



FACULTY PROFILE

Name	DR. ASWATHY JOSEPH
Designation	ASSISTANT PROFESSOR
Department	CHEMISTRY

PERSONAL VISION AND MISSION

“To nurture students who are confident, competent, and socially responsible, enabling them to advance both societal development and their own professional futures.”

PERSONAL DETAILS

Date of entry into permanent service	29-11-2021
Total teaching experience as on 01 December 2022	5 years
Age and Date of Birth	37; 29-12-1987
Residential Address	Vechukettickal(H), Thottuva, Kuravilangadu, Kottayam, Kerala 686633
Address for Correspondence	Assistant Professor, Department of Chemistry, Catholicate College, Pathanamthitta
Mobile / Whatsapp Number	9495244558
E-mail (Personal and Official)	aswathyj@gmail.com ; aswathyj@catholicatecollege.ac.in

ACADEMIC QUALIFICATIONS

Degree	Subject	Institution and University	Grade/ Rank etc.
UG	B.Sc. Chemistry (2008)	St. Xavier's College, Thumba, University of Kerala	93.6%
PG	M.Sc. Chemistry (2010)	Department of Chemistry, Karriyavattom Campus, University of Kerala	80%



Ph D	PhD Chemistry (2019)	School of Chemical Sciences, Mahatma Gandhi University	N.A.
Additional Qualifications	PG Diploma in Education Technology and Management (PGD-ETM 2021)	ICAR-NAARM & University of Hyderabad (Distant Education)	1st Division

COLLEGE LEVEL DUTIES / MAJOR CHARGES

Duty	Position	Duration
D3 Chemistry	Class-in Charge	2024-till date
D3 Open Course	Chemistry Department Co-ordinator	2020 – till date
NAAC Criterion 3	Chemistry Department Co-ordinator	2022-till date
KIRF (Kerala Institutional Ranking Framework) Committe	Co-ordinator	2022-till date
IEDC (Innovation and Entrepreneurship Development Centre)	Co-ordinator/Nodal Officer	2023-till date
MOOC (Massive Online Open Course)	Member	2024-till date
College Handbook	Member	2024-till date
Women's cell	Member	2024-till date

POSITIONS HELD/ AWARDS/ RECOGNITIONS/ MAJOR ACHIEVEMENTS

Name	Details
Reviewer	Elsevier (Journal of Molecular Liquids)
Scholarships	<ul style="list-style-type: none"> Kerala University Merit Scholarship 2008 Jawaharlal Nehru Scholarship for Doctoral Studies 2015-17, Jawaharlal Nehru Memorial Fund, New Delhi
KSCSTE -Scheme for promoting Seminar/ Symposia/ Workshop	Received Rs. 30,000/- for conducting Two-day National Conference on Energy Materials and Environment (EME 2024) on June 13 th and 14 th June 2024.



RESEARCH AND CONSULTANCY

Year of Award of Ph.D.	2019
No. of Publications	Research Articles-13 Book Chapter-2 Book-1
No. of Patents awarded	-
No. of papers presented in Conferences, Seminars, Workshops and Symposia	13
Year of Award of Research Guideship	-
No. of Ph.Ds produced	-
No. of Ph.D. students currently registered	-
No. of Major Research Projects awarded/completed	-
No. of Minor Research Projects awarded/completed	-
Total amount of research grant awarded	-
Area of Consultancy	-
Income generated by consultancy during the last five years	-

RESEARCH PROJECTS

Name	Details	Amount
-	-	-

PUBLICATIONS AND PRESENTATIONS

International/ National Publications	<ul style="list-style-type: none"> Complex dielectric response and EDL characteristics of different types of ionic liquid iron oxide nanofluids (ionanofluids), Aswathy Joseph, Jacek Fał, Andrzej Bąk, Suresh Mathew, Gaweł Żyła,
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Chemical Physics Impact, **2023**, 7, 100357.

<https://doi.org/10.1016/j.chphi.2023.100357>

- Hydro-ionothermally Generated Paramagnetic Fe State-Embedded Ferromagnetic Iron Oxide with a 2D Hexagonal Nanostructure: A Conceptual Intervention on the Methylene Blue Degradation Mechanism, **Aswathy Joseph**, Supin K K, Divya K S, Sreerenjini C R, Bhagyalakshmi Balan, Vishnu Vijayakumar, M. Vasundhara, Suresh Mathew, *Crystal Growth & Design*, **2023**, 23, 6378–6392.
<https://doi.org/10.1021/acs.cgd.3c00348>
- Porous Liquids, Aswathy Joseph, Suresh Mathew, *Resonance: Journal of Science Education*, **2023**, 28, 751-769.
<https://doi.org/10.1007/s12045-023-1603-7>
- Ionic Liquid and Ionanofluid-Based Redox Flow Batteries—A Mini Review, **Aswathy Joseph**, Jolanta Sobczak, Gawel Żyła, Suresh Mathew, *Energies*, **2022**, 15, 4545.
<https://doi.org/10.3390/en15134545>
- *Electronic properties of PVP-ionic liquid composite: spectroscopic and DFT-based thermochemical studies on the effect of anions*, **Aswathy Joseph**, Suresh Mathew, *Iranian Polymer Journal*, **2021**, 30, 505–512. <https://doi.org/10.1007/s13726-021-00908-x>
- *Investigation of Iron Oxide-Based Ionanofluids and Ionic Liquids by Ultrasonic Sound Velocity Method*, **Aswathy Joseph**, Pankajakshan Radhakrishnan Nair & Suresh Mathew, *International Journal of Thermophysics*, **2020**, 41, 168.
<https://doi.org/10.1007/s10765-020-02748-y>
- *Synthesis and electrochemical characterization of electroactive Ionanofluids with high dielectric constants from hydrated ferrous sulphate*, **Aswathy Joseph**, Marylin Mary Xavier, Jacek Fal, Gawel Żyła, Soorya Sasi, P. Radhakrishnan Nair, A. S. Padmanabhana and Suresh Mathew, *Chemical Communications*, **2019**, **55**, 83 – 86.
<https://doi.org/10.1039/C8CC08243J>
- *Nanostructuring of 1-butyl-4-methylpyridinium Chloride in Ionic Liquid- Iron Oxide Nanofluids*, **Aswathy Joseph**, Jacek Fal, Gawel Żyła, Suresh Mathew, *Journal of Thermal Analysis and Calorimetry*, **2019**, 135 (2), 1373–1380.
<https://doi.org/10.1007/s10765-020-02748-y>
- *Theoretical Probing of Weak Anion-Cation Interactions in Certain*



	<p><i>Ionic Pairs of Pyridinium based Ionic Liquids and the Application of Molecular Electrostatic Potential in their Ionic Crystal Density Determination : A Comparative Study Using Density Functional Approach</i>, Aswathy Joseph, Vibin Ipe Thomas, Gawet Żyła, A. S. Padmanabhan, Suresh Mathew, <i>Journal of Physical ChemistryA</i>, 2018, 122 (1),328–340. https://doi.org/10.1021/acs.jpca.7b09189</p> <ul style="list-style-type: none"> • <i>Synthesis, Characterization and Theoretical Studies on Novel Organic–inorganic Hybrid Ion–gel Polymer Thin Films from a γ-Fe₂O₃ doped Polyvinylpyrrolidone–N-butylpyridinium Tetrafluoroborate Composite via Intramolecular Thermal Polymerization</i>, Aswathy Joseph, Marilyn Mary Xavier, Gawet Żyła, P. Radhakrishnan Nair, A. S. Padmanabhan, Suresh Mathew, <i>RSC Advances</i>, 2017, 7, 16623–16636. https://doi.org/10.1039/C6RA27411K • <i>Paramagnetic Ionic Liquids for Advanced Applications: a Review</i>, Aswathy Joseph, Gawet Żyła, Vibin Ipe Thomas, P. Radhakrishnan Nair, A.S. Padmanabhan, Suresh Mathew, <i>Journal of Molecular Liquids</i>, 2016, 218, 319–331. DOI: 10.1016/j.molliq.2016.02.086 • <i>Ferrofluids: Synthetic Strategies, Stabilization, Physicochemical Features, Characterization, and Applications</i>, Aswathy Joseph, Suresh Mathew, <i>ChemPlusChem</i>, 2014, 79, 1382–1420. https://doi.org/10.1002/cplu.201402202, • <i>Photoluminescence study on amino functionalized dysprosium oxide–zinc oxide composite bifunctional nanoparticles</i>, Aswathy Joseph, Praveen G.L., Abha. K, Lekha. G. M., Sony George, <i>Journal of Luminescence</i>, 2012, 132, 1999–2004. https://doi.org/10.1016/j.jlumin.2012.03.023
Chapters inBooks	<ul style="list-style-type: none"> • <i>Chapter 12: Imidazolium-based room temperature ionic liquids for electrochemical reduction of carbon dioxide to carbon monoxide</i>, Aswathy Joseph, Suresh Mathew, <i>Green Sustainable Process for Chemical and Environmental Engineering and Science: Ionic Liquids as Green Solvents</i>, 2020, Edited by: Inamuddin, Abdullah M. Asiri and Suvaradhan Kanchi Pages 343–365 https://doi.org/10.1016/B978-0-12-817386-2.00012-3 • Joseph, A., Mathew, S. (2025). Ionic Liquid-Based Redox Flow



	<p>Batteries. In: Gupta, R. (eds) Handbook of Energy Materials. Springer, Singapore. DOI: https://doi.org/10.1007/978-981-16-4480-1_10-2</p>
Books	<ul style="list-style-type: none"> • <i>Theoretical and Computational Approaches to predicting Ionic Liquid Properties, Edited by Aswathy Joseph, Suresh Mathew, Elsevier, ISBN no: 9780128202807.</i>
Proceedings of international/ National symposiums	<ul style="list-style-type: none"> • “Emerging Prospects of Redox-Nanofluids in Redox flow Batteries” paper presented in 3-Day International Conference on Advance Research, INSIGHT 2024 held on 07-09 February 2024 at MES Keveeyam College, Valanchery, Malappuram • Proceedings of the KSCSTE co-sponsored Two-day National Conference on Energy Materials and Environment (EME 2024) on June 13th and 14th June 2024. ISBN: 978-93-340-8093-3
Paper Presentations (International/ National)	<ul style="list-style-type: none"> • “The Effect of Aminofunctionalization on the Photoluminescence of Silica coated Dysprosium oxide-Zinc oxide Composite Bi-functional Nanoparticles” at the UGC sponsored National Seminar on “GREEN CHEMISTRY- The Ultimate Tool For Pollution Control” organized by Assumption College, Changanasheery, held on February 14th -15th, 2012. • “The Effect of TOPO coating on the Photoluminescence of Dysprosium oxide- Zinc oxide Core-shell Nanoparticles” at the UGC sponsored National Seminar on “MODERN TRENDS IN ORGANIC CHEMISTRY” organized by Baselius College, Kottayam, held on 23rd & 24th February, 2012. • “Amino-functionalized Zinc Oxide-Dysprosium Oxide Composite Nanoparticles” at the National Seminar on Nanoscience And Technology organized by Department of Science and Humanities, Sree Narayana Gurukulam College of Engineering, Kolenchery on 15th & 16th February, 2013 in association with KSCSTE & ISTE. • “Hydrothermal Synthesis of Magnetic Nanostructures Using Ionic Liquid” in the National Seminar “Frontiers of Polymers and Advanced Materials (FPAM-2014)” at Department of Chemistry, University of Kerala during 5th -7th November 2014. • “Density Functional Theory analysis of CO₂ capture ability of 1-Butyl-4-methylpyridinium ionic liquids with chloride, bromide and tetrafluoroborate anions”, presented at 25th Swadesi Science



Congress, Sree Sankaracharya University, Kalady on 15th -18th December 2015.

- “Ultrasonic characterization of 1-Butylpyridinium and 1-Butyl-4-methylpyridinium tetrafluoroborate ionic liquids”, presented at “Second International Conference on Materials Science and Technology (ICMST 2016)”, St. Thomas College, Pala, Kottayam on 7th June, 2016.
- “Theoretical probing of anion-cation interaction in 1-butylpyridinium based ionic liquid”, presented at “The Twelfth International School on Theoretical Physics Symmetry and Structural Properties of Condensed Matter (SSPCM 2016)”, Poland, Rzeszów on 5-10th September, 2016.
- “Fabrication of thinfilms via free radical induced thermal cross polymerization in ionogels for charge storage applications”, presented at “The International Conference on Advanced Materials and Processes (ADMAT 2017 SkyMat)”, Kovalam, Thiruvananthapuram on 14-16th December 2017.
- “Synthesis and characterization of highly stable surfactant-free iron oxide - ionic liquid nanofluids via one step microwave irradiation”, presented at “Indian Analytical Science Congress (IASC 2018)”, Kumarakom, Kerala, 8-10th February, 2018.
- “Synthesis and Characterization of Iron oxide Magnetic Nanoflakes via Hydro-ionothermal Method” presented at International Conference of Emerging Trends in Advanced Functional Materials (ETA FM-2022), Catholicate College, Pathanamthitta on 11th-12th August 2022.
- “Cyber Threats to Chemical Plants Handling Toxic Materials” presented at International Conference on Cyber Security, Catholicate College, Pathanamthitta on 8th November 2022.
- “Investigation of Redox Nature of Iron Oxide-Ionic Liquid Nanofluids for Flow Battery Applications” at International Online Conference on Basic Sciences for Sustainable Development (ICBSSD 2022) organized by Amal Jyothi College of Engineering, Kottayam on 16th-17th December 2022.
- “Emerging Prospects of Redox-Nanofluids in Redox flow Batteries” paper presented in 3-Day International Conference on Advance Research, INSIGHT 2024 held on 07-09 February 2024 at MES Keveeyam College, Valanchery, Malappuram



	<ul style="list-style-type: none"> • “<i>Harnessing Redox-Active Ionic Liquids for High-Efficiency Energy Storage in Redox Flow Batteries: a Review</i>” Poster presented at two-day National Conference on Recent Trends in Science and Technology (NCRTS 24), St. Thomas College, Palai on 30/09/2024-01/10/2024
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WORKSHOPS /SEMINARS/ CONFERENCES ORGANISED

Position	Details
Co-ordinator	<ul style="list-style-type: none"> • Legal Awareness Programme for Women- 8th March 2023 (The Legal Literacy Cell, Postgraduate department of Chemistry, department of English, department of Malayalam and the District Legal Services Authority, Pathanamthitta) • KSCSTE Sponsored Two-day National Conference on Energy Materials and Environment. (KSCSTE & Chemistry Department) EME 2024 - June 13th and 14th June 2024. • CHEMCARE EXPO 2025- 7th February 2025 (Chemistry Department & CATH BIIC IEDC) • SHE VOTES- 7th March 2025 (Kerala Startup Mission, IEDC & Women Cell) • Leadership Training & IEDC Orientation Programme- March 14th 2025.
Resource Person	<p>“<i>How to write a review In Chemistry?</i>”, Webinar organized by Dept. of Chemistry, MES College, Mampad, Kerala on 26-07-2021.</p> <p>Youtube Link: https://youtu.be/DxZQseOR-b4?si=9ZSaI_ssSFdO58bu</p>
Resource Person	<p>FACULTY DEVELOPMENT PROGRAMME: Next-Gen Academics: AI Tools for Educators (IQAC Initiative), on 11th October 2025. <i>Topic: “AI Tools for Academic Research”</i></p> <p>Youtube Link: https://youtu.be/jJRQKZdvlQQ?si=ECf6hePDiQucDPxg</p>

WORKSHOPS /FDP/ORIENTATION/REFRESHERCOURSES ATTENDED

Name	Details



Five day Molecular Modeling Workshop on <i>“Training on Gaussian 09 software”</i>	➤ Organized by Department of Chemistry, C.M.S. College, Kottayam on 20 th September, 2014
Five day Online Training on <i>“Teaching Learning through Learning Management System”</i>	➤ Organized by CIET-NCERT, Ministry of Education, Govt. of India from 24-01-2022 to 28-01-2022
Online IP Awareness/Training program under National Intellectual Property Awareness Mission.	➤ Organized by Department of Life Long Learning and Extension (DLLE) and Business Incubation and Innovation Centre (BIIC) Mahatma Gandhi University & Intellectual Property Office, Govt. of India on 11-02-2022
Six day Online National Workshop <i>“Use of Excel in Data Analysis”</i>	➤ Organized by Centre of Research, IITE, Gandhinagar, Gujarat from 7-03- 2022 to 12-03-2022
19 th One day Conference for Accademic Staff of MOC colleges on NEP	➤ Held at K.G. College, Pampady, Kottayam on 26-03-2022
One Week Online National Faculty Development Program/Leadership Development Program on <i>“Building Academic Leaders for 21st Century Higher Education”</i> .	➤ Organized by Guru Angad Dev Teaching Learning Centre of Ministry of Education under the PMMMMNMTT Scheme, Govt. of India from 14-04-2022 to 20-04-2022.
Faculty Development Program On <i>“Academic Research Writing & Best Practices”</i>	➤ Organized by H.S.N.C Board’s Kishinchand Chellaram Law College, University of Mumbai & Droit Penale Group: A Unit of Arjun Das Gulati Memorial Society, Prayagraj, In-collaboration with Guru Angad Dev Teaching Learning Centre of Ministry of Education under the Pandit Madan Mohan Malaviya National Mission on Teachers & Teaching (PMMMMNMTT) Ministry of Education, Government of India from 25-04-2022 to 02-05-2022.
Online Faculty Development Programme on <i>“Best Practices for Online Teaching: Classrooms, Courseware and Tools”</i>	➤ Organized by Faculty Development Centre, The Kerala State Higher Education Council from 11-05-2022 to 17-04-2022



Two Day Workshop on “ <i>Outcome Based Education</i> ” (OBE)	➤ Organized by IQAC, Catholicate College, Pathanamthitta, in collaboration with The Kerala State Higher Education Council & M.G. University, Kottayam on 20-05-2022 to 21-05-2022.
Fifteen Days Online Refresher Course “ <i>New Age Teaching Methods & Skills in Higher Education</i> ”	➤ on 17-08-2022 to 31-08-2022. Organized by Jagran Lakecity University, Bhopal & Droit Penale Group, A Unit of Arjun Das Gulati Memorial Society, Prayagraj, In collaboration with Guru Angad Dev Teaching Learning Centre Pandit Madan Mohan Malaviya National Mission on Teachers & Teaching (PMMMNTT) Ministry of Education, Government of India
One Month Online National Faculty Induction Programme/Orientation Course	➤ 25 th February to 27 th March 2023 organized by Guru Angad Dev Teaching Learning Centre Pandit Madan Mohan Malaviya National Mission on Teachers & Teaching (PMMMNTT) Ministry of Education, Government of India
1-Week Online National FDP on e-Content Development	➤ Organized on 10 th October to 16 th October 2023 by Guru Angad Dev Malaviya Mission Teacher Training Centre, SGTB Khalsa College, University of Delhi.
Regulations And Frameworks for Four Year Undergraduate Programme (FYUGP)	➤ Held on 18 th November 2023 organized by IQAC, Catholicate College
7-Days Online Hands-on-Training on Density Functional Theory Modelling of Materials: Crystals, Thin Films & Nanomaterials (DFT-M).	➤ Organized on 11 th -17 th March 2024 by Centre for Advanced Computational Research, New Delhi, India. (Registered under the Ministry of SME, Government of India for Research and Experimental Development on Natural Sciences and Engineering UDYAM-DL-06-0096855)
TeachXcelerate Workshop	➤ Organized on 20 th & 21 st September 2024 by Manorama Horizon, Malayala Manorama Office, Kottayam
5-Day Faculty Development Programme on Entrepreneurship with focus on FYUGP	➤ Organized by BIIC Mahatma Gandhi University, Kottayam from 25 th to 29 th September 2024



NEP Orientation & Sensitization Programme	➤ conducted from 6 th – 15 th January 2025 Centre for Professional Development in Higher Education (CPDHE) UGC - Malaviya Mission Teacher Training Centre (MMTTC) University of Delhi
UGC Sponsored Refresher Course in Artificial Intelligence Tools for Higher Education & Research	➤ conducted from 9 th -22 nd July to 2025 (2 week) by University of Calicut.

MEMBERSHIP IN PROFESSIONAL BODIES

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ANY OTHER RELEVANT INFORMATION

- Google Scholar ID: <https://scholar.google.com/citations?user=rxgqqKgAAAAJ&hl=en>
- ORCID ID: <https://orcid.org/0000-0002-0652-5102>

Dr. Aswathy Joseph

(Date 23-11-2025)