



CHEM CHRONICLES

August 2024

Volume 01 Issue 01

Newsletter : Post Graduate Department of Analytical Chemistry

We the faculty and students from the Post Graduate Department of Analytical Chemistry are delighted to announce the very first issue of our newsletter themed,
“CHEM CHRONICLES: Exploring the world of chemistry from the laboratory and beyond.”

Chem Chronicles is an exuberant display of activities and achievements from our department. It relies upon the factual events happening in our department listed in a systematic, meaningful and chronological order.

Chem Chronicles vows to deliver a tale of innumerable and memorable activities every month contributing to the growth of our department.

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FRESHER'S PARTY: THE LEGACY BEGINS

The kickstart to the new academic year was done by hosting a Freshers day celebration for the incoming batch. The Fresher's party on the theme "The Legacy Begins" was organised by the Part II students of M.Sc. Analytical Chemistry on 03rd August 2024 from 1:00 pm onwards in the Flipped classroom. The day was filled with a lot of positive energy, interaction and fun with decent decorations done by our students Prajyoti and Mahalaxmi. The freshers from M.Sc. Part 1 were given a welcome entry by pinning of badges beautifully designed by our part 2 students. This was followed by a session of introduction, music, games and spot prizes hosted by our students Saniya, Saloma and Siya. Furthermore, a number of games were organized and also a competition to declare the "The Analysts of 2024". The teaching faculty from the PG department Dr. Luann, Ms. Limora, Ms. Harsha and Mrs. Suvarna and the non-teaching staff Mr. Saeesh were also cordially invited to witness this celebration. The celebration also included a variety of flavorful snacks which and a take-away to the students giving them the motivation to have more such events in the future. The celebration ended on a positive note with a appreciable response from all the students fostering new friendships.



The memorable glimpses shared of the Fresher's party attended by the students and faculty.

NEWSPAPER ON RECENT ADVANCES ON AIR POLLUTION

As an introductory activity to the Part 2 Generic elective course to M.Sc. Information Technology and Geoinformatics. The course instructor for the course on Environmental Chemistry Dr. Luann R. D'souza created an interactive session and display of their work created in the form of a newspaper on 03rd August 2024. Each student was made to create their own newspaper on the Indian state/city provided to them. The newspaper included the concepts of air quality standards, pollution source, health implications and references. In addition to this, the student had to give a unique title to their newspaper. All the students actively participated in showing their concern towards air pollution and the environment.



The creative works on display of the Generic elective course students.

ACADEMIC ACHIEVEMENTS

Five of the passed out M.Sc. in Analytical Chemistry students from the batch of 2023-2024 got recruited in the following pharmaceutical companies,

Sr. No.	Name	Company
1	Mr. Nikhil Chodankar	Apprenticeship, Medispray labs at Cipla Industrial unit, Kundaim, Goa
2	Ms. Sabira Bi M. A. Shaikh	Apprenticeship, Cipla Industrial unit, Kundaim, Goa
3	Ms. Nitou Chouhan	Apprenticeship, Cipla Industrial unit, Kundaim, Goa
4	Ms. Sanjana Y. Mayekar	Apprenticeship at Cipla Industrial unit, Kundaim, Goa
5	Ms. Harshada D. Gaude	Apprenticeship at Deccan Fine Chemicals (India) Pvt. Ltd., Corlim, Goa

The newly joined faculty at the Post graduate Department of Analytical Chemistry from 18th June 2024.



**DR. LUANN ROMAYNE
D'SOUZA**

**Ph. D in Inorganic
Chemistry
Goa University
2017- 2024**

Ph. D. Thesis Title: Synthesis, Characterization And Selected Applications Of Transition Metal Carboxylates Containing N- Donor Ligands.

Research Guide: Prof. Sunder N. Dhuri., School of Chemical Sciences, Goa University.

Publications: Seven research articles in peer- reviewed journals such as Chemselect, J. Molecular Structure, ACS omega, Inorganica Chimica Acta.

Research Activities: Presented and attended several national, international workshops, conferences, seminars, talks, symposia conducted in Goa and outside the state.

Expertise: Solvothermal crystal growth and synthesis laboratory skills.

Hands- on -training with instruments

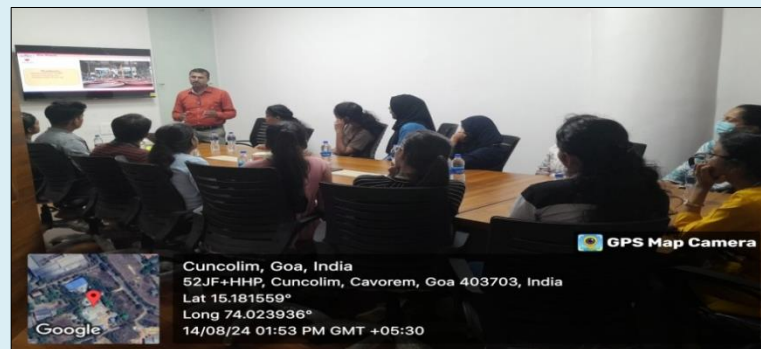
- Infrared (IR) and Raman spectrometers
- UV- Vis spectrophotometer & elemental analyzer
- Thermal Analyzer (TG, DTA , DTG & DSC)
- Fluorescence Spectrometer & Cyclic Voltammetry.
- Gas Chromatography and Gouy Balance.
- Microwave Plasma Atomic Emission Spectrometer.

Softwares

- Scifinder, Origin 8, 9: Scientific graphing & data analysis.
- Chemdraw, Mendeleev & Magnetic data interpretation.
- XPSPEAK41: Fitting & analysis of XPS spectra.
- Bruker D8 Quest Single- Crystal X-ray diffractometer (SCXRD), APEX: Software suite for X- ray crystal diffraction, WinGX, Mercury & Diamond 2: Crystal structure visualization & drawing.

ACADEMIC OUTINGS

The students of M.Sc. Part 1 and Part 2 (21 students) along with 02 faculty members namely Ms. Limora N. D'souza and Ms. Harsha A. Achari got an opportunity to visit the Shalimar Tar Products Limited (STP), Cuncolim Industrial Estate on 14th August 2024. The students and faculty left for the industrial visit to Cuncolim at 1.00 pm from the college campus with the arranged transport service. They arrived at STP at around 2.00 pm and were warmly greeted by Mr. Parasharam G. Maskar, Factory Manager at STP Limited. STP is a business segment known since 1935 for manufacturing construction chemicals, bitumen and coal tar products. He briefed the students on primary reactions carried out during the production process such as water proofing materials, epoxy, sealant, paint and adhesive, road coatings. He also made the students understand the processes involved in paint formulation, quality control, and the role of an Analytical chemist in ensuring product consistency and compliance with industry standards. The visit was indeed a new exposure and exciting exposure to the student community. Mr. Parasharam was felicitated with a small token of appreciation from our department.



Mr. Parasharam G. Maskar (C), Factory Manager at STP Limited briefing the students about the industrial unit.



A group photograph of the students and the factory unit staff of STP Limited, Cuncolim, Goa.

NATIONAL SPACE DAY

On the occasion of National Space Day held on 23rd August 2024, the students of M.Sc. in Analytical Chemistry (Part 1 and 2) actively participated in an online quiz on Chandrayaan-3 mission conducted by Ms. Limora N. D'souza in C202 from 2.15 pm onwards. This activity was indeed brain storming to the students getting to know a lot on the lunar mission which was a prestigious event to account for the history of India.



Glimpses of the students involved in the online quiz on National Space Day 2024.

BIWEEKLY SEMINAR

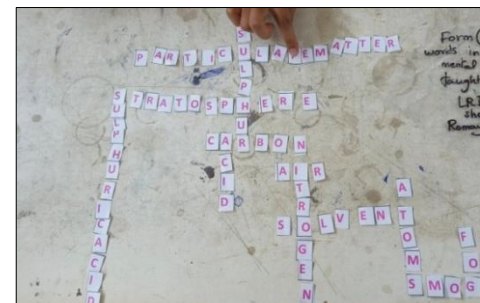
The teaching faculty, Ms. Harsha A. Achari convened the bi-weekly seminars for M.Sc. in Analytical Chemistry Part 1 students. The first seminar was held on 23rd August 2024 in C202 from 2.30 pm onwards presented by two students. The first presenter was Ms. Neha Kalgutkar who briefed the students and faculty on Radioactivity: Isotopes, decays and applications. While the second presenter for the day was Mr. Prateek Rajeswary who gave us an outline on the drug Ibuprofen: Synthesis, mechanism of action and dosage and effects. This was followed by a series of discussions and questions put forth by the students and faculty to enhance further understanding. The next seminar was scheduled on 6th September 2024 (Once in every two weeks: a biweekly pattern).



Glimpses of the students of M.Sc. of Analytical Chemistry Part 1 : Ms. Neha (L) and Mr. Prateek (R) delivering their insights on their seminar topic.

TREASURE HUNT & PUZZLE

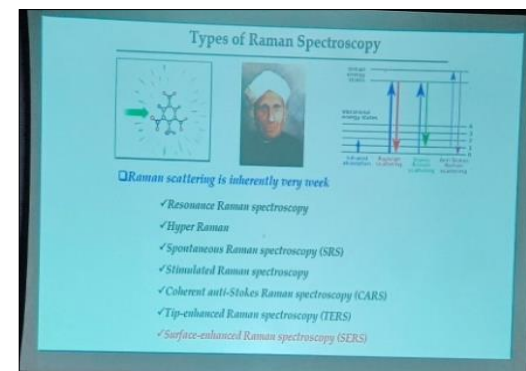
On 24th August 2024 the Part 2 Generic elective students of M.Sc. Information Technology and Geoinformatics actively participated in a course activity conducted by the course instructor Dr. Luann R. D'souza. The activity was held in A115 from 9.30 am to 11.30 am with clues hidden in A115, A113 and adjoining areas. The students had an interactive session wherein they discussed collectively as a group to crack the hints for the hunt and solved puzzles all based on environmental pollution. This activity facilitated interaction and fun amongst fellow students, working in unity as well as enhanced their problem solving abilities and also gave them a lot of knowledge and ideas of the course topic.



The students involved in solving the crossword puzzle to generate clues to the treasure hunt.

TWO-DAY WORKSHOP ON RAMAN SPECTROSCOPY

The faculty from the department of M.Sc. in Analytical Chemistry, Dr. Luann R. D'souza and Ms. Limora N. D'souza attended the "Two-Day Workshop On Raman Spectroscopy" organized by the School of Chemical Sciences (SCS) and the School of Physical and Applied Sciences (SPAS) at Goa University from 26- 27 August 2024 in the Auditorium of Faculty Block E, Goa University from 9.30 am to 6.00 pm.



Introductory glimpse of the Raman spectroscopy workshop held in the Auditorium of Faculty Block E, Goa University.

Continued... TWO- DAY FACULTY WORKSHOP ON RAMAN SPECTROSCOPY

The workshop emphasized on the concepts and demonstrations on the Raman spectroscopic instrument at Goa University. This workshop provided us a platter of vast knowledge on the applications of Raman spectroscopy delivered by renowned speakers namely Prof. Shankar Ghosh (TIFR- Mumbai), Dr. Adithya Lakshmana (IISER-Thiruvananthapuram), Dr. Surajit Saha (IISER- Bhopal), Dr. Kaustabh K. Maiti (NIIST- Thiruvananthapuram) and Dr. Nakul C. Maiti (CSIR-IICB-Kolkata). Their insights were worth brainstorming and informative to us and gave us a platform to educate the our students on having prospects with respect to the research facilities available at Goa University and also encourage the students to attend such worthy workshops in the times to come.



Prof. Shankar Ghosh from TIFR- Mumbai (L) delivering his insights on Raman Scattering to the audience. Dr. Kaustabh K. Maiti from NIIST Thiruvananthapuram (R) delivering his talk on SERS in Diagnostic applications.



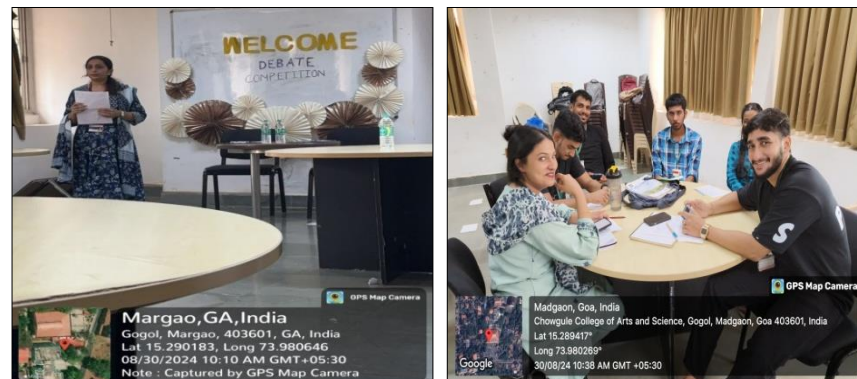
Group photograph taken on the first day of the Raman spectroscopy workshop with the participants and some esteemed speakers and organizers.

DEBATE COMPETITION

The department of M. Sc. in Analytical Chemistry conducted a debate competition on the theme which was in compliance with the "National Nutrition week" on 30th August 2024 in the flipped classroom from 10.00- 11.30am for the students of Generic elective course (Food Chemistry). The competition was organized by the course instructor Mrs. Suvarna P. Jog. The aim of organizing debate competition was to explore the importance of food and nutrition in our daily lives and the impact of our food choices on our health and the environment. The session where we gathered to exchange ideas, challenge perspectives, and celebrate the art of argumentation. The event was judged by our faculty Ms. Limora N. D'souza and Ms. Harsha Achari.

Continued.... DEBATE COMPETITION

A total of 16 students participated in this competition with great enthusiasm. The students were divided in 4 teams namely: THE CALORIE CONUNDRUM, THE FOOD FORMULA, TASTE SQUAD and THE MOLECULE MUNCHERS. The debate on food and nutrition highlighted the complexity and importance of this topic. The teams demonstrated a deep understanding of the issues and presented compelling arguments. The event encouraged participants and audience members to think critically about their food choices and their impact on the world. The winning team of the debate competition was THE FOOD FORMULA.



Some of the glimpses captured during the debate competition.



The winning team for the competition was the "Food formula": Arya (Second L), Srushti (Third L), Cleamson (Third R) and Kahlil (Second R).

ECO CHARADES

An activity named "Eco Charades" was conducted on 31st August 2024 from 10.30 am onwards in A115 for the Part 2 Generic elective course students under the supervision of the course instructor Dr. Luann R. D'souza.

A total of 16 students participated in this activity wherein they were distributed into 4 teams namely: Stratosphere, Troposphere, Mesosphere and Thermosphere. There were 3 rounds of the activity with the team Stratosphere emerging as the winner and Troposphere being the runner-up. This activity emphasized on guessing various pictorial representations depicted environmental pollution. It also involves unscrambling words to define various terms in environmental chemistry. The winning teams were awarded with a small token of appreciation presented by the Judge of this activity Ms. Limora N. D'souza.



GREEN GOA SUMMIT 2024

The faculty from the Post Graduate Department of Analytical Chemistry Ms. Harsha A. Achari attended the Green Goa Summit 2024 on 31st August 2024 organized by Vibrant Goa at the Durbar Hall, Raj Bhavan, Dona Paula, Goa.

The event was convened by eminent speakers across the globe namely; Commdant P. K. Khuswaha (SORR India), Dr. Padma Rao (CSIR, Nagpur).

The summit emphasized on accomplishing the set goals under Sustainable Development Goals and Environmental Social Governance Policies.

Panel discussions were held on plastic resource recovery, green hydrogen production technology, green belt development, oceanic solutions for oil spills and encouraging circular economy with skill development.



RESEARCH IN EVERY DAY LIFE

UPCYCLE 130 GRAMS PLASTIC WASTE TO 100 GRAMS SOAP



Apart from having a number of activities for students as well as faculty. Our department also keeps a keen search on finding the updated research technology to combat environmental pollution. We the Department of M.Sc. in Analytical Chemistry keep ourselves updated on recent advances in research.

As plastic waste continues to accumulate, chemists are focused on finding ways to reduce the adverse global effects. The very recent article by Virginia Tech. led by G. Liu reports the transformation of municipal waste polyethylene (plastic) to waxes followed by subsequent processing to fatty acids and finally surfactants (soap). As a economically viable approach.

Reference: Z. Xu, N. E. Munyaneza, Q. Zhang, M. Sun, C. Posada, P. Ventura, N. A. Rorrer, J. Miscall, B. G. Sumpter, G. Liu, *Science* 381 (2023) 666-671.

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