Dr. SREEJA V.

Assistant Professor of Chemistry



CURRENT PROFILE

Research Guide & Assistant Professor, PG Department of Chemistry, SN College Punalur, Kerala, India

International Publications - 06

Conferences (International – 05) (National – 10)

Citation indices	<u>ÀII</u>	<u>Since 2016</u>
Citations	408	223
h-index	05	05
i10-index	05	05



CONTACT INFO

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MOBILE

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EMAIL

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sreejavraj@gmail.com



WEBSITE

tps://www.sncollegepunalur.in/

EDUCATION

2025-till now Certificate Course – Python (On-going)

From G-TEC Education (ISO Certified), Adoor,

Kerala, India

2022-2023 Certificate Course - Innovative Drug Design

Using Molecular Modeling Techniques

From Sacred Heart College, Thevara Kochi, India

approved by UGC NSQF with A+ Grade

2006 -2011 PhD – Chemistry

From National Chemical Laboratory of India,

University of Pune, INDIA Supervisor: Dr. P. A. Joy

Synthesis and studies on superparamagnetic iron

oxide nanoparticles

2003-2005 M.Tech - Industrial Catalysis

From Department of Applied Chemistry, Cochin University of Science and Technology, Kochi,

INDIA with First Class marks

2001-2003 M.Sc – Chemistry

From Christian College, University of Kerala,

INDIA with First Class marks

1999-2001 B.Sc – Chemistry

From St. Cyrill's College, University of Kerala,

INDIA with First Class marks

SOFT SKILLS

Autodock Tools Discovery Studio

VMD

Chimera

Fire Fly Origin

Easy Plot. Specview

MS Office

LateX

Zotero

End note

PUBLICATIONS

- 1) Magnetic Properties of Maghemite Nanoparticles Synthesized by Microwave Hydrothermal Method
 - V. Sreeja and P.A.Joy*, Matrerial Research Bulletin, 42 (2007) 1570–1576
- (2) Size dependent coordination behavior of $\rm MgAl_2O_4$ nanoparticles from $\rm ^{27}Al$ solid state NMR studies
 - **V. Sreeja**, T. S. Smitha, Deepak Nand, P.K.Madhu and T.G.Ajithkumar and P. A. Joy, *J. Phys. Chem. C*, 112 (38), (2008) 14737–14744
- (3) Magnetic and Mössbauer spectroscopic studies of NiZn ferrite nanoparticles synthesized by a combustion method
 - **V. Sreeja**, S. Vijayanand, S. Deka and P. A. Joy, Hyperfine Interactions 183, (2008) 99–107
- (4) Effect of interparticle interaction on the magnetic properties of magnetite nanoparticles after coating with Dextran
 - **V. Sreeja**, H.S. Potdar and P. A. Joy*, International Journal of Nanotechnology 2009, (in press)
- (5) Rapid generation of hierarchical nanoarchitectures of CdS via facile microwave assisted hydrothermal/semi-solvothermal route Manish D. Shinde, Amol U. Pawar, **V. Sreeja**, Sunit Rane, Hari S. Potdar and Dinesh P. Amalnerkar. Int. J. Nanotechnol., Vol. 7, Nos. 9/10/11/12, 2010
- (6) Water-dispersible ascorbic-acid-coated magnetite nanoparticles for contrast enhancement in MRI
 - **Sreeja, V**, Jayaprabha, KN, Joy, PA Joy Applied Nanoscience 2015, Volume 5, Issue 4, pp 435–441

Manuscript under preparation

Insilico studies on carpaine compounds from carica papaya leaves as coronavirus main protease inhibitor

TEACHING EXPERIENCE (10 YEARS)

- January 2019 to May 2025: Assistant Professor, Department of Chemistry, TKMM College Nangiarkulangara, Haripad, - 690513 Kerala, India
 - o Taught **Structure and Ligand based drug designing** for PG level (MSc Drug Design and Development)
 - o Taught Nanoscience and Inorganic chemistry for UG level
 - Participated as a member in exam valuation committee of Kerala university for exam valuation of UG and PG Chemistry
 - Participated as a member in question paper setting committee of Maharajas College, Ernakulam to develop question paper and answer key for UG and PG students
 - o Organised seminars for PG chemistry students
- June 2025 to till now: Assistant Professor, Department of Chemistry, SN College Punalur Kerala, India
 - Taught Nanoscience and Inorganic chemistry for UG & PG level
 - Participated as a member in exam valuation committee of Kerala university for exam valuation of UG and PG Chemistry
 - o Organized seminars for PG chemistry students

RESEARCH INTEREST

Magnetic nanoparticles
Material Science,
Nanomaterials,
Catalysis,
Molecular Docking
Computer Aided Drug Design

HANDS ON INSTRUMENTS

Powder XRD technique Vibrating sample magnetometer (10-1000 K, magnetization as a function of temperature, time or field)

AC susceptometer (15-300 K, frequency/field dependence) Microwave Accelerated Reaction System

Gas Chromatograph 5890 Series Gas Chromatograph and Mass Spectrometer

Fourier Transform Infrared
Spectrometer 8201 PC
UV/VIS Spectrometer Perkin
Elmer Lambda 650

High Pressure Reactors
Dynamic Light Scattering
Instrument

Thermogravimetry Bruker AV 200 Spectrometer (Liquid & solid State)

RESEARCH CONNECTIONS

Web of Science ResearcherID

AAN-9339-2020

https://orcid.org/ 0000-0001-5720-6833

https://scholar.google.co.i

coogle/citations?user=qRl_tHQ

AAAAJ&hl=en

R⁶ https://www.researchgate.net/scientific-contributions/V-Sreeja-73389825

LANGUAGES

ENGLISH
MALAYALAM
HINDI
TAMIL

INVITED LECTURES (as Resource Person)

- Participated and presented an oral demonstration entitled CADD using Discovery Studio and Autodock vina in "Workshop on Innovations and entrepreneurship in Industrial Chemistry" held at TKMM college, Nangiyarkulengara, Kerala during February 2019
- Invited talk and demonstration on e-Brochure Designing in "Workshop on e-Brochure Designing" (Online mode) as a part of Platinum Jubilee Celebration organized by SD College Alappuzha, Kerala on 14th August 2021
- Invited talk and demonstration on e-Brochure Designing in "Workshop on e-Brochure Designing & e-Certificate Generation" (Online mode) organized by VTM NSS College, Dhanuvachapuram, Trivandrum, Kerala from 21st January 2022 to 23rd January 2022.
- Invited talk and demonstration on e-Brochure Designing in "How to design a brochure???" organized by Science Club & PG Department of Chemistry, T. K. Madhava Memorial College, Nangiarkulangara, Kerala on 28th January 2022.
- Invited talk and demonstration on An AI Revolution in Powerpoint Presentation in "Workshop on How to create effective and impressive powerpoint presentation: An AI revolution" (Online mode) organized by VTM NSS College, Dhanuvachapuram, Trivandrum, Kerala from 28th May 2023 to 29th May 2023.
- Invited talk and demonstration on Docking Software in "Workshop on Design to Dock, A Handson Journey in Computer Aided Drug Discovery" (Online Mode) organised by SN College Cherthala, Kerala on 01st August 2025.
- Invited talk and demonstration on Autodock Software in "Workshop on Auto dock Software for Molecular Docking" (Online Mode) organised by SN College Cherthala, Kerala on 02nd August 2025.

PROJECT

"Studies on lead optimization of plant derived bioactive compound as coronavirus main protease inhibitor" funded by The Kerala Council for Science Technology & Environment (KSCSTE)

HONOURS & ACHIEVMENTS

- Awarded Guideship (recognition as Research Supervisor) from University of Kerala
- Awarded Academic Excellence Award -2022 from Social Development Federation Agra, UP
- Awarded **Research Fellowship** in April 2007 from CSIR, Govt. of India to pursue doctoral studies in chemical sciences during 2007- 2011.
- Awarded Best Poster Award in Science day celebrations held at National Chemical Laboratory, Pune in February 2008
- Awarded **Travel Fellowship (2009)** from Department of Science and Technology, Govt. of India to present research paper in international conferences/ workshops outside India
- Awarded **CSIR Travel Grant (2009)** from CSIR, Govt. of India to present research paper in international conferences outside India
- Awarded **Travel Fellowship (2010)** from Indian National Science Academy, Govt. of India to present research paper in international conferences outside India
- Won First prize in Chess, Carom, and Rummy completion in Resaerch Scholor Meet held at National Chemical Laboratory, Pune during the year 2007, 2008, & 2009.
- Successfully completed collaborative works with various Universities
- Quiz competition prizes/Quiz master/Editor/Editorial Board of Magazine during School and College

RESEARCH EXPERIENCE

"Studies on lead optimization of plant derived bioactive compound as coronavirus main protease inhibitor" funded by The Kerala Council for Science Technology & Environment (KSCSTE) from 2021 onwards

My research focuses on computer-aided drug discovery (CADD) with an emphasis on lead molecule optimization. The central objective is to explore phytochemicals from medicinal plants and identify promising candidates with the potential to serve as cost-effective therapeutic agents. Specifically, molecular docking studies were employed to analyze noncovalent interactions between bioactive compounds and target proteins, providing insights into structural stability and binding affinity. This approach was applied to investigate potential inhibitors of the SARS-CoV-2 main protease, highlighting phytochemicals as viable leads in antiviral drug discovery.

In parallel, my work explored the anti-diabetic potential of *Psidium guajava* triterpenoids, a class of natural compounds traditionally used in diabetes management. Through molecular docking with key proteins such as the insulin receptor and glucokinase, the study elucidated binding orientations, affinities, and interaction patterns, thereby offering mechanistic insights into their bioactivity. The findings provide a scientific rationale for the traditional use of *Psidium guajava* and establish a foundation for subsequent in vitro and in vivo studies. Collectively, this research underscores the value of in silico strategies in accelerating drug discovery and developing natural product-based therapeutic agents.

My doctoral research, "Synthesis and Studies on Superparamagnetic Iron Oxide Nanoparticles (SPIONs)," focused on the development of nanomaterials with enhanced biomedical potential. I successfully synthesized SPIONs using environmentally benign methods and optimized their structural, magnetic, and surface properties. Comprehensive characterization was carried out employing XRD, FTIR, TEM, VSM, and UV–Vis spectroscopy. The study further explored the functionalization of nanoparticles to improve stability and biocompatibility, followed by evaluations of their magnetic behavior and applicability in targeted drug delivery, hyperthermia, and MRI contrast enhancement. The work contributes to advancing nanotechnology-driven biomedical applications by demonstrating scalable synthesis routes and multifunctional properties of SPIONs.

DIGITAL PORTFOLIO

Author & Editor, Reactions & Reflections (2019–Present)

Chemistry meets curiosity in this digital blog authored by Dr. Sreeja V., Assistant Professor of Chemistry, M.Sc., M.Tech., Ph.D.

- Explores the intersections of science, teaching, and travel, highlighting research innovations, educational strategies, and real-world applications
- Features posts like "Catalyst 2 College" (a digital quiz initiative under NEP 2020) and a Computational Chemistry lecture series, reflecting both academic outreach and state-of-the-art pedagogy.
- Serves as a resource for students, educators, and curious audiences, bridging complex chemical concepts with accessible insights.

Blog URL: https://reactnreflect.blogspot.com/

ADMINISTRATIVE DISTINCTION

- NAAC Criteria 2 Coordinator from 2025 onwards
- Startup Coordinator, Institution Innovation Cell from 2025 onwards
- FYUGP Tutor from 2025 onwards
- HoD in Charge, PG Department of Chemistry, TKMM College Nangiarkulangara 2025
- External Examiner, Board of Examiners for the Fourth Semester MSc Chemistry Practical Examinations 2022 onwards
- Chief Editor, Iridescent Vision (Multidisciplinary multi linguistic annual research journal) 2023-2024
- Website Coordinator 2023-2024
- Chief Superintend of Kerala University Examinations 2023-2024
- External Examiner, Board of Examiners for the Fourth Semester MSc Chemistry specialization in Drug Design and Development Practical Examinations 2022 onwards
- Coordinator, Young Innovators Programme, Kerala Development and Strategic Council (K-DISC)
- National Service Scheme (NSS) Programme Officer (2019-2020)
- Subject Expert for the Selection of Assistant Professor (on contract) of Chemistry at SN College, Chengannur in 2022.
- Convenor, Reading Club, Computer awareness club
- Technical Coordinator, NAAC, Website Committee, Webinar Committee etc.
- Technical Coordinator, Organizing committee, e-Darshan Webinar Series
- Member, NAAC, IQAC, Women Empowerment Cell, Debate Club, Nature Club, Admission Committee, DLMC etc
- Convenor, Chemistry webinar: Online resources for teaching chemistry
- Convenor, Talk on "The Chemical World" by Dr. Sudheesh K V conducted by Dept. of Chemistry as a part of ACS National Chemistry Week
- Technical Coordinator, Intricacies of NAAC assessment 23rd December, 2020
- Convenor, Webinar on Research Ethics 5th February 2021
- Coordinator, Organizing Committee, International day of women and girls in science on 11th February 2021
- Technical Coordinator, Organizing Committee, Relevance of Intellectual Property rights on 20th February, 2021
- Coordinator, Organizing Committee, National Science Day observation (Webinar The Puzzle of Life- Weak interactions that shaped our lives) on 27th February, 2021
- Class Tutor BSc Industrial Chemistry (2020 Admission)
- External Examiner, Board of Examiners for the fourth Semester B.Sc Chemistry and Inductrial Chemistry Degree Practical Examinations 2020
- External Examiner, Board of Examiners for the Sixth Semester B.Sc Chemistry Degree Practical Examinations 2019

ORIENTATION/REFRESHER/SHORT TERM COURSES ATTENDED

- One-month Induction Training programme conducted by PMMMNMTT, School of Education, Central University of Kerala, Kasaragod from 23. 09.2019 to 22.10.2019.
- Four Week Online Course on Learn Moodle Basics conducted by Moodle HQ, Perth Australia during April 2020.
- Online Course on How to write a helpful peer review report conducted by Research Academy, Elsevier, Amsterdam, Netherlands during April 2020.
- Online Course on How to peer review a review article conducted by Research Academy, Elsevier, Amsterdam, Netherlands during April 2020.

- Online Course on Teach 2030 Facilitator Training Course conducted by Commonwealth Education Trust, London, UK during May 2020.
- Online Course on Introduction to LateX conducted by Geo University, Sepapaja 6, 15551 Tallinn, Estonia during April 2020.
- Online Course on Introduction to Remote Sensing conducted by Geo University, Sepapaja 6, 15551 Tallinn, Estonia during April 2020.
- 10-hour course on Technology, innovation and management conducted by the Open University of UK, Milton Kynes during April 2020.
- Five days FDP on G Chem Pain and LibreOffice Suite Writer conducted by DKMM College for Women, Vellore, Tamil Nadu in association with Spoken Tutorial Project, IIT Bombay, MHRD, Govt. of India (under PMMMNMTT), from 04. 05.2020 to 10.05.2020.
- Five days FDP on Innovative Teaching Learning Methodologies conducted by Teaching Learning Centre (under PMMMNMTT), Coimbatore Institute of Technology, from 06. 07.2020 to 10.07.2020.
- Online Short-Term Course on Research Methodology conducted by Shri RLT College of Science, Akola in association with Amaravati University, India from 13. 07.2020 to 16.07.2020.
- One Week online FDP on E-Content and ICT Tools for Innovative and effective Teaching conducted by K.S. Jain Institute of Engineering and Technology (Approved by AICTE) Ghaziabad, Lucknow, India from 15. 07.2020 to 21.07.2020.
- Six days online FDP on Educational Video Creation for Teachers conducted by Rajarshi Chatrapati Sahoo College Kolhapur from 22. 07.2020 to 27.07.2020.
- One Week online FDP on E-Content and ICT Tools for "Implementation of Information and Communication Technology in Teaching, School of Legal Studies, CUSAT I collaboration with The Kerala State Higher Education Council from 18. 07.2020 to 24.07.2020.
- Five days Faculty Development Program on Nanomaterials Characterization Techniques and Results Analysis Methodology: Ideas Innovations & Initiatives conducted by Savitribai Phule Pune University (under PMMMNMTT), Pune, India from 27.07.2020 to 31.07.2020
- Five days Faculty Development Program on Towards a Digital Era of Teaching and Learning conducted by KSMDB College Sasthamkotta in association with UGC HRDC University of Kerala from 12.08.2020 to 18.08.2020
- Five days Faculty Development Programme on "Research and Career" held from 19th to 23rd October 2020 organized by Vimala College (Autonomous) Thrissur, Kerala, supported by DBT-STAR College Scheme, Government of India.
- National Virtual Workshop on Computational Biology and Chemistry tools for Drug Designing, from October 03-06, 2020" Organized by Department of Zoology and Microbiology, Thiagarajar College, Madurai.
- One day workshop on "Artificial Intelligence in Drug Discovery" organized by CSIR-North East Institute of Science and Technology, Jorhat on 01-09-2020.
- One Week National Faculty Development Program on Research Ethics and Characterisation Techniques in Material Science from 09-15 September jointly organized by Guru Angad Dev Teaching Learning Centre, S.G.T.B. Khalsa College, University of Delhi under the Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT) of MHRD and Bishop Moore College, Mavelikara, Affiliated to the University of Kerala & St. John's College, Agra.
- One Week National Faculty Development Program on Multimedia Enriched PowerPoint Presentation from 11-16th August 2020 organized by Guru Angad Dev Teaching Learning Centre SGTB Khalsa College, University of Delhi under the Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT) of MHRD.
- Refresher course in Material science: Recombinant Mimetics, conducted by UGC-HRDC, University
 of Calicut, Kerala from 21/10/2020 to 06/11/2020.

- Three days International Faculty Development Program on Academic Writing for Journal Publication conducted by Department of Management Studies, St Aloysius College, Thrissur, Kerala from 27.08.2021 to 29.08.2021
- Three days Faculty Development Programme on Computer Aided Drug Design organised by PG Department of Chemistry from 09-02-2022 to 11-02-2022.
- One Week National Faculty Development Program on National Education Policy 2020 orientation and sensitisation programme from 18-28th November 2024 organized by UGC MMTC University of Kerala Kariavattom, Thiruvanathapuram, Kerala under the Malaviya Mission Teacher Training Programme (MM-TTP) of UGC.
- Refresher course in ICT Tools and Online Teaching, conducted by UGC- Malaviya Mission Teacher Training Centre, University of Calicut, Kerala from 03/12/2024 to 16/12/2024.

SEMINARS/ WEBINARS ORGANISED/ATTENDED

- Organized and presented a *CATALYST 2 COLLEGE 2025– a digital application quiz* competition bridging plus two and FYUGP on 07.07.2025 for FYUGP chemistry students at PG Department of Chemistry, SN College, Punalur.
- Participated and officiated as programme co-ordinator in the seminar on "A Scientific Odyssey" as a part of Darshan Multidiciplinary Seminar Series 2024" organized by Departments of Chemistry & IQAC, TKMM College Nangiarkulangara, Kerala, INDIA on 24th January 2024.
- Participated and officiated as programme co-ordinator in the webinar on "Role of Chemistry in Crime Investigation" as a part of International Day of Women and Girls in Science" organized by Departments of Chemistry, Zoology & IQAC, TKMM College Nangiarkulangara, Kerala, INDIA on 24th February 2021.
- Participated and officiated as programme co-ordinator in the webinar on "The Puzzle of Life" as a part of Science Day Celebration organized by Departments of Chemistry, TKMM College Nangiarkulangara Kerala, INDIA on 27th February 2021.
- Participated and officiated as Technical Coordinator in the "e-DARSHAN Webinar Lecture Series-2020" on "Horizons of Virtual Teaching" organized by Department of Commerce & IQAC, T.K.M.M. College Nangiarkulangara Kerala, INDIA on 26th May 2020.
- National Webinar on "ICT Enabled Higher Education in India: Challenges & Opportunities" organized by Guru Angad Dev Teaching Learning Centre SGTB Khalsa College, University of Delhi, INDIA under the Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT) of MHRD from 13th April, 2020
- Participated in the Online Workshop on MSc Physical Chemistry Practicals on 20th and 21st May 2021, organised by Post Graduate & Research Department of Chemistry & IQAC, Sanatana Dharma College, Alappuzha Kerala, INDIA.
- Participated in the **Online Workshop on MSc Organic Chemistry Practicals** on 28th May 2021, organised by Post Graduate & Research Department of Chemistry & IQAC, Sanatana Dharma College, Alappuzha Kerala, INDIA.
- Participated in Inter-National seminar on 'Outcome based Education: How to write measurable Learning Objectives' organized by Dept of Mathematics in association with IQAC & NAAC, TKMM College Nnagiarkulangara Kerala, INDIA on 15th February 2021.
- Organized and presented a *DIGICHEM- 2020 a mobile application quiz* on 25.01.2020 for UG chemistry students at TKMM College Nangiarkulangara, Haripad.
- Participated in one day National Workshop on MOOC, Swayam and e-content development on 29th February 2020, organized by Department of Commerce in association with Educational Multimedia Research Centre (EMMRC) Calicut, Kerala, INDIA.

- Participated and presented poster in International Seminar on "Advances in Photo Responsive Materials" (APRM-2017) held at Maharaja's College, Ernakulam, India on 14th and 15th November 2017.
- Participated and presented a paper entitled "Solid State NMR Studies on Particle Size Dependent Co-ordination Behavior of Al in Spinel Aluminate Nanoparticles" in ICONN 2010 held at Sydney Convention and Exhibition Centre, Sydney, AUSTRALIA during February 2010
- Participated and presented a paper entitled " Superparamagnetic properties of dextran coated Fe₃O₄ nanoparticles" in 11th CRSI National Symposium in Chemistry conducted by NCL-Research Foundation on February 2009 at National Chemical Laboratory, India.
- Participated and presented a paper entitled "Magnetic and Mossbauer spectroscopic studies of NiZn ferrite nanocrystals synthesized by combustion method" in the special symposium on "29th International conference on the applications of the Mossbauer effect" (ICAME 2007) held at IIT Kanpur, INDIA during October 2007.
- Participated and presented a paper entitled "Magnetic Properties of ascorbic acid functionalized Fe₃O₄ nanoparticles" in National Conference on Current Trends in Material Science (CTMS-07) organized by the Department of Physics, Christian College, Chengannur, Kreala INDIA
- .Participated and presented a paper entitled "sSynthesis and Magnetic Properties of gamma-Fe₂O₃ nanoparticles" in International Conference on Nanomaterials for Electronics ICNME-2006 held from Novemeber 27-29 2006 at Centre for Materials and Electronics Technology Pune, INDIA

OTHER PARTICULARS

29th May 1981 Date of Birth

Nationality Indian Passport No F6792917

Driving License No: MH12 20090097089

PRO SKILLS

TECHNOLOGY

INNOVATION

LEADERSHIP

TEAM WORK

REFERENCE

Dr. P. A. Joy, (Research Supervisor) Senior Scientist (Retired) Physical Chemistry Division National Chemical Laboratory

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Dr. P. P. Sharmila

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