

## Dr. P. REVATHI

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Tiruchirappalli (Dt) – 621308  
Tamil Nadu, India.



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**Scopus ID:** <https://www.scopus.com/freelookup/form/author.uri>

### ACADEMICS

- **Ph. D. in Physics**  
2014 – 2020  
PG & Research Department of Physics  
Periyar E.V.R College (A)  
Affiliated to Bharathidasan University,  
Tiruchirappalli, Tamil Nadu, India.

**Thesis Title :** *Synthesis, Crystal Growth and Characterization of Halogenides and metal halogenides of Glycine.*

- **M. Sc., in Physics**  
**80.60 % - I Class with Distinction**  
2014  
PG & Research Department of Physics  
Periyar E.V.R College (A)  
Affiliated to Bharathidasan University  
Tiruchirappalli, Tamil Nadu, India.

**Project Title :** *Spectroscopy Investigation (FT-IR, FT-Raman) of 2-Fluoro-3-Nitrobenzene.*

- **B. Sc., in Physics**  
**76.35 % - I Class**  
2012  
PG & Research Department of Physics  
Periyar E.V.R College (A)  
Affiliated to Bharathidasan  
University, Trichy, Tamil Nādu, India

**TEACHING EXPERIENCE** : **December 2019 – Till to date**

**Assistant Professor of Physics**  
**Jamal Mohamed College, Tiruchirappalli – 23**  
**Tamil Nadu, India.**

**RESEARCH EXPERIENCE** : **9 Years**

### **ACADEMIC ACCOLADES**

Cumulative Impact Factor (as per JCR)	: <b>16.198</b>
h-index	: <b>3</b>
i10-index	: <b>1</b>
Total Citations	: <b>15</b>
Journals	: <b>6 (Annexure – I)</b>
International / National conference	: <b>Presented : 12 Participate : 16</b> <b>(Annexure – II)</b>
<b>Books</b>	: <b>2</b>
<b>Patents</b>	: <b>1</b>

### **LIST OF PATENTS AND BOOKS**

- ❖ **Title of invention** : *Apparatus for crystal growth in vacuum and a method thereof*, Application no: 202141057590 on March 2021 – **Published**.
- ❖ **Title of Book** : *Allied Physics Practical (ISBN:978-93-5593-221-1)* on January 2022 – **Published**
- ❖ **Title of Book Chapter** : *Emerging Trends in Science and Technology Engineering and Arts (SEA) (ISBN: 978-81-955557-0-3)* on February 2022 – **Published**

## GRANTS RECEIVED

**Junior Research Fellowship (JRF)**, Project entitled “*Synthesis, Crystal growth Characterization, Crystal structure and NLO properties of halogenides and metal halogenides of Glycine*” and received a grant worth of Rs. 4.10 lacs from **Tamil Nadu State Council for Science and Technology (TNSCST) from June 2014 to 2016.**

**Senior Research Fellowship (SRF)**, Project entitled “*L– Lysine derivatives: Synthesis, Structure solution, Crystal Growth, Optical, Spectral, Thermal, Mechanical and Nonlinear*” received a grant worth of Rs. 10.68 lacs from **CSIR Emeritus Scientist ship Scheme from October 2016 to 2018.**

## HIGHLIGHTS

- Growing various types of nonlinear optical single crystals
- Highly interest to grow bulk single crystals apt for different applications like Photonics, Lasers, Missile detection, Piezoelectric and Microelectronic devices
- Highly interest in Thermo Physical and Opto-electronic properties of solids
- Highly interest in Optical, SHG and THG of materials.
- Excellent knowledge in Photo Acoustic Spectroscopy (PAS) instrument.
- Excellent knowledge in Thermal Expansion of Solid instrument.
- Excellent Knowledge in Dielectric instrument
- Excellent Knowledge in UV– Vis – NIR Spectroscopy and Optical Microscope.

## SOFTWARES HANDLING

- ❖ Density Functional Theory (DFT)
- ❖ Structure refinement of single crystal XRD using WINGX and OLEX softwares
- ❖ Energy framework of molecular structure using CRYSTAL EXPLORER software
- ❖ Rietveld refinement of PXRD using GSAS and TOPAS softwares

- ❖ Indexing and peak fitting of PXRD data with CMPR software
- ❖ Chem Draw, origin and Mercury Softwares
- ❖ Computer – based literature search technique (sci – finder)

## **TECHNICAL SKILLS**

- ❖ Analysis of the structural (XRD, FT–IR and FT–Raman), Optical (UV and FL), Thermal (TGA, DTG and DSC), Single Harmonic Generation (SHG), Z-Scan and Pharmaceutical properties (anti-bacterial, fungi, inflammatory and cytotoxicity) of the single crystal and bulk single crystal.
- ❖ UV – Vis – NIR spectroscopy instrument was calibrated by standard crystal samples.
- ❖ Dielectric instrument was calibrated by standard crystal samples.
- ❖ Achieved huge size metal Halogenides and Halogenides based single crystal for NLO application.
- ❖ Achieved bulk size L- Lysine derivatives single crystal for Microelectronic device application.
- ❖ First time reported the Photoacoustic spectroscopy (PAS) analysis of amino acid based single crystal sample, it is suitable for electronic and energy storedevice applications.

## **PERSONAL DETAILS**

Date of Birth : 16-06-1991  
Gender : Female  
Languages Known : Tamil & English  
Marital Status : Unmarried  
Nationality : Indian

## **STRENGTH**

- Self-motivated person, Team worker and Quick learner.

## **WEAKNESS**

- Neglecting to take credit.

## **HOBBIES**

- Listening to music
- Dancing
- Reading Books

## **ACADEMIC REFERENCES**

### **Dr. T. BALAKRISHNAN**

Head & Associate Professor

PG & Research Department of Physics

Thanthai Periyar Government Arts and Science

College (A)

Tiruchirappalli, Tamil Nadu.

*Email:* [balaphy@rdiffmail.com](mailto:balaphy@rdiffmail.com)

Phone: 94434 45535

### **Dr. J. VISHAL JAIN**

Head & Associate Professor

PG & Research Department of Physics

Geetanjali Engineering and Technology

Rajasthan, India

*Email:* [vishal.jain@gits.ac.in](mailto:vishal.jain@gits.ac.in)

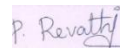
Phone: 9461369876

## **DECLARATION**

I hereby declare that all the details furnished above are true to the best of my knowledge.

**Date : 11.07.2022**

**Place : Tiruchirappalli**



**P. REVATHI**

## ANNEXURE – I

### LIST OF PUBLICATIONS

#### International Journals – 6 (Scopus & Web of Science)

1. **P. Revathi**, T. Balakrishnan, K. Ramamurthi, S. Thamocharan, *Crystal structure of catena -poly [[[triaquastrontium]-di- $\mu$ 2-glycinato] dibromide]*, Acta Cryst. (2015) E71 875 – 878. **(IF – 0.656)**
2. T. Balakrishnan, **P. Revathi**, S. Sakthivel and K.Ramamurthi, *Crystal growth, structural, optical, mechanical and thermal properties of a Third - order nonlinear material bis-glycine lithium bromide monohydrate single Crystal*, Journal of Taibah University for Science, 2018, Vol. 12, no. 2, 208 – 217. **(IF – 2.688)**
3. T. Balakrishnan, **P. Revathi**, A. Krishnaveni, J. Thirupathy, K. Ramamurthi, “Structural, Dielectric, thermal and antibacterial properties of a ferroelectric single crystal: bis-glycine cobalt sulphate pentahydrate” in Journal of Materials Science: Materials in Electronics 2018, 29(19), 16971–16982. **(IF – 2.478)**
4. **P. Revathi**, J. S. Mohan, Balakrishnan, K. Ramamurthi and S. Thamocharan, Crystal structure and Hirshfeld surface analysis of poly[[lithium-di-13-glycine] perchlorate], **Acta Cryst. (2019)**. E 75, 134 – 138. **(IF – 0.656)**
5. S. Sakthivel, T. Balakrishnan, **P. Revathi** and P. Jaikumar, *Growth, Structural, Optical, Thermal and Mechanical properties of Copper Glutamate Dihydrate Single crystal*, Journal of Applied Physics Vol.9, Issue 4, 57 – 67. **(IF – 2.710)**
6. P. Jaikumar, **P. Revathi**, T. Balakrishnan and S. Sakthivel Growth and Characterization of pure and Mg– doped L – Lysine Monohydrochloride single crystals, IJRAR- International Journal of Research and Analytical Reviews Vol.5, Issue 3, 556 – 565. **(IF – 7.01)**

## ANNEXURE – II

### LIST OF PRESENTED CONFERENCES

1. Presented a paper entitled “*Crystal growth, structural, optical, mechanical and dielectric studies of  $\gamma$  – glycine single crystals in the presence of boric acid*”, **P. Revathi**, S. Sathiskumar and T. Balakrishnan, Devanga Arts College, Aruppukottai, December 22 – 23, 2014.
2. Presented a paper entitled “*Crystal growth, structural, optical, mechanical and dielectric studies of glycine lithium bromide single crystals*” **P. Revathi** and T. Balakrishnan, Bharathiar University, Coimbatore, March 18 – 20, 2015.
3. Presented a paper entitled “*Crystal growth, structural, optical, mechanical and dielectric studies of  $\gamma$  - glycine single crystals in the presence of potassium nitrate*” **P. Revathi**, S. Sakthivel and T. Balakrishnan, Gandhigram University, Dindigul, December 14 – 15, 2015.
4. Presented a paper entitled “*Studies on the Growth and Characterization of Bisglycine Cobalt Sulphate – A Novel Semi Organic Third Order Nonlinear Optical Single Crystal*” **P. Revathi**, S. Karthik and T. Balakrishnan, Bhabha Atomic Research Centre, Mumbai January 19 – 21 2016.
5. Presented a paper entitled “*Crystal growth and characterization of L - Lysine doped malic acid single crystal*” **P. Revathi** and T. Balakrishnan, Holy Cross College, Trichy, January 6 -7 2017.
6. Presented a paper entitled “*Synthesis, crystal growth and characterization of new semi organic NLO Bisglycine Magnesium Sulphate decahydrate single crystal*”, **P. Revathi** and T. Balakrishnan, National College, Trichy, March 6 – 8 2017.
7. Presented a paper entitled “*Crystal growth, structural, optical, mechanical and dielectric studies of L – Lysine Adipate*”, **P. Revathi**, S. Sathiskumar and T. Balakrishnan, Sacred Heart College, Tiruppattur, Vellore January 23 – 25, 2018.
8. Presented a paper entitled “*Crystal growth, structural, optical, mechanical and dielectric studies of glycine Zinc sulphate single crystals*” **P. Revathi**, M. Sathish and T. Balakrishnan, Bishop Heber College, Trichy, January 23- 25 , 2018.
9. Presented a paper entitled “*Crystal growth, structural, optical, mechanical and dielectric studies bisglycine cobalt sulphate pentahydrate*” **P. Revathi**, S.Sakthivel and T. Balakrishnan, Bharathiar university , January 28 – 30, 2019.
10. Presented a paper entitled “*Studies on The Growth and Characterization of Bisglycine Cobalt Sulphate – A Novel Semi organic Third Order Nonlinear optical Single Crystal*” **P. Revathi**,

S.karthick and T. Balakrishnan, Bhabha atomic research centre, Mumbai January 19 – 21 2016.

11. Presented a paper entitled “*Crystal growth and characterization of L - Lysine Acetate single crystal*”, M. Sathish, **P. Revathi** and T. Balakrishnan, National College, Trichy, February 6 - 8 2019.
12. Presented a paper entitled “*Synthesis, crystal growth and characterization of L – Lysine Adipate single crystal*”, **P. Revathi** and T. Balakrishnan, Bishop Heber College, Trichy, February, 6 – 8 2019.

#### **LIST OF PARTICIPATED SEMINARS AND WEBINARS**

1. Participated the international webinar on “**A school & college teachers online outreach programme on ham radio as a technical hobby for social service**” held on 5<sup>th</sup> February 2022 at Jamal Mohamed College, Trichy – 620 020
2. Participated the international webinar on “**An International Online Workshop on Materials Science and Computational Methods**” held on 15<sup>th</sup> February 2022 - 16<sup>th</sup> February 2022 at Jamal Mohamed College, Trichy – 620 020.
3. Participated the international webinar on “**Two-Dimensional Materials: Graphene and Beyond**” held on 28<sup>th</sup> March 2022 at Sathyabama Institute of Science and Technology (Deemed to Be University) Jeppiaar Nagar, Chennai – 600119.
4. Participated the international webinar on “**Conference on “Unraveling Therapeutic Resources from Nature’s Treasure**” held on 20<sup>th</sup> April 2022 - 21<sup>st</sup> April 2022 at MSCAS College, Chennai – 620 119.

#### **LIST OF FACULTY DEVELOPMENT PROGRAMMES:**

1. Participated the one-week online faculty development programme on “**Research Methodology – Tools and Techniques**” held at during 25 April 2022 – 29 April 2022 at Geetanjali Institute of technical studies, Udaipur.
2. Participated in national one day faculty development programme on “**Remarkable Structural, Magnetic and Microwave Adsorption Properties of Rare Earth-Doped Mn-Cu Ferrites. & In-situ characterization of Materials at Elevated Temperatures**” from 4<sup>th</sup> May 2020 at Kristu Jayanti College (Autonomous) Bengaluru.
3. Participated the one-week online faculty development programme on “**Research Methodology –**



**Tools and Techniques**” held at during 25 April 2022 – 29 April 2022 at Geetanjali Institute of technical studies, Udaipur.

4. Participated the national level faculty development programme on **“An online Faculty Development Programme on Intellectual Property Rights”** held at 9<sup>th</sup> February 2022 at Jamal Mohamed College, Tiruchirappalli.
5. Participated the national level faculty development programme on **“An online Faculty Development Programme on Astronomical Studies”** held at during 7<sup>th</sup> – 8<sup>th</sup> February 2022 at Jamal Mohamed College, Tiruchirappalli.
6. Participated the seven days online faculty development programme on **“Advanced Materials for Future Science (AMFS)”** held at during 6<sup>th</sup> – 13<sup>th</sup> September 2021 at Jeppiaar Engineering College, Chennai.
7. Participated in national level faculty development programme on **“Five Day Innovation series on patent search and filing”** held at during 16<sup>th</sup> February 2021 – 20<sup>th</sup> February 2021 at Andhra University collaboration with Turnip Innovations, Visakapatnam.
8. Participated the faculty development programme on **“Frontiers in Scientific Research and Technology”** held at during 11<sup>th</sup> June 2020 – 13<sup>th</sup> June 2020 at St. Joseph’s Institute of Technology, Chennai.
9. Participated the faculty development programme on **“Nanotechnology Innovation in Energy and Biomedicine”** held at during 8<sup>th</sup> June 2020 – 10<sup>th</sup> June 2020 at Kamaraj College of Engineering and Technology, Madurai.
10. Participated the faculty development programme on **“Nanomaterials for Energy Harvesting and Biomedical Applications”** held at during 18<sup>th</sup> May 2020 – 22<sup>nd</sup> May 2020 at Godavari Institute of Engineering and Technology (Autonomous), Rajamahendravaram, Andhra Pradesh.
11. Participated the State level seminar of **“NANOSCIENCE”** on 11<sup>th</sup> OCTOBER, 2013 in Periyar E.V.R College, Trichy.
12. Participated the National level Physics symposium **“INPHYNIT-T’13”** Held On 11<sup>th</sup> March National Institute of Technology, Trichy.