Dr. Ancemma Joseph

Faculty ID : F12PH001

Designation : Assistant Professor

Department : Physics

Data of Joining : 15.06.2012

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Languages Proficiency : English, Hindi, Tamil & Malayalam

1. Digital Academic Profiles

S. No.	Platform	Profile ID / Link
1.	ORCID	0009-0005-5323-7524
2.	Scopus Author ID	25959051500
3.	Web of Science Researcher ID	LTF-6985-2024
4.	Google Scholar	L0t9qx4AAAAJ
5.	Vidwan/IRINS	276371
6.	ResearchGate	Ancemma-Joseph-2
8.	LinkedIn	b3112a3b5

2. Academic Qualifications

S. No.	Degree / Diploma / Certificate	Discipline	Name of the Institution	Year of Passing
1.	UG	Physics	Fatima College, Madurai Kamaraj university	2002
2.	PG	physics	The American College, Madurai Kamaraj University	2004
3.	Ph.D.	Physics	Pondicherry University, Puducherry	2012
4.	SET	Physics	Mother Teresa university	2016
5.	GATE	Physics	IIT DELHI	2004
6.	Online Certificate Course	Designing Learner Centric - Moocs	IIT Bombay, Nptel, Swayam	Feb. 2023
7.		The Joy of Computing Using Python	IIT Madras, Nptel, Swayam	July - Oct. 2023
8.		Appreciating Carnatic Music	IIT Madras Nptel, Swayam	July - Sep. 2023

S. No.	Degree / Diploma / Certificate	Discipline	Name of the Institution	Year of Passing
9.		Educational Leadership	IIT Kharagpur Nptel, Swayam	July – Nov. 2025
10.	Short Term Certificate Course	Adaptive Design for Learning	Ateneo De Manila University's Institute for The Science And Art of Learning And Teaching	Sep. 2022

3. Professional Experience

i. Teaching Experience

S. No.	Institution / Organization	Designation	Duration	Years
1.	Fatima college	Assistant Professor	2012 -Till date	14 +

ii. Research Experience

S. No.	Name of the Employer/Organization	Position	Duration
1.	Project Funded by DST Mumbai in Pondicherry University	Project Associate	Jan 2009 – July 2009
2.	Project Funded by Dae- BRNS Mumbai in Pondicherry University	Senior Research Fellow	May 2007 – March 2008
3.	Project Funded by Dae-BRNS Mumbai in Pondicherry University	Junior Research Fellow	May 2005 – April 2007
4.	Institute of Mathematical Sciences Chennai	Summer Research Fellow	May 2003 – July 2003

4. Position & Responsibilities at Fatima (Vice Principal, HoD, Dean, Coordinator, Member etc.)

S. No.	Name of the Position	From - To
1.	NSS Programme Officer	From June 2012 – May 2017
2.	Member – Research Advisory Committee	2013- 2019
3.	NSS Programme Coordinator	June 2015 – May 2017
4.	Fatima College alumnae association – vice president	June 2015 – May 2022
5.	Human Rights cell - coordinator	June 2021-May 2022
6.	FONDE (FATIMA online and digital education) – Asst. Coordinator	June 2022 – May 2023
7.	Enterprise Resource planning committee - member	June 2022 – till date
8.	FONDE (Fatima online and digital education) – Coordinator	July 2023 – May 2025
9.	Admission Committee - member	June 2024 -June 2025
10.	IQAC -Assistant Coordinator	June 2025 – till date
11.	Calendar Committee - member	June 2026

5. Memberships in Professional / Other Bodies / Committees

S. No.	Name of the Position	Name of the Body/Name of the Institution	Duration
1.	Editorial Board Member	Optics	27 April 2026 to 27 April 2029.
2.	Board of Examiners	Thiagarajar College	2025 -2026
3.	Examiner	American College	2012-till date
4.	Examiner	Madura College	2013 - 2019
5.	Academic Auditor	Vivekanandha College	2016-2017
6.	Examiner	Arul Anandhar College	2019 - 2022
7.	Examiner	Bishop Heber College	2022 – 2023
8.	Examiner	Lady Doak College	2023 – Till Date

6. Areas of Expertise

Specialization: Nonlinear Optics

- **wave propagation & soliton dynamics**
- **modulation instability**
- **metamaterials**
- **Design and simulation of Photonic crystal fiber for terahertz research**

7. Research Guide/Guidance Details

- **Recognized Research Supervisor**

S. No.	Recognized University	Registration Number	Date of Recognition	Ph.D. Scholars			
				Ongoing		Completed	
				Full Time	Part Time	Full Time	Part Time
1.	Madurai Kamaraj University	1681	07.11.2017	2	-	-	-

- **Ph.D. Guidance**

- **Registered : 2**
- **Pursuing : 1**
- **Submitted : 1**
- **Awarded : Nil**

S. No.	Student Name	Title of Thesis	Mode of Ph.D. (FT/PT)	Registration Number	Date of Registration	University/ Institution	Registered/ Pursuing/ Submitted/ Pre-Viva/ Viva/ Awarded	Date (Submitted / Pre-Viva/ Viva/ Awarded)
1.	Afrin Hazaana S	Study of Biopolymer Electrolytes with Lithium Salts and Its Applications on Electrochemical Devices	Full Time	Mku21ffos10073	17.06.21	Fatima College (Madurai Kamaraj University)	Viva completed	18 Sept. 2026
2.	R. Niranjana	Design and Analysis of Low Loss Photonic Crystal Fiber for Terahertz Research	Full Time	Mku24ffos11557	16.09.24	Fatima College (Madurai Kamaraj University)	Pursuing	NA

8. Fellowship Received

S. No.	Name of the Fellowship	Funding Agency	Duration (From - To)	Status (Completed / Ongoing)
1.	Project Associateship	Project Funded by DST Mumbai in Pondicherry University	Jan 2009 – July 2009	Completed
2.	Senior Research Fellowship	Project Funded by Dae- BRNS Mumbai in Pondicherry University	May 2007 – March 2008	Completed
3.	Junior Research Fellowship	Project Funded by Dae-BRNS Mumbai in Pondicherry University	May 2005 – April 2007	Completed
4.	Summer Student Fellowship	Institute of Mathematical Sciences Chennai	May 2003 – July 2003	Completed

9. Capacity Building Programmes (Orientation/Refresher/Training Programmes/FDP)

S. No.	Programme	Theme / Title	Organized by	Date
1.	Faculty Development Programme	Inspiring Educational Leadership Training	AIACHE, Stella Mary's Centre, Kanyakumari	Nov. 17 - 19, 2014
2.	Online Faculty Development Programme	New Normal Pedagogical Tools for Online Teaching	Fatima College, Madurai	May 11 & 12, 2020
3.	Faculty Induction Programme	Fourth Faculty Induction Programme	UGC HRDC, Pondicherry University	Aug. 04 - Sep. 02, 2021
4.	Faculty Development Programme	Tools and Techniques in Characterization of Compounds	CSIR- Central Electrochemical Research Institute, Karaikudi and Dr. Umayal Ramanathan college, Karaikudi	Jan. 17 - 21, 2022
5.	Faculty Development Programme	Next-Generation Nanoelectronics Devices	Electronics and ICT Academy, NIT Patna	Jan. 31 -Feb. 04, 2022

		Trends (NGND): Materials to Applications"		
6.	Faculty Development Programme	Materials Engineering in Device Manufacturing	Department of Physics, KPR Institute of Engineering and Technology, Coimbatore	Feb. 05, 2022
7.	Refresher Course	Recent Advances in the Physics of Materials	UGC HRDC Madurai Kamaraj University	Oct. 07 - 20, 2022
8.	Faculty Development Programme	International Faculty Development Programme on Foremost Frontiers of Material Science	Department of Physics, Satyabama Institute of Science and Technology	Sep. 12 - 20, 2022
9.	Faculty Development Programme	Advanced Computational and Experimental Research in Physics 2022	Department of Physics, SRM Institute of Science and Technology, chennai,	June 20 - 27, 2022
10.	Faculty Development Programme	Current Scenario in Advanced Materials Research and Technology	Department of Physics & IQAC, Rajapalayamraju's College, Rajapalayam	Nov. 14 - 18, 2022
11.	Faculty Development Programme	Recent Research in Materials Physics & Nano Devices	Department of Physics & IQAC, Rajapalayamraju's College, Rajapalayam	Nov. 21 - 25, 2022
12.	Faculty Development Programme	Computational Modelling of Materials	Department of Physics, Madanapalle Institute of Technology and Science	May 08 - 12, 2023
13.	Faculty Development Programme	Soft Skills for Capacity Building	St. Joseph's College	Sep. 25 - 29, 2023
14.	Refresher course	Frontiers in Experimental and Theoretical Physics	UGC HRDC Madurai Kamaraj University	Oct. 03 - 16, 2023
15.	Faculty Development Programme	Research Methodology and Pedagogy of Writing, Project Funding	Mohamed Sathak A.J. College of Engineering	Jan. 29 - Feb. 06, 2024
16.	Faculty Development Programme	Ethics Model of Excellence Framework	Rani Anna Government College for Women, Tirunelveli & Globe Ethics, Bangalore	Mar. 30 - Apr. 23, 2024
17.	Faculty Development Programme	Technology Integration in Learning and Teaching	Seethalakshmi Ramaswami College	Aug. 19 - 24, 2024
18.	Faculty Development Programme	Renewable and Nonrenewable Energy Sources and Their Impact on Current Energy Scenario	Nehru Institute of Technology, Coimbatore	Aug. 27 - 31, 2024
19.	Refresher Course	Interdisciplinary Refresher Course on Basic Science	MMTTC (formerly UGC-HRDC), Kannur university	Nov. 26 - Dec. 09, 2024
20.	Round Table Discussion	Learning From the Future, Leading for the Future	Lily Gokongwei Leadership Academy	Mar. 04, 2025
21.	International FDP	Empowering Faculty for Ethical Teaching in Digital Era	Globe Ethics, South Asia Centre & Dmi Engineering College, Aralvaimozhi	June 02 -07, 2025
22.	Orientation & Sensitization Programme	NEP 2020	(MM-TTP) of University Grants Commission (UGC), Organized by MMTTC, Kannur University	Sep. 09 - 18, 2025
23.	Faculty Development Programme	Emerging Trends in Photonics and Fiber Optic Technologies	Department of Electronics and Communication Engineering and	Feb 16-20,2026

			the Centre of Excellence in Electronic Product Testing (CEEPT), Thiagarajar College of Engineering, Madurai	

10. Academic Engagements

i. Distinguished Academic Roles (Chief Guest / Keynote / Judge/Resource Person etc.)

S. No.	Major Assignment	Event	Theme/Title	Institution	Date
1.	Resource Person – Plenary Address	Bodhi International Conference on Humanities, Arts and Science - 2026 (BICOHAS-26)	Wisdom as our Armor: Driving Transformation through Interdisciplinary Research	Umar Pulavar Tamil Language Center, Ministry of Education, Beatty Road, Singapore	Aug – 22, 2026
2.	Resource Person	TWO-WEEK Online FDP on Exploring the Fabrication Techniques, Characterization and Applications of Functional Materials	Nonlinear Optical Characterisation of Materials	Faculty Development Training Centre in Association with Azhagappa Chettiar Government College of Engineering and Technology	June 22, 2022
3.	Resource Person	Workshop on House hold Appliances,	Exotic Day Today Applications of Intense Optics	Department of Physics, Vivekanandha College, Madurai	Mar. 16, 2022
4.	Chief Guest	Round Table Dialogue Session on Women's Day	Presiding lecture on "Breaking the Bias"	Justice V. R. Krishna Iyer Rural Institute for Socio Legal Studies, Justice Shivraj Patil &Action Aid	Mar. 08, 2022
5.	Resource Person	Association Lecture	Photonics Meets Biology: Biosensing Reinvented	Seethalakshmi Achi College for Women, Pallathur, Sivagangai, Tamil Nadu	Aug. 19, 2025

11. Research Contributions

i. Research Articles Published in Journals

S. No.	Journal/Proceeding / Magazine/Book Name with Indexing (UGC-CARE / Scopus / WoS / Peer-Reviewed)	Title of the Article	Month / Year	Vol. No.	Iss. No.	Page No.	DOI / Article Web Link	ISSN / ISBN	Publisher

1.	Proceedings of Asia Optical Fiber Communication and Optoelectronic Exposition & Conference (AOE)	On the Existence and Stability of Small Amplitude Solitons on A Pedestal Pertaining to Negative Index Materials	Nov. 2008	1	-	1-3	https://optica-org-web-afd-f9abf4byhbacgfgk.z02.azurefd.net/optica/media/osa.media/meetings/archives/2008/aoe/aoefinalwebarchive.pdf	978-1-55752-863-6	IEEE
2.	Journal of Optics A: Pure & Applied Optics	Gap Solitons and Modulational Instability in Dynamic Bragg Grating with Nonlinearity Management	2009	11	-	015203	http://dx.doi.org/10.1088/1464-4258/11/1/015203	1464-4258	IOP Publishing, United Kingdom
3.	J. Phys. Soc. of Japan	Small Amplitude Solitons on A Pedestal in the Modified Nonlinear Schrödinger Equation for Negative Index Materials	2009	78	4	044402	http://dx.doi.org/10.1143/JPSJ.78.044402	1347-4073	Physical Society of Japan, Tokyo, Japan
4.	Phys. Rev. A	Stability Criterion for Gaussian Pulse Propagation Through Negative Index Materials	2010	81	-	023805	http://dx.doi.org/10.1103/PhysRevA.81.023805	1050-2947	American Physical Society, USA
5.	J. Mod. Opt.	Modulation Instability Scenario in Negative Index Materials	2010	57	6	436	http://dx.doi.org/10.1080/09500341003693235	0950-0340	Taylor & Francis
6.	J. Nonlinear Opt. Phys. and Materials	Periodic Wave Solutions to Modified Nonlinear Schrödinger Equation Pertaining to Negative Index Materials	2010	19	1	177	http://dx.doi.org/10.1142/S0218863510005005	0218-8635	World Scientific, Singapore
7.	Resonance	A New Era of Exotic Electromagnetism	2012	17	2	163	http://dx.doi.org/10.	0971-8044	Indian Academy of Sciences, Bangalore,

							1007/s12045-012-0016-9		India
8.	Facet 2k18	Investigation of Emergence of Periodic and Solitary Wave Solution in Bio Membranes and Nerves	2018	9,	-	67		0975-6973	Fatima College, Madurai
9.	International Journal of Scientific Research	Solitary Transmission of Neuronal Signals Approached Via He's Semi Inverse Method	2021	10	10	1	http://dx.doi.org/10.36106/ijsr/4630243	2277 - 8179	World Wide Journals
10.	Optik	Impact of Higher Order Dispersions and Nonlinearities on Instability Criterion of Oppositely Directed Coupler in the Presence of Negative Index Material Channel	2022	255		168705	http://dx.doi.org/10.1016/j.ijleo.2022.168705	0030 - 4026	Elsevier
11.	Optik	Omnipresent instability criterion of birefringent Kundu-Eckhaus model with nonic nonlinearity	2022	265		169482	http://dx.doi.org/10.1016/j.ijleo.2022.169482	0030 - 4026	Elsevier
12.	Polymer bulletin	Development and Characterization of Biopolymer Electrolyte Based on Gellan Gum (Gg) with Lithium Chloride (Licl) for the Application of Electrochemical Devices	June 2022	80	5	5291-5311	http://dx.doi.org/10.1007/s00289-022-04316-w	1436-2449	Springer
13.	International Journal of Nanomaterials &	Efficacy of Graphene	May 2022	4	1	126		-	Pubtexto

	Molecular Nanotechnology	Quantum Dot on Gellan Gum Based Biopolymer Electrolyte for the Application of Solid-State Battery					http://dx.doi.org/10.36266/IJNMN/126		
14.	Journal of Solid-State Electrochemistry	Performance of Solid-State Li-Ion Conducting Battery Using Biopolymer Electrolyte Based on Agar-Agar/Lithium Chloride	Dec. 2022	27	2	539-557	http://dx.doi.org/10.1007/s10008-022-05348-y	1433-0768	Springer
15.	Optical and Quantum Electronics	Investigation of Influence of Kerr and Detuning Parameters Over Instability Gain in the Three Wave Resonant Interaction of Stimulated Raman Backscattering	Jan. 2023	55	6	538	http://dx.doi.org/10.1007/s11082-023-04782-0	0306-8919	Springer
16.	European Physical Journal Plus	Impact of Higher-Order Nonlinear Saturation Effects on Modulation Instability in Three-Core Oppositely Directed Coupler with Two Negative Index Material Channels	Apr. 2023	138		351	http://dx.doi.org/10.1140/epjp/s13360-023-03960-z	2190-5444	Springer
17.	Ionics	Performance Study of Sodium Alginate with Lithium Chloride Based Solid-State Membrane as an Electrolyte in Electrochemical Device Application	Jan. 2024	30		1413 – 1435	http://dx.doi.org/10.1007/s11581-023-05350-y	1862-0760	Springer

18.	Modern Physics Letters B	Role of Cubic–Quintic–Septic–Nonic Nonlinearity Over the Instability of Solitons in Conversely Guided Couplers with Bi-Negative Index Metamaterial Transmission Medium	June 24	39	8	2450426	http://dx.doi.org/10.1142/S0217984924504268	0217-9849	World scientific publishing
19.	Journal of Modern Optics	Effect of Adapted Septic Saturation on Instability Solitons in Triple-Core Couplers with One Positive and Dual Negative Refractive Material Channels	May 2025	72	13	501	http://dx.doi.org/10.1080/09500340.2025.2501270	1362-3044	Taylor &Francis
20.	Optik	Influence of Four Wave Mixing and Kerr Nonlinearity on the Instability Gain Spectrum of Non-Uniform Pt-Symmetric Chirped Fbg Structure	Nov 2025	342 - 343	-	172597	http://dx.doi.org/10.1016/j.ijleo.2025.172597	0030 - 4026	ELSEVIER
21.	Physics Letters A	Influence of saturable nonlinearity on instability in oppositely oriented coupler with NIM channels	Jan 2026	565	-	131160	http://dx.doi.org/10.1016/j.physleta.2025.131160	0375-9601	Elsevier
22.	Journal of Optics	Novel Zeonex based photonic crystal fiber featuring elliptical and rectangular air inclusions for ultralow confinement loss and	March 2026	-	-	-	http://dx.doi.org/10.1007/s12596-026-03076-4	0972-8821.	Springer Nature

		enhanced birefringence							
23.	Physics Letters A	Effect of nonlocal and nonlinear saturation on instability characteristics in dual core coupler with negative indexed material	May 2026	579	-	-	http://dx.doi.org/10.1016/j.physleta.2026.131514	0375-9601	Elsevier
24.	Proceedings of 13th International Conference on Computing for Sustainable Global Development (INDIACom)	Structure-Engineered Modified Square-Lattice Terahertz PCF for High-Precision Respiratory Virus Diagnostics	May 2026				http://dx.doi.org/10.23919/INDIACom70271.2026.11525536		IEEE
25.	Optical and Quantum Electronics	Modified nonlinear saturation on instability characteristics in PT-symmetric FBG with four-wave mixing	July 2026	58			http://dx.doi.org/10.1007/s11082-026-08998-8	*0306-8919*	Springer Nature
26.	Indian Journal of Physics	Influence of nonlinear conventional saturation on spatio-temporal modulational instabilities in PT-symmetric fiber Bragg grating structures	Accepted					0973-1458	Springer Nature

ii. Conference Publications in Proceedings

ii. CONFERENCE PUBLICATIONS IN PROCEEDINGS

S. No.	Conference	Title of the Article	Publication Year	ISBN	Publisher
1.	Proceedings of Asia Optical Fiber Communication and Optoelectronic Exposition & Conference (AOE)	On the Existence and Stability of Small Amplitude Solitons on A Pedestal Pertaining to Negative Index Materials	Nov. 2008	978-1-55752-863-6	IEEE
1.	Proceedings of the National Conference on Optics, Photonics and Lasers	Nonlinear Interactions and Solitary Wave Aspects in Negative Index Materials	2014	978-81-921895-0-6	University Grant Commission, New Delhi
2.	Proceedings of the 1st International Conference on Optoelectronics and Photonic Materials (ICOPMA-2015)	Investigation of Propagation of Light Through Fiber with Core of Negative Refractive Index	2015	-	Center for Nonlinear Science and Engineering, Sastra University
3.	Proceedings of the National Conference on Smart Materials NCSM 2016	Solitary Wave Prospects in Metamaterials'	2016	978-81-900971-9-2	Dept. of Chemistry & Physics, Lady Doak College, Madurai
4.	Proceedings of National Conference on Materials for the Modern World NCMMW 2016	Novel Design of Meta Fiber with Framed Anisotropic Meta Material Cladding And Air Core for High Birefringence	2016	978 81 89 84316 8	DAE – BRNS, Mumbai
5.	Proceedings of the International Conference on Recent Advancements in Material Science And Its Applications	A Transfer Matrix Approach to Study the Reflection Modulation Prospects in Hyperbolic Metamaterials	Jan. 11 & 12, 2023		Mannar Thirumalai Naicker College, Madurai
6.	Proceedings of the *International Conference on* Recent Trends in Materials Science (RTMS-2024)	Recent progress in the analysis and simulation of Zeonex based Photonic Crystal Fibers for THz Waveguiding	*Mar. 1, 2024*	978-93-94448-74-2	Department of Physics, Arul Anandar College (Autonomous), Karumathur
7.	Proceedings of the International Conference on Advances in Smart Materials (ICASMs-2024)	Design and simulation of circular PCF with tiny square air holes for Ultra-low confinement loss and high birefringence	*Aug. 9, 2024*	978-93-92560-81-1	Department of Physics, Saraswathi Narayanan College, Madurai
8.	Third International Conference on Advanced Nanomaterials for Energy, Environment and Healthcare Applications (ANEH 2024)	Modelling and Analysis of Tapered Circular Photonic Crystal Fiber with Versatile Host Materials for 6G Communication Prospects	(Aug. 21 - 23rAugust 2024)	978-93-93518-35-4	Heriot-Watt University, G.T.N. Arts College (Autonomous),Tamil Nadu and ANEH Scientific Foundation ,India
9.	Proceedings of the Global Conference on Advanced Materials and Processing (GCAMP-2024)	Enhanced Optical Performance in Photonic Crystal Fibers: Optimization of Elliptical Holes and Comparative Analysis with Alternative Geometries	*Sep. 12-13, 2024*		Department of Humanities and Sciences (Physics), Sri Sairam Engineering college, Chennai
10	Proceedings of the International Conference on "Advanced Materials and Applications"-ICAMA-2024	A simulative study of the enhanced optical performance through the inclusion of	*Oct. 26, 2024*		Department of Physics, SRM Institute of Science

		rectangular/elliptical holes in the multilayered circular PCF			and Technology, Chennai
11	Proceedings of the International Conference on Smart and Functional Materials: Perspectives and challenges (ICSFM-2025)	High-Performance Hexagonal Zeonex PCF Featuring Elliptical and Circular Inclusions for Terahertz Applications	*Feb. 7, 2025*		Department of Physics, Government Arts College for Women, Nilakottai
12	Proceedings of the International Conference on Advancements in Theoretical, Experimental and Observational physics (ATEOP'25)	High-Performance Hexagonal Photonic Crystal Fiber for Low-Loss Terahertz Transmission and Advanced Sensing Applications	*Mar. 11, 2025*	819796006-2	The Madura College, Research Centre and PG Department of Physics, Madurai
13	Proceedings of the International conference on Advanced Materials & Characterization (ICAMC-2025)	Highly Sensitive D-shaped -based Terahertz Sensor for Non-invasive Detection of Artificial Sweeteners	*Aug. 11-13,2025*	978-93-48577-56-6	Sathyabama Institute of Science and Technology, Chennai
14	Proceedings of the International Conference on "Recent Trends in physics-3"	Trapping Toxins in Light: A Zeonex-Based PCF Sensor for THz Monitoring of Poisonous Gases	*Sep. 24-25, 2025*		Sri Saradha College for women, Tirunelveli
15	Proceedings of the National Conference on "Recent Trends in Sustainable Energy Materials (NCRTSEM-2K26)	A Novel FEM-Optimized Hollow Square Core THz PCF for Real-Time Agricultural Pesticide Monitoring	*Feb. 24, 2026*	978-93-6163-148-1	Mannar Thirumalai Naicker College, Madurai
16	Proceedings of the International Conference on Smart Materials (ICSM-2026)	Optimized Hollow Square Core Photonic Crystal Fiber for High-Sensitivity Terahertz Pesticide Detection for Agricultural Monitoring	*Feb. 25, 2026*	978-81-999157-6-3	Fatima College, Mary Land, Madurai
17	Proceedings of the 2026 13th International Conference on Computing for Sustainable Global Development (INDIACom)	Structure-Engineered Modified Square-Lattice Terahertz PCF for High-Precision Respiratory Virus Diagnostics	*Apr. 8-10,2026*	978-93-80544-64-9	BVICAM, New Delhi

iii. Conference Presentations

S. No.	Programme & Theme	Organized by	Date	Title of the Paper
1.	International Conference of Recent Developments in Nonlinear Dynamics (RDND)	Bharathidasan University, Tiruchirappalli, India	Feb. 13 - 16, 2008	Role of Nonlinear Dispersion on Modulational Instability in Negative Index Materials
2.	Asia Optical Fiber Communication and Optoelectronic Exposition and Conference (China)	Optica Publishing Group, Shangai, China	Oct. 30 - Nov. 02, 2008	The Existence and Stability of Small Amplitude Solitons on a Pedestal Pertaining to Negative Index Materials
3.	International Conference on Fiber Optics and Photonics	Indian Institute of Technology, Delhi	Dec. 13 - 17, 2008	Existence of Dark -Antidark Solitons in Negative Index Material
4.	National Conference on Optics, Photonics and Lasers (NCOPL)	Arul Anandhar College, Madurai	July 17 & 18, 2014	Nonlinear Interactions and Solitary Wave Aspects in Negative Index Materials

S. No.	Programme & Theme	Organized by	Date	Title of the Paper
5.	International Conference on Optoelectronics and Photonic Materials (ICOPMA 2015)	Sastra University, Tanjore	Feb. 27 & 28, 2015	Investigation of Propagation of Light through Fiber with Core of Negative Refractive Index
6.	National conference on Smart Materials	Lady Doak College, Madurai	Feb. 23 & 24, 2016	Solitary Wave Prospects of Metamaterials
7.	BRNS sponsored 3rd National Conference on Materials for Modern World (NCMMW - 2016)	Easwari Engineering College, Chennai	Sep. 15 & 16, 2016	Novel Design of Meta Fiber with Framed Anisotropic Meta Material Cladding and Air Core for High Birefringence
8.	65th Dae Solid State Physics Symposium	Bhabha Atomic Research Centre, Mumbai	Dec. 15 - 19, 2021	Proposing and Modelling Chalcogenide Prism Model with Hyperbolic Metamaterials for Surface Plasmon Resonance Based Biosensing Applications
9.	International Conference on Advanced Materials in Innovative Technology	Miliya Arts, Science and Management Science College, Beed, India	Jan. 11, 2022	Investigation of Light Propagation Through Hyperbolic Metamaterials for High Reflectance Contrast Applications
10.	International Conference on Advanced Materials -2022	St. Joseph's College, Tiruchirappalli	Feb. 11 - 12, 2022	Simulative Investigation of Anisotropy of Effective Permittivity Tensor for Nanolayered and Nano Wired GST Based Metamaterials
11.	Aif Conference on Minerals, Materials and Manufacturing Methods	Centre for Material Science, Karpagam Academy of Higher Education, Coimbatore	Mar. 18 -19, 2022	Synthesis and Characterization of Novel La Doped Sm0.5 Sr0.5mno3 Cathode for Intermediate Temperature Solid Oxide Fuel Cell
12.	International Conference on Recent Advancements in Material Science And Its Applications	Mannar Thirumalai Naicker College, Madurai	Jan. 11 & 12, 2023	A Transfer Matrix Approach to Study the Reflection Modulation Prospects in Hyperbolic Metamaterials
13.	AIACHE - South Regional Meet – Two Day Conference	Madras Christian College, Chennai	Aug. 29 -30, 2025	Chiseling the Quality Benchmarks - The Sculptural Role of IQAC in Raising the Standards of Teaching, Learning and Research under the Revised Accreditation Framework of NAAC
14.	Bodhi International Conference on Humanities, Arts and Science - 2026 (BICOHAS-26)	Umar Pulavar Tamil Language Center, Ministry of Education, Beatty Road, Singapore	Aug. 22 -25,	Advanced Terahertz Photonic Crystal Fiber Sensor for Ultrasensitive Detection of Pesticide Residues

iv. BOOKS PUBLISHED

S. No.	Book Name	Year	Publisher	ISBN	Web Link (if Available)
1.	Light's Odyssey through Metamaterials and its Nonlinear Horizons, The	2025	Notion Press	9798901126004	https://notionpress.com/in/read/light-s-odyssey-through-metamaterials-and-its-nonlinear-horizons-the-instability-and-solitons-

	Instability and Solitons!				hardcover?srsltid=AfmBOoq9HjciOXXhHitkJHLYZ6ZqHD9gnrvCiKVYOYHrXGI6XJ3SIBG5

v. Chapters Published in Books

S. No.	Book Name	Title of Chapter	Year	Page No.	ISBN	Publisher
1.	Innovations and Advances in Science and Engineering Research	Nonlinear Pulse Propagation Prospects in Negative Index Materials: An Overview	2025	1-19	9798900231259	Notion Press
2.	Fostering Academic Partnerships Among Christian Higher Education Institutions	Chiseling The Quality Benchmarks - The Sculptural Role of IQAC in Raising The Standards of Teaching , Learning and Research under The Revised Accreditation Framework of NAAC	2025	1-20	9788198688606	Madras Christian College, Chennai

vi. Peer Review Assignments

Journal Article Reviewed

S. No.	Journal/Book Name	Publisher	Year
	Journal of Physics B: Atomic, Molecular and Optical Physics	Iop Publishing	June 2026
1.	Physica Scripta	IOP Publishing	Nov 24, Aug 2025, Dec 2025
2.	*Optical and Quantum Electronics*	Springer Nature	July 2025
3.	Journal of Solid State Electrochemistry	Springer Nature	2024-2025

VI. Member in Editorial Board of National/International Journals

S. No.	Name of Editorial Board	Journal Name	Role / Position	Publisher / Organization	Year	Web Link
1.	Editorial Board	Optics	Member	Science Publishing Group	*27 April 2026 to 27 April 2029.*	http://www.opticsjournal.org/editorial-team#Editorial_Board_Member

12. Achievements & Recognition

i. Awards

S. No.	Name of the Award	Award Received for	Sponsors / Source	Date
1.	Distinguished International Academic &	Outstanding excellence in teaching and research and	Universitas Serambi Mekkah, Indonesia, Singapore Tamil Teachers Union, Bodhi	August 2026

	Research Service Award 2026	distinguished academic contribution	International Journal of Arts, Science and Humanities, India, Alagappa University, Karaikudi and The Gandhigram Rural Institute, Gandhigram	
2.	Certificate of Achievement	Best paper presentation	Sathyabama Institute of Science and Technology, Chennai	August 2025
3.	Top 1% Rank Elite Certification	Educational Leadership – NPTEL Course,	IIT Kharagpur, NPTEL, Swayam	Nov 2025
4.	Best Performance Award (2023-2024)	Excellence, Research Culture and Dedicated Service	Fatima College	2023
5.	Humanity : Best Social Star	National Service Scheme - Coordinator	Humanity Protection Organization	2017
6.	Einstein's Award & M.A. Thangaraj Award	Proficiency in M.Sc. Physics	The American College	2004
7.	Dr. Richard Reisz Award	Proficiency in M.Sc. Physics – Best Student	The American College	2004
8.	Maveeran Sundaralingam Merit Scholarship award	Proficiency in B.Sc. Physics	Fatima college	2002
9.	Proficiency Award	Proficiency in B.Sc. Physics	Fatima college	2002
10.	Best Poster Award	International Conference on Progress on Tunable Lasers for Ultrafast Processes and Applications	IIT Madras, Chennai	Dec. 2006
11.	Best Oral Presentation Award	National Conference on Subtle World of Physics	Vivekananda Arts & Science College	Feb. 2006

ii. PATENTS/COPYRIGHT IF ANY

S. No.	Patents/Copyrights for	Application No	Date of Registration	Jurisdiction	Status (Granted / Published / Filed)	If published / Granted		
						The Patent Office Journal No	Publication Date	Granted Date
1.	Camellia Sinensis – Green tea leaf as biomaterial electrolyte membrane for battery and fuel cell applications	202241004370	26.01.2022	India	Published	31/2022	05.08.2022	----

13. PROJECTS & CONSULTANCY

i. RESEARCH PROJECTS

S. No.	Title of Project	Position	Sponsored By	Duration	Sanctioned Amount	Status (Completed / Ongoing)

1.	Designing Skill Embedded, Research-Driven and Community-Engaged Academic Model for Environmental Sustainability	Co-PI	UBCHEA	July 2026 – June 2028	11,13,287/-	Ongoing
2.	Establishment of Common Instrumentation and Computational Facility for Innovative Teaching, Learning and Research	Co- PI	DST FIST	Mar. 2023 - 2028	80,00,000/-	Ongoing
	Investigation of soliton model in Bio membranes and Nerves	Principal Investigator	UGC	Aug. 2016	1,00,000/-	Completed
3.	Fabrication of Solar Cells using e-waste	Principal Investigator	FCAA	2019-2020	15,000/-	Completed

15. Foreign Countries Visited on Academic Assignments/Training/Invited Programme

S. No.	Country Visited	Institution / Organization	Purpose (Assignment / Training / Invited Programme)	Date / Duration	Programme Title	Funding Source (if available)
1.	Singapore	Umar Pulavar Tamil Language Center, Ministry of Education, Beatty Road, Singapore	Conference/ Plenary Address & Paper Presentation	Aug. 22 – 25, 2026	Bodhi International Conference on Humanities, Arts and Science - 2026 (BICOHAS-26)	- Nil

14. Organized National/International Seminars, Workshops, Conferences , Symposiums, Internships:

S. No.	Programme & Theme	Role	Organized by	Date
1.	Internship – Advances in Physics: From Fundamentals to Innovation	Convener	Dept of Physics, Fatima College	June 01 – June 06, 2026
2.	DST-FIST sponsored National Conference on “Partnering for Progress: The Industry-Academic Nexus”	Co-Convener	FIST Team, Fatima College (Autonomous), Madurai	Jan. 09, 2025
3.	DST- FIST Sponsored Science Fair: Exploring the Science of the Future	Co-Convener	FIST Team, Fatima College (Autonomous), Madurai	Jan 7, 2025
4.	International Webinar on Astrophysics	Co-Convener	Dept of Physics, Fatima College	Sep. 30, 2021
5.	International Webinar on Materials Science	Co-Convener	Dept of Physics, Fatima College	Oct. 01, 2021