

Dr. A. Jegatha Christy

Associate Professor of Physics

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ACADEMIC QUALIFICATION:

S.No	Degree	University/Institution	Year of Passing
1.	B.Sc	Jayaraj Annapackiam College for Women (Autonomous), Periyakulam.	2004
2.	M.Sc	Fatima College, Madurai.	2006
3.	PGDCA	Manipal Institute of Computer Education.	2006
4.	M.Phil	Mother Teresa Women's University, Kodaikanal.	2007
5.	Ph.D	Mother Teresa Women's University, Kodaikanal.	2013

AREA OF SPECILIZATION:Spectroscopy, Materials Science, Nano Science & Nanotechnology

Ph.D DETAILS :

Title	Guidance	Period	Date of Degree Awarded
Photocatalytic and antimicrobial investigations of nanoparticles synthesized by combustion method.	Dr.M. Umadevi Professor and Head Department of Physics Mother Teresa Women's University, Kodaikanal, Tamilnadu, India.	July 2008 to July 2013	22.07.2013

WORK EXPERIENCE :

S.No	Positions held	Name of the Institute	From	To
1.	Lecturer	Jayaraj Annapackiam College for Women, Periyakulam.	13 th Jun '07	31 st Jan '08
2.	Lecturer	Mother Teresa Women's University, Kodaikanal.	4 th Feb '08	2 nd Jun '09
3.	Assistant Professor (Aided)	Fatima College, Madurai.	15 th Jun '09	5 th Nov '12
4.	Assistant Professor (Aided)	Jayaraj Annapackiam College for Women, Periyakulam.	16 th Jun '14	13 th Jun '23
5.	Associate Professor (Aided)	Jayaraj Annapackiam College for Women, Periyakulam.	14 th Jun '23	Till Date

TOTAL EXPERIENCE : UG – 14 years ; PG – 14 years ; M.Phil – 5 years ; Ph.D – 2 years

RESEARCH GUIDANCE: M.Phil – 06 (completed); Ph.D – 01 (ongoing)

PROFESSIONAL RECOGNITION:

S.No	Recognition	Institution	Year
1.	Ph.D Guideship	Mother Teresa Women's University, Kodaikanal.	2017
2.	External Evaluator	Bharathidasan University, Tiruchirappalli.	2019
3.	Doctoral Committee University Nominee	Fatima College - Madurai Kamaraj University. Madurai.	2022
4.	External Examiner for M.Phil and M.Sc viva voce	Mother Teresa Women's University, Kodaikanal.	2021,2022
5.	Assessor for Academic and Administrative Audit	Xavier Board Member Colleges, Tamilnadu.	2023

ACADEMIC AFFILIATIONS:

- ❖ Project Development Officer -2022 -till date
- ❖ Coordinator - Research Consultancy Cell - 2023- till date
- ❖ OBE Monitoring Cell Member– 2023- till date
- ❖ Research Committee Member– 2022 -till date
- ❖ Institution Innovation Council Member– 2022 -till date
- ❖ Research Consultancy Member – 2020-2023
- ❖ Coordinator -Fine Arts – 2019 -2022
- ❖ Discipline Committee – 2017 -2021
- ❖ Press Member– 2018 – 2019
- ❖ IQAC Member – 2015 -2019
- ❖ OSA Member – 2014- 2019

PROFESSIONAL AFFILIATIONS:

- ❖ Board of Studies Member in Physics of Jayaraj Annapackiam College for Women (Autonomous), Periyakulam since 2014.
- ❖ Board of Studies Member in Physics of Mother Teresa Women’s University, Kodaikanal during 2018 – 2019 and 2019-2020
- ❖ Board of Studies Member in Fatima College, Madurai during 2018 – 2021

RESOURCE PERSON:

- ❖ Guest lecture on “Photocatalytic and antimicrobial investigations of nanoparticles” at Fatima College, Madurai on 29.01.2014.
- ❖ External Examiner for Major Practical at Fatima College, Madurai on 25.03.2019.
- ❖ Judge for zonal wide temperance contest conducted by Seventh-Day Adventist Matric. Hr. Sec. School, Periyakulam on 22.08.2019.
- ❖ External Evaluator for the synopsis submission and presentation for Ph.D Scholar at Department of Medical Physics, Bharathidasan University, Tiruchirappalli on 16.10.2019
- ❖ Guest Lecture on “Photocatalytic activity of metal oxide nanoparticles” at Mary Matha College of Arts and Science, Periyakulam on 11.03.2020.

- ❖ External Examiner for Major Practical at Fatima College, Madurai on 14.11.2022.
- ❖ External Examiner for II-M.Sc Physics Practicals at Mother Teresa Women's University, Kodaikanal on 18.11.2022.
- ❖ External Examiner for Major Practical at Fatima College, Madurai on 05.04.2023.
- ❖ Resource Person for the In-Service Teacher Training Program for School Teachers by TNSCST by May 2022
- ❖ Resource Person for the In-Service Teacher Training Program for School Teachers by TNSCST by 4th – 9th Jan 2024

PUBLICATIONS:

S.No	Title	Name of Journal	Volume	Page	Year
1.	Preferential solvation of acridine in binary mixtures.	Spectrochimica Acta Part A, Elsevier.	71	773 - 778	2008
2.	Synthesis and characterization of mono dispersed silver nanoparticles.	Adv. Nat. Sci: Nanosci. Nanotechnol. IOP Publishing.	3	035013 (1-4)	2012
3.	A novel combustion method to prepare CuO nanorods and its antimicrobial and photocatalytic activities.	Powder Technology, Elsevier.	235	783 - 786	2013
4.	Synthesis, characterization and photocatalytic activity of CuO nano flowers.	Spectrochimica Acta Part A, Elsevier.	109	133 - 137	2013
5.	Optical, structural and morphological properties of silver nanoparticles and its influence on the photocatalytic activity of TiO ₂ .	Spectrochimica Acta Part A, Elsevier.	111	80-85	2013
6.	Novel combustion method to prepare octahedral NiO nanoparticles and its	Materials Research Bulletin, Elsevier.	48	4248 -	2013

	photocatalytic activity.			4254	
7.	Optical, structural and morphological properties of silver nanoparticles and their antimicrobial activity.	International Journal of ChemTech Research	7	1191 - 1197	2014
8.	Synthesis, characterization and photocatalytic activity of ZnO nanoflakes.	Journal of Nano Energy and Power Research.	2	1-7	2014
9.	Solvatochromic spectral investigations of acridine.	International Journal of Chem Tech Research.	8	383 - 390	2015
10.	Visible light photocatalyst: Hydrothermal green synthesized TiO ₂ NPs for degradation of picric acid.	Materials Letters, Elsevier.	222	45-49	2018
11.	Effect of neodymium doping on the structural, morphological, optical and electrical properties of copper oxide thin films.	Journal of Materials Science: Materials in Electronics, Springer.	29, Issue 13	10921 - 10923	2018
12.	Physical properties evaluation of nebulized spray pyrolysis prepared Nd doped ZnO thin films for opto-electronic applications.	Journal of Materials Science: Materials in Electronics, Springer.	30, Issue 8	7257 - 7267	2019
13.	Green approach synthesis of Pb@TiO ₂ nanoparticles : Characterization, visible light active picric acid degradation and anticancer activity.	Process Biochemistry, Elsevier.	87	83-88	2019
14.	Green hydrothermal synthesis of gold and palladium doped titanium oxide nanoparticles for multifunctional performance.	Journal of Materials Science: Materials in Electronics, Springer.	30, Issue 13	12812 - 12819	2019
15.	Enhanced photocatalysis	Journal of			

	and anticancer activity of green hydrothermal synthesized Ag@TiO ₂ nanoparticles.	Photochemistry & Photobiology, B: Biology, Elsevier.	202	111636 (1-10)	2020
16.	Significance of Ni doping on structure-morphology-photoluminescence, optical and photocatalytic activity of CBD grown ZnO nanowires for opto-photocatalyst applications.	Inorganic Chemistry Communications, Elsevier.	119	108082	2020
17.	Study on the synergistic effect of terbium-doped SnO ₂ thin film photocatalysts for dye degradation.	Journal of Nanoparticle Research, Springer.	22:359	1-14	2020
18.	Fabrication of Magnesium oxide nanoparticles using combustion method for a biological and environmental cause.	Chemical Physics Letters, Elsevier.	763	138216 (1-8)	2021
19.	Photocatalytic and antibacterial performance of iron oxide nanoparticles formed by the combustion method.	Chemical Physics Letters, Elsevier.	771	138524 (1-6)	2021
20.	Enhanced antibacterial and photocatalytic activities of nickel oxide nanostructures.	Optik, Elsevier.	237	166731 (1-11)	2021
21.	Structural, magnetic and gas sensing activity of pure and Cr doped In ₂ O ₃ thin films grown by pulsed laser deposition.	Coatings, MDPI.	11	588 (1-14)	2021
22.	Evaluation of Physicochemical characteristics and antimicrobial activities of copper oxide nanoparticles	Conference paper 2021 IEEE Regional Symposium on Micro and Nanoelectronics (RSM)	--	--	2021

	formed by solution combustion method.				
23.	Antibacterial activities and photocatalyzed degradation of textile dyeing waste water by Mn and F co-doped TiO ₂ nanoparticles.	Advances in Natural Sciences: Nanoscience and Nanotechnology, IOP Publishing.	13	045005 (1-11)	2022
24.	Novel solution combustion synthesis of CeO ₂ /CuO nanocomposite for photocatalytic and biological applications.	Optical Materials, Elsevier.	139	113756	2023
25.	Photo-triggered antibacterial and catalytic activities of solution combustion synthesized CeO ₂ /NiO binary nanocomposite.	Inorganic Chemistry Communications, Elsevier.	153	110860	2023
26.	Efficient antimicrobial activity for combustion-derived CeO ₂ quantum dots.	Inorganic Chemistry Communications, Elsevier.	158	111616	2023
27.	Synergistic effect of nanoflower CeO ₂ /ZnO nanocomposite as an efficient photocatalyst for environmental remediation.	Ceramics International, Elsevier.	50	11817 - 11832	2024
28.	Monodispersed nanorod-shaped Mn-Co co-doped ZnO nanoparticles for enhanced photocatalytic and antibacterial activities	Inorganic Chemistry Communications, Elsevier.	163	112284	2024
29.	Enhanced photocatalytic and antibacterial performance of NiCo ₂ S ₄ nanostructures	MRS Advances Springer.	Accepted		2024

BOOKS/REPORTS/CHAPTERS/GENERAL ARTICLES etc:

S.No	Title	Author's Name	Publisher	Year of Publication
1.	Book : Metal oxide powder technologies: Fundamentals, Processing Methods and Applications Chapter 16: "Metal oxides powder technology in membranes"	Dr. A. Jegatha Christy	Elsevier	2020
2.	Book : Green Photocatalytic Semiconductors Chapter 18: Photocatalysis Degradation of Dye Using P-Type Nanoparticles in the book	Dr. A. Jegatha Christy	Springer	2022

PROJECTS COMPLETED:

S.No	Title of the Project	Duration		Total Cost	Funding Agency
		From	To		
1.	Tailoring the surface morphology of metal oxide nanoparticles and its influence on dye effluent treatment.	30 th June 2017	30 th June 2019	4,90,000/-	UGC – SERO No.F.F.MRP-6823/16 (SERO/UGC) dated 30 June 2017

PATENTS:

S.No	Title of the Patent	Design No	Date of Publication	Level
1.	Nanotechnology based dipping system for water purification	353512 - 001	13 th January 2022	Indian
2.	A Blockchain-based interface for secret remote communication through a smartphone using wireless sensor network	202241003575	04 th February 2022	Indian
3.	Nanotech-based metal oxide identifying gloves	381085-001	28 th July 2023	Indian

CONFERENCES ORGANIZED:

- ❖ Organizing committee member for International Conference on “Material Science Research and Nano Technology” organized by Department of Physics, Mother Teresa Women’s University, Kodaikanal during 27th – 29th Feb 2008.
- ❖ Organizing committee member for International conference on “Nanomaterials & Nanocomposites - Synthesis, Properties & Application” organized by Department of Physics, Mother Teresa Women’s University, Kodaikanal on 28th -29th Feb 2012.
- ❖ Organizing committee member for UGC Sponsored National Seminar on “Recent Trends in Physics & Materials Research” at Jayaraj Annapackiam College for Women (Autonomous), Periyakulam.

- ❖ **Convener** for UGC Sponsored National Seminar on “Recent Advancement in Materials Science” organized by Department of Physics, Jayaraj Annapackiam College for Women, Periyakulam on 10th Feb 2017.
- ❖ **Convener** for One Day Seminar on “Energy Conservation” organized by PG & Research Department of Physics, Jayaraj Annapackiam College for Women, Periyakulam in collaboration with Petrol Conservation Research Association, on 15th Sep 2017.
- ❖ **Organizing secretary** for National Level Conference on “Recent Trends in Physics” organized by PG and Research Centre of Physics, Jayaraj Annapackiam College for Women, Periyakulam on 9th Feb 2018.
- ❖ **Convener** for One Day Seminar on “Energy Conservation” organized by PG & Research Department of Physics, Jayaraj Annapackiam College for Women, Periyakulam in collaboration with Petrol Conservation Research Association, on 30th Sep 2019.
- ❖ **Organizing secretary** for the International Webinar on “Functional Properties and Bandgap Engineering of ZnO – GaN Alloys” organized by PG & Research Department of Physics, Jayaraj Annapackiam College for Women, Periyakulam on 8th June 2020.
- ❖ **Organizing secretary** for the International Webinar on “Exoplanets” organized by PG & Research Department of Physics, Jayaraj Annapackiam College for Women, Periyakulam on 2nd Sep 2021.
- ❖ **Convener** for “Transdisciplinary Research & Global Opportunities for Women”, organized by PG and Research Department of Physics, Jayaraj Annapackiam College for Women, Periyakulam on 05th Aug 2022.
- ❖ **Convener** for the Guest Lectures organized by PG and Research Department of Physics, Jayaraj Annapackiam College for Women, Periyakulam in collaboration with Fatima College, Madurai on 21st Dec 2022.
- ❖ **Convener** for the International Virtual Conference on “Recent Trends in Physics (ICRTP – 2023)” organized by PG and Research Centre of Physics, Jayaraj Annapackiam College for Women, Periyakulam on 16th& 17th March 2023.
- ❖ **Co-convener** for the International Virtual Conference on “Emerging Technologies in Materials Science (ICETM -2024)” organized by PG and Research Centre of Physics, Jayaraj Annapackiam College for Women, Periyakulam on 22nd February 2024.

HONOURS:

- ❖ Chairperson for Paper Presentation session in the UGC Sponsored National Conference on "Recent Trends in Physics & Materials Research" at Jayaraj Annapackiam College for Women (Autonomous), Periyakulam during 4th& 5th Feb 2016.
- ❖ Chairperson for "International Conference on Advanced Materials for Energy and Environment" organized by Department of Physics, Mother Teresa Women's University, Kodaikanal from 10th – 11th Jan 2022.

MEMBERSHIPS:

- ❖ Life time member in Indian Physics Association. TIFR, Mumbai.
- ❖ Member in American Chemical Society, Newyork.