

BITSOC NEWS

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BIOTECHNOLOGY SOCIETY OF WAYAMBA UNIVERSITY OF SRI LANKA
DEPARTMENT OF BIOTECHNOLOGY
FACULTY OF AGRICULTURE AND PLANTATION MANAGEMENT
WAYAMBA UNIVERSITY OF SRI LANKA





Bitsoc Events

BitSoc 'Awurudu Siritha' 2024

BitSoc organized 'BitSoc Awurudu Siritha' 2024 program on April 7th, at Coco Garden by Dasa, Kuliypitiya. The programme is opened for alumni of Department of Biotechnology and BitSoc members. Representing the academic staff of the Department of Biotechnology, FAPM, Dr. Priyanwada Warakagoda-Head of the Department, Snr. Prof. Nisha Kottearachchi, Dr. Radhika Gimhani-Senior Treasurer, BitSoc and Mr. Lalinka Herath-Lecturer have been participated for the event. Mr. Chinthaka Bandara and Ms. Subashini Wickramarachchi represented the nonacademic staff of the Department.



The programme featured with various activities, including "Kiri ithiraweema", "Kewili" table which were beautifully arranged with a variety of symbolic items that represent prosperity, happiness, and auspiciousness for the coming year. Folk games added fun and excitement to the festive atmosphere. The event granted opportunities for the students to buildup connections with alumni, work as a team, brush up announcing abilities, and to get a relief from day-today routine activities.

BitSoc expresses sincere gratitude to all sponsors and the official media partner, Wayoscope, whose steadfast support made the event possible. Their contribution ensured the success of the BitSoc Awurudu Siritha 2024 program, leaving a lasting impact on all attendees.





Bitsoc Events

Webinar on

“Exploring Higher Education and Navigating Graduate School Applications in the USA”

A live webinar was conducted on February 24th, 2024, via Zoom under the topic 'Exploring Higher Education and Navigating Graduate School Applications in the USA.' by BitSoc under the guidance by Snr. Prof. Nisha Kottearachchi. The webinar offered invaluable insights for students aspiring to pursue their post graduate studies in the USA.

The keynote speaker of the event was Prof. Subramaniam Sathivel of Louisiana State University. Prof. Sathivel's extensive career and deep academic expertise proved to be a positive guide for the students who interest in academia. He shared his in-depth understanding on the often-complex process of applying to graduate schools in a clear and engaging manner.



zoom
LIVE WEBINAR
SATURDAY | 24TH FEB 2024 | 8.15 AM

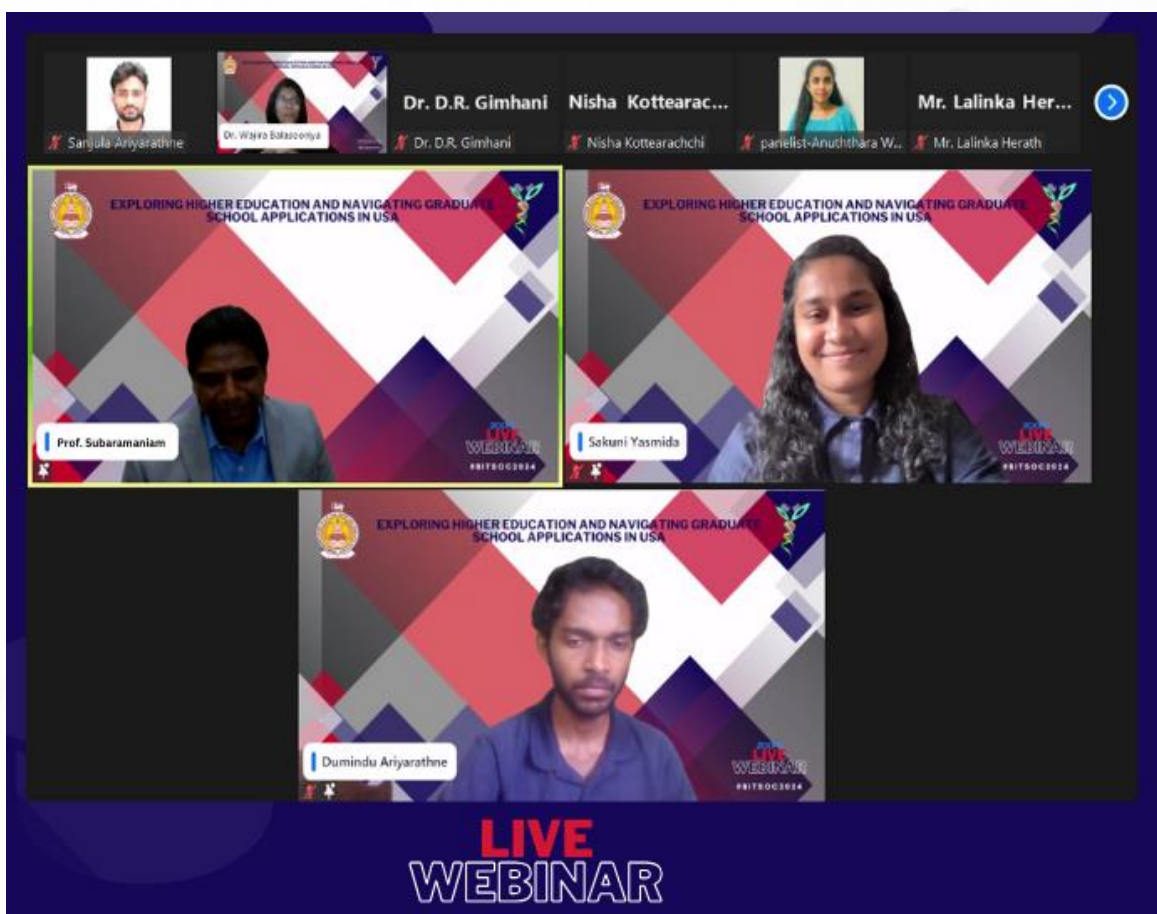
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#BITSOC2024



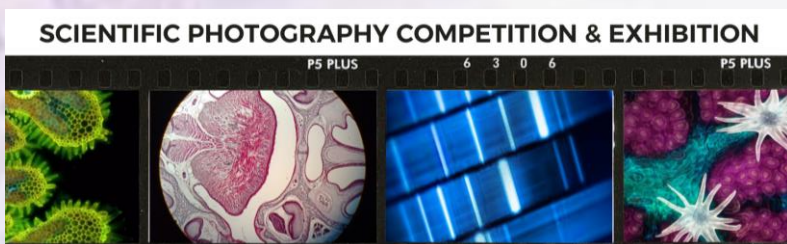


Upcoming Bitsoc Events

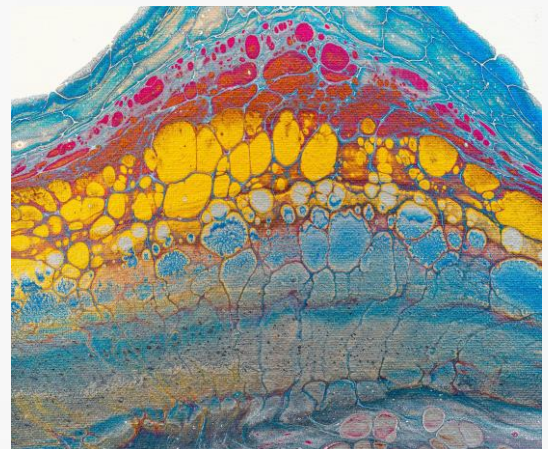
BitSoc LENS Exhibition

“Unveil the Microcosms” : Open for Submissions

LENS is a Photographic Exhibition announced by the BitSoc to showcase the hidden beauty of microscopic world as a blend of artistry and scientific research under the theme "Unveil the Microcosms". BitSoc ensures the originality and authenticity in submissions, urging photographers to submit original works and to avoid plagiarism. Submission guidelines and requirements are available at the BitSoc website (<https://bitsoc.wyb.ac.lk>), with the deadline of 11th May 2024. Selected photographs will be exhibited at FAPM, WUSL on 11th June 2024, offering the audience an opportunity to feel the science and art together.



BITSOC
LENS



Registration Form :

<https://forms.gle/hoCLB9DFjGXUBvyv6>

Guidelines :

<https://drive.google.com/drive/folders/1vhSX4kMmuKhR3qtorelU8YpZWrt6hl6k?usp=sharing>

BitSoc Hackathon

Registration Now Open

BitSoc Hackathon is a premier event aimed at fostering creativity and problem-solving in the realm of biotechnology. It serves as a platform for university and school students to get together, share ideas and develop innovative solutions to address real world challenges.

Participants can register for the hackathon by filling out the Google Form available at the BitSoc website (<https://bitsoc.wyb.ac.lk>). Upon registration, participants could access to the comprehensive guideline document, providing insights into the event structure, theme, and judging criteria.

The hackathon will include workshops, networking sessions, and collaborative challenges, aimed at promoting creativity and teamwork. Participants will have opportunities to showcase skills, learn from industry experts, and compete for prizes.



Registration Form :

<https://forms.gle/zipPKASwuR629p3Cw5>

Guidelines :

<https://drive.google.com/drive/folders/1470v7eobULr9lF63llvCpT9vPdBJlBT?usp=sharing>



Congratulations

Newly Appointed Head, Department of Biotechnology



Dr. Priyanwada Warakagoda has been appointed as the Head, Department of Biotechnology with effect from 1st February 2024. She joined the Department of Biotechnology, FAPM, WUSL as a Senior Lecturer in year 2019. She received her PhD in the field of Plant Cell and Tissue Culture from University of Ruhuna in year 2016. In addition, she holds an MPhil degree and a Postgraduate Diploma in same discipline and B.Sc. special degree in Agriculture. Her academic and research career commenced in 2005 as a Research Assistant at the Department of Crop Science, Faculty of Agriculture, University of Ruhuna. There she got a chance to develop feasible micropropagation protocol for Red Sandalwood a red listed woody plant with medicinal value. Subsequently she joined

with Link Natural Products (Pvt) Ltd as a Research Scientist and engaged in developing agro-technological packages for commercially important medicinal plants, some of which are near extinction in the wild. She also served as a Scientific Officer at National Science Foundation from year 2013 to 2019.

NSF Awards 2023

Snr. Prof. Nisha Kottearachchi was awarded two SUSRED (Support Scheme for Supervision of Research Degrees) awards from the National Science Foundation (NSF) as the Principal Supervisor of the PhD Degree titled "QTL map-based candidate gene discovery for salt tolerance in rice (*Oryza sativa* L.)" and as the Co-supervisor of the PhD Degree titled "Assessment of pathogeography and pathogenicity of blast and brown spot diseases in rice (*Oryza sativa* L.) using phenetic, molecular and digital image sensing approaches".



Dr. Radhika Gimhani was also awarded a SUSRED award as the co-supervisor of the PhD degree titled "QTL map-based candidate gene discovery for salt tolerance in rice (*Oryza sativa* L.)".



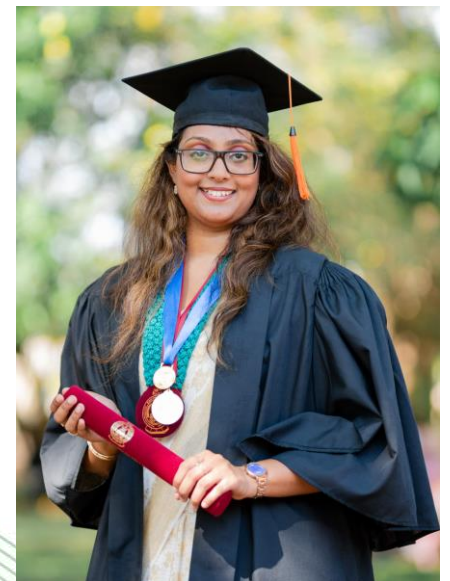
Master Study at the Weihenstephan-Triesdorf University of Applied Sciences (HSWT), Germany 1

Ms. Himasha Withana, a graduate (2016/2017 batch) of the Department of Biotechnology, has been chosen to pursue her master's study in International Farm Management at the Weihenstephan-Triesdorf University of Applied Sciences (HSWT), in Germany.



IPMP Gold Medal for the Best Performance in the B.Sc. (Hons.) Agriculture Degree Program and Dr. Dharmawansa Senadhira Gold Medal

Ms. Shenaz Amath of the 2017/2018 batch was honored with the esteemed IPMP Gold Medal for the Best Performance in the B.Sc. (Hons.) Agriculture degree program, along with the prestigious Dr. Dharmawansa Senadhira Gold Medal in recognition of her outstanding academic achievement as an undergraduate in the Department of Biotechnology. This momentous acknowledgment took place at the 19th General Convocation held on 2nd April 2024, at the Pandith Amaradewa Auditorium, WUSL, Kuliypitiya Premises.



Research Presentations and Publications

Ms. Raveena Bulegoda Arachchi, a graduate (2016/2017 batch) of the Department of Biotechnology, has presented her research findings under the topic of "Optimization of culture conditions for production of alpha-amylase enzymes from recombinant *Escherichia coli* clones" at the International Conference on Innovation and Emerging Technologies (iCIET 2023) organized by the Faculty of Technology, University of Sri Jayewardenepura, Sri Lanka, which was held on 24th November 2023. The research was conducted under the supervision of Prof. Thilak Attanayake and Mr. Shehan Kurera.



Mr. Kanchana Madanayake, who recently graduated from the Department of Biotechnology, has presented his research findings under the topic "Chemical composition and antimicrobial activity of *Psidium guajava* L. leaf essential oil" at the 2nd International Research Symposium on Multidisciplinary Approaches in Indigenous Knowledge Systems organized by Gampaha Wickramarachchi University of Indigenous Medicine, which was held on 1st March 2024. He also won the Best Presenter award under the track of Biochemistry, Molecular Biology, Medicinal Resources and Ecology. The research was conducted under the supervision of Snr. Prof. Nisha Kottearachchi and Dr. Gavini Liyanaarachchi.





Ms. Sivashoby Sivalingam, who recently graduated from the Department of Biotechnology, has presented her research findings under the topic of "ISSR-Based Genetic Diversity Assessment of Arrowroot (*Maranta arundinacea* L.) Germplasm in Sri Lanka" at the Third International Conference on Innovation and Emerging Technologies 2023 (ICIET 2023) organized by the Faculty of Technology, University of Sri Jayewardenepura, Sri Lanka, which was held on November 23rd - 24th 2023. The research was conducted under the supervision of Dr. Radhika Gimhani, Dr. Amani Wijesinghe and Mrs. Susanga Malki.



Ms. Dinithi Rajapaksha, a temporary demonstrator from the Department of Biotechnology at Wayamba University of Sri Lanka, presented her research findings under the topic of "Antibacterial activity of essential oil extracted from leaves and barks of *Acronychia pedunculata* (L.) Miq. (Ankenda) using agar disk diffusion method" at the Young Scientists' Conference Multidisciplinary Research (YSCMR)-2023, organized by the Young Scientists' Association, National Institute of Fundamental Studies, Sri Lanka, which was held on 9th November 2023. The research was conducted under the supervision of Dr. Mudith Mewan and Dr. Gayini Liyanaarachchi.



She also presented two other researches titled "Are adolescent female monks in Sri Lanka having an adequate Body Mass Index (BMI); preliminary study in rural Sri Lanka (in press)" and "Knowledge Related to Poor Compliance for Diabetes Management among pregnant Type 2 Diabetes in Kurunegala District; Hospital Based Study (in press)" at the PGIM Annual Research Symposium 2023 held at the Academic Center of PGIM, on 1st of December 2023. These research studies were conducted under the supervision of Dr. Udara Sendanayaka.

Ms. Upeksha Thalgodapitiya, who recently graduated from the Department of Biotechnology, has presented her research findings under the topic of "Stomatal responses of herbaceous vine *Mikania micrantha* to urban air pollution in Kandy" at the Young Scientists' Conference on Multidisciplinary Research, 2023, organized by the Young Scientists' Association of National Institute of Fundamental Studies, Kandy, Sri Lanka, which was held on 9th November 2023. The research was conducted under the supervision of Dr. Wajira Balasooriya and Prof. Udaya Vitharana.





SLALAS Poster Competition 2023

Ms. Dharani Rathnayake, a temporary demonstrator from the Department of Biotechnology, has won third place at the SLALAS poster competition 2023 of the 11th Annual Scientific Sessions and International Conference organized by the Sri Lanka Association for Laboratory Animal Science on 21st January 2024, at the Hilton Colombo.



International Pitching Competition by FOUNTAIN and SECRA

Team Banaro, an innovative food product created by Mr. Akeel Shahan, a 4th year Biotechnology specialization student, Ms. Iresha Perera specializing in Agribusiness Management, and Ms. Ushani Ranasingha from Department of Food Science and Technology, FLFN, secured first place in the International Pitching Competition organized by FOUNTAIN and SECRA, held at GapHQ. This team was able to surpass 15 national and international finalists with their pitch, earning them the title remarkably.



At the same event, Team EcoWave comprised of Ms. Sachini Madushika, Ms. Dulani Nimaya, Ms. Lawanya Indeevari, and Mr. Akeel Shahan, 4th year Biotechnology specialization students was able to secure a spot among the top 15 finalists of the international pitching competition, surpassing over 100 national and international competitors.



Dialog Innovation Challenge

Finepay and Global Voice, which are innovative solutions developed by the Infinite Innovators led by Mr. Akeel Shahan, a 4th year Biotechnology specialization student with the support of Ms. Nethmini Wijendrasinghe, another 4th year Biotechnology specialization student, and Ms. Iresha Perera, specializing in Agribusiness Management, were shortlisted for the second round of the Dialog Innovation Challenge.



Successful Filing of a Patent Application

Mr. Lahiru Kavinda, a 4th year Biotechnology specializing student of the Department of Biotechnology, has filed a patent application for a Composite for non-asbestos roofing sheets and tiles utilizing Biochar and Portland cement - LK/P/1/22938. This patent presents a novel composite material for roofing sheets, addressing limitations of traditional asbestos-based roofing materials. The innovation incorporates biochar derived from diverse biomass sources, resolving carcinogenic concerns associated with asbestos.



Momentum Photo Contest

Ms. Ushani Nisansala, a 3rd year Biotechnology specialization student, secured 10th place in the "Most Popular" category of the Momentum photo contest held on October 07 2023, which was organized by Wayaexplorers.





Spellbinder '23 Speech Contest

Ms. Sakuni Yasmida, a 3rd year Biotechnology specialization student, emerged as the winner of Spellbinder '23 and Ms. Dinithi Gunawardhana, also in her 3rd year of biotechnology specialization, achieved the position of 1st runner-up at the Grand Finale of the Spellbinder '23 Speech Contest, organized by the Gavel Club, FAPM, WUSL held on November 8, 2023.



Speech Master '24 All-island Public Speaking Competition

Ms. Sakuni Yasmida, a 3rd year Biotechnology specialization student, reached the semi-finals of Speech Master '24, an all-island public speaking competition organized by the Gavel Club of the University of Sri Jaywardenepura.





Sports

Mr. Kalindu Wickramasingha, currently in his 3rd year of biotechnology specialization, was appointed as the captain of the university athletic team.



Ms. Vihara Dunukebandara, a 3rd year Biotechnology specialization student, was appointed as the secretary of the FAPM sports club. Additionally, she served as the captain of the Elle team in 2023, earning university colors for her remarkable achievements.



Mr. Rajakumar Tharshan, a 3rd year Biotechnology specialization student, was appointed as the captain of the Elle team. His outstanding accomplishments in Elle earned him both SLUSA and university colors.



Mr. Anjana Perera, a 3rd year Biotechnology specialization student, secured third place at the Interfaculty Championship in weightlifting.



BIOTECH BREAKTHROUGHS: EXPLORING THE FRONTIERS OF SCIENCE



The CRISPR-based diagnostic platforms have enabled quick, ultra-sensitive, and reliable detection of pathogens, viruses, genetic diseases, and cancer. doi.org/10.1016/bs.pmbs.2021.01.013



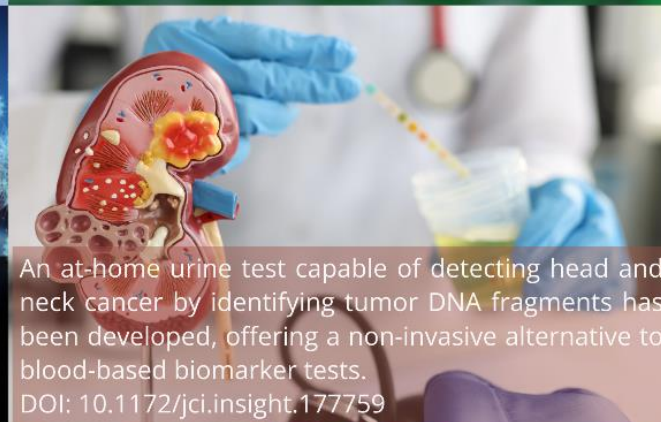
Cellular agriculture, the culturing of meat and other agricultural products from cells in bioreactors, has emerged as a revolutionary approach to food production. doi.org/10.1080/00963402.2017.1413059



RNA-based treatments, such as modified non-coding RNAs (ncRNAs) and microRNAs (miRNAs), have emerged as promising approaches for addressing a range of illnesses. DOI: 10.3389/fmolb.2021.710738



Using AI, a new computational pipeline has accurately predicted cancer therapy responses at single-cell resolution, showcasing the power of machine learning. DOI: 10.1038/s43018-024-00756-7



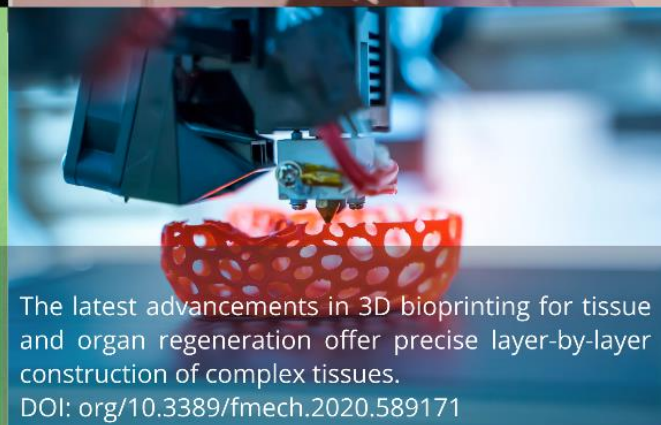
An at-home urine test capable of detecting head and neck cancer by identifying tumor DNA fragments has been developed, offering a non-invasive alternative to blood-based biomarker tests. DOI: 10.1172/jci.insight.177759



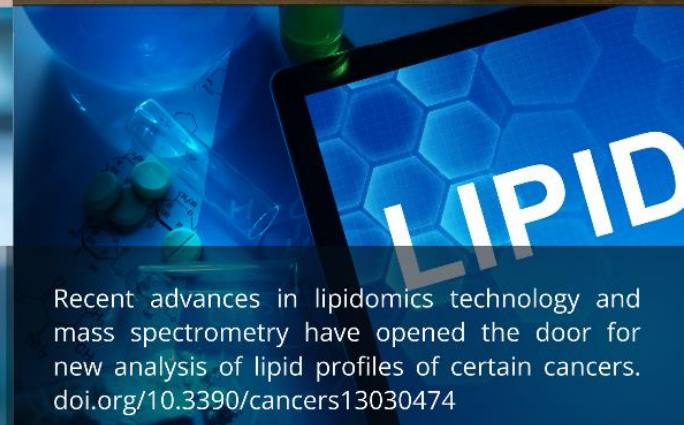
The completion of a polyploid assembly for an archetypal modern sugarcane hybrid has revealed its intricate genetic past, providing researchers and breeders with new opportunities. doi.org/10.1038/s41477-024-01691-2



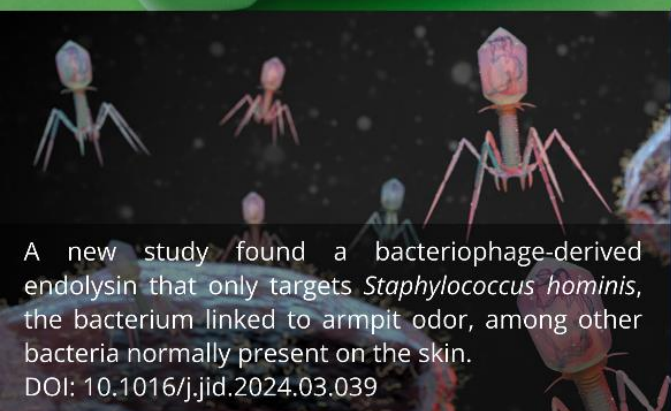
Biodegradable bioplastics offer alternatives to traditional petrochemically derived plastics through microbial degradation like composting. doi.org/10.3389/fchem.2022.971792



The latest advancements in 3D bioprinting for tissue and organ regeneration offer precise layer-by-layer construction of complex tissues. DOI: org/10.3389/fmech.2020.589171



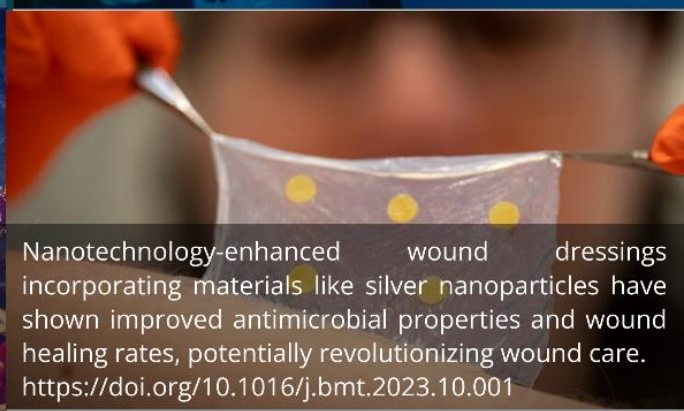
Recent advances in lipidomics technology and mass spectrometry have opened the door for new analysis of lipid profiles of certain cancers. doi.org/10.3390/cancers13030474



A new study found a bacteriophage-derived endolysin that only targets *Staphylococcus hominis*, the bacterium linked to armpit odor, among other bacteria normally present on the skin. DOI: 10.1016/j.jid.2024.03.039



A CNRS-led research team found cancer can be caused solely by epigenetic modifications, explaining how cells diversify despite identical genomes. DOI: 10.1038/s41586-024-07328-w



Nanotechnology-enhanced wound dressings incorporating materials like silver nanoparticles have shown improved antimicrobial properties and wound healing rates, potentially revolutionizing wound care. https://doi.org/10.1016/j.bmt.2023.10.001



BITSOC NEWS

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