

Dr. PHILOMINAL A

Assistant Professor and Head

School of Physical Sciences
PG and Research Department of Physics
Holy Cross College (Autonomous)
Tiruchirappalli – 620 002
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PROFESSIONAL SUMMARY

College Professor dedicated to providing a fun and informative learning environment to students. Skilled at developing and implementing a class curriculum, preparing daily lessons and assignments, and completing grading duties. Specialize in forming productive relationships with students and fellow faculty members.

EXPERIENCE

S. No	Position Held	Name of the Institute	From	To
1	Assistant Professor	Holy Cross College (Autonomous) Tiruchirappalli-620 002	June 2012	December 2015 (SF)
2	Assistant Professor	Holy Cross College (Autonomous) Tiruchirappalli-620 002	June 2014 onwards (Aided)	

EDUCATIONAL QUALIFICATION

Course	Institution	Board/University	Year of Completion	Percentage of Marks
Ph D (Physics)	Bharathidasan University, Tiruchirappalli– 620 024	Bharathidasan, University, Tiruchirappalli– 620 024	April 2012	
M. Sc (Physics)	Bishop Heber College (Autonomous) Tiruchirappalli -620 017	Bharathidasan, University, Tiruchirappalli– 620 024	2004-2006	88.95% (Rank I) (URE-Rank III)
B. Sc (Physics)	Holy Cross College (Autonomous) Tiruchirappalli-620 002	Bharathidasan, University, Tiruchirappalli– 620 024	2001-2004	83.45%
HSC	Govt. A. D. W. Girls Hr. Sec. School, Kattur, Tiruchirappalli-620 019	State board, Tamil Nadu	2000-2001	78 %
SSLC	Govt. A. D. W. Girls Hr. Sec. School, Kattur, Tiruchirappalli-620 019	State board, Tamil Nadu	1998-1999	88 %

SUBJECT EXPERTISE

- Crystal Growth
- Thin film Physics
- Nonlinear optics and Nanomaterials

CORE COMPETENCIES

- Adapts to changing work environments, work priorities and organizational needs.
- Sound judgment and high-impact decision-making capabilities point to confidence and motivation
- Collaboration and an understanding of group dynamics providing need for team-oriented work environments.
- Ability to cultivate interpersonal relationships.
- Deals with difficult situations while maintaining performance.

LEADERSHIP PROFILE

- Served as Admission Committee Member for the Year 2014-2017
- Served as Physics Department - Association Secretary.
- Served as Organising Committee member in various state level, national and international conferences/seminars.
- Served as NAAC parameter I: Curriculum core member (Cycle IV).
- Served as a DBT - STAR college member.
- NIRF Co-ordinator from 2019 – 2023 (NIRF 2020- NIRF 2023).
- IQAC core team member from 2020 – 2022.
- Noon Meal Scheme Staff incharge from 2021 – 2023.
- Head of the Department from 2024 onwards

KEY ACHIEVEMENTS

- Received Research fellowship in Science for meritorious Students (RFSMS) during the Academic Year 2009-2011.
- Won Best Paper Presentation award.
- Received Guideship recognition in the year 2014.

SUMMER TRAINING

Participated in the Summer Training Programme in Physics (**STPIP – 2005**) Organized by the Tamil Nadu Academy of Sciences, Science City & Department of Nuclear Physics, University of Madras, Chennai, India during May 23 – June 18, 2005.

SERC SCHOOL

Participated in the DST Sponsored **SERC School on Laser Spectroscopy and Applications in Science and Technology** Organized by Bhabha Atomic Research Centre (BARC), Mumbai – 400 085, India during November 03 - 21, 2008.

LECTURES DELIVERED/JUDGE

Served as Judge for the poster paper presentation in the International Conference on Scientific and Technological Advancements for reliable and Sustainable –future (STARS-2022), Bishop Heber College (Autonomous), Tiruchirappalli – 620 017, 16th to 18th November 2022.

ORIENTATION/REFRESHER COURSES/FACULTY DEVELOPMENT PROGRAMMES

1. Participated in the UGC sponsored 99th Orientation Programme conducted by UGC-HRDC, Bharathidasan University, Tiruchirappalli – 620 023. from 15.11.2017 to 12.12.2017.
2. Participated in the UGC sponsored Refresher Course in Physics conducted by UGC-HRDC, Bharathidasan University, Tiruchirappalli – 620 023 from 23.10.2019 to 05.11.2019.
3. Participated in the UGC sponsored Online Refresher Course in Physics, Theme: “Perspectives in Physics” conducted by UGC-HRDC, Madurai Kamaraj University, Madurai 625 021 from 10.11.2021 to 23.11.2021.
4. Participated in the two days In-Service Training programme in Physical Sciences held at Thanthai Periyar Government Arts and Science College (A), Tiruchirappalli - 620 023 conducted by Tamil Nadu State Council for Higher Education, Chennai - 600 005 on 05.05.2022 and 06.05.2022.
5. Participated in the Online Faculty Development Programme in Solar Photovoltaic Fundamentals, Technology and Applications, (SWAYAM) NPTEL-AICTE (July – September 2022, 8 Weeks Course).
6. Participated in the **UGC-Sponsored Online Refresher Course in Physical Science (Interdisciplinary)** conducted by UGC-HRDC, Bharathidasan University, Tiruchirappalli – 620 023 from 27.07.2023 to 09.08.2023.
7. Participated in the Online Faculty Development Programme in Sensor Technologies: Physics, Fabrication, and Circuit, (SWAYAM) NPTEL-AICTE (July – September 2024, 8 Weeks Course).

RESEARCH EXPERIENCE

Graphene is a fascinating material that has garnered ever increasing interest from the scientific community over the past decade. Because of its exceptional properties, graphene is already being used in a wide variety of applications including electronics, energy storage devices, gas sensing, and bio-applications such as biosensors, drug delivery, stem cell differentiation, antibacterial agents, cellular imaging and antibacterial activity. However, in the last several years, the incessant search for new avenues that would benefit from graphene has led to the advent of graphene-nanoparticle hybrid structures, which combine the unique and advantageous properties of nanomaterials/nanotechnology with those of graphene to produce advantageous and often synergistic effects. Presently, the research is focused on the synthesis of Carbon Nanomaterials particularly Graphene Oxide /Graphene metal oxide Nanoparticles from organic wastes.

PROJECT PROFILE

Guide' s Name: *Prof. S. Dhanuskodi (Retired), School of Physics, Bharathidasan University, Tiruchirappalli*

Institute/Organization/University: Bharathidasan University, Tiruchirappalli

Title of the thesis: *Investigations on Pyridine and Phenol Based Nonlinear Optical Materials*

Year of Award: April 2012

Hands on Experience with Instruments

- ❖ Fourier Transform Infrared Spectrometer
- ❖ HIOKI 3532 LCR HI TESTER

MPHIL AND PHD GUIDES

✓ M. Phil Guided: 6

✓ Ph. D

- Guiding : 3
- Awarded : **1 Candidate Name: Dr. D. Mary Deena 31st August 2024.**

MEMBERSHIP IN VARIOUS BODIES

- Doctoral Committee Member, Thiruvalluvar Arts College for Women, Periyar University, Rasipuram, Salem.
- **Doctoral Committee member, St. Joseph's College (Autonomous), Tiruchirappalli.**
- **Doctoral Committee member, Holy Cross College (Autonomous), Tiruchirappalli.**

INTERNATIONAL PUBLICATIONS

1. M. Thenmozhi, **A. Philominal**, S. Dhanuskodi, M. N. Ponnuswamy, Dichloridobis(1-ethyl-2,6-dimethylpyridinium-4-olate- κ O) zinc (II), Acta Cryst., E66 (2010) m1448-m1449.
2. M. Thenmozhi, **A. Philominal**, S. Dhanuskodi, M. N. Ponnuswamy, Dibromidobis(1-ethyl-2,6-dimethylpyridinium-4-olate- κ O)zinc(II), Acta Cryst., E67 (2010) m103-m104.
3. S. Dhanuskodi, **A. Philominal**, J. Philip, K. Kim, J. Yi, Optical and Dielectric Properties of Nitrophenolate based Nonlinear Optical Crystal, J. Mater. Sci. 46 (2011) 3169-3175.
4. **A. Philominal**, S. Dhanuskodi, Reji Philip, Optical Limiting Characteristics in Metal-organic Coordination Compound:Dichloridobis(1-ethyl-2, 6-dimethylpyridinium-4-olate- κ O) zinc (II), Current Applied Physics, 12 (2012) 401-404, **2.4**, Scopus.
5. **A. Philominal**, S. Dhanuskodi, J. Philip, Optical, Thermal and Microhardness Studies on Dichloridobis(1- ethyl-2, 6-dimethylpyridinium-4-olate- κ O)zinc(II), Materials Chemistry and Physics, 139 1 (2013) 1-7. **4.3** Scopus.
6. **A. Philominal**, S. Dhanuskodi, J. Philip, Dielectric, Thermal and Optical Properties of a metal organic coordinated pyridinium complex, Archives of Applied Science Research, 5 4 (2013) 1 – 7.
7. S. Dhanuskodi, **A. Philominal**, J. Philip, K. Kim, J. Yi, Electrical, Optical and Thermal Studies on Phase Matchable Nonlinear Optical Material, Archives of Applied Science Research, 5 4 (2013) 154 – 164.
8. **A. Philominal**, M. Thenmozhi, M.N. Ponnusamy, S. Dhanuskodi, Spectral, optical, thermal and mechanical studies of metal halide co-ordinate pyridinium derivatives, Archives of Applied Science Research 7 2 (2015) 39-49.
9. D. Reshmi Agnes Preethi, and **A. Philominal**, Green Synthesis of Pure and Silver Doped Copper Oxide Nanoparticles using *Moringa Oleifera Leaf Extract*, Materials Letters: X 13 (2022) 100122, **2.2**, Scopus.
10. D. Reshmi Agnes Preethi, S. Prabhu, Vilwanathan Ravikumar, and **A. Philominal**, Anticancer activity of pure and silver doped copper oxide nanoparticles against A549 cell line, Materials Today Communications 33 (2022) 104462. **3.7**, Scopus.
11. D. Reshmi Agnes Preethi, and **A. Philominal**, Antimicrobial and anituro lithiatic activities of pure and silver doped copper oxide nanoparticles using *Moringa Oleifera* leaf extract on struvite urinary stones, Applied Surface Science Advances 12 (2022) 100351, **6.2**, Scopus.
12. S. Arockia Anushya, S. Prabhu, Vilwanathan Ravikumar, **A. Philominal**, A. Screening of Anti-Cancer Activity of rGO-Bi₂O₃ Nanocomposite on Apoptosis in A549 and NCI-H460 Lung Cancer Cell Lines, Journal of Inorganic and Organometallic Polymers and Materials, Springer Nature, 2023, **3.518**, Scopus.
13. D. Mary Deena, A. Dhanusha, T.C. Sabari Girisun, **A. Philominal**, Optical limiting behavior of metal (Mn, W) oxides decorated nitrogen-doped reduced graphene oxide nanocomposites stimulated by two-photon absorption, Optical Materials, 139 (2023) 113776, **3.754**, SCI indexed journal.
14. D. Mary Deena, Prabhu Subramani, Vilwanathan Ravikumar, **A. Philominal** Anticancer activity of manganese dioxide/reduced graphene oxide nanocomposites against A549 human lung adenocarcinoma cell line, Nano-Structures & Nano-Objects, 35 (2023) 101032, **5.914**, SCI indexed journal.

15. D. Mary Deena, S. Arockia Anushya, A. Dhanusha, T. C. Sabari Girisun, **A. Philominal**, Peculiar nonlinear optical absorption and optical limiting behaviors of bismuth-based binary and ternary nanostructures, *Diamond and Related Materials*, 141 (2024) 110656, **4.1**, SCI indexed journal.
16. D. Reshmi Agnes Preethi, T. C. Sabari Girisun, **A. Philominal**, Excited state absorption induced optical limiting behavior of pure, single, and co-doped copper oxide nanoparticles, *Optical Materials*, 148 (2024) 114884, **3.754**, SCI indexed journal.
17. J. Roselin Jeyaseeli, P. Jaikumar, T.C. Sabari Girisun, **A. Philominal**, Third order nonlinear optical properties of undoped and Bi-doped ZnO-ZrO₂ nanocomposites, *Journal of Molecular Structure*, 1321 (2024) 139918, **4.0**, SCI indexed journal
18. S. Arockia Anushya, **A. Philominal**, Efficient photocatalytic degradation of crystal violet using quaternized reduced graphene oxide nanocomposite, *Diamond and Related Materials*, 149 (2024) 111592, **4.1**, SCI indexed journal.
19. J. Roselin Jeyaseeli, **A. Philominal**, P. Jaikumar, Varuna Kumaravel, SenthilKumar Sadhasivam, Band Gap Tuning of Ce – Doping in Zn:Zr System for Enhanced Visible Light Driven Photocatalysis, *Journal of Materials Science: Materials in Electronics* (Accepted on 14th October 2024)

PAPER PRESENTED IN THE CONFERENCES/SEMINARS/WORKSHOPS

S. No	Date and Place	Title of the paper	Conference	Author Name	Presentation & Participation
1	Sri Sivasubramaniya Nadar College of Engineering, Kalavakkam-603110 May 19- 21, 2021	Green Synthesis of Pure and Silver doped Copper Oxide Nanoparticles using Moringa Oleifera Leaf Extract	International conference on Sustainable Materials and Technology for Bio and Energy Applications (SMBTEA-2021)	D. Reshmi Agnes Preethi, A. Philominal	Best Paper Presentation award & Materials Letters: X (Accepted)
2	Sri Venkateswara College of Engineering and Technology (Autonomous) Chittoor-517 127, Andhra Pradesh, India. July 08-09, 2021	Antimicrobial Activity for silver doped Copper Oxide nanoparticles	National conference on Innovation in Science and Technology (NCIST -2021)	D. Reshmi Agnes Preethi, A. Philominal	Paper Presented

3	Easwari Engineering College (Autonomous) Ramapuram, Chennai August 26-27, 2021	Structural and Antimicrobial studies for Pure and Silver doped Copper Oxide nanoparticles of different concentrations	International virtual conference on Materials Research (IVCM R- 21)	D. Reshmi Agnes Preethi, A. Philominal	Paper Presented
4	Holy Cross College (Autonomous), PG and Research Department of Chemistry, Trichy-620002 March 3-4, 2022	Pure and Silver doped Copper Oxide nanoparticles for Bio-Applications	International virtual conference on Futuristic Aspects of Sensors and Biosensors (IVCMR- 21)	D. Reshmi Agnes Preethi, A. Philominal	Paper Presented
5	Sri Sivasubramaniya Nadar College of Engineering, Kalavakkam-603110 July 13-15, 2022	Antiuro lithiatic Activity of Pure and silver doped Copper Oxide nanoparticles on Struvite Urinary Stones	International conference on Sustainable Materials and Technology for Bio and Energy Applications (SMBTEA-2022)	D. Reshmi Agnes Preethi, A. Philominal	Best Paper Presentation award & Applied Surface Science Advances (Accepted)
6	National College (Autonomous) Tiruchirappalli. October 05-06, 2023	Nonlinear Optical Response of rGO/Bi ₂ O ₃ Nanocomposite by Z-scan Technique	International Conference on Recent Advancement in Spectroscopy	D. Mary Deena, A. Philominal	Paper Presented
7	National College (Autonomous) Tiruchirappalli. October 05-06, 2023	One-step Hydrothermal synthesis of rGO-CNT composite for Optical Limiting and Nonlinear Absorption properties	International Conference on Recent Advancement in Spectroscopy	Arockia Anushya, A. Philominal	Paper Presented

8	School of Physical Sciences, Holy Cross College, Tiruchirappalli 19-20 January 2024	Optical Limiting Behavior of MnO ₂ Decorated rGO Nanocomposite Stimulated by Two-Photon Absorption.	International Conference on Recent Advances in Physical sciences - ICRAPS 2024	D. Mary Deena, A. Philominal	Paper Presented
9	School of Physical Sciences, Holy Cross College, Tiruchirappalli 19-20 January 2024	Antimicrobial activities of mono and co-doped copper oxide nanoparticles	International Conference on Recent Advances in Physical sciences - ICRAPS 2024	D. Reshmi Agnes Preethi, A. Philominal	Paper Presented (Best Paper Award)
10	School of Physical Sciences, Holy Cross College, Tiruchirappalli 19-20 January 2024	Antimicrobial Studies of Zinc Magnesium Oxide Nanocomposite by Co-precipitation Method	International Conference on Recent Advances in Physical sciences - ICRAPS 2024	J. Roselin Jeyaseeli and A. Philominal	Paper Presented
11	School of Physical Sciences, Holy Cross College, Tiruchirappalli 19-20 January 2024	Structural and optical studies of Bismuth doped Copper Oxide Nanoparticles by an Ecofriendly Approach.	International Conference on Recent Advances in Physical sciences - ICRAPS 2024	J. Hareesha, D. Reshmi Agnes Preethi, A. Philominal	Paper Presented

DECLARATION

I hereby declare that all the information provided above is true up to the best of my knowledge.

Date: 15th October 2024

Place: Tiruchirappalli

Yours faithfully,
A Philominal)