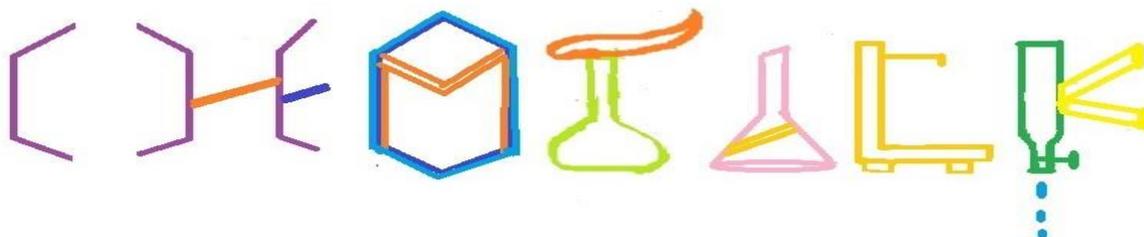


A.P.C.Mahalaxmi College For Women

Thoothukudi.

Department of Chemistry



A Students' Magazine

Edition I, Volume XI

10/04/2023



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

PG & Research Department of Chemistry, A.P.C.Mahalaxmi college for Women

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## 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**

On behalf of Chemistry association, Dr. M. Kamalutheen, Associate Professor, Sadakthullah Appa College, Tirunelveli delivered a talk on How to become a Successful Entrepreneur on 30.12.2022 for chemistry students. The students gather more knowledge about innovation in chemistry as well as collect information for entrepreneur in various fields of Chemistry. He gave more information about successful Entrepreneur.

On behalf of the chemistry association, an alumnae Mrs. U. Selvi, Headmistress, Government Higher Secondary School, Kovilpatti delivered a talk about how to face problems in current situation. Alumnae shared their memories.

Department of Chemistry, A.P.C Mahalaxmi College for Women, Thoothukudi observed National Girl Child day by organising a gender equity programme on 24<sup>th</sup> January 2023 to create awareness about the rights of the girl child, to remove gender-based bias and education of girl child, child marriage, various schemes for the girl child and empowering the girl child. They also added up on sensitizing the participants on the ill effects of dowry, hazards of domestic violence and child labour. Dr.H.Kohila Subathra Christy, Head and Assistant Professor of Chemistry welcomed the guest and participants.

Mrs.K.Kalaiselvi, Panel Advocate, DLSA, Thoothukudi was the invited chief guest. In her speech, she said that the girls around the world continue to face unprecedented challenges to their education, their physical and mental wellness, and the protections needed for a life without violence. Girls with disabilities face additional barriers to accessing support and services. COVID-19 has worsened existing burdens on girls around the world and worn away important gains made over the last decade. With adversity, however, comes **resourcefulness, creativity, tenacity, and resilience**. The world's 600 million adolescent girls have shown time and time again that given the skills and the opportunities, they can be the **changemakers** driving progress in their communities, building back stronger for all, including women, boys and men. Dr.D.Shanmuga Priya, Assistant

Professor of Chemistry, NSS Programme officer proposed the formal vote of thanks. All the chemistry students have actively participated in the programme.

The International Web Conference in “Recent Advancements in Chemical Sciences and Intellectual Property rights (RACSIPR ‘23) was organized by the PG and Research Department of Chemistry, A.P.C. Mahalaxmi College for Women. The main aim of this conference was to bring together leading academicians, researchers and students to exchange and share their experiences and research outputs on all aspects of Chemical Sciences. It was also meant to provide a premier interdisciplinary platform to present and discuss the most recent innovations, trends and concerns as well as practical challenges encountered and solutions adopted in the field of Chemical Sciences. The conference preparations started with the call for abstracts; 88 abstracts were received out of which 75 were accepted. Selected research abstracts have been compiled and edited in the form of Conference Proceedings with ISBN and published by Shanlax Publisher. The technical sessions followed the inaugural session and the main keynote lecture was delivered by Dr. N.S.K. Gowthaman, Post-Doctoral Researcher School of Engineering, Monash University, Malaysia. The conference comprised of three technical sessions, some of them scheduled concurrently. The first session on “Innovation, Invention and startup via IPR” was handled by Dr. T. Arockiadoss, Assistant Professor and Head i/c, Deputy Coordinator, Technology Support Centre, Madurai Kamaraj University, Madurai. “Carbon Quantum Dots: An Economical Sustainable Opto Electro catalyst in Sensing Applications” was the topic delivered by Dr. N.S.K. Gowthaman Post-Doctoral Researcher School of Engineering, Monash University, Malaysia. The final technical session was handled by Dr. P. Pon Sathieshkumar, Senior Postdoctoral Researcher, POSTECH, South Korea on the topic “Supramolecular Approaches for the Advancements in Materials Chemistry”. The conference was structured to foster discussion between participants.

The paper presentation session was chaired by Dr. Chandralekha, Head and Assistant Professor of Chemistry, Kamaraj College, Thoothukudi. Faculties, research scholars and students from the host institution and other institutions presented their research work enthusiastically. Best presenter awards were given to participants in four categories i.e, Faculty, research scholar, PG students and UG students based on novelty, presentation and response to questions. The one day virtual Conference ended with a valedictory session. The welcome speech in the session was delivered by Dr. P. Yokeswari Nithya, Assistant Professor of Chemistry. This was followed by a

valedictory address by Dr.Chandralekha, Head and Assistant Professor of Chemistry, Kamaraj College, Thoothukudi. A few delegates gave a feedback on the Conference and the session concluded with a vote of thanks proposed by Dr.S.Sankaravadivu, Assistant Professor of Chemistry

## CHEM TRENDS

M.Santhiya-(I B. Sc. Chemistry)

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### **Green Chemistry**

Green chemistry focuses on processes and products that stop the impact of dangerous or hazardous chemicals and materials. This chemicals trend pushes manufacturers to prioritize environmental regulations and sustainability. Producers install recycling technologies, enhance waste management, and move to alternative energy resources. For example, the transition from petroleum to plant-based feedstocks converts biomass into fuel. Another example is green hydrogen which transforms carbon dioxide (CO<sub>2</sub>) emissions into hydrocarbons. Further, green chemistry solutions substitute coke oven gas to decarbonize the steelmaking process.

### **Lignolix develops Lignin Upcycling Technology**

Lignolix is a US-based startup that upcycles lignin from plant waste into high-performance specialty chemicals. Since lignin is difficult to process due to its smell, the startup's technology breaks down lignin into small pieces while preserving its functional properties. This approach reduces odor and color challenges and is also compatible with other products. The end products are applicable in cosmetics, adhesives, flavorings, and fragrances and the Lignolix technology is easily scalable.

### **SusPhos offers Phosphate Waste Upcycling**

SusPhos is a startup from Denmark that applies smart chemistry to upgrade phosphate-rich waste. The startup generates waste-free alternatives to products derived from fossils. SusPhos's patented technologies provide sustainable phosphate products such as high-quality flame retardants and specialty fertilizer.

## **Chem Fact**

**K.Abitha (II B. Sc., Chemistry)**

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**A lightning strike may sometimes reach a staggering temperature of 30,000 degrees Celsius (i.e., 54,000 degrees Fahrenheit).**

**Helium is lighter than air. Hence, it floats.**

**More than 78% of human brain consists of water.**

**Sound travels 4.3 times faster in comparison to air. It doesn't travel through the vacuum at all.**

**Dynamite contains peanuts as a part of its ingredient.**

**Chalk is made of trillions of microscopic skeleton fossils of plankton.**

**Your tooth enamel is the hardest chemical substance in your body.**

**The Amazon rainforest produces approximately 20% of the oxygen in the atmosphere.**

**The surface of Mars is red because of the presence of iron oxide**

**Superfluid Helium defies gravity and climbs on walls**

**The rarest naturally-occurring element in the Earth's crust is astatine**

**Famed chemist Glenn Seaborg was the only person who could write his address in chemical elements**

**Air becomes liquid at  $-190^{\circ}\text{C}$**

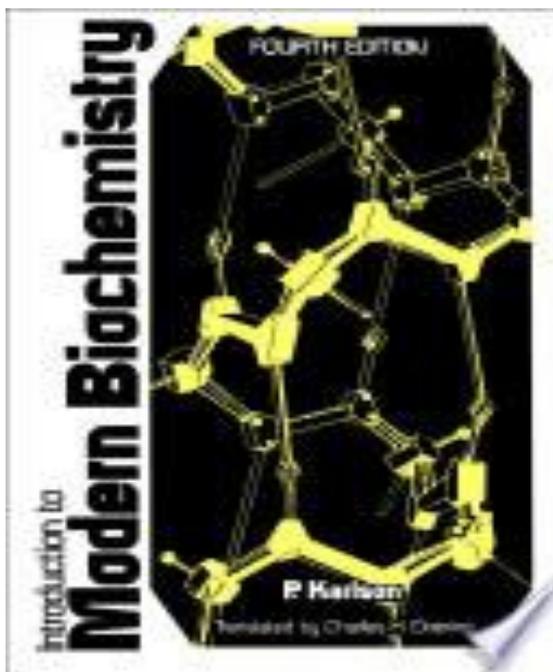
**EAGLE VIEW**

**N.L.Lakshmi Priya (III B. Sc., Chemistry)**

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**Introduction to Bioorganic Chemistry and Chemical Biology**

**By P.Karlsan**

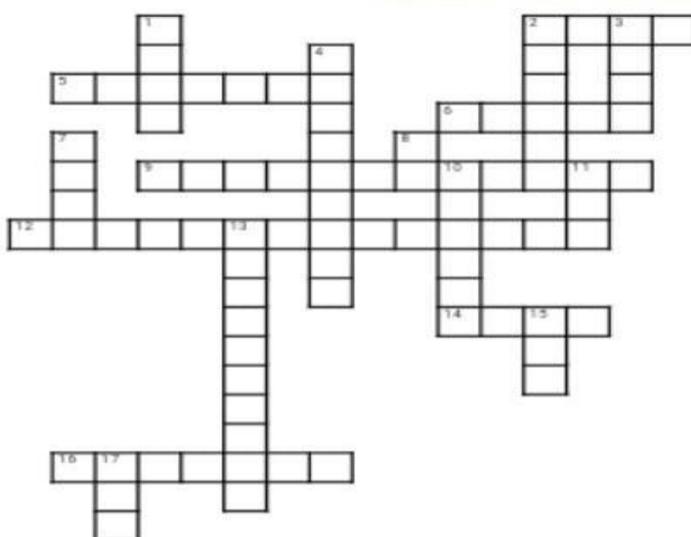


Introduction to Modern Biochemistry, Fourth Edition provides an understanding of the chemical background of biological phenomena. This book discusses the concepts of generation and utilization of free energy. Organized into 23 chapters, this edition starts with an overview of the important role of amides in biochemistry. This text then explores the chemical structure of proteins and describes the methods of

determining the amino acids sequence of proteins. Other chapters consider the role of genes in protein and enzyme synthesis. This book discusses as well the significance of the submicroscopic structure of the cell in biochemical reactions. The reader is also introduced to the chemistry of the carbohydrates. The final chapter deals with biochemical functions of various organs, including the digestive tract, liver, kidney, nervous system, muscles, and connective tissues. This book is a valuable resource for biologists, biochemists, scientists, researchers, and readers who are interested in the field of biochemistry

## CHEMYSTERY

- A.Ebenazar Beulah (II M. Sc. Chemistry)



### Across

- 2 A substance that releases hydroxide ions into water. (4)
- 5 The strength of an acid. (7)
- 6 One of the products when you add an acid to a base. (5)
- 9 Acid found in your stomach. (12)
- 12 The process of adding acids to bases. (14)
- 14 One of the products of adding an acid to a base. (4)
- 16 A solid substance composed of positive and negative ions. (7)

### Down

- 1 A substance that releases hydrogen ions into water. (4)
- 2 How bases usually taste. (6)
- 3 How acids usually taste. (4)
- 4 An ion formed when a hydrogen ion combines with a water molecule. (9)
- 7 Color of litmus paper in bases. (4)
- 8 Scale used to measure acidity and alkalinity. (2)
- 10 A substance used as an acid-base indicator. (6)
- 11 An atom or molecule with a positive or negative charge. (3)
- 13 The strength of a base. (10)
- 15 Common name for sodium hydroxide. (3)
- 17 Color of litmus paper in acids. (3)



Please send your answers to [chemtalk123@gmail.com](mailto:chemtalk123@gmail.com). Cash award Rs.100 will be given to puzzle solver. The winner of the previous Chemystery puzzle is R.Saranya (II M.Sc.).The Correct answers are 1. Electron 2.Two, 3.Proton, 4.Hydrogen, 5.Reaction, 6.Plasma,7.Metal,8.Nucleus,9.Neutron,10.Number,11.Noble,12.Ion,13.Mass,14.Carbon