposites for high-performance supercapacitor applications” at the DST International Conference on Advances in Material Sciences 2025, organised by St.Dominics’s College, Kanjirappally (January 2025).

Workshops/ Training Programmes Attended/Resourse Person

- Invited Lecture on “Mixed dimensional stacked semiconductor polymer nanocomposite structures for photonic applications.” on 3rd International Conference on Recent Trends in Materials Science & Devices 2025 (ICRTMD-2025), 24-25 ,2025.

- Resource person for the Moons Day Quiz conducted by ANHS 2023.
- Participated in National Seminar on Statistical Physics organized by Department of Physics, Government College, Kottayam on 22 August 2014.
- Attended the three day Induction training programme of FLAIR from 22-1-15 to 24-1-15
- Participated in Introductory Training Workshop on “Nano fabrication Technologies” conducted on behalf of Fostering Linkages in Academic Innovation and Research (FLAIR) program at Centre for nano Science and Engineering, Indian Institute of Science, Bangalore from 13-16 february 2015
- Attended Workshop on Mathematical Methods in Physics on September 3-5, 2016 @ SRIBS, Pampady, Kottayam organized by KSCSTE, Trivandrum.
- **Resource Person** and Delivered an invited talk as part of World Ozone Day Celebration 2016 conducted by Govt Higher Secondary School Veyapuram on 22 & 23 September 2016 supported by KSCSTE Govt of Kerala.
- **Resource Person and Delivered an invited talk** entitled “The Hole in sky: Causes effects and mitigations” as part of World Ozone Day Celebration 2016 conducted in S N College Chengannur on 22 & 23 September 2016 supported by KSCSTE Govt of Kerala.
- Attended two day workshop on Electromagnetic waves organized Academy of Physics Teachers, Kerala hosted by Department of Physics, CMS College Kottayam during 8-9 October 2016.
- Attended the science Academies Lecture workshop on basis of Relativistic Quantum Mechanics & Field theory organized by National Science Academy (New Delhi), National Academy of Science (Allahabad) & Indian Science Academy (Bangalore) conducted at Bishop Moore Collegae Mavelikara during 30 November- 1 December.
- **Resource Person and Delivered an invited talk** entitled “Optical Communications” S N College Chengannur on 06/03/2018 .
- **Invites talk on “Mixed dimensional stacked semiconductor polymer nanocomposite structures for photonic applications.”** 3rd International Conference on Recent Trends in Materials Science & Devices 2025