

March , 2023 / Issue 2

CHEMLETTERS

Newsletter of the Department of Chemistry, Mar Ivanios College



The Department of Chemistry was established in 1957. The Chemistry Post Graduate course was started in 1964 and was upgraded as a Research Centre in 1976. Currently the Department offers Under-Graduate courses, Post- Graduate courses and Research programmes. Chemistry is offered as a Complementary paper to the Under Graduate students of Physics, Botany and Zoology by the Department. The Department is a DST-FIST supported department. The Department has produced several nationally and internationally renowned scientists and professors who are holding positions of high esteem. The Research Department is engaged in active research and conducts various research activities in the fields of biomaterials, electrochemistry, phytochemistry, pharmaceutical chemistry, synthetic organic chemistry and materials science. Currently, the department has 10 Faculty Members, out of whom 6 are research guides. The Department has conducted several major and minor projects from various government agencies like the UGC, DST and CSIR. The Department provides consultancy services to IGNOU and undertakes projects from industries.

From the Editor's Desk

This Newsletter named 'Chemletters' portrays a glimpse of our activities during this academic year 2022-23. The academic year was providential and after the pandemic, we are all back to the main stream and the Chemistry Department Association of Mar Ivanios College could arrange perfectly a variety of programs celebrating academics and different extracurricular as well as festival activities which could definitely enrich our campus life. We started the year with the Environment Day celebration on June 5th 2022 by planting a tree near the department and we are concluding this year's programme with a grand meeting as a convocation to our first batch of Diploma in Pharmaceutical Chemistry on 14th of March 2023. The same day was also chosen to release this Newsletter. During this year, we had two international seminars, one on Advanced Functional Materials and the other on Plant Chemistry. We also arranged a distinguished lecture series collaborating with the Chemical Research Society of India (CRSI), where many distinguished scientists including the directors of IISER TVM and RGCN among the speakers. Our Chemistry family celebrated Onam, Christmas and Ethnic day and we also successfully conducted an exhibition named 'CHEMEX' on the national science day, where students of seven and eighth standards from nearby schools came to visit the exhibition. I thank our HOD, Dr. Suju C Joseph and all my dear colleagues for their helping hands in all the programmes. I congratulate my dear second year UG students to take up all the responsibilities and leadership to make this year's programmes a grand success. I also thank Akshay Jayan and Jeeja P Jiji, the student representatives of the association and Athul Pradeep for the wonderfully designing the Chem Letters.



- **Dr. Rabin Rajan J. Methikkalam**

Message from HoD



It gives me immense pleasure in presenting the Chemletters 2023, which is an authentic record of the various activities and achievements of the Department of Chemistry, Mar Ivanios College in the academic year 2022-23. The motto of our Department is to provide quality, skill-based education. The broad impact of Chemistry on Society can be found in its great contributions towards improving health, environmental sustainability, identifying alternate renewable sources of energy and in its greater contributions to a competitive industrial growth of our Nation. When such an important subject is being dealt, the Department has the great responsibility for training young minds to bring out the best possible in them to fulfil the needs of our Society. This academic year we were able to switch to direct class mode after two years of COVID-19 pandemic. Therefore, teaching and learning processes were carried out in a systematic manner throughout this academic year. The two international seminars and the distinguished lecture series organized by the Department of Chemistry added to the academic brilliance of the students. We were also able to complete the first batch of the Diploma Course in Pharmaceutical Chemistry (DPCh) which was the first of its kind offered by our College. CHEMEX 2023, the Chemistry exhibition organized by the Department of Chemistry on 28th February, the National Science Day had turned to be successful with the participation of a good number of students from the nearby Schools. Research Awards for the meritorious research scholars were presented based on their oral presentations presided over by an external expert. Several literary programmes were organized by the Chemistry Association and the winners were rewarded, thereby naturing the inborn talents of the students. All auspicious days were celebrated to create an awareness of that particular day enabling students to grow up as responsible citizens of our Nation. Several extension/out reach programmes were also organized by the Chemistry Association. Let me whole heartedly thank His Beatitude Cardinal Baselios Cleemis Catholicos, Patron & Manager of our College for the leadership, blessings and Fatherly affection shown to us. Also gratefully thank Most Rev. Dr. Mathews Mar Polycarpus Episcopo, former Principal and Auxiliary Bishop, Major Archdiocese of Trivandrum for the motivation and encouragement.

We thank the Principal Prof. (Dr.) Jijimon K. Thomas and the Bursar Rev. Fr. Soji Mathew Muruppel for their support, guidance, cooperation, and encouragement. Also thank the Vice-Principal Dr. Shirley Stewart the Dean of Studies Rev. Dr. Gigi Thomas for their support, guidance, and encouragement. I, congratulate the esteem team of faculty members and the students of the Department of Chemistry for their brilliant and original efforts in making this academic year a grand success amidst various challenges and hurdles. Specially applaud the hard work and determination of Dr. Rabin Rajan J. Methikkalam, faculty coordinator, Chemistry Association for taking up the great initiative to publish this newsletter. Efforts of Jeeja P. Jiji and Akshay Jayan, the Secretaries of the Chemistry Association and Athul Pradeep for the layout of this newsletter are very much appreciated. I wish all the students and my faculty colleagues a great academic career.

- Dr. Suju C Joseph

Freshers Day Celebration



International Symposium

An "International Symposium on Advanced Functional Materials" is being organized by the Department of Chemistry, Mar Ivanios College (Autonomous), Trivandrum in association with the Chemical Research Society of India (CRSI), Kerala Chapter on Wednesday, 27th July 2022. Venue: Conference Hall, B.HUB, Cardinal Cleemis Centre.



Department of Chemistry, Mar Ivanios College & Chemical Research Society of India (Trivandrum/Cochin/Gulf Region Chapter) organize

INTERNATIONAL SYMPOSIUM ON ADVANCED FUNCTIONAL MATERIALS (ISAFM - 2022)

RESOURCE PERSONS

Prof. George Thomas
IISER Trivandrum

Dr. Shigeyuki Yagi
Osaka Metropolitan University

Dr. Biju Vasudevan Pillai
RIES, Hokkaido University

Dr. Sarit S. Agasti
JNCASR

Dr. Anees Palapuravan
University of Chicago

Talks:

- Plasmonic platforms for surface enhanced spectroscopy: from fundamentals to translational research
- Imaging life with transient molecular interactions
- Fluorescent indicators to probe ion channel activities in subcellular organelles
- Halide perovskite nanocrystal films for charge carrier transport and trapping
- Development of phosphorescent organometallic complexes as emitting materials in OLED

27-07-2022 WEDNESDAY

For details contact:
Convener, ISAFM 2022
+91 82898 29785

Distinguished Lecture Series in Chemistry



Distinguished Lecture Series in Chemistry-1 jointly organized by the Department of Chemistry, Mar Ivanios College (Autonomous) and CRSI (Kerala Chapter) was held at Mar Gregorios Hall, Mar Ivanios College on 19th November, 2022. The Lecture Series was inaugurated by Prof. Suresh Das, Patron, CRSI Kerala Chapter & Emeritus Professor, IISER Thiruvananthapuram. Dr. Syed Ibrahim, Honorary Consul of the Fed. Republic of Germany to Kerala was the Guest of honour.

The distinguished speakers for the Technical Session include :

Prof. J.N. Moorthy

Director, IISER, Thiruvananthapuram

Prof. Chandrabhas Narayana

Director, RGCB, Thiruvananthapuram

Prof. R.S. Jayasree

Scientist, SCTIMST, Thiruvananthapuram.

International Seminar on Plant Chemistry, Gene prospecting and Clinical Biology



International Seminar on Plant Chemistry, Gene prospecting and Clinical Biology jointly organized by the Department of Chemistry, Mar Ivanios College and Kerala Academy of Sciences (KAS) on 10th and 11th November 2022. The International Seminar which was held at Mar Ivanios College was inaugurated by Dr. Rekha A. Nair, Director, RCC Thiruvananthapuram. Principal Prof. (Dr.) Jijimon K. Thomas; Prof. (Dr.) G.M Nair, President, KAS; Vice-Principal Dr. Shirley Stewart; Dr. K.B. Ramesh Kumar, General Secretary KAS; Conveners Dr. Sonia Mol Joseph & Dr. Sony George addressed during this session. The key note address was delivered by Prof. Kholis Abdurachim Audah, Swiss German University, Indonesia. Prof. Jayantha Wijayabhandara, University of Jayewardhenepura, Srilanka delivered the Prof. A. Kisham Endowment Lecture. Valedictory session was graced by the presence of Dr. Sabulal, Director, TBGRI, Thiruvananthapuram. Had 4 invited lectures and 80 oral presentations.

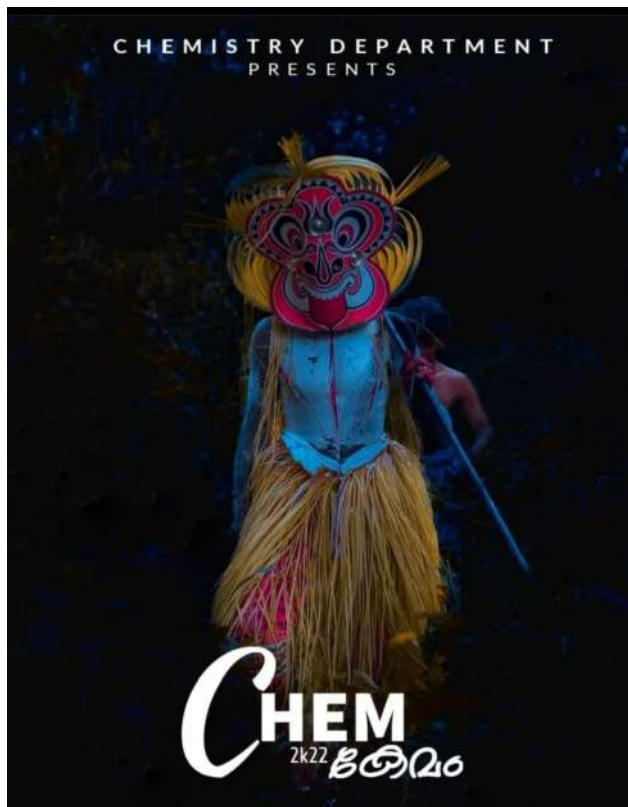
Inauguration of Chemistry Association- 'IGNIRE'

Chemistry Association at Mar Ivanios College is an Association of the students by the students and for the students. Inaugural function was dignified by the esteemed presence of the Principal Prof. Dr. Jijimon K. Thomas (for the Inauguration and an enthusiastic Scientific message), Prof. Dr. Suresh Das (Chief Guest, for the inspirational Key note address on Chemistry in Natural processes) and the Vice-Principal Dr. Shirley Stewart (for the great motivational address enlightening students to do their best as to get a Noble prize in future). Overall an excellent day which started with a Cultural event with a mesmerising display of talents by the students.



MAR IVANIOS COLLEGE (AUTONOMOUS INSTITUTE)
DEPARTMENT OF CHEMISTRY
PRESENTS
- Association Inauguration '22 -
IGNIRE
"FIND YOUR FIRE"
CHIEF GUEST
Prof. (Dr.) SURESH DAS, FIRA, FASc
SCIENCE TALK & CULTURAL EVENTS
WEDNESDAY
21
DECEMBER
SILVER JUBILEE HALL
10:00 AM - 03:30 PM

Onam Celebration



National Science Day celebration



National Science Day celebrations at Mar Ivanios College Thiruvananthapuram. Honoured by the presence of the Chief Secretary, Dr. V. P. Joy IAS; CSIR-NIIST Director, Dr. Anandharamakrishnan; KAS President, distinguished Prof. G.M. Nair (Director, CLIF), Principal Prof. Jijimon K. Thomas; Vice-Principal Dr. Shirley Stewart, Prof. Oommen V. Oommen (former Chairman, Kerala Biotechnology Commission), Prof. Joshy Joseph (NIIST), KAS General Secretary Dr. K. B. Rameshkumar (JNTBGRI, Palode) and other eminent Scientists/Professors.

Chemistry Exhibition- 'CHEMEX 2023'

The Department of Chemistry, Mar Ivanios College (Autonomous) organized the Chemistry Exhibition "CHEMEX 2023" as part of the National Science Day celebrations on 28th February 2023. The exhibition was inaugurated by the Principal, Prof. Dr. Jijimon K. Thomas; Dr. James T. Joseph (Guest of honour & Principal of Sarvodaya Vidyalaya), Bursar Rev. Fr. Soji Mathew Muruppel and Dr. Shirley Stewart, Vice-Principal, Mar Ivanios College. This grand exhibition was attended by the students of various Schools. The Teachers and students of the College were also inspired by the exhibits. The judges, Dr. Dhanya (Assistant Professor of Chemistry, MG College) and Dr. John Jacob (Assistant Professor of Physics, Mar Ivanios College) for the evaluation of the exhibition.

Overall winners: II BSc Chemistry



MAR IVANIOS COLLEGE
DEPARTMENT OF CHEMISTRY
PRESENTS

CHEMEX

CHEMISTRY EXHIBITION ON THE OCCASION OF
NATIONAL SCIENCE DAY

28TH FEBRUARY, 2023

Dr. Rabin Rajan J. Methikkalam (COORDINATOR) - 9940576909
Dr. Suju C. Joseph (HOD) - 9633078868

The poster features a dark purple background with various chemistry-related icons in pink and white, including test tubes, a magnifying glass, molecular structures, and a flask. The text is centered and uses a mix of bold, sans-serif fonts.

Christmas Celebration & Snehaveedu visit



Christmas celebrations at Department of Chemistry, Mar Ivanios College was held on 22nd dec, 2022 followed by visit to Mar Gregorios Snehaveedu, the Divine home of destitutes at Nalanchira. The Faculty members and the students celebrated Christmas there and provided a Medical bed with mattress as the Christmas gift. Rev. Fr. George Joshua, Director, Snehaveedu has delivered the Christmas message.



Student Achievements



→ **Akhil Jose** of S6 BSc Chemistry won the title Ivano artist



→ **Akshay Jayan** of S4 BSc Chemistry secured 1st place Trivandrum District meet Javelin throw



→ **Amrutha G.S** of S4 BSc Chemistry Secured 1st place in Kerala University chess tournament



→ **Athul Pradeep** of S4 BSc Chemistry participated in the All India Thal Sainik Camp, Delhi



→ **Honey John** of S6 BSc Chemistry Secured 3rd place in Womens Long Jump, University Inter college athletics meet 2022-23

Jino Stephen of S4 BSc Chemistry elected as UUC in College Union

Karunya Vijay Pillai of S4 Secured 3rd place in Kavitha Rachana, interdepartmental competition

Nandana Suresh of S4 BSc Chemistry participated in the All India Vayu Sainik Camp, Jodhpur

Surya S of S4 BSc Chemistry Secured 2nd place Trivandrum District Arm Wrestling Championship



Faculty Achievements



Dr. Suju C. Joseph

- Editor, Bulletin of the Chemical Research Society of India (CRSI), Kerala Chapter.
- Resource person, Indo-US Shastra Conference organized by the MG University, Kottayam.
- Resource person, DST sponsored workshop on Spectroscopy organized by Christian College, Chenganoor.
- Resource person, National Science Day Celebrations at KSMD College, Sasthamcotta.



Dr. Suja Mathai

- Book chapter, Bioactive Nano Titania Coatings on Metal Substrates for Orthopedic and Dental Applications Current Topics on Chemistry and Biochemistry Vol. 5, 24 September 2022, Page 1-25 eBook ISBN: 978-93-5547-856-6.
- Book chapter, Polymeric Biomaterials and Current Trends for Advanced Applications, Progress in Polymer Research for Biomedical, Energy and Specialty Applications, CRC Press, Taylor and Francis Group, eBook ISBN:9781003200710.
- Presented research article entitled "Development and Characterization of Conductive Bioactive Polymeric Nanocomposite Coatings for Orthopedic Implants" at the International Conference on Polymeric Material in Medicine 2022.

- Presented research article entitled “Polymeric Nanocomposite Coating for Enhanced Adhesion and Bioactivity on Titanium Implants” at the International Conference on Polymeric Material in Medicine 2022.



Dr. R. Selwin Joseyphus

- Honoured with the Distinguished Alumnus Award 2022 from St. Joseph's College (Autonomous), Tiruchirappalli, Tamil Nadu, for his outstanding contribution to the scientific community and lifetime achievement in academic and research development. His efforts have raised the profile of their alma mater.



Dr. Sonia Mol Joseph

- Resource person , ‘New Conceptual Approaches in Research Methodology’, National Science Day Celebrations 2023, All Saint’s College, Thiruvananthapuram, Kerala, February 24, 2023.
- Resource person , ‘Moodle Workshop for Teachers’ organized by IQAC, Mar Ivanios College (Autonomous), Thiruvananthapuram, Kerala, November 21-25, 2022.
- Resource person , ‘Encapsulation of Plant Essential Oils: Scope for Developing Natural Bio-Preservatives’, Science Club Inauguration, All Saint’s College, Thiruvananthapuram, Kerala, March 25, 2022.
- Amala Dev A.R & Sonia Mol Joseph. 2022. Chemical profiling of volatile compounds of two Citrus species and screening of its efficacy as an antimicrobial agent. Proceedings of International Seminar on Plant chemistry, Gene Prospecting and Clinical Biology 18, ISBN: 978-81-959794-0-0.



Dr. Rabin Rajan J Methikkalam

- Recognized Research guide of University of Kerala, Tvpm
- Resource person , Astrochemistry: Chemical Evolution in Space, Invited talk for International Conference on Innovative Strategies in Astro and Synthetic Organic Chemistry ICISASOC-2023", Holy Cross College (Autonomous), Nagercoil, Tamil Nadu, February 27, 2023.
- Relevance of Surface Reactions in Interstellar Chemistry, Invited talk for National Conference on Recent Trends in Material Science (RTMS-2K23), Andra Loyola College, Vijayawada, Andra Pradesh, February 13, 2023.
- Chemical Kinetics: Speed Governing the Reaction, Online Guest Lecture for Degree Students, Department of Chemistry, Nirmala College For Women, Coimbatore, April 13, 2022.

Research Highlights

DST-TARE Fellowship

Dr. Sonia Mol Joseph, Assistant Professor of Chemistry, has received the DST-TARE Fellowship (Teachers Associateship for Research Excellence) of 2022-2025 awarded by the Science and Engineering Research Board, Department of Science and Technology, Government of India. This fellowship grant (20 lakhs) will be utilised to carry out her Research work in collaboration with the IISER (Indian Institute of Science Education and Research), Thiruvananthapuram for a period of 3 years.



Publications:

1. **Suja Mathai**, and P. S. Shaji. "Polymer-Based Nanocomposite Coating Methods: A Review." *Journal of Scientific Research* 14, no. 3 (2022): 973-1002.
2. **R. Selwin Joseyphus**, R. Reshma, Dasan Arish, and Viswanathan Elumalai. "Antimicrobial, photocatalytic action and molecular docking studies of imidazole-based Schiff base complexes." *Results in Chemistry* 4 (2022): 100583.
3. **R. Selwin Joseyphus**, and D. Arish. "Heterocyclic ligated Co (II), Ni (II), Cu (II) and Zn (II) complexes for efficient photocatalytic and biological applications." (2022).
4. Reshma, R., **R. Selwin Joseyphus**, D. Arish, R. Jaya Reshmi Jaya, and J. Johnson. "Tridentate imidazole-based Schiff base metal complexes: Molecular docking, structural and biological studies." *Journal of Biomolecular Structure and Dynamics* 40, no. 18 (2022): 8602-8614.
5. Dev, AR Amala, and **Sonia Mol Joseph**. "Anticancer potential of Annona genus: A detailed review." *Journal of the Indian Chemical Society* 98, no. 12 (2021): 100231.
6. Krishnan, A. Anantha, Aneesh Kumar, Revathy B. Nair, R. Sivaraj, A. Lamiya, P. K. Jishnu, **Sajith Kurian**, Thomas Mathew, M. Ameen Sha, and P. S. Arun. "Multifunctional Na-enriched Ni-Fe/Ni-P plates for highly efficient photo-and electrocatalytic water splitting reactions." *New Journal of Chemistry* 46, no. 46 (2022): 22256-22267.
7. **Binimol Mary Mathew**, S. Suma, M. R. Sudarsanakumar, M. R. Prathapachandra Kurup, and I. Hubert Joe. "Solid-state synthesis, characterisation, crystal structure and computational studies of a novel proton transfer compound: 8-Hydroxyquinoliniumphthalate- an optical limiting crystal." *Indian Journal of Physics* 96, no. 7 (2022): 2161-2174.
8. Vishwakarma, Gaurav, Bijesh K. Malla, **Rabin Rajan J. Methikkalam**, and Thalappil Pradeep. "Rapid crystallization of amorphous solid water by porosity induction." *Physical Chemistry Chemical Physics* 24, no. 42 (2022): 26200-26210.
9. Nair, Rothish R., **Jiffin Sam**, E. V. Sooraj, and K. P. Prathish. "Smart in-line cleanup cartridge modules and floating sorbent systems for BrO₃-removal from natural water sources-An innovative approach." *Journal of Environmental Chemical Engineering* (2023): 109508.

New Faces.....



Dr. Jinu M John

Joined as a faculty member on 01-06-2022. She did her BSc from Assumption College, Changanassery, MSc from SB College Changanacherry and BEd from University College of Teacher Education, Changanassery. She completed her PhD from University of Hannover, Germany and joined as a Faculty of Chemistry at St John's College, Anchal in 2015. Her area of research interest include bio process control and material science.



Mr. Jiffin Sam

Joined as a faculty member on 01-12-2022. Jiffin did his BSc from Catholicate College, Pathanmthitta and MSc from Mar Ivanios College. After qualifying Junior Research Fellowship, He has been pursuing his PhD at National Institute of Interdisciplinary Science (NIIST)-CSIR, Papanamcode, Thiruvananthapuram. His area of research include Environmental Chemistry, Industrial Waster Treatment and Management.

Board of Studies.....



BoS Chemistry meeting was held 13th December 2022.

Chairman: Prof. Dr. Suresh Das

Secretary: Dr. Sonia Mol Joseph

Photo Gallery

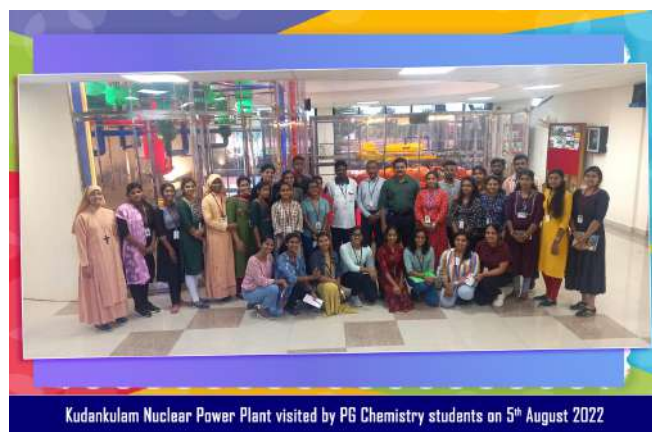
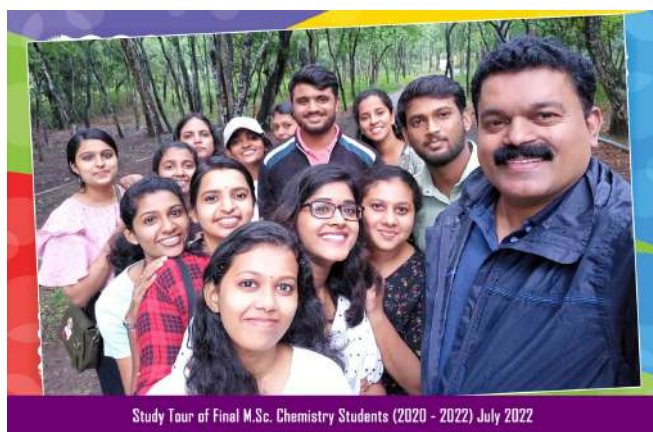
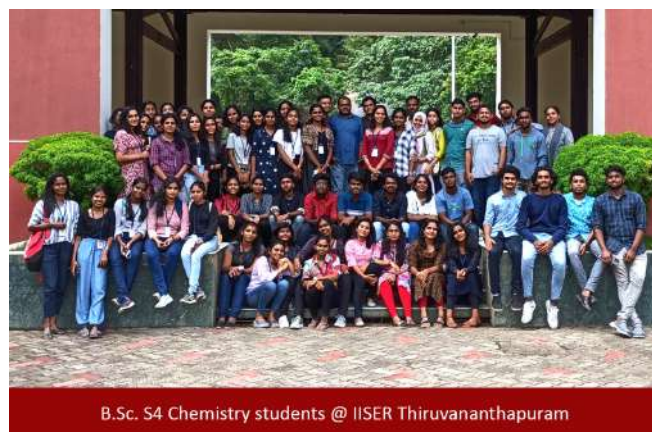


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Editorial Team:

Dr. Suju C Joseph (HOD)

Dr. Rabin Rajan J. Methikkalam (Faculty In Charge)

Akshay Jayan & Jeeja P Jiji (Student Secretaries)

Athul Pradeep (Design & Editing)

II year BSc Chemistry