

**DEPARTMENT OF
BIOTECHNOLOGY**

NEWSLETTER

Volume-2 | Issue-11 | November-2023

BIOGAZETTE

Echoing multidisciplinary perspectives



EDITORIAL TEAM



DR. M. SIVANANDHAM
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Visiting Professor
Biotechnology



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Professor and Head
Biotechnology



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Associate Professor
Biotechnology



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Assistant Professor
Biotechnology



DR. J. G. ASWIN JENO
Assistant Professor
Biotechnology

STUDENT EDITORIAL TEAM



MS. R. JYOTSNA
IV Year Student
Biotechnology



MS. G. JEEVITHA
II Year Student
Biotechnology

Vision

To produce higher caliber Biotechnologists to attain new heights in bioinformatics and bioprocess technology as per industrial needs and to provide leaders in the field of Biotechnology.

Mission

- To progress the department to attain center of excellence in bioinformatics and bioprocess technologies by providing best Undergraduate, Postgraduate, Doctoral programs and R&D activities within a decade.
- To develop special skilled training programs for graduates to meet the personality characters stipulated by the industries within a period of five years.
- To build potential biotechnologists capable of dealing with new challenges and socio-ethical implications.

B. Tech. Biotechnology

Program Educational Objectives

PEO-1. To produce Biotechnology graduates who will be employable in core Biotech/Pharma industries and domain-based software services.

PEO-2. To produce research-oriented Biotechnology graduates who will be employable in academic/Industry sponsored research and also who will be pursuing higher studies.

PEO-3. To produce bioentrepreneurs.

Program Outcomes

PO-1. Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.

PO-2. 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.

PO-3. 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.

PO-4. 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.

PO-5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO-6. 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.

PO-7. 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.

PO-8. 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.

PO-10. 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.

PO-11. Project management and finance: Demonstrate knowledge and understanding of the engineering 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.

PO-12. Life-long learning: Recognize the need for and have the preparation and ability to engage in independent and lifelong learning in the broadest context of technological change.

Program Specific Outcomes (PSOs)

PSO-1: To make the students understand and apply the knowledge of computational systems biotechnology to design and develop biologics to meet societal needs.

PSO-2: To train the students to meet the requirement of bioprocess industries for developing techno-economical processes.

PSO-3: To empower the students with competent skill sets for bridging the gap between academia and the requirements of the healthcare industry.

M. Tech. Biotechnology

Program Educational Objectives

PEO-1: To prepare the students to excel and succeed in biotechnology research or industry through the latest state-of-art postgraduate education.

PEO-2: To train students with good scientific and technical knowledge so as to comprehend, analyze, design and adopt innovative and new technology that provides solutions for developing novel biotechnological products.

PEO-3: To create bioentrepreneurs with good communication and leadership skills, respect for authority and the life-long learning needed for a successful professional career.

Program Outcomes

PO-1: Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.

PO-2: An ability to write and present a substantial technical report/document.

PO-3: Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.

PO-4: Ability to examine the technological problems in various domains of Biotechnology apply modern engineering tools for the prediction and modeling of complex engineering problems with a focus on sustainable development.

PO-5: Students should be able to acquire self-management and teamwork skills to collaborate with multidisciplinary teams from academic, industry and research institutes of national or international repute, with a commitment to lifelong learning.

PO-6: Potential to apply biotechnological solutions by adhering to the standards of bioethics with social responsibilities.

Program Specific Outcomes (PSOs)

After the successful completion of M.Tech. Biotechnology program, the students will be able to:

PSO-1: Demonstrate the biotechnology concepts and research approach and apply them for healthcare and industrial applications.

PSO-2: Possess scientific and technological skills to design and develop novel bioproducts for addressing biological and healthcare challenges.

PSO-3: Analyze the socio-economical needs and possess the necessary expertise to become a bioentrepreneur.

iGEM Grand Jamboree Event



The iGEM team, Department of Biotechnology, SVCE-CHENNAI mentored by Prof. M. Sivanandham, Prof. E. Nakkeeran, Dr. K. Divakar and Mr. J. Hariharan received Bronze Medal in the iGEM 2023 Grand Jamboree competition held at Porte de Versailles, Paris, France during 2nd -5th November 2023.

Mr. Arun Pravin CV, Mr. Nandakishor V, Mr. Sriram M and Mr. Sivagurunathan R, 3rd year B.Tech Biotechnology students represented the SVCE-CHENNAI team in the iGEM Grand jamboree event held at Paris in physical mode.

SVCE-CHENNAI iGEM team members are as follows.

Primary PI - Prof. Sivanandham M

Secondary PI - Prof. Nakkeeran E

Instructors - Dr. Divakar K & Mr. Hariharan J

Student Members - Ms. Jyothishree Veerabhadran, Ms. Vibhushini ., Ms. Maanasa Mani, Ms. Madhumitha K, Ms. Harini Balasubramanian, Mr. Thapasvi Anirudhan Puvvada, Ms. Ragini Vidyashankar, Mr. Aswatha Narayana R, Mr. Arun Pravin CV, Ms. Maseera Ahmedi M, Mr. Nandakishor V, Mr. Sriram M, Mr. Sivagurunathan R.



iGEM
COMPETITION
2023

SVCE-CHENNAI

The Team

 Prof. M. Sivanandham Primary Principal Investigator	 Prof. E. Nakkeeran Secondary Principal Investigator	 Dr. K. Divakar Instructor	 Mr. J. Hariharan Instructor			
 Jyothishree V B. Tech BIO III Year	 Harini B B. Tech BIO III Year	 Maanasa M B. Tech BIO III Year	 Madhumitha K B. Tech BIO III Year	 Ragini V B. Tech BIO III Year	 Thapasvi B. Tech BIO III Year	 Vibhushini B. Tech BIO III Year
 Arun Pravin C V B. Tech BIO II Year	 Aswatha Narayana B. Tech BIO II Year	 Devadharshini S B. Tech BIO II Year	 Sriram M B. Tech BIO II Year	 Maseera Ahmedi M B. Tech BIO II Year	 Nandakishor V B. Tech BIO II Year	 Sivagurunathan R B. Tech BIO II Year

We take this opportunity to congratulate all the Mentors and Students of iGEM team, SVCE-CHENNAI for this achievement and wish the team to get more awards in future. We thank our SVCE management, Secretary, and Principal for their unconditional support, motivation, and financial assistance to the team. We also thank our sponsors and alumni for their financial support. We take this opportunity to thank our department faculty members and supporting staff who stayed back beyond regular working hours for the successful completion of iGEM work.



SVCE-CHENNAI iGEM Team has won the **Bronze Medal** in the **iGEM 2023 Grand Jamboree Competition** held at Porte de Versailles, Paris, France from Nov 2-5, 2023.



Congratulations

to the Mentors and Students of SVCE-CHENNAI iGEM Team from the Department of Biotechnology for the remarkable achievement

www.svce.ac.in

Guest Lecture

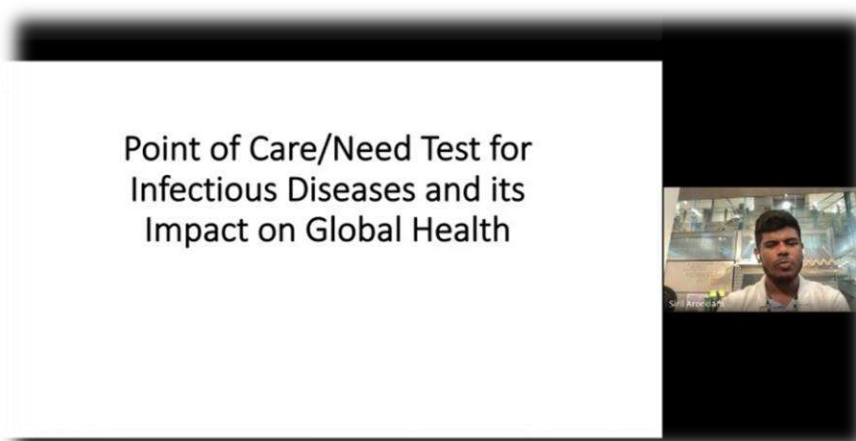


**Prof. Khalifah S., Department of Biomedical Sciences, University of Illinois
College of Medicine at Rockford, USA**

The Department of Biotechnology of Sri Venkateswara College of Engineering organized a Guest Lecture on “**Higher Studies Opportunities at the University of Illinois Chicago**” by **Prof. Khalifah S., Director, Masters in Medical Biotechnology, Department of Biomedical Sciences, University of Illinois College of Medicine at Rockford, USA** on 13th November 2023 (Monday) at 7.00 - 8.00 PM (IST). Third Year and Final year B. Tech Biotechnology students have attended and understand the various aspects of domain for pursuing post graduate studies.

Guest Lecture

The Department of Biotechnology of Sri Venkateswara College of Engineering recently conducted a Guest Lecture on “**Point of Care/Need for Infectious Diseases and its Impact on Global Health**” by **Mr. Siril Arockiam, PhD Scholar, Arizona State University, Arizona, USA** on 17th November 2023 (Friday) at 10.00 - 11.00 AM (IST). The discourse covered the pivotal role of Point of Care (POC) testing in the rapid detection of infectious diseases, particularly its applications in early diagnosis of cervical cancer. Additionally, Mr. Arockiam provided a meticulous comparison between isothermal amplification and quantitative Polymerase Chain Reaction (qPCR) techniques.



Placement Updates



Ms. B. Vardhini
(2020-2024)



- **Ms. B. Vardhini (2020-2024) of B. Tech Biotechnology** has been selected for the LEAP program (Internship) at Zifo RnD on January 2024 for a period of 3 months.

Research Activities

Book Chapter Publication

B.Tech and M.Tech Biotechnology students, Ms. Kaaviya Velmurugan (2021-25 Batch), Ms. Harini Gurumurthy (2021-25 Batch) of B.Tech Biotechnology, Ms. Abirami Krishnan, Mr. Gopinath S, Ms. Yamunadevi B (2022-24) of M. Tech Biotechnology and Ms. N. Kanagam published a book chapter titled "An integrated approach of green nanotechnology in wastewater remediation using algae" in the book, Materials Technology for the Energy and Environmental Nexus, Volume 2.


Recent Book Chapter Publication

"Impact of Blue Green Algae on heavy metal remediation: A clean Green Approach"

Materials Technology for the Energy and Environmental Nexus, Volume 2



AUTHORS



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Mr. GOPINATH S
Final Year PG Student
Biotechnology



Ms. YAMUNADEVI B
Final Year PG Student
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Research Publication

Mr. Gopinath S (2022-24) of **M. Tech Biotechnology** published a research article titled "Secretion of acetylated amino acids by drug-induced cancer cells: perspectives on metabolic-epigenetic alterations" in the Journal, Epigenomics.

Recent Research Publication

"Secretion of acetylated amino acids by drug-induced cancer cells: perspectives on metabolic-epigenetic alterations"

Journal: Epigenomics



Epigenomics

ISSN 1750-1911

EDITORIAL

- Epigenetics in the single cell era: an important road out for genome function and cell identity

SECRET C-DNA/MYC/CDKN


- HDL-related miR-30a-5p is associated with HDL cholesterol levels and glucose metabolism in healthy men and women

RESEARCH ARTICLES

- High-throughput miRNA sequencing of the human placenta: expression throughout gestation
- miR-455 inhibits autophagy and M2-like polarization of tumor-associated macrophages in esophageal cancer via MDM2/ATF3
- Early-life stress induces genome-wide cis-dependent miRNA expression and translation across linked loci across in 100
- Expanded profiles and functional analysis of placenta RNA-derived small RNAs in children with Edman's syndrome

Future Medicine **fsg**

AUTHOR



Mr. S. Gopinath
II-M.Tech Biotechnology

DOI: doi.org/10.2217/epi-2023-0251

ATAL FDP



Dr. P. K. Praveen Kumar
Professor



Dr. K. Vasantharaj
Assistant Professor

Prof. P.K. Praveen Kumar and Dr. K. Vasantharaj received Rs. 3,50,000/- from AICTE for conducting Faculty Development Programme under AICTE Training and Learning (ATAL) Academy program (Ref. F.No. 1690909392/AICTE/ATAL/2023-24 dtd. 06.11.2023) during 18th December 2023 to 23rd December 2023.

Industrial Visit

Industrial Visit for the II Year B. Tech Biotechnology for the 2022-26 Batch at Shrimpex Biotech Services Pvt. Ltd

An industrial visit to “Shrimpex Biotech Services Pvt. Ltd, Uthandi, Chennai, Tamil Nadu” was successfully organized by the Department of Biotechnology on 17th November 2023 (Friday). Forty-Nine students, Mr. N. Sathish, Assistant Professor and Dr. K. Ganesh Prasath, Assistant Professor visited the industry to learn and understand about various diagnostic kit, genomics and proteomics aspects.

The Technical Head and the Project Scientists of the industry shared their work experience in the various streams of biotechnology such as Aquaculture, Diagnostics, Agriculture and Biotechnology. We also came to know about the wet-lab and dry-lab facilities along with the implementation of inclined infrastructure and innovative technologies for diagnostics. They explained the column-based nucleic acid extraction from various sources such as bacteria, fungi, algae, tissues, zebra fish and shrimps through kit-based method. The explanation also covered the importance of non-hazardous chemicals that is a quick, reliable, and consistent method for nucleic acid extraction. Students visualized a live demo on agarose gel electrophoresis.

The students got exposure to the high-level instruments such as DNA-RNA Synthesizer, MALDI-TOF/TOF, Real-Time PCR, DNA Sequencer, super computers pertaining to the bioinformatics facility. Students also observed the working principles of DNA-RNA Synthesizer and the software related to the primer designing. The explanation contained the importance of primer in the targeted gene expression. In addition, they explained the number of oligo nucleotide synthesized per run basis along with column volume and reaction efficiency.

Furthermore, students got introduced to the higher end mass spectrometry i.e. matrix assisted laser desorption ionization- time of flight (MALDI-TOF). Students visualized the different kinds of matrix implemented in the analysis of protein, DNA and species identification. The technical head showed the sample plate and different sampling techniques employed in the MALDI-TOF. Also, students were exposed to the normal and Real-Time polymerized chain reaction. Students visualized a live demo on the running of RT-PCR. They understood the importance of RT-PCR in measuring the gene expression

in high throughput studies. Students were also exposed to the nano-spectrophotometer for the accurate quantification of RNA and DNA. Finally, they visualized the sequencer that works on the sanger sequencing principle. It was an informative, interesting, and enjoyable visit. Students of Biotechnology got a great exposure in the cutting-edge technologies in the stream of genomics and proteomics. The exposure led them to visualize the connecting bridge between the basic science in the modern diagnostic application.

Snapshot of the Industrial Visit



Industrial Visit

Industrial Visit for the I year M. Tech Biotechnology for the 2023-25 Batch at Synkromax Biotech Private Limited

The M. Tech Biotechnology of 2023-25 Batch recently undertook an Industrial Visit to **Synkromax Biotech Private Limited** in Thiruvallangadu, Tamil Nadu.

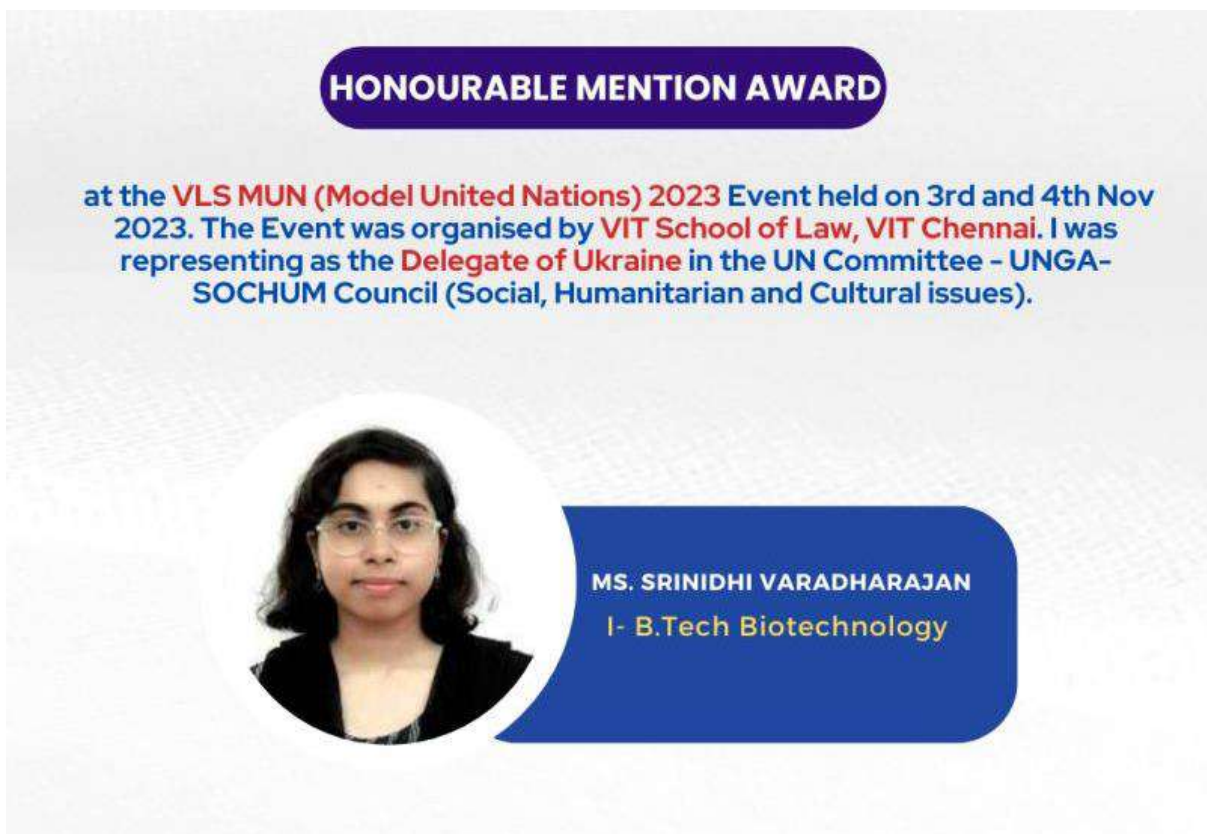
During the visit, senior technicians guided the students through the entire facility, showcasing various production facilities such as Fermenters, Bioreactors, Reactors, Blenders, Filling Machines, QA/QC Laboratory, Product Application Laboratories, Stores, and the Utility Section (Boilers, Air Compressors, Cooling Tower, ETP, RO/Soft Water Treatment plants, etc.). Detailed explanations were provided on the manufacturing processes of Enzymes, Fat liquors, Auxiliaries, Probiotics, and Agri Products.



Students Activities

Honourable Mention Award

Ms. Srinidhi Varadharajan (2023-27 Batch) won “Honourable Mention Award” at the VLS MUN (Model United Nations) 2023 Event held on 3rd and 4th Nov 2023. The Event was organized by VIT School of Law, VIT Chennai. She was representing as the Delegate of Ukraine in the UN Committee - UNGA-SOCHUM Council (Social, Humanitarian and Cultural issues).



NPTEL Course

Ms. Bhagya Shree S of B. Tech Biotechnology (Batch 2023-27) have cleared four NPTEL course exams with elite certificate for the semester July-December 2023

The courses and the respective results are as follows-

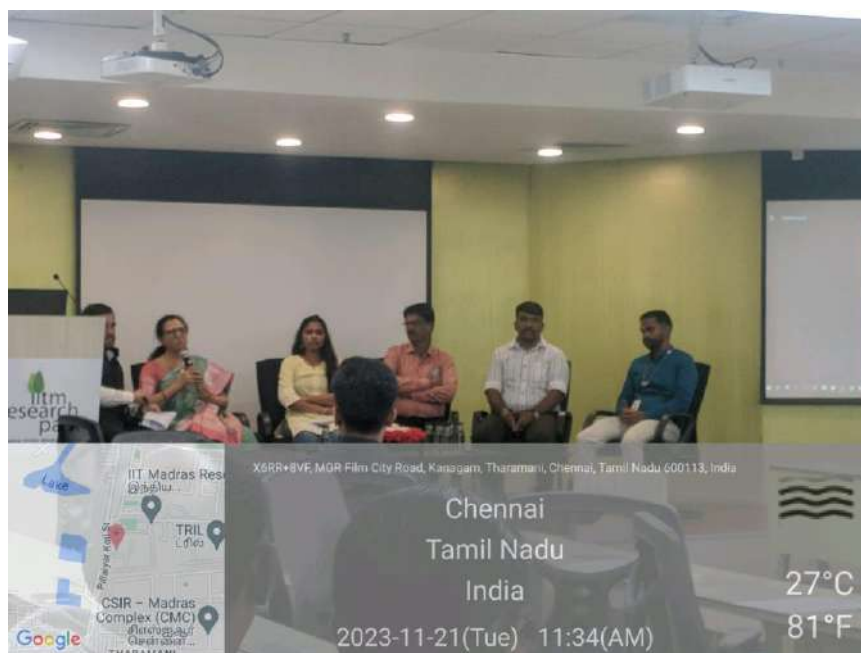
1. Genome Editing and Engineering (IIT Guwahati)- Elite Certificate with 61%.
2. Introduction to Japanese Culture and Language(IIT Kanpur)- Topper, Silver Medalist and Elite Certificate with 87%.
3. Introduction to Japanese Culture and Language II (IIT Kanpur)- Silver Medalist, Elite Certificate with 85%.
4. Appreciating Carnatic Music (IIT Madras)- Silver Medalist, Elite Certificate with 82%.



Events Attended by the Students

- **Mr. Yashwanth S** and **Ms. Harini P** (2022-26 Batch) of B. Tech Biotechnology, have attended the workshop on “Proteomics and Transformation techniques, held at PSG College of technology, from 09th - 14th of October 2023.
- **Ms. Reshma R**, **Ms. Shruthi** and **Ms. Vaishnavi** (2022-26 Batch) of B. Tech Biotechnology, have participated in the “Illuminate Workshop” – an entrepreneurial workshop organized by E Cell SVCE in association with E Cell IIT Bombay held on 30th October 2023.
- **Ms. Dharshni R** and **Ms. Jeevitha G** (2022-26 Batch) of B. Tech Biotechnology have attended the on-Animal cell culture and Immunofluorescence techniques held at Sathyabama Institute of Technology, from 12th - 14th of October 2023.
- **Ms. Monica** and **Ms. Vaishnavi** (2022-26 Batch) of B.Tech Biotechnology have participated in the EWB Inauguration ceremony held at SVCE on 12th October 2023.

Faculty Activities



Mr. S. Naga Vignesh, Assistant Professor and **Ms. U. Mrudula**, B. Tech Biotechnology (2022-2026 Batch) student participated in Global Bio-India Road Show 2023 organized by Tamil Nadu BioNest Cluster and supported by Healthcare technology innovation centre, IITM biocubator, BIRAC and Bio-NEST held at Raman hall, IITM Research Park, Tharamani, Chennai on 21st November 2023.

Guest Lecture given by the Faculty

Dr. G. Karthigadevi, Assistant Professor, presented a Guest Lecture entitled “Exploring marine cosmeceuticals: Unveiling science behind the beauty products” at Vivekananda College of Engineering for Women on 23rd November 2023.

Events Attended by the Faculty

- **Dr. V. Sumitha**, Professor has participated in a Faculty Development Program on Virtual Labs, held virtually between 15th – 17th November 2023 as part of the PALS VLAB 2023 – 24 Initiative with NITK Surathkal.
- **Dr. S. Pandi Prabha**, Professor has participated and successfully completed the 5-day Online FDP on the theme “Inculcating Universal Human Values in Technical Education” organized by All India Council for Technical Education (AICTE) from 3rd July to 7th July 2023.
- **Dr. K. Vasantharaj**, Assistant Professor has participated and successfully completed the 5-day Online FDP on the theme “Inculcating Universal Human Values in Technical Education” organized by All India Council for Technical Education (AICTE) from 3rd July to 7th July 2023.
- **Dr. K. Ganesh Prasath**, Assistant Professor has participated and successfully completed the 5-day Online FDP on the theme “Inculcating Universal Human Values in Technical Education” organized by All India Council for Technical Education (AICTE) from 3rd July to 7th July 2023.
- **Dr. J. Isaivani**, Assistant Professor has participated and successfully completed the 5-day Online FDP on the theme “Inculcating Universal Human Values in Technical Education” organized by All India Council for Technical Education (AICTE) from 3rd July to 7th July 2023.

Alumni Write-up



Mr. Deva S
Ph.D. Scholar IIT Delhi
Batch of PG 2021-2023

The Department of Biotechnology at SVCE is not just a place for education; it is also a place where I was able to discuss all of my research ideas and carry them out without any hassle. It is evident that no institute under Anna University has the greatest amenities (particularly the animal house facility), but SVCE does. The faculties at the Department of Biotechnology not only taught us the courses, but also helped me build self-confidence and settle into where I am now.

Upcoming Events

REGISTRATION FEE

No registration fee is charged from the Participants.

SELECTION CRITERIA

Participants are faculty members of the AICTE approved institutions, Research scholars, PG Scholars, participants from Government, Industry Bureaucrats/Technicians/ Professionals/School Teachers and staff of host institutions nominated by the head of the institutions. Selection is based on a first-come, first serve basis. Maximum of 50 participants will be permitted to attend this FDP.

CERTIFICATION CRITERIA

Upon attending of the program on all the sessions, participants shall be awarded E-Certificates of participation by respective ATAL academy. Minimum 80% attendance and 60% marks in the online test at the end of the FDP are compulsory for certification.

HOW TO APPLY?

The participant has to sign-up through ATAL portal:

<https://atalacademy.aicte-india.org/signup>

COORDINATOR CONTACT DETAILS

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AICTE ATAL sponsored National FDP on "Unraveling Molecular Mechanisms and Artificial Intelligence Approaches of Drug Design in Cancer"

18th to 23rd December, 2023

INVITED SPEAKERS

- 1) Prof. M. Sivanandham, Secretary & Professor, Department of Biotechnology, SVCE
- 2) Dr. Bahu Renganathan, Director, CanBrs Therapeutics Pvt Ltd, IITM Research Park, Chennai
- 3) Dr. Manikandan Narayanan, Professor, Department of CSE, IITM, Chennai
- 4) Dr. Gopisetty Gopal, Professor, Department of Molecular Oncology, Cancer Research Institute, Adyar
- 5) Dr. Suresh Kumar Rayala, Department of Biotechnology, IITM, Chennai
- 6) Dr. Ezhilarasan, Professor, Department of Pharmacology, Saveetha Dental Hospital, Chennai
- 7) Dr. Badrinathan, Professor & Dean (Educational Development), SVCE
- 8) Ms. Dhivya Shanmugarajan, Senior Application Scientist, Altem technologies, Bengaluru
- 9) Dr. Pawan Kumar Gupta, Associate Professor, SVKMs Institute of Pharmacy Dhule, Maharashtra.
- 10) Dr. Arnold Emerson I, Professor & HOD, Department of Biosciences, VIT, Vellore

CO-CORDINATOR CONTACT DETAILS

Dr. K. Vasantharaj

Assistant Professor,
Department of Biotechnology,
Sri Venkateswara College of Engineering
Mobile: 9600202346

AICTE ATAL sponsored National FDP on "Unraveling Molecular Mechanisms and Artificial Intelligence Approaches of Drug Design in Cancer"

18th to 23rd December, 2023



**Organized by
Department of Biotechnology**



Sponsored by



CONVENERS

Prof. M. Sivanandham, Secretary & Prof/ BIO
Prof. S. Ganesh Vaidyanathan, Principal
Prof. E. Nakkeeran, HOD/BIO

COORDINATOR

Prof. P.K. Praveen Kumar

CO-CORDINATOR

Dr. K. Vasantharaj

**Pennalur, Sriperumbudur Tk - 602 117,
Tamilnadu, India**

svce.ac.in



Upcoming Events

ABOUT THE INSTITUTION

Sri Venkateswara College of Engineering (SVCE) is a unit of Sri Venkateswara Educational and Health Trust (SVEHT). SVCE is one of the premier technical institutions in Tamilnadu; the College is situated on the Chennai – Bangahuru National Highway (NH4) about 37 km south-west of Chennai. The college is in a 90-acre lush green Campus. It is housed in architecturally exquisite buildings with ample infrastructure such as classrooms, laboratories, libraries, sports arena, canteen, hostels, dispensary etc., The college offers 12 UG programmes and 7 PG programmes. SVCE is an ISO 9001:2015 certified institution and accredited by 'NAAC' with 'A+' grade.

DEPARTMENT OF BIOTECHNOLOGY

Sri Venkateswara College of Engineering noted the growth in Modern Industrial Biotechnology. In order to support the growth in Biotechnology, SVCE started the Department of Biotechnology in 2005. The department offers B.Tech and M.Tech Biotechnology programmes approved by AICTE. It is also approved as a Research Center in Biotechnology for MS (by Research) and Ph.D. programmes by Anna University, Chennai. The Department has well-established laboratory facilities namely Genetic Engineering, Bioprocess, Research Lab, Animal house and Computational System Biotechnology Lab. The Department received Research Grants (2.85 Crores) from various funding agencies such as SERB, ICMR, AICTE, CTS and also several grants for organizing Short Term Training courses, Workshops, Faculty Development Programmes from various funding agencies such as DBT, SERB, ICMR, CSIR and EDIL.

PROGRAMME OBJECTIVE

High personalized oncology care is one of the emerging technologies observed in Healthcare Industry. One of the most exciting potential applications of Artificial Intelligence (AI) is the possibility of designing novel anti-cancer therapies and guiding the development of such therapies to decrease the failure rate and decrease the time to approval.

The purpose of this program is to create a platform for the research scholars and faculties from various institutions across India to gain knowledge on understanding molecular mechanisms and applications of artificial intelligence in Drug design in cancer. The FDP will consist of a series of interactive lectures and practical sessions. Participants will have the opportunity to work with open-source bioinformatics tools and software, gaining hands-on-experience in mining and using stages of cancer data in online cancer web resource portals. The participants would prepare themselves to identify drug targets and navigate the molecular pathway mechanisms to target cancer disease using computational aided drug design tools that are available online.

Thus, this FDP includes invited lectures by eminent scientists and academicians from leading Educational Institutions, Industries and Research organizations in India with practical demonstration of AI based computational methods of drug designing techniques in Cancer research in equipped computer labs.

VIDEO TOUR OF DEPARTMENT

<https://youtu.be/p6TZo15pL7U>

ABOUT ATAL

All India Council for Technical Education (AICTE) through its newly established AICTE training and learning (ATAL) academy have started unique FDP in various thrust areas of modern technology.

LECTURE AND PRACTICAL SESSIONS

The FDP is planned to disperse knowledge from eminent experts who had earlier and presently had working experience from leading Institutions like IITM, Universities, Medical colleges, BIRAC Big Grant Startups and reputed MNC Industries.

Moreover, the FDP consists of hands-on training sessions provided in the Genomic Big Data Science, Differential expression of genes with SNPs from Biological databases, exploring and gene richment pathways using cytoscape, Pharmacokinetics models, diagnosis of cancer using MATLAB Simulink, Virtual screening of anti-cancer drugs and Molecular docking of anti-cancer compounds with drug targets using PyRx and Autodock.

VENUE

Dr.A.C.Muthiah Central Library Seminar Hall, Sri Venkateswara College of Engineering (SVCE), Sriperumbudur Tk.- 602 117, Tamilnadu
Distance from Domestic Airport: 31 kms
Distance from Central railway station: 35.5 kms
Distance from Sriperumbudur Toll Plaza: 1.4 kms

DATES TO REMEMBER

Last date for e- registration	: 03.12.2023
Intimation of selection	: 04.12.2023

Upcoming Events

Resource Persons:

Faculty members from IIT's, NITs, Central Universities, Scientists, Bioinformaticians from Industries and Research Laboratories will deliver lectures and demonstrate the experiments for Hands-On sessions.

Registration is open to:

All the faculty members, research Scholars, PG students from AICTE approved institutions and also for scientists, technical officers, bureaucrats working in government institutions and industry. Number of participants is limited to 50.

No Registration fee will be charged from the participants.

How to Apply:

Eligible candidates may apply online through AICTE-ATAL Portal.

<https://atalacademy.aicte-india.org/>. Candidates are advised to apply early to avoid disappointment. Selected applicants will be intimated through E-mail **on or before 05-01-2024**.

Accommodation:

Accommodation can be arranged in the campus on prior notice, for which the participants will have to bear the subsidized charges and the participants are advised to send the request on or before **15-01-2024** to ensure the accommodation.

For further details, please contact

Dr. K. Divakar / Dr. E. Nakkeeran

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ATAL FDP

on

“Microbial Metagenomics and Next Generation Sequencing”

5th- 10th February, 2024

Sponsored by

AICTE Training and Learning Academy (ATAL)



Patrons

Prof. M. Sivanandham, Secretary, SVEHT

Prof. S. Ganesh Vaidyanathan, Principal, SVCE

Coordinators

Dr. K. Divakar, Associate Professor/BIO

Dr. E. Nakkeeran, Professor/BIO



Organized by

Department of Biotechnology

SVCE | Sri Venkateswara
College of
Engineering

(An Autonomous Institution - Affiliated to Anna University, Chennai)

Sriperumbudur Tk -602 117, Tamil Nadu, India

Upcoming Events

About the Institution:

Sri Venkateswara College of Engineering (SVCE) is one of the premier technical institutions in Tamilnadu; the College is situated on the Chennai – Bengaluru National Highway. The college offers 12 UG programs and 7 PG programs. SVCE is an ISO 9001:2015 certified institution and Accredited by “NAAC” with A+ grade.

For more details visit: www.svce.ac.in.

About the Department of Biotechnology

The Department of Biotechnology was established in 2005. The department offers B.Tech and M.Tech Biotechnology programs approved by AICTE. It is also approved as a Research Centre in Biotechnology for MS (by Research) and Ph.D. programs by Anna University, Chennai. The Department has well-established laboratory facilities. The Department received Research Grants (2.85 Crores) from various funding agencies such as SERB, ICMR, AICTE, CTS and also several grants for organizing Short Term Training courses, Workshops, Faculty Development Programs from various funding agencies such as DBT, SERB, ICMR, CSIR and EDII.

Vision of the Department

To produce higher caliber Biotechnologists to attain new heights in bioinformatics and bioprocess technology as per industrial needs and to provide leaders in the field of Biotechnology.

Mission of the Department

1. To progress the department to attain center of excellence in bioinformatics and bioprocess technologies by providing best Undergraduate, Postgraduate, Doctoral programs and R&D activities within a decade.
2. To develop special skilled training programs for graduates to meet the personality characters stipulated by the industries within a period of five years.
3. To build potential biotechnologists capable of dealing with new challenges and socio-ethical implications.

Overview of the FDP

Next-Generation sequencing technologies (NGS) are an essential part of almost all life sciences research and diagnostics. Due to their quantity and especially their complexity, NGS data are typically processed by qualified bioinformaticians. Considering the significance, the faculties and research scholars/students need to update and reorient themselves to meet the rapidly changing genomic data analysis tools. This FDP is designed to bring together the experts working in Metagenomics and Next Generation Sequencing to overcome the inherent lag in teaching and learning of concepts in genomics, high throughput genome sequencing and NGS data analysis. This ATAL-FDP will allow the participants to understand the basics of NGS data processing, including manipulation of raw data, quality control, and removal of low quality sequences, sequence adapters and artifacts.

Objectives of the FDP:

- To explain conceptual framework and create an awareness among the faculty members teaching biotechnology, on the importance of metagenomics and next generation sequencing.
- To catalyze and motivate participants to perform research in the field of metagenomics and next generation sequencing techniques and incorporate the same in teaching curriculum.

Topics covered in the FDP:

- Microbial Metagenomics and its application in bioproduct development.
- Functional metagenomics for bioprospecting of enzymes.
- Metagenomics for surveillance of Antibiotic Resistant Genes.
- NGS technology and platforms: Fundamental Concepts to Applications.
- Hands-on session on DNA sequencing using Oxford Nanopore Sequencer.
- Essential computing skills for NGS bioinformatics.
- Overview and Advances in Clinical NGS Technology.
- NGS technology, algorithms and data formats.
- Hands-on session on sequence data processing: MGnify, MGRAST, HMMER, InterPro, Gene Ontology (GO), FASTQC, Galaxy server and pathway analyses.
- Metagenomics Data Analysis and Population Dynamics analysis.

Expected Outcomes:

After attending workshop, Participants can be able to

- Design experiment to isolate/purify metagenomic DNA from environmental samples.
- Construct metagenomic fosmid library for functional screening of industrial/therapeutic enzymes.
- Get confidence to introduce the metagenomics experiments in the regular teaching in curriculum.
- Perform next generation sequencing using nanopore sequencer and analyze the DNA sequence data.



SVCE Sri Venkateswara College of Engineering

DEPARTMENT OF BIOTECHNOLOGY



INFORMATION BROCHURE FOR ADMISSION TO M.TECH BIOTECHNOLOGY & Ph.D PROGRAM (2024-2025)

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Sri Venkateswara College of Engineering (Autonomous) is a premier self-financing institution started in 1985 and received Autonomous status in 2016. **Department of Biotechnology** was established in 2005 under the guidance of our chairman, Governing Council Dr. A.C. Muthiah, a well-known industrialist, in order to explore and experience new frontiers of Biotechnology. The department started B.Tech Biotechnology in 2005, M.Tech Biotechnology in 2010 & and Ph.D. in 2011.

RECEIVED PROJECTS FROM

- DBT
- ICMR
- DST-SERB
- CSIR
- AICTE
- MSME
- TNSCST
- EDII

RESEARCH FOCUS

- Immunology & Immuno-technology
- Biomaterials & Tissue Engineering
- Stem Cell Technology
- Genetic Engineering & rDNA Technology
- Cellular & Molecular Biology
- Computational Systems Biotechnology
- Bioprocess Engineering
- Regenerative Medicine & Diseases
- Herbal Medicines & Antioxidants Research



Biotechnology, SVCE

Awardees of PG Scholarship - 2023

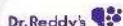


SCHOLARSHIPS FOR PG STUDENTS

- **PG scholarship of Rs.50,000/year** for 30% of the top scorers in their UG degree of sanctioned class strength for 2 years.
- **Management Scholarships** for tuition fees and assistance for books and instruments.
- **AICTE-GATE Scholarship of Rs. 12,400/month for 24 months** from AICTE for students having a valid GATE score.
- **Intramural M.E/M.Tech Student Research Grant** to carry out innovative projects in Biotechnology.
- **Sponsorships** for students to participate in conferences.

In-Demand Biotechnology Careers that will shape your future

- Research Assistant
- Technical Officer
- Clinical Scientist
- Pharma Engineer
- Biostatistician
- Academic Jobs
- Project Assistant
- Research Interns
- Bioinformatician
- Medical Writer
- Research Analyst
- Scientific Assistant
- Laboratory Technician
- Quality Control Analyst
- Regulatory Affairs Specialist
- Clinical Research Coordinator
- Calibration Technician
- Environmental Scientist



Possible List of Industries to join after M.Tech Biotechnology Program

Eligibility: As per Anna University Guidelines. Admissions are through Common Engineering Entrance Test and Admission by Anna University & Entrance Examinations conducted by Consortium of Self Financing Professional, Arts and Science Colleges in Tamilnadu.

Connect @ www.svce.ac.in/departments/biotechnology/ | hodbt@svce.ac.in | 9791668110

DEPARTMENT OF BIOTECHNOLOGY
SRI VENKATESWARA COLLEGE OF ENGINEERING



COURSES OFFERED

1. B.Tech Biotechnology
2. M.Tech Biotechnology
3. M.S. (By Research)
4. Ph.D. Biotechnology

A GLIMPSE OF OUR MAJOR FACILITIES



OLYMPUS CX-23 BINO LED JAPAN BINOCULAR RESEARCH MICROSCOPE

**FOR
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OR
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