

Name : Dr.R.Karunathan
Designation : Assistant Professor
Department : Physics
Qualification : M.Sc., M.Phil., Ph.D.,FARA.
Experience : Teaching: 9.6 Years Research: 7 Years
Area of Specialization(s) : Molecular Quantum Mechanics, Computational Physics
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Academic Qualifications

Degree	Branch	Institution / University Name	Year of Graduation
Ph.D.	Physics	PSG College of Arts & Science, Bharathiar University, Tamil Nadu, India.	2014
M.phil	Physics	Sri Ramakrishna Mission Vidyalaya, Bharathiar University, Tamil Nadu, India	2011
M.Sc.	Physics	Sri Ramakrishna Mission Vidyalaya, Bharathiar University, Tamil Nadu, India	2009
B.Sc.	Physics	Sri Ramakrishna Mission Vidyalaya, Bharathiar University, Tamil Nadu, India	2007

Research Guidance

Programme	No. of Scholars	
	Completed	Pursuing
Ph. D.	----	02
M. Phil.	----	----

Research Publications (Indexed)

International:

1. D. Prabha , **R. Karunathan** & V. Sathyanarayanamoorthi, “EXPERIMENTAL AND THEORETICAL PERSPECTIVES ON 2-AMINO 5-BROMOPYRIDINIUM SALICYLATE: A THIRD ORDER NONLINEAR OPTICAL MATERIAL”, J Mater Sci: Mater Electron in Springer , Vol.7,issue 2, Sep 2017,DOI 10.1007/s10854-017-6718-8-2017. ISSN : 0957-4522(Scopus).

2. V. Anbu, **R. Karunathan**, K.A.Vijayalakshmi & A. David Stephen, "EXPLOSIVES PROPERTIES OF HIGH ENERGETIC TRINITROPHENYL NITRAMIDE MOLECULES: A DFT AND AIM ANALYSIS", Arabian journal of chemistry, Vol.12,issue 5,Sep 2016. DOI: <http://dx.doi.org/10.1016/j.arabjc.2016.09.023> (Scopus) ISSN: 1878-5352.
3. S. Suganthi, V. Kannappan, V. Sathyanarayanamoorthi & **R. Karunathan**, "QUANTUM MECHANICAL INVESTIGATION OF VIBRATIONAL AND ELECTRONIC SPECTRA OF SOME 5-SUBSTITUTED ISOQUINOLINES" Indian journal of pure & Applied physics, Vol. 54, issue12, pp-15-34,2016, ISSN: 2320-2459. (Scopus)
4. B. Babu J. Chandrasekaran, **R. Karunathan** & V.Sathyanarayanamoorthi, "OPTICAL, STRUCTURAL, THERMAL AND POWDER SHGINVESTIGATIONS ON 5-CHLOROSALICYLALDEHYDE SINGLE CRYSTALS", Optik - International Journal for Light and Electron Optics , Vol.126, issue 9,pp-27-423516–3521,30-Aug.2015, ISSN :0030-4026 (Scopus)
5. V. Sathyanarayanamoorthi, **R. Karunathan** & V. Kannappan, "MOLECULAR MODELING AND SPECTROSCOPIC STUDIES OF BENZOTHAZOLE", Hindawi Publishing Corporation, Journal of Chemistry, Vol. 1155, issue 2013,pp-27-42,7-Feb-2013,DOI: 10.1155/2013/258519. ISSN: 2090-9071(Scopus)
6. E. Shobhana, R. Kesavasamy , B. Babu , **R. Karunathan** ,Synthesis, crystal structure, spectral, thermal, dielectric, z-scan analysis and computational studies of 8-hydroxyquinolinium trichloroacetate (8HQTC), Digest Journal of Nanomaterials and Biostructures Vol. 17, No. 1, January - March 2022, p. 369 – 382.
7. G Arjunana, **R Karunathan**,**R Raj Muhamed**,Quantum chemical and third order nonlinear optical investigation of (E)-1-(1H-imidazol-1-yl)-3-(1H-indol-2-yl)prop-2-en-1-one, Indian Journal of Chemistry, Vol. 62, August 2023, pp. 808-815, DOI: 10.56042/ijc.v62i8.198.
8. Yamuna Radhakrishnan , R. Karunathan ,Nandhini Panjulingam , Senthilkumar Lakshmipathi , Babu Balraj , Chandrasekar Sivakumar " pH impact on Bismuth vanadate Nanomaterial: Photocatalyst and Super capacitor Application" Ceramics International, March 2025

National:

1. A.Thirunavukkarasu1, **R Karunathan**, J Mallika & V Sathyanarayanamoorthi "VIBRATIONAL AND QUANTUM CHEMICAL ANALYSIS OF 3-METHYL-2,6-DIPHENYL PIPERIDIN-4- ONE USING HF AND DFT METHODS", Indian Journal of Pure & Applied Physics Vol. 52, pp-653-670,27.Oct-2014, ISSN: 0975-1041.(Scopus)

2. B.Vijayakumar, .Sathyanarayanamoorthi & **R.Karunathan**, “THEORETICAL STUDIES ON 3-AMINORHODANINEDERIVATIVES IN THE GAS PHASE: CHARGE DELOCALIZATION AND NLO PROPERTIES” ,International Journal of Innovations in Scientific and Engineering Research (IJISER), Vol. 3 Issue 12 ,pp-102-116,12.Dec- 2016 ,DOI: 10.1155/2018/2347, ISSN: 2347-9728. (*Scopus*)
3. **R. Karunathan** , K. Mohanraj , J. Chandrasekaran & B. Babu, “EFFECT OF GAMMA IRRADIATION ON STRUCTURAL PROPERTIES OF CDTE THIN FILMS”, Chemical letter(Eleyon), Vol. 1 ,Issue 1,pp-19-22, Aug-2018, **ISSN** 1001-8417,DOI: 10.26524/cl1814 (*Scopus*)
4. D.Sridher, V.kannappan, **R.Karunathan** & V.Sathyanarayanamoorthi, "SPECTROSCOPIC INVESTIGATION, HOMO-LUMO ANALYSIS AND DFT STUDIES ON ACETONE THIOSEMICARBAZONE" Elixir Vib. Spec, Vol.72, pp- 25577-25582, 2014.
5. **R.Karunathan**, V.Kannappan & V.Sathyanarayanamoorthi, “GEOMETRY AND VIBRATIONAL ANALYSIS OF 2-AMINO THIAZOLE - QUANTUM CHEMICAL STUDY”, Elixir Vibrational Spectroscopy. Volume 72, Issue 7,pp-25565-25576, Oct-2014.**ISSN**:2229-712X. (*Scopus*)
6. D.Sridher , A.Muthusamy, V.kannappan, **R.Karunathan** & V.Sathyanarayanamoorthi, “SPECTROSCOPIC INVESTIGATION, HOMO-LUMO ANALYSIS AND DFT STUDIES ON ACETONE THIOSEMICARBAZONE”, Vol. 72, Issue 7,pp-25577-25582, 2014, **ISSN**:2229-712X. (*Scopus*)
7. R. Revathi & **R. Karunathan** , “STRUCTURAL, OPTICAL AND ELECTRICAL PROPERTIES OF THERMAL EVAPORATED NANO SIZED IN₂TE₃ THIN FILMS”, Chemical letter (Eleyon), Vol. 1 ,Issue. 1, pp-21-25, Feb-2018, DOI: 10.26524/cl1814 , **ISSN**: 1001-8417 (*Scopus*)
8. S Arulappan, R RajMuhammed, A IshaqAhamed, **R Karunathan**, Spectroscopic (FT-IR, FT-Raman), first order hyperpolarizability, NBO and HOMO-LUMO analysis of Z)-3-(2, 4-dichlorophenyl) 1-(1H-imidazol-1-yl) prop-2-en-1-one, Vol 8, Issue 12, Dec- 2019. ISSN 2277-8616(*Scopus*)

Book Publications

1. SPECTROSCOPIC AND THEORETICAL INVESTIGATION OF SOME THIAZOLE DERIVATIVES, Dr.R.Karunathan, First edition, Nature Academic Publishing, Coimbatore, 2017, ISBN:978-93-884130-2-2.
2. PHYSICS QUESTIONS AND ANSWERS FOR COMPETITIVE EXAMINATIONS, Dr.R.Karunathan, First edition, Royal book Publishing-International, Coimbatore, 2018, ISBN: 978-93-884130-1-5.

Presentations in Conference

1. QUANTUM CHEMICAL STUDY OF 2-AMINO-6 NITROBENZOTHIAZOLE, International conference on Research in condensed Matter Physics, University of madras and Mie University in Japan, Department of theoretical Physics (University of madras), 6-Sep-2011.
2. VIBRATIONAL AND SPECTROSCOPIC STUDIES AND AB INITIO CALCULATION OF PYRAZOLE 4-CARBOXYLIC ACID, National conference on Spectrophysics (UGC and CSIR), Pachaiyappa's college and women's Christians College, WCC-Chennai, 8-Nov-2012.
3. SPECTROSCOPY STUDIES AND ABINITIO CALCULATIONS OF DMT, National Seminar on Plasma physics, Sri Shakthi Institute of Engineering & Technology (UGC&DST), Department of Science & Humanities, Coimbatore, 12-Feb-2014.
4. Quantum Chemical Study on 2 Amino thiazole, International Conference on Atomic, Molecular, Optical & Nano Physics With Applications, Delhi Technological University, Department of Applied Physics, 18 – 20 December 2019.
5. Synthesis of iron oxide NPs by co-precipitation technique for Supercapacitors, “7th International conference on recent innovations in modern science and technology”, KPR Institute of Engineering & Technology, Coimbatore, 9-11 January 2024.
6. THE INFLUENCE OF pH ON BISMUTH VANADATE NANOMATERIAL: PHOTOCATALYST APPLICATION, Two Days National Conference On Green Energy Technologies For Sustainability, organized by the Department of Green Energy Technology, Pondicherry University, 20th-21st March 2025.

Participation in Conference

International:

1. QUANTUM CHEMICAL STUDY OF 2-AMINO-6 NITROBENZOTHIAZOLE, International conference on Research in condensed Matter Physics, University of madras and Mie University in Japan, Department of theoretical Physics (University of madras), 6-Sep-2011.
2. A NATIONAL SEMINAR ON SPACE SCIENCE AND TECHNOLOGY, Sri Ramakrishna College of Arts and Science, SNR Arangam, Coimbatore, 14-Oct- 2017.
3. INTERNATIONAL CONFERENCE ON ATOMIC, MOLECULAR, OPTICAL&NANO PHYSICS with APPLICATIONS, DTU ,Delhi, 18th-20th December, 2019.

National:

1. Participated in a National Conference on "EMERGING TRENDS IN MATERIALS AND METHODS" (NCETMM-2015) KSR Collge of Arts and Science for women, 7-Oct-15.

Participation in Seminars

PARTICIPATED IN A NATIONAL SEMINAR ON ADVANCED MATERIALS AND SOLAR ENERGY (AMASE'2015) ,KPR Institute of Engineering & Technology, Coimbatore-07, 28-Oct-15.

Participation in Faculty Development Programme

QUALITY INITIATIVES IN HIGHER EDUCATION, Dr. N.G.P. Arts and Science College, Coimbatore, 3-Dec-18 to 9-Dec-18.

NAAC REVISED ACCREDITATION FRAME WORK AND OBE ASSESSMENT METHODOLOGY, Dr. N.G.P. Arts and Science College, Coimbatore, May 27th to June 02nd, 2019.

Conference / Seminar / Workshop Organized

1. Committee member, Inspire Internship Science Camp (DST), Dr. N.G.P. Arts and Science College, Coimbatore, 4-8 Aug-2018
2. Committee member, Inspire Internship Science Camp (DST), Dr. N.G.P. Arts and Science College, Coimbatore, 25-29 Aug-2018
3. Committee member, Industry institute partnership Conclave, Industry institute partnership Cell (Dr. N.G.P. Arts and Science College, Coimbatore) & Bioline Laboratory Coimbatore, 11 Jan-2019.

Professional Membership

1. Board of Physics, Dr. N.G.P. Arts and Science College, Coimbatore- 2015-18
2. Board of Physics, Dr. N.G.P. Arts and Science College, Coimbatore- 2019-20
3. Fellow of Asian research Association (FARA)

Editorial Team

1. Bulletin of Scientific Research (E-ISSN 2582-4678)