

**CAUVERY COLLEGE FOR WOMEN
(AUTONOMOUS)
STAFF PROFILE**

PERSONAL INFORMATION

1. Name : Dr. R.GAYATHRI
2. Date of Birth : 05-05-1983
3. Address :

Residential	Office
71/A West street, Pallivasal, Perugamani(P.O) Trichy(D.T)-639115 E-Mail: gayathri.real@yahoo.com Mobile:9787663255	Assistant Professor of Physics Cauvery College for Women(Autonomous) Tiruchirappalli-620018 E-Mail:gayathri.phy@cauverycollege.ac.in Mobile:9787663255

ACADEMIC INFORMATION

4. Designation & Department : Assistant Professor & Physics
5. Educational Qualification :

Degree	Year	College/University
Ph.D	2017	Bharathidasan University, Trichy-24
M.Phil	2008	St.Joseph's College, Trichy-620002
M.Sc	2007	Shrimati Indira Gandhi college, Trichy-620 002

6. Researcher ID :
Google Scholar ID: 7Ej6kj4AAAAJ

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Vidwan ID : <https://vidwan.inflibnet.ac.in/profile/205862>

Web of Science ID : AAH-4228-2020

Mendeley ID :

<https://www.mendeley.com/search/?page=1&query=An%20experimental%20and%20theoretical%20investigation%20of%20the%20electronic%20structure%20and%20photoelectrical%20properties%20of%201%2C%204diacetoxy2methylnaphthalene%20for%20DSSC%20application&sortBy=>

Publon : <https://publons.com/researcher/1342876/drrgayathri/>

7. Experience :

Date of Joining	Institution	Year of Experience
02-07-2008	M.Kumarasamy College of Engineering	11 Months
15/06/2009	Cauvery College for Women(Autonomous)	12 Years 10 Months

8. Areas of Specialization :

- Vibrational Spectroscopy
- Characterization and property analysis of Natural Materials
- Dye Sensitized Solar Cell characterization using theoretical Methodology
- Nanotechnology

9. Languages known : TAMIL,ENGLISH

10. Subjects Taught :

UG	<ol style="list-style-type: none">1. Spectroscopy and laser physics2. Applied physics-I3. Applied physics-III4. Digital electronics and Microprocessor5. Wave mechanics and relativity6. Optics and spectroscopy7. Programming in C8. Atomic and Molecular Physics9. Electricity, Magnetism and Electromagnetism10. Elements of Theoretical Physics11. Thermal Physics and Statistical Mechanics12. Environmental Studies13. Astrophysics and cosmology
PG	<ol style="list-style-type: none">1. Nuclear and particle physics2. Numerical methods3. Statistical mechanics4. Electronics5. Electromagnetic theory6. Mathematical Physics7. Quantum Mechanics8. Classical Dynamics and Relativity9. Nano Science10. Crystal Growth and Thin film Science11. Astrophysics
M.Phil	-

11. Research Supervision:

	University from where guideship obtained	Thesis		
		Completed	Year of Completion	Pursuing (in numbers)
M.Phil	Bharathidasan University	-	-	-
Ph. D	Bharathidasan University	-	-	01

12. Details of Publications:

S.No	Journal Name & Volume, Page	Year of Publication	ISSN Number	Name of the Paper	Impact factor
1	Cauvery research Journal Volume:3 Page No:79-86	Jan 2010	-	Vibrational Spectra and Normal coordinate calculations of 5,6-Diamino 1H pyrimidine 2,4-Dione	-
2	Spectrochimica Acta – PartA- Molecular and Biomolecular spectroscopy(Elsevier) Volume:81A Page No:242-250	2011	1386-1425	Vibrational Spectroscopy investigation and HOMO,LUMO analysis using DFT(B3LYP) on the structure of 1,3-Dichloro-5-nitrobenzene	1.737
3	Spectrochimica Acta – PartA- Molecular and Biomolecular spectroscopy(Elsevier) Volume:82 Page No:332-339	2011	1386-1425	Molecular structure, vibrational spectroscopic, first hyper polarizability, NBO and HOMO, LUMO studies of P-Iodobenzene sulfonyl chloride	1.737
4	Spectrochimica Acta – PartA- Molecular and Biomolecular spectroscopy(Elsevier) Volume :97 Page No:311-325	2012	1386-1425	Experimental(FTIR and FT-Raman) and theoretical(HF and DFT) investigation NMR,NBO,electronic properties and frequency estimation analysis on 2,4,5-trichlorobenzene sulfonyl chloride	1.737

5	Spectrochimica Acta – PartA- Molecular and Biomolecular spectroscopy(Elsevier) Volume :116 Page No:170-182	2013	1386-1425	NBO,NMR,UV,FT-IR,FT-Raman Spectraand molecular structure (monometric and diametric structures) investigation of 4-chloro-3,5-xyleneol; A Combined experimental and theoretical study	2.129
6	Spectrochimica Acta – PartA- Molecular and Biomolecular spectroscopy(Elsevier) Volume : 123 Page No:309-326	2014	1386-1425	Molecular Structure , Vibrational investigation of 2-Chloro- α trifluoro-3.5-dinitrotolueneusing DFT(LSDA,B3LYP, and MPW1PW91)andUV-Vis absorption Spectra in organic solvents :a IEF-PCM /TD-DFT Study	2.129
7	Journal of Molecular Structure (Elsevier) Volume :1130 Page No: 876-894	2017	0022-2860	Quantum Chemical Modeling, Atomic charge and Molecular orbital analyses of trans-3-(trans-4-imidazolyl) acrylic acid.	1.78
8	Journal of Molecular Structure(Elsevier) Volume:1163 Page No:480-485	2017	0022-2860	Optical, Fluorescence with Quantum analysis of Hydrazine (1, 3- Dinitro Phenyl) by DFT and Ab initio approach	1.78
9	Journal of Molecular Structure(Elsevier) Volume : 1116 Page No:63-78	2018	0022-2860	An Experimental and Theoretical Investigation of the Electronic Structure and Photoelectrical Properties of 1,4-Diacetoxy-2-methylnaphthalene for DSSC Application	1.78
10	Natural Products and Bioprospecting (Springer)	2018	2192-2195	Medicinal Plant using Ground state stabilization of natural antioxidant curcumin by keto-Enol Tautomerisation	-
11	Sensor Letters (American Scientific Publishers)	2020	1546-198X	Study on <i>N</i> -(4-Chlorobenzoyl) Fenamic Acid Crystal-Density Functional Theory Approach	0.811

13. Details of Papers Presented:

Date	Organizer	Name of the seminar	Paper Name
7-9 th Jan, 2010	Department of Physics, Women's Christian College, Nagarcoil-629 001.	National Conference With international participants on Recent and Emerging Developments in Physics	DFT Studies and vibrational assignments of 2-bromo aniline - Poster Presentation
22-24 th Sep, 2010	Annamalai university, chidambaram	Inter national conference on "Recent Frontiers in applied spectroscopy (ICORFAS-2010)	DFT Studies and vibrational spectra of 1,3-dichloro 5- nitrobenzene - Poster Presentation
06 th Jan, 2011	SRM University, Chennai.	98 th indian science congress association	Quantum chemical modeling and spectroscopic analysis of 2,4,5-Trichloro benzene sulfonyl chloride - Poster Presentation
10-11 th Feb, 2011	Queen Mary's college(A), Chennai -04	National conference on Recent Advances in Molecular physics (NCRAMP'11)	Molecular structure, vibrational spectroscopic, first-order hyperpolarizability and HOMO, LUMO studies of P- Iodobenzene sulfonyl chloride -ORAL Presentation
14 th Feb, 2011	Bishob Heber college, Trichy	National conference On "Perspectives in laser, optics, spectroscopy and nanoscience (NCLOSN2011)	Computation and Interpretation of vibrational spectra, NLO and NBO analysis on the structure of 4-Chloro-3, 5-Xylenol using Ab-initio HF and DFT Methods -ORAL Presentation
07-08 th March 2012.	Women's Christian College, Chennai.	CSIR sponsored national Conference on Spectrophysics (NCONS 2012) held at Pachaiyappa's College (in collaboration with Indian Spectro Physics Association (ISPA))	"Vibrational investigation of 2- chloro trifluoro-3,5- dinitrotoluene using DFT (LSDA, B3LYP, B9PW91 and MPW1PW91) and UV-VIS absorption spectra in organic solvents: A IEF-PCM/TD-DFT study" - ORAL Presentation
07- 09.08.2012	Bishop Moore College, Mavelikara, Kerala	DST,UGC and CSIR Sponsored International Conference on Molecular Spectroscopy on Advanced Materials and Biomolecules (IMSAB-12)	Vibrational investigation of 2-chloro trifluoro- 3,5- dinitrotoluene using DFT(LSDA, B3LYP, B9PW91 and MPW1PW 91) and UV-VIS absorption spectra in organic solvents: A IEF-PCM/TD-DFT study - ORAL Presentation

15-02-2017	Jamal Mohammad College-Trichy	National level seminar on "Recent Advancements in Materials"(NLS-RAM:17)	<p>1. A DFT study designing andrographics paniculta towards enhancing dss dye on functionalized single walled carbon nanotubes.</p> <p>2. A combined experimental and theoretical study designing curcum towards enhancing DSSC dye on functionalized single wall, carbon nano tubes.</p> <p>-POSTER Presentation</p>
28-29.03.2017	K. Ramakrishna College of Technology, Trichy-621112	International Conference (ICONNECT-2K17)	<p>1. Pharmaceutical importance, vibrational, spectra, electronic structure calculations and frontier orbital study on 2-Isopropyl-5-Methylcyclohexanol.</p> <p>2. Vibrational Spectroscopic investigation mulliken charges, NBO analysis, thermodynamic properties using AB INITIO and density functional theory study on the structure of clove.</p> <p>3. Understanding polar variation, quantum chemical modeling spectral studies of cinnamoldeheyde.</p> <p>-Poster Presentation</p>
04.08.2017	Dept of Physics, Mother Terasa University Kodaikanol	One day International Seminar on Material Science and Technology (ISMST - 2017)	<p>A DFT study on georgeous rose petals towards enhancing DSSC sensitization along SW-Carbon Nanotube.</p> <p>-Poster Presentation</p>
21.08.2017	Dept.of.physics, Urumu Dhanalaksmi College, Tiruchirappalli	International conference on recent trends in Material science and its Applications-ICRM 2017	<p>Isolation spectroscopic characterization and understanding the charge density distribution studies of multi-functional therapeutic plants curcumin,black pepper and andrographicpaniculata</p> <p>-Oral Presentation</p>
10-01-2023	Jamal Mohamed College(Autonomous) Tiruchirappalli	International Conference on Recent Innovations in Materials Science and Spectroscopy(ICRIMS-2023)	<p>A Combined experimental and theoretical Study on the clinical proof of everolimus effectiveness and its therapeutic potential for treatment of tumor cells.</p> <p>-Oral Presentation</p>

14. Details of Seminars / Conferences / Workshops Attended:

Date	Organizer	Title of the Conference / Seminar / Workshop	LEVEL International / National / Regional / State Level	Topic
29-01-2010 & 30-01-2010	Thanthi Hans Roever college, Perambalur	Recent trends in material science	State level	Recent trends in material science
10-02-2010 to 12-02-2010	Jamal Mohamed college, Trichy	Special lecture series on theoretical physics	Regional level	Theoretical physics
01-03-2010	Jamal Mohamed college	Recent advances in laser application(SLS-RALA-2010)	State level	Advances in laser application
07-09-2010	Bishob Heber college, Trichy	Recent advances in spectroscopic techniques	Regional level	Spectroscopic Techniques
05-10-2010	Bishob Heber college, Trichy	Special lecture on search of new anticancer ligands	Regional level	Lecture on search of new anticancer ligands
18-10-2010 and 19-10-2010	Anna University, Chennai	(Padiga valarchi ariviyal thozhilnutpa karutharangu)	National Level	Crystal Growth
12-01-2011 to 14-01-2011	St. Joseph's College, Trichy	INDO-US workshop on nanoscience and ultrasonics (IUWONU-2011) & International conference on Nano Technology & Ultrasound(ICNU-2011)	International Level	Nano Technology & Ultrasound
28-01-2016 to 30-01-2016	Prist University & IICPT, Thanjavur	Lecture cum-workshop on Interpretation of spectral, Chromatographic, Crystallographic and Computational data of chemical Systems	National Level	Interpretation of spectral, Chromatographic, Crystallographic and Computational data of chemical Systems
06-08-2018 to 10-08-2018	Bharathidasan University, Trichy-24	Workshop on Crystal Growth of functional and Exotic Materials	International Level	Crystal Growth of functional and Exotic Materials
29-11-2018 to 02-11-2018	Cauvery College for Women, Trichy-18	Capacity Building Workshop on e-Content Development	Regional Level	E-Content Development
26 th -27 th Sep 2019	Cauvery College for Women (autonomous), Trichy.	State level technical workshop on "Intellectual Property Rights"	State level	Intellectual Property Right
29 – 30, April 2020	Coimbatore Institute of Technology, Coimbatore	Two day FDP on virtual teaching	State level	Virtual Teaching - Moodle

27-05-2020 to 30-05-2020	PG and Research Department of Physics, Jamal Mohamed College (Autonomous), Tiruchirappalli in association with Spoken Tutorial, IIT Bombay.	Faculty Development Programme on C and C++	National Level	Programme on C and C++
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15. Details of Orientation / Refresher Course Attended:

Date	Title of the Course	Organizer
06-08-2018 to 10-08-2018	Workshop on Crystal Growth of functional and Exotic Materials	Bharathidasan University
24.06.2020 to 07.07.2020	Online Refresher Course on Science Academics	A.P.A.College of Arts & Culture

16. Details of Study Materials / Books written and published:

S.No	Book Title	ISBN Number	Publisher	Year	Mode
1	Understanding Field Variation and Quantum Chemical Modeling	978-3-330-05202-4	Lambert Academic Publishing	2017	Online
2	Quantum Chemical Studies of Novel Multifunctional Therapeutic plants cucumin, Black pepper, Andrographis Paniculata	978-93-91373-10-8	Novel Material for Emerging Application	October 2021	offline

17. Administrative Positions held in the College:

Nature of Position	Year
Member secretary-Research Advisory Committee	2021-22
Member secretary-Research Ethics Committee	2021-22

18. Details of Incharge / Participation in Extracurricular Activities :

(NSS, NCC, Sports, Games, Voluntary Association and Cultural Activities):

Nature of Activity	Period of Incharge
Sports Incharge	2011-12
Hale-Bopp club	2013-2014
Cultural Incharge	2016-17
Cultural Incharge	2017-18

19. Details of Participation in Consultancy, Training, Development etc.:

S. No	Nature of Position	Institution Name	Period
1	Resource Person	Bharathidasan University-Distance Education classes	2017-18 2018-19

Any other information if any

20. Details of Patent Published:

S.No	Patent Title	Name of Applicant(s)	Patent No.	Award Date	Agency/Country	Status
1	Nanoparticulate formulation for diagnosis and/or treatment of cancer	Dr.R.Gayathri	202141047416	05/11/2021	Intellectual Property India	Published
2	Three-dimensional nanoparticulate drug delivery guidance system and method thereof	Dr.R.Gayathri	202141051870	26/11/2021	Intellectual Property India	Published

21. Details of Projects Received:

Title of the Project	Duration	Name of the Funding Organisation	Role of the Project	Fund Sacntioned	Status
Experimental and theoretical spectroscopic studies of some polyatomic molecules with reference to Biological and Pharmaceutical importance	2012-2015	University Grant Commision Sanction No: F- MRP-4370/12(MRP/UGC-SERO)	Principal Investigator	Rs 1,99,000/-	Completed
Tuning the optoelectronic Properties of natural Dyes for Solar Cells Application towards optimization and characterization strategies	2022 - 23	Seed Grant -Cauvery College for Women (Autonomous)	Principal Investigator	Rs 20,000/-	Ongoing
Potential antioxidant, antiviral	2022-23	TNSCST Student project Scheme(2022-23)	Guide	Rs 7,500/-	Ongoing

activity against covid- 19 using quantum and molecuclar modelling of Cleome gynandra					
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