

**Kalaigñar Karunanidhi Govt. Arts College for women (Autonomous),
Pudukkottai-622001**

STAFF PROFILE

i) General Information

- a) Name : **Dr.R.Santhakumari**
- b) Address (Residential): No.90, Chola Estate
Thirukkokarnam
Pudukkottai-622001
- c) Designation: Associate Professor
- d) Department: Physics
- e) Date of Birth: 20/07/1967
- f) E-mailid : santhakumarirengarajen@gmail.com
- g) Area of Specialization: Crystal Growth



A) Academic Qualifications

Exam Passed	Subjects	Board/ University	Year	Division/ Grade/ Merit, etc.
High School	Tamil, English, Maths, Science, Hist. And Geo.	Board of Secondary Education	1982	I Class
Higher Secondary or Pre-degree	Tamil, English, Physics, Chemistry, Botany, Zoology	Board of Higher Secondary Education	1984	I Class
UG	Physics	Bharathidasan University	1987	I Class
PG	Physics	Bharathidasan University	1989	I Class
M.Phil.,	Physics	Alagappa University	1990	I Class
Ph.D.,	Physics	Bharathidasan University	2012	Commended
National Educational Testing (NET) UGC	---	---	--	---
State Level Educational Testing (SLET)	--	--	--	==

ii) Research Experience & Training

Research Stage	Title of work / Thesis	University where the work was carried out
M. Phil. or Equivalent	Crystal Growth	Alagappa University & Central Electrochemical Research Institute,, Karaikudi
Ph.D.	Crystal Growth	Bharathidasan University
Post-Doctoral	---	----
Publications (give a list separately)	ANNEXURE -I	-----
Research Guidance (give names of students guided successfully)	ANNEXURE -II	-----
Training (please specify)	-----	-----

B) (i) Research Projects carried out

S.No	Title of the Project	Funding Agency	Duration	Remarks
1	Synthesis, growth and characterization of some of the derivatives of thiosemicarbazide and thiosemicarbazone single crystals	UGC	2007-2009	Completed
2	Synthesis, Growth, DFT and Biological Studies on some of the derivatives of Aminopyridine	TANSCHE	2017-2018	Completed
3	Synthesis, growth ,structural, non linear optical and antibacterial studies on 4- Hydroxy-3-methoxybenzaldehyde based organic and semiorganic single crystal'	TNSCST	2017-2019	Completed
4	Synthesis, Growth, spectral optical and DFT Studies on Vanillin	TANSCHE	2019-2020	Completed

(ii) Seminars, Conferences, Symposia Workshops etc. attended (If necessary, give a separatelist)

Name of the Seminars / Conferences / Symposia / Workshops etc	Name of the Sponsoring Agency	Place and Date
ANNEXURE-III		

iii) Teaching Experience

Courses Taught	Name of the University / College / Intuition	Duration
i UG Physics /.B.E	1.Sri Saradha Nikethan College for Women, Thanthonimalai, Karur	1990-1991
	2.National Engineering College , Kovilpatti	1991-2002
	3.Sudharsan Engineering College, Pudukkottai	2002-2005
Ii. UG/PG Physics	4.J.J.College of Arts and Science, Pudukkottai	2005-2007
Iii/UG/PG/M.Phil/ Ph.D	5.Government Arts College for Women(Autonomous), Pudukkottai. [Kalaigñar Karunanidhi Govt.Arts College for Women(Autonomous)	26.12.2007-26.12.2021 26.12.2021-till date

Total Teaching Experience (in years and months):

- a) Under-graduate(Sci.) : 29
- b) Under-graduate (Hons.):
- c) Post-graduate : 15
- d) Research : (M.Phil) 15
: (Ph.D) 10

viii) Innovations/ Contributions in Teaching (If necessary, give a separate list)

a) Design of Curriculum:	Member in Board of Studies
b) Teaching methods:	Chalk and Talk method, Online -mode (Google Meet), Power point presentation,
c) Laboratory experiments:	Demonstration
d) Evaluation methods:	Class test, Quiz, oral presentation, Assignments
e) Preparation of resource material including books, reading materials, laboratory manuals etc.:	Study materials
f) Remedial Teaching / Student Counseling (academic) :	Student counselling (academic)
g) Any other:	-

ix) Extension Work/ Community Service *(If necessary, give a separate list)*

a) Please give a short account of your contribution to:

i) Community work such as values of National Integration, secularism, democracy, socialism, humanism, peace, scientific temper, flood or drought relief, small family norms etc.

:

ii) National Literacy Mission

:

b) Positions held / leadership role played in organizations linked with Extension Work National Service Scheme (NSS), or NCC or any other similar activity :

NSS Programme officer
From 26.12. 2007 to 26.05.2009

D. Participation in Corporate Life

Please give a short account your contribution to:

a) College/ University / Institution	NSS Coordinator, Assistant Controller of Examinations, Old student Association coordinator, RUSA Coordinator
b) Co-curricular Activities	Conduct of Talent shows, writing competitions, drawing competitions
c) Enrichment of Campus Life (Hostels, sports, games, cultural activities)	Encourage the students to participate in the cultural events in intercollegiate competition
d) Students Welfare and Discipline	Special care has been taken for the weaker and needy sections of students as and when required. Executed various programmes for holistic development of the students
e) Membership / Participation in Bodies / Committees on Education and National Development	Autonomous review committee, Member in Boards of studies for Physics, J.J. College for Arts and Science College (2012, 2016), Pudukkottai
f) Professional Organization of Teachers	Conducted workshop in electronic device testing ,Conducted Entrepreneur programme funded by Tamil Nadu state council for Science and Technology in Mushroom Cultivation, organic farming, Care of Milch animals

E.Membership of Professional Bodies, Societies etc.:

- Reviewer: Elsevier Journals

Dr.R.SANTHAKUMARI
(Signature of the Teacher)

ANNEXURE-I

Publications

- 1 3-D Supramolecular, quantum computational, and vibrational spectroscopic investigation on L-cysteinium methanesulfonate single crystals. P.Koteeswari, Solhe F. Alshahateet, R. Santhakumari, Is Fathima, Suresh Sagadevan *Molecular Crystals and Liquid Crystals*, (2023), *Publisher:Elsevier*
Impact factor: 0,672
<http://dx.doi.org/10.1080/15421406.2023.2171558>.
- 2 “Growth, NBO, and vibrational studies combined with intramolecular hydrogen bond interaction of L-Valine lead (II) nitrate complex: DFT” Usha C, Buvaneswari, M; **Santhakumari, R;** ;Jayasree, R Sagadevan, Suresh *Journal: Journal of Molecular Structure* (2022), Volume 1249, Pages:131570,*Publisher:Elsevier*
Impact factor: 3.841
<https://www.sciencedirect.com/science/article/abs/pii/S0022286021016987#!>
- 3 Growth, Optical, Thermal, Mechanical and Dielectric Properties of 4-Aminopyridinium Sulfonate Monohydrate Single Crystal, G. Amudha, **R. Santhakumari**, D. Chandrika S Mugeshini N. Rajeswari, **Journal of Advances in Science and Computation**
DOI:16.10089.JASC.2018.V6I3.453459.150010403 Page No:1089-1099
- 4 Growth, spectroscopic, and Hiresfeld surface analysis on pyridine urea single crystal. G. Amudha, R. Santhakumari, D. Chandrika S.Mugeshini N. Rajeswari, Suresh Sagadevan ,**Journal of Molecular Structure**. 1257 (2022) 13260, *Publisher:Elsevier*
Impact factor: 3.841
<https://doi.org/10.1016/j.molstruc.2022.132606>
- 5 Synthesis, growth, DFT, and HOMO-LUMO studies on pyrazolemethoxy benzaldehyde single crystals.G. Amudha, R. Santhakumari, D. Chandrika, S. Mugeshini, N. Rajeswari, S. Sagadevan,**Chinese. Journal of Physics** 76 (2022) 44–58, *Publisher:Elsevier*
Impact factor: 3.957
<https://doi.org/10.1016/j.cjph.2021.10.038>
- 6 Synthesis, growth, supramolecular, experimental, and theoretical characterization of 6-amino-1H-pyrimidine-2,4-dione dimethylacetamide single crystal. S. Mugeshini , **R. Santhakumari**, N. Rajeswari , G. Amudha, D. Chandrika, F.Solhe, Alshahateet.*Chinese Journal of Physics* Volume:76, (2022), Pages:14-23. *Publisher:Elsevier*
Impact factor: 3.957
<http://dx.doi.org/10.1016/j.cjph.2021.10.037>

7. Growth, computational studies and docking analysis on α -pyrrolidinopentiophenone hydrochloride monohydrate single crystal. S. Mugeshini, **R. Santhakumari**, N. Rajeswari, G. Amudha, D. Chandrika, *Journal of Molecular Structure* Volume 1249 (2022), 131600. **Publisher: Elsevier**
Impact factor: 3.841
<https://doi.org/10.1016/j.molstruc.2021.131600>.
8. Synthesis, growth spectral and computational studies on Aminomethylpyridinium trichloroacetate single crystal. Rajeswari, **R. Santhakumari**, S. Mugeshini, D. Chandrika, Suresh Sagadevan, Journal: *Chinese Journal of Physics* (2021), Volume 73, Pages: 746-755. **Publisher: Elsevier**
Impact factor: 3.957
<https://doi.org/10.1016/j.cjph.2021.08.010>
9. Growth and computational studies on vanillin isoniazid single crystals. S. Mugeshini, **R. Santhakumari**, N. Rajeswari, G. Amudha, D. Chandrika, Suresh Sagadevan *Chinese Journal of Physics* (2021), Volume 72, 229-239. **Publisher: Elsevier**
Impact factor: 3.957
<https://doi.org/10.1016/j.cjph.2021.04.025>.
9. Synthesis, growth, structural, spectroscopic, optical, thermal, DFT, HOMO-LUMO, MEP, NBO analysis and thermodynamic properties of vanillin isonicotinic hydrazide single crystal. Buvanewari, M; **Santhakumari, R**; Usha C; Jayasree, R. Sagadevan, Suresh *Journal: Journal of Molecular Structure* (2021), Volume 1243, Pages: 130846. **Publisher: Elsevier**
Impact factor: 3.841
<https://www.sciencedirect.com/science/article/abs/pii/S0022286021009893?via%3Dihub>
11. "Synthesis, growth and computational studies on vanillin nicotinamide single crystals" Buvanewari, M; **Santhakumari, R**; Jayasree, R; Sagadevan, Suresh, Journal: *Applied Physics A* (2021) Volume: 127, 7544, **Publisher: Springer Berlin Heidelberg**
Impact factor: 2.983
<https://scholar.google.com/scholar?oi=bibs&cluster=11366455528636393081&btnI=1&hl=en>
12. "Synthesis, growth, crystal structure, vibrational, DFT and HOMO-LUMO analysis on protonated molecule-4-aminopyridinium nicotinate, R. Vasanthakumari **Santhakumari R**, Nirmala W. Suresh Sagadevan Mugeshini S, Rajeswari Journal: *Journal of Molecular structure* (2021), Volume 1239, 130449,
Impact factor: 3.841
<https://scholar.google.com/scholar?oi=bibs&cluster=11821331330726099174&btnI=1&hl=en>

13. Synthesis, Growth and Quantum Analysis on Chloroisocytosine bromo methylisocytosine single crystal. N. Rajeswari , **R. Santhakumari** **TEST Engineering & Management** ISSN: 0193-4120 (2020), 295-306.(**Scopus**),

<http://testmagzine.biz/index.php/testmagzine/article/view/14483/11107>

14. “Growth, spectral, computational studies and docking analysis on 2-Aminopyridinium dibromomethonate single crystal.”D. Chandrika, **Santhakumari.R**, **TEST Engineering and Management (2020)**, Pages 278-294. (**Scopus**).

<http://testmagzine.biz/index.php/testmagzine/article/view/14482/11106>.

15. “Synthesis, Growth, spectral and computational studies on 6- aminouracil-1-methylpyrrolidin-2-one single crystal.”D. Chandrika, **R. Santhakumari**, **TEST Engineering and Management (2020)** Pages, 157-167. (**Scopus**).

<http://testmagzine.biz/index.php/testmagzine/article/view/14480/1110>

16. ”Growth and characterization of 4-amino-N-carbamothioyl benzenesulfonamide:A nonlinear optical single crystal”.G. Amudha, **R. Santhakumari**, D. Chandrika S. Mugeshini N. Rajeswari, **International Journal of Mechanical and Production Engineering Research and Development (IJMPERD)** Volume:10 (2020), 7291-7302.(**Scopus**).

17. “Growth and characterization of 4-aminopyridinium copper II chloride monohydrate single crystal”,R. Jayasree, **R. Santhakumari**, S.Mugeshini, N. Rajeshwari, **International Journal of Advanced Science and Technology**, (2020) 29(8s), Pages1548 - 1554 (**Scopus**)

<http://sersc.org/journals/index.php/IJAST/article/view/12567>

18. Growth and combined experimental and quantum chemical study of glycyl-L-Valine crystal Usha, C; **Santhakumari, R**; Joseph, Lynnette; Sajan, D; Meenakshi, R; Sinthiya, A,**Journal: Heliyon**, (2019) Volume 5, Issue 5, Page:e01574, **Publisher:Elsevier**

Impact factor: 3.776

(2020) <https://www.sciencedirect.com/science/article/abs/pii/S0022286021005822>

19. Growth, spectral, density functional theory (DFT) and Hirshfeld surface analysis on 4-aminopyridinium adipate monohydrate nonlinear optical single crystal, Vasanthakumari R, , Nirmala W. **Santhakumari R**, Meenakshi R Sinthya A, **Journal:Materials Science-Poland**, (2018), Volume:36(2), Pages:. 177-184, **Publisher:De -Gruyter** , **Impact factor: 0.889**

<https://sciendo.com/pdf/10.1515/msp-2018-0010>

- 20 Growth, density functional theory (DFT) and spectral studies on L-2-aminobutyric acid–biologically active material”Usha, C; **Santhakumari, R**; Meenakshi, R; Jayasree, R; Bhuvaneshwari, M
Journal:Journal of Molecular Structure, (2017) Volume: 1149, 655-661, Publisher:Elsevier
Impact factor: 3.841

[https://www.semanticscholar.org/paper/Growth%2C-density-functional-theory-\(DFT\)-and-studies-Usha-Santhakumari/dbb8d55402c9fd81202cb8effb9b7e8f123614cb](https://www.semanticscholar.org/paper/Growth%2C-density-functional-theory-(DFT)-and-studies-Usha-Santhakumari/dbb8d55402c9fd81202cb8effb9b7e8f123614cb)

- 21 Synthesis, Growth and spectral studies on Thiosemicarbazide Zinc (II) Picrate,**Santhakumari R**, Ramamurthi K, Babu R Ramesh,(2015) Pages:322-330 ISSN: 2395-3713,*Journal of Applied Chemical Science International*

<https://scholar.google.com/scholar?oi=bibs&cluster=6697175076561925281&btnI=1&hl=en>

22. 1-(2-Chlorophenyl)-3-(2-ethylhexanoyl) thiourea **Santhakumari, R**; Selvanayagam, S; Ramamurthi, K; Radha, N; Yamin, Bohari M, *Journal:Acta Crystallographica Section E: Structure Reports Online, (2013) Volume: 69, Issues: 9, Pages:o1220-o1220, Publisher: International Union of Crystallography*
Impact factor: 0.42

https://scholar.google.com/scholar?oi=bibs&cluster=151966657630434492_54&btnI=1&hl=en

23. “Synthesis, optical, thermal and anti-bacterial activities of semiorganic material-thiosemicarbazide cadmium (II) picrate”**Santhakumari, R**; Ramamurthi, K; Balakrishnan, T; Stoeckli-Evans, Helen; Hema, R, *Journal: Materials Letters, (2012), Volume: 67,Issues: 1, Pages: 70-73,*

Publisher:North-Holland

Impact factor: 3.574

https://scholar.google.com/scholar?oi=bibs&cluster=2327708715709403282_&btnI=1&hl=en

24. “(Dimethyl sulfoxide- κ O)bis(thiosemicarbazide- κ^2 N 1,S)zinc dipicrate dimethyl sulfoxide solvate monohydrate” **Santhakumari R**, Hema R, Ramamurthy K and Helen Stoeckli-Evans,*Journal: Acta Crystallographica Section E, (2011), Volume: 67(Pt 2): m133–m134., Publisher: International Union of Crystallography*
Impact factor: 0.42

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3051735/#>

- 25 . trans-Bis(dimethyl sulfoxide- κ O)bis(thiosemicarbazide- κ^2 N1,S)cadmium dipicrate dihydrate
"Shanthakumari R, Hema R, Ramamurthy K and Helen Stoeckli-Evans, (2011), *Journal: Acta Crystallographica Section E, ISSN 1600-5368,Volume 67, Page: m127 , Publisher: International Union of Crystallography.*
Impact factor: 0.42

<https://doi.org/10.1107/S1600536810053602>

25. “Growth and characterization of thiosemicarbazide hydrochloride: A semiorganic NLO material”
Santhakumari, R; Ramamurthi, K; Babu, R Ramesh; Evans, Helen Stoeckli; Bhagavannarayana, G;
Hema, R, *Journal: Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*,
(2011), Volume: 82, Issue: 1, Pages: 102-107, **Publisher: Elsevier**
Impact factor: 4.831

<https://scholar.google.com/scholar?oi=bibs&cluster=1378243272213542352>

26. “Synthesis, crystal growth and characterization of a chiral compound (triphenylphosphine oxide cadmium iodide): A new semiorganic nonlinear optical material”
Santhakumari, R; Ramamurthi, K;
Stoeckli- Evans, Helen; Hema, R; Nirmala, W, *Journal: Physica B: Condensed Matter*, (2011)
Volume: 406, Issues: 10, Pages: 1872-1876, **Publisher: North-Holland**
Impact factor: 2.988

<https://scholar.google.com/scholar?oi=bibs&cluster=17894631948469863774&btnI=1&hl=en>

27. “Structural, thermal and optical characterization of an organic NLO material—Benzaldehyde thiosemicarbazone monohydrate single crystals”, **Santhakumari, R;** Ramamurthi, K, *Journal: Spectrochimica, Acta Part A: Molecular and Biomolecular Spectroscopy*, (2011), 78, Issue 2 Pages 653-659, **Publisher: Elsevier**
Impact factor: 4.831

<https://scholar.google.com/scholar?oi=bibs&cluster=1017352546279332738&btnI=1&hl=en>





29. Diiodidobis(triphenylphosphine oxide)cadmium, **Shanthakumari R,** Hema R, Ramamurthy K and Helen Stoeckli-Evans *Journal: Acta Crystallographica Section E: Structure Reports, Online*, (2010), Volume 67(Pt 1): Page: m114. **Publisher: International Union of Crystallography**
Impact factor: 0.42





<https://pubmed.ncbi.nlm.nih.gov/21522527/>

30. “Synthesis and spectral characterization of acetophenone thiosemicarbazone—A nonlinear optical material”—**Santhakumari, R;** Ramamurthi, K; Vasuki, G; Yamin, Bohari M; Bhagavannarayana, G, *Journal: Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, (2010), Vol. 76, Issues 3-4, Pages 369-375. **Publisher: Elsevier**
Impact factor: .4.831

<https://scholar.google.com/scholar?oi=bibs&cluster=1728586570689532764&btnI=1&hl=en>

ANNEXURE II

S. No.	Name of the Ph. D Scholar	Ref.No.	Title of the thesis	Year of registration of the scholar	Year of awarded Ph.D
1.	 Dr. C. Usha	Ref.No. 17394/Ph.D.K3/ Physics/confirm/P.T/ July 2014/ Date.15.02.2017	Growth and characterization of organic and semi organic nonlinear optical single crystals	July 2014	23.07.2020
2.	  Dr. R. Jayasree	Ref.No. 32368/Ph.D.K3/ Physics/confirm/P.T/ october 2014/ Date.13.11.2018	Growth and characterization of some of the derivatives of 4 Aminopyridine and methyl thiourea single crystals and potassium acid phthalate alpha amino butyric acid single crystals	October - 2014	13.11.2020
3.	 Dr. M. Bhuvaneswari	Ref.No. 32366/Ph.D.K3/ Physics/confirm/P.T/ october 2014 /Date.13.11.2018	Growth and characterization of some of the derivatives single crystal	October - 2014	08.04.2022

4.	 <p>Dr. S. Mugeshini</p>	<p>Ref.No. 28027/Ph.D.K3/ Physics/confirm/P.T/ october 2016 /Date.13.11.2018</p>	<p>Growth and characterization of some of the organic single crystals</p>	<p>October - 2016</p>	<p>12.08.2022</p>
5.	 <p>Mrs. N. Rajeswari</p>	<p>Ref.No. 28028/Ph.D.K3/ Physics/confirm/P.T/ october 2016 /Date.13.11.2018</p>	<p>Growth and characterization of some of the organic and semiorganic single crystals</p>	<p>October - 2016</p>	<p>24.04.23</p>
6.	 <p>Dr. G. Amudha</p>	<p>Ref.No. 40119/Ph.D.K3/ Physics/confirm/P.T/ January 2017 /Date.28.12.2016</p>	<p>Growth and characterization of some of the organic single crystal</p>	<p>January - 2017</p>	<p>17.12.2022</p>
7.	 <p>Dr. D. Chandrika</p>	<p>Ref.No. 40120/Ph.D.K3/ Physics/confirm/P.T/ January 2017 /Date.28.12.2016</p>	<p>Growth and characterization of some of the organic single crystals</p>	<p>January - 2017</p>	<p>09.01.2023</p>

ANNEXURE- III

Name of the Seminars / Conferences / Symposia / Workshops etc	Name of the Sponsoring Agency	Place and Date
Five days training programme on skill development “Yoga therapy on stress reduction”	-----	Government Arts College for Women (A) Pudukkottai on 18.09.17-22.09.17
Design, Develop and Deliver Online Courses to MOODLE Platform	TANSCHÉ	Tamil Nadu State Council for Higher Education , Chennai 29.5.2020, 30.5.2020

Orientation/Refresher Course

Orientation Course	State Government	Academic staff College-Bharathidasan University, Tiruchirappalli 26.12.2007-15.01.2008
Refresher Course in Physics	UGC	Academic staff College-Bharathidasan University, Tiruchirappalli 08-11-2010-29.11.2010
Refresher course in Environmental Science	UGC	Academic staff College-Bharathidasan University, Tiruchirappalli 16.06.2012-05.07.2012
Refresher Course in Physics	UGC-HRDC	Bharathidasan University, Tiruchirappalli- 23.10.19 - 05.11.2019
Refresher Course in Managing Online Classes & Co- creating MOOCS 21.0” (Online mode)	Ministry of Education	Teaching Learning Centre, Ramanujan College ,University of Delhi ,In collaboration with Shri Guru Ram Rai University Dehradun, Uttarakhand 07.12.2023-21.12.2023