

Name : Dr. M. R. Ananthan

Designation : Associate Professor

Department : Physics

Qualification : M.Sc., Ph.D, (Post Doc)

Experience : Teaching: 10.5 Years Research :20 years Industry : 2.5 years



Area of Specialization(s): Absorber based thin film solar cells and materials, Surface and interfaces of thin films, TCO films, metal nanoparticles embedded TCO matrix, Green synthesis, CBD, Spray pyrolysis, sputtering and Ion beam techniques.

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Academic Qualifications

Degree	Branch	Institution / University Name	Year of Graduation
Ph.D.	Physics	IIT Madras	2009
M.Sc.,	Physics	V.H.N.S.N. College, Virudhu Nagar	2001
B. Sc.,	Physics	V.H.N.S.N. College, Virudhu Nagar	1999

Additional Qualifications

Diploma / Vocational / Certification	Area of Specialization	Institution / University / Agency Name	Year
Post Doctorate	CIGSSe Solar Cells	University of Johannesburg	2010-2012

Research Publications (Indexed)

International

1. Sudha, Niral, Samsudeen K, Neema, Aparna Veluru, Sivakumar V and **Ananthan M R**, **Leaf anatomical characteristics and identification of drought tolerance varieties of coconut (Cocosnucifera L.) in Kerala; India.** Plant Science Today (accepted). <https://doi.org/10.14719/pst.3278> (Scopus)
2. M.R. Venkatraman, G. Rajesh, S. Rajkumar, **M.R. Ananthan**, G Balaji, “**Semi-transparent dye-sensitized solar cells (DSSC) for energy-efficient windows with microwave-prepared TiO2 nanoparticles as photoanodes**”, Materials Letters Vol.360, p.135953, 2024 (Scopus)
3. M.R. Ananthan and M.R. Venkatraman, “**Micro-Raman spectroscopy of laser induced changes in polycrystalline CuInTe₂**”, Results in Optics, Vol.13, p.100577, 2023. (Scopus)
4. Sen.P, Durgesh, M. R. Ananthan,Laha, Ranjit and S. Kasiviswanathan, **Electrical conduction in goldnanoparticles embedded indium oxide films: A crossover from metallic to insulating**

- behavior"**, Journal of Physics: Condensed Matter, Vol. 31, p.505702, 2019.(Scopus)
5. M.R. Ananthan, P. Malar, Thomas Osipowicz, Shika Varma and S. Kasiviswanathan, **Growth and characterization of Au nanoparticles embedded In₂O₃ composite films**, Thin Solid Films, Vol.622, pp 78–83, 2017.(Scopus)
 6. M.R. Ananthan, P. Malar, Thomas Osipowicz and S. Kasiviswanathan, **Studies on interface between In₂O₃ and CuInTe₂ Thin films**, Appl. Surf. Sci., Vol 418, pp 388-392, 2017. (Scopus)
 7. M. R. Ananthan and Mahalakshmi, **Review on CZTS based solar cells**, Adv. Nat. and Appl. Sci., Vol.8,72-75, 2014. (indexed in SCOPUS)(Google Scholar)
 8. M.R. Ananthan and S. Kasiviswanathan, **Growth and Characterization of CuInTe₂ thin films**, Sol. Energy Mater. Sol. Cells Vol.93, pp. 188-192, 2009.(Scopus)
 9. M.R. Ananthan, Bhaskar Chandra Mohanty and S. Kasiviswanathan, **Micro-Raman Spectroscopy Studies of Bulk and Thin Films of CuInTe₂**, Semicond. Sci. Technol. Vol. 24, p. 075019, 2009.(IOP Science, Scopus)

Presentations in Conference

International

1. **Localized surface plasmon resonance of gold nano-clusters embedded in In₂O₃ thin films**, International Conference on Nano Science and Technology (ICONSAT-2006), IIT Delhi, New Delhi, 16-28-Mar-06.
2. **Micro-Raman Spectroscopy of polycrystalline and amorphous CuInTe₂ thin Films**, Material Research Society (MRS) Spring Meeting - Thin Film Compound Semiconductor Photovoltaics, San Francisco, USA, 13-17-Apr-09.
3. **Novel thin film PV technology-Transition from basic research to commercial mass production**, First Southern African Solar cell conference (SASEC 2012), Stellenbosch, South Africa, 21-23-May-12.
4. **Commercial production of CIGSSe by In-Line selenization/Sulfurization of metallic Alloys**, 27th European Photovoltaic Solar Energy Conference and Exhibition 2012, Frankfurt, Germany, 24-28-Sep-12.
5. **Review on CZTS based solar cells**, International conference on Electrical, Electronics, Instrumentation and Computer communication, Coimbatore, India, Dec 12-13, 2014.
6. **Studies on interface between In₂O₃ and CuInTe₂ Thin films**, Asian Consortium on Computational Materials Science (ACCMS) Theme Meeting, SRM University, Chennai, India on Sep 22-29, 2016.
7. **Growth and studies on CdZnS thin films**, International Virtual Conference on Energy Conversion and Storage (ICECS-2K21), PPG College of Arts and Science, Coimbatore, India, Apr 20 -21, 2021.
8. **Characterization of Spray deposited Cu₂ZnSnS₄ films**, International conference on International

Conference on Advanced Materials for Clean Energy and Health Applications (AMCEHA 2023), Coimbatore Institute of Technology, Coimbatore, India, September 19th & 20th, 2023.

9. **Studies On Spray Coated Sb₂S₃ (Antimony Trisulfide) For Large Area Solar Cell Applications**, KPRIET, 7th International Conference on Recent Innovations in Modern Science and Technology, Coimbatore, India, 09-11, January 2024.
10. **Synthesis Of Li₂TiO₃ Nanoparticles By Simple Chemical Method For Solar Cells Application**, KPRIET, 7th International Conference on Recent Innovations in Modern Science and Technology, Coimbatore, India, 09-11, January 2024.
11. **Green synthesis of Titanium dioxide nanoparticles using *Melia azedarach* leaf extract and evaluation of their antibacterial activity for multiple application**, International Conference on Smart NextGen Nanomaterials for Sustainable Development of Energy and Environment – An Interdisciplinary Approach" on 15th & 16th October 2024, Dr. N.G.P. Arts and Science College, Coimbatore.

National

1. **Vacuum Tunneling Spectroscopy Studies of CuInTe₂ Films**, DAE-SSP symposium, Guru Nanak Dev University, Amritsar, Dec 26-30, 2004.
2. **Growth and Raman study of CuInTe₂ thin films**, National Conference on Semiconductor Materials and Technology (NCSMT-2008), GKV University, Haridwar, Oct 14-16, 2008.
3. **Characterization of interface between CuInTe₂ and In₂O₃**, DAE-BRNS symposium, IIT Bombay, Mumbai, Dec 16-20, 2008.
4. **Synthesis and characterization of CZTS nanoparticles**, Emerging Trends in Physical Sciences and Mathematics April 12, 2023.
5. **CZTS-based quantum dots sensitized solar cell**, Emerging Trends in Physical Sciences and Mathematics April 12, 2023.
6. **Growth and characterization of CZTS thin films by spray pyrolysis method**, Emerging Trends in Physical Sciences and Mathematics April 12, 2023.
7. **Extraction of Manganese oxide nanoparticles from alkaline batteries: An environmental remediation catalyst**, Two Days National Conference on Green Energy Technologies For Sustainability, Pondichery University, 20-21 March 2025
8. **Waste reduction and metal recovery development from alkaline battery waste**, Two Days National Conference on Green Energy Technologies For Sustainability, Pondichery University, 20-21 March 2025.

Books Authored

1. Manjunathan. M, Sulthan A, Jeyachitra and Ananthan M R, **Robotics and Applications**, ISBN: 978-93-6492-292-0, SK Research group of Companies publications, India.

Participation in Seminars

1. DRDO & ISTE Sponsored National Level Seminar on Advances in Materials Research for Armaments Applications, Dr. Mahalingam College of Engineering and technology, Pollachi, 15- Feb19 to 16-Feb-19.
2. One day National seminar on Novel materials for sustainable energy developments and Radiation measurements, Dr. N.G.P. Arts and Science College, Feb 29, 2024.
3. One day National Level Awareness Program on Institutional Development Plan (IDP) for Higher Educational Institutions, Bangaluru, March 6, 2025.

Participation in Workshop

1. National Level workshop on “Recent Trends and Opportunities in Physics (Online)” on 10th and 17th April 2021, VIT-AP University, Andhra Pradesh, India.
2. Workshop on Integrating AI in Academics and Research, PSGR Krishnammal College for Women, 28.08.2024.
3. Agnivira Space Internship Program (Recognized by AICTE) on 13th Match 2025, conducted Online by ISRO.

Participation in Faculty Development Programme

1. Bridge courses in Physics, Anna University, 23rd and 24th June 2014
2. NPTEL Course on “Optical Sensors”, Jan-Feb 2021.
3. Online FDP on “Research Methodology and Pedagogy for Tertiary Education”, Dr. N.G.P. Arts and Science College, Coimbatore, June 15-21, 2021.
4. Online FDP on “Five day IQAC FDP Series-2022”, Sankara College of Science and Commerce, Coimbatore, January 24-29 2022.
5. Online FDP on “Thoughts of Teaching”, IIT Hyderabad, 5th March 2022.
6. Online course “Basics of Python”, Infosys Springboard, 4th Aug 2023.
7. FDP on “Outcome based Education” Dr. N.G.P. Arts and Science college, June 17 -21, 2023.
8. FDP on “Empowering education for innovation- A NEP perspective”, Dr. N.G.P. Arts and Science College, June 30th – July 4th 2023.
9. Online Course on II PU Physics, Infosys Springboard, Aug 2023.
10. Online FDP on “Recent advancement in sustainable Energy sources: Research and Development” Karpagam Academy of Higher Education, Feb 26-March 1st, 2024.
11. A free course on Building your first RAG system using LlamaIndex, 28.11.2024
12. A free course on Generative AI- Away of life, Anlytics Vidyalaya, 28.11.2025
13. FDP on Science and Technology Developments -Academic growth, K.S.R. College of Arts and Science for Women, 02-09 Dec 2024.
14. A free course on Exploring stability.AI, 12.12.2025.
15. A short term course on “NAAC Documentation- A Key insight”, 6th, 13th, 20th and 27th Feb 2024.
16. FDP on ATAL by AICTE from 06.01.2025 to 11.01.2025.

Conference / Seminar / Workshop Organized

1. Organizing Secretary, SCIENCIA FEST (National level), Karpagam College of Engineering, Coimbatore, 28- Feb-15 and 28-Feb-16.
2. Coordinator, Seminar on “Thin Film Solar Cells: Overview of Absorber Materials and Characterization Tools”, Dr. N. G. P. Arts and Science College, Coimbatore, May 29, 2021.
4. Coordinator, Seminar on “Nanostructured Metal oxides for Supercapacitor Applications”, Dr. N.G.P. Arts and Science College, Coimbatore, November 29, 2021.
5. DBT Coordinator, Dr. N.G.P. Arts and Science College, from June 2022.
6. Member, National conference on Emerging trends in Physical sciences and mathematics , Apr 23, 2023.
7. Member, National seminar on Novel materials for sustainable energy developments and Radiation measurements, Feb 29, 2024.
8. Member, 2 days International conference on “Smart NextGen Nanomaterials for Sustainable Development of Energy and Environment – An Interdisciplinary Approach”, October 15 & 16, 2024.
9. Coordinator, 5 Day virtual National Faculty Development Program on Integration of Artificial Intelligence in Teaching and Research, Feb 3-7, 2025.

Member in BoS

1. Board of Studies (Physics), Karpagam College of Engineering, Coimbatore, 2013-2017.
2. Board of Studies (Physics), Dr. N.G.P. Arts and Science College, Coimbatore, 2020 onwards.

Membership in Professional Bodies

Name of the Professional Body	Nature of membership	Duration
SPIE	Life-time	-

Awards / Honors

Awards / Honors	Agency / Institute	Year of Award
JRF	IIT Madras	2002
Post Doctorate Fellow	University of Johannesburg	2010