



# Dwaraka Doss Goverdhan Doss Vaishnav College (Autonomous)

Reaccredited With A++ Grade by NAAC  
College with Potential for Excellence, Linguistic Minority Institution,  
Affiliated to University of Madras,  
Arumbakkam, Chennai - 600 106

## PG & RESEARCH DEPARTMENT OF CHEMISTRY

# ATOMIC BYTE-VOLUME IX



## From Secretary's Desk



Dr. Shri. Ashok Kumar Mundhra,

Dwaraka Doss Goverdhan Doss Vaishnav College has a long history of rich tradition and culture. Our mission is excellence, and our goal is virtue.

This publication gives young, aspiring chemists a stage on which to showcase their abilities and hone their skills. Achievement is a journey that teaches us that failure is never fatal; it is not a destination.

Students are exposed to a variety of options and encouraged to pursue those chances in order to provide them with a holistic education. I am extremely happy and elated to note that the Postgraduate and Research Department of Chemistry is bringing out the ninth edition of their Newsletter "Atomic Byte" in a remarkable way.

Being an alumnus of the department I can visualize the growth of the department both in infrastructure and academics achievement. I am delighted to note that faculty work meticulously to impart knowledge and skills among the students by organizing many co-curricular activities and provide them a strong foundation for overcoming obstacles in the future.

I congratulate The Head, Faculty, DGVC Chemical society and the students of the Department of Chemistry for their efforts and wish them to reach their goal.

*Amm*  
SECRETARY

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## From Principal's Desk



Chemistry is present in all living things, both here on Earth and beyond, and is not only found in laboratories, factories, and other industrial settings. Chemistry has always been an experimental discipline that produces important and worthwhile results for all of humanity. It has come to our attention that our daily existence is impossible without Chemistry.

Numerous chemists have dedicated their entire lives to their work, winning Nobel Prizes that have opened the door to ground-breaking discoveries.

I am happy to note that the Department of Chemistry is currently issuing the ninth edition of the "Atomic Byte" Newsletter, which showcases the department's efforts and achievements.

I congratulate the faculty and students of the Department of Chemistry for making this distinctive effort.

I hope that the insights provided in the Newsletter will benefit and enlighten the large student body while encouraging others to strive for excellence.

PRINCIPAL



## From HOD'S Desk



Jai Shree Krishna!!

I am extremely delighted to unleash the highlights of our department activities of 2023-2024 both co-curricular and extracurricular, in this News Letter Atomic Byte Volume IX.

Our vision is to become one of the pioneering departments both in academics and research and our mission is to motivate and mould the students to become achievers and reach their goal successfully. We provide a platform for the students to balance themselves with intellectual and practical experiences which will definitely enable them to boost their confidence and competence to face the challenges of life both personally and professionally.

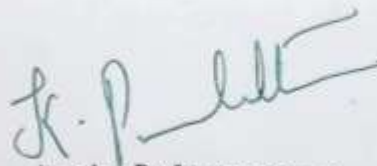
I wish to place on record the untiring efforts and endeavours of DGVC Chemical society members both staff and students, non-teaching staff and student volunteers throughout the academic year 2023-2024 to make it an eventful one.

The students are enlightened through inspiring lectures, hands-on training, entrepreneurial workshop, CSIR-NET Coaching, extended activity for Government school children, Industrial visits as well as motivational speeches by the distinguished alumni of our department.

I am sure that the MOU and certificate program would be an eye-opener for kindling the interest in the young minds to set a goal for their future.

I am confident that the DEPARTMENT shall enhance the credibility by showing a high level of professional competence and provide space for students to hone their skill sets and march towards their goal.

Looking forward in the pursuit of progress!!



Associate Professor and Head,  
Department of Chemistry

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## INAUGURATION OF DGVC CHEMICAL SOCIETY

The inauguration of DGVC Chemical Society for the academic year 2023-2024 was held on July 26<sup>th</sup> 2023. Dr. K. Premalatha, Asso.Prof & Head welcomed the gathering and highlighted on the role of DGVC Chemical Society members to make it an eventful year. Dr. R . Vasanthi, Staff Secretary, DGVC Chemical Society introduced the society members.



The Chief guest, **Dr. S. Anne Pauline**, Faculty of CIPET, delivered a lecture on Biopolymer hydrogels and **Mr B. Manimaran**, Assistant Technical Officer of CIPET highlighted the Design for the environment.

## INVITED TALKS

On 21st August 2023, **Dr. S. Ramanathan, Professor, Department of Chemical Engineering at IIT Madras**, shared his wisdom on "**Lithium-ion batteries for electric vehicles**," elucidating its objectives, advantages, and working mechanism. The intricacies of the battery's structure and materials used were thoughtfully highlighted.



**Dr. Raghunath Ramabhadran, Assistant Professor, IISER Tirupati** invited on 7<sup>th</sup> September 2023 to deliver a lecture on "**Electronic spectra of diatomic molecule**". He highlighted the behaviour of free electrons, adiabatic transitions and surrounding energies.



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## CSIR –JRF/NET,GATE Workshop

The 7th edition of the State Level CSIR-JRF/NET, GATE Workshop on Chemical Sciences was held over three insightful days from October 16th to 18th 2023.



During Session-I, **Dr. T. Sivaramakrishnan**, Associate Professor of Chemistry at RKM Vivekananda College, imparted foundational insights with a focus on "Nuts and bolts of Chemistry" and "Chronicles of Chemistry" which provided mnemonic aids and tricks to enhance our exam preparation.

Session II & V were handled by our faculty **Mr. A. Gopalakrishnan** intricately explored the exactly solvable systems and sophisticated approximate methods. He shared his expertise of problem-solving methods in Quantum chemistry and molecular spectroscopy.



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On Day – 2 Mr M. Balaji, Associate Professor, RKM Vivekananda College unfolded the complexities of Ionic equilibria and explained the method of solving application-oriented problems in a lucid manner.

Dr. S. Swarnalakshmi, Retired Professor from Guru Nanak College, enlightened the students on "Organic photochemistry and pericyclic reaction" with invaluable perspectives to aid in exam preparation.



"In the laboratory of life, every experiment is an opportunity for discovery, and this workshop has equipped the students with the tools to unravel the mysteries of competitive examination"

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## SKILL DEVELOPMENT PROGRAM

The Smart Evaporator Skill Development Workshop was conducted in collaboration with Bio Chromato, Japan, on 15th December 2023.

Mr. P. Manikandan, Vice President of Anatek Service (p) Ltd, introduced the esteemed chief guest, Mr. Keiyu Aihara, Country Head of Bio Chromato, Japan & Mr. Ota Technical Expert



They have educated the students with a comprehensive presentation and demonstration of the BioChromato Smart Evaporator, skillfully.

The workshop proved to be an insightful and engaging platform for skill development in the realm of Smart Evaporator technology.

"In the pursuit of knowledge and innovation, workshops like these serve as catalysts, unlocking the doors to a realm where theory meets practice, and possibilities unfold through shared expertise."

## WORKSHOP ON ENTREPRENEURSHIP

The entrepreneurship workshop was conducted on December 14, 2023. The faculty **Dr. U. Amaleshwari, Dean & Head, Department of School Management**, gave a lecture on “Business Incubators and Accelerators”, **Ms. Divya Vigneshwaran Designer, Merchandiser, Clothing Brand Consultant, Hastha Clothing & Accessories** highlighted the thumb rules to become a successful entrepreneur.



The final year Chemistry students participated in the course titled “Hands-on casting skill with wax base” showcased their talents with enthusiasm on the note of becoming future entrepreneur.



# INDUSTRIAL VISITS FOR UG & PG STUDENTS

## FOR PG STUDENTS

The PG and Research Department of Chemistry has organized an Industrial Visit to **Apex Pharmaceuticals in Irungattukotai** on February 12, 2024. The visit rendered an insight on drug synthesis. The students were exposed on the pharmaceutical procedures and instrumentation techniques of **FT-IR, HPLC, HPTLC, IN VITROSOLUTION UV SCANNING, AAS, and BOMB CALORIMETER**. The visit provided them with practical experience and in-depth knowledge of analytical and medicinal chemistry.



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## FOR UG STUDENTS

An Industrial visit to Domestic water treatment plants at Chembarambakkam and Puzhal Water Treatment Plant were organized on 12th February 2024. The students were educated on safety precautions, plant operations and water treatment processes.



## EVS FIELD TRIP

An Environmental field trip to the ARB Organic Farm in Ernakuppam, Periyapalayam was organized for the second-year B.Sc Chemistry students on February 12, 2024. The group was greeted by Ms. Anuradha owner of ARD Organic Farm, who also provided an overview of the different farming techniques and transplantation methods



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## LECTURE BY DISTINGUISHED ALUMNI

Lectures were organized on 21st February 2024 to motivate our students through our department's distinguished alumni.



**Mr. Ramesh Venkataraman, Divisional Sales Manager, Zuventus Healthcare LTD (Batch – 1992-1995), Mr V. Sathyanarayanan,, AGM, Cargo Logistics LH (Batch 1995- 1998) and Mr R. Annamalai, Head Master, Govt. Hr. Sec. School, Devanur, Villupuram (Batch 1998-2000) and Mr. Narasimman, Entrepreneur (Batch – 1992-1995 )** have shared their experiences and highlighted on the future prospects for chemistry students in industry and academic fields.



They had given motivational lectures regarding “skills required for a successful career” and “Role of youth for the future India”.

## NATIONAL SCIENCE DAY

National Science Day in commemoration of Sir C. V Raman's discovery of the Raman effect, the department organized a lecture on **“Developing Scientific thinking”**. The speaker **Dr. Edamana Prasad, Professor, IIT Madras** highlighted the role of understanding scientific thinking, fostering creativity, and inquiry-based learning in driving innovation and societal progress.



## PARENT TEACHER MEETING

On 19<sup>th</sup> February 2024, the department conducted its Annual Parents - Teachers meeting with the respective course teachers. The staff gave an insight of the overall performance of students and suggested ideas for the betterment of the students progress in the ensuing semester examination.



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## EXTENSION ACTIVITY

"Fun with Chemistry" was organized for the students of **Government Higher Secondary School Arumbakkam** on January 11, 2024 as an extension activity of the department. The workshop's objective was to spark school children's curiosity on the nuances of chemistry through attractive and colourful experiments.



The UG & PG students of our department demonstrated several experiments that illustrated the fundamental concepts of chemistry and showed many vibrant chemical reactions.

The children from **Kalpavriksh Montessori Community School, Anna Nagar** visited the chemistry department on February 7, 2024. The visit's main goal was to expose the children to a variety of chemicals and elements outside of their classroom setting. Our faculty Mr. A. Gopalakrishnan, demonstrated many scintillating experiments along with Dr. C. Kavitha offered lucid explanations to kindle their interest in Chemistry.



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# RASAYANOTSAV 2024



The 27<sup>th</sup> edition of RASAYANOTSAV 2024- an intercollegiate annual cultural fest is conducted on 6<sup>th</sup> March 2024. The chemico-cultural event has been a great opportunity for the chemistry students of other colleges to explore and showcase their inherent talents. **Dr U P Senthil Kumar Head - Generics R&D 3XPER INNOVENTURE Ltd., Chennai** will be the Chief guest for inauguration and **Dr. K. Parthasarathy, Assistant Professor, Department of organic chemistry, University of Madras, Chennai** for the valedictory session. Students from various city colleges have registered in events such as JAM, Artistry, Chem Memes, Poster Presentation, UG Quiz, PG Quiz, Chem Connect etc.,





## STUDENTS ACHIEVEMENT



CHANDRAJA. B, ANAND. C & DHARSHINI. A of I MSc Chemistry won the I prize in POTPOURRI-QUANTA - 2023 at Ethiraj College.



ASWIN. P & MADHANA GOPAL. G K of II MSc Chemistry won I prize in PG – QUIZ at Stella Maris College.



ANAND. C of I MSc Chemistry won II prize in TAMIL ORATORICAL at GURU NANAK College.

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## STAFF ACHIEVEMENTS

### STAFF EMPOWERMENT STRATEGIES

S.No	Details	Total (in numbers)
1	Resource person	25
2	Publication	18
3	Refresher course	4
3	Conference attended	7
4	Seminar attended	2
5	Workshop attended	1
6	Faculty development programme attended	1

### PATENTS

The patents listed below were submitted to IP India and published.

- ZrO<sub>2</sub>/SO<sub>4</sub>/Cu nanoparticles supported on reduced graphene oxide for selective oxidation of propylene glycol in the continuous reactor by Dr. P. TamizhDurai and Dr. C. Kavitha.
- Continuous hydroprocessing of waste plastics to diesel using Ni-Mo or Pt on Al<sub>2</sub>O<sub>3</sub> supports by Dr.P.TamizhDurai
- Continuous processing of veratryl alcohol to veratraldehyde using AC/Mn-Zn catalyst by Dr. P. TamizhDurai, Dr. T. Augustine Arul Prasad and Dr. C. Kavitha.

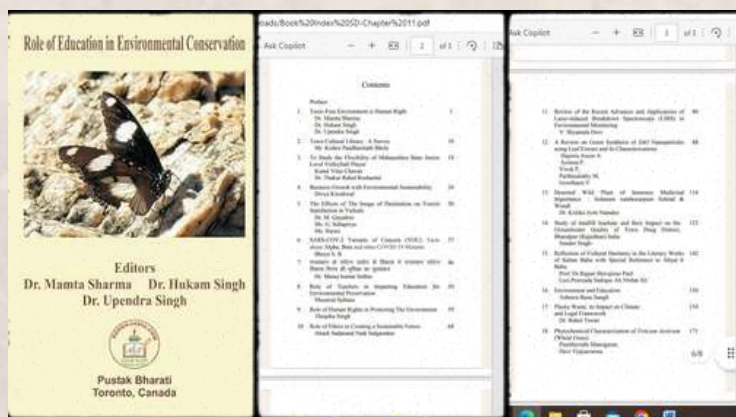
## APPROVED PROJECT INITIATIVES

Dr. P. Tamizhdurai's has been sanctioned a research project on **“Hydroprocessing of Waste Plastics to Produce Diesel under Low Processing Temperatures”** by The Science and Engineering Research Board (SERB) who acts as Co-Principal Investigator in collaboration with Dr.V.L.Mangesh, Mechanical Engineering, K L University, Guntur, Andhra Pradesh, with a total expenditure of **Rs 21,16,400/** for a 36-month timeframe.

## SEED MONEY FOR PROJECT

Dr.A. Vijayaraj has been granted Rs 25,000/- by the Management to carry out a project on **“3d-4f Hetero binuclear Macrocylic Complexes and their Luminescence, Photochemical, Magnetic, DNA Binding, Cleavage and Biological Studies”**.

### Book chapter



Dr. V. Shyamala Devi authored a chapter titled **“Review of the Recent Advances and Applications of Laser-induced Breakdown Spectroscopy (LIBS) in Environmental Monitoring”** in the book **“The Role of Education in Environmental Conservation**

## MOU

A MOU was signed with Central Institute of Petrochemicals Engineering & Technology (CIPET), Government of India on 16<sup>th</sup> June 2023 to conduct the value added course for the first year UG and PG Students on **“Processing and testing of plastic materials and products”** and **“Conversion Techniques, Characterization and quality control of plastics”** respectively.



A MOU was signed between DDGD Vaishnav College and Smartail on 4th September 2023 to conduct certificate program on **“IT skills for Chemists.”** for final year UG and PG students



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## STUDENTS PROGRESSION



Our M.Sc students Yogesh H and Lavanya B of Batch 2021-2023 have been selected in **Hallym University, South Korea** to pursue their PhD

## BIDDING FAREWELL



One of our dedicated faculty Dr L. Sowbagya Lakshmi Prabha, Associate Professor has retired on 30<sup>th</sup> September 2023.

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## EDITORIAL TEAM

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### Contributing Editors

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