



**Dr. M.G.R.**  
**EDUCATIONAL AND RESEARCH INSTITUTE**  
(Deemed to be University with Special Autonomy Status)  
Maduravoyal, Chennai - 600 095, Tamilnadu, India.  
(An ISO 9001-2015 Certified Institution)

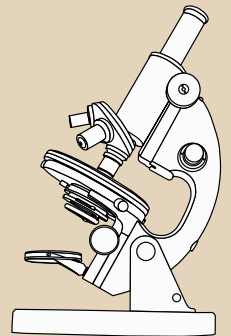
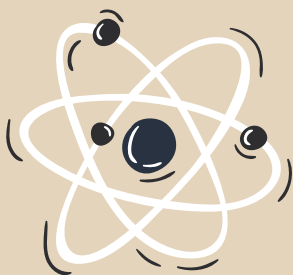
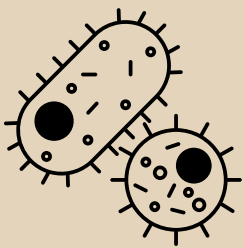


— DEPARTMENT OF BIOTECHNOLOGY —

PRESENT'S

# BIobytes NEWSLETTER

BT-Q4- 22 DECEMBER, 2022

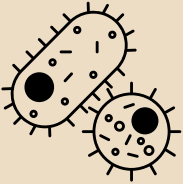




## DEPARTMENT OF BIOTECHNOLOGY

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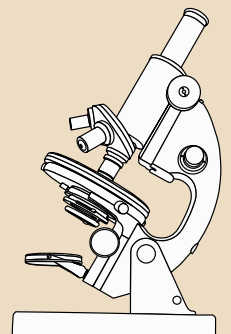
## DEPARTMENT VISION & MISSION

### VISION

To strive towards the innovative knowledge in the domains of biotechnology for the development of new processes and product useful to the society and enrich economy.

### MISSION

- To impart knowledge and skills in the biological sciences to improve human health, protect environment and to enrich economy.
- To provide an outstanding environment to learn for facing the global need in the fields of Biotechnology.
- We focus on excellence in teaching and research as well as to promote entrepreneurship





## DEPARTMENT OF BIOTECHNOLOGY

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BT-Q4- 22 DECEMBER, 2022

## PROGRAM EDUCATIONAL OBJECTIVES OF THE DEPARTMENT

PEO No.	Program Educational Objectives Statements
<b>PEO 1</b>	<ul style="list-style-type: none"> <li>Pursue higher studies or involve themselves in R&amp;D activities in Biotechnology Industries and related organizations</li> </ul>
<b>PEO 2</b>	<ul style="list-style-type: none"> <li>Be a successful entrepreneur in creating jobs related to health science and Biomedical Society.</li> </ul>
<b>PEO 3</b>	<ul style="list-style-type: none"> <li>Promote ethics, sustainability, social environmental responsibility in their profession and career.</li> </ul>

List of Program Outcome for the program Engineering Graduates will be able to:

PO1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

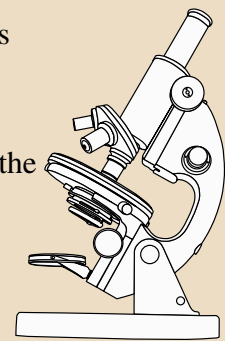
PO2: Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3: Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

PO6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

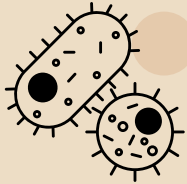




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# BIOBYTES NEWSLETTER

BT-Q4- 22 DECEMBER, 2022



## PROGRAM EDUCATIONAL OBJECTIVES OF THE DEPARTMENT

**PO7: Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8: Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO: 9 Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10: Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

**PO11: Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

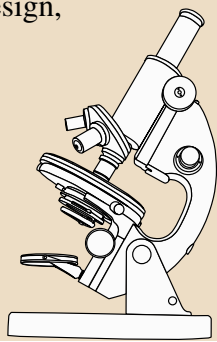
**PO12: Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change holders (Industry experts, and with the other reputed universities) have been received.

### LIST OF PROGRAM SPECIFIC OUTCOMES (PSOs)

**PSO1:** Ability to Apply knowledge of basic Life sciences for Biotechnological innovation and promoting entrepreneurship

**PSO2:** Proficiency to develop value-added Biotechnological products through implementation, Design, optimization, and scale-up of Biotechnological processes.

**PSO3:** Competency to promote Biotechnological research in the fields of biomedical, food and environment-related fields and also to publish papers in highly reputed journals





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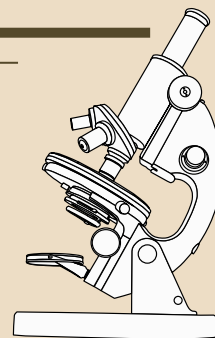
BT-Q4- 22 DECEMBER, 2022



## DESK MESSAGE



**Dr. Rajeswary Hari**  
**HOD of Biotechnology Department**



The Department of Biotechnology was started in the year 2003 with an objective of generating trained manpower in Biotechnology with disciplinary skills from Chemical engineering, Computer Science and Management Skills. Biotechnology is the application of Biology for industrial purposes such as development of vaccines, biomaterials reducing toxic waste by using microbial or enzyme based processes, development of new drugs for treating emerging and reemerging diseases, development of newer diagnostic methods for diagnosis of human diseases, development of crops with additional productivity or added advantages etc. The Research focus in our Department Involves methods to reduce environmental pollution by using micro organisms, identifying the plant products which can be used to treat diabetes, fasten the wound healing processes; understanding the role of SNP in critical gene in the development of cancer; and monitoring and understanding the mechanisms of antibiotic resistance in bacteria. The Dept. is supported by grants from the SERB, DST, DBT & CSIR .The department is motivating the students and faculties to actively involve in research programme and also to publishish articles in national and international journals & Conference The Department offers B.Tech and M.Tech Programs in Biotechnology, M.Tech in Medical Biotechnology and Ph.D. programs also.

*Rajeswary Hari*

**HOD Sign**



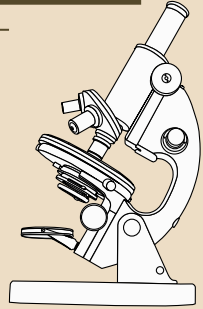
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# BIobytes NEWSLETTER

BT-Q4- 22 DECEMBER, 2022



## ACHIEVEMENTS



We are pleased to announce that Sri Siva Sruthika ST, Lalith Kumarr D A, Girshani S, Varshini V from 3rd-year Bio-Technology studenth as successfully completed the "Think Create Engineer" program. This program was conducted by IIT PALS (Promotion of Active Learning and Sustainability) initiative at the IIT Madras Campus from December 12th to 14th, 2022.

They got Certificate of Appreciation for their outstanding performance in the program. They successfully complete the program and the mini-projects which they done got 1st price with cash price of 2500 Rupees.



### Premium & Star Award 2022:

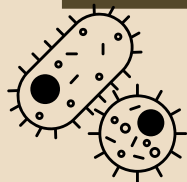
- The Sir C. V. Raman Journal club Mgr publish awards challenge 999 awarded Dr. P. Thirunavukkarasu - Premium category "Star Author" with Medal, certificate, cash price and a momentum. The club appreciates and congratulates Mr. Pranav , Final year student of Biotechnology department who has published a paper titled " Gene Expression and their Significance in Organoid cultures from Breast cancer patient derived biopsies " in the Elsevier Journal - Acta Histochemica with impact factor 2.5 . Mr. Pranav has been felicitated by our Honorable President with a cash reward of Rs. 15,000 along with medal and Premium and Star Award ceremony of MGRPUBLISH999CHALLENGE.



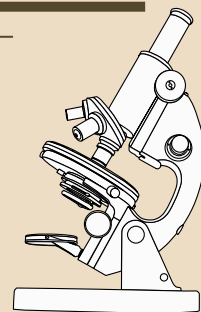
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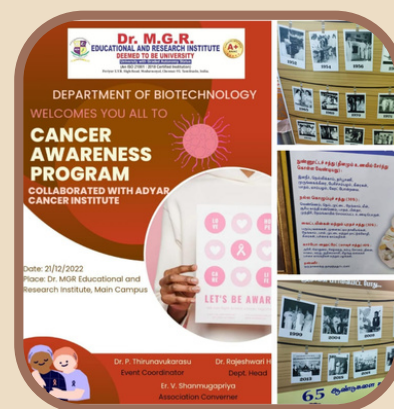
BT-Q4- 22 DECEMBER, 2022



## EVENT CORNER



On 21.12.2022 Adayar Cancer Institute and the Department of Biotechnology at the Dr. M.G.R. Educational and Research Institute organised a cancer awareness program. As a part of the outreach programme A cancer awareness bus equipped with an audio-video exhibition display comprising valuable information for dispelling myths about cancer, its incidence and burden, common causes of cancer, methods of cancer screening, diagnostics, and prevention, and a message from someone who was completely cured. The awareness event was conducted successfully, and all the students and faculty members got benefitted.



On 17.11.2022 Department of Biotechnology, Dr.MGR Educational And Research Institute organized an event regarding "BIOGENOMICS" delivered by Dr.Priya Durairaj , Assistant Professor ( dept of biotech ). The chief speaker gave knowledge about context of Biogenomics and study of complete set of dna in an organism, developing a software analysis ,detailed about Earth Bio Genome Project: Sequencing life for future of life in India and emphasized on wide variety of research topics.



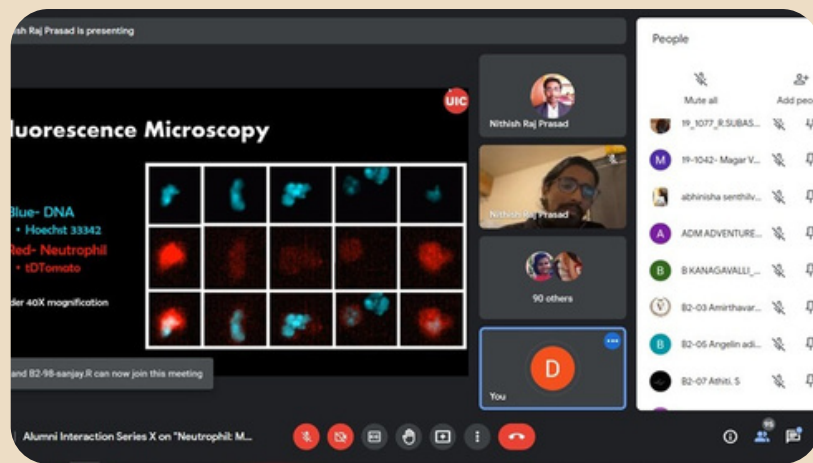
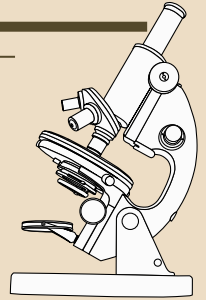
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# BIobyTES NEWSLETTER

BT-Q4- 22 DECEMBER, 2022



## ALUMINI CORNER



The event "Neutrophils The Marvel of the Micro-world" was a part of the Alumni interaction series X. The opening speech was given by Vaishnavya Devi.B who also did the compering. This was followed by Sivaramakrishnan who addressed the students and speaker with the welcome address. Varsha Magesh then gave a concise introduction speech about the presenter Mr. Nithish Raj Prasad. Alumni Mr. Nithish Raj Prasad is currently pursuing his Phd. in Biomedical engineering at University of Illinois (Chicago) USA. He spoke about his research on Neutrophils and about the unique features of Neutrophil extra cellular traps, in which he used mice as the model specimen organism and infected it with Pseudomonas, which was injected directly to its trachea and then analysis about Frustrated Neutrophils was done under two photon microscope and its mechanism involved.

He also enlightened the students about the scope of education outside of India in various countries and its expenditure and relevant information regarding that. It was a very informative and interactive session where the students were able to clear their doubts and gain a lot of insight. The event was wrapped up by vote of thanks given by Sneha.S We are grateful to Dr. Rajeswari Hari, Head of the Biotechnology Department, for her unwavering support during this event, which was a wonderful success.



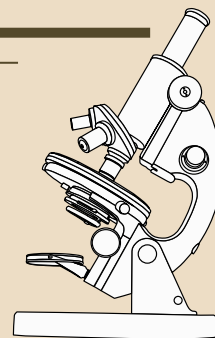
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BT-Q4- 22 DECEMBER, 2022



## STAR OF Q4



## SRI SIVA SRUTHIKA

We are delighted to publish the star person of our department , ever passionate Mrs. Sri Siva Sruthika , studying (UG) 3th year B.tech BT at our esteemed Dr.MGR Educational And Research Institute. Participated and selected in IIT PALs "Think Create Engineer" program, she has completed the program and the mini project desining a system that can identify free parking space and believes that as an individual, can use this knowledge and potential to make the world a better place. IGEN Research Survey presented the Certificate of Participation to the recipient for their active involvement in the "RISING EV 2WHEELER OPINION SURVEY" project. The project aims to support the United Nations' Sustainable Development Goal 7, Target 7.1, and the recipient's participation has been crucial in achieving this objective. We greatly appreciate their efforts and contributions to the research survey, which will aid in the development of sustainable transportation solutions.

She is a member of DR.MGR ACS SATELLTE TEAM under Rector Viswanathan sir. She got avenues of oppotunities to witness a lot of workshop,interships and conferences such as at ISRO,TSC and ITCA. All these were completely sponsored by our university. She was well trained such that even a biotech student can build and lauch a satellite.BSX 7th international space expo and conference conducted in Bangalore

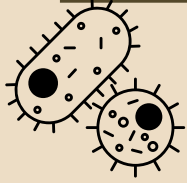
The BSX 7th International Space Expo and Conference was held in Bangalore, India, . The three-day event was a platform for space experts, professionals, and enthusiasts from around the world to discuss the latest advancements in space technology and exploration. This kind of oppurtunites of knowledge gaining,network building with all the people in the field,team working experience,hands on training etc.



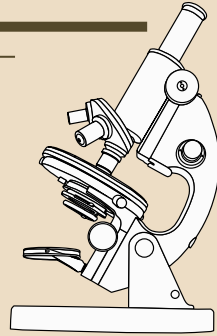
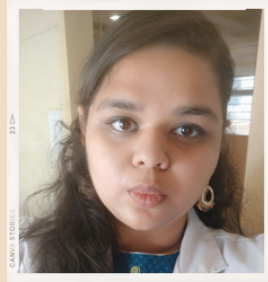
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BT-Q4- 22 DECEMBER, 2022



## SUCCESS STORIES



### AAMIRA AFRIN A

We are excited to share AAMIRA AFRIN, one of our students,' inspirational success story with you. A, who has excelled and made all of us proud.

AAMIRA AFRIN earned a bachelor's degree in technology with a focus on biotechnology from the Dr. MGR Educational and Research Institute. The Dr. APJ ABDUL KALAM Center of Excellence in Innovation and Entrepreneurship is where she is currently working as a research intern. She demonstrated a tremendous amount of commitment, effort, and excitement while pursuing her bachelor's degree, and she also worked as a field intern with VA TECH WABAG LTD. She also worked as a production assistant at LAZHORA MEDICAL COSMETICS and as an executive intern in the R&D coding and innovation department.

AAMIRA AFRIN consistently sought to test her limits and never shied away from taking on difficulties. She has worked really hard and put in a lot of effort to attain this goal, which is a credit to their tenacity, self-control, and grit. She was named the best employee of the month at LAZHORA MEDICAL COSMETICS as well as the intra college winner of the SMART INDIA HACKATHON 2020. She served as the ORANGE E-secretary CELL's at the Dr. MGR Educational and Research Institute University. She leads the department's alumni ambassador programme for biotechnology.

We at the Dr. MGR Educational and Research Institute University are proud to have assisted AAMIRA AFRIN in her journey and in achieving her objectives.

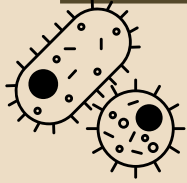
We are confident that she will continue to shine in her future endeavors and make us all proud .



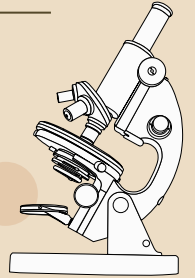
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BT-Q4- 22 DECEMBER, 2022



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