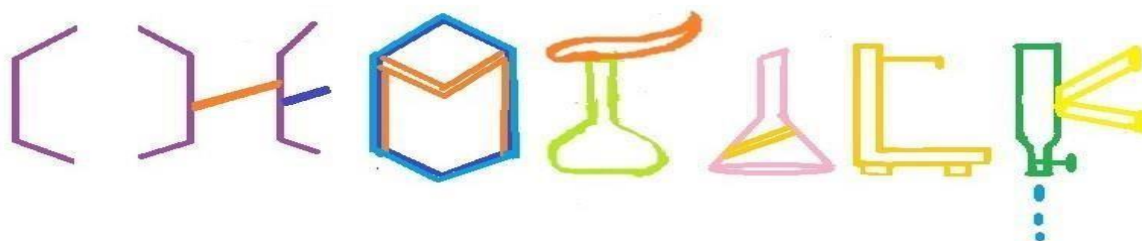


A.P.C.Mahalaxmi College For Women

Thoothukudi.

PG & Research Department of Chemistry



A Students 'Magazine

Edition I, Volume XV

10/04/2025



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This edition brings an article with chem Fact,. Besides this, Chem innovation and chemystery also discussed.

## **From Editor's Desk**

Dear Readers,

As our Government has strongly enforced plastic ban, we have also tried to take a step towards environmental protection by publishing a novel method of plastic degradation. To give a new perspective of chemistry to readers, we have introduced chemfiction, i.e. a fictional story on chemistry. We assure that this edition will satisfy the expectation of the readers.

**- Editor**

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## DEPARTMENTAL ACTIVITIES

The PG & Research Department of Chemistry of A.P.C Mahalaxmi College for Women jointly organized a Oneday Workshop on “An Overview of HWP” on 20<sup>th</sup> December 2024. The workshop started with the inauguration and welcome address was given by the programme Convener and Head, Dr. H.Kohila Subathra Christy, Department of Chemistry. The workshop was attended by 103 chemistry departments students. The Technical session I started with the talk by Dr.S.Sukumar, Incharge PC&AL, Heavy Water Plant, on the Topic “Indian Nuclear Power Programme & Heavy Water Board”.

Mr. Prabhat Chand Technical Officer/D, Heavy Water Plant, and the prize winners were awarded. Refreshments were also provided to the students. In the Feedback session, the participants interestingly expressed their views. The Workshop provided an ideal platform for the participants and promotes the opportunity to discuss about the Indian nuclear power and their application to the society. Dr. D. Shanmuga Priya proposed the vote of thanks. Finally, the Workshop successfully ended with the National Anthem.

The PG & Research Department of Chemistry of A.P.C Mahalaxmi College for Women organized a Multidisciplinary innovation Programme on Research “Fostering innovation through multidisciplinary Collaboration Strategies for Patent Development on 8<sup>th</sup> January 2025. The programme started with the inauguration and welcome address was given by Dr.D. Shanmuga Priya, Assistant Professor. The Programme was attended by 60 chemistry department students.

Dr.M.Tamilselvi, Dean, Research, Associate Professor, V.V.Vanniaperumal College for Women, Virudhunagar, delivered a talk on “Fostering innovation through multidisciplinary Collaboration Strategies for Patent Development”. She emphasized the need for collaboration between experts from diverse fields to drive innovation and patent development. The Programme offered an excellent opportunity for the participants to develop innovative solutions, promoting collaborations. Dr.S.Sankaravadivu, Assistant Professor of Chemistry department delivered the vote of thanks.

PG & Research Department of Chemistry, PG & Department of Chemistry organizes a Gender Sensitization Programme on 24.01.2025. Mrs. M. Rajalakshmi, B.Sc., B.L., Alumnae, Advocate, Thoothukudi has consented to deliver a talk on “Combating Cybercrime: Protecting Women and Children on fine” at 2.00 PM on 24.01.2025.

In observance of “National Voters Day”, PG and Research Department of Chemistry of A.P.C. Mahalaxmi College for Women, Thoothukudi, took “Voters’ Pledge on 25.01.2025. The day is observed to create awareness on the Local body election, and the significance of suffrage. Dr. H. Kohila Subathra Christy Head, Department of Chemistry and other faculty members are arranged to take the pledge by students at 11.30 a.m.

III UG & II PG students of Chemistry were brought to an Industrial Visit to SPIC PVT Ltd., Thoothukudi on 27.02.2025 by Dr. S. Kalaiarasi, Asst., Prof., of Chemistry. Students gathered an knowledge about chemical productions which inside the plant.

Parents Teachers Meet was arranged on 13.03.2025. All UG & PG students of parents met the staff and instructed about college timing, attendance, cell phone and internal exam marks.

In connection with National Science Day celebrations, PG & Research Department of Chemistry association organizes an Inter Departmental Competitions - SCI FEST 2025 (20.02.2025). As part of the celebrations, various competitions like Memes on “Daily Dose of Science, Videography on Science in Focus & Logo designing on Science for Sustainable Development: Promoting Green Technologies were conducted on 20.02.2025. 44 students of Chemistry actively participated in the competition. Prize winners of the competition have been awarded.

The PG & Research Department of Chemistry successfully organized the intercollegiate competition, MACH Fest-25, on 25th March 2025. As part of the celebrations, various competitions like Cheminar, Chemistry Choas, Periodic Table Prodigies, Chem-Tastic Meme, Chem Cheftain, Chem Snafu were conducted on 25.03.2025. Fifteen institutions enthusiastically participated in both online and offline competitions, making the event a grand success. Several colleges actively participated, making the competition intense and engaging. The enthusiasm and talent displayed by the students were commendable.

After a rigorous evaluation of performances, the Overall Winner of MACH Fest-25 was awarded to V.O. Chidambaram College, Thoothukudi, for their exceptional performance across multiple categories. The Runner-up position was secured by Manonmaniam Sundaranar University College, Mahendragiri, for their remarkable participation and commendable efforts. Dr. P. Gurulakshmi, Assistant Professor of Chemistry propose the formal vote of thanks. The valedictory function was graced by esteemed faculty members, and student participants.

The winners and runners-up were honoured with trophies and certificates of appreciation. The organizing team expressed gratitude to all the participating colleges, faculty members, and student volunteers for making the event a resounding success.

On behalf of the Chemistry association, Community service was arranged on 18.03.2025 in HNUP Middle School, Puthiamputhur on the topic “Food Adulteration”. Students of II PG addressed by our staff members and created awareness among all students.

PG and Research Department of Chemistry organized a Health Awareness Programme on ‘The Magic Health: A Chemical Adventure’ at 10.00 a.m. on 27.03.2025. Dr. R. Rajeswari, Assistant Professor of Mathematics, A.P.C. Mahalaxmi College for Women, Thoothukudi was the invited chief guest. The chief guest talk was focused on bringing awareness on women health. Totally 67 students were benefited.

## **Chem Fact**

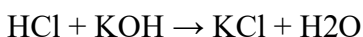
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### **S.Santhiya (III B. Sc., Chemistry)**

#### Acid-Base Reactions

Whenever you combine an acid (e.g., vinegar, lemon juice, sulfuric acid, or muriatic acid) with a base (e.g., baking soda, soap, ammonia, or acetone), you are performing an acid-base reaction. These reactions neutralize the acid and base to yield salt and water.

Sodium chloride isn't the only salt that can be formed. For example, here is the chemical equation for an acid-base reaction that produces potassium chloride, a common table salt substitute:



#### Soap and Detergent Reactions

Soaps and detergents clean by way of chemical reactions. Soap emulsifies grime, which means oily stains bind to the soap so they can be lifted away with water. Detergents act as surfactants, lowering the surface tension of water so it can interact with oils, isolate them, and rinse them away.

## **Chem Innovation**

**R.P. Thanga Jothi(II B.Sc.) ., Chemistry)**

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### **Nanopesticides**

The world population keeps growing. Some predictions suggest we will be almost 10 billion humans by 2050. Feeding that many people will require a huge increase in agricultural production while keeping crops sustainable: minimizing the environmental impact in terms of land use, reducing the amount of water needed, and mitigating the contamination by agrochemicals such as fertilizers or pesticides. Unsurprisingly, nanotechnology is attracting quite a lot of attention beyond the pharma and health industries. Tailored nano-delivery systems could also become a great tool for farmers, as it would eventually allow them to tackle the main problems of conventional pesticides such as environmental contamination, bioaccumulation, and the huge increase in pest resistance. There are very few publications that carefully analyze the benefits—and risks—of so-called “nanoagrochemicals” against their conventional alternatives. In most cases, the increase in efficacy is quite limited. However, in some cases, researchers have observed improvements by an order of magnitude under laboratory conditions. We still need a proper assessment of the efficacy of nano pesticides under field conditions. That is why some companies still investigate their potential, proving that there is still hope for this technology. Nanotechnology may not be the only ingredient to a successful new, more sustainable agriculture, but it will certainly lead to more sophisticated agrochemicals with a lower impact on the environment and human health.

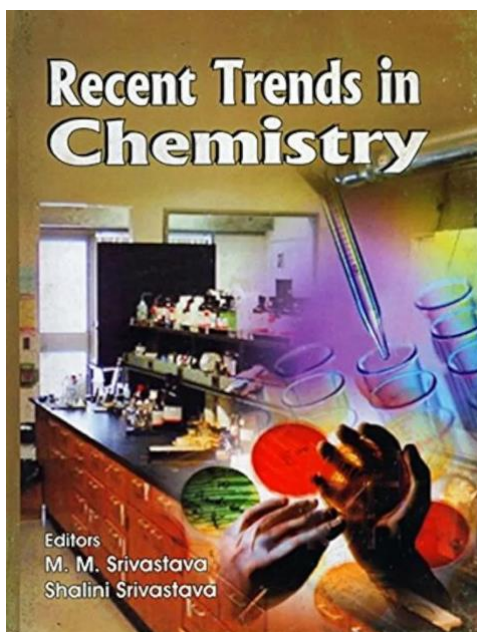
### **Enantio selective organocatalysis**

Chemists have always been inspired by nature. A few years back, researchers dreamt of a new kind of catalyst that, like most natural enzymes, would not require the use of expensive metals. “Organocatalysis” was born in the late 1990s and it has not stopped growing ever since. As chemists understood the industrial implications of lowering the catalyst amount, they crafted ways of creating chiral carbon-carbon bonds using just part per millions of organocatalysts. Many other fields have emerged from organocatalysis, and now industries have scaled-up asymmetric organocatalytic protocols to synthesize fine chemicals and drugs.

## EAGLE VIEW

R.Alfina Mary (I M. Sc., Chemistry)

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M.M. Srivastava

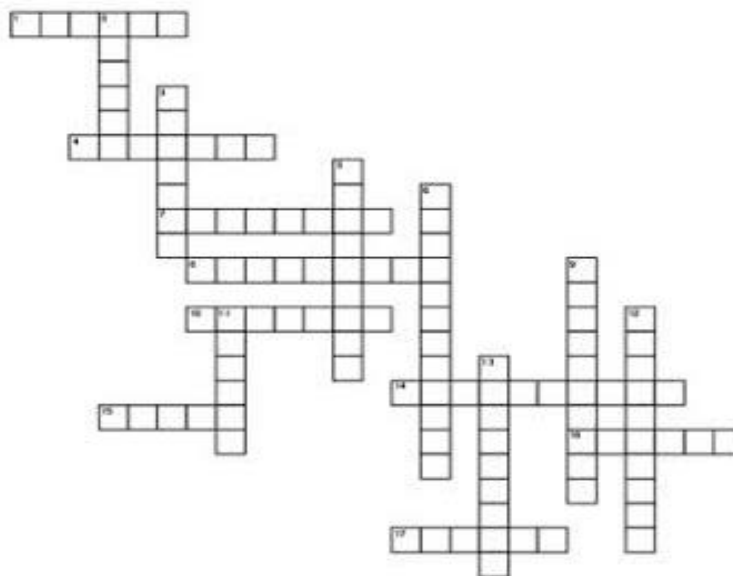
### Recent Trends In Chemistry

The Book Recent Trends in Chemistry is the presentation of the collection of 32 in-depth reviews from the eminent professors and scientists of educational institutions and research organizations, providing in a single volume, an usually broad array of topics in chemistry. The book addresses to the recent advancements in wide arena of Chemical Sciences like Green chemistry, Organic metallic chemistry, Microwave chemistry, Supramolecular chemistry, Nano chemistry, Computational chemistry, Combinatorial chemistry, Bio Molecular chemistry, Solutions chemistry, Coordination chemistry, Trends in Structural and function predictions [protein molecule], Artificial Photosynthesis, Radiation preservation of food, Emerging trends of Polymerization, Biodegradation of polymers, Polymeric membrane for separation, Polymer based Hydro gels, Pesticides of New millennium, Bio Chelation and detoxification of metals, Phyto remediation of toxic metals etc.

## CHEMYSTERY

-M.Jeyasankari (II M. Sc. Chemistry)

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### Across

- [1] \_\_\_\_\_ are placed on the left side of the periodic table  
[4] British chemist who formulated the Law of Octaves  
[7] \_\_\_\_\_ bond is formed due to sharing of electrons  
[8] Atomic radius is measured in this unit of distance  
[10] Elements in group 17 of the periodic table are known as  
[14] Atoms of an element which substitute hydrogen in a carbon chain  
[15] This element has atomic number: 18  
[16] Compounds with same molecular formula but different structure  
[17] Horizontal rows in the modern periodic table are known as

### Down

- [2] Saturated carbon compounds are known as  
[3] All elements in a group have the same  
[5] Russian chemist who formulated the first Periodic Law  
[6] Property of carbon which helps it to form large number of covalent compounds with various elements  
[9] Ability of carbon to form bonds with other carbon atoms  
[11] Hydrocarbons in which there is a triple covalent bond between two carbon atoms  
[12] \_\_\_\_\_ series is a series of carbon compounds in which the same functional group substitutes for hydrogen in carbon chains  
[13] Germanium is a

Please send your answers to chemtalk123@gmail.com. Cash award Rs.100 will be given to puzzle solver. The winner of the previous Chemystery puzzle is S.Karthika Lakshmi (IM.Sc.). The Correct answers are Here are the answers to the Chemistry Crossword Puzzle in the image: Across 1.Electron 2.Reaction 3.States 4.Proton 5.Noble 6.Mass 7.Organic Down 2.Two 3.Proton 4.Hydrogen 5.Periodic 6.Metal 7.Nucleus 8.Atomic 9.Ion