

Maris Stella College (Autonomous), Vijayawada

Department of Chemistry

Departmental activities

2015-16

1. Organized a guest lecture 'Theoretical concepts of molecular spectroscopy' on 24.11.2015 for II B.Sc Chemistry combination students.

Resource person: Mr T.N.V.S.S.Satya Dev, Faculty, PG Dept. of Chemistry
P.B. Siddhartha college of Atrs & Sciences
Vijayawada.

Outcomes of the programme:

Students are enlightened with the basic concepts of **spectroscopy** like

- Electronic spectroscopy: different regions of electromagnetic radiation, selection rules, types of transitions
- IR spectroscopy: general principle, Hook's Law, modes of vibrations
- NMR: General principle, different conditions required to record NMR spectrum, equivalent and non-equivalent protons concept.
- Basic concepts of microwave spectroscopy
- Differences between ESR and H^1 NMR



2. Organized a skill development training programme on 'HPLC instrumental methods of analysis and basic organic synthesis at Shree Icon Pharmaceutical laboratory, Vijayawada from 2.1.2016 to 15.2.2016 for 15 students from III B.Sc – MPC, CBZ and Bio Tech groups.

Hands on training is given to a group of 15 students from B.Sc (MPC,CBZ,Bio Tech) programme on HPLC method development and validation, simple organic synthesis and purity check.

Course outcomes:

Upon completion of the course, students would

CO1: Able to correlate the theoretical concepts practically.

CO2: Gain hands on experience on High Performance Liquid Chromatography for chemical analysis.

CO3: Learn simple organic synthesis and reaction monitoring, purity check by Thin Layer Chromatography.

2016-17

1. Organized a guest lecture 'Theoretical and Experimental demonstration of Chromatographic techniques' on 05.08.2016 for III B.Sc – Chemistry combination students.

Resource persons: Dr.G.Jyothi garu and Dr.V.Nagalakshmi garu,
Dept of Chemistry,
St.Theresa's college for women, Eluru.

Outcomes of the programme:

Students are enlightened with the basic concepts of Chromatography like

- Types of Chromatography
- Principle used in Chromatographic techniques
- Experimental procedures and uses of chromatographic techniques [Paper, Column, HPLC and TLC]



Delivering Lecture on Chromatography techniques



Demonstration Paper and column chromatography

2. Organized an extension activity 'Sharing lab resources to intermediate students of other colleges with no/min lab facilities' on 18.1.2017.

Outcomes of the programme:

- Students of III B.Sc and II BSc – chemistry served as mentors for the programme.
- UG students have trained 73 students of senior intermediate from other colleges in intermediate chemistry practicals by guiding them in salt analysis, volumetric analysis, sol preparations and chromatography experiments.
- This activity helps in enhancing the practical skills of other college students and is a means of developing confidence, teaching skills, organizing skills and deep understanding of the concepts in our UG students by their role of mentors.



2017-18

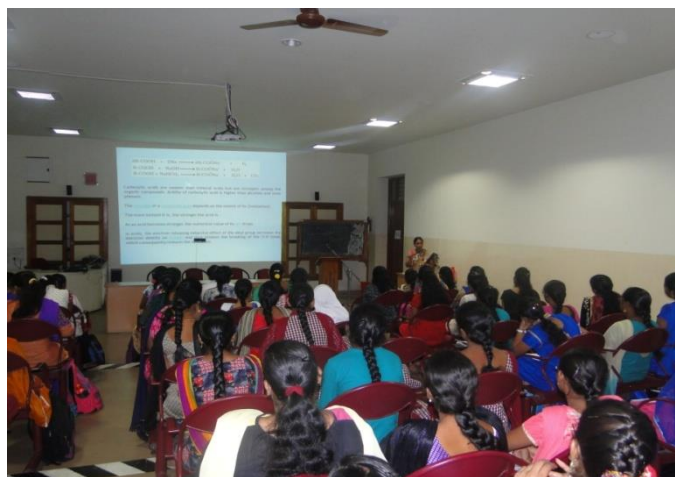
1. Organized a guest lecture on 'Structural theory in organic chemistry' for I B.Sc chemistry combination students on 15.07.2017

Resource person: Dr.G.Krishnaveni, HoD, Dept. of Chemistry, KBN College, Vijayawada.

Outcomes of the programme:

Students are enlightened with the basic concepts of Structural theory in Organic Chemistry.

- Types of Bond fission
- Factors influencing bond polarization
- Types of Organic Reactions [Addition, Substitution, Elimination, Rearrangments.]



Delivering lecture on Structural theory in Organic Chemistry |

2. Organized a guest lecture on 'Basic concepts of atomic absorption spectroscopy and paper electrophoresis' for III B.Sc chemistry combination students on 12.12.2017.

Resource person: DrVijaya Lakshmi Marella
Associate professor, Dept. Of pharmaceutical analysis
KVSR Siddhartha college of pharmaceutical sciences
Vijayawada.

Outcomes of the programme:

Students are enlightened with the basic concepts of instrumental methods

- Atomic Absorption Spectroscopy (AAS) – principle, components of instrumentation, applications of AAS
- Paper electrophoresis – principle, components of instrumentation, applications of paper electrophoresis.



Delivering lecture on instrumental methods

3. Organized a guest lecture on ‘Fundamental concepts of UV-Visible, IR and NMR spectroscopy’ for II B.Sc chemistry combination students on 12.01.2018.

Resource person: *Mr. Ch Siva Prasad*
PG-Dept. Of Chemistry,
SRR & CVR College,
Vijayawada.

Outcomes of the programme:

Detailed inputs of UV-Visible, IR spectroscopy and fundamental concepts of NMR have been delivered.

- Types of electronic transitions
- Chromophore, auxochrome concepts
- Modes of vibrations in IR
- Discussion of ir bands for different functional groups
- NMR principle
- Equivalent, non – equivalent protons

- Briefly about chemical shift, spin –spin coupling



Delivering lecture on spectroscopic methods

4. Organized an extension activity ‘Skill Enhancement Programme’ on 09.1.2018 by sharing our lab resources to intermediate students of other colleges.

Outcomes of the programme:

- III-B.Sc chemistry cluster students and chosen II BSc students served as mentors for the programme.
- UG students have trained 73 students of senior intermediate from other colleges in intermediate chemistry practicals by guiding them in salt analysis, volumetric analysis, sol preparations and chromatography experiments.
- This activity helps in enhancing the practical skills of other college students and is a means of developing confidence, teaching skills, organizing skills and deep understanding of the concepts in our UG students by their role of mentors.



Sharing our lab resources with other college students



Explanation and demonstrations by UG students

5. Organized an industrial visit cum study tour to CIPET (Central Institute of Plastic Engineering and Technology) located at Enikepadu on 3.1.2018 for Chemistry cluster students.

Outcome of the programme:

- Mr. Anjaneya Sharma, Sr Technical Officer at CIPET has coordinated the visit at CIPET.
- Mr. K.P. Singh has given orientation about CIPET, PG-Diploma courses at CIPET and career opportunities in this field.
- Students were given inputs about different instruments used in two testing laboratories.
- Then students were exposed to production unit which consists of recycling-equipment and different modes of moulding systems (injection moulding, compression moulding film moulding etc.).
- Students were witnessed the production of jars, stools, folder clips etc.
- A live demo was given exclusively for students by preparing 'poly propylene dust pan' by running an injection moulding system.

- Students were also witnessed the task of changing the moulds in one of the moulding systems.



Students at CIPET

2018-19

1. Organized a guest lecture on “**Career Guidance in Polymer Science**”on 30.08.2018 in the Auditorium for the students of III B.Sc and II B.Sc chemistry combination groups.

No. Of students participated is 220.

Resource persons:

Mr. V.Kiran Kumar
Director & Head Quality manager
CIPET, Vijayawada.



Career guidance by Mr.V.Kiran Kumar

Outcomes of the programme:

- It was an interactive and informative session.
- Mr V.Kiran Kumar and Mr Anjaneya Sharma have given the inputs about different courses in plastics technology, relevance of the courses with the growing needs of the society, their employability opportunities, Course offering institutions, different CIPET centres, mode of admissions etc.

2. Organized a guest lecture on ‘*Fundamental concepts of Isomerism in Chemistry*’on 11-02-2018.

Resource person: Dr.P.V.V. Sathyanarayana, Retired Professor,
AcharyaNagarjuna University, Guntur.

Purpose of the programme:

To gain understand the fundamental concepts of Isomerism in Chemistry

Outcomes of the programme:

- It was an interactive and demonstrative guest lecture.
- Explained the basic concepts and terminology like Symmetry, Asymmetry, Dissymmetry, Enantiomers & Diastereomers, differences between d,l- forms & D,L-forms, Chiral carbon and E-Z isomerism etc.,.



Delivering lecture on Isomerism

3. Organized an industrial visit cum study tour to CIPET (Central Institute of Plastic Engineering and Technology) located at Enikepadu on 9.8.2018 for the students of III BSc – MPC, CBZ, BioTech. 92 students were taken to the visit and were accompanied by 5 degree faculty members.

Outcome of the programme:

- Mr D. Anjaneya Sharma, Sr Technical Officer at CIPET has coordinated the visit at CIPET.
- Mr K.P.Singh has given orientation about CIPET, PG-Diploma courses at CIPET and career opportunities in this field.
- Students were given inputs about different instruments used in two testing laboratories, mould designing lab and tool rooms.
- Then students were exposed to production unit which consists of recycling-equipment and different modes of moulding systems (injection moulding, compression moulding, film moulding, blow moulding etc.).
- Students were exposed to the production of jars, stools, folder clips etc.
- A live demo was given exclusively for students by preparing HDPE pipe holders with poly acrylo 1,3-butadiene by running an injection moulding system in the processing unit.

- Another live demonstration was also witnessed by our students in Tool room about metal cutting.



III MPC students and faculty at CIPET



III CBZ students and faculty at CIPET



III Bio Tech students and faculty with CIPET staff

4. Organized an industrial visit cum study tour to GS Alloys located at Surampalli on 8.2.2018 for the students of II BSc – MPC, CBZ, BioTech. 91 students were taken to the visit and were accompanied by 5 degree faculty members.

Outcome of the programme:

- Mr.Kutty, HR Manager at Surampalli branch has coordinated the visit at GS Alloys.
- Students were given inputs about preparation of liquid iron, pumping of carbon dioxide, moulding, compression and quality test.
- Then students were exposed to production unit.



Interaction of students with personnel at GS Alloys

2019-20

1. Organized a guest lecture on “**Chemistry: Career opportunities in research**” on 26.7.2019 in the Auditorium in association with Andhra Pradesh Academy of Sciences (APAS).

Resource person:

Prof.M.V.Basaveswara Rao,

Krishna University

Purpose of the programme:

- To motivate students towards higher education and research in chemistry.
- To bring awareness on career opportunities through research in chemical sciences

Outcomes of the programme:

- It was an interactive session
- Explained different sources to get into higher education and research
- Discussed about integrated Ph.D courses.



2. Organized an industrial visit cum study tour to CIPET (Central Institute of Plastic Engineering and Technology) located at Surampally on 13.1.2020 for the students of II BSc – MPC, MCCs, CBZ, BioTech, FMC. 75 students were taken to the visit and were accompanied by 4 degree faculty members. Visit to CIPET is coordinated by Dr.S.Vani Latha, Head, Department of Chemistry.

Outcome of the programme:

- Mr D. Anjaneya Sharma, Sr Technical Officer at CIPET has coordinated the visit at CIPET.
- MrK.P.Singh has given orientation about CIPET, PG-Diploma courses at CIPET and career opportunities in this field.
- Students were given inputs about different instruments used in two testing laboratories, mould designing lab and tool rooms.

- Then students were exposed to production unit which consists of recycling-equipment and different modes of moulding systems (injection moulding, compression moulding, film moulding, blow moulding etc.).
- A live demo was given exclusively for students in testing department.



Students at testing unit of CIPET



Recycling unit at CIPET



Students and Faculty at CIPET

3. Organized an extension activity namely 'Lab To Schools' programme on **4.2.2020** at MPUP School in Kuntamukkala village, which does not have lab facility at all. This event would motivate the young minds to exercise social responsibility in empowering the unprivileged students to visualize the concepts experimentally and make their learning effective.

All the faculty members from the department are involved in designing the concept based live experiments for classes V to VIII.

Number of students participated (as Demonstrators) – 10

Number of faculty accompanied – 2

Number of faculty coordinated - 8

Basic chemical science concepts from V to VIII class were taken for live Experimental demonstrations and shown class wise with good explanation by our students.

To inculcate social responsibility, at the end of the event, in each class, our students brought awareness on water consumption and management strategies to be followed to face one of the global problems 'Water Scarcity'.



Live demonstrations of concept based experiments at Lab to Schools programme



Live demonstrations of concept based experiments at Lab to Schools programme

2020-21

1. Organized awareness programme on 'Promoting Gender Equity' on 5.2.2021, 2-4PM, in the college Auditorium for all UG students.
Dr. Narayana Rao Battu M.L.Ph.D. (ILS)
Joint Secretary & Legislative Counsel to the Government of India
Legislative Department, Ministry of Law and Justice addressed the gathering.
2. Conducted elocution competition on the topics related to main theme 'Promoting Gender Equity'
Preliminary round on 4.2.2021
Final round on 5.2.2021.
3. Arranged a guest lecture cum demonstration on 'Awareness on Safe drinking Water' on the eve of World water day on 22.3.2021
4. Conducted Drawing, painting and poster presentation competition on 'Water consumption and management' on the eve of World water day on 22.3.2021.
5. Organized a guest lecture for III B.Sc – Chemistry cluster student on 'SOPs of commonly used polymerization and molding techniques' on 24.3.2021, A.N, in AV Room