




# Dr. MUTHURAJA ARUMUGAM

ASSISTANT PROFESSOR & PLACEMENT OFFICER

## INFO

 27/5 AS Nagar,  
First Cross Street, Vandimedu  
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 amuthuraja90@gmail.com

## TEACHING

- ✓ **Material Science (UG)**
- ✓ **Basic Electronics (UG)**
- ✓ **Digital Electronics (UG)**
- ✓ **Thin Film Technology (PG)**
- ✓ **Nanomaterials (PG)**
- ✓ **8085 MPU & 8051 MCU(PG)**

## RESEARCH

 id: [futdSssAAAAJ](#)

 **14** Research articles published in  
Scopus indexed journals.  
**04** Research Articles under the  
Revision

## RESEARCH AREAS

- NLO Single Crystals Growth
- Organic & Inorganic Materials
- Scintillator Material
- Nano particles Synthesis
- Third harmonic based  
Materials

## STUDENTS FEEDBACK



## WORK EXPERIENCE

- 2017 - Present** **Placement Officer of Es Group of Institutions**  
**Assistant Professor of Physics**  
Theivanai Ammal College for Women (A)  
Trichy Trunk Road, Villupuram  
Tamil Nadu, India.
- 2013 - 2016** **Teaching Research Associate (TRA)**  
VIT University, Vellore



## EDUCATION

- 2013 - 2017** **Doctor of Philosophy (Ph.D)**  
**Thesis Title: Growth And**  
**Characterization of Organic NLO**  
**Single Crystals Grown Using**  
**Vertical Bridgman Technique**  
VIT University, Vellore, Tamil Nadu,  
India.
- 2010 - 2012** **Postgraduate in Electronics**  
**Grade: First Class**  
St Joseph's College, Trichy,  
Tamil Nadu, India.  
Bharathidasan, University.
- 2007- 2010** **Undergraduate in Electronics**  
**Grade: First Class**  
St John's College, Palayamkottai,  
Tirunelveli.  
Tamil Nadu, India.  
Manonmaniam Sundaranar University



## SKILLS



CREATIVE  
TEACHING



RESEARCH



MENTORING



PRESENTATION  
SKILLS



## SCIENTIFIC INSTRUMENTS HANDLED

- ☐ Dielectric Analyzer
- ☐ Bridgman Furnace
- ☐ UV-Vis-NIR Spectrophotometer
- ☐ Z-Scan Instrument
- ☐ Diffusion Vacuum pump,
- ☐ Micro hardness tester
- ☐ Optical Microscope
- ☐ High temperature Furnaces
- ☐ Laser Damage Threshold
- ☐ Photoluminescence

2022

1. V. Ratchagar, K. Jagannathan, **A.Muthuraja**, Enrichment of Electrical behavior of Co<sub>3</sub>O<sub>4</sub> Cobalt Oxide Nano materials, Journal of Materials Science: Materials in Electronics, **(Received Minor Revision). (IF -2.60)**
2. G.Murugesan, K.R. Nandan, N. Maruthi, **A.Muthuraja**, M, Manigandan, B.Saraswathi, Structural analysis of Ba<sub>0.8</sub>Sr<sub>0.2</sub>Ti<sub>0.6</sub>Zr<sub>0.3</sub>Mn<sub>0.1</sub>O<sub>3</sub> ceramics, Cambridge University Press, **(Recently Accepted). (IF -2.10)**
3. **A.Muthuraja**, S. Surya, A. Adithya, S. Sivasri, M. Dhivya, M.Saranya, P.Kiruthiga, B.Janani, V.Ilakkiya, Investigation of the Double Seed organic single crystals and Third Order Nonlinear optical applications. Molecular Crystal and Liquid Crystal **(Recently Accepted) (IF -0.8)**
4. S.Sundari, **A.Muthuraja**, and S. Chandra Spectroscopic Analysis (FT-IR/FT-Raman) Electronic (UV-Visible), NMR and Docking on 4-Methoxyphenylboronic acid (4MPBA) by DFT Calculation Molecular Crystal and Liquid Crystal **(IF -0.8)**
5. **A. Muthuraja**, K. Prabavathi, S. Kavipriya, K. Rubitha, S. Pavithra, A. Ishwarya, Third Harmonic Generation (THG) Studies On Piperine Single Crystal For Optical Limiting Applications – A Comparative Analysis, *International Journal of Mechanical Engineering*, ISSN: 0974-5823, Vol. 7 No. 4 April, (2022.) **(IF -2.1)**
6. V Ratchagar, A Vishnupriya, R Shirly, V Vaishnavi, **A Muthuraja**, EFFECT OF DOPING (Cd, Dy) OPTICAL PROPERTIES OF STO CERAMICS, *International Journal of Mechanical Engineering*, ISSN: 0974-5823, Vol. 7 No. 4 April, (2022.) **(IF -2.1)**
7. **A. Muthuraja**, V. Kowsalya, N. Malarvizhi, S. Saheera Banu, B. Mithra, Second And Third Order Nonlinearity Of Ethyl P-Aminobenzoate (Epab) Single Crystal Grown By Solution And Bridgman Technique – A Comparative Analysis, *International Journal of Mechanical Engineering*, ISSN: 0974-5823, Vol. 7 No. 4 April, (2022.) **(IF -2.1)**
8. **Muthuraja, A**, Murugesan, G., Felscia, U. R., Rajkumar, B. J, Kalainathan, S,& Ratchagar,V. Experimental and Computational investigations of 4, 4'-Dimethoxybenzoin single crystal for optical limiting applications. *Journal of Crystal Growth*, 12660. (2022). **(IF -1.83)**
9. Sundari, S., **Muthuraja Arumugam**, and S. Chandra. "Spectroscopic analysis, NBO, HOMO and LUMO analysis of anticancer compound Silibinin: experimental and theoretical approach." *Materials Research Innovations* (2022): 1-12. **(IF -1.46)**
10. **Muthuraja, A**, Bharath, D, Murugesan, G, Anbuselvi, D, & Kalainathan, S. Nonlinear optical studies on bioperine crystals grown by vertical Bridgman technique for photonic applications. *Optics & Laser Technology*, 107639 (2022). **(IF -4.93)**

2021

11. **A. Muthuraja**, S.Keerthana, S.Kamali, M.Rajasri, G.Jeevitha, I. Jayasri, S. Renuka, R.K. Karishmashamim, T.Deepika, Optical, thermal, mechanical and dielectric studies of L Alaine Potassium iodide single crystal by conventional solution growth technique, Turkish Online Journal of Qualitative Inquiry, Vol. 12 No. 8 (2021)

12. **A. Muthuraja**, S.Keerthana, S.Kamali, M.Rajasri, G.Jeevitha, I. Jayasri, S. Renuka, R.K. Karishmashamim, T.Deepika, Optical, thermal, mechanical and dielectric studies of L Alaine Potassium iodide single crystal by conventional solution growth technique, Turkish Online Journal of Qualitative Inquiry, Vol. 12 No. 8 (**2021**)

### 2020

13. **Muthuraja, A.** and K. Kanimozhi (**2020**) Third Order Nlo and Other Properties of Benzil Doped Urea by Conventional Slow Evaporation Method, ISSN:2320-0693, Vol-19, PP. 182-194.

### 2018

14. **Muthuraja, A.** R. Subramaniyan @ Raja &D. Bharath (**2018**). Growth and Characterization of Piperine (PPN) Single Crystal Grown by Slow Evaporation Solution Growth Technique, Materials Research Innovations, (**IF -1.46**)  
DOI: 10.1080/14328917.2018.1436215, ISSN: 1432-8917 Print) 1433- 075X, PP.1-5

### 2017

15. **Muthuraja, A.** and S. Kalainathan. (**2017**) Study on Growth, Structural, Optical, Thermal and Mechanical Properties of Organic Single Crystal Ethyl p-Amino Benzoate (EPAB) Grown using Vertical Bridgman Technique. Journal of Crystal Growth, Vol. 459, PP.31-37. (**IF -1.83**)

### 2016

16. **Muthuraja, A.** and S. Kalainathan (**2016**). 9, 10-Diphenylanthracene (DPA) Single Crystal Grown by Conventional Slow Evaporation Method and its Characterization, Materials Research Innovations, Vol. 20(5), PP.358-364. (**IF -1.46**)
17. **Muthuraja, A.** and S. Kalainathan (**2016**). Growth, Hardness and Laser Damage Threshold Studies on Vertical Bridgman Grown Piperine (PPN) Single Crystal, Materials Research Innovations, Vol. 21(1) PP.50-54. (**IF -1.46**)
18. **Muthuraja, A.** and S. Kalainathan (**2016**). A Study on Growth, Optical, Mechanical, and NLO Properties of 2-Mercaptobenzimidazole, 2-Phenylbenzimidazole, and 2-Hydroxy Benzimidazole Single Crystals: A Comparative Investigation, Materials Technology, ISSN: 1066- 7857 (Print) 1753-5557, Vol. 32(6)335-348. (**IF -3.29**)

### 2015

19. **Muthuraja, A.** and S. Kalainathan (**2015**). Growth of Organic Benzimidazole (BMZ) Single Crystal by Vertical Bridgman Technique and its Structural, Spectral, Thermal, Optical, Mechanical and Dielectric Properties. Optical Materials, Vol. 47, PP.354-360. (**IF -3.75**)

## RESEARCH RELATED SKILLS

During my research period at VIT University, I have gained hands-on experience in using two and three zones vertical Bridgman furnace, Box-type furnace, Vacuum pump, ampoule sealing process. I have constructed Homemade Flux growth furnace in my laboratory. The homemade furnace maximum operating temperature is 1400°C.

## SCIENTIFIC SOFTWARE SKILLS

- ☐ Origin Pro 8.5 software
- ☐ Two Theta software
- ☐ Powder X software
- ☐ Eurotherm controller (Model 2604, 2404) Program software

## PAPER PRESENTATIONS (National / International)

- ✓ 17<sup>th</sup> *International Conference on Crystal Growth and Epitaxy*, held at the University Warsaw, Poland 11<sup>th</sup>-16<sup>th</sup> August, 2013.
- ✓ *National Conference on ‘Advanced Functional Materials’* Department of Physics, SRM University, Chennai. May 8-9<sup>th</sup> 2015.
- ✓ *National Conference on “Recent Developments in Materials and Methods”*, Department of Physics, Auxilium College, Vellore 15<sup>th</sup> September 2015,
- ✓ *National Conference on “Recent Trends in Chemical Sciences for Energy and Environment”*, Thanthai Hans Roever College, Perambalur, 1<sup>st</sup> & 2<sup>nd</sup> April 2016.
- ✓ *National conference on “Technologically Advanced Materials”*. Muslim Arts College, Thiruvithancode, Kanyakumari, 6<sup>th</sup> September 2016.
- ✓ *“Adroit Conference on Emerging Trends in Chemistry”*, Japper Engineering College, Chennai, 11<sup>th</sup> March -2018.
- ✓ *“International Conference of Emerging Materials and Modeling (ICEMM-2019)”* K.S. Rangasamy College of Arts and Science (Autonomous), Tiruchengode, August -2018.
- ✓ *National conference on “Recent Advanced Materials and Applications (RAMA-19)”* Theivanai Ammal College for Women (Autonomous) Villupuram, September – 2018.
- ✓ *National conference on “Recent Developments in Materials and Chemical Sciences”* BWDA Arts & Science College. Villupuram, March -2018.
- ✓ *“National seminar on Advanced Topics in Physics (NSATP-19)”* Jamal Mohamed College (Autonomous), Trichirappalli, June -2019.
- ✓ *“International conference on Recent Applications in Advanced Materials”* ERK Arts & Science College, Dharmapuri on 11<sup>th</sup> and 12<sup>th</sup> July, 2019.
- ✓ *“International conference on Bio Organic & Biofuel Chemistry”* Sri Sarada Mahavidyalayam Arts & Science College for Women, Ulundurpet, 7<sup>th</sup> August 2019.
- ✓ *National Conference on “Recent Development in Chemical Science”* BWDA Arts & Science College, Ulundurpet, 4<sup>th</sup> October, 2019.
- ✓ *2<sup>nd</sup> International Symposium on “Modeling Of Crystal Growth Processes And Devices”* (MCGPD 2021)” for the paper entitled “Z- Scan and Microhardness studies on double seeded grown Bulk 2- mercaptobenzothiazole (2-MBT) single crystal” SSN Research Centre (SSNRC), SSN Institutions, Kalavakkam,

## UG / PG STUDENTS GUIDED

- ☐ M.Sc Projects – **28** Students (Completed)
- ☐ B.Sc Projects – **45** Students (Completed)

## INTERNATIONAL JOURNAL REVIEWER

- ☐ Material Research Innovation (**Taylor & Francis**)
- ☐ Journal of Materials Science: Materials in Electronics (**Springer**)
- ☐ Wear of Materials (**Elsevier**)
- ☐ Materials Today (**Elsevier**)

## SEMINARS & WORKSHOPS

- ✓ International Conference on **“Materials and Characterization Techniques”**, 10-12<sup>th</sup> March, 2014, VIT University, Vellore.
- ✓ 59<sup>th</sup> **DAE-Solid State Physics Symposium** held at VIT University, University, Vellore, 2014.
- ✓ 19<sup>th</sup> **National Seminar on Crystal Growth** conducted by VIT University, Vellore, 2015.
- ✓ Workshop on **“Scientific Writing”**, 30<sup>th</sup> October 2015, VIT University, Vellore.
- ✓ **Working Model/ Idea contest** conducted at VIT University, Vellore as a part of Engineers' Day Celebration, September 2016
- ✓ Seminar on **“Nuclear Energy Science”** MDT Hindu College, Tirunelveli, May -2017.
- ✓ Idea presented during the **“INOVIT”** held a VIT University, Vellore, January 2015.
- ✓ **“Two days Rural Immersion Training Programme”** Sri Vinayaga College of Arts & Science. Ulundurpet, 12<sup>th</sup> and 13<sup>th</sup> September, 2019.
- ✓ **“Hands on Training on Scientific Instruments”** Theivanai Ammal College for Women (Autonomous), Villupuram. 19<sup>th</sup> September, 2019.
- ✓ **“Revised Assessment and Accreditation Frame Work of NAAC”** Theivanai Ammal College for Women (Autonomous), Villupuram. 1<sup>st</sup> October 2019.
- ✓ **“Intellectual Property Rights & Innovations”** Theivanai Ammal College for Women (Autonomous), Villupuram. 24<sup>th</sup> January, 2020.
- ✓ **“Solar Energy & Global Warming (NSSEGW - 2020)”** organized by Department of Physics, E.S. Arts & Science College, Villupuram, 11<sup>th</sup> March, 2020.

## E- content Development

Link - <https://www.youtube.com/watch?v=U8lcGZ59fRU>

## AWARDS

- ❖ **“Research award”** VIT University, Vellore - April 2016.
- ❖ Have received the **“Best Oral award”** at International Conference, SSN Research Centre, SSN Institution, Kalavakkam 5<sup>th</sup> to 8<sup>th</sup> July 2021.

## INVITED TALKS



- ❑ Delivered the talk on **“Plagiarism Software”** organized by Research and Development Cells, Theivanai Ammal College for Women (Autonomous), Villupuram, Tamilnadu, 20<sup>th</sup> February 2019.
- ❑ Delivered the talk on **“Resume Writing”** organized by Research and Development cells, Theivanai Ammal College for Women (Autonomous), Villupuram, Tamilnadu, 03<sup>rd</sup> December 2019.
- ❑ Delivered the talk on **“Plagiarism in Research”** organized by Research and Development Cells, Theivanai Ammal College for Women (Autonomous), Villupuram, Tamilnadu. 05<sup>th</sup> December, 2019.
- ❑ Acted as a JUDGE in **“State Level Science Exhibition”** for school students organized by Saraswathi Matriculation School Villupuram and Education Department, Government of Tamilnadu, 11<sup>th</sup> January 2020.
- ❑ Delivered a talk on **“Future Development with Electronics”** for Post Graduate Online Orientation Program organized by Department of Electronics Science and Physics at Jaya College of Arts and Science on 02<sup>nd</sup> December 2020.
- ❑ Delivered a talk on **“UV-Spectroscopy”** for DST-FIST Hand on Training Program organized by Research and Development Cell and Theivanai Ammal College for Women College (Autonomous), Villupuram, Tamil Nadu, on 15<sup>th</sup> February 2021.
- ❑ Delivered a talk on **“Optimization Organic single crystal grown by Bridgman Technique”** organized by Department of Physics at Sacred Heart Arts & Science College, Perani, Villupuram on 23<sup>rd</sup> October 2021.
- ❑ Delivered a Hand on Training **““UV- NIR Spectroscopy Instrument”** for **“Hands on Training on Familiarization, Handling and Training on Sophisticated Analytical Instruments for Students”** organized by the Research & Development cell held in TACW Central Instrumentation Lab supported by DST-FIST Program “0” Level on 03<sup>rd</sup> December 2021.
- ❑ Delivered the talk on **“Time Management”** organized by Theivanai Ammal College for Women (Autonomous), Villupuram, Tamilnadu. 05<sup>th</sup> December, 2022.
- ❑ Delivered a talk on **“Fellowship Opportunities for Ph.D Scholars”** organized by Department of Physics, School of Engineering. Presidency University, Bangalore. On 7<sup>th</sup> January 2023.

## ORGANIZED EVENTS



- ✓ **Convener** in National webinar On *“Nonlinear Dynamical Systems And Its Application”*  
Department of Physics, Theivanai Ammal College for Women (Autonomous),  
Villupuram, 17<sup>th</sup> May 2021.
- ✓ **Organizing Member** in *“Characterization Of Materials: Theory And Hands On Training”*  
Organized by Research and Development Cell in DST-FIST Lab, Theivanai Ammal College for  
Women (Autonomous), Villupuram, Tamilnadu, held on 15 to 19<sup>th</sup> February 2021.
- ✓ **Convener** in National Conference on *“Modeling Extreme Events In Natural And Engineering  
Systems”*, Organized by Department of Physics, Theivanai Ammal College for Women (A),  
Villupuram, Tamilnadu, 27<sup>th</sup> January 2021.
- ✓ **Convener**, International webinar on *“Chaos Communication Via Simple Cellular Neural  
Network (Cnn) Nodes”*, Department of Physics, Theivanai Ammal College for Women (A),  
Villupuram, 21<sup>st</sup> August 2020.
- ✓ **Convener**, National Conference on *“Hybrid Materials And Medical Applications”*  
(NCHMMA – 2019)” organized by Department of Physics, Theivanai Ammal College for  
Women(A), Villupuram, 26<sup>th</sup> September 2019.
- ✓ **Convener**, National Seminar on *“Recent Advanced Materials And Applications* (RAMA – 2019)”  
organized by Department of Physics, Theivanai Ammal College for Women (Autonomous),  
Villupuram, 06<sup>th</sup> February 2019.
- ✓ **Coordinator and Organizer**, Science Day Program organized by *Villupuram Astro Club,  
Theivanai Ammal College for Women (A), in Association with the Government of India,  
Vigyan Prasara, Ariviyal Palagai*, on 14<sup>th</sup> March 2022.

## INTERNATIONAL VISIT



- **International Placement visit for Educational Institutions and Industries  
in Dubai – 13<sup>th</sup> to 18<sup>th</sup> March 2022.**
- **International Relationship Officer for Es Group of Institutions, Villupuram.**

## ACADEMIC RESPONSIBILITIES HELD

- ☐ Placement Officer of ES Group of Institutions
- ☐ International Relationship officer.
- ☐ President, Villupuram Astro Club, Villupuram
- ☐ Member of the NAAC internal Committee.
- ☐ Member of the Organizing Committee Various National and International Conferences and Webinar.
- ☐ Member of the NIRF Organizing internal Committee
- ☐ Internal Member of the Board of Studies (BOS)
- ☐ Internal Member of IQAC.

## PLACEMENT PROGRAMS

- ❑ Arranged **free training for TNPSC Group IV Examinations**. The free classes are conducted in the college campus through the Akash IAS Academy from March to July 2022
- ❑ Conducted **free training for SSC Examinations**. The free classes are conducted in the college campus through District Employment Office, Villupuram.
- ❑ Two Days **“Placement Training Workshop”** conducted for all the final year students entire the Villupuram district on May 11<sup>th</sup> and 12<sup>th</sup> 2022 organized by Placement Cell.

## ORGANIZED JOB FAIRS PROGRAMS

- ✓ **Coordinator**, Job Fair Programme **“Carrier Expo-2020”** organized by Placement cell, Theivanai Ammal College for Women (Autonomous), Villupuram, Tamilnadu, 1<sup>st</sup> February 2020.
- ✓ **Coordinator and Organizer**, Job Fair Programme **“Mega Job Fair -2021”** organized by District Employment Office and Training Centre, and TamilNadu Rural Transformation jointly organizes with Placement Cell, Theivanai Ammal College for Women (A), Villupuram on 27<sup>th</sup> November 2021.
- ✓ **Coordinator and Organizer**, Job Fair Programme **“Mega School Job Fair -2022”** organized by Placement Cell, Theivanai Ammal College for Women (A), Villupuram and Tamilnadu Private School Recruitment Association, Villupuram on 13<sup>th</sup> March 2022.
- ✓ **Coordinator and Organizer**, **“Campus Drive”** organized by Placement Cell, Theivanai Ammal College for Women (A), Villupuram Villupuram on 1 & 2<sup>nd</sup> June 2022.
- ✓ **Coordinator and Organizer**, Job Fair Programme **“Mega School Job Fair -2023”** organized by Placement Cell, Theivanai Ammal College for Women (A), Villupuram and Tamilnadu Private School Recruitment Association, Villupuram on 08<sup>th</sup> January 2023.

## REFERENCES

### **Dr. S. Kalainathan**

Professor, Centre for Nanotechnology Research  
VIT University Vellore – 632 014.  
Tamil Nadu, India.  
Email: kalainathan@yahoo.com

### **Prof., P. Ramasamy,**

President (Indian Association for Crystal Growth)  
Director of Research, SSN College of Engineering,  
Old Mahabalipuram Road,  
Kalavakkam – 603110. Tamil Nadu, India  
Email id: ramasamp@ssn.edu.in.

## UNDERTAKING

*I hereby declare that the above particulars of facts and information stated are true, correct and complete to the best of my belief and knowledge.*

**STATION: Villupuram**

**Dr. A. Muthuraja**