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EDUCATION

❖ B.Sc. - Physics	Bharathidasan University, Trichy	2007
❖ M.Sc. - Physics	Bharathidasan University, Trichy	2009
❖ M.Phil. - Physics	Bharathiar University, Coimbatore	2011
❖ Ph.D. - Physics	Bharathiar University, Coimbatore	2018

TEACHING EXPERIENCE

Name of the Institution	Designation	From	To	Teaching Experience
NGM College, Pollachi.	Assistant Professor	June 2017	till date	3 years 8 months

RESEARCH EXPERIENCE

Name of the Institution	Designation	From	To	Research Experience
NGM College, Pollachi.	M.Phil. Scholar	September 2009	March 2011	1 year 6 months
NGM College, Pollachi.	Ph.D. Scholar	April 2011	June 2017	6 years 3 months
NGM College, Pollachi.	Assistant Professor	June 2017	till date	3 years 8 months
Total Research Experience				11 years 6 months

Title of the M.Phil. thesis

Characterization of Bi₂Se₃ thin films prepared by spray pyrolysis technique

Title of the Ph.D. thesis

A Study on the Influence of Cu, Zn and Sn Concentration on the Properties of CZTS Nanoparticles and its Performance in Solar Cells

RESEARCH SUPERVISION

S.No.	Project Title	Student Name	Year	Course
1	Structural and optical properties of CZTS nanoparticles synthesized by solvothermal method	M. Poornima (16-PP-10)	2018	M.Sc.
2	Structural and optical properties of Zn ₂ SnO ₄ nanoparticles synthesized by solvothermal method	V. S. Gopika (17-PP-14)	2019	M.Sc.
3	Synthesis and characterization of Zn ₂ SnO ₄ nanoparticles by hydrothermal method	A. Sameena (17-PP-25)	2019	M.Sc.
4	A study on the effect of surfactants on the properties of hydrothermally synthesized Zn ₂ SnO ₄ nanoparticles	B. Haritha (18-PP-10)	2020	M.Sc.
5	structural and optical properties of Zn ₂ SnO ₄ nanoparticles synthesized by hydrothermal method	M. Thenmalar (18-PP-30)	2020	M.Sc.

PREPARATION AND CHARACTERIZATION TECHNIQUES KNOWN

- XRD analysis
- Raman analysis
- SEM and TEM analysis
- EDX analysis
- Optical studies
- Photoluminescence studies
- Thermal Evaporation
- Spray Pyrolysis Technique
- Chemical Bath Deposition
- Spin Coating
- Hydrothermal and Solvothermal Techniques
- Solar cell device fabrication
- J-V characterization

AREA OF INTEREST

Thin Films, Nanomaterials, Solar Cells, Energy, Environment

TOTAL NUMBER OF CITATIONS

- ❖ Citations 58
- ❖ h-index 3
- ❖ i10-index 1

Details of publications and citation profile can be accessed at public domain through the URL <https://scholar.google.co.in/citations?user=ENz6NeEAAAAJ&hl=en>

JOURNAL REVIEWER

1. Applied Nanoscience (Springer International Publishing)
2. Nanomaterials and Energy (ICE Publishing, United Kingdom)
3. Journal of Optoelectronics and Advanced Materials (INOE Publishing House)

RESEARCH FELLOWSHIPS

- ❖ Research Fellowship by **Department of Collegiate Education, Government of Tamilnadu**
- ❖ Dr N Mahalingam Research Fellowship by **NGM College Management**

LIST OF PUBLICATIONS

1. **A G Kannan**, T E Manjulavalli, M. Thambidurai, Photoconversion efficiency of CZTS solar cells fabricated using ZnO as a buffer layer, Int.J. ChemTech Res. 2017, 10(6), pp 598-604
2. **A G Kannan**, T E Manjulavalli, J Chandrasekaran, Influence of solvent on the properties of CZTS nanoparticles, Procedia Engineering, 141 (2016) 15–22
3. **Annapoornam Ganesan Kannan**, Thirumalaisamy Esvaramoorthy Manjulavalli, Synthesis and characterization of Cu₂ZnSnS₄ nanoparticles, Nanomaterials and Energy, Volume 4 Issue 2, December, 2015, pp. 118-123

4. **A G Kannan**, T E Manjulavalli, Characterization of CZTS Nanoparticles Synthesized by Solvothermal Method for Solar Cell Application, Int.J. ChemTech Res.2014-2015, 7(3), pp 1167-1171
5. T E Manjulavalli, **A G Kannan**, Thickness dependent structural, optical and electrical properties of chemical bath deposited Cu_2SnS_3 thin films, Int.J. ChemTech Res. 2015, 8(10), pp 259-265
6. **A G Kannan**, T E Manjulavalli, Structural, optical and electrical properties of Bi_2Se_3 thin films prepared by spray pyrolysis technique, Int.J. ChemTech Res. 2015, Vol.8, No.11 pp 599-606
7. T E Manjulavalli, **A G Kannan**, Effects of deposition time on structural, optical and electrical properties of chemically deposited Cu_2S thin films, Int.J. ChemTech Res. 2015, Vol.8, No.11 pp 607-616
8. T E Manjulavalli, **A G Kannan**, Structural and optical properties of ZnS thin films prepared by chemical bath deposition method, Int.J. ChemTech Res. 2015, Vol.8, No.11 pp 396-402
9. R Nithya, **A G Kannan**, T E Manjulavalli, Investigation of Pure and Transition Metal Doped ZnO Nanoparticles for Photovoltaic Applications, Int.J. ChemTech Res. 2014-2015, 7(3), pp 1178-1184
10. T E Manjulavalli, **A G Kannan**, Structural and Optical Characterization of Pure and Mn^{2+} -doped ZnS Nanoparticles Prepared by Solvothermal Method, Advanced Materials Research Vol. 678 (2013) pp 61-66
11. T E Manjulavalli, **A G Kannan**, Synthesis of ZnS Nanoparticles Using Different Solvents and its Characterization, Thin Films and Nanomaterials, Macmillan advanced research series, Macmillan Publishers India Ltd, (2014) pp 432-437, ISBN : 978-935-059-049-2

INTERNATIONAL CONFERENCE PRESENTATIONS

In Abroad

1. Title: **Influence of solvents on the structural, morphological, compositional, optical and electrical properties of CZTS nanoparticles synthesized by solvothermal method**

Name of the Conference: International Conference on Materials for Advanced Technologies (ICMAT-2015)

Organized by: Materials Research Society of Singapore, Singapore

Date: 28 June to 03 July 2015

In India

1. Title: **3.2% efficient cadmium free $\text{Cu}_2\text{ZnSnS}_4/\text{ZnO}$ solar cells fabricated using solvothermally synthesized nanoparticles**

Name of the Conference: International Conference on Nanoscience and Nanotechnology (ICONN-2021)

Organized by: Department of Physics and Nanotechnology, SRM University, Chennai

Date: 1 - 3 February 2021

2. Title: **A study on the Cu-poor and Zn-poor CZTS nanoparticles and its influence on the photoconversion efficiency of non-toxic ZnO buffer layer solar cell**

Name of the Conference: International Conference on Advancements in Materials Science and Technology (iCAM2020)

Organized by: Sathyabama Institute of Science and Technology, Chennai & Gyeongsang National University, Republic of Korea

Date: 23 – 25 November 2020

3. Title: **Influence of Zn/Sn ratio on the properties of CZTS nanoparticles and its performance in solar cells**

Name of the Conference: Joint India-UK International Conference on Advanced Nanomaterials for Energy, Environment and Healthcare Applications (ANEH-2018)

Organized by: K.S.R. College of Arts and Science for Women, Tiruchengode & Swansea University, United Kingdom

Date: 31 August 2018 - 01 September 2018

4. Title: **Characterization of CZTS nanoparticles synthesized by solvothermal method for solar cell application**

Name of the Conference: International Conference on Nanoscience and Nanotechnology (ICONN-2015)

Organized by: Department of Physics and Nanotechnology, SRM University, Chennai

Date: 04-06 February 2015

5. Title: **Investigation of Pure and Transition Metal Doped ZnO Nanoparticles for Photovoltaic Applications**

Name of the Conference: International Conference on Nanoscience and Nanotechnology (ICONN-2015)

Organized by: Department of Physics and Nanotechnology, SRM University, Chennai

Date: 04-06 February 2015

6. Title: **Structural and optical properties of CZTS nanoparticles synthesized by solvothermal method**

Name of the Conference: International Conference on Sustainable Energy (ICSET-2014)

Organized by: Department of Physics, PSG College of Technology, Coimbatore

Date: 11-13 December 2014

7. Title: **Thickness dependent structural, optical and electrical properties of chemical bath deposited Cu_2SnS_3 thin films**

Name of the Conference: International Conference on Nanomaterials for Frontier Applications (ICNFA-2013)

Organized by: Department of Physics, Coimbatore Institute of Technology, Coimbatore

Date: 10-12 July 2013

8. Title: **Structural and optical properties of ZnS thin films prepared by chemical bath deposition**

Name of the Conference: International Conference on Nanoscience and Nanotechnology (ICONN-2013)

Organized by: Department of Physics and Nanotechnology, SRM University, Chennai

Date: 18-20 March 2013

9. Title: **Characterization of Bi₂Se₃ thin films prepared by spray pyrolysis technique**

Name of the Conference: International Conference on Advanced Materials (ICAM-2012)

Organized by: Department of Physics, Loyola College, Chennai

Date: 5-7 January 2012

10. Title: **Synthesis of ZnS nanoparticles using different solvents and its characterization**

Name of the Conference: International Conference on Advanced Materials (ICAM-2011)

Organized by: Department of Physics, PSG College of Technology, Coimbatore

Date: 12-16 December 2011

11. Title: **Synthesis and characterization of ZnS and Mn²⁺ doped ZnS nanoparticles**

Name of the Conference: International Conference on Nanoscience and Nanotechnology (ICNN-2011)

Organized by: Department of Physics, Coimbatore Institute of Technology, Coimbatore

Date: 6-8 July 2011

INTERNATIONAL CONFERENCE ATTENDED

1. Name of the Conference: International Conference on Recent Developments in Nonlinear Dynamics

Organized by: School of Physics, Bharathidasan University, Trichy

Date: 13-16 February 2008

NATIONAL CONFERENCE PRESENTATIONS

1. Title: **Synthesize and characterization of pure and Sn doped ZnO nanoparticles**

Name of the Conference: Advanced Functional Materials (NCAFM-2014)

Organized by: Department of Physics, Bharathiar University, Coimbatore

Date: 30-31 January 2014

2. Title: **Microstructural Properties of Chemical Bath Deposited (CBD) thin films**

Name of the Conference: Material Science (MATS 2009)

Organized by: Department of Chemistry, Annamalai University, Chidambaram

Date: 9-10 October 2009

NATIONAL CONFERENCE/SEMINAR/WORKSHOP ATTENDED

1. Name of the Workshop: Sustainable Agriculture

Organized by: Department of Zoology, NGM College, Pollachi

Date: 3 October 2018

2. Name of the Workshop: E-Content Development

Organized by: NGM College, Pollachi

Date: 28 September 2018

3. Name of the Workshop: Recent Trends in Chemistry

Organized by: Department of Chemistry, NGM College, Pollachi

Date: 11 January 2018

4. Name of the Conference: Recent Innovations in Greener Nano Technology

Organized by: PG Department of Chemistry, NGM College, Pollachi

Date: 21 July 2017

5. Name of the Workshop: Emerging Trends in Physics

Organized by: Department of Physics, NGM College, Pollachi

Date: 3-4 March 2017

6. Name of the Workshop: Hands on training in UV-Visible Spectrophotometer

Organized by: Department of Chemistry, NGM College, Pollachi

Date: 24 February 2017

7. Name of the Seminar: Empowering the Youth to Enrich Mankind

Organized by: Department of Human Excellence, NGM College, Pollachi

Date: 29 January 2016

8. Name of the Conference: Advanced Materials NCAM-2015

Organized by: Department of Physics, Sri GVG Visalakshi College for Women,
Udumalpet

Date: 18-19 February 2015

9. Name of the Workshop: Recent Trends in Physics

Organized by: Department of Physics, NGM College, Pollachi

Date: 23-24 January 2015

10. Name of the Workshop: Emerging Trends in Thin Film Technology

Organized by: Department of Physics, Gobi arts and science college, Gobichettipalayam

Date: 4 March 2014

11. Name of the Seminar: Modelling and Building Blocks for Future Nanoelectronics

Organized by: Department of Science and Humanities, PA College of Engineering and Technology, Pollachi

Date: 19 October 2013

12. Name of the Workshop: Characterization Techniques

Organized by: School of Physics, Alagappa University, Karaikudi

Date: 21-23 March 2013

13. Name of the Workshop: Advanced Materials for Engineering Applications

Organized by: Pollachi Institute of Engineering and Technology, Pollachi

Date: 2-3 November 2012

14. Name of the Seminar: Recent Trends and Development in the Emerging Field of New Transparent Conductors and Device Applications using Multidisciplinary Approach

Organized by: Kongu Engineering College, Perundurai, Erode

Date: 19 June 2012

15. Name of the Workshop: Advanced Instruments for Characterization

Organized by: Department of Nanoscience and Technology, Bharathiar University, Coimbatore

Date: 27 March 2012

16. Name of the Workshop: Nano Science and Nano Technology NSNT-2012

Organized by: Department of Physics, Sri GVG Visalakshi College for Women, Udumalpet

Date: 7 March 2012

17. Name of the Workshop: Nanomeasurements : nanomeasure 2011

Organized by: Department of Physics, NGM College, Pollachi

Date: 15-16 September 2011

18. Name of the Conference: Green Technology-Green Tech 09

Organized by: Department of Chemistry, NGM College, Pollachi

Date: 18-19 February 2010

19. Name of the Seminar: Nuclear Energy for National Development - NEND

Organized by: Bhaba Atomic Research Centre (BARC), Mumbai and Department of Physics, NGM College, Pollachi

Date: 3 December 2009

20. Name of the Seminar: Nonlinear Electronics and Spintronics

Organized by: School of Physics, Bharathidasan University, Trichy

Date: 20-21 March 2009

21. Name of the Seminar: Recent Trends in Power Science

Organized by: Department of Physics, Jamal Mohamed College, Trichy

Date: 23 July 2008

FACULTY DEVELOPMENT PROGRAMME ATTENDED

1. Name of the Programme: Faculty Orientation Programme

Organized by: Department of Human Excellence, Academy for Professional Development and Training & Placement Cell, NGM College, Pollachi

Date: 21-23 June 2017

2. Name of the Programme: Faculty Development Program

Organized by: Karunya Institute of Technology and Sciences, Coimbatore

Date: 21 July 2018

3. Name of the Programme: Faculty Orientation Programme

Organized by: Department of Human Excellence, Academy for Professional Development and Training & Placement Cell, NGM College, Pollachi

Date: 24 August 2018

SEMINARS ORGANIZED

Name of the Programme: In-service Training to Secondary Grade Science Teachers

Sponsored by: Tamilnadu State Council for Science and Technology, Chennai.

Organized In: Department of Physics, NGM College, Pollachi.

Date: 28 August to 01 September 2017

GUEST LECTURES

Title: **Renewable Energy Sources**

Name of the Programme: In-service Training to Secondary Grade Science Teachers

Sponsored by: Tamilnadu State Council for Science and Technology, Chennai.

Organized by: Department of Physics, NGM College, Pollachi.

Date: 28 August to 01 September 2017