

Ch SD St Theresa's college for women(A) Eluru

Department of Chemistry

Annual Report- 2023- 2024

College was reopened on 5th June 2023 for the academic year 2023-24. A general body meeting was conducted by Principal Dr.Sr.P.Mercy for the faculty members and assigned the duties such as time table setting, work load allotment and planning of department activities for the academic year 2023-24. Classes started on 5th June 2023 for II & III year UG and I &II year PG students and on 4th July 2023 for I Year degree students.

Work load of UG and PG Chemistry was distributed equally among 7 members of the department. Annual plan was discussed and classes taken accordingly. Faculty members are regular and punctual in taking classes and completing the syllabus on time.

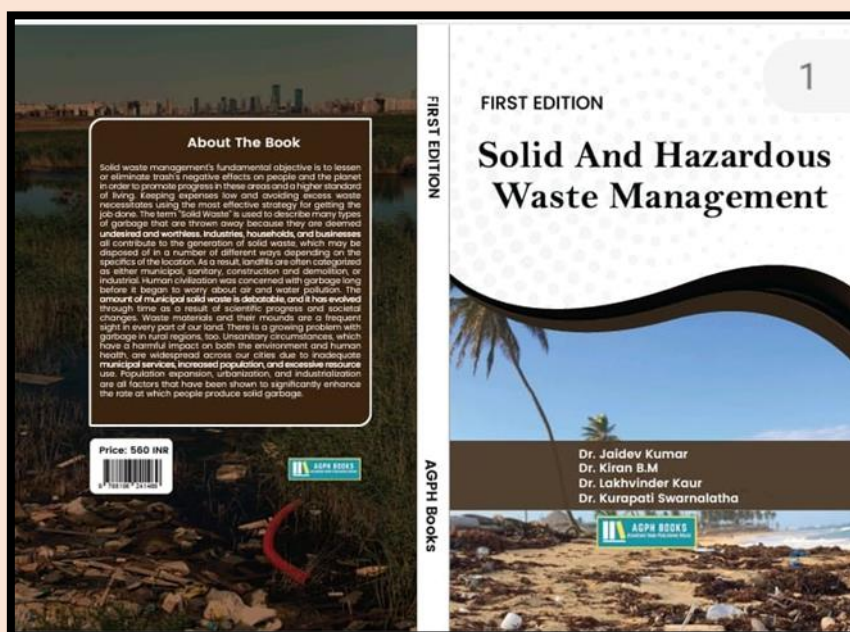
To improve the subject knowledge and skills of average and above average students, different teaching and learning methods were implemented. Some of them are Power point presentations, Seminars, Discussions, Quiz Programmes etc., For the slow learners Field study, Group study, Question & Answer sessions methods were implemented during remedial coaching.

Activities for the academic year 2023-2024

1.Dr C.A. Jyothirmayee, HO Dept of Chemistry was invited by **APSCHE-AC-I-as Chemistry, Subject Committee member** for the Preparation of syllabus for General UG Programmes with effect from 2023-24 in accordance with NEP 2020 and revised curricular structure of UGC. The Major change in the proposed curriculum is a shift from three majors to single Major along with multiple entry and exit options. Workshop was held at Andhra Loyola College, Vijayawada from 11th May to 13th May, 2023.



2.1st June 2023: Dr K Swarna Latha of Department of Chemistry **published a book** on - Solid and hazardous waste management, first edition published by AGPH Books.



3. Dr. M. Rama, Department of Chemistry attended **Board of studies meeting** at Maris Stella College(A), Vijayawada on 21st June as a management nominee to discuss on the implementation of Single Major program for UG students in Degree colleges from 2023 academic year.



4. Guest lecture cum Workshop- 23rd June 2023

On 23rd June 2023, Department of Chemistry organized a guest lecture cum workshop on Analytical determinations using UV-Visible spectrophotometer for the subject project students. UV-VIS spectrophotometer is an instrumental technique used for chemical analysis. It is used

for qualitative as well as quantitative analysis. This technique has several applications for a large number of compounds. It is used to observe the optical behaviour of chemical compounds, identification of various species, and quantification of specific analytes. UV-Vis spectrophotometer is used for the quantitative determination and measurement of different analytes i.e. organic, inorganic, biological molecules etc. Dr. K. Nagaraju, Professor, Sir CR Reddy College of Pharmaceutical sciences, Eluru, enlightened the students regarding the construction, basic principle involved, the preparation of sample and spectral analysis using UV visible spectrophotometer. He demonstrated the working of UV-VIS spectrophotometer and all the students had excellent hands-on experience which enabled 50 students to present the Subject project excellently. The students took active participation and involved effectively in the workshop. The workshop enabled the students for the phytochemical analysis, determination of Elements, Total Phenolic Content present in the malted and non-malted millets using UV-Visible spectrophotometer.



5. 50 students of II BSc were guided by the by the faculty of the Department of Chemistry for the **Summer short term internship**. Ten projects are taken up. The title of the project is **“The estimation of phytochemicals in malted and unmalted millets using UV-Visible spectrophotometer”**. As the phytochemicals aid the function of the immune system, protect cells and DNA from damage that may lead to cancer, reduce inflammation, slow the growth rate of some cancer cells and help regulate the hormones this topic was selected. Different millets are taken like Barnyard millets, little millets, Foxtail millets, Proso millets, Kodo millets, Sorghum millets, Finger millets, Pearl millets, Quinoa millets, Andukorralu and the phytochemicals are estimated using titrimetry and UV-Visible spectrophotometer. Because of the internship students developed real time technical skills, managerial skills and communication skills. Subject project Viva"was on 30thJune 2023.



6. I BSc, MPC students took part in Community service project and they were guided by the faculty of the Department of Chemistry. The title of the **CS Project is “the impact of environmental pollution and plastic waste on the health and hygiene of the residents”** . As the students are involved in the survey of the community, they got an idea on the overview of the community and the problems in their area. They created awareness regarding the impact of environmental pollution and plastic waste on the health and hygiene and the remedies. 30 students of I BSc, MPC completed the CS Project Viva- voce on 1st July, 2023.



7.Both the departments of Chemistry of Ch SD St Theresa's college for women and Govt Degree College, ELURU signed MOU on 17th July, 2023for future **"Students and Staff academic exchange programs"**. Dr CA Jyothirmayee and Dr Udaya Lakshmi played active role in the event. Principal Dr Sr Mercy of Ch SD St Theresa's college for women(A) and Dr G. Giri Babu, Principal Govt Degree College, ELURU congratulated the department members for the initiation.



8. As a part of MOU, a training program on **“Qualitative analysis and Quantitative analysis”** was organised by the Department of Chemistry on 17th July, 2023. Nearly 25 students of II BSc, Government Degree College, ELURU attended the training program and got benefitted. Dr CA Jyothirmayee, HO Dept of Chemistry gave the introduction. Dr M Rama and Dr N Gayatri Devi demonstrated the Qualitative analysis of the organic compound by adopting the systematic procedure. Dr V Naga Lakshmi explained and demonstrated the instrumental analysis. Dr Udaya Lakshmi, HO Dept of Chemistry, Government Degree College, ELURU accompanied the students



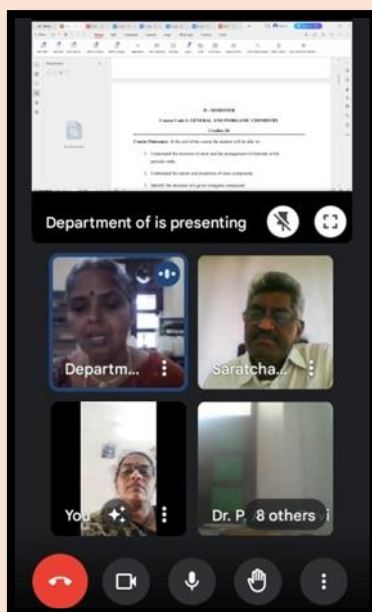
9. Dr. V. Nagalakshmi as a resource person gave a talk on Innovation and entrepreneurship outreach program in community on **“Thermodynamics- Innovative ideas and Research Methodology”**-19th July 2023 for the students of Govt. degree college, Eluru.



10. Dr. M. Rama, Department of Chemistry as Resource person gave a **talk on “Water Conservation”** in the workshop of Unnat Bharat Abhiyan on 22nd July 2023 at Gayatri Vidya Parishad College of Engineering (Autonomous), Visakhapatnam.



11. Dr. M. Rama, Department of Chemistry attended **Board of Studies meeting** of St. Joseph's College for Women (Autonomous), Visakhapatnam as Subject expert from Autonomous College on 27th July in online mode.



12.PG Students Project work: Students of MSc Organic Chemistry, carried out **Project work** from 31st July to 2nd Aug 2023 at Sir CRR College of Pharmaceutical sciences, ELURU as a part of **Faculty and student exchange program** under functional MOU. Dr K Naga Raju, Professor, Sir CRR College of Pharmaceutical sciences, ELURU trained the students in the method development and validation of different drugs. Each and every student had hands on experience of handling HPLC. Methods were developed by the students for the validation of different drugs namely Carbocistine, Tolvaptan and Gemecitabine in bulk and dosage forms by using RP-HPLC.



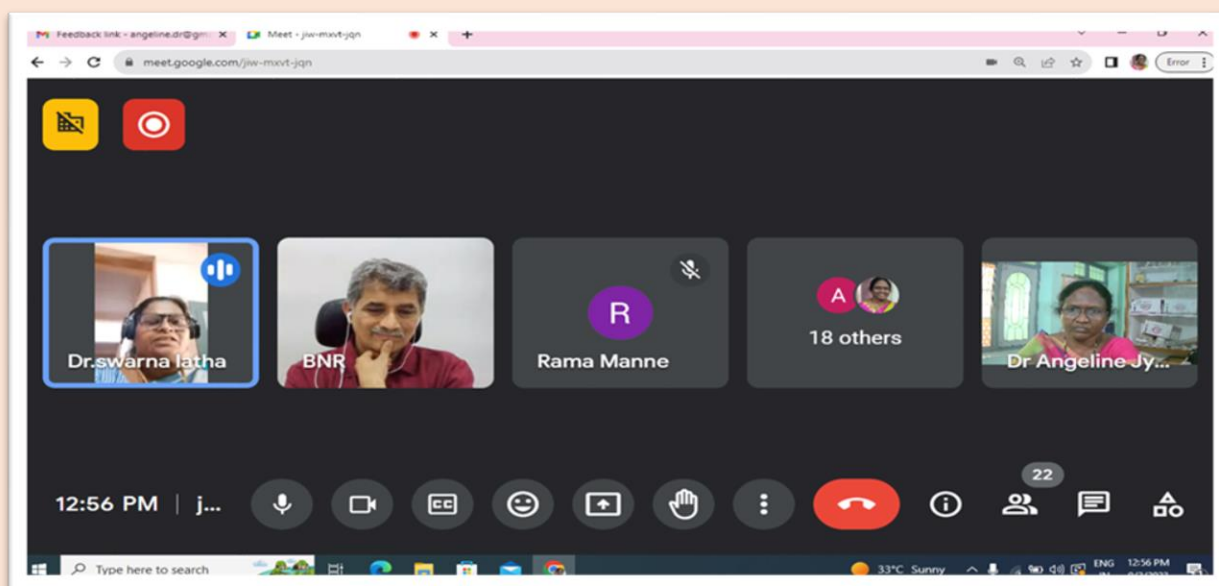
13.Department of Chemistry in association with IQAC organised a **Motivational talk on "Make a difference"** on 22nd August for the final year degree students. The resource person Prof. Dr. Ratnakar D.B, IMRF Director addressed the gathering. He mentioned that Success comes from dreaming big, desiring positive and determining firm. He reminded that each one

is capable of doing extraordinary things, has the potential to make a difference, to create, to invent, to explore. Life is filled with challenges. They are there to test, to make stronger, to help us grow. Diamonds are formed under pressure and so challenges need to be turned into strengths. Believing in oneself have the power to change the world, to make it better. All it takes is that first step. You are the writers of the future, the painters of new realities, the inventors of incredible things, and the leaders who will guide us forward. So, dream big, aim high, and don't stop until you've left your mark on the world. And remember, the journey of a thousand miles begins with a single step. Let's take that step today. Together, we can conquer the world. The resource person also presented the importance of internship and the opportunities available in collaboration with foreign universities. Nearly 450 students participated in the program. Under the guidance of Dr Sr Mercy, Principal of the college, Dr CA Jyothirmayee, IQAC Coordinator and Dr N Gayatri Devi, IQAC Secretary coordinated the program.



14. National level seminar on “Life is Chemistry”

Department of Chemistry organized a **National seminar on “Life is Chemistry”** on 2nd September 2023 on virtual mode. The resource person of the seminar was Mr. Naga raju Banda, Vice president ,Leiutis Pharmaceuticals Pvt ,Ltd, Hyderabad. Starting from what is chemistry, he gave the detailed information about the branches of Chemistry and it's importance in our day today life. He also presented the career opportunities with Chemistry. The resource person also created awareness regarding the importance of research with chemistry. As a part of MOU, 250 members including faculty and students of different colleges i.e., Govt. Degree College, Eluru, KBN College ,Vijayawada and Sri YN college, Narsapuram along with the Host College participated in the seminar.



15. Dr. V. Nagalakshmi attended as a university nominee to **Boards of Studies** in chemistry of V S M College (A), Ramachandrapuram on 12.09.2023 at 10.00 A.M through offline mode.

16. Dr. V. Nagalakshmi as a part of II Cell activity, delivered a **guest lecture on “Environmental issues and challenges - An innovative approach towards sustainability”** to the Post graduate students of VSM College, Ramachandrapuram on 12th September 2023. All the students are highly motivated to think differently, achieve something eco-friendly by adopting new approaches.



17. Ozone day celebrations:

The Department of **Chemistry club FOCUS** celebrated ozone day on September 16th 2023. The theme of world ozone day 2023 is “Montreal protocol: fixing the ozone layer and reducing climate change”.

Dr .V.Nagalakshmi gave awareness to the students about the importance of Ozone layer, causes and consequences of depletion of ozone layer, control measures and the role of chemistry students to aware the people in their surroundings about ozone layer.

A power point presentation competition was conducted for the students, five groups enthusiastically participated in it. The faculty of chemistry and students participated in the program.



18..As a part of the functional MOU, PG Department of Chemistry organized a **Guest lecture** on 21st September 2023. The topic is **“Future prospects with chemistry and Research methodology”**. The resource person is Dr K.Kiran Kumar, Asst Professor in Chemistry, KBN College, Vijayawada. Nearly 40 students attended got awareness regarding the career opportunities with Chemistry and emerging trends in Chemistry. Resource made the session very interesting with interaction.



19. **Guest lecture** was organized by the Department of Chemistry on 05.10.2023 on “ **Method development and validation of different drugs in bulk and dosage forms by using RP-HPLC**” for M.Sc Organic Chemistry students.



20. **Two-day international conference on Applied sciences – Advances & applications 2023** was organised in collaboration with IMRF on 13th& 14th Oct 2023. Nearly 150 faculty and 400 students participated in the conference. All the Plenary and Technical sessions are interactive and enriching. Innovative research papers are presented by faculty and students.

This conference was designed to give an exposure on current challenges and advances in Mathematics, Statistics, Computer Science, Physics & Electronics, Chemistry, Agriculture, Botany, Zoology, Microbiology and Biochemistry, Nutrition & Dietetics, Home Science and allied branches.



This Conference witnessed a wide range of technical papers as Oral Paper Presentations besides Plenary Sessions on different disciplines from all over the World. This Conference is honored to bring Proceedings of the International Conference with ISBN, Peer Reviewed International Research Journal Publications & ISBN Book Publications.

All the sessions were successfully completed by all the resource persons, the participants and guests in the allotted time. The enormous response was well recognized through the registration of around 500 participants, faculty from universities and colleges, research scholars, PG students, associate and assistant professors.



21. Dr. M. Rama gave a **talk on "Happiness and you"** to management students on the occasion of 114th Birth anniversary of Peter F Drucker, father of modern management on 18th November 2023.



22. Dr CA Jyothirmayee, Dr M Rama and Dr K Srilatha attended a **State Level One-Day workshop for Universities and Colleges on "India Rankings-2024 National Institutional Ranking Framework (NIRF)"** on 01.12.2023 organised by APSCHE in collaboration with Adikavi Nannaya University, Rajamahendravaram.



23. Dr. M. Rama, Department of Chemistry, UBA coordinator attended Unnat Bharat Abhiyan in collaboration with **Centre for Research in Schemes and policies (CRISP) program** at IIT Delhi on 7th December 2023.



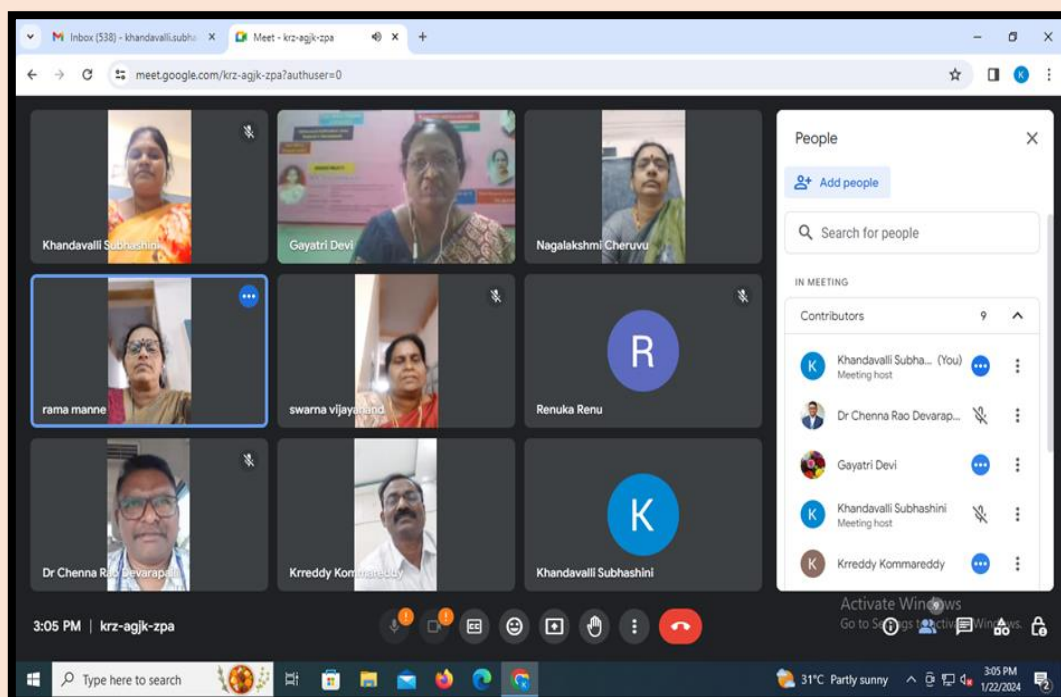
24. On 9th Jan 2024, **Career guidance and mentoring program** was organized by IQAC to the intermediate students. Nearly 650 students from local colleges attended the program and got

inspired. Dr CA Jyothirmayee created awareness regarding **NEP 2020 - single major, four-year professional degree** and its importance.



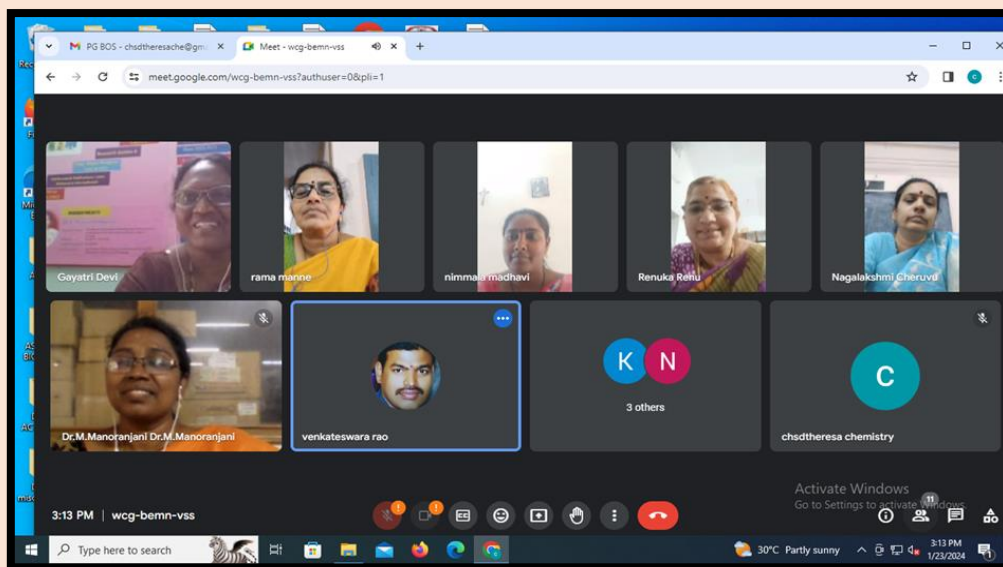
25.UG BOS Meeting:

Board of studies meeting for UG Chemistry was organized on 22.01.2024 at 2.30pm on a virtual platform. **Dr Chenna Rao** from Govt Degree college, YELESWARAM was the University nominee and **Dr K Rayapa Reddy** from Andhra Loyola college, Vijayawada is the Subject expert. Minor changes were made in the syllabus and pattern of model paper was discussed. Had a good time with a fruitful discussion. Chairperson Dr CA Jyothirmayee, moderated the meeting.



26. PG BOS Meeting:

Chemistry PG - BOS Meeting was held on 23.01.2024 at 2.30pm on a virtual platform. **Dr M. Manoranjani**, HO Dept of PG Chemistry, PB Siddhartha arts and science college, Vijayawada was the university nominee and **Dr Ch. Venkateswara Rao**, HO Dept of PG Chemistry, YN College, Narsapuram is the Subject expert. After successful discussions and deliberations on the existing syllabus and model papers, they advised that the students may be encouraged to register for one MOOCs course a year.



27. On 24th Jan 2024, all the Heads of the Departments visited the Intermediate campus, Ch SD St Theresa's college for women(A) ELURU for **creating awareness regarding the importance of pure sciences and the career opportunities**. Dr CA Jyothirmayee presented the importance of Chemistry in career building.



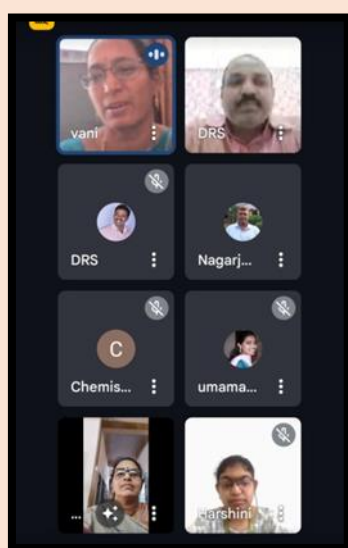
28. Workshop Cum Internship:

Department of Chemistry organized Six Days Workshop Cum Internship on **“Instrumentation and Analytical Techniques in Chemistry”** in collaboration with Shree ICON Pharmaceutical Laboratories, Vijayawada from 29th Jan to 3rd Feb 2024. The objective of the workshop is to train the staff and students with advanced analytical techniques. This included a detailed theoretical background, practical training and a critical understanding of the laboratory-based techniques they apply during their research projects. The course delivered an in-depth examination of the specific analytical techniques relevant to their research project. Mr Narendra and Mrs Rajeswari from **“Shree ICON Pharmaceutical Laboratories”**, Vijayawada are the resource persons. Nearly 84 students and 10 Faculty members are trained and given hands – on experience. These Analytical techniques are used for the detection, identification, characterization, and quantification of chemical compounds. These methods are commonly used in biology for research, development, and quality control of pharmaceutical products.





29. Dr. M. Rama, Department of Chemistry attended **Board of Studies meeting** of Maris Stella College for Women (Autonomous), Vijayawada as Subject expert from Autonomous College on 14th February 2024 in online mode.



30. Talk on **“Reforms in higher education – youth empowerment”** organised By Quality Assurance Cell, APSCHE in collaboration with Ch SD St Theresa’s college for women (A) ELURU On 21.02.2024.

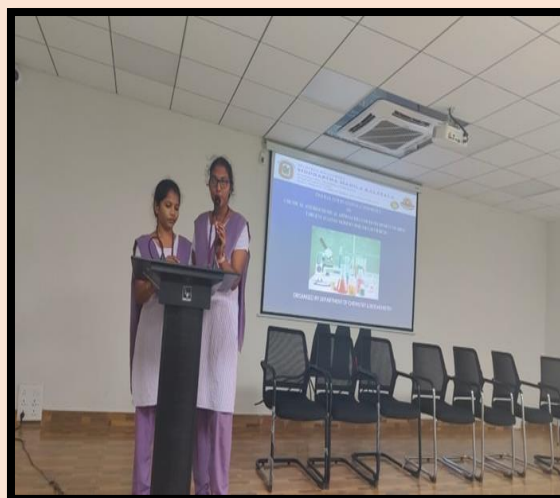
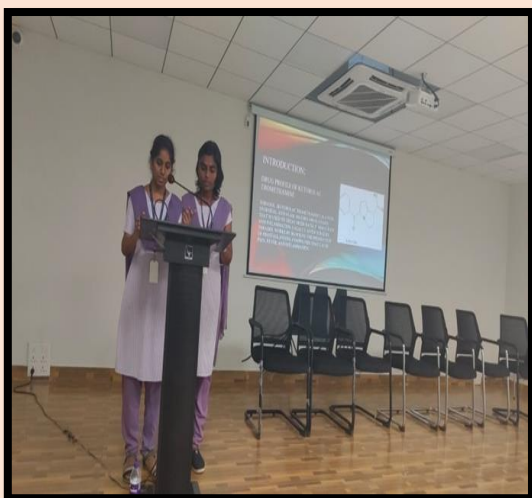
The Andhra Pradesh State council of Higher Education has embarked on several initiatives in transforming Higher Education to future needs. In order to have interaction with the students Quality Assurance Cell, APSCHE organised a talk on “Reforms in higher education – youth

empowerment” in collaboration with Ch SD St Theresa’s college for women (A) ELURU in the college campus on 21.02.2024 at 10.30AM.

The program started at 10.30 am in the Multipurpose hall of Ch SD St Theresa’s college for women (A) ELURU. The Key note speaker is **Prof. K Rama Mohan Rao, Vice- Chairman, APSCHE and Director, Quality Assurance Cell.** Dr Sr Mercy.P. Principal of the college is the Convener of the programme and compered by Dr CA Jyothirmayee, IQAC Coordinator.



31. III BSc Chemistry internship students and Chemistry faculty attended two day **International conference on “Chemical and Biochemical approaches for development of Drug targets against modern diseases”** at SDMSM Kalasala, Vijayawada on 28th & 29th Feb 2024. Fourteen students presented papers.

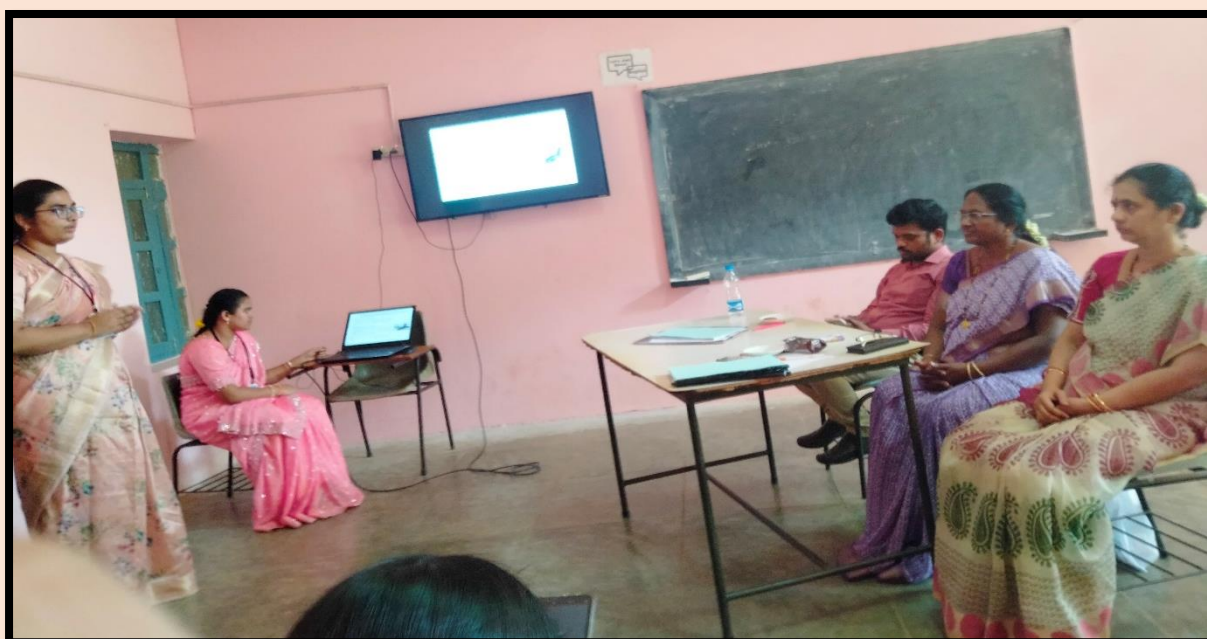




32. In view of the **National science day celebrations** on 28th of Feb 2024, students from local schools visited the science departments of Ch SD St Theresa's college for women. The theme for 2024 is “ **Indigenous technologies for Viksit Bharat**”. In order to create awareness regarding the **importance of core science subjects**, faculty of the department of Chemistry and students demonstrated the magics and wonders with Chemistry. Students are actively involved, got inspired and motivated.



33. 20 students of III BSc were guided by the by the faculty of the Department of Chemistry for the **VI Semester subject internship** 2023-24. Six projects are taken up using UV-Visible spectrophotometer and High performance liquid chromatography. During the internship students developed real time technical skills, managerial skills and communication skills. Project internal viva was on 4th April 2024 and external viva was conducted on 15th April 2024.



Publications

1. Dr. V. Nagalakshmi published a paper- **In silico molecular docking study and nano TiO₂-SiO₂ catalyzed microwave facilitated synthesis of new bis(α -aminophosphonates) as potential anti diabetic agents, Phosphorus, Sulfur, and Silicon and the Related Elements**, Vol 198, ISSN No:1042-6507 14th April 2023 Pages:1-14 , Publisher:Taylor and Francis Ltd. <https://doi.org/10.1080/10426507.2023.2198715>, DOI: 10.1080/10426507.2023.2198715

2. Dr Nanduri Gayatri Devi published a paper -**Thermodynamic and spectroscopic properties of binary liquid mixtures of p-chloroacetophenone and isomeric xylenes at various temperatures**” in YMER, ISSN:0044-0477, Vol.22, issue-5, May 2023.

3. Dr. V. Nagalakshmi published a paper-**Visible spectrophotometric methods for the quantitative estimation of lopinavir in their formulations** in international journal of innovations in engineering research and technology [IJIERT] ISSN: 2394-3696 Website: ijiert.org Volume 10, ISSUE 6, June -2023.

4. Dr. M. Rama published a paper-**Method development and validation of baricitinib in bulk and Pharmaceutical dosage form by using RP-HPLC** international journal of innovations in engineering research and technology [IJIERT] ISSN: 2394-3696 website: [Ijiert.org](http://ijiert.org) Volume 10, issue 6, June -2023.

5. Dr. V. Nagalakshmi published a paper-**Determination of Sodium, Potassium, and Calcium Content in Diverse Mango Fruit Varieties and Mango Flavoured Beverages from Nuzvid, Eluru District, AP through Flame Photometry** ,DOI: 10.48047/ecb/2023.12.7.289, Eur. Chem. Bull. 2023,12(Issue 7), ISSN 2063-5346 PP3515-3523.

6. Dr N Gayatri Devi published research paper –**“Study of effect of nitrogen treatment on Nd-Fe-B based powder”**. Contents lists available at Science Direct, Materials Today: Proceedings Journal homepage www.elsevier.com/locate/matpr. Page No: 1-5. <https://doi.org/10.1016/j.matpr.2023.08.317>.

7. Dr. K. Swarna Latha published research paper - **“Dynamic mechanical, tensile fatigue and water absorption behavior of polyester composites comprises of Amaranthus dubius stem natural fiber and its root waste crystalline cellulose”**. Biomass Conversion and Biorefinery. <https://doi.org/10.1007/s13399-023-04831-4>- Springer.

8. Dr. V. Naga Lakshmi published research paper – **“Thermal management of PV panel through the circulation of a nano-MgO/ water-based nanofluid”**. Contents lists available at Science Direct, Materials Today: Proceedings Journal homepage www.elsevier.com/locate/matpr. <https://doi.org/10.1016/j.matpr.2023.09.001>. Page No: 1-6.

9. Dr CA Jyothirmayee published research paper - **“Improving the productivity of the solar-based evaporative still (SBES) using the nano - coated absorber”**. Contents lists available

at Science Direct, Materials Today: Proceedings Journal homepage www.elsevier.com/locate/matpr. <https://doi.org/10.1016/j.matpr.2023.09.14>. Page No: 1-5.

10. Dr. M. Rama published a paper **Study on the wear properties of Al5083 metal matrix composite using boron carbide nanoparticles**, Materials Today: Proceedings ISSN 2214-7853, <https://doi.org/10.1016/j.matpr.2023.09.013> 2nd Sep-2023

11. Dr. N. Gayatri Devi published research paper **“Analyzing performance of a solar water heater using nano-ZrO₂/ water-based nanofluid”**. Contents lists available at Science Direct, Materials Today: Proceedings Journal homepage www.elsevier.com/locate/matpr. Page No: 1-4. <https://doi.org/10.1016/j.matpr.2023.09.012>

12. Dr. V. Naga Lakshmi published research paper **Structure, DC electrical resistivity, and magnetic properties of Gd³⁺ substituted NiZnCo ferrites system**, Inorganic Chemistry Communications, ISSN 1387-7003 <https://doi.org/10.1016/j.inoche.2023.111496>, 23rd Sep-2023.

13. Dr. V. Naga Lakshmi published research paper **Ultrasound mediated nano ZnO catalyzed synthesis of new α -amino phosphonates as potential anti-diabetic agents; an in silico ADMET, molecular docking study, α -amylase and α -glucosidase inhibitory activity**, Synthetic Communications, ISSN 1532-2432, <https://doi.org/10.1080/00397911.2023.226958>, 15th Oct. 23.

14. Dr. V. Naga Lakshmi published research paper **“Phytochemistry & Pharmacological studies of Betel piper”** in Journal of Pharmaceutical Negative Results, ISSN: 0976-9234, <https://pnrjournal.com> Volume 13 special issue 10, Dec. 2022.

15. Dr. CA. Jyothirmayee published research paper - **“Chemical Reactivity and Nano catalysis”** in United International Journal of Engineering and Sciences [UIJEC] ISSN: 2582-5887 pp 120-124, Jan -2024.

16. Dr. K. Swarna Latha published research paper - **“A Quantitative Estimation of Phytochemicals AntiDiabetic and Anti-Oxidant Activities in crude extracts of Zingiber officinale rhizome”**. in YMER, Volume 22 : Issue 03, ISSN : 0044-0477, Mar – 2023, <http://ymerdigital.com>,

Book chapters

1. Dr V.Naga Lakshmi published Chapter on **“Quantitative and qualitative estimation of phytochemicals of malted & unmalted sorghum millet”**, Advances and applications in applied sciences, published by IMRF institute of higher education & Research, India. ISBN 978-93-90146-57-4.
2. Dr N Gayatri Devi published Chapter on **“A study and estimation of phytochemicals in malted & unmalted Quinoa millet by Uv-Visible spectrophotometer”**, Advances and applications in applied sciences, published by IMRF institute of higher education & Research, India. ISBN 978-93-90146-57-4.
3. Dr M.Rama published Chapter on **“Phytochemical estimation and antioxidant activity of malted & unmalted seed extract of Proso millet”**, Advances and applications in applied sciences, published by IMRF institute of higher education & Research, India. ISBN 978-93-90146-57-4.
4. Dr. Kurapati. Swarna Latha published Chapter on **“Phytochemical screening and green synthesis of iron oxide and silver nanoparticles from phyllanthus acidus leaves”**, Advances and applications in applied sciences, published by IMRF institute of higher education & Research, Indi ISBN 978-93-90146-57-4.
5. Dr CA Jyothirmayee published Chapter on **“Development and validation of RP-HPLC method for the estimation Tazemetostat”**, Advances and applications in applied sciences, published by IMRF institute of higher education & Research, India,ISBN 978-93-90146-57-4.
6. Dr V.Naga Lakshmi published Chapter on **“ Estimation of phytochemicals of malted & unmalted Kodo millet quantitatively”**, Advances and applications in applied sciences, published by IMRF institute of higher education & Research, India. ISBN 978-93-90146-57-4.
7. Dr N Gayatri Devi published Chapter on **“Spectrophotometric determination of phytochemicals in malted & unmalted Andukorralu ”**, Advances and applications in applied sciences, published by IMRF institute of higher education & Research, India. ISBN 978-93-90146-57-4.
8. Dr CA Jyothirmayee published Chapter on **“Method development and validation of Gemecitabine in bulk and dosage forms by using RP-HPLC”**, Advances and applications in applied sciences, published by IMRF institute of higher education & Research, India, ISBN 978-93-90146-57-4.
9. Dr M.Rama published Chapter on **“Esimation of Phytochemicals, micronutrients and antioxidant activity of malted & unmalted seed extract of Foxtail millet”**, Advances and

applications in applied sciences, published by IMRF institute of higher education & Research, India. ISBN 978-93-90146-57-4.

10. Dr. K. Swarna Latha published Chapter on **“Sustainable green synthesis of biogenic iron oxide, silver nano particles using Lagenaria siceraria leaf aqueous extracts”**, Advances and applications in applied sciences, published by IMRF institute of higher education & Research, India. ISBN 978-93-90146-57-4.

11. Dr CA Jyothirmayee published Chapter on **“Comprehensive development and validation of RP-HPLC method for Tolvaptan determination in bulk and dosage forms ”**, Advances and applications in applied sciences, published by IMRF institute of higher education & Research, India, ISBN 978-93-90146-57-4.

12. Dr N Gayatri Devi published Chapter on **“A study and estimation of Vitamin B12 in fortified foods using HPLC ”**, Advances and applications in applied sciences, published by IMRF institute of higher education & Research, India. ISBN 978-93-90146-57-4.

13. Dr CA Jyothirmayee published Chapter on **“Method development and validation of Thiocolchcoside and Paracetamol in bulk and dosage forms by using RP-HPLC ”**, Advances and applications in applied sciences, published by IMRF institute of higher education & Research, India, ISBN 978-93-90146-57-4.

14. Dr CA Jyothirmayee published a chapter **“Role of Artificial intelligence and ICT in Sustainable development goals”** , in **Artificial intelligence in Chemistry: Current trends & Future directions**, ISBN978-81-958704-5-5 in Nov.2023 by KBN College , Vijayawada.

15. Dr Mr Rama published a chapter **“Protein molecular interaction prediction:AI driven molecular properties detection.”** , in **Artificial intelligence in Chemistry: Current trends & Future directions**, ISBN978-81-958704-5-5 in Nov.2023 by KBN College , Vijayawada.

16. Dr V Naga Lakshmi published a chapter **“Predicting molecular properties of Gedunin derivatives through artificial intelligence”** , in **Artificial intelligence in Chemistry: Current trends & Future directions**, ISBN978-81-958704-5-5 in Nov.2023 by KBN College , Vijayawada.

17. Dr K Swarna Latha published a chapter **“Artificial intelligence for neural network and machine learning.”** , in **Artificial intelligence in Chemistry: Current trends & Future directions**, ISBN978-81-958704-5-5 in Nov.2023 by KBN College , Vijayawada.

18. Dr N Gayatri Devi published a chapter **“Accurate prediction of molecular properties and Drug targets using a self –supervised image representation learning frame work.”** , in **Artificial intelligence in Chemistry: Current trends & Future directions**, ISBN978-81-958704-5-5 in Nov.2023 by KBN College , Vijayawada.

19. Dr CA Jyothirmayee published a chapter “**RP-HPLC Method for the simultaneous estimation of Aspirin and Prasugrel Hydrochloride in bulk and dosage forms**”, in Chemical and Biochemical approaches for development of Drug targets against modern diseases ISBN in Feb 2024 by Sri Durga Malleswara Siddhartha mahila Kalasala , Vijayawada.

20. Dr Mr Rama published a chapter “**A new method development and validation of simultaneous estimation of Eplerenone and Torsemide by using HPLC in bulk and pharmaceutical formulations**”, in Chemical and Biochemical approaches for development of Drug targets against modern diseases ISBN in Feb 2024 by Sri Durga Malleswara Siddhartha mahila Kalasala , Vijayawada.

21. Dr V Naga Lakshmi published a chapter “**New analytical method and validation for simultaneous estimation of Alogliptin and Metformin in bulk and solid dosage forms**”, in Chemical and Biochemical approaches for development of Drug targets against modern diseases ISBN in Feb 2024 by Sri Durga Malleswara Siddhartha mahila Kalasala , Vijayawada.

22. Dr K Swarna Latha published a chapter “**UV spectrophotometric method and validation of Doravirine in bulk and solid dosage forms**”, in Chemical and Biochemical approaches for development of Drug targets against modern diseases ISBN in Feb 2024 by Sri Durga Malleswara Siddhartha mahila Kalasala , Vijayawada.

23. Dr N Gayatri Devi published a chapter “**Development and validation of Stability-indicating method for the determination of Netarsudil Mesylate by using RP-HPLC**”, in Chemical and Biochemical approaches for development of Drug targets against modern diseases ISBN in Feb 2024 by Sri Durga Malleswara Siddhartha mahila Kalasala , Vijayawada.



24. Mrs KJ Subhashini published a chapter “**Validated Spectrophotometric determination of Ketorolac Tromethamine in Pharmaceutical formulations.**”, in Chemical and Biochemical approaches for development of Drug targets against modern diseases ISBN in Feb 2024 by Sri Durga Malleswara Siddhartha mahila Kalasala , Vijayawada.



25. Ms N Madhavi published a chapter “**Spectrophotometric method for the estimation of Remogliflozin Etabonate in Bulk and dosage Forms**”, in Chemical and Biochemical approaches for development of Drug targets against modern diseases ISBN in Feb 2024 by Sri Durga Malleswara Siddhartha mahila Kalasala , Vijayawada.

Patents

1. Dr.V.Nagalakshmi published a patent on “**Developing spectroscopy based techniques for in depth nanomaterial analysis in industrial application**” on 29th December 2023. This patent was filed on 3rd December 2023 with application number 202341082257 A in collaboration with Dr.G.Rajarao, Professor , Department of EEE, Anil Neerukonda Institute of Technology and services, Visakhapatnam, Andhra Pradesh India. Pincod–517520.

2. Dr N Gayatri Devi published a patent on “**Tunable nano particle based sensors for accurate humidity and gas detection**” on 19th January 2024. This patent was filed on 18th January 2024 with application number 202341086648 A in collaboration with Dr.G.N.Anilkumar ,Asst. Professor , Department of Physics, Research Institute of Technology, Bangalore, Karnataka, India. Pincod–560054.

3. Dr.V.Nagalakshmi published a patent on” **Advanced graphene-based nanostructured sensors for high-sensitivity gas detection in industrial environments**” Application Number: 202441020257, Published Date- 29/03/2024  online status link https://iprsearch.ipindia.gov.in/PublicSearch/PublicationSearch/ApplicationStatus*
[https://search.ipindia.gov.in/DynamicUtility/Journal/Patent](https://search.ipindia.gov.in/DynamicUtility/Journal/Patent*)  Journal link.

4. Dr CA jyothirmayee published a patent on “**Eco-Friendly Catalysts: Fe₃O₄@SiO₂-PMA-Cu Nanoparticles for Green Triazole Synthesis**” *Application Number: 202441020256, Published Date- 29/03/2024*  online status link [*https://iprsearch.ipindia.gov.in/PublicSearch/PublicationSearch/ApplicationStatus*](https://iprsearch.ipindia.gov.in/PublicSearch/PublicationSearch/ApplicationStatus*)
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1.Dr.C.A Jyothirmayee, HO Dept of Chemistry got a copyright with Reg No: L-131224/2023 and Diary No: 14304/2022-CO/L for her research paper with title- “**Determination of water quality index of drinking water sources with special reference to Denduluru mandal of West Godavari District, AP, INDIA**”.