

Curriculum Vitae

Dr. CHINTHU SUKUMAR

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Academic Qualifications

Qualification	College	University	Year
Ph. D Chemistry	Kariavattom Campus, Thiruvananthapuram, Kerala	University of Kerala	2022
M.Sc Chemistry	Mar Ivanios College, Nalanchira, Thiruvananthapuram, Kerala	University of Kerala	2011
B.Sc Chemistry	Mar Ivanios College, Nalanchira, Thiruvananthapuram, Kerala	University of Kerala	2009
Certificate in Desk Top Publishing (CDTP)	Centre for Development of Imaging Technology (C-Dit)		2010

Awards & Fellowships

- Awarded **direct CSIR–Senior Research Fellowship** in 2018.
- Qualified Graduate Aptitude Test in Engineering (**GATE**) in 2014.

Current Roles and Responsibilities

- **Assistant Professor**, Department of Chemistry, **Sree Narayana College, Punalur** (2026- till date).
- **Academic Counsellor**, **Indira Gandhi National Open University Study Centre**, Mar Ivanios College, Thiruvananthapuram, providing academic guidance and support to distance learning students (2024- till date).
- **Answer Script Evaluator**, **Indira Gandhi National Open University Regional Centre, Bhubaneswar** (2026– till date)

Professional Experience

- Handled the role of a **Guest Lecturer** in **Sree Narayana College for Women**, Kollam for 9 months (July 2025- March 2026)
- Handled the role of a **Guest Lecturer** in **All Saints' College**, Trivandrum for 8 months (Aug 2024-March 2025)
- Handled the role of a **Guest Lecturer** in **Sree Narayana College** for Women, Kollam for 2 months (June 2024- August 2024)
- Handled the role of a **Guest Lecturer** in **All Saints' College**, Trivandrum for 8 months (Aug 2023-March 2024)
- Handled the role of a **Guest Lecturer** in **CMS College**, Kottayam for 7 months (Aug 2022- March 2023)
- Handled the role of a **Guest Lecturer** in **BCM College**, Kottayam for 6 months (Oct 2021- March 2022)

Additional Experience

- Two year experience as **Project Assistant** in **CSIR-NIIST** (Kerala, India) under the guidance of Dr. Manoj Raama Varma, Senior Principal Scientist (September 2012 - September 2014).
- Carried out M.Sc Project titled “**Electrochemical Phase Formation of Mixed Monolayer Protected Gold Atomic Clusters**”, in **CSIR-NIIST** (Kerala, India) under the guidance of Dr. T. Prasada Rao, Chief Scientist (April-June 2011).
- Research scholar in Dept. of Chemistry, University of Kerala, Kariavattom Campus, Kerala, India under the guidance of Dr. Jayasree. E. G., Former Assistant Professor & Head, Kariavattom Campus, University of Kerala (January 2015 - November 2021). The work is related to the theoretical studies on the disulfide cleavage and reducing properties in cystine and thia cages.

Research Highlights

- Theoretical studies on the influence of non-covalent interactions on the reducing properties of cystines and selenocystines.
- Theoretical studies on the cleavage of dichalcogenide bridges in cystines and selenocystines: Effect of hydrogen bonding.
- Structural stability and reducing properties of polyhedral thiaboranes and dithiacarbaboranes.
- Reducing properties of bicyclic dithia hydrocarbons and hetero-bicyclic dithiopyrrolone compounds with rotation restricted planar disulfide linkage.
- Reducing properties and gauge of transannular interactions involved in the strained dithia cyclophanes.
- Integrating redox-response in crown ethers by disulfide incorporation.
- Complexation of thiacyclopentanes with alkali metal cations- a host-guest interaction.

Experience at CSIR-NIIST (Experimental)

- Synthesis of ceramic materials using various routes such as solid state, sol gel and citrate gel methods.
- Synthesis of oxide materials and characterisation using XRD, SEM, HRTEM, PPMS etc.
- Structural characterization of materials using XRD, Rietveld Refinement and Electron Microscopic Techniques.
- Magnetic characterization of materials using PPMS (Physical Property Measurement System) and electrical characterization of materials.
- Electrochemical synthesis of gold nano clusters and their characterisation using SEM, HRTEM, XPS, MALDI-TOF, DLS, Fluorescence and UV-Visible analysis.

Research Connections

- **orcid ID**

0000-0003-4108-5760

Profile URL: <https://orcid.org/0000-0003-4108-5760>

- **Vidwan ID**

446694

Profile URL: <https://vidwan.inflibnet.ac.in/profile/446694>

- **Google Scholar Account**

<https://scholar.google.com/citations?user=wrZIOB0AAAAJ&hl=en>

Research Publications

1. Elambalassery G. Jayasree and **Chinthu Sukumar**. “A DFT study on the cleavage of dichalcogenide bridges in cystines and selenocystines: Effect of hydrogen bonding.” *Inorganica Chimica Acta*, 512 (2020) 119897.
2. Elambalassery G. Jayasree, **Chinthu Sukumar** and Suseeladevi Asha. “A theoretical insight into the reducing properties of bicyclic dithia hydrocarbons and hetero-bicyclic dithiopyrrolone compounds with rotation-restricted planar disulfide linkage, *Structural Chemistry* (2020).
3. Elambalassery G. Jayasree and **Chinthu Sukumar**. “Integrating redox-response in crown ethers by disulfide incorporation: A computational approach.” *Structural Chemistry* (2021) <https://doi.org/10.1007/s11224-021-01761-7>.
4. Jayasree, Elambalassery G., and **Chinthu Sukumar**. “Strained Thiacyclophanes: Reducing Properties and Gauge of Transannular Interactions” *Journal of Molecular Graphics and Modelling*(2023), 125, 108607.
5. Sindhu R. Nambiar, Padamadathil K. Aneesh, **Chinthu Sukumar** & Talasila P. Rao, Mixed monolayer

- protected gold atom–oxide cluster synthesis and characterization, *Nanoscale* 4 (2012) 4130–4137.
- Jayasree, Elambalassery G., and **Chinthu Sukumar**. “Influence of Non-covalent Interactions on the Reducing Properties of Cystines and Selenocystines - A Computational Study” (*Manuscript under Preparation*).
 - Jayasree, Elambalassery G., and **Chinthu Sukumar**. “A Theoretical Insight into the Structural Stability and Reducing Properties of Polyhedral Thiaboranes and Dithia Carbaboranes” (*Manuscript under Preparation*).

Book Chapter

Shinu Peter, Sumayya Abdul Rahim, **Chinthu Sukumar**, Arya Sindhu and Rogimon P. Thomas. 2026. Surface Chemistry and Catalytic Properties of Nanoparticles in Pollution Control. In: *The Fragile Web: Climate Change, Biodiversity, Ecosystem Health and Sustainability*. B. R. Brilliant & M. V. Vincy (Eds.) Lulu Press Inc. 700 Park Offices Dr. Durham, North Carolina 27709, USA. Pp. 279–298. ISBN: 978-1-105-48642-5.

Conference Papers

- Chinthu Sukumar**, Jayasree E.G., “A Theoretical Insight into the Reducing Properties of Dithia Bicyclic Hydrocarbons” in International Conference on Energy and Environment (iCEE-2k19) organized by TKM College of Arts & Science, Kollam, Dec 12-14, 2019 (**Oral Presentation**).
- Chinthu Sukumar**, Jayasree E.G., “A DFT Study on Reducing Properties of Disulfide Incorporated Bicyclic Hydrocarbons” in International Seminar on “Recent Research and Developments in Material Science (RRDMS-2019)”, Dept. of Chemistry, All Saints’ College, Thiruvananthapuram on Nov 15, 2019 (**Oral Presentation**).
- Chinthu Sukumar**, Jayasree E.G., “A Theoretical Insight into the Reducing Properties of Disulfide Incorporated Cyclophanes” in International Conference on Materials for the Millennium (MATCON 2019), Cochin University of Science and Technology (CUSAT) during March 14 -16, 2019 (**Poster Presentation**).
- Chinthu Sukumar**, Jayasree E.G., “A Theoretical Insight into the Reducing Properties of Disulfide Incorporated Cyclophanes” in International Conference on Advanced Chemical and Structural Biology (ICACSB 2019), PRIST deemed to be University, Thanjavur during February 19-21, 2019 (**Poster Presentation**).
- E.G. Jayasree, **Chinthu Sukumar**, “A Computational Study on the Reducing Properties and Antioxidant Behaviour of Lipoic Acid Derivatives”, in International Symposium on Advanced Functional Materials (ISAFM 2018), Dept. of Chemistry, Mar Ivanios College, Trivandrum on Oct12, 2018 (**Poster Presentation**).
- E.G. Jayasree, **Chinthu Sukumar**, “A Computational Study on the Reducing Properties of Lipoic Acid Derivatives” in National Seminar on “Neoteric Advances in Chemical Sciences, NACS 2018”, Dept. of Chemistry, University of Kerala, Kariavattom Campus, during Oct 11-12, 2018 (**Poster Presentation**).
- E.G. Jayasree, **Chinthu Sukumar**, “Theoretical Study of Host-guest Complexes: Alkali Metal Cations with Disulfide Incorporated Thiocrown Ethers”, in National seminar on “Frontline Approaches in Material Science and Computational Chemistry (MATCOM-2018)”, Sree Narayana College for Women, Kollam during March 14-16, 2018 (**Oral Presentation**).
- E.G. Jayasree, **Chinthu Sukumar**, “Conformational Analysis and the Reducing Properties of Disulfide Incorporated Crown Ethers: A Computational Study” in 30th Kerala Science Congress, Govt. Brennen College, Thalassery during Jan 28-30, 2018 (**Poster Presentation**).
- Chinthu Sukumar**, presented a flash talk titled “Mpemba Effect” on “Present your science in 60 sec” seminar, Dept. of Computational Biology and Bioinformatics, University of Kerala, Thiruvananthapuram on Jan 16, 2017.
- E.G. Jayasree, **Chinthu Sukumar**, “Conformational analysis and the reducing properties of disulfide incorporated crown ethers: A computational study” in National Seminar on Advanced Materials (NSAM-2017), Department of Chemistry, University of Kerala, Kariavattom Campus on Oct 4, 2017 (**Poster Presentation**).
- E.G. Jayasree, **Chinthu Sukumar**, “Theoretical Studies on the Reducing Properties of *Closo*-Monothiaboranes” in National Seminar and Training on “Machine Learning Approaches a New Trend in Quantum Mechanics”, Sree Narayana College, Chengannur, Alappuzha during Aug 4-6, 2015 (**Oral Presentation**).
- E.G. Jayasree, **Chinthu Sukumar**, “Theoretical Studies on the Reducing Properties of *Closo*-

- Monothiaboranes” in 17th CRSI National symposium in Chemistry, CSIR- NCL, Pune during Feb 6-8, 2015 (**Poster Presentation**).
- 13.E.G. Jayasree, **Chinthu Sukumar**, “Theoretical Studies on the Reducing Properties of *Closo*-Monothiaboranes”, in National Conference on “Recent Trends in Quantum Chemistry (QUANTUM 2014)”, Nesamony Memorial Christian College, Marthandam during Dec 12-13, 2014 (**Oral Presentation**).

Attended Workshops

1. **Chinthu Sukumar**, Four-day National Workshop on Magnetic Resonance Spectroscopy and Imaging (NMRSI 2019), Dept. of Chemistry and SICCC, University of Kerala during Feb 25-28, 2019.
2. **Chinthu Sukumar**, Two-day National Workshop on various aspects of computer aided drug discovery, Athmic Biotech Solutions Pvt Ltd, Kalliyoore, Thiruvananthapuram during May 26-27, 2018.
3. **Chinthu Sukumar**, Two-day Lecture Workshop and Demo on NMR, Sophisticated Instrumentation and Computation Centre (SICCC) and Dept. of Chemistry, University of Kerala during July 11-12, 2017.
4. **Chinthu Sukumar**, Three-day workshop on “Computer Aided Drug Design using Schrodinger”, Dept. of Computational Biology and Bioinformatics, University of Kerala during Oct 6-8, 2015.

Attended Webinars

1. Webinar on “**Introduction to Density Functional Theory**” in **Raman Optronics Webinar Series 2020: Virtual International Conference** held on 1st October 2020, Department of Optoelectronics, University of Kerala, Trivandrum.
2. Webinar on “**Exploring New Facets of Organic Synthesis: From Metal to Metal-Free Catalysis**” held on 5th October 2020, Post graduate Department of Chemistry, Mercy College, Palakkad.
3. Webinar on “**Introduction to Time Series Analysis and its Applications**” in **Raman Optronics Webinar Series 2020: Virtual International Conference** held on 7th October 2020, Department of Optoelectronics, University of Kerala, Trivandrum.
4. Webinar on “**Reactive Functional Graft Copolymers For Biomedical Applications**” in **Raman Optronics Webinar Series 2020: Virtual International Conference** held on 11th November 2020, Department of Optoelectronics, University of Kerala, Trivandrum.
5. Webinar on “**Challenging Problems in Chemistry Using Computational Chemistry and Machine Learning**” held on 14th June 2021, Department of Chemistry, The American College, Madurai.
6. Webinar on “**Molecular dynamic Simulations: A Versatile Tool in Drug Delivery**” held on 7th May 2023, Scinicorn Labs, Marthandam, Tamilnadu.

Orientation Programme

Completed successfully the **12 days (19th Jan 2026 – 30th Jan 2026) NEP 2020 Orientation and Sensitization Programme** under Malaviya Mission Teacher Training Programme (MM-TTP) of University Grants Commission (UGC) organized by UGC- MMTTC, University of Kerala, Kariavattom, Thiruvananthapuram.

Key Skills

- Scientific and numerical skills
- Excellent analytical skills
- Logical and independent mind
- Meticulous attention to detail and accuracy
- Written and oral communication skills
- Teamwork and interpersonal skills
- Patience and determination
- Flexibility

Computer Skill:

Windows, Microsoft Word, Power Point & Microsoft Excel, ChemDraw 11.0, Origin.8, Adobe Photoshop.
Computational Softwares: GAUSSIAN 09, NWCHEM, TINKER 4.2, MULTIWFN 3.1.
Programming language: Python

Personal Details

Date of Birth	: 28-07-1988
Nationality	: Indian
Gender	: Female
Marital status	: Married
Language known	: English, Hindi, Malayalam

References: Letters of recommendation available on request

1. Dr. Jayasree. E. G.
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