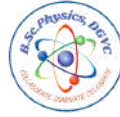


Newsletter
REVERBERATIONS '24
Celebrate Physics



Department of Physics (Aided)



DWARAKA DOSS GOVERDHAN DOSS VAISHNAV COLLEGE

ARUMBAKKAM, CHENNAI (AUTONOMOUS)
COLLEGE WITH POTENTIAL FOR EXCELLENCE
LINGUISTIC MINORITY INSTITUTION, AFFILIATED TO UNIVERSITY OF MADRAS

Inside The Newsletter

We are happy to present you with this Newsletter - Reverberations '24 by The Department of Physics [Aided], Dwaraka Doss Goverdhan Doss Vaishnav College. It showcases the compilation of articles written by our students, activities organized by our department and accolades received by our faculty and students.

Our department believes in developing scientific temper, building overall excellence and making our students life-long learners, which are important to build our society. We have organised many webinars , workshop and hands on training throughout the year. This newsletter tries to give you a flavour of these.

Enjoy Reading!

Contents

About Our College
Our Green Campus
About Our Department
Vision & Mission
Our Department Faculty
Collaborative Projects
Our Laboratory
Triple Helix Club
Department Activities
Enviro Club
Awards & Honours
Books Authored
Accolades

Students' Corner
Article Published By Our Students
ICFAN Abstract
ICFAN Proceedings
Connect With Alumni
Students Outreach Videos
E-Content
Students' Art Corner
Empathetic Moment
Students' Achievements
Proud Moment
Students' Participation
Student Progression 2023
Stars of the Batch
Creative Team

Greetings from Secretary

Jai Shree Krishna!

It is indeed a pleasure to release the newsletter of The Department of Physics (aided). This department reverberates with activities and hence it is apt to name this newsletter as REVERBERATIONS'24. In sync with our institution's vision to provide high quality and value based education, the department has been organising diverse programmes.

I would like to appreciate the department's activities in collaboration with CSIR NIScPR, Vigyan Prasar, Ministry of Education, TNSCERT, Tamilnadu Science and Technology Centre, IAPT, TIFR, HBCSE, IMSc and other government agencies. I am very happy to note the laurels brought by the teachers and the students of the department. For decades since the days of Professor SRG, this department has been setting benchmark for academic and science activities.

My heartiest congratulations to the department for being the torchbearer to continue these efforts.

I am happy to see the contributions of the undergraduate Physics students in curricular and co-curricular activities. Best wishes to the department in all its endeavours.

Shri. Ashok Kumar Mundhra
Secretary



Message from Principal's Desk

I am very happy to see the sustained contribution of our Physics department towards the growth of our college. Being an undergraduate department has never been a deterrent to this team. This is conspicuous from the collaborative activities in association with institutes of national and international repute. The department of Physics conceives programmes in a structured manner to achieve SDG goal4.

Triple Helix club activities of this department are commendable in the STEM field. The novelty and the creativity in making their students self-learners and lifelong learners is exemplary. STEM videos, self-learning series on Indian scientists, e-content for laboratory experiments, biography of women scientists, #why#what series curated under the mentorship of teachers can be emulated by teachers across the globe. Anyone who watches these videos in DGVC PHYSICS YOU TUBE channel will get enthused to be a lifelong learner. This is a department having science outreach contributions and offering many value added courses.

I congratulate the entire team on their achievements and wishing all the best for the department which is marching towards its diamond Jubilee.

Dr.S.Santhosh Baboo, M.Sc., Ph.D.
Principal



From HOD

The Department of Physics [Aided] has been bestowed with dedicated team, since the time of inception who believe their professional development and capacity building is a must to cater the evolving needs of the society. As the world marches to ensure equitable quality education, it is our prime duty as teachers to impart skills to help them explore their skillset.

Our Department being a Government-aided department catering students from different backgrounds, we need innovative, evolving, flexible and affordable methods to achieve this.

With the fast changing scenario, guiding our students to become self-learners and life-long learners is necessary to groom them as global learners instead of confining to four walls. To achieve that and even to think in those lines, it needs re-orientation in our pedagogy, curriculum and assessment patterns. Our teachers are engaged actively in many forums make this possible through their consistent efforts and mentoring. Reverberations '24 is a testimony of this and congratulations to the entire team!

I thank the Principal and our Management for their consistent support and encouragement.



Dr.D.Uthra
Associate Professor & Head

Editors' Note

To provide renewed impetus and accelerated actions for reaching SDG's, it's time we reorient ourselves. In unison with this, our department has been organizing range of activities. This REVERBERATIONS '24, brings out the essence of creativity combined with academic skills of our students. This newsletter from our department gives them a platform to showcase their interests, skills, ideas, enthusiastic participation in plethora of activities.

As we are aware that the quality education is the most powerful tool, localizing the SDG4 goals is essential. To achieve this, the department has been conceiving tailor-made activities beyond classroom, connected with their curriculum. We are happy to guide this enthusiastic team. We thank our Secretary, Principal and management for their sustained encouragement.

Dr V Renganayaki & Dr D Sridevi
Editors, Reverberations '24



About Our College



Dwaraka Doss Goverdhan Doss Vaishnav College, a linguistic minority institution was established in the year 1964, by the people of Rajasthan and Gujarat who settled in Chennai for the cause of higher education. The college, with the sole purpose of imparting knowledge and value-based education, saw its grand day on June 30, 1964. In the year of its inception, the College offered a degree course in Mathematics along with Pre-University Courses. The very next year degree courses in Physics and Economics were introduced. Shri. Thotadri Iyengar, teacher of our former president Shri. APJ Abdul Kalam was our first Principal. Then Shri. S.R. Govindarajan, a great Physics teacher headed the institution and saw its immense growth.

About Our College



Ours is a green campus where environmentally friendly practises and education combine to promote sustainable and eco-friendly practises. Our campus offers an opportunity to take the lead in redefining its environmental culture and developing new paradigms, consistently striving to enrich the greenery.

<https://www.dgvaishnavcollege.edu.in/>

Picture Credit

Priyadharshini R (23D1224)
Devadharshini B (23D1247)
Divya H (23D1234)
I B.Sc. Physics
Batch 2023-2026

Our Green Campus



Picture Credit

Priyadharshini R (2301224)
Devadharshini B (2301247)
Divya M (2301234)
I.B.Sc.Physics
Batch 2023-2026

About our Department

The Department of Physics was established in the year 1964 by the visionary teacher Prof.S.R.Govindarajan. It was moulding the young minds through the B.Sc.Physics Degree Programme. It has been bestowed with dedicated teachers right from the time of inception. Three teachers from this Department served as Principal of our college - Shri S.R.Govindarajan, Shri C.Rangarajan, Dr.B.Krishnan and contributed to the growth of the institution immensely. The path for our mission has been laid by the great visionaries - who were willing to collaborate, reach out, innovate, experiment beyond classroom teaching and empathize diverse needs of their students.

This department has a unique pride of being the parent department nurturing three different degree courses in self financing streams over the decades. To meet the growing demand for Physics graduates, the Department introduced B.Sc.Physics course in the Evening College in 1984. Later, under the headship of Major. Dr.S.Srinivasan, M.Sc.Physics course was started and from the year 2011-12, it added another course in that bouquet- B.Sc Physics with Computer Applications under the leadership of Dr.D.Uthra, to meet the changing trends and needs of fast growing IT field.

About Our Department

This Department provides every student a platform to spot their interests, hone their skills, follow their own path and build scientific temper. This is made possible by the dynamic dedicated team of faculty who are highly qualified, who engage themselves in regular professional development and is a part of various scientific forums. With excellent lab facilities, a good collection of library books, very effective pedagogical tools, efficient teachers and a plethora of opportunities, it's a haven for students who want to pursue Physics.



Shri.S.R.Govindarajan



Major Dr S Srinivasan

<https://www.devaishnavcollege.edu.in/programs/science/department-of-physics-aided/>

About Our Department



AI search engines' Write-up on Physics Department

The Department of Physics was established in 1964 and led by the great teacher Prof. S.R.Govindarajan. The department has a well-equipped lab, excellent teaching staff, and lab assistants. The department has been an exemplary in imparting hands-on skills, trainings in collaboration with various research institutes, government agriculture department, forest department, museum and many other private institutes of excellence in research. Notably, the Physics Department has received recognition for excellence in imparting education, teacher training, publications and science outreach activities through various collaborative efforts. The Department typically offers undergraduate B.Sc. program in Physics, designed to provide a solid foundation in classical and modern physics.. The curriculum is often updated to include advancements in the field, ensuring students are well-prepared for both research and industry roles. In addition to classroom learning, the department encourages students to participate in various extracurricular activities, workshops, seminars, and research projects. This helps students apply their theoretical knowledge to practical applications and develop problem-solving skills. In summary, the Department of Physics at D.G. Vaishnav College offers a comprehensive and engaging learning experience, preparing students for successful careers.

Vision & Mission

OUR VISION

To train the students to develop scientific temper, achieve excellence in education in the field of Physics and related areas and equip them with skills, knowledge and become life-long learners.



OUR MISSION

To create an academic base that responds to the need of the students to understand the basics of Physics and its ever evolving nature of applications in explaining all observed natural phenomenon as well as predicting the future applications to the new phenomenon with a global perspective.

Apply one's knowledge and understanding relating to physics and skills to new/unfamiliar contexts and to identify and analyze problems and issues and seek solutions to real-life problems.

To be a tool for transformation marching in the road map of our country's vision towards Higher Education.

Our Department Faculty

Teaching Staff



Dr.D.Uthra, M.Sc., SLET, Ph.D.
Spectroscopy, Electronics, Science Communication, STEM Mentoring



Dr.D.Syamala, M.Sc., M.Phil., M.E., Ph.D.
Spectroscopy, Crystal growth, Electronics



Dr.V.Renganayaki, M.Sc., SLET, Ph.D.
Spectroscopy, Crystal growth, Solid State Physics, Science Communication



Dr.V.Sangeetha, M.Sc., M.Phil., Ph.D.
Crystal growth, Nuclear Physics



Dr.D.Sridevi, M.Sc., M.Phil., Ph.D.
Nano science, Electronics



Ms.D.Pourkodee, M.Sc., NET
Electronics, Microprocessors



Dr.K.Selva Kothai Nachiyar, M.Sc., M.Phil., Ph.D.
Solid State Physics, Soil Research, Environmental Studies, Science Communication



Non-Teaching Staff

Our Department Faculty



**Dr. M. Leena, M.Com., M.Phil., Ph.D.,
PGDCS , Lab Assistant**



**Ms. C. Anitha, B.Sc., (MBA),
Lab Assistant**



**Ms. Jayalakshmi Bai
Attender**

Collaborative Projects

- Dr.D.Uthra and Dr.V.Renganayaki are involved in the SVASTIK-Scientifically Validated Societal Traditional Knowledge project of CSIR NISCP, Govt. of India as translators.
- Dr.Uthra and Dr.Renganayaki Co-author, Digital are involved as authors creating e-books in Tamil for the e-Kumbh project, Ministry of Education, Govt. of India.
- Prestigious Muthamizh Aringnar Translation Project of Tamilnadu Govt.- Dr.Uthra, Dr.V.Renganayaki and Dr.Selvakothai Nachiar are translating books on Venkatraman Series.
- Dr. D.Uthra and Dr.V.Renganayaki are Reviewers of e-content in Physics for Higher Secondary students through Samgraha Shiksha, TN School Education Department.
- Dr.D.Uthra is involved in Vigyan Vidhushi Project, Vigyan Prasar, DST.
- Dr.D.Uthra, is vetting Science worksheets of Vigyan Pratibha, a HBCSE and TIFR, IISc Initiative.
- Dr.V.Renganayaki and Dr.D.Uthra involved in translating Books of Issac Assimov under Kaleidoscope project, MHRD.
- Our department is Actively involved in training and conducting various exams in association with Indian Association of Physics Teachers (IAPT).
- Our department has entered Memorandum of Understanding (MoU) with TVS Training and Service centre to upskill students.

Our Laboratory



Our Science Club 'Triple Helix'



Triple Helix is a Science Club registered as a member of VIPNET(VigyanPrasarNETwork of science clubs), under Vigyan Prasar, an autonomous organization under DST, Govt. of India. Through this, students get a platform to disseminate knowledge and information on Science & Technology (S&T) by participating in various STEM Activities, Science communication, and Outreach.

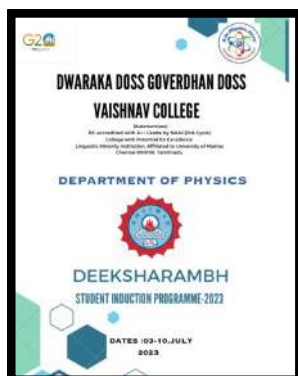
The department is actively involved in training School teachers, engage students and teachers in hands-on activities, creating teaching-learning e-content modules, create awareness on inclusivity and women in STEM and popularize Govt. DBT and DST schemes.

Vision

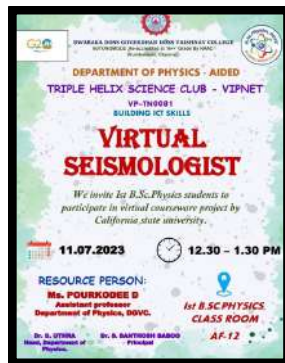
Serve as part of a national network of science clubs and be a part of exciting national movement.

Mission

Reach out to students and fellow citizens to popularize science.



The Department of Physics in association with IQAC of the college, organized a week-long Student Induction Programme, Deeksharambh-2023. The session highlighted the institution, the department, processes, practices, culture and values of the college. Value added courses offered by the department, Industrial and field visit experiences were shared by the senior students and the peer interaction ended up with enthusiastic participation of the freshers. On the final day of the SIP introduction to clubs and cells was given to students. IQAC and the cell coordinators briefed the freshers about Chinmaya Vaishnav IAS academy, NCC, NSS and various other club activities of the college.



Triple Helix Science Club - Department of Physics Aided has organized Building ICT Skill Series, Virtual Seismologist - The Virtual Courseware Project from California State University. This Virtual Courseware produces interactive, online simulations for the life science laboratory or for earth science field studies. 48 students of B.Sc. Physics took part in this online learning. It was indeed a very proud moment for everyone of them and our Department in using ICT tools and learn from international projects and explore beyond our boundaries!

RSC - Global Battery Experiments

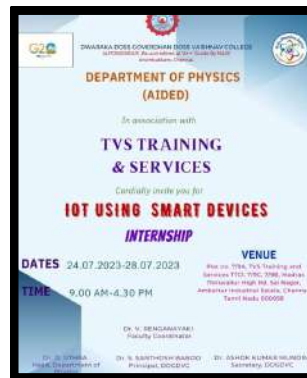
Department Activities



Triple Helix Science Club - Department of Physics Aided in association with IAPT- Indian Association of Physics Teachers has organised a hands-on session, RSC-Global battery experiments. Taking part in global battery experiments conducted by Royal Society of Chemistry, London gave the students the opportunity to explore the science behind batteries and why they are such an important part of our bright energy future. 43 students of I B.Sc. Physics and II B.Sc. Physics took part in this hands-on learning.

Department Activities

Value added course IOT using smart devices



Internship in IoT using smart devices was organised by Department of Physics in association with TVS Training & services Company Ltd, Chennai for first year students of B.Sc.Physics. It provided online realtime experience for the students who are aspiring to have their career in IoT. Designed as a complete package, this internship program enabled them to get real-time industry exposure by building and assembling circuits, writing codes an hands-on experience. Armed with all these benefits students will be able to explore a bright career in IoTdomain and at the same time, apply IoT and ICT ideas in Physics.

Value added course IOT using smart devices

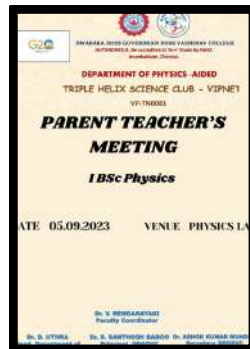
Department Activities



The internship programme on IoT using Smart devices was conducted by TVSTS Training Centre, Ambattur for third year students of B.Sc. Physics. The program started with theoretical classes about the Industrial revolutions and evolution of technology that are used. They were thought to use Arduino boards which are programmable circuit boards.

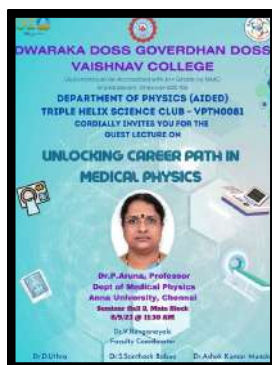
The internship programme was structured, organised and consisted of well-planned sessions. The students found the programme useful and they want in future similar programs to be organised by the Department/College. The students in their feedback mentioned that this internship program was a curious learning experience.





A parent Teacher Meeting for I B.Sc. Physics was held to discuss the performance of students with their parents. Parents were given feedback on their ward's performances in the the CIA I Exam. It was a great interaction between the teacher and the parents for the development of their children where they discussed both the strengths and areas of improvements. The progress report shown to the parents and their suggestions were noted. The faculty threw light upon the various outreach programmes organised by the department to kindle the scientific temper of students.



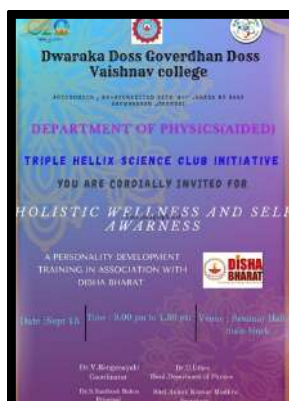


The Department of Physics organized a guest lecture on 08/09/23. Professor P.Aruna, Department of Medical Physics, Anna University, Chennai, the recipient of the prestigious BOYSCAST award from DST in 1998 delivered her lecture titled, Unlocking career path in Medical Physics.

She introduced the students about PG Program in Medical Physics and Ph.D. programmes in Laser spectroscopy, Medical optics, Radiation technology applied to health care. The session was loaded with information regarding the numerous opportunities in Medical Physics & biomedical engineering to provide better diagnosis.



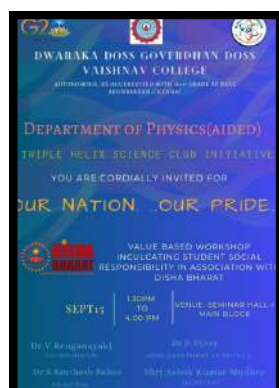
The Department of Physics organized personality development training programme in association with Disha Bharat. This training was held to impart values and necessary skills for the development of holistic personality. "Know yourself, Know your country and Know your Culture" was the theme around which the training was based on.



Our students learnt about history and rich tradition of our country through a quiz programme followed by a discussion on the same. Disha Bharat helped our students to understand importance of physical, mental and emotional health. This was done through Yoga session imparting holistic wellness. This made every student question about their physical health and emotional balance.

**Our Nation...
Our Pride...**

Department Activities



The Department of Physics organized a value-based workshop “Our Nation...Our Pride” on 15.09.2023 in association with Disha Bharat. This workshop was designed to build leadership skills in students so they become catalysts of social change.

This workshop started with discussion on three audio visual presentations which kindled the students. The students came out with their opinions, narratives, suggestions and this session helped even the quietest student to open up and share his/her ideas. This was followed by good dynamics, that included army games. The students became enthusiastic and performed well, overcoming their fear and trusting their team. This enhanced leadership, interpersonal and team-building skills of the students. Moreover, this session kindled the spirit of patriotism.



ENVIRONMENTAL SCIENCE FIELD VISIT

Department Activities



The Department of Physics has organized field visit to Adayar Eco Poonga (Tholkappiar Poonga) near the Adayar creek and the estuary is located on the eastern part of thiru.vi.ka bridge, with an area of about 358 acres. This is unique eco-system supports a wide variety of flora and fauna



Tholkappiar Poonga, Adayar eco-park, a unique ecological landmark at the heart of the highly-urbanized chennai city.it is a tropical evergreen dry vegetation (mangrove forest- here plants roots are above the soil-saline in nature, for absorbing oxygen meant for plant growth). It is a nature's gift for us to Observe various species at one place.



The internship programme on machine learning in Python was conducted by TVSTS Training Centre, Ambattur from 7th August to 11th August 2023. The internship programme was structured, organised and consisted of well-planned sessions.



PARENT-TEACHER MEET

Department Activities



The parents-teacher meeting was held on 14th August 2023 for the class II B.Sc. (Physics).The meeting was meant to discuss the academic performance of students with their respective parents. Parents were given feedback on their wards performance. The discussion was meant to enhance the student's strengths and identify the areas of improvement.

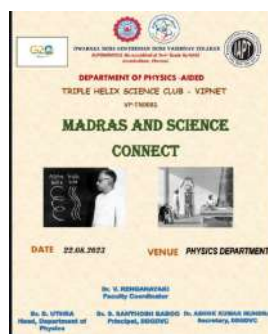




The Department of Physics organised MEET YOUR ALUMNI programme on 21st August 2023. Mr.M Abhishek, alumnus (2013-2016)



Mr Abhishek shared his personal life experience with students, the path he traversed to reach the top national institute in his research career. students gained information about how to prepare for entrance examinations like GATE, JAM, JEST and how to manage time.



Chennai city turned 384 years and the foundation day of the city is known as "Madras Day" which is observed on August 22 in order to celebrate the deep heritage and cultural significance of this great city. Our students organised "Madras and Science Connect" glorifying Professor GN Ramachandran mentored under Sir CV Raman, whose Triple Helix structure being used as our club name - where students explained the glory of Madras city with science.



Department Activities

Ayudha Pooja Celebration



Department Activities



Department Activities



Department Activities



Department Activities





The Department of Physics organised a lecture to develop and hone the banking skills of the students. CMA R Rakesh Shankar, Assistant professor, P G and Research of Commerce delivered a talk on "FINANCIAL LITERACY AND NEO BANKING". He gave a deep insight of how to apply to get PAN Card, net banking, Postal ID Card, Life insurance, term insurance, NET banking, RTGS, IMPS, NEFT etc. He created a conducive atmosphere in such a way that students interacted well and raised many questions to clarify their doubts. It was really a useful and informative session.





As a part of Navarathri celebration, TRIPLE HELIX SCIENCE CLUB of The Department of Physics (Aided), Dwaraka Doss Goverdhan Doss Vaishnav College, Arumbakkam, Chennai organised Building ICT skill Series online quiz based on the book Lilavati's Daughters released by Vigyan Prasad, DST, Government of India.

This is an initiative of our Department to help school and college students and general public to explore their knowledge of Women Scientists in India. Through this initiative, we believe we can promote life long learning opportunities for all under SDG goals. As many as 446 participants from various schools, colleges and also general public actively participated in this online quiz program.

Lilavati's Daughters: The Women Scientists of India- Online Quiz-in Association with IAPT RC-15

November 2023 - Navarathri - Women in Science, Technology, Engineering and Mathematics. As a part of the celebration, TRIPLE HELIX SCIENCE CLUB of Department of Physics (Aided), Dwaraka Doss Goverdhan Doss Vaishnav College, Arumbakkam, Chennai is organizing an online quiz competition on IAPT RC-15 (Scientific Collection of nearly a hundred biographical essays on Women Scientists of India published by Indian Academy of Sciences).

The quiz is an initiative of our Department to help young people know about some of the great women scientists. Through this initiative, we believe we can bring in Gender equity in STEM and achieve SDG goals.

The Quiz Contest is available until 27, October 2023.

Who can participate: Anyone who wants to know about our Scientists.

How to get a certificate: 75% (if you get 50% after 1000 entries, you can take the quiz again).

Quiz Fee: Nil.

How long will this quiz take: maximum 30 minutes.

Where I can find answers, as I don't know much: Download the free pdf (Link given below).

The Quiz features on the free 30 Women Scientists mentioned in the book.

<https://www.dwarakadoss.org/2023/11/01/online-quiz-in-association-with-iapt-rc-15/>

STILLS

Department Activities



Reena.S (21D1331)



Midhun Krishna.C.J (23D1209)



Dharshini.S (23D1233)



Vinoth.B (23D1244)



Swetha.R (21D1322)



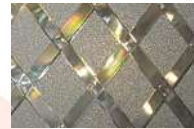
Priya Dharshini.R (23D1224)



Shankaranarayanan.M (23D1227)



Deva Dharshini.B (23D1247)



Kanniappan.G (22D1101)

Department Activities

STILLS



Swetha.M (23D1212)



Vignesh.S (23D1204)



Lingesh.B (23D1201)



Vishali.S (23D1236)



Saadhanaa.V (23D1221)



Kugasri.J (23D1231)



Yeswanth.P (21D1307)



Abisha.P.V (21D1308)



Suresh Kumar.V (23D1232)

STILLS- PRIZE WINNERS

Department Activities



Divya.M (23D1234)



Harish.H (21D1329)



Vineeth.V (21D1334)



Muneesh Kumar.V (21D1315)



Dhanush.B (21D1319)



Logesh.M (21D1313)

Department Activities

ROLLS

ELECTRO MAGNETISM



Dhanushaa V(21D1312)
Priyanga M (21D1346)
III B.Sc. Physics
Batch 2021 - 2024

Priyanka (21D1123)
Raaviya Sri (21D1122)
II B.Sc. Physics
Batch 2022- 2025



Bending Moment due
to an applied load



Wonderful
Wind!

Charan T (23D1219)
Moulieshwaran M(23D1238)
I B.Sc. Physics
Batch 2023- 2026

Kanniappan G (22D1101)
Divya Bharathi S S(22D1130)
II B.Sc. Physics
Batch 2022- 2025



NUCLEAR FISSION, NUCLEAR FUSION AND
WORKING OF NUCLEAR POWER PLANT

ROLLS - WINNERS

Department Activities



Divya M (23D1234)
Dharshini S (23D1233)
I B.Sc. Physics
Batch 2023- 2026



Varsha P (23D1205)
Vishalini K (23D1211)
I B.Sc. Physics
Batch 2023- 2026



Vinoth B (23D1244)
Lokeshwaran N (23D1207)
I B.Sc. Physics
Batch 2023- 2026

Priyadarshini R(23D1224)
Madhumitha U (23D1241)
I B.Sc. Physics
Batch 2023- 2026



Keerthivasan E(23D1216)
Kishore M (23D1230)
I B.Sc. Physics
Batch 2023- 2026



Ramkumar C (23D1228)
Suresh Kumar V(23D1232)
I B.Sc. Physics
Batch 2023- 2026





The Department of Physics, under Triple Helix Science club organized MEET UR ALUMNI programme for the students of Undergraduate Physics. Mr Bharat Somani, successful Entrepreneur, alumnus of our department (1998-2001), addressed the students. He gave many valuable points like There is no such perfect equilibrium in the path of life. More failures in the young age will give us knowledge, strong background for the upcoming years, Learning skills on investing, marketing, and power of money will help to be successful in the path of struggle, Growing the society and satisfying the people's needs are the success mantras in Business. Students interacted with him and knew his experiences. The programme helped the students to look into their mistakes and how to correct them.



To embrace the students in the Journey of skill development with think 20(group of G20), two Special guests Ms.Jhana varshini and Mr. Ricardo from Build HR management consultants private limited were the resource experts to address the students on the one day regional level training on How to build CV and resume. The programme was organised by the department of Physics under Triple Helix science club. Mr Ricardo, Head, Business development, BuildHr management consultants Private Ltd, Chennai and Ms.Jhana Varshini, Senior Associate, HR Services,BuildHr management consultants Private Ltd, Chennai trained the students to build a strong CV and resume. The students came to know the steps of a constructive resume, viz, recording all the achievements, internships, organisations attended, the power of creating LinkedIn profile, which gives immense opportunities to students to get placed in various sectors.

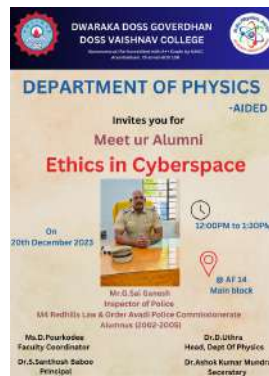


The Department of Physics organised a workshop on Building the CV for summer internships for advanced learners in Undergraduate Physics students of city colleges. Ms.S Dipthi, Research scholar in astrophysics at VIT, Chennai was the resource expert,gave practical tips for building CV, writing SoP for summer schools and enhancing the skill set of students. The students perceived invaluable insights about crafting an effective CV. Students interacted with the resource expert and clarified their doubts regarding applying to Research institutes such as TIFR, ICTS, IUCAA.

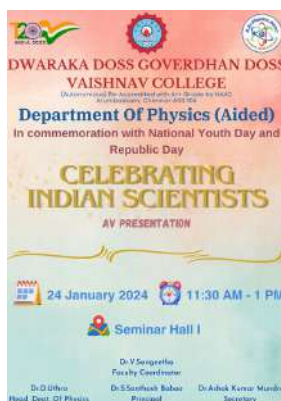
Department Activities

One day regional training & CV for summer internships





The Department of Physics, under Triple Helix Science club organized MEET UR ALUMNI - Ethics in Cyberspace programme for the students of I and II Undergraduate Physics. Mr G. Sai Ganesh, Inspector General of Police, M4 Redhills Law & Order Avadi Police Commissionerate, alumnus of our department (2002-2005), addressed the students about AI and safety precautions while answering spam calls, gaining additional knowledge about cybersecurity and its effects on students by providing examples from his personal experiences and also spurred the students' curiosity in safety precautions and the digital complaint management system for digital transactions. Students interacted with him about how to deal with law enforcement and women's safety. The programme helped the students to overcome the fear of approaching the police.



A programme named "Celebrating Indian Scientists" was organised in commemoration with National Youth Day and Republic Day on 24th January 2024. Students of 3rd year of our department made Audio Visual presentations of our prestigious scientists to the other students of our department. The goal of this program is to create awareness about our Indian Scientists and their crucial role in the development in the field of Science and Technology. The students who attended the program were able to know about the contributions by our scientists that changed the scientific perspective of the world. The programme was informative and inspiring and by these presentations, students learned technical and presentation skills. The videos made by the students were uploaded on the Department's YouTube channel to make the information accessible to everyone.

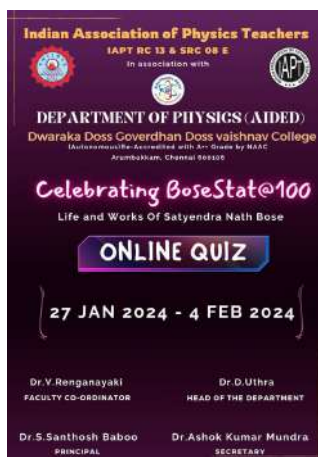
YouTube Playlist QR



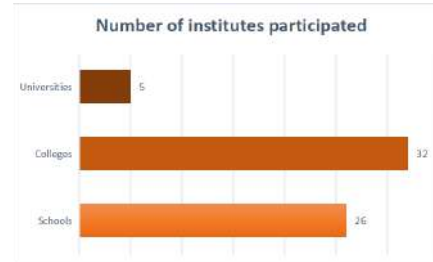
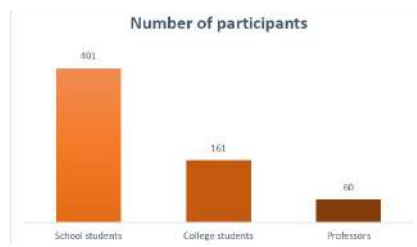
**Celebrating Indian Scientists
AV Presentation**

Department Activities





Life and works of Sri. S N Bose quiz was organised by The Department of Physics, in association with IAPT RC 13 AND SRC08 E. The students learnt about the life and works of Sathyendranath Bose. This programme was organised in commemoration with Centenary celebration of BoseStat@100. It strengthened the knowledge and insight about the great scientist.



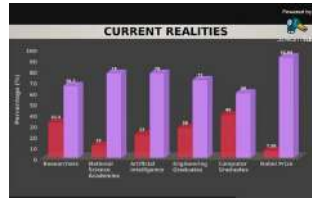


The online event titled “ Women in STEM, A Global Perspective”, organized to commemorate International Day of Women and Girls in Science and to create awareness about IAU Outreach Program. The IAU helps to connect the global astronomy community to the amateur astronomers, educators, and general public. To make this event even more special, we invited two successful women in the field of science.

Dr.Priya Hasan, one of the two speakers of this event, who is an Asst. Professor of Physics at Maulana Azad National Urdu University, Hyderabad. She delivered her talk on Women in Astronomy and how women astronomers overcame their hardships and succeeded in their career. Dr.Margaret Bose Adedokun, International speaker of this event, is a lecturer of Physics at University of Lagos, Nigeria. Her talk on Gender Inequality and key issues faced by Women and Girls in their career path changed the perspective of both women.This event motivated our students to prevail over any obstacles they face in their career.

Women in STEM
Global perspective

Department Activities





Department of Physics, Organized LUMINO 2024, a science exhibition of working models by the students of II B.Sc. Physics in its Physics Lab. The chief guest of this exhibition was Dr. Shanmugakumar Murugesan. He is the founder and CEO of Modern Agriculture Technology Innovation Centre (MATIC). He has received Entrepreneurships Development, DST- NIDH'S PRAYAS and chhatra Vishwakarma Award by the Govt of India. He talked on "An Introduction to Microprocessor and Microcontroller". He highlighted about IOT (Internet of Things), Data Science which was interesting and informative.

The teams presented their projects which included models of Rocket, Van De Graff Generator, Step up Transformer, Home Automation, Relaunch Sugar Rocket and many more. Dr. Shanmugakumar Murugesan along with staff members of the other Department went around looking at the different models designed by the students and assessed the descriptions given by the students. The students also presented charts and posters to help everyone understand the concepts of their working models. At the end of the exhibition, upon careful inspection of the different models, Dr. Shanmugakumar Murugesan distributed the prizes. He encouraged students to continue doing lots of models and participate in events





Exploration of Bird Biodiversity

Department Activities



From this session of Our Alumnus Mr. R. Mugilan, we came to know about various bird species and birds which are extinct right now. From this session, we learned that birds play a vital role in maintaining - balance of ecosystems and preserving biodiversity. By protecting birds, we are directly protect our natural habitats and various organisms that rely on them. If there's no bird's means they will be no continuation food chain which affects the ecosystem to the extreme level.





Hemamalini E (22D1105)
Raaviya Sri A(22D1122)
II B.Sc.Physics(Batch 2022-2025)
Won I Prize
Topic: Impact of Ocean Acidification on Marine life

Keerthana R (22D1131)
Divya Bharathi (22D1130)
II B.Sc.Physics (Batch 2022-2025)
Won II Prize
Topic: Impact of Ocean Acidification on Marine life



Dharshini B S (22D1120)
Kalabarathi P A (22D1150)
II B.Sc.Physics (Batch 2022-2025)
Topic: Loss of Biodiversity

Makeesh G (22D1139)
Kanniappan G (22D1101)
II B.Sc.Physics (Batch 2022-2025)
Topic: El Niño Impact on Climate Change in 2024



Dr. D. Uthra received IAPT - Dinabandhu Sahu Memorial Award



Books Authored



**Scientific Reason Behind Indian Culture by
Dr. D. Uthra and Dr. V. Renganayaki
Published by CISR - NIScPR (January 2023)**



**Digital Electronics in Tamil by Dr. D. Uthra
Published by AICTE - UGC (December 2023)**

Career Development Workshop for Women in Physics

Accolades



Dr. D. Uthra attended the prestigious "Career Development Workshop for Women in Physics" at The Abdus Salam International Centre for Theoretical Physics, ICTP, Trieste, Italy from 06 November 2023 to 10 November 2023.

She was a panelist for the discussion on "Balancing Career and Family". She also presented her paper on science communication.

Accolades



Dr. K. Selva Kothai Nachiyar was attended an International Conference “ராமாயணம் மகாபாரதம் காட்டும் வாழ்வியல்” conducted by The Department of Tamil, Dwaraka Doss Goverdhan Doss Vaishnav College on 11th - 12th October, 2023 and she wrote an essay titled as “சூகனெனும் தூய அன்பினன்” in the Book Published by the respective department during the Conference.

QUASARS: BRILLIANT MYSTERIES OF THE DISTANT UNIVERSE

Is there any celestial body that is brighter than the sun ?

Of course! Yes, they are the source points of large plumes of radio waves, with mass ranging from millions to billions of solar masses, 10 trillion times brighter than the sun or any other galaxy. There are particles swirling nearly at the speed of light and emitting high energy in the form of X-rays, gamma rays, light waves and jets of matter arising from their poles, powered by a super-massive black hole.

'QUASARS'

Quasi-stellar objects or quasars are the most powerful celestial bodies located at the core of a galaxy. It is an extremely luminous active galactic nucleus (AGN) surrounded by a gaseous accretion disc. An accretion disc is where the gas particles create a whirlpool around a massive celestial body. The matter swirls around the black hole at enormous speed resulting in the production of heat due to the kinetic energy, the temperature is so high that it appears to be immensely bright. They emit a jet of plasmalized matter out of their core at approximately the speed of light. As with other categories of AGN, the observed properties of a quasar depend on many factors, including the mass of the black hole, the rate of gas accretion, the orientation of the accretion disc relative to the observer, the presence or absence of a jet and the degree of obscuration by gas and dust within the host galaxy. Quasars, radio galaxies and blazars are AGN with strong jets that can travel outward into large regions of intergalactic space. Some of the apparent differences between types of AGN are due to different orientations with respect to the disc.

Students' Corner

They radiate energy across the electromagnetic spectrum, from radio waves to gamma rays. Light that has travelled from distant quasars offer us a glimpse back in time .Today, more than a million quasars have been detected. ' Markarian 231 ' is officially the closest quasar to us at an approximate distance of 600 million light-years. Quasars also support The Big Bang theory of the universe, as there are no local quasars. It suggests that they only existed in the early universe. Therefore the universe has changed as it has aged, something that cannot be explained by the steady state model. About 10 billion years after The Big Bang itself we essentially reach a kind of peak epoch of star formation and this is also the time of the most number of quasars in our far-flung universe. Astronomers widely consider the energy from quasars to be the main driver in limiting the growth of massive galaxies. More than 9,00,000 quasars have been found (as of July 2023), most from the Sloan Digital Sky Survey. All observed quasar spectra have redshifts between 0.056 and 7.64. J1144 was detected in June 2022 at a redshift of 0.83, it has a bolometric luminosity of about 470. In India, sizable fraction of astronomers work towards astrophysical sources like Active Galactic Nuclei (AGN), Gamma-ray bursts (GRBs), Supernovae, X ray binaries and make use of a range of multi-wavelength observational facilities. Nainital-based Indian astronomers have played a key role in making a rare discovery of a dozen quasars. This can help determine the expansion rate of the universe and help address other mysteries as the number of known quasars have now increased by about 25 percent, according to a statement issued by The Ministry of Science and Technology. The study by Gaia Gravitational Lenses Working Group of astronomers, which included scientists from Aryabhata Research Institute of Observational Sciences (ARIES), Nainital, an autonomous institute of Department of Science and Technology, spanning only a year and a half, demonstrates the power of machine-learning to assist astronomers in their search for these cosmic jewels.

Students' Corner

The light of a distant quasar, lying billions of light-years away, is bent by the gravity of a massive galaxy that happens to sit in front of it, as seen from our point of view on earth. Quasars also help us to address another mystery of our universe, 'The Dark Matter'.

History

Some unknown objects emitted large amount of radio waves at many frequencies though no source could be located when viewed through telescopes in late 1950s.

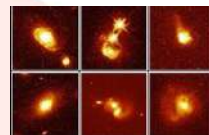
They were later named as QUASAR by Hong-Yee Chiu. They were first noted as radio sources with no corresponding visible object. Using small telescopes and the Lovell Telescope as an interferometer, they were shown to have a very small angular size. Maarten Schmidt was the first astronomer to identify and measure the distances of quasars.

Quasars were much more common in the early universe than they are today. This discovery by Maarten Schmidt in 1967 was early strong evidence against steady-state cosmology and in favor of the Big Bang cosmology.

Professor Clive Tadhunter said: "Quasars are one of the most extreme phenomena in the Universe, and what we see is likely to represent the future of our own Milky Way galaxy when it collides with the Andromeda galaxy in about five billion years.



Shankaranarayanan M
I B.Sc. Physics
23D1227
BATCH (2023-26)



IN-SPACE

The Indian National Space Promotion and Authorization Centre (IN-SPACe) is an independent nodal agency under Department of Space for allowing space activities and usage of Department of Science owned facilities by NGPEs as well as to prioritise the launch manifest.

The establishment of IN-SPACe was announced in June 2020 by the Minister of State for Space, Jitendra Singh, with the Union Cabinet approving its creation. In the same month the Chairperson of Indian Space Research Organisation Dr. Kailasavadivoo Sivan, said that it would take upto six months to operationalise IN-SPACe. On June 10, 2022, IN-SPACe headquarters was inaugurated by Hon'ble Prime Minister Shri Narendra Modi at Bopal-Shilaj road, Ahmedabad, Gujarat. In the inaugural address Hon'ble P.M. said "IN-SPACe will give opportunity to the youth of India to showcase their talents to the best minds of India."

According to DR. K. Sivan, IN-SPACe is an autonomous body with its own board and with some members from the private sector and industry and a chairperson. Dr. Pawan Kumar Goenka is the chairman of IN-SPACe.

The main objectives of IN-SPACe are to promote and develop Indian space ecosystem and accelerating space economy, authorize space operations and services in the country. INSPACE acts as a link between the ISRO and private sector companies, assessing how to utilise India's space resources and increase space-based activities. The centre will evaluate the demands of private sector companies including educational institutes and will find ways to attune their demands after consulting with ISRO.

Students' Corner

A declaration of Intent was signed by ISRO and IN-SPACe with Voyager space, USA to explore opportunities of ISRO's Gaganyaan crewed spacecraft to service starlab, a first of its kind, continuously crewed spacecraft to service spacestation. The DOI was signed on 7 July on the second day of G-20 SELM Summit. IN-SPACe in its endeavour to develop a private space ecosystem in the country had released a seed fund scheme aimed at promoting space technology on 14 March 2023.



Midhun Krishna C.J
I B.Sc. Physics
23D1209
BATCH (2023-2026)



TIDAL LOCKING

Have you ever admired the moon in our sky? If so, you must've definitely noticed that the face of the moon towards the earth is exactly the same all around the year. If a system of randomness is allowed to exist for a period of time, it attains stability. In regards to planetary motions, this stability attained is called Spin-Orbital resonance. This is the ratio between the rotation and revolution of an object with respect to another body. In our case, the reason why we always see one side of the moon is because there exists a Spin-Orbital resonance between the moon and earth. For each rotation the moon makes, it revolves around the earth once and this makes the ratio to be 1 and the type of the orbit is Synchronous Rotation Objects which have Spin-Orbital resonance value as 1 are Tidally Locked bodies. These bodies always show once side of its surface to the object it revolves around. These types of objects are very common in our solar system. Both of Mars' moons Phobos and Deimos are tidally locked to the red planet, Jupiter's Galilean moons Europa, Io, Callisto, Ganymede are tidally locked to the gas giant. If a perfectly spherical planet and a satellite is taken into account, the ratio wouldn't reach 1. The imperfection of the bodies makes this phenomenon possible. The Earth and the moon are gravitationally affected by each other and this gravitational tug cause bulging on both the bodies which we call the Tidal bulge. Synchronous rotation is caused by torque. When the moon is rotating, it's bulge lags behind due to the fact that tidal bulge cannot change quickly. When the bulge is lagging behind, it means the forces on either side on Planet-Moon line doesn't line up and there will be a torque acting opposite the rotation which slows it down a bit.

Students' Corner

This torque is very minimal as the bulge is also very minute but as millions of years passed since its formation, the small torques added up for its rotation to slow down until the bulge is along the Planet-Moon line which equals the rotation to the orbital period. An object orbiting a planet closer will be tidally locked faster as the gravitational tug caused by both objects will be greater resulting in bigger bulge which in turn makes the torque much more significant and eventually, it slows the rotation much faster. Not only satellites get tidally locked to its planet but sometimes, planets also get tidally locked to its parent star. Here, the orbits of the planet will be much closer to the star compared to our system. These planets are to be wondered. Since one side of the planet is always facing its star, that half of the planet will have daytime forever with the part of the planet directly in line with the star, scorching. Meanwhile, the other side of the planet will be on eternal darkness with getting any light from its star. There will be a region around the planet where there will always be the dusk breaking or dawn falling. These planets lie all over our galaxy and they might be the planets to have hospitable life thriving on its twilight region.

Vineeth. V
III B.Sc. Physics
21D1334
BATCH (2021-2024)



GRAVITATIONAL WAVE OBSERVATORY

LIGO is the world's largest gravitational wave observatory and a marvel of precision engineering and it stands for "Laser Interferometer Gravitational-wave Observatory". Comprising two enormous laser interferometers located 3000 kilometers apart. LIGO is funded by the U.S. National Science Foundation and operated by the California Institute of Technology (Caltech) and the Massachusetts Institute of Technology (MIT). In addition to LIGO, in Italy, there is a detector called Virgo that was developed and built independent of LIGO. In 2007, however, LIGO joined together and began collaborating after recognizing that you they can gather a lot more information by operating as a network. LIGO have also joined forces with the Kamioka Gravitational Wave Detector (KAGRA) in Japan.

Gravitational waves were first predicted by Albert Einstein in his general theory of relativity over 100 years ago. It is discovered that matter and energy are interchangeable and when matter and energy are put into space, they can accelerate and generate a ripple in space-time - known as a gravitational wave.

LIGO looks for gravitational waves from astrophysical objects such as colliding black holes. The reason why gravitational waves are so important and why we want to detect them is because they are a completely new way of looking at the Universe. Most of what we know about the Universe comes from telescopes looking at stars. Telescopes look at light, whereas gravitational waves are produced by accelerating matter, so they are complementary to what we can see with telescopes. The first direct detection of gravitational waves happened in 2015 and it was discovered that black holes could exist in pairs.

Students' Corner

The detections showed that the black holes that we see in the Universe are indeed the black holes that were predicted by Albert Einstein over 100 years ago. In 2017, Astronomers and researchers observed our first binary neutron star collision which enabled them to infer important information including that many of the heaviest elements in the periodic table come from the collisions of these neutron stars.

We always want to improve our detector sensitivity. By improving the sensitivity, we will be able to go further into the Universe.

There are plans to develop these new generations of gravitational wave observatories in the next decade. In the US, scientists are working on the Cosmic Explorer, which is ten times the size of LIGO with 40km arms. By just making that simple change, it improves the reach of the detector by about a factor of ten. These detectors will be able to see the edge of the Universe. They will be able to see every black hole merger that ever happened and even the epic before stars were formed.

Another best example of new generations of gravitational wave observatory is the Laser Interferometer Space Antenna (LISA), led by the European Space Agency (ESA) with participation by NASA, which is set to be launched into space within the next decade. The idea is to make the same kind of detector that we have on Earth, but in space. Instead of having 4km arms, their arms are going to be 2.5 million kilometres. This is impressive technology.



SUJITHAA K
III B.Sc.Physics
21D1335
BATCH (2021-2024)



TENSEGRITY STRUCTURE

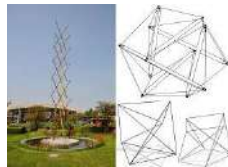
"Tensegrity" is an amalgamation of the words tension and integrity or tensile integrity. The term was first coined by Buckminster Fuller in the 1960s, the other denomination of tensegrity, was used mainly by the constructivist artist Kenneth Snelson. In pure tensegrity structure the components do not touch and appear to float. Tensegrity structures are constructed from an assembled system of cables and strings in a manner that are under continuous tension which is often innovative and visually interesting. The main force that makes this possible is the upward tension exerted by the string from which the lowest point of the object is suspended. The other tensions are downward and serve to balance the moment created by the weight of the object. The centre of gravity of the structure lies just in front of the supporting string exerting the upward tension. The two smaller downward vectors at the back due to the strings balance the moment due to the weight, and give the structure stability sideways. Because of these patterns, no structural member experiences a bending moment and there are no shear stresses within the system. This can produce exceptionally strong and rigid structures for their mass. The base is wide to provide some stability so that the whole structure does not topple.

Advantages of tensegrity structure:

- They are strong and resilient.
- They deflect and disperse loads rather than compound them.
- They do not rely on gravity to hold together, tensegrities are independent of gravity - they are governed by force vectors which travel inward and outward not up and down.
- They are transparent both in structure and design.

Some of the tensegrity structures in real life :

- The Needle Tower, in Washington is one of the most iconic examples of tensegrity by American sculptor Kenneth Snelson.
- The Biosphere, aka Montreal Biosphere, in Canada is an environmental museum with a sublime dome structure that fully integrates the visual allure of tensegrity.
- This architectural masterpiece was designed by architect Buckminster Fuller.
- This tensegrity structure can be found in science city of Kolkata, India.
- The Munich Olympic Stadium in Germany was designed by Frei Otto, an architect and structural engineer created with minimal material and minimal cost.



*Divya. M, I B.Sc. Physics
2301234
BATCH (2023-2026)*





COP28 AND INDIA

The Conference of the Parties (COP) is the main decision-making body of the United Nations Framework Convention on Climate Change (UNFCCC). The COP is made up of representatives from all countries that have signed the UNFCCC.

The COP's purpose is to:

- Assess the effects of measures taken by the Parties to limit climate change
- Review national communications and emission inventories submitted by Parties
- Assess the progress made in achieving the ultimate objective of the Convention

The ultimate objective of the convention is to stabilize greenhouse gas concentrations at a level that would prevent dangerous human-induced interference with the climate system. The first COP was held in Berlin, Germany in 1995. COPs are usually held annually, unless the Parties decide otherwise.

COP28 is the 28th Conference of the Parties (COP) of the UNFCCC. COP28 was held from November 30 to December 12, 2023 at Expo City, Dubai, United Arab Emirates with Dr. Sultan Ahmed Al Jaber as the president of COP. Around 197 countries and the European Union (EU) were represented and some 85,000 participants Attended.

COP28: INDIA'S PIVOTAL ROLE IN SHAPING GLOBAL CLIMATE AGENDAS

As the world geared up for COP28, the conference was anticipated to be a crucial moment in climate negotiations, with a spotlight on India and its role in the pursuit of a sustainable future. India's stance became instrumental due to its vast population, economic growth, and environmental challenges.

India had been both lauded and scrutinized for its commitment to reducing carbon emissions and adopting renewable energy sources. As one of the largest emitters, the nation's strategies to balance industrial growth with environmental stewardship held paramount importance.

At COP28, India aimed to present comprehensive plans that harmonized developmental aspirations with global climate goals. Its emphasis on renewable energy, ambitious renewable capacity targets, and efforts to scale up clean energy infrastructure marked significant strides towards sustainability.

India played a significant role in COP28, including :

Green Credit Initiative

India proposed this initiative to create carbon sinks through afforestation. It encourages the generation and trading of green credits for environmental actions by individuals, communities, and companies.

Global River Cities Alliance (GRCA)

The National Mission for Clean Ganga (NMCG) launched this alliance at COP28. The GRCA highlights India's role in climate resilience and sustainable river-centric development.

CLIMATE CHANGE DECLARATION

India played a key role in advancing the G20 declaration on climate change. India committed to an ambitious target and a climate-friendly and cleaner development path.

Students' Corner

EQUITY IN CLIMATE TALKS

India and other countries whose economies rely on fossil fuels argued that wealthy countries should be doing more. They argued that wealthy countries have released more climate-warming emissions since the industrial revolution.

GLOBAL LEADERSHIP & COLLABORATIONS

PM Modi's proposal for India to host a climate summit in 2028 demonstrates a commitment to global environmental issues. It showcases India's willingness to take on a leadership role and collaborate with other nations to address climate change collectively.

However, challenges persisted, notably in curbing emissions from sectors like transportation and industry. Collaborative efforts in technology transfer, finance, and capacity building were imperative for India to accelerate its climate action plans. India's active participation in COP28 signified a pivotal moment where the nation, alongside global stakeholders, strove to craft inclusive policies that safeguarded the planet while fostering equitable growth. The outcome not only shaped India's trajectory but also impacted the global fight against climate change.



*B.S.Dharshini,
II B.Sc.Physics
2201120
BATCH (2022-2025)*



DARK SKY MISSION OF OUR COUNTRY

The union territory of Ladakh will host India's first Dark Sky Reserve which will be set up in Hanle area in the next three months. The Dark Sky Reserve is being built as part of Ladakh's high-altitude Changthang Wildlife Sanctuary.

Dark Sky Reserve (DSR)?

It is a public or private land of substantial size (at least 700 km², or about 173,000 acres) possessing an exceptional or distinguished quality of starry nights and nocturnal environment, and that is specifically protected for its scientific, natural, educational, cultural heritage, and/or public enjoyment. Ladakh is ideal for long term observatories and dark-sky sites because of its large arid area, high elevation, and sparse population, extreme cold and minimum temperature drops to minus 40°C. The Changthang wildlife Sanctuary, the DSR site is situated around 4,500 metres above sea level, which makes it a perfect host for telescopes. The Department of Science and Technology and Indian Institute of Astrophysics (IIA) in Bengaluru are providing support for the facility. As the IIA already manages the Indian Astronomical Observatory (IAO) complex in Hanle, Ladakh.

India's objective with DSR :-

- To promote astro tourism , To offer clear skies for observations , For training purpose , Sky gazing and a boost for village economy.

Moto of this mission :-

- The Dark Sky Reserve is likely to boost Astro tourism in India where there has been no such reserve. Once set up, the reserve will be the highest-located site in the country for infrared, gamma-ray, and optical telescopes.



J PAVITHRA
I B.Sc.Physics
23D1215
BATCH (2023-2026)



CHANDRAYAAN-3 (MISSION SOFT LANDING)

In ISRO's official YouTube channel they gave a live coverage of Chandrayaan-3 Mission and updated about its landing on the lunar surface. They notified about the journey of Chandrayaan-3 from its launch to soft landing. During soft landing, the power descent phase for the landing of the Chandrayaan-3 is divided into four phase. The four phases are Rough Braking, Altitude Hold, Fine Braking, Terminal Descent. During the Rough Braking phase the lander velocity was brought down and the altitude was brought down from 30Km to 7.4Km which took around 11.5 minutes for the completion of 1st phase. On the other side scientists analysed those complex data. The lander module reduced from 7.4Km to 6.8Km in the next phase called the Altitude Hold phase which took around 10 seconds and the parameters of lander module was analysed. The lander imager camera on the module took continuous photograph of the moon which was telecasted. In the Altitude Hold phase there was a sensor update. The third phase Fine Braking took nearly 3 minutes and the altitude was reduced nearly 800m in the end of the phase. The final phase of the power descent which is the vertical descent phase. The horizontal and vertical velocity was constantly reduced. The lander module was approaching the lunar surface. The sensors updated the confirmation, safety of the landing surface. Then the lander module landed on the lunar surface of the Moon. It has been three decades since India made this journey to the Moon. The space control room beamed with joy on August 23 ,Wednesday 2023, when the Vikram lander landed on the Moon at 6.40. The success of the Chandrayaan-3 Mission was celebrated and the celebration ended with the national anthem. India's successful soft landing near the Moon's south pole is a moment of national pride, establishing the country as the first to achieve this remarkable feat of landing a spacecraft on the Moon.

U. MADHUMITHA
I B.Sc.Physics
23D1241
BATCH (2023-2026)





செ.வேதனியால்

இயற்பியல் திரைப்படம் ஆண்டு
துவாரகதாஸ் வேலித்தேவன் வைணவக் கல்லூரி, சென்னை

பீளாஸ்மா கண்காட்சி பருப்பொருளின் நான்காவது நிலை!



அறிவியல் கண்காட்சி கண்காட்சிகள் கண்களுக்கு விருத்தித்து கருத்து தெரிவித்து சித்திக்கவும், கனவு காணவும் செய்யும் ஒரு திகழ்ச்சியாகும். தமிழ்நாடு அறிவியல் பொருள்புலியையும், மத்திய அரசின் அறிவியல் தொழில்நுட்பத் துறைமுகம் சார்ந்த பீளாஸ்மா ஆராய்ச்சி நிறுவனம்-தூரநி, மத்திய அரசின் அணுகுத்தி துறைமுகம் சார்ந்த இந்திய வர்த்தி அணுகுத்தி ஆராய்ச்சி நிறுவனம், கல்பாக்கம் ஆகியவை இணைந்து ஜூலை 3 முதல் ஜூலை 7 வரை பெரியார் அறிவியல் இதழிக்குட்பட வையத்தின் நடத்தப்பட்ட இந்தக் கண்காட்சியில் பீளாஸ்மா பற்றிய அறிவியல் செய்துகொற விசக்கவக்கள், பரிநிசிக்கல் பற்றும் விந்லூசனிகூடல் உணர்யாடல்களும் நடத்தப்பட்டன. இதற்கைய கண்காட்சிகள் மாணவர்களின் அறிவு மற்றும் செயல்திறன்களை மேலிடடுத்திபுதியவைகளைக் கண்டறிவதற்கு அறிவியல் தேவக்களுக்கு செயல்படும் கண்காட்சிகளில் கற்றுத் தரல்கிறது. மாணவர்களின் தர்ணாய்க்கெவை வளர்க்க உதவுகிறது. இந்தக் கண்காட்சியில் பீளாஸ்மா பற்றிய அறிவு தகவல்கள் மற்றும் பீளாஸ்மா கருவிகளும் கட்டிடத்திட்டப்பட்டன.

பீளாஸ்மா என்ற பெயர் வித்தியகவாக இருக்கிறதே? பீளாஸ்மா என்றால் என்ன? இதன் பண்புகள் யாவை?

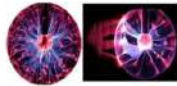
அவசியம் துவக்கு பீளாஸ்மா (ஸ்மின்) பீளாஸ்மா/கவைய, பிளாசுக் கவைய என்பது இயற்பியல், வேதியியல் ஆகிய துறைகளின்படி பொருளொன்றின் தன்மை, நிலம் (நிரலம்), வலியம்(வலு) ஆகிய மூன்று இயல்பான தனி நிலைகளைத் திரைத் தாங்கிய மூன்றாவது ஒரு தனிநிலையாகும். இதனை டயமியம் இயல்பான நிலைகளிலின்று செயற்கையாகவழிப் பெறப்பட்ட நடுநிலையை வாய்க்கவைய மூலமே பெற இயலும். இதனை பிளாசுக்ஸ் (ஜெல்லி) எனவும் அழைக்கப்படும். வேதியியல்குறி இரண்டு கார்புரன் என்சுமில் 1928ல் ஆண்டு பீளாஸ்மா என்ற மத்தகை அறிமுகப்படுத்தினார்.

இந்த பீளாஸ்மாவானது மூலமே பீளாஸ்மா, மூலம் பீளாஸ்மா என பல வகைகளில் உள்ளது. ஒவ்வொரு பீளாஸ்மாவிற்கும் தனித்தனிப் பண்புகள் உள்ளன.

பீளாஸ்மா கண்காட்சியில் வைக்கப்பட்டிருக்கிற கருவிகள்

இந்த பீளாஸ்மா கண்காட்சியில் கோலிட் மூன்று நோய்களின்கொடு மேற்பரப்புகளை சிறுமி நீக்கம் செய்க்கூடிய பீளாஸ்மா அடிப்படையிலான பீளாஸ்மா சி.டி.கவைய, கருவியில் கற்றுக்கொடுக்கிற அடிப்படத்தின் மீறும் வலியம்கவைய மாணவர்களை குறைக்கவும் உருவாக்கப்பட்ட பீளாஸ்மா பெயரொசில் கருவியில் பீளாஸ்மா அடிப்படையிலான பீளாஸ்மா டிராச் கருவியும் மேலும் குழந்தைகளின் கண்கவையக் கவலும் வண்ணம் பீளாஸ்மாவை உருவாக்கப்பட்டிருந்த பீளாஸ்மா குளோப்

Articles Published by our Students



குற்றாள கருவிகள்
Glow discharge plasma
Jacob's ladder
Plasma ion thruster
Plasma pyrolysis
Plasma sterilizers
Plasma for personal grooming
Superconductivity- magnetic levitation
Model of a generic tokamak
Teela coil and RF plasma



இதுமேலும் பிளாஸ்மாவை உருவாக்கக் கெற்ற டைக் கருவிகள் இந்தக் கண்காட்சியில் இடம் பெற்றன.



பிளாஸ்மா கண்காட்சியின் குற்றாள கருவிகள்

பிளாஸ்மா என்பது வெற்றிடமான வானவளக்களுக்கு ஒரு குறியாக உள்ளது. இது மின்காந்த அலைகளை உருவாக்குகிறது. இது பள்ளி மற்றும் கல்லூரிகளில் கற்றுக்கொடுக்கப்படாத ஒரு பயன்பாடு. இக்கண்காட்சி மாணவர்கள் மற்றும் ஆசிரியர்களுக்கு இந்த தலைப்பு அறிமுகப்படுத்துவதை நோக்கமாகக் கொண்டிருக்கிறது. இந்தத் துறையில் ஒரு தொழிலைத் தொடக்க ஆரம்ப பயன்பாடு மற்றும் வாய்ப்புகளை அளிக்கக் கூடுகிறது.



பிளாஸ்மா தொழில்நுட்பம் என்பது பல்வேறு பயன்பாடுகளில் பிளாஸ்மாவை பயன்படுத்துவதை உள்ளடக்கியது. இது கண்காட்சியில் இடம் பெற்றது. பல்வேறு தலைப்புகளை உள்ளடக்கியது. இயற்பியலுக்கான காரணமாக மனிதர் செயல்பாட்டின் ஒரு பகுதி ஆகும். பிளாஸ்மா தொழில்நுட்பம் பாலிமர்கள், தானா தூசு ஆகியவை நான்கு-தனித்தனி உட்கருவிகள் தூசு விடுவது மற்றும் உச்சியில் போன்றவற்றின் தொழில், சிவ்வாறு ஆகியவற்றிற்கு பயன்படுத்தப்படுகிறது. இது கற்றுக்கொடுக்க உதவுகிறது.

கருவியும் காட்சிப்படுத்தப்பட்டன. ஆரம்பிக்கும் மாணவர்களுக்கு பயன்படும் வகையில் வெவ்வேறு சிமேயுள்ள கருவிகள், பிளாஸ்மா டைட், டைட் கருவிகள் என பல அறிமுகம் கருவிகளையும் கண்காட்சியில் வைத்திருந்தனர். மாணவர்களின் கருவிகளையும் மாணவர்களையும், ஆசிரியர்களையும் விடவும் ஆழ்ந்தியு இக்கண்காட்சி.

பிளாஸ்மா கண்காட்சியில் இடம்

பிளாஸ்மா தொழில்நுட்பத்தில் ஆர்வம் உள்ளவர்களுக்கு உதவியாக இருக்கும். ஏனென்றால், இது இயற்கையாக நிகழும் மற்றும் மனிதனால் உருவாக்கப்பட்டவற்றின் பிளாஸ்மா நிலையின் கட்டுப்பாடுகளை பரிசீலிப்பதில் உதவியாகும். இந்தப் பரிந்துரைகள் பல்வேறு ஆய்வுகளை உள்ளடக்கியவை. உருவாக்க உதவியாகும். உதவியாகும். உதவியாகும்.

ஆசிரியர் | கருவிகள் அமை | 29

Vedhaviyas S
22D1151, II B.Sc.Physics, BATCH (2022-2025)



On 1st July 2023 I went to Periyar Institute of science and technology along with a few more students in Kotturupam to take part in a plasma exhibition as a volunteer to explain exhibits invented by Institute for Plasma Research (IPR).

Institute for Plasma Research (IPR)

Institute for Plasma Research is an autonomous R & D organization under the authority of Department of Atomic Energy (DAE), Government of India situated near west bank of river Sabarmati in Guwahati, India. This Institute is largely involved in theoretical and experimental studies in plasma science including basic plasma physics, magnetically confined hot plasmas and plasma technologies for industrial application. The institute owns two operational tokamaks (a machine for controlling thermonuclear fusion) - ADITYA and Steady State Tokamak (SST) - 1. ICFI, ITER-India and CFV-IPR, located in Gandhinagar and Guwahati are three divisions under IPR.

When my professor announced that they needed some volunteers I was very curious "An exhibition on plasma? Does it have applications? But plasma

can't be confined, right?" These were my thoughts at that moment. I wanted to know the answers for my questions. Also I love to interact with people so I enrolled my name as a volunteer. It was a one week program.

On 1st July we were asked to come at 11:30 am. We also saw many other college students. The staff at the planetarium welcomed us warmly and gave some basic instructions on the timing of the event. Then around 1:00 pm a scientist named Dr. Ravi Kumar gave a brief introduction on plasma and about their institution it impressed me more.

What is plasma?

Plasma is often called "the fourth state of matter" along with solid, liquid and gas. But as a liquid will boil, changing into a gas when energy is added, heating a gas will form a plasma. It comprises over 99% of the visible universe. In the night sky, plasma glows in the form of stars, nebulae, and even the auroras that sometimes ripple above the north and south poles. That branch of lightning that cracks the sky is plasma, so are the neon signs along our city streets. And so is our sun, the star that makes life on earth possible.

Articles Published by our Students

Then two other scientific officer Mr. Gattu Ramash Babu and Mr. Chetan Karvazala gave us a brief description on their exhibits and

Ms. Chhaya Chanda told us how to explain to the students. There were many exhibits that really amazed me. There were many exhibits based on Plasma and its application. After that we were allotted for each exhibit as teams.

Exhibit that were displayed:

On 3rd July our work began. Around 2179 school students of 46 schools and 562 college students of 18 colleges and some few science lover's visited the exhibition.

They asked us many questions about the exhibits which made me want to learn even more. We used to go there on time and do our part and go home. This continued for a week.

B.S.Dharshini B.Sc (Physics)
D.G.Vaishnav College,
Chennai 106

During that time, the first thing that I learned was the difficulties of a teacher. Also how to break concepts for each student's level. Even though I feel exhausted from all day standing and explaining the curious look on the student's face that tells "oh... what is that exhibit about" made me feel more boosted.

"Opportunity knocks only once. You never know if you'll get another opportunity." So I utilized this opportunity and got to learn more about plasma and how to interact with people.



GLOBAL LEVEL DAF Drawing Competitions in Govt Higher secondary School, Geramancherry, Chennai-119
ARVILKKAN August 2023

Dharshini B S
22D1120, II B.Sc.Physics, BATCH (2022-2025)

அம்மா சாட்டர்ஜி ஒரு இந்திய கவிம வேதிவியலாளர் ஆவார். அவள் ஆங்காங்கிக் கோயிலடர் மற்றும் ஸ்பெடோமெயூசின் துறைகளில் தனது பணிக்காக குறிப்பிடப்பட்டவர். அவர் தேவீ முகர்ஜி மற்றும் இந்திய நா முகர்ஜி ஆகியோருக்கு 24 செப்டம்பர் 1917 அன்று பிறந்தார். அவர் 1936 இல் கல்கத்தா பல்கலைக்கழகத்தில் ஹானாஸ் பட்டம் பெற்றார். மேலும் 1938 இல் கல்கத்தா பல்கலைக்கழகத்தில் கவிம வேதிவியலில் முதுகலைப் பட்டம் பெற்றார். இந்தியாவின் முன்னோடி இயற்கை தயாரிப்பு வேதிவியலாளர் டி.கே.பொலின் வழிகாட்டுதல் கீழ் 1944 இல் டாக்டர் பட்டம் பெற்றார்.

சாட்டர்ஜி தனது அவாந்த முயற்சியின் மூலம், ஆயர்வேத மருந்துகளின் வளர்ச்சிக்காக இந்திய மருத்துவ தாவரங்கள் மற்றும் ஆராய்ச்சியை மேற்கொள்வதற்காக ஒரு பிராந்திய ஆராய்ச்சி நிறுவனத்தை நிறுவ வேண்டும் என்ற தனது வாழ்நாள் கனவை திறைவேற்றினார். கோல்கத்தாவின் சாட்ட வேக் சிடிமில் உள்ள ஆயர்வேதம் மற்றும் சீத்த ஆராய்ச்சிக் களம் மத்திய கல்விக்கல்வி கீழ் மாநில ஒத்தாசைப்பு கோளாறு முதன்மை ஒருங்கிணைப்பாளராக, அவர் தனது வாழ்க்கையின் இறுதி வரை இந்த நிறுவனத்தை வளர்த்தார்.

1984 ஆம் ஆண்டில், அவரது நிறுவனத்திற்கு பிறகு சாட்டர்ஜி கல்கத்தா பல்கலைக்கழகத்தில் தாய் வேதிவியல் துறையில் சீடராக நியமிக்கப்பட்டார். இது அவரது மாணம் வரை அவரது நிர்ந்தா முகவரியாக இருந்தது.

வின்கா ஆல்கலாய்டுகள் பற்றிய ஆராய்ச்சி, மாச்சிலியா மிஸ்ட்டோலிக்குத்து வலிப்பு எதிர்ப்பு மருந்தான ஆயுஷ்டம் மற்றும் ஆல்கலாய்டு என்சைலின், ஸ்வாத்தீயா சிரட்டர், டிக்ரோபீசா குரோவா மற்றும் சீவின்ன கிறிஸ்டாவைப் போன்ற மருத்துவ தாவரங்களிலிருந்து மலேரியா எதிர்ப்பு மருந்தான ஆயுஷ்ட மின் வளர்ச்சி ஆகியவை அவரது குறிப்பிடத்தக்க வேலைகளில் அடங்கும்.

இந்திய வேதியியலின் அராசி

அம்மா சாட்டர்ஜி

பி.எஸ்.சுர்ஜிவி,
பீ.எல்.சி.இயம்பியல் இரண்டாம் ஆண்டு
துவாரதா தரல் கோயில்தல் தரல், ஸ்ரீராம கர்ஜாரி,
அருப்பாக்கம்
சென்னை - 600106.

ஆல்கலாய்டுகள், கமரீன்கள் மற்றும் டெர்பெனாய்டுகள், பகுப்பாய்வு வேதிவியல் மற்றும் இயந்திர வேதிவியல் ஆகியவற்றில் சிறப்புக் குறிப்பிடும் மருத்துவ வேதிவியல் துறையில் குறிப்பிடத்தக்க பங்களிப்பைப் கொடுத்தார். அவர் தேசிய மற்றும் சர்வதேச பத்திரிகைகளில் சுமார் 400 கட்டுரைகளை வெளியிட்டார்.



ARIVUKKAN
20
November 2023

Articles Published
by our Students



அமிர சாட்டஜி 1944 இல் இந்தியப் பல்கலைக்கழகத்தால் அறிவியல் முனைவர் பட்டம் பெற்ற முதல் பெண்மணி ஆவார். இந்திய அறிவியல் காவியத்தின் பெருந்தலைவராகத் தேர்ந்தெடுக்கப்பட்ட முதல் பெண்மணியும் ஆவார். 1975 இல் இந்தியாவின் முன்னாள் உயரிய விருதை பத்ம பூஷன் பெற்றார்.


அவர் 1985 லாசு.பி.டி.ஓ. சோதனையிட்டுத் தரும் நூலின் விருதைப் பெற்றார். கல்கத்தா பல்கலைக்கழகத்தின் செயல்பிரபாகர் கல்லூரியில் வேதியியல் துறையைப் தொடங்கினார். அமிர சாட்டஜி ஒரு பெரிய மாணவியால் பாதிக்கப்பட்டு 26 நவம்பர் 2006 அன்று காலத்தை விட்டு 89 வயதில் இறந்தார்.

எல்லா உயிர்களிலும் 'அமிர சாட்டஜி' அவர்கள் "நான் வாழும்வரை உணர்ப்பேன்" என்ற தத்துவத்தைக் கடைபிடித்து மக்களுக்கு பயன்தரும் வகையில் மருத்துவ வேதியல் துறையில் பணியாற்றி பல நோய்களுக்குான மருந்துகளை நவீனத்தில் முக்கிய பணியாற்றினார். அவருடைய குழுவின் உள்நோய் நிகழ்வில் நிபுணர்களாக.

வாழ்வில் முன்சென்றப் பாதையில் செல்வோமாக.

ARIVUKKAN November 2023

Known Facts



1. Sleeping less than 7 hours each night reduces your life expectancy.
2. Only one half of a dolphins brain goes to sleep at a time.
3. Children tend to fall asleep faster and sleep longer when they go to bed before 9 p.m.
4. A snail can sleep for 3 years.
5. Its impossible to sneeze while sleeping.
6. People can only live upto 11 days without sleeping.
7. Cats sleep for 70% of their lives.
8. Rabbits often sleep with their eyes open.
9. Giraffes only need 5 to 30 minutes of sleep in a 24-hour period.
10. Man is the only mammal that willingly delays sleep.

Dharshini B S
22D1120, II B.Sc.Physics, BATCH (2022-2025)

Ten interesting facts about Chandrayaan 3

Pa. Kalabarathi

Chandrayaan-3 has begun its voyage towards the Moon from Satish Dhawan Space Centre, Sriharikota, Andhra Pradesh, carried by ISRO's biggest and most powerful rocket, the LVM3 (Vikram Sarabhai Space Centre).



It will also be the first Chandrayaan-3 mission on the Moon's south pole. The complex task will become the fourth rocket to successfully complete the soft landing of a spacecraft on Earth's natural satellite, and the first mission to land a spacecraft on the Moon's south pole.

1. Chandrayaan-3 is the first Indian lunar mission because it is the fourth operational mission of ISRO.

2. Chandrayaan-3 consists of a lander, a rover and a propulsion module. The objectives of the mission are to demonstrate soft landing on the lunar surface, and using as a



The LVM3 launch rocket and Chandrayaan-3



Navigation | NEWS | HISTORY | 3

Green nanotechnology involves the application of nanotechnology to enhance sustainability, minimize environmental impact, and improve efficiency in various fields like energy production, medicine, and environmental remediation. It focuses on developing ecofriendly nanomaterials and processes that reduce waste and energy consumption while maximizing resource utilization. The escalating demand for clean and accessible water resources necessitates innovative and environmentally friendly approaches for water treatment. Green nanotechnology emerges as a transformative strategy, leveraging nanomaterials and processes to address water quality challenges sustainably. This paper investigates the application of green nanotechnology in water treatment, emphasizing the development of eco-friendly nanomaterials and their utilization in purification, desalination, and remediation processes. In this paper Investigate about NanoH₂O. NanoH₂O's reverse osmosis membranes incorporated nanotechnology to enhance water desalination processes. These membranes utilized nanomaterials to improve the efficiency of removing salts and impurities from water, making the desalination process more effective and energy-efficient compared to conventional membranes. By leveraging nanotechnology, NanoH₂O aimed to address the challenges of water scarcity by offering high-performance membranes that could produce freshwater from seawater or brackish water more efficiently.

PRIYADHARSHINI R (23D1224), I B.Sc.Physics
DEVADHARSHINI B (23D1247), I B.Sc.Physics
Batch 2023-2026

Nanotechnology is one of the most promising keys enabling technologies of the 21st century. The field of nanotechnology was foretold in Richard Feynman's famous 1959 lecture "There's Plenty of Room at the Bottom". Nanotechnology started coming into its own in the 1980s, gaining public exposure, awareness and commercial applications of the new technologies. The use of nanotechnology in electronic components makes nanoelectronics. These parts are only a few nano meters in size. Nanotechnology has extensive application as nanomedicine in the medical field. They are being used as novel diagnostic instruments, imagery and methodologies, targeted medicinal products, pharmaceutical products, biomedical implants, tissue engineering and a lot more. Nanotechnology is now regarded as the most promising technology of the twenty-first century, and researchers have investigated it as a novel technique in medical research. Nano electronic biosensors are nanostructured semiconducting materials aimed at addressing nano molecules to facilitate appropriate solutions for biological activities at the cellular level. Nano electronic biosensors have been found to be effective primarily in detecting the presence of molecular and cellular functions at low levels of concentration. The detection of viruses and development of DNA-hybridization kinetics have also been made possible through emerging innovations in the field. The emergence of nano electronic biosensors in current medical research was greatly influenced by research endeavors to merge electronics with medical interventions. The variety of nano electronic biosensing materials are also helpful in promoting a larger scope of treatment in the bioengineering sciences. This paper focuses on working of Nano electronic biosensors, advantages of using them in medical field, future scope of nanotechnology in medical field.

DIVYA M (23D1234), I B.Sc.Physics
DHARSHINI S (23D1233), I B.Sc.Physics
Batch 2023-2026

Piezoelectric nanomaterials, when activated by ultrasound, generate electrical charges due to mechanical stress. Endogenous electric fields play a crucial role in cellular physiology, not only in the generation and propagation of the action potentials in nerves and muscles but also in controlling other cellular functions, such as proliferation, morphology, gene expression, differentiation, and migration. As a therapeutic tool, therefore, electrical stimulation has exciting potential in different biomedical applications, such as neuromodulation, regenerative medicine, and cancer treatment.

To date, therapies based on electrical stimuli require invasive percutaneous electrodes or transcutaneous devices, which typically lack efficacy and spatial resolution. In this vein, piezoelectric nanoparticles activated by external ultrasound (US) constitute a paradigm enabling the induction of localized electrical stimulation within the body in a wireless fashion. Piezoelectric nanomaterials also find their application in a wide variety of biomedical fields, including sensors and actuators and energy-harvesting systems. This phenomenon finds applications in various fields, such as medical imaging, drug delivery and sensors. It has an ability to convert mechanical energy to electrical signals.

KUGASRI J (23D1231), I B.Sc.Physics
HARINI S (23D1214), I B.Sc.Physics
Batch 2023-2026

Quantum Dots : Building Blocks For Future Quantum Technologies

ICFAN Abstract

Quantum dots have evolved optimistic nano-scale materials with both electronic and optical properties. This abstract highlight the fundamental properties and effects of quantum dots in present and futuristic technologies. Applications in fields such as bio-imaging, quantum computing and optical-electronics showcases the potential of QDs in assorted technological domains. In quantum computing, quantum dots are being investigated as potential qubits. Quantum states can be manipulated to represent the 0s and 1s of classical bits. The confined electrons in quantum dots exhibit quantum properties, such as superposition and entanglement, making them suitable candidates for qubits. The semiconductor nature allows for controlled manipulation of electrons, enabling quantum states to be encoded and processed. Their confinement properties contribute to better control over quantum-states, a key requirement for building steady quantum computers. Researchers aim to use these properties to perform complex calculations at much higher speeds than classical computers. However, it's important to note that quantum-computing is still in the early stages of development and practical quantum computers are yet to be completely accomplished. Quantum dots can serve as an interface between spin qubits and photons, allowing for the transfer of quantum information between stationary qubits and photons. This is crucial for quantum communication and building quantum networks. To put it in brief, quantum dots contribute significantly to the development of quantum computing by serving as qubits, enabling quantum gate operations, exhibiting longer scalability, participating in hybrid quantum systems and facilitating spin-photon interfaces for quantum communication.

M. SHANKARANARAYANAN (23D1227)
I.B.Sc Physics
Batch 2023-2026

**(Vermi compost, Neem leaves) and Electrical Conductivity
study of soil**

This study aimed to explore the comparison between the ill effect of Prosopis Juliflora tree on soil fertility and productivity. Focusing methodology by applying vermicompost, Groundnut seed coat and dry neem or Tulasi leaves.

In my previous study, it was focused to identify the presence of minute traces of toxic element and heavy metal content in the soil sample near the Prosopis Juliflora (Seemaikaruvelam) planted soil. AAS (Atomic Absorption Spectroscopy) study revealed the existence of minute traces of lead, arsenic in the soil near the tree.

Comparative study was carried out by collected soil sample near and far away (40m) from the tree (Depth 20 Cm). The area of location was a small village near Tirunelveli District.

The sample were dried at room temperature and grounded into finely powdered and packed 10gm in packets each then subjected to heavy metal analysis study.

If we enhance the soil fertility by using practices like applying natural fertilizers like vermicompost or neem leaves or Tulasi leaves could make the soil to some extent sustainable development in future our country scientific developments depend on the fabrication biomaterials from natural sources like (various types of soil-Red soil, Coastal, Alluvial, River bed and so on). This methodology is paved the new way for the fabrication of nano batteries, lithium-ion batteries using soil sample on cathode.

*DR. K. SELVA KOTHAI NACHIYAR, ASSISTANT PROFESSOR, DEPT. OF PHYSICS
PA. KALABARATHI (22D1150), II B.Sc Physics
B.S. DHARSHINI(22D1120), II B.Sc Physics
Batch 2022-2025*

Important challenges in the global water situation, mainly resulting from worldwide population growth and climate change, require novel ingenious water technologies in order to ensure a supply of drinking water and reduce global water pollution. Under these circumstances, the adaptation of highly advanced nanotechnology to traditional process engineering offers new opportunities in technological developments for advanced water and wastewater technology processes. Here, a summation of recent advances in nanotechnologies for wastewater treatment processes is provided, including, such as nano adsorbents, nano based materials nanometals, nanomembranes, and photocatalysts.

*S. VEDHAVIYAS (22D1151), II B.Sc.Physics
Batch 2022-2025*



The field of Nanoscale characterisation deals with the analysis of materials at nanoscale like study the size, crystal structure and other physical properties of nanoparticles. It involves many techniques such as Transmission Electron Microscopy, X-ray diffraction, scanning probe microscopy, Fourier transform infrared spectroscopy, etc. Transmission electron microscopy (TEM) is a microscopy technique which transmits a beam of electrons through the specimen to form an image. This study aims to explore about the principle and working of TEM, its types and uses. This probe also deals with the improvement in the nanoscale characterisation field with the help of TEM.

DR. V RENGANAYAKI, ASSOCIATE PROFESSOR, DEPT. OF PHYSICS
G MAKESH(22D1139), II B.Sc Physics
Batch 2022-2025

The semiconducting nanomaterials, because of their wide direct band gap, are desired for the next generation of optoelectronic communication systems, optical recording devices, light sensors and blue diode lasers. When the size of the semiconductor materials is reduced to nanoscale, their physical and chemical properties change dramatically, resulting in unique properties due to their large surface area or quantum size effect. Generally, there are two different approaches for material fabrication. One is the Top-down and the other is the Bottom-up approach. Attrition or milling is a typical top-down method in making nanomaterials, whereas colloidal dispersion is a good example for the Bottom-up approach in the synthesis of nanomaterials. The 'Top-down' approach utilizes lithography and precision engineered tools like cutting, etching, grinding etc., to fabricate nanoscale objects out of bulk materials. In the 'Bottom-up' approach, materials and devices are built from molecular components which assemble themselves chemically, using the principle of molecular recognition. The 'Bottom up' approach refers to the buildup of a material from the bottom, i.e., atom by atom, molecule by molecule or cluster by cluster. An important aspect of research on nanomaterials has been to prepare size-selected particles in order to study various size-dependent features. Most of the metal oxide and metal sulphide nanomaterials can be produced by soft chemical methods, such as co-precipitation, sol-gel and hydrothermal synthesis.

Besides other methods, wet chemical methods have several advantages as follows:

Simple techniques

Inexpensive, less instrumentation compared to many physical methods

Low temperature (<500°C) synthesis

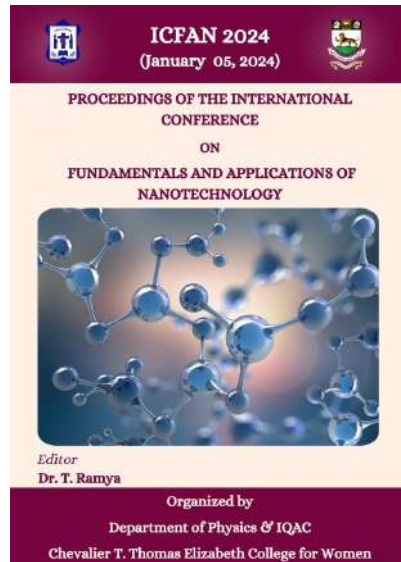
Doping of foreign atoms (ions) possible during synthesis

Large quantities of the materials can be obtained

Variety of sizes and shapes are possible

*DR.D.SRIDEVI, ASSISTANT PROFESSOR, DEPARTMENT OF PHYSICS
K.SUJITHA (21D1335), III B.Sc.Physics
Batch 2021-2024*

**The International Conference of Fundamentals
and Application of Nanotechnology
(ICFAN)
Conducted on January 5, 2024**



Development of Nano Scale Characterisation with TEM*V. Renganyaki, G. Makesh*

Department of Physics, Dwaraka Doss Goverdhan Doss Vaidyan College, Tamilnadu, India

Abstract

The field of Nanoscale characterisation deals with the analysis of materials at nanoscale like study the size, crystal structure and other physical properties of nanoparticles. It involves many techniques such as Transmission Electron Microscopy, X-ray diffraction, scanning probe microscopy, Fourier transform infrared spectroscopy, etc. Transmission electron microscopy (TEM) is a microscopy technique which transmits a beam of electrons through the specimen to form an image. This study aims to explore about the principle and working of TEM, its types and uses. This probe also deals with the improvement in the nanoscale characterisation field with the help of TEM.

Introduction

Ernst Abbe introduced the capability to resolve the detail in an object was approximately limited by the wavelength of the light used in imaging, which limits the resolution of the optical microscope to a few hundred nanometres. Development of the ultraviolet (UV) microscopes, led by Köhler and Rohr, allowed for an increase in resolution. However, this requires a high-priced quartz component, because of the absorption of UV rays by glass. At this point Ernst Ruska thought that obtaining an image with sub-micrometre information was simply not possible due to this wavelength limitations. It had earlier been recognized by Plöcker in 1858 that the deflection of "cathode rays" was possible by magnetic fields. This effect had been used to build primitive Cathode Ray Oscilloscopes (CROs).

A Transmission Electron Microscope (TEM) uses electrons to provide linguistic and crystallographic details on samples. At a maximum potential magnification of 1 nanometre, TEMs are the most powerful microscopes. TEM produces a high-resolution, two-dimensional images, allowing for an extensive range of educational, science and industry related applications. At smaller magnifications, TEM image varies due to absorption of electrons in the material, because



Chevalier T. Thomas Elizabeth College for Women, Chennai - 600011, Tamil Nadu, India.

84

DR. V RENGANYAKI, ASSOCIATE PROFESSOR, DEPT. OF PHYSICS
G MAKESH (22D1139), II B.Sc Physics
Batch 2022-2025

Proceedings of the International Conference on Fundamentals and Applications of Nanotechnology – ICFAN 2024

Introduction

In the persistent pursuit of computing capabilities beyond the constraints of classical systems, quantum computing has emerged as a metamorphic boundary. At the heart of this technological revolution lies the complex interplay of quantum dots-nano-scale semiconductor structures with remarkable quantum properties.

This paper embarks on an extensive journey to broadcast the profound impact of quantum dots in the field of quantum computing. Quantum dots play a crucial role in quantum computing due to their unique quantum mechanical properties. Here are some key aspects highlighting the significance of quantum dots in quantum computing:

Quantum Information Encoding

Quantum dots can trap and confine electrons in three dimensions. This confinement leads to discrete energy levels, allowing quantum dots to function as artificial atoms. These discrete energy levels can be leveraged to encode quantum information, serving as quantum bits or qubits.

Qubit Implementation

Quantum dots provide a platform for implementing qubits in a solid-state system. The electronic and spin states of individual electrons within quantum dots can be manipulated and utilized as qubits. This solid-state approach has advantages for scalability and integration with existing semiconductor technologies.

Quantum Dot Cellular Automata (QCA)

Quantum dots have been proposed for use in quantum dot cellular automata, a quantum analog to classical cellular automata.

Entanglement Generation

Quantum dots can be engineered to facilitate the generation of entangled states, a fundamental requirement for many quantum computing algorithms.



Chevalier T. Thomas Elizabeth College for Women, Chennai -600011, Tamil Nadu, India.

26

M. SHANKARANARAYANAN (23D1227)
I B.Sc Physics
Batch 2023-2026

Proceedings of the International Conference on Fundamentals and Applications of Nanotechnology – ICFAN 2024

Green Nanotechnology and Water Treatment

Priyadharshini R. Devadharshini B

Department of Physics, Dwaraka Doss Goverdhan Doss Vaidyan College, Chennai, Tamilnadu,
India**Abstract**

Green nanotechnology involves the application of nanotechnology to enhance sustainability, minimize environmental impact, and improve efficiency in various fields like energy production, medicine, and environmental remediation. It focuses on developing eco-friendly nanomaterials and processes that reduce waste and energy consumption while maximizing resource utilization. The escalating demand for clean and accessible water resources necessitates innovative and environmentally friendly approaches for water treatment. Green nanotechnology emerges as a transformative strategy, leveraging nanomaterials and processes to address water quality challenges sustainably. This paper investigates the application of green nanotechnology in water treatment, emphasizing the development of eco-friendly nanomaterials and their utilization in purification, desalination, and remediation processes. In this paper Investigate about NanoH2O. NanoH2O's reverse osmosis membranes incorporated nanotechnology to enhance water desalination processes. These membranes utilized nanomaterials to improve the efficiency of removing salts and impurities from water, making the desalination process more effective and energy-efficient compared to conventional membranes. By leveraging nanotechnology, NanoH2O aimed to address the challenges of water scarcity by offering high-performance membranes that could produce freshwater from seawater or brackish water more efficiently.

Keywords: Green nanotechnology, Water treatment, reverse osmosis, NanoH₂O

Introduction

Green nanotechnology involves the application of nanotechnology to enhance sustainability, minimize environmental impact, and improve efficiency in various fields like energy production, medicine, and environmental remediation. It focuses on developing eco-friendly nanomaterials and processes that reduce waste and energy consumption while maximizing resource utilization. The escalating demand for clean and accessible water resources necessitates innovative and environmentally friendly approaches for water treatment. Green nanotechnology

102
Chevalier T. Thomas Elizabeth College for Women, Chennai -600011, Tamil Nadu, India.

PRIYADHARSHINI R (23D1224), I B.Sc.Physics
DEVADHARSHINI B (23D1247), I B.Sc.Physics
Batch 2023-2026

Proceedings of the International Conference on Fundamentals and Applications of Nanotechnology – ICFAN 2024

Legacy of Nanoelectronics in Medical Field: Nano electronic Biosensor

Divya M. Dharshini S

Department of Physics, Dwaraka Doss Goverdhan Doss Vaishnav College, Chennai, Tamilnadu,
India

Abstract

Nanotechnology is one of the most promising keys enabling technologies of the 21st century. The field of nanotechnology was foretold in Richard Feynman's famous 1959 lecture "There's Plenty of Room at the Bottom". Nanotechnology started coming into its own in the 1980s, gaining public exposure, awareness and commercial applications of the new technologies. The use of nanotechnology in electronic components makes nanoelectronics. These parts are only a few nano meters in size. Nanotechnology has extensive application as nanomedicine in the medical field. They are being used as novel diagnostic instruments, imaging and methodologies, targeted medicinal products, pharmaceutical products, biomedical implants, tissue engineering and a lot more. Nanotechnology is now regarded as the most promising technology of the twenty-first century, and researchers have investigated it as a novel technique in medical research. Nano electronic biosensors are nanostructured semiconducting materials aimed at addressing nano molecules to facilitate appropriate solutions for biological activities at the cellular level. Nano electronic biosensors have been found to be effective primarily in detecting the presence of molecular and cellular functions at low levels of concentration. The detection of viruses and development of DNA-hybridization kinetics have also been made possible through emerging innovations in the field. The emergence of nano electronic biosensors in current medical research was greatly influenced by research endeavors to merge electronics with medical interventions. The variety of nano electronic biosensing materials are also helpful in promoting a larger scope of treatment in the bioengineering sciences. This paper focuses on working of Nano electronic biosensors, advantages of using them in medical field, future scope of nanotechnology in medical field.

Keywords: Nanotechnology, nanoelectronics, nanomedicine, biosensors



Chevalier T. Thomas Elizabeth College for Women, Chennai -600011, Tamil Nadu, India.

127

**DIVYA M (23D1234), I B.Sc.Physics
DHARSHINI S (23D1233), I B.Sc.Physics
Batch 2023-2026**

Piezoelectric Nanomaterials Activated by Ultrasound*Kugasri J, Harini S*

Department of Physics, Dwarka Doss Goverdhan Doss Vaishnav College, Chennai, Tamilnadu, India

Abstract

Piezoelectric nanomaterials, when activated by ultrasound, generate electrical charges due to mechanical stress. Endogenous electric fields play a crucial role in cellular physiology, not only in the generation and propagation of the action potentials in nerves and muscles but also in controlling other cellular functions, such as proliferation, morphology, gene expression, differentiation, and migration. As a therapeutic tool, therefore, electrical stimulation has exciting potential in different biomedical applications, such as neurostimulation, regenerative medicine, and cancer treatment.

To date, therapies based on electrical stimuli require invasive percutaneous electrodes or transcutaneous devices, which typically lack efficacy and spatial resolution. In this vein, piezoelectric nanoparticles activated by external ultrasound (US) constitute a paradigm enabling the induction of localized electrical stimulation within the body in a wireless fashion.

Piezoelectric nanomaterials also find their application in a wide variety of biomedical fields, including sensors and actuators and energy-harvesting systems. This phenomenon finds applications in various fields, such as medical imaging, drug delivery and sensors. It is an ability to convert mechanical energy to electrical signals.

Physics of Piezoelectric Nanomaterials and Ultrasound Waves**Piezoelectric Nanomaterials**

Piezoelectric materials are a subset of inorganic and organic dielectric compounds characterized by their ability to become electrically polarized when they are mechanically stimulated, and vice versa, they strain when they are subject to electric fields. Piezoelectric nanomaterials play a crucial role in generating ultrasound waves. Among the existing 32 crystal classes, 21 are non-centrosymmetric, of which 20 are piezoelectric. a shows examples of unit cells

147
Chevalier T. Thomas Elizabeth College for Women, Chennai - 600011, Tamil Nadu, India.**KUGASRI J (23D1231), I B.Sc.Physics
HARINI S (23D1214), I B.Sc.Physics
Batch 2023-2026**

Proceedings of the International Conference on Fundamentals and Applications of Nanotechnology – ICFAN 2024

Green Nanotechnology and Water Treatment

S. Vedhaviyas

Department of Physics, Dwaraka Doss Goverdhan Doss Vaishnav College, Tamilnadu, India.

Abstract

Important challenges in the global water situation, mainly resulting from worldwide population growth and climate change, require novel ingenious water technologies in order to ensure a supply of drinking water and reduce global water pollution. Under these circumstances, the adaptation of highly advanced nanotechnology to traditional process engineering offers new opportunities in technological developments for advanced water and wastewater technology processes. Here, a summation of recent advances in nanotechnologies for wastewater treatment processes is provided, including, such as nano adsorbents, nano based materials nanometals, nanomembranes, and photocatalysts.

Introduction

Global population growth and climate change have a direct impact on how the world's water situation develops over the long run. A 70% increase in agricultural output is expected by 2050 to keep up with the world's population growth, which is expected to nearly double from 3.4 billion in 2009 to 6.3 billion people. Since agricultural irrigation currently accounts for 70% of the world's freshwater withdrawals, the need for fresh water is rising substantially, particularly for food production. At the moment, 64 billion cubic meters of fresh water are gradually poured through annually.

About 70% of people living in the arid parts of North Africa and nearly half of the European countries face a shortage of water. Due to the fact that more water is withdrawn than replaced, even developed nations like the USA and many developing nations, which employ really inventive methods for water conservation and purification, demonstrate the challenge of depleting water reservoirs. 550 out of the 600 greatest cities in the People's Republic of China experience a shortage or lack of water due to the major rivers' extreme pollution, which makes it necessary to forgo using them for agriculture, let alone treating them to provide drinkable water. A group of



Chevalier T. Thomas Elizabeth College for Women, Chennai -600011, Tamil Nadu, India.

160

**S. VEDHAVIYAS (22DT151), II B.Sc. Physics
Batch 2022-2025**

CONNECT WITH ALUMNI



Students' Outreach Videos



Lazy Block- Inertia of rest
M. Divya I B.Sc Physics
V. Vineeth III B.Sc Physics

Comeback Can- Law of Conservation of Energy
G. Makesh II B.Sc Physics
U. Madhumitha I B.Sc Physics



Series and Parallel connection
V. Suresh Kumar I B.Sc. Physics

Crazy Light- Total internal reflection
M. Divya I B.Sc. Physics
V. Vineeth III B.Sc. Physics



Students' Outreach Videos



Magnetic Levitation
M. Shankaranarayanan I B.Sc. Physics
V. Muneesh Kumar III B.Sc. Physics

Angular Momentum
M. Shankaranarayanan
I B.Sc. Physics



Double cone going uphill
M. Shankaranarayanan
I B.Sc. Physics

Cartesian Diver
Pa. Kala Bharathi II B.S.c Physics
V. Saadhana I B.S.c Physics



Newton's disc
B.S.Dharshini II B.Sc. Physics
B. Vinoth I B.Sc. Physics

Republic Day 2024 - Let us know our Indian Scientists





















DGVC PHYSICS

This playlist is a collection of AV presenterator made by Ily B.Sc. Physics students (...MORE









▶ PLAY **⇄ SHUFFLE**

20 videos

	Amal Kumar Raychaudhuri #co... DGVC PHYSICS 81 views • 1 month ...		Birbal Sahni #indianscientist... DGVC PHYSICS 11 views • 1 month ...		D.D Kosambi #indianscientist... DGVC PHYSICS 28 views • 4 weeks ...
	Anna Mani #indianscientist... DGVC PHYSICS 24 views • 1 month ...		Biresh Guha #indianscientist... DGVC PHYSICS 20 views • 1 month ...		APJ Abdul Kalam #indianscientist... DGVC PHYSICS 11 views • 4 weeks ...
	Ashesh Prasad Mitra #csir #radi... DGVC PHYSICS 16 views • 1 month ...		Homi Jehangir Bhabha #azadik... DGVC PHYSICS 17 views • 1 month ...		Prof. GN Ramachandran DGVC PHYSICS 17 views • 4 weeks ...
	Atma Ram #indianscientist... DGVC PHYSICS 12 views • 1 month ...		Hariish Chandra #indianscientist... DGVC PHYSICS 10 views • 1 month ...		Darshan Ranganathan #i... DGVC PHYSICS 22 views • 4 weeks ...
	Prof. Aular Singh Paintal #azadika... DGVC PHYSICS 9 views • 1 month a...		Colathur Gopalan #indianscientist... DGVC PHYSICS 13 views • 1 month ...		Janaki Ammal #indianscientist... DGVC PHYSICS 19 views • 4 weeks ...
			C.V Vishveshwara #indianscientist... DGVC PHYSICS 24 views • 1 month ...		ECG Sudharshan #indianscientist... DGVC PHYSICS 13 views • 4 weeks ...
			Prof. D.M Bose #indianscientist... DGVC PHYSICS 41 views • 4 weeks ...		Asima Chatterjee #indianscientist... DGVC PHYSICS 19 views • 4 weeks ...
			D.N Wadia #indianscientist... DGVC PHYSICS 12 views • 4 weeks ...		



- 1  **Why-What series #5 Escape Velocity**
DGVC PHYSICS • 182 views • 5 months ago
2:17
- 2  **What Why series #4 - Lissajous figures created by I B.Sc. students**
DGVC PHYSICS • 142 views • 5 months ago
7:46
- 3  **Broken peg, why cannot we use ?- Why-What series #3**
DGVC PHYSICS • 105 views • 5 months ago
2:09
- 4  **Effect of AC vs DC applied to an electromagnet? Why - What series #1**
DGVC PHYSICS • 323 views • 6 months ago
2:18
- 5  **What- Why series #6- Elastic constants by our I B.Sc. Physics student**
DGVC PHYSICS • 69 views • 5 months ago
2:59
- 6  **Using a Masher to mash veggies makes job easier! Why...What series #2**
DGVC PHYSICS • 153 views • 6 months ago
2:00



Lab skills with VR mam

DGVC PHYSICS



▶ PLAY **↺ SHUFFLE**

9 videos

- B.Sc.Physics Lab experiments- Sel...**
DGVC PHYSICS
434 views • 3 mont...
- B.Sc.Physics lab #selflearning -re...**
DGVC PHYSICS
111 views • 2 mont...
- Determination of frequency of t...**
DGVC PHYSICS
61 views • 2 month...
- B.Sc.Lab #convxlens #fo...**
DGVC PHYSICS
42 views • 2 month...
- Torsion pendulum #selflearning #t...**
DGVC PHYSICS
39 views • 1 month ...
- P.O box #bscphysics #s...**
DGVC PHYSICS
28 views • 1 month ...
- Non-uniform Bending of a bea...**
DGVC PHYSICS
40 views • 1 month ...
- Determination of coefficient of ...**
DGVC PHYSICS
40 views • 1 month ...















Navarathri 2023

DGVC PHYSICS



▶ PLAY ⌂ SHUFFLE

12 videos

-  Navarathri Dussera 2023 ce...
DGVC PHYSICS
157 views · 4 month...
-  DGVC Physics celebrates Wom...
DGVC PHYSICS
99 views · 4 month...
-  Women Scientists: Trailblazing Women's Journey
DGVC PHYSICS
64 views · 4 month...
-  DGVC Physics celebrates Wom...
DGVC PHYSICS
40 views · 4 month...
-  DGVC Physics celebrates Wom...
DGVC PHYSICS
52 views · 4 month...
-  Navarathri 2023- Dance by our IB...
DGVC PHYSICS
454 views · 4 month...
-  Navarathri-Invocation by Ily...
DGVC PHYSICS
239 views · 4 month...
-  Sharadha Navarathri- Vijay...
DGVC PHYSICS
78 views · 4 month...
-  Navarathri Silambam by Ad...
DGVC PHYSICS
79 views · 4 month...
-  Paral Osai by Iy Vinoth and ...
DGVC PHYSICS
113 views · 4 month...
-  Worship through Music #navarathri...
DGVC PHYSICS
100 views · 3 month...
-  Women Scientists of India- Present...
DGVC PHYSICS
99 views · 3 month...



Students' Art Corner



Divya M (23D1234), I B.Sc. Physics
Batch 2023-2026



Varsha P (23D1205), I B.Sc. Physics
Batch 2023-2026

Chandrayaan-3 celebration



Rithika Anbu Bharathi V (21D1324), III B.Sc. Physics
Batch 2021-2024



Saadhanaa V (23D1221), I B.Sc. Physics
Batch 2023-2026

Students' Art Corner



Dharshini B S (22D1120), II B.Sc. Physics
Batch 2022-2025



Divya M (23D1234), I B.Sc. Physics
Batch 2023-2026

LIGO Submissions



Saadhana V (23D1221), I B.Sc. Physics
Batch 2023-2026



Divya M (23D1234), I B.Sc. Physics
Batch 2023-2026

Students' Art Corner



**Aravind D (22D1102),II B.Sc.Physics
Batch 2022-2025**



**Divya M (23D1234),I B.Sc.Physics
Batch 2023-2026**



**Swetha M (23D1212),I B.Sc.Physics
Batch 2023-2026**



**Devadharshini V (23D1212),I B.Sc.Physics
Batch 2023-2026**

Empathetic Moment



July 20 morning 11.00 am, our class teacher is in our class, giving certain instructions to all of us. Suddenly a cuckoo flew over to our classroom, it was being chased by a crow. The poor bird got hit in our class room's ceiling fan. This full chaos was just over in a second. Siddharthan ran quickly and took the injured bird. We all thought that the bird was dead but fortunately it had life. Signs of bleeding were seen all over our class. Our class teacher suggested to take a cloth and apply it on the wound, to see if the bleeding was stopping.

It was a huge cut in its chest. We could see its internal organs. So we went to our college's nursing department but they weren't of much help. They told us to let go of the bird as they thought that it would die soon. But we didn't have the mindset of giving up. We thought of taking it to some pet clinic, our class teacher had also said the same. Since we didn't have a bike, Logesh went to our class and ask for a bike. Samrithik came forward and helped us.

Logesh was riding the bike, Giridurai holding the bird and I'm on Google map to tell the right way, Siddharthan stayed back. First we went to a clinic near our college, sadly it was closed. So we thought of going to some other clinic. It was in Anna nagar. Logesh driving the bike very carefully through the traffic. The bird still breathing fighting for its life.

Empathetic Moment

We arrived at the hospital. Dr. Vishnu Priya attended the bird, she told the bird won't make it. Even though she tried and wiped all the blood and offered some medicine. While dressing the bird Giri and Logesh told that they can't watch, so now I'm holding the bird. The clinic was mostly for dogs and cats. That's why she can't do much help.

During that time a lady came with her cat. Her name is Uma. She's seeing the struggles we're going through. So she offered some help. She told there was a person, "His name is Derek he was a professional in handling birds. So if you take this bird to him maybe he can help". We asked for his contact but unfortunately she didn't have it on her phone. She told to wait. So we waited outside. Meanwhile the bird's still breathing but not so good. Uma ma'am came out and gave a teacher's number instead of Derek's and told she has Derek's number, maybe if you contact her she can help. Giri reached her but it was switched off.

Uma ma'am told that she was working in SBOA school, it was near from where we was, so me and Logesh decided to meet her and left Giri back in the clinic to take care of the bird. Me and Logesh met her.

Her name was Ramya. She was a P.E teacher. She reached Derek and told that she can take care of the bird till Derek comes. Me and Logesh went back to Giri to take the bird. While we went to the school, Giri gave medicine to the bird with the help of Dr. Vishnu Priya. The bird was feeling much better now.

Empathetic Moment

Now Me, Logesh, Giri all three of us put the bird in a box and took back it to Ramya ma'am. We gave also the medicine to her and requested her to updated on the bird, she congratulated all of us for taking this much of effort to rescue a bird and gave her number and told to text her for update.

We went back to college at 2.00 pm, gave bike to Samrithik and thanked him, and told our class teacher the full story. A day after I texted Ramya ma'am she sent a video of the bird sent by Derek. The bird was much healthier now. Two days later she sent an another video, now the bird was jumping on a stick and opening its wings, trying to fly it seems that the bird was recovering very well. Everyone felt better when they heard about the bird's health. It was a overwhelming experience for all of us.

Students:
SURENDAR.N (21D1316)
LOGESH.M (21D1313)
GIRDURAI.D (21D1340)
SIDDHARTHAN.K (21D1320)
SAMRITHIK.S (21D1310)

In Search of Asteroids

Students' Achievements



The Team of Students Vineeth. V, Muneesh Kumar. V, Surendar. N, Siddharthan. K, Ganesh. B from III B.Sc. Physics were participated in the Online Asteroid Search Campaign Conducted by Dr. Kalam Science Club collaborated with International Astronomical Search Collaboration (NASA Partner) on 9th October 2023 - 3rd November 2023.

Students' Achievements



@ RIPPLES, ETHIRAJ
COLLEGE



Students' Achievements



IAU Office for Astronomy Outr...
05-Oct-2023 · 🌐

"Our earth, our eye - one planet". The artist, Divya M, said, "We are all made of stardust.... So I depicted our unity and togetherness of one planet through the eye".

An incredible piece of Art.

Thank you for sharing this connection with all of us.

[#100HoursOfAstronomy](#)



ART BY

M.DIVYA (23D1234)

I B.Sc.Physics

Students' Achievements



Premkumar G (22D1152), II B.Sc.Physics,Batch 2022-2025 took part in RDC parade in Chennai





Indresh D (23D1203)
I B.Sc.Physics
BATCH (2023-2026)

Lokeshwaran N (23D1207)
I B.Sc.Physics
BATCH (2023-2026)

Dhanushaa V (21D1312)
III B.Sc.Physics
BATCH (2021-2024)

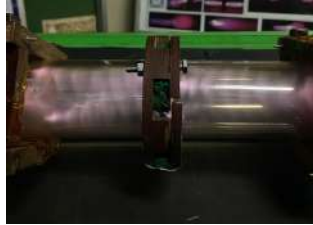
Students' Achievements

**VOLUNTEERING FOR
PLASMA RESEARCH
EXHIBITION**



**VOLUNTEERING FOR
PLASMA RESEARCH
EXHIBITION**

Students' Achievements



Students' Achievements

VOLUNTEERING FOR PLASMA RESEARCH EXHIBITION



Students of III B.Sc. Physics & II B.Sc. Physics volunteered in Plasma Research Exhibition conducted by Institute of Plasma Research in collaboration with IGCAR at Periyar Science & Technology Centre, Chennai from July 3 2023 - July 7 2023.

Students of our Department won the Overall Runner-Up Trophy on Phyfest at VIT Chennai



Students' Achievements

**Chamundeeswari
(22D1136)**

**II B.Sc.Physics
Batch 2022-2025**

**3rd prize -Tamil speech in
Sardar Vallabhbhai Patel Birthday Event
honoured by Tamilnadu Governer R.N.Ravi**



**Kalabarathi P A
(22D1150)**

**II B.Sc.Physics
Batch 2022-2025**

**3rd prize -Tamil speech on
Vallalar 200 Mupperum Vizha**

Students' Achievements



Aditya K (23D1218)
I B.Sc.Physics
Batch 2023-2026
Acted as Silambam Referee at
Montford Indoor Stadium , Mylapore



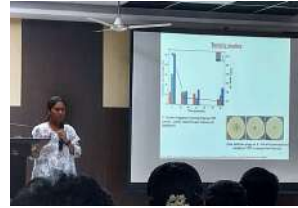
Santhosh S (22D1124) & Seshadri S (22D1148)
of II B.Sc.Physics
Batch 2022-2025
Secured 2nd prize in intercoligate competition
conducted by MCC College



Divya Bharathi S (22D1130)
II B.Sc.Physics
Batch 2022-2025
2nd price in photo presentation
Intercolleigate competition Conducted by
MOP Vaishnav College

Students' Achievements

Science City and National Center for Nanoscience & Nanotechnology, University of Madras



Hands-on training Program on Nanoscience and Nanotechnology



Students' Achievements



Group of Students from III B.Sc. Physics were attended the Nano-Technology Lecture conducted by Science City and National Center For Nanoscience and Nanotechnology, University of Madras on October 2 - 6, 2023. From them, Muneesh Kumar. V (21D1315) & Surendar. N (21D1316) of III B.Sc. Physics, Batch 2021-2024 were selected by getting Good Score in Exit Test and they attended Hands-on Training on Nanotechnology , from 12th - 16th February 2024.

They shared their views as:

The Lectures given by the Asst. Professors from Various Institutions gave me some idea about the synthesis of Nano-particles and those information were really useful. They learned about Nanomaterial synthesis, Application of Nanomaterials etc. During the Program, The Ph.D. Scholars explained them about some synthesis process like Spin Coating, Electro spinning, Wet Chemical Synthesis etc. They learned about how to apply these hands-on experiments in real life. They said it was an awesome and massive experience by attending the Workshop.

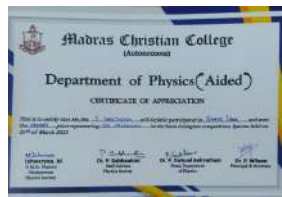
Students' Achievements



Students' Achievements



Students' Achievements



Students' Achievements



Proud Moment



Keerthana AK

Our Student Keerthana joined Australian National University to pursue Masters in Astronomy



AKR Centenary Program is a 3 day program conducted by IMSC, Chennai which was conducted on the Birth Centenary year of the renowned Indian Physicist Amal Kumar RayChaudhuri. The third day of this program was focused for the college students. Students of various colleges participated in this event. This event had 4 speeches from his students and those who took AKR as a role model. The first speech was given by Palash Baran Pal, one of AKR's student. He gave stories about his time with AKR as his professor and how it impacted his professional life.



One Day State Level Science Exhibition

Students' Participation



Students of II B.Sc.physics participated in One Day State Level Science Exhibition to commemorate National Science Day conducted by Department of Physics with Computer Application (Shift II) , Dwaraka Doss Goverdhan Doss Vaishnav College.

Students' Participation

Science at the Sabha 2024

Students of our department attended Science at the Sabha 2024 conducted by IMSc, Chennai on 18 February 2024

Science at Sabha 2024
I had good experience from Science at Sabha. I got an information from them. There is a lot of information about Astro.

M. Akshay
2120204

From the speech of the professor, I got new some new things about Astrophysics and Relativity in the modern era.

Sourabh Kumar V
2121232



The Seminar by Anupama Prasad was very informative and the talk went detailed into the reasons why we need to study Astronomy.

Vineetha V
2120334

Science at the Sabha 2024
- A perfect informative session
- learned a lot about astronomy
from ground to space and uses of
plastics in good and bad manner.
- N. Jyoti Kumar V
2121515

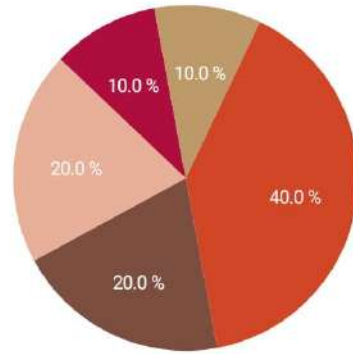


Science at Sabha 2024
Overall it was a good informative session
with interactive and given chance around 25
minutes to give inputs the time consumed as
a paper presenter. It was a very good
experience.
Shankararaman V
22019

Science at Sabha
It was very interesting information
science they give very valuable input
about plastics and Astronomy.
K. Anitha
22020

The discussion on
astronomy from ground
to space was stimulating.
M. Divya
220234

Students' Progression 2023



DGVC Physics



DGVC Physics



DGVC Physics

Stars of the Batch 2021-2024



VINEETH V



MUNEESH KUMAR V



GANESH B



ROSHAN I



SURENDAR N



SURYA PRAKASH V



ABISHA P V



DHANUSHAA V



NANDHINI V



SWETHA R



SUJITHAA K

CREATIVE TEAM

STUDENT EDITORS



VINEETH V



VINOTH B



DIVYA M

DESIGN & LAYOUT

CERTIFICATES DESIGN



LINGESH B



SURESH KUMAR V



PRIYADHARSHINI R



DEVA DHARSHINI B

CREATIVE TEAM

CONTENT COORDINATORS



MUNEESH KUMAR V



MIDHUN KRISHNA C J



SHANKARNARAYANAN M



LOKESHWARAN N



VEDHAVIYAS S



DHARSHINI B S



KALABARATHI P A

HOSPITALITY



SAMRITHIK S



SHANMUGA SUNDAR K



SAMUEL NESAKUMAR Y J

Transition to HEI



Our Knowledge Partners

