



SATHYABAMA

**INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)**

**ACCREDITED WITH GRADE "A++" BY NAAC
CATEGORY - 1 UNIVERSITY BY UGC**

SUSTAINABILITY REPORT

2023 - 2024



www.sathyabama.ac.in | Tamilnadu. India

With the Blessings of



Col. Dr. JEPPIAAR, M.A., B.L., Ph.D.
Founder Chancellor

Preamble

As an institution of higher learning, Sathyabama Institute of Science and Technology embraces a commitment to sustainability that aligns with our mission of fostering knowledge, innovation, and responsibility. This report reflects our continued efforts to integrate environmental, social, and economic sustainability principles into all facets of campus life, from academics and operations to community engagement and research.

Throughout the year, our faculty, students, and staff have worked collaboratively to champion sustainable practices and implement projects that enhance resource efficiency, reduce carbon emissions, and promote biodiversity. Together, we strive to create a resilient, adaptable campus that serves as a living laboratory for sustainability, inspiring future leaders to drive positive change.

This report highlights the progress we have made, and the challenges we face as we advance toward our ambitious sustainability goals. We remain committed to transparent reporting, rigorous assessment, and continual improvement in our journey to cultivate a sustainable future for our campus, community, and the world beyond.

Our dedication to attaining sustainable development is demonstrated by this Sustainability Report. This report focuses on our sustainability initiatives for the year 2023-2024.

Message

We are very happy to publish the Institution's Sustainability Report, which provides a brief review of the work for the year 2023-2024.

Sustainable development has gained significant attention from administrators and leaders with the evolution of the Sustainable Development Goals and the Millennium Development Goals. Sathyabama Institute of Science and Technology has initiated many schemes towards achieving the Sustainable Development Goal. Sathyabama's strategic plan expresses the commitment to get involved in multidisciplinary research that can provide solutions to the problems faced by society and promote sustainable development.

Academic excellence, research towards meeting the national mission, and implementation of sustainability initiatives have enabled Sathyabama to be in the top 50 Universities in the rankings by the National Institutional Ranking Framework (NIRF), Government of India, for the seventh consecutive year.

The staff and students of our institution have understood their role in building a sustainable community, and they actively participate in all our initiatives contributing to sustainable development. In our continuous pursuit of excellence, we are very happy that we are able to make significant progress towards the Sustainable Development Goals.

We are very happy that we are able to make significant progress toward the Sustainable Development Goals proposed by Agenda 2030 that aims to protect people and the planet.

Dr. Marie Johnson, President

Dr. Mariazeena Johnson, Chancellor

Foreword

Sathyabama is known for its commitment to societal development, apart from its academic and research excellence. It is bestowed with state of the art infrastructure and world class research facilities and recognized as one of the top higher educational institutions both at national and international level.

Sustainable development emphasizes on economic progress with due recognition on environmental and societal aspects. Any advancement is considered to be real only if it is not made at the cost of the environment. It is high time that we all stop our unsustainable practices and start getting involved in efforts to preserving natural resources. Our Institution is one of the fore runners in adopting innovative practices to achieve sustainable development.

Academic and Research initiatives of the Institution are focused on the achievement of the sustainable development goals like eradicating poverty and hunger, developing good health and well-being, creating access to clean and affordable energy, combating climate change, reducing economic inequalities, promoting gender equality and developing sustainable community. Our Institution's curriculum is designed in such a way that sustainable development is the core of it. We have dedicated Research Centres like Centre for Energy Research, Centre for Climate Change Studies, Centre for waste Management, Centre for Ocean Research and Centre for Drug Discovery and Development that are working towards the achievement of United Nation's Sustainable Development Goals -Agenda 2030.

We are happy to publish this report that publicizes our Institution's efforts to build a safe, prosperous, resilient and sustainable community.

Dr. T. SASIPRABA, M.E., Ph.D.
VICE CHANCELLOR

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A. ABOUT SATHYABAMA

Sathyabama Institute of Science and Technology is one of the premier higher educational institutions in India, with a high reputation for teaching and research excellence. It is a Deemed to be University established under Section 3 of the UGC Act, 1956. The Institution has been accredited with 'A++' Grade by the NAAC. The UGC has awarded Category-1 status to the Institution. Established in 1988, Sathyabama offers a wide range of programs in various fields such as engineering, technology, science, architecture, law, dental science, pharmacy, nursing, humanities and management. The institution has state-of-the-art infrastructure, world-class research facilities, experienced faculty, and a vibrant campus life, making it a preferred choice for students aspiring for quality education in India.

Vision of the Institution

Be a leading multidisciplinary University, producing world class talents to address global challenges

Mission of the Institution

- To attain excellence in Education and Research through effective collaboration with Industries and other International/National organisations
- To consistently remain an attractive ecosystem for students and employees, a hub of innovation for researchers and an incubating platform for entrepreneurs
- To create an inclusive environment that caters to all forms of diversity
- To engage in outreach and community development activities, creating an impact on the society

B. RANKINGS AND RATINGS

Sathyabama is consistently ranked in good positions in various prestigious international rankings owing to its academic excellence, research impact, and contributions to global sustainability goals.

- It has been ranked in 51 position among the Universities in India by National Institutional Ranking Framework (NIRF), Government of India for the year 2024.

- Sathyabama is ranked in 1201–1400 position by QS World University Rankings, 2025 and it is one of the 46 Institutions in India ranked by QS.
- According to QS Asia University Rankings, 2024, Sathyabama is ranked in 401-450 rank.
- QS Stars has awarded Five Star ratings for the Institution.
- The Institution is ranked in 1201–1500 band by the Times Higher Education World University Rankings 2024 and with respect to Times Higher Education Asia University Rankings, 2023 it is ranked in 501-600 band.
- The Institution is placed in 401–500 band in the world by Times Higher Education Young University Rankings, 2024
- Ranked in the 601–800 band in the overall Times Higher Education Subject Rankings, 2024 for Clinical, pre-clinical & Health, ranked in the 801–1000 band for Computer Science, ranked in the 801–1000 band for Engineering & Technology, ranked in the 801–1000 band for Life Sciences, ranked in the 801–1000 band for Physical Sciences

Sathyabama is ranked in the 601–800 band in the overall Times Higher Education Impact Rankings, 2024. With respect to SDGs individually following are the ranks secured by the institution in the Times Higher Education Impact Rankings, 2024:

- SDG 1 No Poverty: 401-600 rank
- SDG 3 Good Health and Wellbeing: 801-1000 rank
- SDG 6 Clean Water and Sanitation: 301-400 rank
- SDG 7 Affordable and Clean Energy: 101-200 rank
- SDG 9 Industry Innovation and Infrastructure: 301-400 rank
- SDG 10 Reduced Inequalities: 301-400 rank
- SDG 13 Climate Action: 301-400 rank
- SDG 14 Life Below Water: 101-200 rank
- SDG 15 Life on Land: 90th rank
- SDG 17 Partnership for Goals: 301-400 rank

Recognizing the contribution of Sathyabama towards Sustainable Development Goals of United Nation's Agenda 2030, Times Higher Education has ranked Sathyabama in good positions in the Times Higher Education Impact Rankings, 2024.

Schools/Department/Courses

- School of Computing
- School of Electrical and Electronics
- School of Mechanical Engineering
- School of Bio and Chemical Engineering
- School of Building and Environment
- School of Management Studies
- School of Science and Humanities
- School of Pharmacy
- School of Nursing
- School of Dental Science
- School of Law
- School of Allied Health Sciences

C. SATHYABAMA'S SUSTAINABILITY APPROACH AND PERSPECTIVE

Teaching and Learning

Sustainability forms the core of teaching and the notion of sustainable development is instilled in the students. Students are educated about the sustainability issues and a sense of responsibility is created.

Sathyabama is committed to providing a quality education to students to develop them as responsible citizens who are concerned about their environment. We design our curriculum with adequate emphasis on environmental education. Subjects relating to sustainable development are included in the curriculum of all branches of studies, ensuring that all of our students are groomed as professionals who follow sustainability principles in their professional life.

Sustainability in the curriculum

To have sustainability principle inbuilt in the curriculum the following Courses are included in the curriculum of the University.

- Green computing for Computer science students
- Energy Engineering
- Environmental impact assessment
- Environment pollution control
- Disaster management
- Water resources engineering
- Air and noise pollution
- Ground water engineering
- Solid waste management
- Environmental planning and design
- Wind and solar energy
- Health informatics
- Environmental science and engineering
- Environmental biotechnology
- Biosafety, bioethics and IPR
- Irrigation engineering
- Energy and environmental management

Masters Programme Offered

A Masters Programme on Sustainable Architecture is offered in the School of Built Environment.

D. RESEARCH AT SATHYABAMA

Sathyabama is one of India's premier Higher Education Institutions known for its research excellence. World-class research facilities are available at the Institution. Our university's research initiatives serve as a foundation for transformative solutions that address the Sustainable Development Goals, equipping students and faculty to be catalysts of change in building a sustainable, equitable, and prosperous future for all.

Research strategies:

- Establishment of Research Centres in the frontier areas of Science and Technology
- Setting up Centres of Excellence in association with Government agencies
- Promoting research culture through seed funding

- Collaboration with Industries and Universities across the world to improve the research strength
- Strengthening research infrastructure
- Establishment of Centre for innovation and Technology Transfer to promote innovation and knowledge transfer
- Strengthen the Institution-Industry interaction through involvement in consultancy-based research projects

To promote research activities, Sathyabama instills a research culture and provides a research enabling environment through the following measures

- Drafting a research policy to guide the research activities
- Making substantial investments to develop research infrastructure
- Providing Institutional seed fund to encourage innovation and research and facilitate conversion of ideas in to products
- Setting up IPR facilitation Cell to support and promote innovation and protect intellectual property
- Rewarding the researchers appropriately rewarded for their research accomplishments.
- Allocating a significant percentage (7%) in its annual budget for research to upgrade the research infrastructure and research facilities
- Constituting Research Committees to review the research and development activities of the Institution

Research Centres

The following are the Research Centres of Sathyabama that are carrying out research on almost all the major areas of science and Technology:

- Centre for Nanoscience and Nanotechnology
- Centre for Energy Research
- Centre for Ocean Research
- Centre for Space Technology

- The Centre for Bioresource Research and Development
- Centre for Earth and Atmospheric Science
- Centre for Remote Sensing and Geoinformatics
- Centre for Robotics and Automation
- Centre for Quality Assurance and Non-Destructive Evaluation
- Centre for Waste Management
- Centre for Laboratory Animal Research
- Centre for Climate Change Studies
- Centre for Drug Discovery and Development

E. RESEARCH FOCUSING ON SUSTAINABLE DEVELOPMENT GOALS

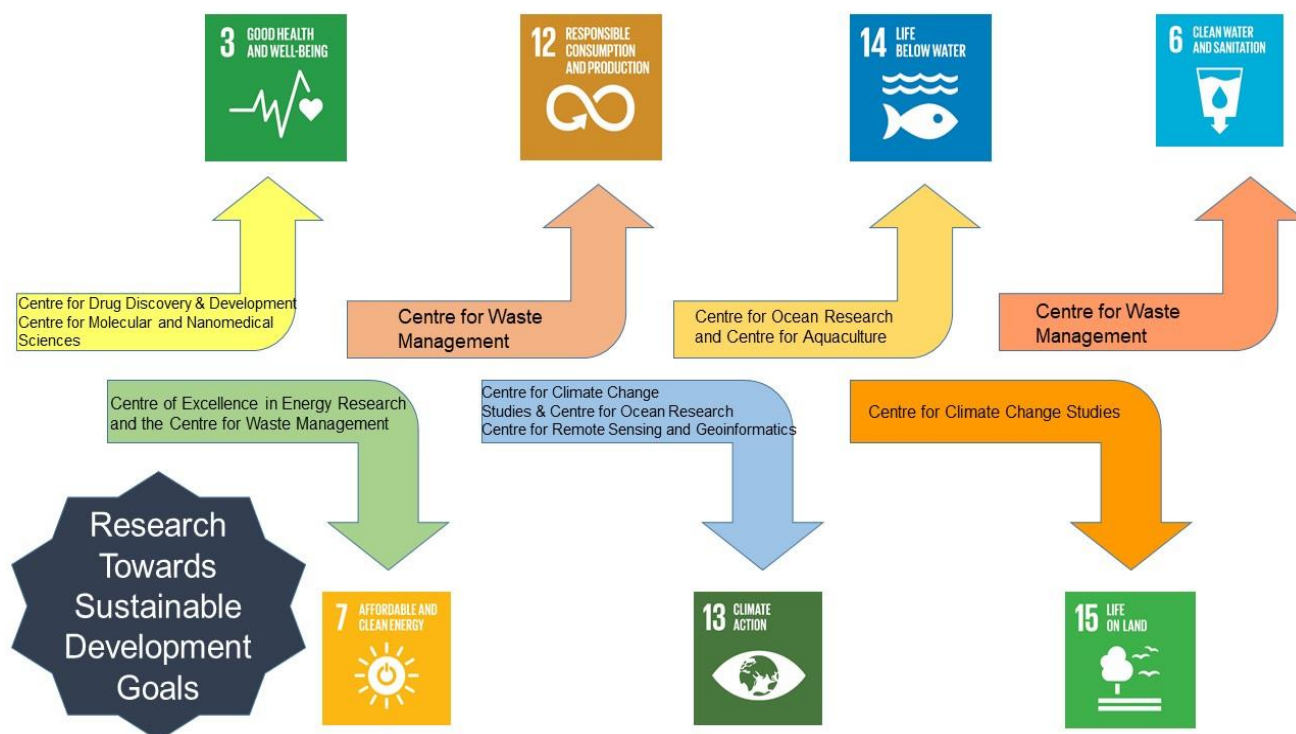
Our university is committed to advancing research that addresses pressing global challenges as outlined in the United Nations Sustainable Development Goals (SDGs). By aligning our research initiatives with these goals, we aim to create solutions that foster environmental resilience, social equity, and economic prosperity. Our research strategy is interdisciplinary, bringing together experts from various fields to work on complex issues that impact our local and global communities.

The Research Centres are focusing on the following SDGs:

- The Centre for Drug Discovery and Development and the Centre for Molecular and Nanomedical Sciences are working towards SDG-3 Good Health and Well-being. They are focusing on research to discover novel drugs to fight against life-threatening infectious diseases, including tuberculosis (TB), Acquired Immuno Deficiency syndrome (AIDS), Dengue and non-infectious diseases including, Alzheimer's disease, cancer and diabetes
- The Centre of Excellence for Energy Research and the Centre for Waste Management are involved in research projects and initiatives that address SDG 7- Affordable and Clean Energy. The MHRD-funded Center of Excellence in Energy Research is working to find sustainable solutions to the need for energy while minimising environmental impact and reducing carbon footprint

- The Centre for waste management is involved in finding alternative energy through biosources. It has come out with biodiesel from waste cooking oil and bio fertilizers from food waste. The Centre for Waste Management is working towards achieving SDG 12- Responsible Consumption and Production. The Centre carries out research in the area of waste management and promotes the 3 R concepts Reduce, Reuse and Recycle to minimize waste generation. This Centre organizes programmes to create awareness about the consequences of consuming more and more products without considering the concepts of repair, reuse and recycling
- The Centre for Climate Change Studies and the Centre for Ocean Research are involved in research addressing SDG 13- Climate Action. The Centre monitors marine organisms associated with various ecosystems such as coral reefs, seagrass meadows, intertidal zones and mangrove ecosystem in selected coastal sites to study the impact of global climate change on aquatic ecosystems
- The Centre for Remote Sensing and Geoinformatics is involved in research facilitating resilience and adaptive capacity to climate-related hazards, disaster preparedness against flood-related disasters, addressing SDG 13
- The Centre for Ocean Research and Centre for Aquaculture are working towards SDG 14- Life Below Water which addresses issues on conservation and sustainable use of oceans, seas and marine resources for sustainable development. Research in Mariculture, Marine Technology and Engineering, Marine Ecology, Marine Nanotechnology, Marine Biotechnology, and Marine Education are the focus areas of research of this Centre. The Centre is involved in research in areas including resilience and adaptive capacity to climate-related hazards, disaster preparedness against flood-related disasters through Remote Sensing and Geoinformatics
- The Centre for Climate Change Studies is working towards SDG 15 - Life on Land, which addresses issues related to the management of land and water resources and biodiversity conservation
- Marine Research Station- Apart from the Research Centres within the campus, Sathyabama Institute of Science and Technology has established a new Marine Research Station at Rameswaram to encourage research on conservation of marine ecosystems, marine ecology and climate change. The research station is helpful in research related to

coastal and marine biodiversity conservation and in understanding the impact of anthropogenic stressors on marine ecosystems



Publications and Patents

Our Institution's performance in terms of research publications is excellent. More publications are made in Scopus and Web of Science indexed journals and in high impact factor journals.

The Institution has around 15000 research publications in Scopus with an H-index of 109 and around 7000 research papers published in Web of Science with an H-index of 93. More than 2000 joint publications are made as the outcome of joint research with international research organisations and universities. Sathyabama has been granted with more than 350 patents. Many faculty members have written Books, Monographs and book chapters on various specialized subjects. Sathyabama is highly active in applied research with more than 500 patents filed, over

100 patents published, 115 patents including ten German patents were granted. 15 patents have been successfully converted into products this year.

TOP 2% MOST INFLUENTIAL SCIENTISTS

Our faculty members Dr. G. Murugadoss, Dr. S.Manigandan, Dr. Subbiah Ganesan and Dr. Arun Jayaseelan. are in the list of Top 2% Most Influential Scientists (Single Year) in 2024 in the Stanford University Survey.



Dr.G.Murugadoss, CNSNT



Dr. S.Manigandan, AERO



Dr.S. Ganesan, Mechanical



Dr.Arun Jayaseelan, CWM

F. SOCIETY AND COMMUNITY

Sustainable Community

Sathyabama Institute of Science and Technology is involved in community development initiatives that contribute positively to the development of sustainable community. It is playing a vital role in developing a sustainable community

- where the needs of everyone in the community are met and people feel safe, healthy and happy and the prosperity jointly enjoyed
- where the needs are met while ensuring that adequate resources are available for future generations.
- where the environment is appreciated, protected and damage to the environment is minimised
- where the employment opportunities are growing and working lives are more rewarding

It is working to achieve the following goals

- Clean air and water and nutritious food for everyone
- Protection of ecosystems and biological diversity
- Conservation of water, land, energy, reduction, reuse and recycling of waste.

To pursue these goals, the Institution:

- Use appropriate technology to minimize emissions and pollution
- Use of renewable energy
- Advocates green concepts like organic farming
- Minimize waste
- Avoid usage of plastics
- Advocate Plantation drive
- Advocates mass transportation
- Advocates the usage of bio-fuel and bio-fertilizers
- Promotes eco-conscious and eco-friendly initiatives

Participation in government Initiatives

The Faculty members and the Research Scientists of Sathyabama are actively participating in Unnat Bharath Abhiyan, a Government of India's initiative to develop villages by providing technical solutions to their problems. Sathyabama has adopted 5 villages and helped them in solving some of their issues by providing technical solutions, which are purely the outcomes of the research.

Environment Consciousness Initiatives of the Institution for promoting sustainable development

Carbon Neutrality

Only the University buses are allowed inside the campus, which is the only mass transit system. No private vehicles of staff or students are allowed inside the campus, and hence the pollution is almost nil. More trees are scheduled to be planted in future through eco club and a separate land space is allotted to encourage farming.

Reduction of carbon footprint

At Sathyabama, all the possible actions that produce greenhouse gases are identified and monitored. Efforts are taken to reduce the usage of fossil fuel. One notable initiative is usage of bio-fuel for running some of the Institution's buses. In fact, the bio-fuel is a research outcome of our Centre for Waste Management that adopts innovative technologies for developing cleaner and greener environment. Bio-fuel/bio-diesel is produced from the waste cooking oil generated from the institution's huge cooking facility. The vegetable waste generated after cooking is also effectively converted into bio fertilizer.

This Centre conducts several programmes to students and public to create awareness about waste segregation and management.

Water consumption

Students and staff of the Institution are instructed to use minimum water and avoid wastage of water. Water saving taps are fitted in rest rooms, wash basins and in student hostels.

Recycling of waste water

The Institution has a Sewage Treatment Plant that recycles the waste water. The contaminants are treated and reduced to safe level according to the standards of environment agency and removed. The purified water is used for flushing in toilets and watering the plants in the garden.

<https://www.sathyabama.ac.in/campus-life/stp-plant>

Transportation

Sathyabama advocates mass transportation to reduce carbon emissions and carbon foot print in the environment. The Institution has 200+ buses used for the commutation of staff and students to and from the Institution. It is compulsory for the students to use the Institution run buses. This environmental conscious initiative not only reduces the cost of transportation, but contributes to the reduction in air pollution to a very large extent.

<https://www.sathyabama.ac.in/campus-life/transport-facility>

Reduction of food waste

The Institution has very big cooking facility that prepares food for around 12000 people. Effective measures are taken to minimize and avoid food waste. One Unique feature of Sathyabama is, anyone visiting the Institution can have food at the Institution's mess free of cost. Moreover, as a philanthropic act, the Institution provides food to hundreds of children, old people and destitute women living in the nearby community. This is one small CSR effort of the Institution to feed the hungry mouths.

Plastic Reduction

Usage of plastic is minimized in the campus. Drinking water coolers are installed at accessible places for students and staff. Usage of polythene covers, plastic water bottles and plastic cups are avoided. Reusable plastics are responsibly used and recycled.

Supplier evaluation

Responsible consumption-behaviour is promoted in the Institution. An item will be purchased only after ruling out the possibility of repair and reuse. Purchasing will be approved from a

particular supplier, producer, manufacturer and distributor only if the green standards are satisfied by them.

Training for staff and students

Staff members and students of the Institution are given adequate training to learn and follow sustainable practices. All the initiatives of the Institution are successfully implemented with the active participation of the staff and students. Awareness programs, workshops, training programmes, seminars, rallies, and road shows are regularly organized to sensitize the students towards social issues.

The Community Development Club of the Institution is functioning with the objective of inculcating the spirit of service among students.

The Institution's ECO Club is dedicated to raising environmental awareness and protecting the environment. Students of this club regularly organise programmes relating to harmful activities that affect the environment and their effect on and prevention of the same.

Training programmes are provided to students to develop awareness on environmental issues and encourage responsible behaviour to adopt a sustainable way of life and create a sustainable community. The Institution has introduced Community Internships to students to increase students' social responsibility.

Food wastage

University is taking measurable initiatives towards reduction of the food and energy wastage in the campus. Planning and monitoring committee suggestions of the University are helping time and again for waste management; effective power supply management is one such example. Bio degradable and non-bio degradable wastes are segregated separately in the campus and bio degradable wastes are used as food for cattle and used as manure for the plants and trees. Non bio degradable wastes are disposed through the waste disposal adopted through Chennai Metropolitan garbage cleaning methods. Paperless University will be the game changer towards boosting up objective of the environmental friendly campus.

E SUSTAINABLE DEVELOPMENT GOALS

In 2015, 193 Nations agreed with the United Nation that they can change the world for the better by eradicating poverty and hunger, promoting good health and quality education, promoting gender equality, promoting access to clean water and clean energy, taking actions to combat climate change, protecting life below water and life on land, Promoting peaceful and inclusive societies for sustainable development and strengthening the means of implementation and development through global partnerships for sustainable development.

The Sustainable Development Goals (SDGs), established by the United Nations in 2015, provide a global framework to address critical challenges related to environmental sustainability, social equity, and economic growth. These 17 goals represent a comprehensive vision for achieving a more sustainable and resilient world by 2030, and they encompass diverse areas—from climate action, clean water, and biodiversity conservation to education, gender equality, and responsible consumption.



SATHYABAMA'S CONTRIBUTION TOWARDS SUSTAINABLE DEVELOPMENT GOALS

Sathyabama Institute of Science and Technology support the implementation of every SDG, through learning and teaching, research and organizational governance.

SDG 1- NO POVERTY



1.1 Admission of students belonging to lower income group with full scholarships

Free education plays a crucial role in addressing Sustainable Development Goal 1, which aims to end poverty in all its forms. By providing access to quality education without financial barriers, countries can empower individuals and communities to break the cycle of poverty. When education is free, children from low-income families are more likely to participate in higher education, opening up future economic opportunities for them and their families.

Education equips individuals with skills and knowledge, enabling them to secure better-paying jobs and break out of poverty. Free education increases the employability of marginalized groups, helping them to participate in the formal economy.

Sathyabama is dedicated to supporting students from lower-income backgrounds by providing full scholarships, an initiative that directly aligns with several Sustainable Development Goals including SDG 1 (No Poverty), SDG 2 (Zero Hunger), SDG 5 (Gender Equality), and SDG 10 (Reduced Inequalities). By ensuring that financial barriers do not stand in the way of higher education, we empower students to pursue their academic and career goals, creating opportunities that contribute to long-term economic stability and social equity.

Through these scholarships, we aim to alleviate the financial burden on students and their families, ensuring access to a quality education that enhances lifelong prospects. The initiative prioritizes equitable representation, ensuring that students from diverse backgrounds and genders have the support needed to excel, in turn fostering a campus culture that values inclusivity.

This program is a vital step toward addressing inequalities and promoting upward mobility. By nurturing a generation of educated, empowered individuals from all socioeconomic backgrounds, we contribute meaningfully to poverty reduction, hunger alleviation, gender equality, and social inclusion, furthering our commitment to sustainable development.

Every year around 500 students, from very poor background, are provided opportunity to study in various streams in our university including, Engineering, Arts, Science, Law and Management. NGO's like Agar am, Maryam, and Ability Foundation help us find the truly deserving students from very low economic background.

The Institution not only provides the fee waiver to these students, but also provides food and on campus accommodation free of cost, supporting their physical and mental well-being throughout their studies. Performance of the students receiving scholarships, are monitored and the students who need special attention are given the additional support. They are given all the support needed to develop them into qualified graduates with employability skills. These students earn their degree and get placed in prestigious organizations, taking their family and their society up as they grow.



1.2 Improving the livelihood of Marginalised community through village Adoption Initiative

Sathyabama's initiatives will always focus on finding solutions to the social, economic and environmental problems faced by the society. The Institution believes that villages are to be developed to develop the nation. Several activities are undertaken by the institution for livelihood enhancement from health, education and economic perspective.

Objective

- To improve the livelihood of the people of the beneficiary villages
- To help them generate income through alternate source
- To develop the selected villages through various measures
- To solve the day-to-day problems of the villages by providing technological solutions

Sathyabama has adopted 6 villages under Unnat Bharath Abhiyan, a Government of India's initiative and helping them in solving some of their day-to-day problems by providing technological solutions. Kumizhi, Venkatapuram, Aapur, Oteri, Thenmelpakkam and kalaampoondi are the Six villages benefiting under this initiative.

The academicians and researchers of the institution have trained the people of Aadhanur, Eachampoondi and Periakottagam villages, belonging to SC community on Biodiesel production, Biochar production from Agro waste, Accelerated Biocompost production from vegetable market waste, Flyash brick making, hydroponics an alternate farming technology, through the recently established STI hub in Cuddalore, Kattumannarkoil taluk

People belonging to ST community from Peenjamandhai, pallambattu and Jarthamkollai Panchayats of Jawadhu Hills are provided training on millet cultivation, medicinal plant cultivation, and bee farming through the Agri Innovation Hub. The villagers are trained on making value added products from the millets. They are also provided technological assistance for digital marketing. Skill development programmes on baking, tailoring, electrical work, laptop repair are conducted for the village youth. Computer literacy programmes are organised for the school children of these villages.

In addition, the institution gives educational support and employability to eligible candidates from the beneficiary villages. Frequent health camps and awareness Programmes are organized by the institution.

Impact

- The problems faced by the villages are solved through technological interventions.
- Increase in the income of farmers and women through the value addition of the agricultural produce- Through the training received on value added products from millets, the villagers belonging to Peenmandhai, Palambattua and jathankollai Panjayats have started earning by preparing and selling value added products
- Empowerment and social inclusion of underrepresented sections of the community
- Facilitate the achievement of SDGs

Start-ups Established

- “BiGlySo Pvt. Ltd” has been launched for the production of waste cooking oil derived biodiesel, Agro-waste derived enriched biochar, vegetable market waste based accelerated bio compost, industrial grade bio glycerine, waste cooking oil based detergent soaps, and bioglycerine based liquid soaps.
- “POOBAS Pvt. Ltd” has been established for sales of hydroponics based horticultural cultivation and consultation
- “Penteum Enterprises Pvt. Ltd functions with the objective to utilize fly ash for brick making.
- Poomanam was established by the Self help group women in these adopted villages where they make incense sticks from the flower waste.

1.3 Women Empowerment

Realising that teaching a person to fish is better than to feed him, Women empowerment bureau of the Institution conducts several training programmes and vocational courses for women of these villages to financially empower them. It also works with some of the NGOs for the upliftment of the downtrodden by providing them training in a vocation and facilitating income

generation. More than 1000 women are trained in mushroom cultivation, sea weed cultivation, ornamental fish culturing, solar lamp making, baking, tailoring, sanitary napkin making, house-keeping, beauty and wellness etc.



Training Programmes to women



Training on Baking



Training on Solar Lamp making

SDG 2 - ZERO HUNGER



Hunger and malnutrition impedes the human progress and pose a major challenge for achieving sustainable development. Research reveals nearly 800 million people live in extreme poverty across the world. To move towards a world where there is no poverty, the world community should jointly take efforts to improve the food system, practice sustainable agriculture, enhance socio-economic status of the people living in poverty, and develop rural economies.

Climate change is the main reason for the decline in food production and the consequent hunger and food security issues faced by the global community. In India food security is a major problem to be addressed in priority over other problems as India failed to achieve the Millennium Development Goal-1 with respect to eradication of poverty and hunger. The problems associated with Climate change, such as declining fertility of land, increasing water scarcity are to be addressed properly in order to increase the agriculture productivity. To end hunger and all forms of malnutrition and to ensure access to food to everyone, by 2030, requires the support of Educational Institutions. We believe higher educational Institutions like us can contribute to eradicate the problem of hunger and malnutrition through innovative research.

2.1 Research Contribution

At Sathyabama, research on effective agricultural practices, organic farming and pest control are undertaken. The Centre for climate change studies is involved in research addressing the issues like maintenance of ecosystems and avoiding degradation of eco-systems, adaptation to climate change, water scarcity, ground water resources and irrigation. Centre for Remote Sensing and Geoinformatics is also involved in research that addresses the change in rainfall pattern, anthropogenic disaster monitoring and so on.

2.2 Training Programmes

The Institution conduct

- Training programmes to students and outsiders in order to develop awareness on these issues and encourage responsible behaviour to combat human caused climate change and promote sustainable way of life.
- Training programmes to farmers on sustainable and resilient agricultural practices.
- Awareness programmes on food wastage and ways to avoid food wastage.

2.3 Outreach Programmes

Sathyabama has always had a social consciousness about the society we are in. The needy and poor are always helped, and many projects to empower them with employment has always been the mission. The students also do a lot of outreach activities in the schools and villages that we have adopted.

The Institution sponsors food to old age homes, homes for destitute women and Children's home in the nearby community as a small step towards eradication of hunger. Sathyabama's CSR arm has arrangement to donate food to the following orphanages and Homes. Christmas is a season of celebration and Sathyabama never fails to extend its arm to the orphanages and Home for the aged, where special food and delicacies are served. Christmas Baskets are sent out in the hope to bring cheer and happiness.

2.4 Food Distribution during Natural Disasters

Other than giving food to orphanages and Homes, Sathyabama has never failed to rise to any occasion, during natural calamities in Chennai. The huge kitchen in Sathyabama that feeds more than 5000 people every day, three times a day, effortlessly starts cooking for the masses during any natural calamity. The students also volunteer and their active participation has always been Sathyabama's strength. The food that is cooked and packed by the efficient kitchen gets distributed effortlessly by the students.

2.5 Women Empowerment and Eradication of Hunger

Empowering women will alleviate poverty and eradicate hunger. The women in the rural areas have been taught many skills that could help them make a living and have a good quality of life.



Training on Tailoring



Training on Beauty and wellness



Training on seaweed cultivation

Initiatives on campus to avoid food waste



Zero food waste campaign

SDG 3 – GOOD HEALTH AND WELL-BEING



Sathyabama Institute of Science and Technology towards SDG3

Sathyabama Institute of Science and Technology is one of the premier institutions that constantly gives equal importance to both academics and research, with a focus on bringing more benefits to society by making technologies easier and more affordable. It offers under-graduation and post-graduation professional courses in Dental sciences, Nursing, Physiotherapy, Biotechnology, Microbiology, Medical Lab Technology, Clinical and Nutrition, and Dietetics and Psychology that are related to health. These departments were established to bring in trained professionals who will support the healthcare sector, improving its capabilities and benefit society.

Sathyabama Institute of Science and Technology encourages various outreach activities through these Departments, keeping in mind the health and well-being of the community. Such activities aim to reach a larger mass of the population, create awareness among them, and change their perceptions of hygiene and health. This will indirectly increase the quality of life. As the institute has several departments, they carry out activities such as commemorating the days of importance every year, which involves national and international speakers who are world-renowned doctors and clinicians, scientists from top institutes and industries, and spending some time with the young researchers and talking about the current challenges.

3.1 Research and Publication

The Institute also supports various multi-disciplinary projects, which bring clinicians and scientists together on the same platform to sit and discuss several challenging aspects. This built a connection between the top hospitals in Chennai and Tamil Nadu, such as Deepam Hospitals, Medway Hospital, and Kauvery Hospitals, to collaborate with the Sathyabama Institute of Science and Technology.

There is a separate research and development wing in Sathyabama that focuses mainly on research activities. The Centre for Drug Discovery and Development is one of the main centres that conduct multiple national and international conferences, outreach activities, training programmes, and workshops. This is done in collaboration with other departments such as the School of Pharmacy, the School of Dental Sciences, Allied Health Science, and the School of Bio and Chemical Sciences.

The Centre for Drug Discovery and Development aligns its focus on the major challenging concerns to overcome infectious and non-infectious diseases. To understand disease biology, disease progression, epidemiology, drug discovery, and diagnostic development. The centre has received funding from the Indian Council of Medical Research (ICMR) for studying the different mutations of the envelope and membrane proteins of SARS-CoV-2 and its effect on forming VLPs. It has received funding from the Ministry of Education (MoE SPARC) to identify biomarkers for the rapid diagnosis of pulmonary tuberculosis by imaging technique. Additionally, CDDD received major funding from the Ministry of Earth Science (MoES) to explore the virobiome of the Bay of Bengal - Deep sea.

Sathyabama SEED Innovation Fund

Sathyabama Institute of Science and Technology values young researchers and scientists who bring about novel ideas and products that will benefit the health and well-being of society. One such initiative by the institute is the SEED Innovation Fund, which provides funding to students and staff to carry out multidisciplinary.

One of the scientists from the Centre for Drug Discovery and Development received the SEED Grant for the formulation of a polyherbal capsule for reducing the viral load of respiratory disease (COVID-19). The capsule was formulated by using metabolites extracted from plants.

Another SEED innovation grant was given to one of the scientists from the Biomedical Department for developing a smart digital pain level detector.

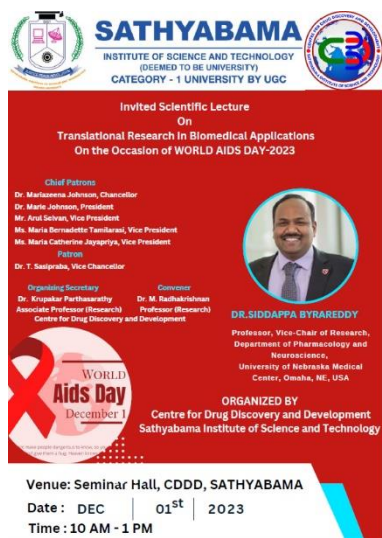
3.2 Days of Importance Related to Health and Well-Being Commemorated at Sathyabama

It is very essential in today's scenario to inculcate in young minds the seriousness of an ongoing disease or pandemic. Therefore, Sathyabama initiates every centre, school, or department to commemorate the days of importance, which will bring awareness among students, teachers, and the general public about the disease. The days of importance conducted at the Centre for Drug Discovery include World AIDS Day, World TB Day, World Cancer Day, and World Organ Donation Day.

3.2.1 World AIDS Day

The theme for World AIDS Day 2023 was commemorated on 1st December 2023 with a theme of translational research in Biomedical Sciences. The focal point of this programme is to raise awareness among the younger researchers and was conducted with the UN's SDG-3 goals in mind, which aim for fair access to healthcare services for all men and women in order to attain universal health coverage.

Every year at Sathyabama, we commemorate this day and inculcate awareness among our young and blooming doctors, scientists, and nurses from several departments. The Centre for Drug Discovery and Development plays a key role as we contribute to finding novel drugs and therapeutic medicines for the cure of several pathogenic infections. Our major focus is on HIV, HPV, dengue, TB, and SARS-CoV-2. Dr. Siddappa Byrareddy, Professor and Vice-Chair of the Research Department of Pharmacology and Neuroscience, University of Nebraska Medical Centre, Omaha, NE, USA, delivered a special lecture on "HIV/AIDS".



3.2.2 International Day of Girl Child

SIST provides sexual and reproductive health education, especially to school-going girl children to create awareness. For example, The Centre for Nanoscience and Nanotechnology, Sathyabama Institute of Science and Technology organized an “Outreach Program on the occasion of International Day of Girl Child” on October 17th, 2023, in which 225 girl students from VI to IX standard of Government Higher Secondary School, Pudhupattinam, Kalpakkam, participated. Dr. T. Dharini, Dr. Sudha Uthaman, Dr. Gopika G, Assistant Professors and convenor of the program from Sathyabama Institute of Science and Technology, Chennai with the Speaker Dr. Parveen Banu. R, HOD, Psychology Department, Sathyabama Institute of Science and Technology, Chennai and with Dr. R. Raja, Headmaster, Government Higher Secondary School,

Pudhupattinam inaugurated the event. Dr. Sudha Uthaman addressed the gathering and Dr. Parveen Banu felicitated Dr. R. Raja, the school HM. Further, Dr. Parveen Banu delivered an awareness talk on Child Protection Legislation for children that includes four main laws on (I) The Juvenile Justice Act, (II) The Prohibition of Child Marriage Act, (III) The Protection of Child from Sexual Offences Act and (IV) The Child Labour Act. Also, she discussed on several real-life scenarios and the righteous moves that could be made. Further, she discussed on the importance of personal hygiene and health care. Towards the end of the program, the student participants were given refreshments and gifts.



3.2.3 World Cancer Day

Sathyabama Dental College and Hospital organized and conducted an awareness rally on 16 Feb 2023 to commemorate World Cancer day. The rally started at the primary health center Sholingnallur (Adopted by Sathyabama Dental College), and ended at J-10 Chemmenchery police station, OMR. 41 Dental students and 10 Doctors attended the Cancer Awareness Rally.



3.2.4 World TB Day and International Immunology Day

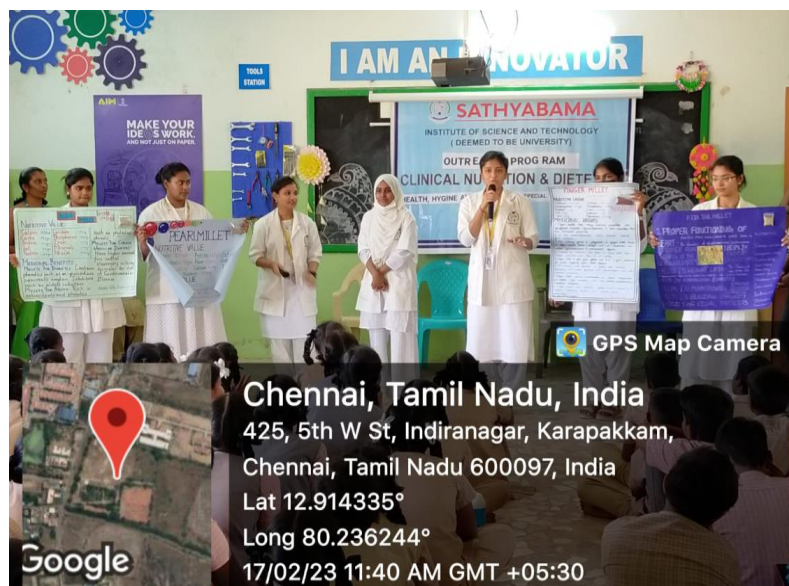
The Centre for Drug Discovery and Development commemorated World TB Day and International Day of Immunology during the days International Conference on “Translational Research in Drug Discovery and Development for Sustainable Healthcare” on 3rd-5th May 2023 as a part of celebrating its Decennial year. The event commemorates World TB Day. Totally 16 eminent speakers from both International and National institutes delivered their eminent lectures at the event. Totally 150 participants attended the program from various institutions and presented their research work by both oral and poster presentations. Dr. Kini Manjuntha, National University of Singapore, Dr. R. Kanagaraj, University of Westminster, UK, Dr. Syed Dastager,

CSIR-NCL, Pune, Dr. Shandil, FNDR, Bengaluru, Dr. Ramani Devi, Ramakrishnan Medical Centre, Trichy and Dr. Sujatha Sunil, ICGB, New Delhi, Dr.Sreejalakshmi, ISSR, Trivandrum, Dr.Shakila Harshavardhan, Madurai Kamaraj University, Dr.Neelakandan K, InSTEM, Bengaluru, Dr.Sajeevan, Cochin University of Science &Technology, Kerala, Dr. Mukesh Double, IITM, Dr.Dipanker Nandi, IISc., Bengaluru, Dr. Devasena .T, Anna University, Dr.Supraja, MMM Hospital and Dr. HariBalaji, Vivagen Dx Labs has delivered the expert talk on Translational research in Drug discovery for sustainable health care.

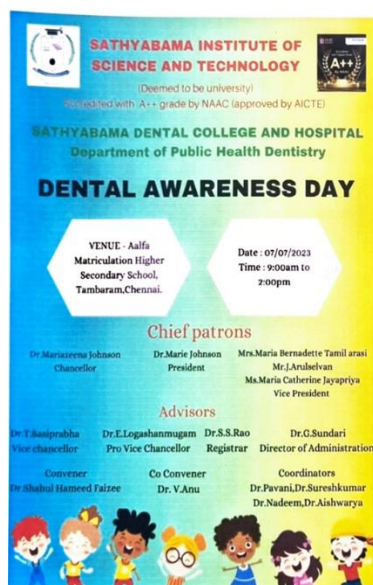


3.2.5 International Year of Millets 2023

Commemorating the International Year of Millets 2023, the Department of Clinical Nutrition & Dietetics in association with the Department of Biotechnology jointly organized an Outreach Program “Health, Hygiene, and Nutrition - A Special focus on Millets” on 17th February 2023 at Government High School, Karapakkam. Faculty and students of both departments interacted with the school students around 300 from class 6th to class 9th. It was an awareness program along with activities and edutainment insisting on the significance of health, hygiene, and nutrition, and the multiple benefits of millets. The school students responded enthusiastically. The program provided a platform to inculcate the practice of using millets implementing the spirit of social responsibility among the budding generation.



Sathyabama Dental College conducted Dental Awareness Day-2023 among the Aalfa Matriculation Hr, Sec. School children on 07.07.2023 and conducted dental screening among school children.



3.2.6 World Mental Health Day

Through the Department of Psychology, Sathyabama Institute of Science and Technology provides continual mental health support to its students, teaching faculties, and non-teaching staff. In September 2022, Programmes for suicide prevention were conducted in a bidirectional manner

for the benefit of students by the experts and by the students themselves in the form of awareness rallies. World Mental Health Day was commemorated on 17th October 2022 followed by a mental health camp organized on 19.10.2022. The Psychology department of SIST reached our staff to assess their mental health and provide necessary support.



3.2.7 World Suicide Prevention Day

A special awareness rally was organized to commemorate World Suicide Prevention Day 2022 on 6th September 2022 and on 10th September 2022 by the Department of Psychology. More than 150 students and staff participated in the rally shedding rays of hope among the public.



3.2.8 World Breastfeeding Week

The School of Nursing organized a programme under the theme of World Breastfeeding Week. This was done to bring the focus on young lactating mothers and women who are pregnant. They were educated about the necessity of breastfeeding which will have a good impact on their health and wellbeing.



3.2.9 International Day of People with Disabilities

This day is celebrated every year on December 3rd, to provide their rights and well-being - A person with disabilities at every level of society and development.

To commemorate this day, the Department of Public Health Dentistry, Sathyabama Dental College, conducted a paper bag workshop for the students of Montfort Community Development Society on December 2nd, 2022. There were around 40 students gathered there along with the staff of MCDS and Mrs Vijayalakshmi, the in-charge head, gave an introduction speech. Dr. Nadeem was called upon to give a speech to the students. Dr. Nadeem gave a speech based on the theme of the year 2022. “Transformative solution for inclusive development.” The interns were divided ourselves into 2 groups, 4 members each. One group interacted with the students and the other group decorated the room.



3.3 General Hospital and Dental Hospital

The Institution has its own General Hospital and Dental Hospital that offers medical treatment to the nearby community at a very reasonable rate. Apart from the hospitals it also provides medical health professional courses in Dental, Pharmacy, and Nursing. The world has made significant progress but still faces significant challenges to achieving the 2030 targets for Good Health and well-being. Women around the world lack access to sexual and reproductive health care, millions suffer from malnutrition, HIV/AIDS continues to afflict thousands daily, billions of people have no access to life-saving medicine, and we continue to create more waste that will impact the health of all. Poor health impacts every dimension of human life: lowers access to education and economic opportunities and increases poverty. A cause of poverty, health is also impacted by poverty and Goal 3 is strongly connected to SDGs, such as Goal 1: No Poverty, Goal 2: Zero Hunger, Goal 5: Gender Equality, Goal 6: Clean Water & Sanitation, Goal 13: Climate Action, and Goal 16: Peace, Justice & Strong Institutions. Sustainable Development Goal 3 seeks to ensure health and well-being for all, at every stage of life. The Goal addresses all major health priorities, including reproductive, maternal and child health; communicable, non-communicable and environmental diseases; universal health coverage; and access to all safe, effective, quality and affordable medicines and vaccines. It also calls for more research and development, increased health financing, and strengthened capacity of all countries in health risk reduction and management. Studying disease epidemiology, and drug discovery by bio-prospecting natural resources from screening to identify potential anti-infective leads. Understanding the disease burden and better understanding of the disease pathogenesis Monitoring factors that affect human health and well-being, like air quality and traffic. Supporting health promotion and disease prevention, through the use of wearable monitoring devices. Enabling remote/rural healthcare and

ensuring continuous support until the disease is completely eradicated. Overall, we can contribute to the prevention of people falling below the poverty line and help target specific support to those in need.

3.4 Outreach Activities

A social outreach Program was launched on 7th July 2023 by B.E. Computer Science and Engineering students, along with faculty members from the School of Computing, Department of Computer Science and Engineering, at the Government High School in Manimangalam, Kanchipuram District, Chennai. The initiative aimed to inspire and motivate government school students while providing an opportunity for meaningful interaction between the faculty, students, and teachers of the school. A total of 373 students benefited from the program. In addition to career awareness sessions, the students participated in academic quizzes and engaging brain games. Through the collaborative efforts of Satyabhama's faculty and students, the program brought about a positive impact on the lives of the government school students, enriching the educational experience.



The NSS Unit of Sathyabama Institute of Science and Technology conducted the outreach activity on Save the soil on 24.08.2023 at Kumizhi Panchayat, Near Guduvanchery Chennai. We have done a village cleaning drive and conducted a social awareness rally on Essentials of clean Environment Village public and school children. It is an Initiative to protect the soil for the wellbeing of the upcoming generation. Around 60 NSS volunteers have actively participated to complete this event successfully.



Sathyabama Ocean Research Field Facility, Centre for Ocean Research in association with the Department of Biotechnology and MoES - Earth Science and Technology Cell had jointly organized an “Outreach Program Effective Marine Conservation in India” on 04.09.2023. Dr. B. Sheela Rani, Director (Research), SISTDU inaugurated and addressed the gathering. A total of 35 participants from M.Sc., Zoology students from Guru Nanak College, Chennai, Tamil Nadu participated and learned the effective marine conservation in India which was crucial to safeguarding the country's rich coastal and marine ecosystems.



The YRC and NSS unit of Sathyabama Institute of Science and Technology, Conducted the Blood Donation Camp on 01.09.2023 as a part of our outreach activities in association with Voluntary Health Services (VHS) Chennai, Tamil Nadu State Blood Transfusion Council, Chennai and Rotary club of Chennai Upscale. This is an Initiative of our students to save life through donating blood. Around 500 students participated out of which 365 Volunteers donated blood based on the hemoglobin test.



The NSS Unit of Sathyabama Institute of Science and Technology has participated in Shramdaan for Swachhata in collaboration with the Central Bureau of Communication and Regional Directorate of NSS as a part of our outreach activities on 01.10.2023 at Akkarai Beach, Injambakkam Village, East Coast Road, Chennai. We have done a Beach cleaning drive and conducted a social awareness rally on Essentials of Garbage Free India to the public. It is an Initiative to protect the coastal zone for the well-being of the upcoming generation. Around 40 volunteers have actively participated to complete this event successfully.



The Centre for Ocean Research at Sathyabama Research Park organized a DST-SERB-sponsored Scientific Social Responsibility (SSR) program on "Outreach towards Seagrass Ecosystem Services, Conservation, and Restoration" for the Olaikuda Fisherman Community, held at the Community Hall in Rameswaram on 26th August 2023. The program aimed to raise awareness about the importance of seagrass ecosystems along Tamil Nadu's coasts and encourage their conservation and sustainable management. Over 50 fishermen and women participated, with key speakers including Dr. D. Inbakandan, Dr. B. Sheela Rani, and experts from CMFRI and the Fisheries Department. Discussions focused on the role of seagrass in supporting fisheries and mitigating climate change. The event concluded with insights on the Halophyte Micropropagation facility at Sathyabama University for seagrass restoration efforts in Palk Bay.



The NSS Unit of Sathyabama Institute of Science and Technology in association with the Chennai Volunteers (NGO) and Madras Round Table -1 Organized the 'Chennai Run 2023' Marathon on 26.11.2023 at Besant Nagar, Chennai. This is an Initiative to support Mentally Challenged People and promote the significance of physical wellness to society. Around 65 NSS Volunteers from our Institution have actively participated and made the event successful.



3.5 National and International Conferences

The Centre for Drug Discovery and Development had organized the International Conference on “Recent Advances in Agricultural Microbiology for Sustainability” on 27th March, 2023 at the International Research Centre Auditorium. Dr. Kasem Soyotong, King Mongkut’s Institute of Technology Ladkrabang (KMITL) – Research Institute of Modern Organic Agriculture, Thailand and Dr. S. Lalitha, Assistant Professor, Periyar University, Tamil Nadu and Dr. K. Sakthivel, Scientist, ICAR-Indian Institute of Oilseed Research Hyderabad has delivered the expert talks.

On this occasion, signing of Memorandum of Understanding (MOU) was also held between Sathyabama Institute of Science and Technology, Chennai and KMITL - Research Institute of Modern Organic Agriculture, Thailand. Prof. Dr. T. Sasipraba, Vice Chancellor, and Dr. Kasem Soyotong, Director have Signed the MOU. The MOU signing is initiated by the Centre for Drug Discovery and Development for Special Research Projects, Students Training Programs, Industry Internships, Placement and R&D Activities.



The 3rd International Conference on "Waste, Energy, Environment" (ICWEE-2023) was held from July 5-7, 2023, organized by the Centre for Waste Management, Centre of Excellence for

Energy Research, and the Department of Chemical Engineering at Sathyabama Institute of Science and Technology. Inaugurated by Vice President Shri. Arul Selvam J, with distinguished guests including Dr. Tjandra Sitiadi and Dr. Kannan Pakshirajan, the event emphasized sustainable solutions for environmental issues. Featuring lectures from prominent experts and attracting 170 participants from 30 institutions, the conference included seven oral sessions, a poster session, and awarded prizes for outstanding presentations.



The Centre for Drug Discovery and Development organized a three-day International Conference on “Translational Research in Drug Discovery and Development for Sustainable Healthcare” from May 3-5, 2023, in celebration of its Decennial year. The event honored World TB Day and the International Day of Immunology, featuring 16 distinguished speakers from leading national and international institutions. Notable speakers included Dr. Kini Manjuntha (National University of Singapore), Dr. R. Kanagaraj (University of Westminster, UK), Dr. Syed Dastager (CSIR-NCL, Pune), and others who presented on advancements in translational research for sustainable healthcare. Approximately 150 participants from various institutions attended, engaging in oral and poster presentations of their research.



The Centre for Nanoscience and Nanotechnology at Sathyabama Institute of Science and Technology hosted the International Conference on Recent Innovations in Biotechnology (ICRIB-2023) from September 21-23, supported by CSIR and held in a hybrid format. Over 150 participants attended, engaging with expert speakers including Dr. S. Elumalai (University of Madras), Dr. B. Madhan (CSIR-CLRI), Dr. Antony S (MAHSA University, Malaysia), and other renowned professionals from institutions in India, Malaysia, the USA, and Thailand. The conference provided an engaging platform, and cash awards were given to outstanding presenters.



The Centre for Ocean Research at Sathyabama Institute of Science and Technology organized a DST-SERB-sponsored National Conference on “Integrative-Omics in Ocean Climate Change” from February 9-10, 2023. Aimed at fostering collaboration and knowledge exchange among researchers and entrepreneurs in ocean conservation, the event featured Dr. E. Vivekanandan, National Consultant on Fisheries and Climate Change, and Dr. R. Kirubakaran, Consultant for MoES-Deep Ocean Mission, as chief guests. Over 50 participants from Tamil Nadu universities and colleges presented their research. The conference concluded with a valedictory address by Prof. Dr. P. Anantharaman from Annamalai University.



A one-day National level conference on ‘Smart Materials and Molecular Nanomedicines-(SMMN 2022)’ was organized jointly by the ‘Centre for Nanoscience and Nanotechnology’ and ‘The Centre for Molecular and Nanomedical Sciences’, International Research Centre at the Presentation Hall on October, 20th 2022. During the program, the resource person(s) have showcased and demonstrated their expertise over the implications of different smart materials, more specifically the nano-materials in different biomedical and dentistry applications.



3.6 Memorandum of Understanding (MOUs)

Memorandum of Understanding (MOU) between Sathyabama Institute of Science and Technology, Chennai, and the Copperbelt University, Zambia was signed on 03/03/2023 (Friday) at 2.30 PM. The MOU is initiated by the Scientists of the Centre for Drug Discovery and Development for joint research projects, joint training programs and to conduct joint conferences.



BridgeLabs, a live Lab environment nurturing Engineers through its Experiential Fellowship Program has signed an MOU with our Institute. BridgeLabs will serve as a platform for students to transform into industry-ready hard-core developers by forming a Coding Club and provide training through their Custom Fellowship program on the latest technologies which will suit the recruiters.



Dr Palash from St. Louis University, USA had visited our campus on 14th June 2022 to sign the Memorandum of Understanding between Sathyabama and St. Louis University. This MoU will facilitate collaborative and Internationalization activities between the two Institutions.



The Department of Mechanical Engineering organized a Memorandum of Understanding (MoU) between Sathyabama Institute of Science and Technology, Chennai and M/s.Kriatec Services Private Limited, Chennai on 09/11/2022 (Wednesday). Dr.T.Sasiprabha, Vice Chancellor of Sathyabama Institute of Science and Technology, Chennai and Dr.Ajitha Prabu, Director, M/s. Kriatec Services Private Limited, Chennai exchanged the MOU Documents for the benefit of Students and faculty.



The Business Head - Institute of Industrial Design Salem, Mr.Ragunathan R, and Dr.T.Sasiprabha, Vice-Chancellor of Sathyabama Institute of Science and Technology signed a Memorandum of Understanding (MoU). This MoU was initiated by the Department of

Automobile Engineering for the benefit of students belonging to the School of Mechanical Engineering, who shall be given state of art in conceptual design, styling & New product development, training, industry certification, and placement assistance



Sathyabama has signed MOU with ETS India on 18th October, 2022, to conduct GRE/TOEFL Mock tests and master classes for students who wish to pursue their higher education abroad. As a part of this MoU, GRE & TOEFL Corner Lab will be established at the campus by ETS India for providing access to students to prepare for the test.

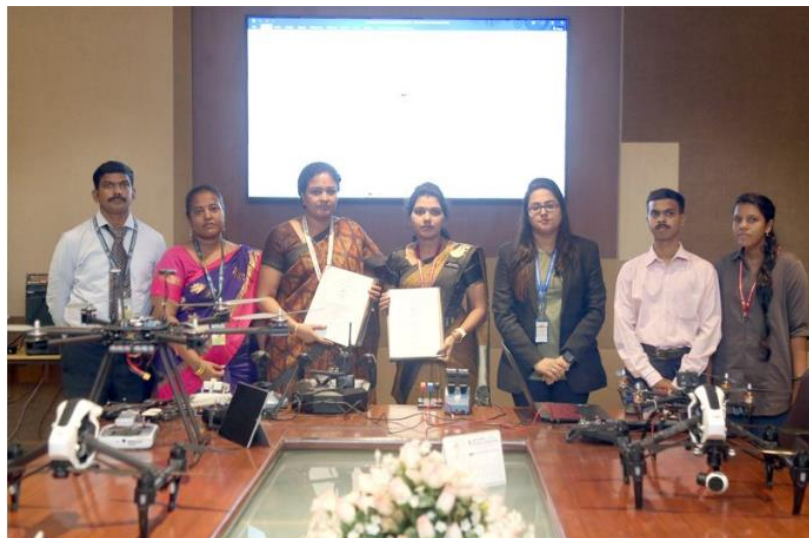


On 3rd November 2022 in the university campus, the Vice Chancellor of the Sathyabama Institute of Science and Technology, Dr.T.Sasipraba and W.G.Prasanna Kumar, Chairman of MGNCRE,

signed the MoU agreeing to collaborate and work on the research activities in rural entrepreneurship.



The Memorandum of Understanding (MoU) between Jet Aerospace Aviation Research Center and the Department of Aeronautical Engineering, Sathyabama Institute of Science and Technology, Chennai was signed on 3rd August 2022. This MoU focuses on the "Center of Excellence" in Skill Development Courses, Value Added courses, Credit courses, Research Activities and Guidance, Drone technology,



On the occasion of Innovation Day 2022 (15th October), Sathyabama Institute of Science and Technology, Chennai has signed MOU with Neelithal Aqua Farms, Metupalayam to develop innovative technologies for the freshwater and the marine aquaponics. Scientists from Centre for the Climate Change Studies (Marine Biology Lab) will be implementing the activities stated in the MOU.



Memorandum of Understanding (MoU) was exchanged between Centre for Laboratory Animal Technology & Research, Sathyabama Institute of Science and Technology and LifeSenz Cancer Research Labs Pvt Ltd.



Sathyabama Institute of Science and Technology has signed an MoU with Taylor's University, Malaysia on 18th August 2022. This MoU will facilitate Academic and Research Collaboration between the two institutions.



Memorandum of Understanding (MoU) between Dautya Aerospace Pvt Ltd (Goa) and Sathyabama Institute of Science and Technology, Chennai was signed on 26th July 2022. This MoU focuses on collaborative research on Non-destructive testing, Aircraft maintenance, software training, composite repair, Manufacturing Technology, Airport security and safety, Drone technology, Design and Analysis tools, 3D printing technology.



A memorandum of Understanding (MOU) between the Sathyabama Institute of Science and Technology, Chennai, and the Central Institute of Brackishwater Aquaculture (CIBA), ICAR, Chennai was signed on the occasion.



Sathyabama Institute of Science and Technology collaborates with NGOs to function in major aspects of SDG through a proper memorandum of understanding. The following are the MoUs between SIST and NGOs about healthcare services offered to underprivileged and mentally retarded children.



SATHYABAMA

DENTAL COLLEGE AND HOSPITAL

(DEEMED TO BE UNIVERSITY)

Accredited with "A" grade by NAAC | 12B Status by UGC | Approved by AICTE

www.sathyabama.ac.in

MEMORANDUM OF UNDERSTANDING

1. The agreement is signed between MONFORT COMMUNITY DEVELOPMENT SOCIETY No.3333 and 3334, Community based Rehabilitation Centre (for special child), TNUHDS, Semmancheri hereinafter called first party and the Institution hereinafter called second party on 11th Feb,2023. The second party agrees to provide the following services to Monfort Community Development Society, Semmancheri with the following terms and conditions.

2. Whereas Sathyabama Dental College and Hospital, Jeppiaar Nagar, Chennai - 600 119, agree to offer free service and vision that envisage for the children in the Monfort Community Development Society, Semmancheri for a period of 3 years and also requested to display their board in the premises of Monfort Community Development Society, Semmancheri.

THIS INDENTURE WITNESS:-

1. In pursuance of the above Monfort Community Development Society, Semmancheri, has been considered and the Sathyabama Dental College and Hospital, Jeppiaar Nagar, Chennai -119, has agreed to provide free dental service like pulpectomy, stainless steel crowns, extractions and restorations to the under privileged children suffering from Dental Problem in Monfort Community Development Society, Semmancheri by providing dental services once in a week.

2. Rev. Brother Joseph Louis, hereby permits the Sathyabama Dental College and Hospital , Jeppiaar Nagar, Chennai 600 119, to offer free dental treatment to the under privileged children who are suffering from dental problem for the period of 3 years.

3. In the event of inability to maintain the required service, the incharge of Monfort Community Development Society, Semmancheri may terminate the MOU after community reasons to the second party.

In witness there of, the parties here into subscribe their respective signatures on this 11th Feb, 2023

DEAN

Sathyabama University

Semmancheri

REV. BROTHER JOSEPH LOUIS

Monfort Community Development Society

Semmancheri



SATHYABAMA

DENTAL COLLEGE AND HOSPITAL

(DEEMED TO BE UNIVERSITY)

Accredited with "A" grade by NAAC | 12B Sttus by UGC | Approved by AICTE

www.sathyabama.ac.in

MEMORANDUM OF UNDERSTANDING

1. The agreement is signed between ANNAI FATHIMA CHILD WELFARE CENTRE, No:48, Old Mahabalipuram Road, Karapakkam, Chennai 600096 hereinafter called first party and the Sathyabama Dental College and Hospital hereinafter called second party on 28th Jan, 2023. The second party agrees to provide the following services to Annai Fathima Child Welfare Centre, Karapakkam with the following terms and conditions.

2. Sathyabama Dental College and Hospital, Jeppiaar Nagar, Chennai - 600 119, agree to offer free dental service for the children in Annai Fathima Child Welfare Centre, Karapakkam for a period of 3 years.

THIS INDENTURE WITNESS: -

1. Mrs Rani Krishnan founder and Secretary, hereby permits the Sathyabama Dental College and Hospital, Jeppiaar Nagar, Chennai 600 119, to offer free dental treatment to the under privileged children who are suffering from dental problems.

2. Sathyabama Dental College and Hospital, Jeppiaar Nagar, Chennai -119, will provide free dental services like pulpectomy, stainless steel crowns, extractions, scaling and restorations to the under privileged children suffering from dental problems by providing dental services once in a week after obtaining caretaker consent.

3. Sathyabama Dental College and Hospital, Jeppiaar Nagar, Chennai -119, agree to provide transport for both picking and dropping children to and from Annai Fathima Child Welfare Centre, Karapakkam.

4. In the event of inability to maintain the required service, the incharge of Annai Fathima Child Welfare Centre Karapakkam may terminate the MOU due to community reasons to the second party.

5. In the event of inability to maintain the required service, the incharge of Sathyabama Dental College and Hospital, Jeppiaar Nagar, Chennai - 600 119 may terminate the MOU due to community reasons to the first party.

In witness thereof, the parties hereinto subscribe their respective signatures on this 28th Jan, 2023


DEAN

Sathyabama Dental College and Hospital

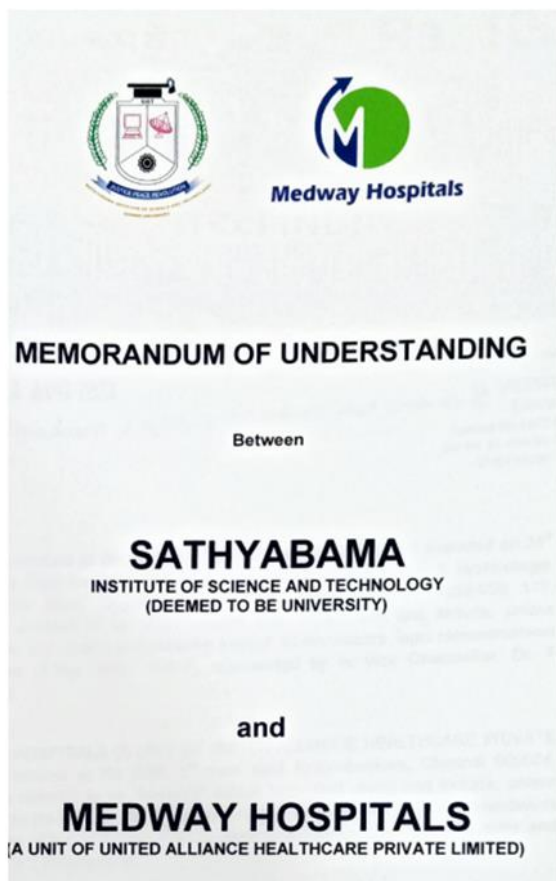
Semmencheri


Mrs. RANI KRISHNAN

Annai Fathima Child Welfare Centre,

Karapakkam

944444874



Medway Hospitals and Sathyabama Institute of Science and Technology signed a Memorandum of Understanding (MOU) on 24.08.2023 to jointly explore research in respiratory diseases. The MOU was signed by Dr. T Palaniappan, Chairman, Founder and Director of Medway Hospitals and Dr. T. Sasipraba, Vice-Chancellor of Sathyabama Institute of Science and Technology. The MoU covers a wide range of research areas, including genetics, lung organoids, sensor-based diagnostics, development of therapeutics, pulmonary rehabilitation, ayurvedic treatments in respiratory diseases, and microbial films in lung diseases. The two institutions will work together to share expertise, resources, and facilities to conduct cutting-edge research in these areas. It will

help to accelerate research in respiratory diseases and improve the diagnosis and treatment of these conditions.

As an extension of the MoU, Sathyabama Institute of Science and Technology organized DST NCSTC YASH (Year of Awareness on Science and Health). Dr Supraja K, Pulmonologist - emphasized the awareness of COPD in alignment with the SDG related to respiratory health.

In continuation of our MoU with Medway Hospital, we have printed the model Lung for COPD using the CT lung scan with our 3D printers at the Makerspace Lab, Sathyabama Centre for Advanced Studies. Congratulations to our 3D printing team of Sathyabama.



MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding (MoU) is made on the 20th day of December, 2017 in Chennai between **SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY – (Deemed to be University)** with its registered place at Jeppiaar Nagar, Rajiv Gandhi Salai, Chennai - 600119.

AND

National Institute for Empowerment of Persons with Multiple Disabilities (DIVAGNJAN) (NIEPMD), situated at East Coast Road, Muttukadu, Kovalam Post, Chennai-603112 (hereinafter referred to as NIEPMD)

X 







Dr. Mariazeena Johnson

Pro -Chancellor

**Sathyabama Institute of Science & Technology
(Deemed to be University)**

Chennai -119

Director

NIEPMD

Chennai-603112

(Dr. Himangshu Das)

DIRECTOR

**NATIONAL INSTITUTE FOR EMPOWERMENT OF PERSONS
WITH MULTIPLE DISABILITIES (NIEPMD)**

**(Dept. of Empowerment of Persons with Multiple Disabilities, MSJ & E, Govt. of India)
E.C.R., Muttukadu, Kovalam Post, Chennai, Tamil Nadu-603 112.**



MOU signed between Sathyabama and the National Institute for Empowerment of persons with multiple disabilities (NIEPMD) to have an exchange of academic, research, and institutional

facilities for the betterment of persons with multiple disabilities was functional during the mentioned.

Memorandum of Understanding (MOU) between Sathyabama Institute of Science and Technology, Chennai and M/s. Disenosys EdTech Pvt Ltd, Chennai held on 01/03/2023.



Sathyabama signed an MoU with the University of Memphis, USA on 27th July 2023 for initiating Collaborative activities including Dual degrees, Accelerator Masters Degree, and Student Exchange Programmes.



Memorandum of Understanding (MOU) with M/s. Shrimp Care Solution was signed on 15/03/2023. Dr. T. Sasipraba, Vice Chancellor and Dr. Neysutheen Inayathullah., Proprietor,

Shrimp Care Solutions and Prof. Dr. T. Balasubramanian, Our BOM member and the Former Chairman - SEAC Tamil Nadu, Govt. of India were present on the occasion. The MoU is initiated by Centre for Aquaculture to develop collaborative research and offer consultancy to potential fish farmers and Entrepreneurs.



The department of Visual Communication has signed Memorandum of Understanding (MOU) with Qube Cinema to create the skilled resource for the Media and Entertainment Industry on 07.07.2023 at Sathyabama Institute of Science and Technology, Chennai. Qube Cinema is a provider of end to end digital cinema technology and solutions. The MOU's facilitate organising seminars, workshops and training programs for the students. This MOU will strengthen the skulking network by executing the New Education Policy across all our vocational training centres and promotion various job opportunities across the Media and Entertainment Sector.



Our institution has signed an MoU with Deakin University, Australia. A team of delegates from Deakin University visited our university today and discussed the possible areas in academic and research collaboration between the two universities.



On 29.03.2023, MOU was signed between the Sathyabama Institute of Science and Technology, Chennai and KMITL - Research Institute of Modern Organic Agriculture, Thailand. Prof. Dr. T. Sasipraba, Vice Chancellor, and Dr. Kasem Soyong, Director have Signed the MOU that was initiated by the Centre for Drug Discovery and Development for Special Research Projects, Students Training Programs, Industry Internships, Placement and R&D Activities.



SDG 4 – QUALITY EDUCATION



The mission of Sathyabama Institute of Science and Technology is to provide quality education to the students and develop qualified manpower for the Nation. The Institution offers courses in Engineering, Science, Technology, Arts, Management, Dental, Nursing and Law and develops professionals.

One of the core values of the institution focuses on the on institutional social responsibility in education. Our Institution believes in Education for all. It takes pride in owning responsibility and commitment towards society by supporting the education of students from rural, economically backward communities, differently abled and acid attack victims with full Financial Assistance.

Students across India hailing from different states, speaking different languages study at Sathyabama. Students from neighbouring countries like Nepal, Srilanka and Myanmar study in the Institution. Students from low income Countries like Nigeria, Congo, and Cameroon visit our Institution for pursuing their research.

The Institution offers opportunity for free education to economically backward students. This promotes access to quality education to everyone as financial status is not a constraint. The desiring students from rural, economically backward section and first generation graduates are given 100% scholarship with free accommodation and food.

4.1 Adoption of Schools

An educated society will always be a developed society. Schooling at primary and secondary level is very important and through good education poverty can be eradicated from the community. The Institution besides taking care of the tertiary or University level higher education of the needy and the downtrodden also takes care of primary and secondary level school

education. It has adopted 21 Schools in the nearby community and provide all financial and infrastructure support to develop these Schools. Sathyabama also takes care of the salary of the Teachers of these adopted Schools.

Objective

To develop government schools into model schools, in terms of infrastructure, academic standards and holistic development of students

Challenges faced

- Lack of basic facilities: basic facilities like class rooms, toilets, drinking water facility and play grounds were not available in the schools. We had to fulfil these basic needs in priority over other needs and had to allocate more funds
- Very high student-teacher ratio: Less number of teachers taking care of more number of students. Our institution had to pay salaries for the additional teachers
- Inadequately motivated teachers: Due to the heavy work load the teachers lacked time and energy to perform well or motivate students. We had to encourage and motivate them
- High rates of student drop-out: Students had less interest to continue with the studies. Our Institution had to conduct several motivational programmes to teach them about the importance of education.

4.2 Programmes for the Adopted Schools

1. My Saturday University

Sathyabama has introduced Skill Development Courses at the University for the Government School Children under “My Saturday University” Programme The students of these schools use the Laboratories of the Institution on Saturdays so that they can learn new technologies and get equipped.

2. Science on Wheels-a mobile science laboratory

This is an initiative wherein basic physics and chemistry laboratory is set up in a bus which reaches out the school children, particularly the rural students

3. Educational and Awareness Programmes

Our students visit these schools regularly and conduct various educational and awareness programmes.

The students of Sathyabama also visit the schools, teach the students there, give them motivation and inspire them. When the school students visit the university they are given hands on training in computers and are really made to understand the importance of good education. Other than school and college students, Sathyabama aims at educating the adults in the rural areas and in the areas below poverty line with vocational courses to help them have a regular income.



Outcomes

- 21 schools were adopted and receive support from the institution. computers, Laptops, Speakers, Projectors, CCTV, Television sets, printers worth more than 2 crore rupees were provided to these schools so far.
- The Institution has spent more than 3 crore rupees towards facilities like class rooms, toilets and laboratories
- As a result of visiting the university on Saturdays students are inspired to study well and get opportunity to study free of cost in the university. Around 100 students from the adopted schools are given 100% scholarship to do higher studies at Sathyabama.



Training students and Adults from Adopted schools & villages

4.3 Skill Development Centre

Sathyabama Institute of Science and Technology has a dedicated Skill development Centre that conducts various value added skill development courses in association with National Skill Training Institute (NSTI), Ministry of Skill Development & Entrepreneurship (MSDE) with the objective of promoting entrepreneurship and improving the employability of the students.

The UGC has approved 10 courses/programmes under UGC NSQF (National Skills Qualifications Framework), at different levels for the students, with the aim of enhancing various

skill components. The Institution offers Certificate, Diploma, PG Diploma, Advanced Diploma and Degree programmes in varied areas. These courses are offered with the objective of strengthening the students' competency level in the relevant areas. Students from other institutions and organizations also enrol in these skill development courses. Every initiative towards the re-skilling and up-skilling of students and faculty is carried out in order to meet the requirements of the industry and work in cutting edge technologies. The Institution offers certificate courses on Banking and Financial Services, Tally ACE Accounting Software, a course on Virtual reality and Augmented Reality, Instrumentation, Quality Control and Non- Destructive Testing technologies, a course on Media and Entertainment, Digital Film Making Techniques for Beginners, Construction Management, Diploma courses in "Hands on Experience in Remote Sensing and GIS" and "MEP Technology," a PG Diploma course in Computational Biology, an

Advanced Diploma course in Robotics & Autonomous Machines, and a degree course in Translational Physiology and Public Health Nutrition.

Skill Development Programmes for the general public

The Skill development Centre organises and conducts various skill development and vocational education programmes to youths, who are school drop outs and rural women. These training programmes are conducted with the aim of teaching a vocation or skill to the under privileged people, so that they earn their livelihood. Women are trained in vocations like tailoring, baking, beauty and wellness, incense stick making, candle making, mushroom cultivation, sea weed cultivation and solar lamp making. Men are trained in electrical work, repairs and maintenance of home appliances, laptop servicing and plumbing. These people are also given technical and financial support to start their own business and earn as independent entrepreneurs.

4.4 Centre for Professional and Career Advancement

Sathyabama Institute of Science and Technology has established a Centre for Professional and Career Advancement through which Online Certificate and Post Graduate Diploma courses are conducted. This centre works with the objective of providing a life-long learning platform for all aspiring learners in order to reskill or up skill their knowledge and become an industry-ready workforce through a systematic approach. This is an initiative to utilize the faculty expertise and the IT infrastructure available in the Institution to provide benefit to the learners across the globe by providing quality online education. This Centre is highly beneficial to students who are not able to continue with the formal college/university education as it provides Skill Based Vocational Courses and Technology Related Courses that expands the opportunities for employment.

4.5 Guidance for Higher Studies

Sathyabama provides guidance to students for higher studies at top-notch academically and culturally affluent Universities. To prepare the students for higher studies, GRE, GMAT, TOEFL, IELTS, GATE, CAT training is offered by renowned Training Institutions. A separate and well equipped library is set up to provide study material for the students who are preparing for

competitive examinations. Sathyabama's Centre for higher studies counsels and supports its students for their enrollment at Universities across the world.

4.6 Jeppiaar IAS Academy

Jeppiaar IAS Academy is one of the initiatives taken by the Institution with the objective to offer free coaching to students who aspire to become civil servants.

SDG 5 – GENDER EQUALITY



Sathyabama is an Institution that works consistently towards achieving gender equality which is one of the fundamental rights. It believes that achieving gender equality is essential for developing a sustainable community. The enrolment figures for various programmes of the Institution ensure the equal participation of girls in the education. Sathyabama, as an employer, practice positive discrimination towards employment of women. Women occupy most of the key positions in the Institution. Around 80% of the women are in top position and more than 70 % of the staff members are women. The Chancellor and the Vice Chancellor of the Institution are women.

In any committee or club or any forum, the equal representation of girls and women is a strictly followed norm at the Institution. The concept and the ideology of gender equality is deeply rooted in the core value of the Institution. Men and women have equal access to opportunities at The Institution and equally participate in policy making and administration.

Sathyabama Institute of Science and Technology has always been an unbiased institution, merit is based on performance only. With 70 percent of the workforce being women, Sathyabama strives to set out the bias against women in developing countries like India, by tilting the scales a bit towards women. The existence to the “Women empowerment bureau’ the “Anti-Discrimination Cell”, ‘Human rights cell’, ‘grievance cell’ just goes to prove that the University has always been conscious in seeing that there is no discrimination based on gender.

Anbu Foundation the CSR arm of the University was started with the aim of giving free education for girls from poor families. It soon turned out that we had to also consider the boys as in some cases there is no equality when there is poverty. It is because of that, the ratio of girls to boys has been kept higher consciously.

5.1 Women Empowerment Bureau

The Aim of having the ‘women empowerment bureau’ and many other cells is just to be more mindful about having a balance way of dealing with Students. Staff and the society that we serve. Sathyabama rightly believes that a society that has empowered women, and where equality exists, growth becomes inevitable.

The need for financial independence of women, especially in the economically weaker background is also emphasised and women are trained to become financially independent. Other major factor is the health. It has been found that in developing countries like India, the people who live below poverty line, especially the women tend to ignore, health and hygiene. Medical camps are held regularly in the college campus as well as in the villages and the schools that we adopted.

5.2 Seminars /Workshops/Sensitization Programmes on Gender Equity and Equality

It has been a conscious endeavor and every occasion is used to bring awareness of gender equity. The women’s day is an occasion used to send messages of gender equality.

All outreach activities, and out NSS and NCC cadets are a right mix of girls and boys. All activities are planned to include all the genders. It has been our strength that we not only preach, but also practice not only Gender equality, but equality to all of mankind, and that reflects in all the activities the University takes up for social causes.

The students participate in Gender equality seminars, webinar and many other programs, but are also made to have hands on experience while they visit villages and the schools that we adopt.

Gender sensitization programmes are held at the Institution to help students deal with gender discrimination. These programmes also educate students about the ill effects of gender bias and other related social consequences. The Institution has a policy for promoting gender equality. In collaboration with the institution's Women's Empowerment Bureau, the departments regularly

conduct programmes on gender discrimination, women empowerment, and women entrepreneurship.

5.3 Measures for the promotion of Gender Equality

Sathyabama makes consistent efforts to promote gender equity and equality. It provides an enabling environment for female students and employees. The Institution has a Gender equity policy devised on the basic principles of respect and tolerance for everyone and facilitates gender equality. Women are encouraged to participate at all levels of the organization, including the highest levels of administration and management. Sathyabama treats everyone with respect and provides equal opportunities for growth and development.

Following are some of the measures taken to promote gender equity:

- Ensuring no discrimination in the hiring and promotion process. Sathyabama is proud to acknowledge its large pool of women employees currently serving in leadership roles as Heads of Departments, Deans, Directors, and Vice Chancellor
- Pay decisions are based on merit, performance, and grade, not gender
- Ensuring that there is no discrimination while accessing various facilities provided by the Institution
- Exclusive career counselling for female students has resulted in a significant increase in the number of girl students being offered job placements
- Conducting workshops on the prevention of sexual harassment to raise awareness among all students and staff, and to promote a safe and conducive atmosphere
- Sensitization programmes were conducted on issues related to gender equity and women's empowerment
- The Women's Empowerment Bureau organises training programmes, seminars, and workshops on gender equity for students
- The Institution's Women Empowerment Bureau has organised several programmes for female staff and students on cybercrime and crime defence mechanisms, inviting advocates and police department personnel

- Awareness programmes on the legal protections available to girls were organised for the students
- Female employees are provided maternity leave, child care leave and are also entitled to avail leave on the adoption of children
- There are a significant number of women cadets in the NCC unit
- Indoor and outdoor games for men and women, students, and staff were held on various occasions
- Internal Complaints Committee (ICC) is constituted in the Institution to deal with the complaints of sexual harassment of women staff and students. ICC works for the prevention of sexual harassment against girls by providing a support system for women employees and girls
- The daycare centre was established to support women with children and improve the work-life balance of women employees
- The Institution has installed CCTV cameras at key places in the campus for round-the-clock vigilance and to ensure the safety of women on campus
- Committees such as the Anti-Ragging Committee, Students Grievance Redressal Committee, and Internal Complaints Committee respond quickly to female students' grievances and ensure a decent and safe environment
- The Institution has female counsellors who provide counselling services to support the students with their psychological issues

SDG 6 - CLEAN WATER AND SANITATION



6.1 Ensure availability and sustainable management of water and sanitation for all

Researches indicate that billions of people around the world do not have access to safe drinking water, sanitation and hygiene services. Thousands of people die due to diseases caused by unsafe water, sanitation and hygiene.

Sathyabama Institute of Science and Technology has taken substantial steps in meeting SDG 6 (**Clean Water and Sanitation**) in terms of noteworthy research publications, innovations, capacity building programmes for students, faculties and through dissemination activities to the rural communities.

As per SDG 6.1 and 6.2, By 2030, achieve universal and equitable access to safe and affordable drinking water and access to adequate and equitable sanitation and hygiene for all. To achieve this goal several activities, innovative projects and awareness programmes were conducted.

Sensitization programmes are conducted for students and the public on clean water and sanitation. Series of Training programmes are conducted for young and dynamic student volunteers of NCC, NSS, Science club and Women Empowerment Cell in order to educate the rural school students and economically privileged communities to know the importance of sanitation - hygiene behavior and water use efficiency.



6.2 Prominent initiative taken by the Institution

6.2.1 Rainwater harvesting

Rainwater harvesting can be a simple solution to meet the daily water requirements and prevent the depletion of the normal groundwater level. Rainwater harvesting has the benefit of allowing excess or wasted water to be injected into the aquifer, replenishing the groundwater table. At Sathyabama rainwater harvesting facility is created, which helps in fulfilling the water requirements to a considerable level.

6.2.2 Establishment of Sewage Treatment Plant

In the state of industry collaboration laboratory facility, Sewage Treatment plant (STP) is established in the year 2019 in association with in-house Department of civil Engineering, Department of Chemical Engineering, Centre for Waste Management and Eco care Engineering Systems Pvt. Ltd to treat about 15 lakh liters of raw sewage water in a day which adopts Sequential Batch Reactor (SBR) process.

Specifications	Details
Freshwater requirement for campus per day	9 lakhs litres
Wastewater generated	7.5 lakhs litres
Source of Water for Treatment	Mess kitchen and hostel toilet water
Capacity of Water treatment facility per day	7 lakhs litres
Usage of treated water	Landscaping and gardening
Outcome	Reducing the freshwater consumption for secondary purposes

Sewage Treatment Plant at the Campus

The STP is equipped with Sensors for Automated control over the SBR design suggested and updated by the Industrial Experts. Further the STP is helpful in performing the case study experiments and research oriented activities. Periodical monitoring is also taking place in the regular interval. The treated water and sludge generated during the treatment process are well utilized for research purpose for characterizing and re usual of water and sludge.



6.2.3 Waste water management

On campus, a 1.5 MLD sewage treatment plant is being built for the proper treatment, disposal, and reuse of wastewater. The treated water is reused for gardening purposes and in toilets for flushing. The Institution has been making a great effort to decrease its water footprint by relying on recycled wastewater and water harvested during the rainy season.

6.2.4 Institution Water Audit

The Centre for Waste Management in association with WasmanPro Environmental Solutions LLP, Chennai dedicatedly involves itself in Environmental and Energy Audit for the Institution since 2018. As a part of it Water Audit is also pursued. Interviews held and Questionnaire responses collected from STP Head for waste water data covers an important aspect in the Water Audit. A walk through survey of the entire facility was conducted to identify defective fixtures and to spot water leakage/ wastage points. The walk-through survey and interacting with the staff and other concerned authorities were conducted at different intervals spanning between October 2021 and May 2022. Discussion was held with the administrative officers, pump operators, ETP/STP staff, housekeeping staff, kitchen employees, students, staffs on the various water usage done by them during the day and the related treatment aspects. Collection of records of water pumped to the overhead and underground tanks and average running hours of all pumps etc. was done to estimate actual supply and to quantify the total water intake by the Institute. The amount of water sent to water treatment unit and the quantity of water recycled and reused was also analyzed. Past records were also analyzed to get historic water usage data for baseline study purpose and to have a comparison of past years and present years water footprint. Based on the findings, calculation was done on overall water usage in the campus and methods for reducing the water footprint were suggested.

The audit was conducted in various time periods spanning from October 2021 to May 2022 to get a clear picture of water consumption of the institute and the measures taken by it to reduce the wastage and decrease the water footprint.

The STP unit was also audited at several occasions to check its functionality the quality of treated water. It was found that the Institution has been using treated water from the STP for gardening and flushing which are one of the major water usage points in the educational Institution. Nearly 40 lpcd is used for flushing in an educational Institution, this requirement is met by the treated water.

The fresh water take is used for purposes like drinking, cooking, cleaning, bathing, laboratory use etc. So the water footprint of the Sathyabama Institute of Technology is considerable less due to presence of an efficient water treatment unit and Rain water harvesting facility. So the intake water of 1191KLD per day seems adequate.

6.3 Research Initiatives leading to Publication

By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

Research Publications which supports SDG 6 to improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity

Students were encouraged to undergo internships in the public water supply agencies to understand the water supply processes which is based on the needs and priorities which was evident.

6.3.1 Zero Waste Initiatives for Sustainability

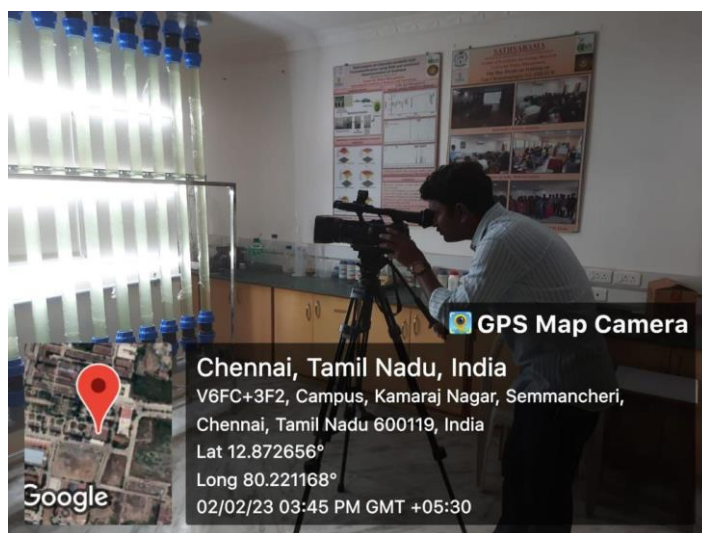
A Pilot Scale Photobioreactor, an Algal Cultivation facility, has been established at the Centre for Waste Management, Centre of Excellence for Energy Research. This facility has been extensively



used in investigating the various micro algal species for its potential in remediating waste waters and subsequently accumulate the inherent lipid content, so as to address the twin problems of wastewater treatment and enhance sustainable raw material availability for bioenergy production. The photobioreactor has been used in the remediation of biodiesel wash water (third cycle) for the

growth of *Chlorella vulgaris*, *Chlorella variabilis*, *Nannochloropsis sp.* For induction of lipid, which can be extracted for biodiesel production.

Food Waste based Activated Carbon has been synthesized and evaluated for its efficiency in handling alkaline waters. The results have been promising and have ended up in development of an additional unit in the existing Pilot Scale Biodiesel Plant, wherein the waste water generated from the process will be treated in a Food Waste Activated Carbon Column and will be recycled for subsequent water requirement in the Biodiesel production process promoting Circular Economy.



SDG 07 - AFFORDABLE CLEAN ENERGY



7.1 Introduction

Sustainable Development Goal 7 (SDG 7) is dedicated to ensuring access to affordable, reliable, sustainable, and modern energy for all. It is crucial for addressing global energy poverty, reducing carbon emissions, and transitioning to sustainable energy sources. This goal aims to provide everyone with the energy they need while promoting energy efficiency, the use of renewable energy sources, and reducing environmental impact. The importance of SDG 7 extends far beyond just providing energy—it is a key enabler for achieving many other SDGs, such as good health, economic growth, and climate action.

Affordable and Clean Energy is not only a standalone goal but also contributes to achieving other SDGs. Energy is critical to the SDGs, from increasing access to power to enhancing clean cooking fuels and decreasing wasteful energy subsidies in reducing harmful air pollution. Here are some key aspects and strategies related to Affordable and Clean Energy.

Access to Energy

Energy Efficiency

Renewable Energy

Research and Innovation

Policy and Regulation

Public Awareness

Finance

Monitoring and Reporting



7.1.1 Energy and Climate Change

The global energy system is a major contributor to climate change, responsible for approximately 70% of global greenhouse gas emissions. The majority of the world's energy comes from fossil fuels—coal, oil, and natural gas—which release carbon dioxide (CO₂) and other pollutants when burned. SDG 7 directly links with SDG 13, which calls for urgent action to combat climate change. Transitioning to clean, renewable energy sources like solar, wind, hydro, and geothermal is essential for reducing carbon emissions and limiting global temperature rise.

By increasing the use of renewable energy in the global energy system, SDG 7 not only provides affordable energy to those in need but also reduces the environmental impact of energy production. This is crucial for achieving the targets set by the Paris Agreement to limit global warming to below 2°C, with efforts to limit it to 1.5°C.

7.1.2 Path Towards Sustainable Energy Future

Achieving SDG 7—ensuring access to affordable, reliable, sustainable, and modern energy for all—is not only a moral imperative but also an economic necessity. By investing in clean and renewable energy, improving energy efficiency, and ensuring equitable access to energy services, the world can reduce poverty, promote sustainable development, and mitigate the impacts of climate change.

The successful achievement of SDG 7 will require collaboration between governments, international organizations, the private sector, and civil society. Only by working together can we build a sustainable energy future for all, ensuring that no one is left behind and that future generations inherit a cleaner, more equitable world.

7.1.3 Global Scenario in Clean Energy

Energy plays a vital role in the Sustainable Development Goals (SDG) from increasing access to electricity, to improving clean cooking fuels, from reducing wasteful energy subsidies to curbing

deadly air pollution. One of these goals which is projected under SDG 7 aims to ensure access to affordable, reliable, sustainable and modern energy for all by the end of the next decade.

The important disadvantage present in the energy production from fossil fuels is the emission of about 60% of global greenhouse gas. While some 17% of energy consumption is now met with renewables, the Intergovernmental Panel on Climate Change warns that this needs to reach around 85% by 2050 to avoid the worst impacts of climate change. Over 50% of our global population lives in cities. They are also responsible for around 70% of global energy related emissions. They are on the frontline of both climate impacts and the transition to a sustainable future for all.

Greater investment and policy support for distributed renewable solutions including solar lanterns, household rooftop solar panels and mini-grids powered by wind, water or sun is the fastest, cleanest, and most affordable way of achieving energy access.

The renewable energy sources (RES) such as solar, wind and hydel have significant potential to contribute to the economic, social and environmental energy sustainability of the globe. They improve access to energy for most of the population, they also reduce emissions of local and global pollutants and they may create local socioeconomic development opportunities.

According to the International Renewable Energy Agency (IRENA) report, Solar and wind energy continued to dominate renewable capacity expansion, jointly accounting for 90 per cent of all net renewable additions in 2019. In 2019 the global renewable generation capacity amounted to 2,537 GW where hydropower accounted for the largest share of the global total, with a capacity of 1,119GW.

Wind and solar energy capacities were at 623 GW and 586 GW, respectively. Whereas, other renewables included 124 GW of bioenergy, 14 GW of geothermal plus, and 500 MW of marine energy. Asia accounted for 54 per cent of new capacity in 2019, increasing its renewable capacity by 95.5 GW to reach 1.12 TW which is about 40% of the global total. Asia continued to dominate

global solar capacity expansion with 56 GW increase, about 60 % of the total in 2019, but this was lower than in 2018. China, India, Japan, Republic of Korea and Vietnam added most new capacity in 2019 as per IRENA report.

7.2. India's Performance in Clean Energy

Several millions of people in India do not have access to reliable, affordable electricity and they are often forced to use to kerosene, charcoal and diesel in order to fuel their lives and thus polluting our environment with large amount of greenhouse gases. Also, the utilization of centralized power production from fossil fuels and nuclear energy, grid distribution, and long-distance transmission pose great difficulty to provide clean electricity to far off villages and hilly areas.

India has made a commendable progress in the new and renewable energy production. India is very ambitious in its targets for promoting renewable energy. In India, renewable energy has started playing an increasingly important role in the augmentation of grid power, providing energy access, reducing the consumption of fossil fuels and helping India to pursue its low carbon development path.

India's renewable capacity installations reached 86 gigawatt (GW) at the end of the year 2019 with wind energy became the biggest contributor with 44 % share in the total renewable energy mix followed by solar with 39 % share. According to the **Ministry of New and Renewable Energy**, Government of India, stands now at 5th Global position for overall installed renewable energy capacity.

The renewable energy has a share of 23.39% in the total installed generation capacity (370GW) in the country up to February 2020. Especially in the last 5-6 years, the solar capacity has been increased from ~2.6 GW to more than 34 GW. Our Indian Government has reduced the solar tariff more than 75% to meet the energy demand. India also embarked upon in setting up world's largest renewable energy programme for ~17 GW till 2022. **Ministry of New & Renewable Energy (MNRE)** is the nodal agency at the central level for promotion of grid-connected and off-

grid renewable energy in the country. Ministry's programmes are implemented in close coordination with State Nodal Agencies (SNAs) for renewable energy (RE).

Over the period, the SNAs have developed considerable knowledge and experience in planning and implementation of RE programmes. India is working towards achieving the goal of installing 175 GW of renewable power capacity by 2022 by setting a new target to increase the country's share of non-fossil-based installed electric capacity to 40 % by 2030. With a radical new approach, India is very confident to provide energy access to all people by 2030.

7.3. Status on the Clean Energy Programme at our Institute

7.3.1 Establishment of Centre of Excellence for Energy

Recognising the importance of the clean energy as one of the primary sustainable development goals, **Sathyabama Institute of Science and Technology** has been focussing its R&D efforts in developing and demonstrating new energy materials and lab scale modules for the sustainable energy production and storage technologies such as solar photovoltaics, solid oxide fuel cells, super capacitors and photocatalysis. The institute has established “**The Centre of Excellence for Energy Research (CEER)**” funded by the Ministry of Human Resource Development (MHRD), Govt. of India under the scheme of Centre of Excellence in the Frontier Areas of Science and Technology (FAST). It was inaugurated by His Excellency Dr. A. P. J. ABDUL KALAM, Former President of India on December 9th, 2014 in the august presence of Col. Dr. JEPPIAAR, Founder and Chancellor of the Sathyabama Institute of Science and Technology.

7.3.2 Aim and Objectives

The main objectives of this Centre of Excellence is to promote education, training, research and developmental programmes in the novel and newly emerging areas of energy research and to develop cost effective, efficient and sustainable technologies for the energy needs of the nation. The Centre also aims to enhance the quality and quantity of basic and applied research programs. The Centre organizes workshops/conferences for students, researchers, academic staff, and

scientists in India to further strengthen their expertise in the areas of energy research, to accelerate the India's human development index and to provide energy security.

The Centre is established in the International Research Centre (IRC) with facilities such as Raman Spectroscopy (Renishaw inVia Reflex Raman spectrometer), DEKTAK profilometer from (Bruker, USA), Potentiostat,- Galvanaostat with Impedance Analyser (Biologic, France), Hall Effect measurement system (Ecopia, South Korea), Raman Spectroscopy (Renishaw, United Kingdom), UV-Visible Spectroscopy (Jasco Analytical Instruments), 50L Biodiesel Pilot plant (Malnad Extraction Industries Bangalore, India), and Gas chromatography (YL Instrument South Korea). The major research laboratories established are Photovoltaics, Surface Physics, Energy Materials, Materials Chemistry, Materials Processing and Bio fuels.

7.3.3 Activities for the Promotion of Clean Energy

The Institute engages itself in several clean energy production and storage related projects in order to reduce the carbon emission. It renders the necessary support to cater to the needs of the Government bodies such as MHRD, ISRO etc. (please see Table 1). The scientists and research scholars are deeply involved in the development of heterojunction solar cells, perovskite based solar cells, intermediate temperature solid oxide fuel cell, oxide and nitride-based supercapacitors for energy production and storage. They have fabricated lab scale devices with advanced materials and have planned to upgrade the power capacity of the devices in future (please see the Table 2). Research is also in progress in the production of hydrogen using titanium oxide as photocatalyst for water splitting.

The Institute also has installed solar panels within the campus for creating awareness among student community. It is continuously making great progress in by publishing high quality manuscripts on clean energy in high impact International Journals (Please refer the list of publications-Attachment 1). Because of the excellent contact through Faculty and Student Exchange Programme with reputed foreign institutes, our researchers have contributed significantly to update the clean energy programme and our Institute also has signed MoUs with Foreign Institutes who work on clean energy (Please see the attachment-3). Our Institute pays keen attention to organize Workshops, National and International Conferences on energy

production and storage (Please see the attachment - In order to create awareness among research scholars, several Training/Orientation programmes were periodically conducted

The administration of Satyabhama Institute of Science and Technology has promoted the use of solar panels on rooftops to generate solar power for lighting the campus and running geysers in the hostel and hospital. The Institution is working on various types of solar cells like thin film solar cells, Si-based solar cell panels, Perovskite solar cells, and Hetro-junction Oxide solar cells. Efforts have been taken to scale up these initiatives. The Institution has also made an effort to power its laboratory using the solar-wind hybrid system. The Institution had installed the world's largest solar steam cooking system with 110 concentrator dishes to power the Institution's Hotel mess. This solar-powered kitchen consumes less power and time than a conventional LPG-powered kitchen.



Fig. Solar cooking system at Sathyabama Institute of Science and Technology



Solar-powered street lights

Young entrepreneurs have installed solar-powered street lights at Sathyabama and also have carried out research & development projects related to solar panel integration and cell assembly. A PV system that combines solar panels with an inverter and other electrical and mechanical components are placed in working condition.

Sun tracking system

A prototype system that tracks the sun's movement in dual axes to generate more energy.

Environmental friendliness: Solar panels do not produce harmful greenhouse gas emissions.

Low cost: The cost of solar panels is expected to continue to decrease.

Low maintenance: The operating and maintenance costs for solar panels are low compared to other renewable energy systems.

Role of Centre for Waste Management in SDG 7

The Centre for Waste Management, Centre acts as centre of innovation, education, and research, plays a vital role in advancing the objectives of Sustainable Development Goal (SDG) 7, which aims to ensure access to affordable, reliable, sustainable, and modern energy for all. Engineering disciplines, particularly those related to electrical, mechanical, civil, and environmental engineering, contribute in multiple ways to the achievement of this goal. By producing skilled engineers, conducting cutting-edge research, fostering partnerships, and driving technological innovations, our centre acts as a key player in the clean energy transition.

The Centre for Waste Management policy supports clean energy goals indirectly through initiatives that reduce reliance on non-renewable energy. One significant initiative involves converting waste cooking oil from the campus kitchens into biodiesel. This biodiesel is used to fuel campus buses and generators, promoting an alternative energy source that not only utilizes waste but also minimizes greenhouse gas emissions associated with traditional diesel. Through these measures, our institution contributes to lowering its carbon footprint while fostering an eco-friendly energy solution.

The Centre for Waste Management, especially works on biomass energy which involves converting organic materials—such as food waste and agricultural waste into energy. Biomass

can be used for heating, cooking, and electricity generation. When managed sustainably, biomass energy deems to be a renewable and low-carbon energy source.

Educational System

One of the most direct ways our centre contributes to SDG 7 is through education and training. Students are the future leaders, innovators, and problem-solvers who will design and implement the sustainable energy systems of tomorrow. Therefore, preparing students with the right knowledge, skills, and mindset is critical.

Training Programs

The Centre for waste management contributes to SDG 7 by offering training programs aimed to promote use of bioenergy. We offer:

Workshops , Seminars , Hands on trainings relevant to Biodiesel, Bioethanol, Biogas, Biooil production providing knowledge to the students community and motivating them towards clean and green energy transition.

The focus has always been interdisciplinary.

Conferences, Internships, UG/PG Projects relevant to Clean Energy Production are convened promoting SDG7.

Biodiesel from Cooking Oil

Biodiesel produced from used cooking oil is an innovative and sustainable solution that contributes significantly to Sustainable Development Goal 7 (SDG 7), which aims to ensure access to affordable, reliable, sustainable, and modern energy for all. Biodiesel, derived from waste cooking oil through a process called transesterification, offers an eco-friendly alternative to conventional fossil fuels, reducing dependence on non-renewable energy sources.

The conversion of waste cooking oil into biodiesel serves multiple purposes that align with the objectives of SDG 7. First, it provides a renewable and clean energy source that can be used in diesel engines, reducing harmful emissions, such as carbon dioxide and particulate matter, and improving air quality. Second, it promotes waste reduction by repurposing discarded oils, which, if left untreated, could pollute water systems.



One day workshop on Biodiesel pilot scale operation

Moreover, biodiesel from cooking oil is cost-effective and scalable, making it an ideal energy source for local communities and small-scale energy systems in both urban and rural areas. By producing biodiesel locally, communities can reduce their energy costs while also creating new opportunities for job creation and economic development, particularly in areas lacking access to conventional energy infrastructure.

Biodiesel can reduce carbon dioxide (CO₂) emissions by up to 78% compared to conventional diesel. Biodiesel has a cleaner combustion profile compared to petroleum diesel, emitting fewer particulates and soot, which helps in improving air quality. Biodiesel plays an important role in advancing sustainable energy by offering a cleaner, renewable alternative to petroleum diesel. Its use can help reduce greenhouse gas emissions, improve energy security, support local economies, and minimize environmental harm. However, continued research and development are essential to

address challenges such as feedstock competition and environmental impacts to ensure biodiesel remains a viable part of a sustainable energy future.

This approach directly contributes to SDG 7 by increasing access to clean, affordable energy while simultaneously addressing waste management and climate change. As technology advances, the widespread adoption of biodiesel from cooking oil can play a key role in advancing global efforts toward a more sustainable and equitable energy future.



50 litres Biodiesel Plant at Centre for Waste Management operated since April 2015



Biodiesel Plant Operation

The plant has produced more than 50000 litres of biodiesel since establishment and contributed to 15% Carbon dioxide reductions as used as B20 in institutional buses.



Biodiesel Powered Bus at Sathyabama

Biochar

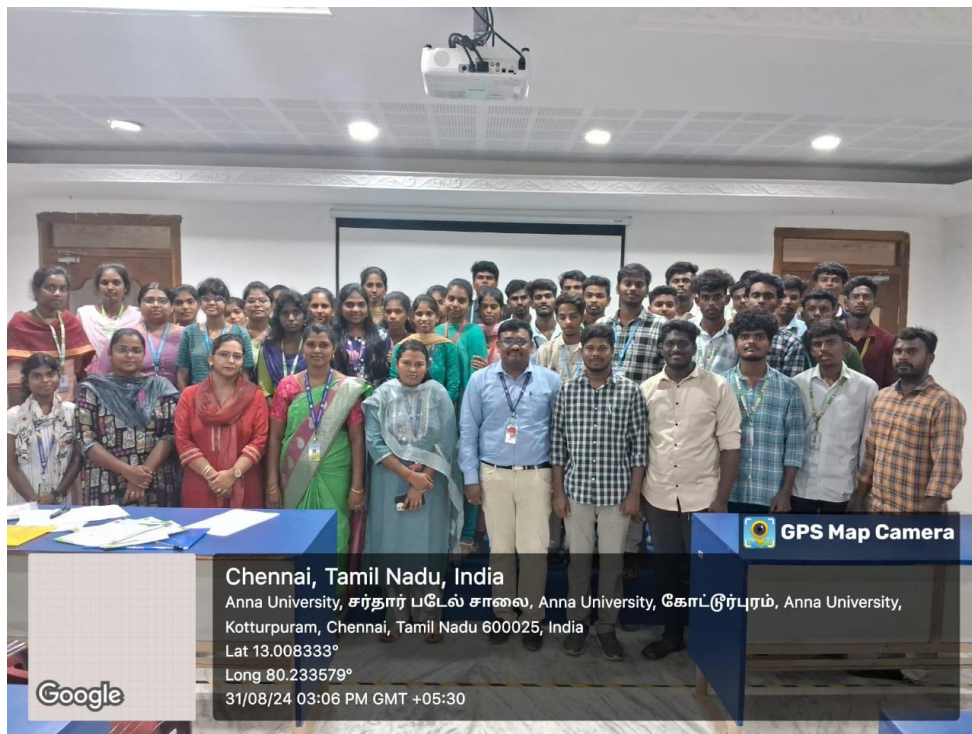
Biochar is a form of carbon-rich material produced by heating organic waste, such as agricultural residues or biomass, in the absence of oxygen through a process called pyrolysis. This sustainable product offers significant benefits for SDG 7: Affordable and Clean Energy by providing a renewable energy source while promoting environmental sustainability.

Biochar can be used as a clean fuel for cooking, heating, and electricity generation, especially in off-grid or rural areas with limited access to conventional energy sources. As a solid biofuel, it burns cleaner than traditional biomass, reducing harmful emissions like particulate matter and carbon monoxide. This helps improve indoor air quality and contributes to healthier living conditions, particularly in developing regions where biomass is commonly used for cooking. Additionally, biochar has the unique ability to sequester carbon in the soil, providing long-term climate mitigation benefits by reducing CO₂ levels in the atmosphere. Its production from agricultural waste also helps solve the dual problem of waste management and energy production.

One of the most compelling reasons biochar is regarded as a cornerstone in sustainable energy development is its role in carbon sequestration. During the pyrolysis process, biomass is heated to temperatures between 350 and 700°C, breaking down the material into three main products: biochar, bio-oil, and syngas. The process traps a significant amount of carbon in a stable, solid form within the biochar, preventing it from being released into the atmosphere as CO₂. Biochar is highly stable over centuries to millennia, making it an effective means of locking away carbon and reducing the overall greenhouse gas burden on the atmosphere.



Biochar (solid biofuel) from Biomass using Hydrothermal Reactor, a facility at CWM



Student Training Program

By offering an affordable, sustainable alternative to traditional energy sources and helping mitigate climate change, biochar contributes directly to SDG 7's goal of providing clean, reliable, and modern energy while fostering environmental sustainability and economic development.

Food waste to Biogas

The institution has a 1 Tonne capacity anaerobic digester that converts anaerobically the food waste generated into biogas. On an average about 500 to 700 kg of food waste converted daily and three commercial LPG cylinders are getting replaced. Sathyabama is looking for an expansion of this facility and the scientific team has been encouraged to involve committedly for the establishment of BioCNG in the institution.



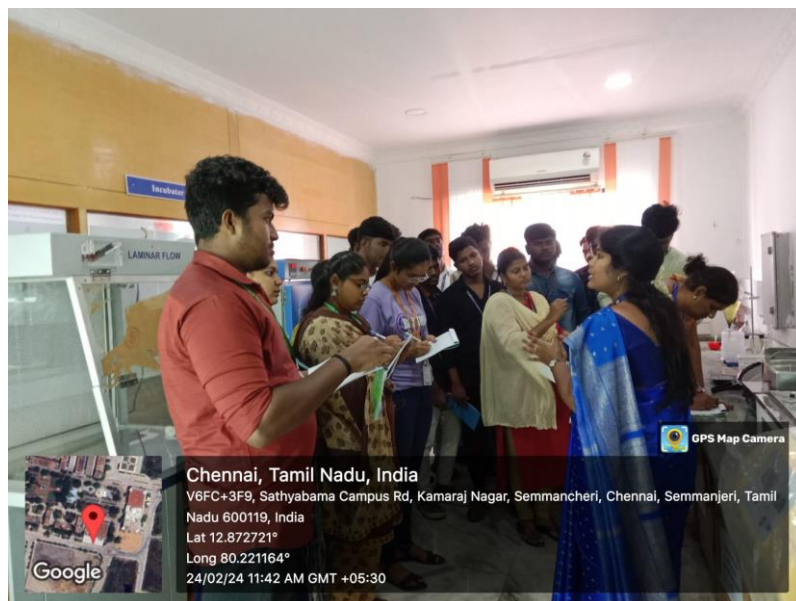
1 Tonne capacity Biogas Plant converts Food Waste generated in the Institution Mess to Biogas replacing 3 commercial cylinders daily



Biogas fuelled Stove in the mess

Biofuel Production from Algae

One of the most significant contributions of algal biotechnology to SDG 7 is through the production of biofuels from algae. Algae is renewable, cleaner alternatives to conventional fossil fuels. Algal biofuels have many advantages over other biofuels derived from crops in terms of land use, water consumption, and energy efficiency. Algae are highly efficient at absorbing carbon dioxide (CO_2) during photosynthesis. This makes algal biofuel production potentially carbon-neutral or even carbon-negative, depending on the lifecycle analysis. By capturing and utilizing CO_2 , algae help reduce the greenhouse gases contributing to climate change, while simultaneously providing a source of clean energy.



One-day training program on Microalgal Cultivation for Lipid extraction and Biodiesel Production



Microalgal Stock cultivation

With their rapid growth rates, high lipid content, and ability to capture carbon dioxide (CO₂) from the atmosphere, microalgae are seen as a key player in addressing the global energy crisis, reducing greenhouse gas emission. Microalgae, like plants, take in CO₂ and release oxygen as a byproduct of photosynthesis. As they grow rapidly, microalgae can capture large volumes of carbon, making them a valuable tool in reducing greenhouse gas concentrations in the atmosphere. For example, some microalgae strains have been shown to sequester up to 1.8 tons of CO₂ per hectare per day. At the Centre for Waste and Management, we cultivate two species of microalgal, Chlorella and Nannochloropsis, which have been noticed to high content of lipids, which is an advantage in biodiesel production. At the Centre for Waste Management, we try to optimize the growth rates of the microalgal culture at various parameters and using different waste water sources. Microalgal cultivation offers a multi-faceted solution to the global challenges of energy security, climate change, and sustainable agriculture. Through the production of biodiesel, bioethanol, biogas, and other biofuels, microalgae contribute to the diversification of renewable energy sources. Additionally, their ability to capture and store Carbon dioxide provides an important tool for mitigating climate change



Photobioreactor Facility for Microalgae Cultivation for Pilot Scale Lipid Extraction

Bioethanol

Bioethanol plays a crucial role in advancing SDG 7 by providing a sustainable, renewable, and clean energy solution. By reducing reliance on fossil fuels, promoting rural development,

supporting energy security, and improving health outcomes through cleaner cooking technologies, bioethanol helps make energy more affordable, accessible, and environmentally friendly. By using locally available feedstocks like agricultural waste, crops, or food by-products, bioethanol reduces dependence on imported fossil fuels. This contributes to energy security by diversifying the energy mix, particularly in regions that have limited access to conventional energy sources. It also promotes rural development and job creation in agriculture and energy sectors. In some developing regions, biomass (wood, crop residues) is still used for cooking and heating, contributing to harmful indoor air pollution.

The use of bioethanol-based cooking stoves can provide a cleaner, more efficient alternative, reducing exposure to toxic smoke and improving health outcomes. This is particularly important in households that rely on traditional fuels for cooking, as bioethanol burns cleaner than wood or coal. Studies have shown that bioethanol can reduce greenhouse gas emissions by up to 40-60% compared to gasoline, depending on the feedstock used, production methods, and land-use changes. Bioethanol plays a crucial role in the transition to a sustainable energy future. As a renewable, carbon-neutral fuel, it can reduce greenhouse gas emissions, enhance energy security, and support rural economic development. As a renewable fuel, bioethanol has the potential to reduce dependency on fossil fuels, lower greenhouse gas emissions, improve energy security, and contribute to rural development.





Training program on Bioethanol

Research and Innovation in Clean Energy Technologies

We at Centre for Waste Management act as a hub of research and innovation, and contribute to SDG 7, profound through the development of new technologies and innovative solutions for sustainable energy.





Event conducted for students

Promoting Sustainable Energy through Community Engagement and Policy Advocacy

We also contribute to SDG 7 by extending our reach beyond academia into the broader community and policy making.

Collaborating with Governments and Industry

Our college acts as bridges between industry, government, and academia, bringing together expertise from all sectors. We focus on:

- Partnering with local governments to design and implement sustainable energy infrastructure at the municipal or regional level.
- Engage in consultancy and advisory roles for both public and private sector entities working on energy solutions.

International Collaboration

Sathyabama leverages the global networks to promote SDG 7 through international collaboration.

International Research Collaborations

We partner with universities, research institutions, and organizations around the world to share knowledge, research findings, and technologies related to clean energy solutions. By doing so, we

can contribute to a global pool of innovation, accelerating the adoption of sustainable energy technologies.

Knowledge Sharing and Capacity Building

Our institution helps disseminate knowledge by participating in global forums and conferences on sustainable energy. We also aim to partner with international organizations to provide expertise in energy systems and sustainability. Some of the institutions we continue to collaborate include

1. University of Hyogo, Japan – ***Perovskite Solar Cells.***
2. Indian Institute of Madras, Chennai, India - ***Storage applications.***
3. CSIR-Central Electrochemical Research Institute (CSIR-CECRI) - ***Sensor and Storage applications.***
4. Technological Development Unit (UDT), University of Concepcion, Coronel Industrial Park, Coronel, Chile - ***Water splitting applications.***
5. Institute of Natural Science and Mathematics, Ural Federal University, Yekaterinburg 620002, Russia - ***Development of new magnetic materials.***
6. King Saud University, Kingdom of Saudi Arabia – ***Photocatalytic Applications.***
7. National Dong Hwa University, Taiwan- ***Solid oxide Fuel Cells te against the*** developing research solutions and innovative technology• **Training Programmes Conducted**



Orientation Programmes conducted for students and faculty



Training Programs for scholars, School Students and researchers

Centre of Excellence for Energy Research is involved in training and Capacity building and conducts series of training programmes in Biodiesel, Bioethanol and Biogas Production. In the last five years about 1000 students and 50 industry experts have been trained through the various programmes conducted.



Outreach Programmes

Centre for Waste Management, Centre of Excellence for Energy Research jointly with Centre for Aquaculture Sathyabama Institute of Science and Technology organized "An Awareness

Programme on "Popularization of Biodiesel for Fueling Fishing Boats" commemorating World Biofuel Day on 10th August 2022 at Tsunami Quarters Karikkattukuppam Muttukadu. Dr. M.V. Rajeswari, Assistant Professor (Research), Centre for Aquaculture co-ordinated the program. 25 fishermen returning after fishing enthusiastically participated the programme. Dr. Dawn S.S., Professor (Research) Centre for Waste Management, explained about the various initiatives of the centre. The importance of biofuel and its role in Climate resilience was explained. Fishing boat fuel (Diesel) requirements per boat, frequency of fishing in a year and related information were gathered by the research team for further studies. The scheme of producing biodiesel from waste cooking oil and its benefits from environment, economy and efficiency points of view were explained. The participants were encouraged to fuel the boats with biodiesel in blends with diesel gradually from 1% - 10%. They showed keen interest and involvement in blending biodiesel with diesel and using the blends in their boats. The program ended with handing over of biodiesel to the fishermen as an encouragement to fuel their boats. The fuelling of the boats with biodiesel blends was announced and the participants eagerly welcomed the event planned to be convened on 17th August 2022.



Centre for Waste Management, Sathyabama Institute of Science and Technology organized a "Waste Cooking Oil Collection Drive " commemorate National Safety Day on 4th March 2022 , elucidating Food Safety. The Scientific team started the drive from the institution campus and covered the Sozhinganallur and Medavakkam stretch covering about 5 kms. The team approached Ponnusamy Hotel, Salem R R Briyani, Hotel Ramanaa's and Sundari Restaurant. The team highlighted their focus on collecting the waste cooking oil that is generated during the frying operations in their restaurant. The health impacts posed by the Waste Cooking Oil reuse for frying and cooking were explained and how they will be playing a major role in prevention of health hazards by giving the used cooking oil to the centre for waste management who are in turn using it to produce biodiesel. The environmental hazards of throwing away the waste cooking oil into sewer lines and on landfills were also explained creating an awareness on both food and environmental safety by diverting the much-generated waste cooking oil for biodiesel production. The drive was completed with an agreement from the hotels and restaurants a major portion of their waste cooking oil to Centre for Waste Management, Sathyabama Institute of Science and Technology. As a consequence of the drive, the centre will be getting waste cooking oil from the restaurants apart from the volume of waste cooking oil it has been receiving from the institution's mess that caters to the food needs of about ten thousand inmates on an average daily. This initiative was taken up to create an additional awareness of how the waste cooking oil can alternately generate revenue by selling it away to organizations which hold a Repurpose Used Cooking Oil (RUCO) certification, who in turn will convert into Biodiesel.





Energy Audit : The institution also is involved in periodic energy audit to assess the energy requirement and how the conventional energy source utility is. The replacements with alternate energy sources is also slowly expanding in the institution.

7.4 Research Collaboration

1. University of Hyogo, Japan – ***Perovskite Solar Cells.***
2. Indian Institute of Madras, Chennai, India - ***Storage applications.***
3. CSIR-Central Electrochemical Research Institute (CSIR-CECRI) - ***Sensor and Storage applications.***
4. Technological Development Unit (UDT), University of Concepcion, Coronel Industrial Park, Coronel, Chile - ***Water splitting applications.***
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6. King Saud University, Kingdom of Saudi Arabia – ***Photocatalytic Applications.***
7. National Dong Hwa University, Taiwan- ***Solid oxide Fuel Cells te against the*** developing research solutions and innovative technology• delivering behaviour change through instilling low-carbon values and habits in our students.

SDG 08 - DECENT WORK AND ECONOMIC GROWTH



8.1 Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

The University is committed to long-term goals that ensure creating, promoting and delivering opportunities that enhance the employability of suitable talent and students. Generating a sustainable pipeline of talent, providing access to the right tools and support for employees by giving individuals the platform to excel is critical to the long-term success of the university and its vital contribution to the community.

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

The full productive employment strategy is framed around developing and implementing simple and consistent processes and systems; supporting the evolution of the workforce, their engagement and wellbeing. The employment policies and practices are legally compliant and have enabled the University in retaining employees and sustaining its position as a fair employer since inception.

8.2 Graduate Employability

The graduates of Sathyabama Institute of Science and Technology are sought after employees, as reflected in the University's ranking in NIRF (INDIA) and the QS Graduate Employability Rankings.

The University plays an important role in employment of graduates and job creation in India and across the world. Commercialization of the research findings of researchers has a high impact on

the employment and entrepreneurial ventures of graduates whose growth and survival rates are above the national average.

8.3 Study Programmes

The robust Curriculum design of the University, accredited by National and International Agencies has promoted creation of responsible and ethical citizens. Global initiatives by the UN to promote Corporate Social Responsibility, Sustainable, Green Engineering and Management solutions are being meticulously disseminated through teaching-learning and research practices of the university. Periodic technology upgrades, innovation management and value added courses in the diverse disciplines have paved way for jobs which increase economic productivity.

Special focus on entrepreneurship, creativity and innovation is provided through Technology Business Incubators supported by the Department of Science and Technology (GOI) and Micro, Small and Medium Enterprises (GOI). Approaches fostering mission-oriented, inclusive, social innovation and digitally enabled innovation for sustainable development and growth of formal MSMEs with access to financial services have been enthusiastically acknowledged by various stakeholders.

8.4 Informal Student employment initiatives

The “**Earn while you Learn Programme**” launched from 2010 to offer interesting and varied career opportunities for students during their study period is a sought after initiative as it provides opportunities for skill development and work experience. Conscious contribution to basic literacy and open access to existing scientific and technological information, flexible intellectual property rules that allow fair use of physical spaces, online tools with hands-on learning and open repositories of scientific and technological knowledge is being practiced to achieve full and productive employment and decent work for all women and men including young people by 2030.

8.5 Integration of persons with disabilities

With increased attention to the principle of inclusive education for students with disabilities, systematic measures for the conditions in higher education have been incorporated. A transparent,

fair and effective method of financing education through specific grants is in practice. Promoting and supporting integration of persons with disabilities through impartial standards regarding equal pay for work of equal value is the motto of the university.

8.6 Educational equity and community Development

Shared accountability and coordinated services integration in education, health and livelihood promotion has led to joint development and welfare of the local community. Various skill Development and Capacity Building programmes for poverty alleviation, promotion of small businesses, financial security, health and hygiene, physical and psychological wellbeing, literacy and safety of individuals for both men and women are being provided for economic inclusion and building up the local community and create assets and wealth for sustainability.

8.7 Strategy for Economic empowerment

The series of reforms and enablers of the Government in the Economic package to make India Atmanirbhar and measures for relief and credit support to businesses, especially MSMEs to support Indian Economy's fight against COVID-19 have been followed to address rural and urban employment generation activities. The startups initiated at the university have been supported to contribute efficiently to the labour market with a distinct focus on inclusive and indiscriminative approach towards equity and sustainability.

SDG 09 – INDUSTRY, INNOVATION AND INFRASTRUCTURE



Creativity and innovation are new drivers of every nation's economy. Innovations is important to an organization as much as Quality. In the NIRF Innovation Rankings 2023, the Institution is placed in the band 51–100 among all the Institutions in India. We have conducted seminar, workshop, conference on regular focused towards innovations, Intellectual Property rights (IPRs), Creativity, Product Design and Development, Design Thinking, System Thinking and Conceiving — Designing — Implementing — Operating — (CDIO).

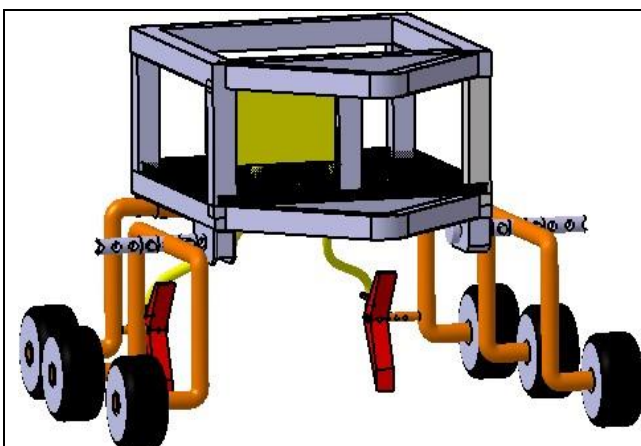
9.1 Programmes on Intellectual Property Rights/Design Thinking

The poster is for an event at Sathyabama Institute of Science and Technology. At the top, the institute's name and logo are displayed. The main title is 'INTERACTIVE SESSION TO ESTABLISH PURDUE EPICS CENTRE @ SATHYABAMA'. A central image shows Dr. William Oakes, Director of EPICS at Purdue University. To the right, a 'SCHEDULE' lists four time slots with their respective topics: 10:15AM-11:15AM (Introduction to EPICS Program), 11:15AM-12:30PM (Human Centered Design Thinking), 01:30PM-02:30PM (How to Apply for IEEE-EPICS EWB Grants), and 02:30PM-04:00PM (Presentation of Selected Engineering Solutions for Community Development by Faculty / Students). Below the schedule, the roles of various attendees are listed: Chief Patron (Dr. Mariazeena Johnson), President (Dr. Marie Johnson), Vice-Presidents (Ms. J. Arulselvan, Ms. Maria Bernadette Tamilarasi, Ms. Maria Catherine Jayapriya), Convenor (Dr. T. Sasipraba), and Organizer (Dr. B. Bharathi). A QR code for registration is provided, along with the registration link: <https://forms.gle/FwQCKRicvLT3wk69>. The event is held at the Soundarabai Auditorium on 5th Nov 2023, from 09 AM IST to 04 PM IST.

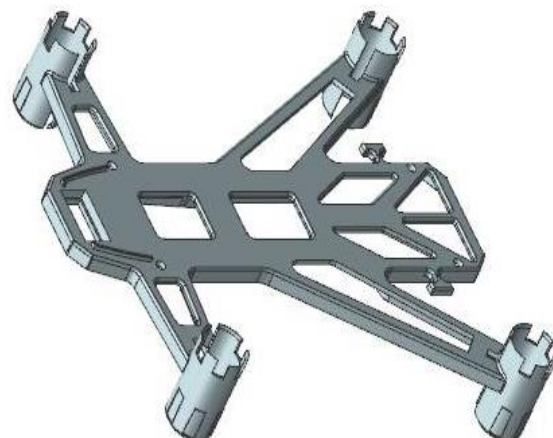


9.1 Centre of Excellence for Collaborative Product Design and Development (CPDD)

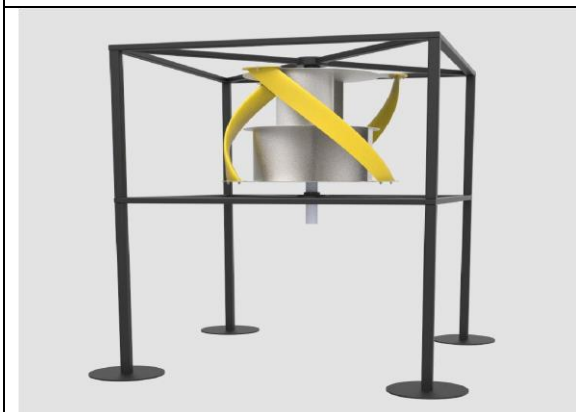
The creation of real product is an important for commercializing technologies arising from R&D at technical institutions. For example conversion of a Bolt & Nut from design into product requires 4-8 weeks. The master pattern can be selected only after testing the design of 34 patterns. That master pattern is used for production. Using Rapid prototyping we can select the master pattern in 4-8 hours. The Rapid prototyping requires construction of a mini plant. Institutions mostly lack of mini plant. Most of the Engineering Institutions have keeping Computer Aided Design Lab in different Location and Additive Manufacturing Laboratory (3 D Printer Lab) in different location. In this Situation, Design to Reality is very difficult. In Sathyabama Institute of Science and Technology, We are Integrated Computer Aided Design Lab and Additive Manufacturing Laboratory and developed new centre name as **Centre of Excellence for Collaborative Product Design and Development (CPDD)**. Through this CPDD, we have developed more than fifty products in the year 2019. Sathyabama have more than 20 successful patent/non patent technology transfer.



Multipurpose Agricultural Robot; Grant No : 317206-001,
Grant Date: 26/04/2019



Base Plate for Unmanned Aerial Vehicle, Grant No: 316200-001, Grant Date: 29/03/2019



Vertical Axis Wind Turbine Using Gorlov and Savonius Blades for Water Pumping System; Grant No : 294063



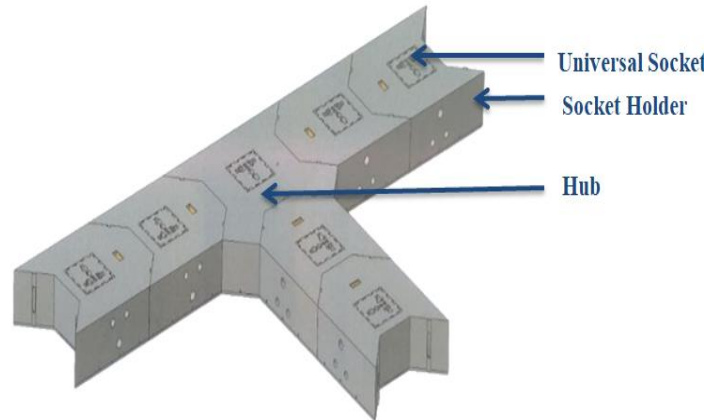
Tube Muffler for Light Motor Vehicle; Grant No :304750

Sathyabama is one of the top Indian Industrial Design (Design Patents) grant institutions in India. A growing trend in Intellectual Property Rights with Design Patents grants and Patents Published in effect moving responsibility for innovations.

IPRs	2017	2018	2019
Grants	7	4	63
Published	25	14	XX

Product : Extension Power Cord

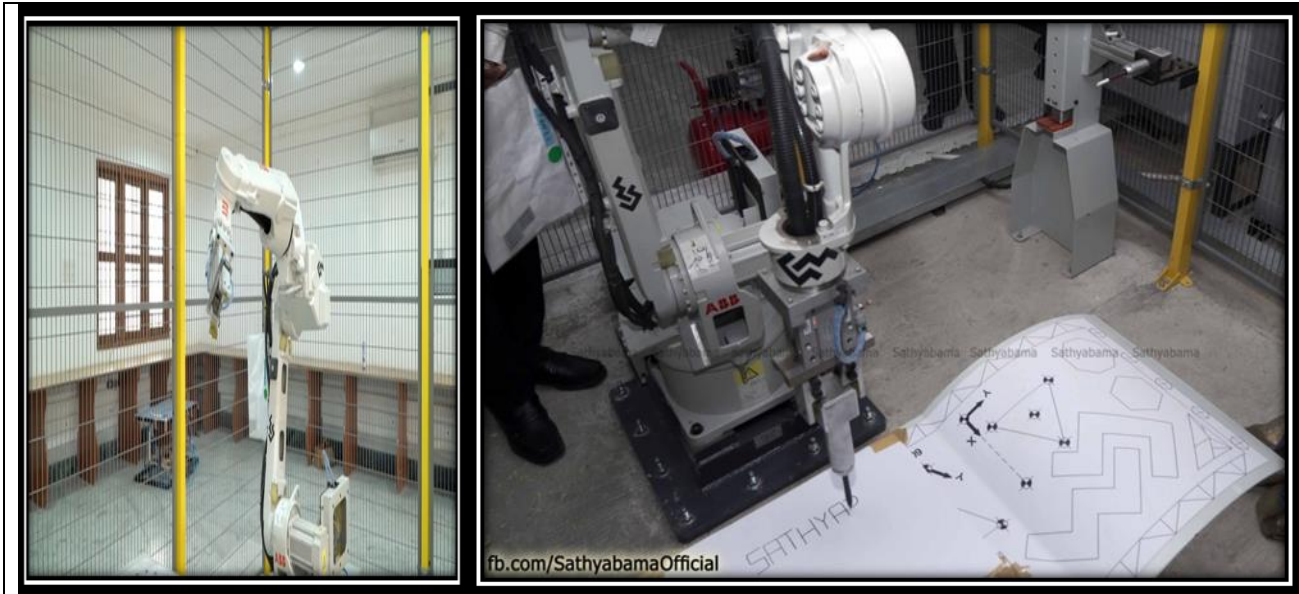
Technology Transfer : CADD Technologies School of Design Private Limited, Coimbatore



9.2 Infrastructures for Innovations

Sathyabama Institute of Science and Technology has ventured into yet another digital initiative “NEXTGEN Lab” to empower students in cutting-edge technology. Pre Incubation and Product Development aspects, Sathyabama developed NI LABVIEW Laboratory, Spectroscopic facilities, Data Science and Centre of Excellence for Robotics and Automation.





The Center of Excellence for Robotics and Automation was established in 2019 to cater the automation knowledge needs in the field of robotics and Artificial intelligence. This center has an exclusive Industrial robot of ABB IRB 1520 (6 axis) to perform operations, programming, and advanced control systems.

9.3 Industry Institute Interaction Cell

The aim of our Industry Institute Interaction Cell (IIIC) is to strengthen the relationship between industry and our institute, which provides an excellent platform for both the students as well as the faculty members to be aware of industry expectations from the graduates. IIIC serves as a podium to showcase the best practices, latest technologies in industry stand point and their implementation.



Industry Institute Interaction Cell Meeting

9.4 Executive Development Program

Sathyabama has well experienced Executive Development Program (EDP) for working professionals entitled with Quality Management, Production Planning, 5 S and Marketing.

INFRASTRUCTURE AND FACILITIES NEWLY ESTABLISHED

To provide avenues in the new research areas and a learning arena for academic advancements, we continue to develop and upgrade infrastructural facilities. Sathyabama Centre for Advanced Studies, a state-of-the-art facility with a total built up space of 2,40,000 Sq.ft is established. The Centre houses Artificial Intelligence Laboratory with Supercomputing facilities, DARE (Drone and Robotics Experimentarium) Lab consisting of Robotics Workstations, Swarm drones, Quadruped Robot, Humanoid Robot and autonomous rovers, Advanced Characterization facility with HRSTEM, FESEM and XRD, Metaverse Studio with AR/VR kits, Makerspace with 3D printers, scanners and Replicators, Media Centre with state of the Art Studio and Centre for Innovation and Technology Transfer which will serve as an incubation cell for several student and faculty start-ups. An Innospace Fab Lab which serves as a One Stop Place for all Idea to Prototyping needs for Students and Startups has been established at Sathyabama Technology Business Incubator. The Center for Ocean Research has been identified by the Ministry of Earth Sciences to establish the Ocean Field Research Facility. Such a unique facility was inaugurated in the name of our founder chancellor, Col. Dr.Jeppiaar by the Hon'ble Secretary of the Ministry of Earth Sciences, Government of India, Dr. M. Ravichandran on 11th March 2022. The facility spans around 10,000 Sq.ft with Aquatic Animal Husbandry and Algal Culture Facility for the Marine Biotechnological Studies, which will augment the research in the area of biotechnology. The institution has also focused on energy conservation and has taken initiatives to change to green and renewable energy.

INNOVATION ECOSYSTEM

The Institution has a strong innovation ecosystem that has facilitated several startups. Start up Summits and Pitch decks were conducted to attract funds from the Angel Investors and Venture Capitalists. An agreement has been signed with Native lead foundation to support the Institution in the development of greater number of startups. 24 startup companies are under consideration for funding.

Awareness programme on Entrepreneurship, Innovation and Startups were organized for the students, faculties and research scholars to promote start up culture in the Institution. To encourage the students and faculties to develop their entrepreneurial interests, our management has provided 50 lakhs as seed fund this year. The innovative ideas are converted successfully into products and currently 22 products are ready for commercialization. Sathyabama TBI supports startups across the country working in the areas of Blue Economy and sustainability. The TBI in association with DST-TIFAC has been identified as TIFAC TAP CENTRE for Academic partnership and Technological intervention towards expertise of faculty members on Engineering, Aquaculture and Plastic Cluster. Sathyabama TBI has supported 26 Student Innovations in 3 successive editions of Startup summits organized this year.

EXHIBITIONS/REGIONAL MEET/HACKATHON

Sathyabama Institute of Science and Technology organized an Exhibition on Science and Technology from 27th to 29th July 2022 supported by National Council for Science and Technology Communication, Department of Science and Technology, Govt. of India. More than 1100 school students from 24 schools (Government and Private) participated in various events conducted in the exhibition.

Our Institution was recognised as a Nodal Centre to organise the Regional Meet of IICs, Innovation Cell, Ministry of Education, Govt. of India on 21st July, 2021.

Sathyabama was also one of the 75 Nodal Centres across India which hosted the fifth edition of Smart India Hackathon, supported by AICTE and MoE on 25th and 26th August 2022. 21 teams from across the country participated in the event.



SDG10 - REDUCED INEQUALITIES



10.1 Introduction

Sathyabama University has always prided itself for its inclusive education. Students from all walks of life, religion, caste, creed and the differently abled too find Sathyabama inclusive. Even our employment policies have no discrimination based on the status of the applicant. The campus is very inclusive for all kinds of physical disabilities. From, ramps to interpreters and Brail books in the library, and the ever friendly attitude of the students and the staff makes inclusive education very easy. Sathyabama also prides in inclusion of high functioning Autistic students, who have benefitted by normal education in a regular college. The inclusion does not end with their academics. Sathyabama's placement Cell takes responsibility to place most of the differently able students in rewarding careers. In short their life is taken care of once they come to Sathyabama.

10.2 Goals

The main aim is to help differently abled students integrate with the society as a whole and not lose out on anything that the world has to offer.

- To reduce the inequities that arise due to mental or physical disabilities, social and cultural differences, class differences and overall any differentiation that exists because of inhuman practices.
- To help students from socially backward and downtrodden lives to create a future that is worth living. To uproot them from poverty and guide them to a more meaningful life.
- To guide children of parents who are disengaged from the society, like prisoners, to be made self-sufficient and have a positive way of looking at life
- To be a mentor and support system for students with physical disability to excel in any sport or activity that they are interested in.

10.3 Scholarship for Disabled Students

Free education is offered to students from Ability foundation, an NGO that helps children with disabilities pursue education. Sathyabama offers 50 free seats every year to Ability foundation. The hearing impaired students have interpreters who are also recommended by Ability and Sathyabama recruits them to help the students. The visually impaired and the students in wheel chair are also given the attention required. Students with mild autism are also integrated well in the system because of the overall acceptance.



10.4 Scholarship for Meritorious Students from Socially and Financially Poor Background

Sathyabama supports students from very poor background finish their higher education and elevate their living standards. These students will be given free education, free Hostel facilities and free transport. Some of the students who passed out and are well placed have made their Alma Mater proud by sponsoring students themselves. This compounding effect will make the ripples larger in our society and it brings immense pride to Sathyabama.

Deserving students from marginalised communities, economically weaker sections, children of destitute women, children of war widows, children of prison inmates and acid attack victims are given 100% scholarships to pursue higher education.

Students with excellent academic records are given merit scholarship.



Chancellor with Merit scholarship students

10.5 Arrangement with Global Network Equality (Prisoners Welfare)

Sathyabama has an arrangement with the GNE (Global network Equality) who work with the prisoners and their children. Admissions are offered to them free of cost and these students are given special attention and care as they have had a traumatic childhood.

10.6 Facilities Offered

Sathyabama provides full support for Differently-abled students and strives to make life easier for them. They are also included in the sports and cultural activities. The acceptance of those students in the university by the faculty and students has had a positive effect on their self-esteem and they are also given enough training to face the world with pride. Sathyabama's placement cell also helps them find jobs as soon as they finish their graduation.

Almost all the buildings are equipped with facilities such as ramps, rails and special toilets to suit the special needs of differently-abled persons.



Ramp facility

ACCESS TO LIBRARY FOR STUDENTS WITH SPECIAL NEEDS

Sathyabama do not discriminate students with disabilities and ensures that they have equal access to Library resources. The students with disabilities are provided extra care and support to access the Library facilities. They are provided with remote access, extended reserve period and are given late fine waiver. Books and other e content are sent by mail to these students. The library provides volunteer readers for the visually impaired students and Sign Language Interpreters' for Hearing impaired students. Visually impaired students can access the library with the help of JAWS software installed in all the systems in the



10.7 Grievance Cell

Sathyabama has a Student's grievance cell which is a 5-member team. The students can approach the cell for any of their grievance and the matter will have to be resolved in 48 hours. The cell is opened on all days and students can approach them at any time during college hours. Regular meetings are held and the issues are discussed and they try finding ways to see that the grievances are minimized.

10.8 Placements for the Disabled

Sathyabama's Placement cell has always tried and placed the students from the inequitable background in good organizations. They have signed an agreement with "youth for job foundation" which is a foundation that helps disabled students get good jobs. The endeavour does not end there. The placement cell has been conscious of the fact that these students has it rough when they go into the society and hence, special counselling is offered to them and the organizations that recruit them are also given an orientation of how they could be Disability friendly organization. Students from socially weak background are given training in Soft skills.

Sustainable Development Goal (SDG) 10 focuses on reducing inequalities within and among countries. Universities can play a crucial role in addressing these inequalities by implementing initiatives that foster inclusivity, diversity, and equal opportunity. Here are some initiatives a university might pursue to support SDG 10:

1. Scholarship Programs and Financial Aid

- **Merit and Need-Based Scholarships:** Providing scholarships and financial aid to students from underprivileged or marginalized communities to enhance access to quality education.
- **International Scholarships: Targeting** students from low-income countries with special financial support programs.

2. Inclusive Education Programs

- **Special Needs Support:** Developing programs to support students with disabilities through accessible infrastructure, specialized services, and inclusive learning environments.
- **Bridging Courses and Preparatory Programs:** Offering preparatory courses to support students from diverse educational backgrounds, helping them integrate more easily into higher education.

3. Diversity and Inclusion Policies

- **Diversity Training and Awareness Programs:** Running workshops and events on diversity, equity, and inclusion to foster a campus culture that respects and celebrates differences.
- **Equal Opportunity Employment:** Promoting diversity among faculty and staff by implementing fair hiring practices and policies aimed at reducing gender, ethnic, and socioeconomic disparities.

4. Research and Outreach Programs

- **Community Engagement Initiatives:** Conducting outreach in underrepresented communities to provide mentorship, educational support, and exposure to higher education.
- **Research on Inequality:** Encouraging research that addresses global inequality, such as income disparity, social exclusion, and barriers to education and healthcare access.

5. Support for International Students and Refugees

- **Refugee Education Programs:** Partnering with organizations to offer educational opportunities for refugees and displaced individuals.
- **Cultural Exchange and Integration Programs:** Offering support programs to help international students adapt and thrive in a new academic and cultural environment.

6. Promoting Social Entrepreneurship

- **Startup Incubators for Marginalized Groups:** Creating platforms that provide mentorship, funding, and resources for startups led by individuals from underrepresented backgrounds.
- **Social Impact Projects:** Supporting student-led projects that aim to reduce inequalities and empower disadvantaged communities.

These initiatives collectively help universities make meaningful contributions toward achieving SDG 10 by creating a more equitable academic environment and reducing inequalities in access, representation, and opportunity.

SDG11 - SUSTAINABLE CITIES AND COMMUNITIES



11.1 Leading by example , we provide a sustainable campus



Sustainable Practices within the campus

1. All students and faculty members use sustainable transport means to commute to college, these are through buses that use Bio-diesel generated from waste oil collected from college kitchen
2. Pedestrian-friendly and pollution free campus with natural ecosystem of wetlands surrounding the campus, only battery-operated vehicles are mainly used inside the campus
3. Mass Tree plantation was conducted by college in the area Thiruvarrum and in the college by around 1000 students on 27th Jan 2019.
4. Water treatment plant has been established in the campus that is used for irrigating the landscape in the campus
5. Renewable resources are utilized in the campus like Solar energy for street lighting, charging points, solar heater for hostels.



6. Road traffic awareness program was conducted by students as a NSS activity on 2nd Feb and 9th Feb 2019 in Sholinganallur, Chennai.

11.2 Contribution to Sustainable development of city

1. Engineer J . Vanjinathan, Assistant Professor in Department of Civil Engineering has been appointed for State Quality Monitor in TUFIDCO (Tamilnadu urban finance Infrastructure development and corporation).

He was involved in the project appraisal in TUFIDCO (Tamilnadu urban finance Infrastructure development and corporation) for the following projects;

- Development of commercial complex at Thiruvallur theatre under Smart Cities Mission
- Redevelopment of new stand in Vellore City Municipal Corporation under Smart Cities Mission
- Convention center at Tamukkan ground Madurai smart city
- Bridge project at Alandurai Town Panchayats



2. School of Building and environment signed a **MOU, with ITDP** Institute of Transportation and development policy, Chennai, to collaborate in working towards **planning Sustainable transportation** in Chennai.

Our students worked for **Complete street project** and prepared proposals for pedestrian infrastructure in the influence area of schools in Mylapore and Saidapet areas in Chennai.

11.3 Centre of Excellence in Urban Climate and Built environment

1. School of Building and environment, Department of Architecture has established Centre of Excellence in Urban Climate and built environment which possesses a well-equipped Climatology lab, with instruments like Thermal imagers, data loggers, outdoor data loggers and simulation software like IESVE, ENVIMET etc. , here simulation studies and research works on Sustainable practices topics like building materials, energy efficiency in the building, urban heat island, sustainable landscape planning are conducted and documented.
2. Students underwent Internship and collaborated for the following Govt. proposal – Post occupancy evaluation for Zero peak energy design for India during the period.

1. .

11.4 Sustainability as an integral part of Academic learning

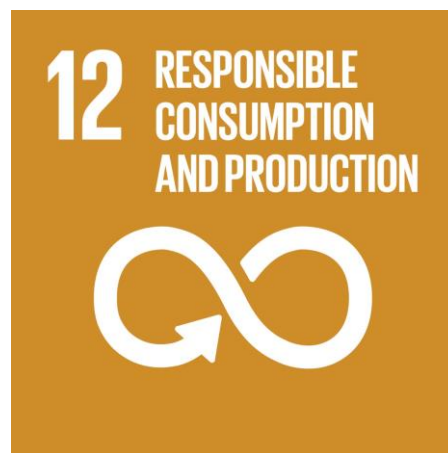
The Academic learning has been developed with the intent to provide professionals and students with a springboard for invention, knowledge and understanding of the application of an integrated environmental approach in sustainable architecture design.

To equip the students with knowledge to respond to a changing world and environmental challenges for best performance in the Industry as Sustainable Architects, Green Auditors, and Green Building Professionals.

1. School of Architecture offers Post graduation program on sustainable architecture and Building Management. The Sustainable goals have been incorporated in the curriculum and students get exposure through various studies and live experiments conducted.

2. Students in Master program in Sustainable Architecture and Building Management can cater to sustainable city planning and design through their academic curriculum and studios which prepare them for sustainable design and construction, enhancement of building services, Intelligent building management systems
3. Professional Training conducted for Post-graduates and Under-graduate programs enable the students to get exposure by working with renowned Architects, Sustainable Architecture firms, Construction Industry.
4. Under Graduate program in Bachelor of Architecture has been structured to include subjects related to Sustainability like Sustainable Architecture, Energy efficient architecture, Vernacular Architecture, Landscape Architecture, Site planning Conservation.

SDG 12 - RESPONSIBLE CONSUMPTION AND PRODUCTION



With the Centre for Waste Management playing a key role the School of Bio and Chemical Engineering, the School of Mechanical Engineering, the School of building and environment through their research objectives, projects, training programmes and other related activities have always promoted the use of services and products bringing a better quality of life while still pertaining to lesser utilization of natural resources and toxic materials. The institution functions with the focus of developing processes and products that give away lesser waste and pollutant emissions thus meeting the demand of Responsible consumption and production.

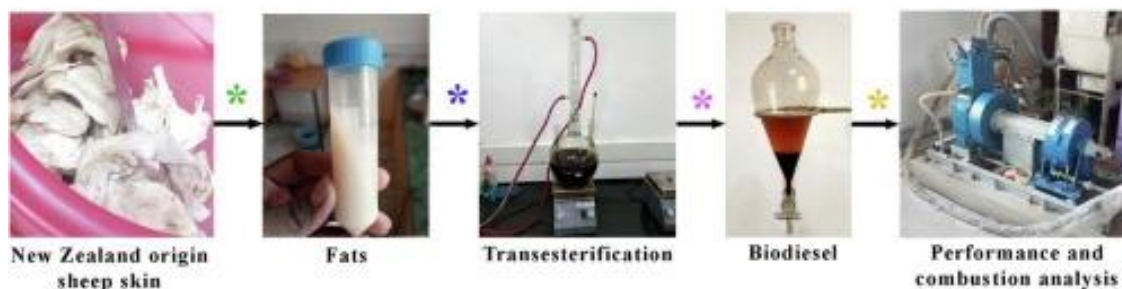
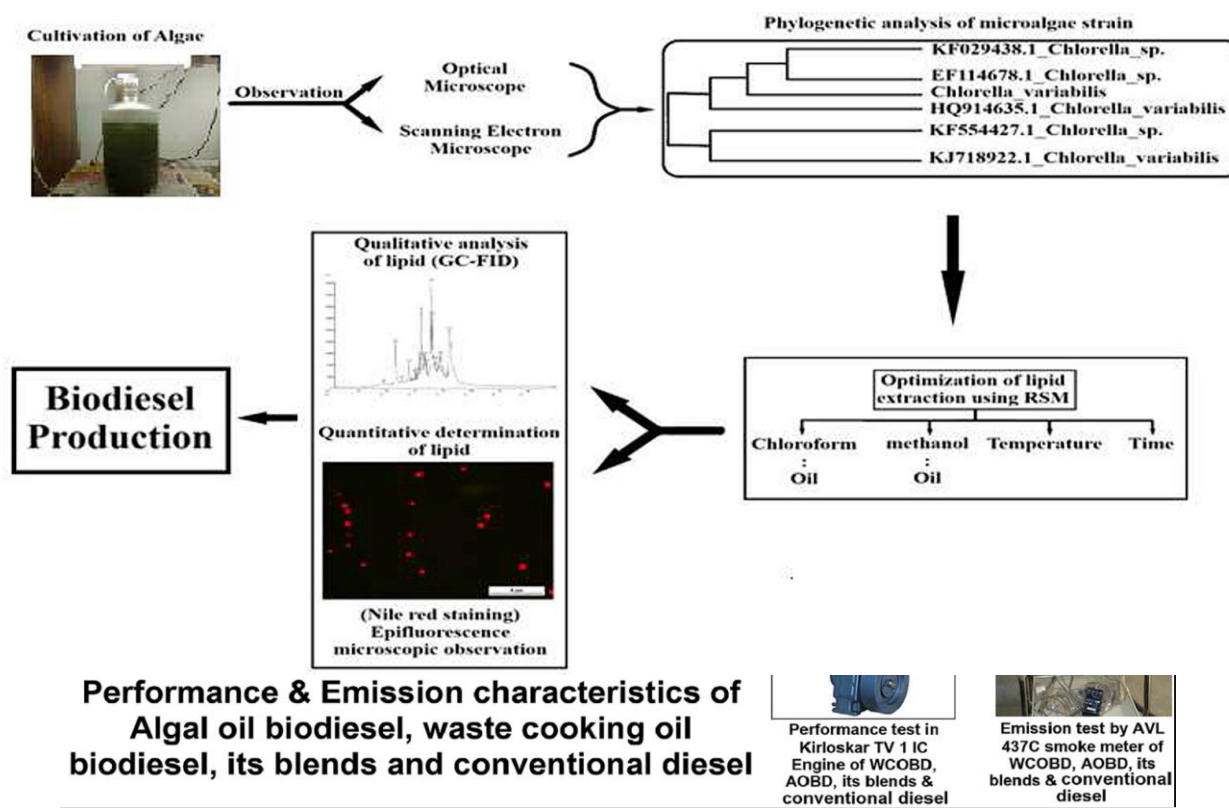
The holistic approach of Sustainable Consumption and Production is built around the following objectives:

12.1 Decoupling environmental degradation from economic growth

The Centre for Waste Management, a Centre of Excellence for Energy Research (Bioenergy) is working on projects related Waste to bioenergy Conversion technologies

Feasibility studies at the lab/bench/pilot scale for the production of biodiesel from various non-edible sources like jatropha/pongamia seeds; animal fat like beef tallow, Newzealand sheep skin; Microalgal lipids and Waste Cooking Oil of different origin. The studies have resulted in the preparation of Biodiesel from Waste Cooking Oil generated in the Sathyabama Institute of Science and Technology mess, which caters to the food need of about 10,000 inmates. This research measure not only has diverted the use of Waste Cooking Oil for fuel production but has also contributed indirectly to the reduction in usage of conventional petroleum crude (natural

resource) for the production of diesel. A 50 litres pilot plant established in the Centre for Waste Management Laboratory produces on an average 90-96% yield catering to the need of five of the institution's buses to operate with 12% blend. The usage of the blends in the buses have proved successful, the laboratory, bench scale and pilot scale biodiesel produced to have better performance and lower emissions.



- * - Extraction of fat from New Zealand origin sheep skin
- * - Conversion of fat into biodiesel
- * - Processing of fat for transesterification
- * - Biodiesel for engine testing



Calorific Value : 36,283 (kJ/kg) Diesel : 39,865 (kJ/kg)



Brief Report on Pilot Scale Bio-Diesel Production Plant	
Raw material Used	Mixed Waste Cooking Oil of FFA < 4 %
Operating time	1.5 hours
Temperature	60° C
Methanol to Oil Molar ratio	4.5 : 1
Catalyst	0.5 weight %
Yield	98%

Project: “Formulation of Biopolymer from algal biomass as an alternate to Conventional Plastic” by Using Natural algae biomass”. Algae are predicted to play an important role in tomorrow’s bio economy. Microalgae flourish in municipal wastewater treatment ponds, where they perform a waste purifying function, but harvesting of the algal biomass is generally not practiced, and where it is the chemical flocculants used to remove the algal cells limit further uses of the algal biomass, even for bio fuels (e.g. anaerobic digestion for methane generation). Many research scholars concentrating for the production of bio fuel/bio mass by natural algae. But this project deals about formulation of Biopolymer from algal biomass as an alternate to Conventional Plastic from wasted algae biomass. Wasted algae bio-mass are our raw material for making an alternate conventional plastic. Through chemical synthesis process we are able to make alternate from raw materials. This project is totally new innovation in the area research and development of waste

material as well as new composite materials and this could be definitely useful for common people because of low cost and eco-friendly.



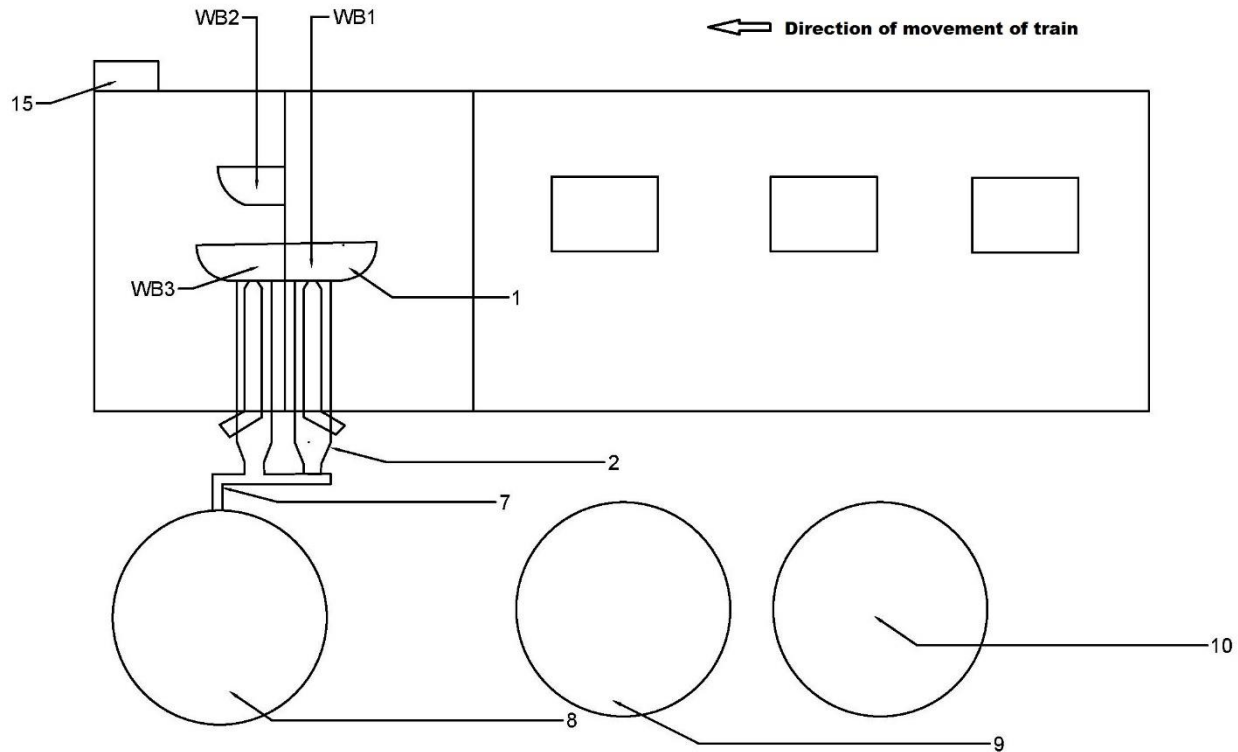
Automobile components made from algal reject

a) Compact Sensor System for Train Compartment Washbasin Water Recovery 201641037331

In this growing technical era, we are forgetting the elementary thing which supports the existence of human race that is WATER. Society faces a major problem in the form of “WATER SCARCITY “. But on the other

hand we waste a huge volume of water every day at some places. One of such places is the Indian railway where lakhs and lakhs liters of water get wasted every day just after a single use. In India average number of passenger trains running is 12617, which carry about 23 million passengers a day and 8.397 billion passengers annually. At an average 24 coaches are there in a long distance trains. Water is stored in the reservoirs at the time of departure of train (1800 litres/coach) and refilling of tanks is done after 250-450 km. But the water is not efficiently utilized. After a single use it gets wasted on railway tracks and it becomes unfit for further use. The thing is that the water which falls on the track is unable to penetrate even to the water table because of the highly compact concrete and stones which are used while constructing the tracks, so it becomes useless. Water from the wash basins are the major offender of waste water during travel.

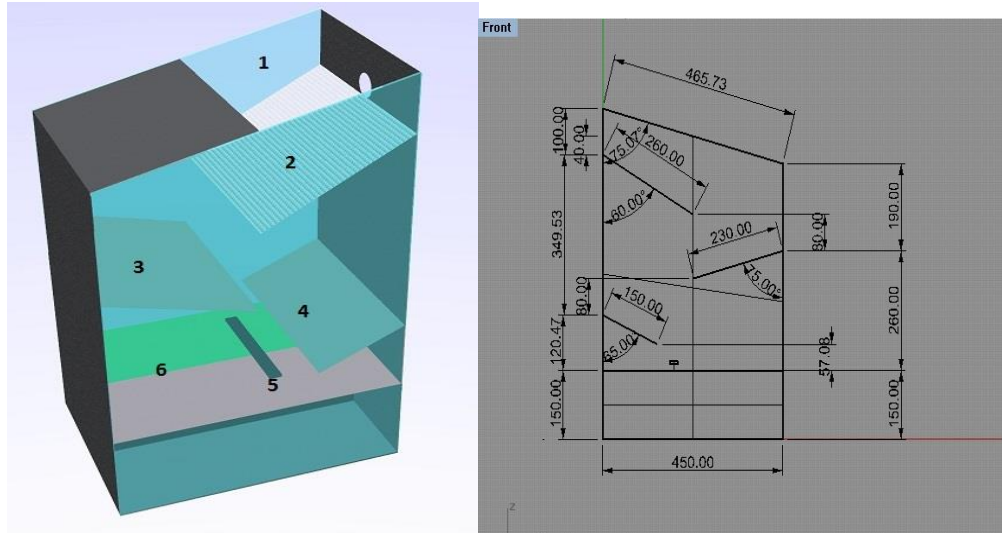
In order to meet the demands of water for the growing population of our country we need to harvest this water from being wasted. To do so we can make certain changes in the construction of the water tanks and the wash basins of the trains of India. As per the proposed system the water tanks can be divided into three chambers both of them should be separated by the non-permeable flexible membrane which will also act as the divider between the water (used & fresh) in the tank. As the volume of fresh water decreases, the place to store the filtered used water increases, so in this way the same tank can be used for storing the freshwater as well as the used water. Water from the wash basin is passed through a filter. Purity of the water will be tested at filter outlet.



Scheme of Wash Basin Water treatment in Railway Compartment

b) Automatic Smart Segregator

About 0.1 million tonnes of waste is generated in India every day, which is approximately 36.5 million tonnes annually having composition of organic waste- 40-60%, plastic, paper, cardboard, metal, glass- 12-28% and other wastes 12-47%. 95% of the municipal waste collected is dumped on land with only 5% being composted as a result of which the landfill sites are growing drastically, so adverse that even airport authorities' permission is being requested to further extend the height of landfill sites. The researchers suggest for opting a different route of utilizing easily available efficient techniques such as waste-to-waste conversion techniques, recycling processes, bio-gas plant, but the only limitation is that these all demands raw segregated waste for their successful operation and once the organic waste is mixed with inorganic and hazardous waste it's almost impossible to achieve efficient segregation. Establishing segregation plants is limited by need to large area of land, high cost machinery, heavy power requirements, so other way to look into the problem is to ensure source segregation right at the point of origin. We propose an automatic and smart concept of self-sorting trash bin, which is capable enough to sort the waste into organic waste and recyclable waste.



Configuration of Automatic Smart Segregator

The Centre for Waste management take initiatives to develop sustainable management of resources and achieve resource efficiency along both production and consumption phases of the lifecycle.

Waste Cooking Oil to Detergent Soaps and Bioglycerol to Liquid Soap

Benefits: No lathering agent addition, removes dirt with less water requirement, Simple process, Suitable for being made with low investment through microenterprises, Potential income generating technology



Eco Friendly soap from used cooking oil and Liquid Soap from bioglycerol two projects funded by Unnat Bharat Abhiyan, Centre for Rural Development and Technology, Indian Institute of Technology, Delhi.

Organic pots from food waste and coco peat



Food waste



Cocopeat



Mould



Mould and Mixing the ingredients



Filling into the mould



Sun Drying



Dried pot



Onsite training (pot making)

A Technology Development for waste to organic pots- a replacement to sapling distributing polythene bags funded by Unnat Bharat Abhiyan, Centre for Rural Development and Technology, Indian Institute of Technology, Delhi.

Ritual Waste to Incense sticks

Recycle of **Ritual Waste Materials to Incense Sticks**- an Eco-friendly Approach for Rural Industrialization and Entrepreneurship Development, Sensitivity: Internal & Restricted funded by Unnat Bharat Abhiyan, Centre for Rural Development and Technology, Indian Institute of Technology, New Delhi

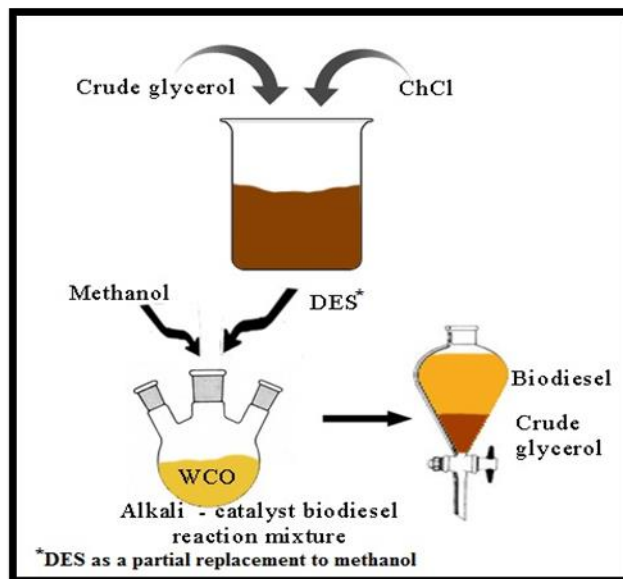
Training Self Help Group Women to make Incense sticks from Ritual Waste, Kumizhi Village



Outcome :Establishment of POOMANAM, Microenterprise establishment at Kumizhi



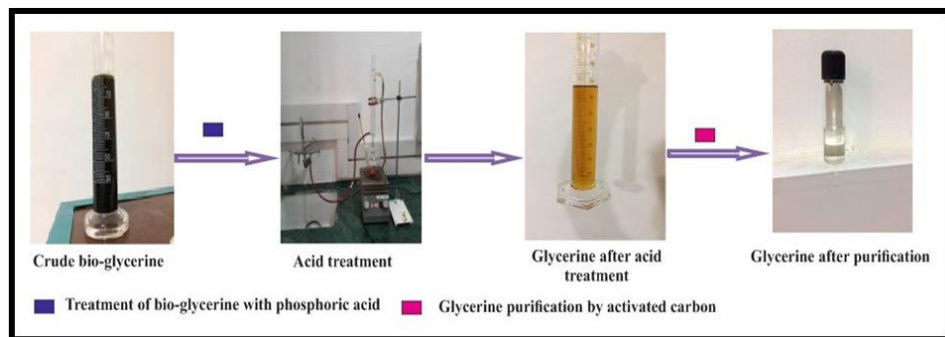
Green Solvent (Deep Eutectic Solvent-DES) Synthesis from bioglycerol recovered as a byproduct from Biodiesel production



Green Solvent Synthesis

The DES thus prepared is used as a partial replacement for Methanol in transesterification reactions for biodiesel synthesis and used to capture CO₂ reducing global warming thereby mitigating climate change.

Refined bioglycerol for heat transfer applications



A process was developed to treat crude glycerol obtained as a byproduct from transesterification reaction in the due course of producing biodiesel, which has good value as an industrial product of significant purity.

Activated Carbon from Food Waste

A technology has been developed to convert food waste to activated carbon which is potentially used in the treatment of biodiesel wash water thereby making the process a closed circuit one by providing a solution to recycle and reuse the water for washing of crude biodiesel.

12.2 Creation of new jobs and poverty eradication

The Centre has been instrumental in disseminating the processes, products and technologies pertaining to Sustainable Consumption and Production, thus being an eye-opener to the younger generation of a developing country like India to show case opportunities such as the creation of new markets, green and decent jobs as well as more efficient, welfare-generating natural resource management by conducting conferences, training programmes, workshops, awareness programmes, exhibitions etc.,

12.3 Societal outreach program

Centre for Waste Management, a Centre of Excellence for Energy Research (Bioenergy) continued to meet the centres' objectives recovering waste, recycling it using several waste valorization techniques and ending up in development of waste to value added materials for reuse, water treatment, manure, and energy applications. MHRD funded SPARC project was executed, ending up in development of protective coatings for biofuel transporting pipelines. The work was pursued in association with the Centre for Nanoscience and Nanotechnology. A patent was filed jointly. A monograph entitled "Polymetallic Coatings to Control Biofouling in Pipelines: Challenges and Potential" with the Scientific team of CWM contributing three chapters was also a remarkable publication from CRC Press, that came out as a project outcome.

A patent entitled "Automatic Smart Segregator" filed in December 2016 was granted during this academic year. A total of 18 Journal publications were made in this academic year with a cumulative impact of 121.05. The Centre's H-index is 12 and i-10 index is 21, The total citations of the Centre is 1127.

The Centre organized the 2nd International Conference on Waste Energy and Environment from 5-7th of September 2021. The conference was conducted in online mode, about 247 delegates participated in the conference. A proceeding with ISBN was published. Selected papers were published in high impact journals including Chemosphere, Biomass Conversion and Biorefinery, Applied Nanoscience. The team was consistently involved in conducting training and outreach Programmes. A total of 10 Hands on training Programmes utilizing Biodiesel Production and Characterization facilities, Gas Chromatography (GC-FID), Hydrothermal Reactor were conducted. The Scientific team conducted several outreach Programmes commemorating National and International Days of importance. In this line the Centre celebrated National Science Day on 28th February 2022; Zero Discrimination day on 1st March 2022; National Safety Day on 4th March 2022; Water Day on 22nd March 2022 and Earth Day on 22nd April 2022. The outreach programmes were conducted to create awareness among school children and the general public in line with Environmental Conservation and Protection. The Centre was also involved in conducting several consultancy services for undergraduates, postgraduates and research scholars and industries.

Adding feather to the cap the Centre jointly with Centre for Nanoscience and Nanotechnology and Department of Electronics and Communication was granted 2.36 Crore worth project entitled “Science Technology and Innovation Hub at Kattumannar Koil C D block, Cuddalore district for SC community”. Three batches of 200 beneficiaries of Eachampoondi and Aadhanur villages have been trained in biodiesel, Flyash bricks and detergent soap making. Several other processes for development of other products involving waste as resources will be taught to the beneficiaries, who will also be trained in marketing, sales and for entrepreneurship for the next three years.

12.4 Start-ups Established

- a) “BiGlySo Pvt. Ltd” has been launched for the production of waste cooking oil derived biodiesel, Agro-waste derived enriched biochar, vegetable market waste based accelerated bio compost, industrial grade bio glycerine, waste cooking oil based detergent soaps, and bioglycerine based liquid soaps.
- b) “POOBAS Pvt. Ltd” has been established for sales of hydroponics based horticultural cultivation and consultation

- c) “Penteum Enterprises Pvt. Ltd functions with the objective to utilize fly ash for brick making.
- d) Poomanam was established by the Self help group women in these adopted villages where they make incense sticks from the flower waste.

Sathyabama Institute of Science and Technology through the Centre for Waste Management will Contribute to India’s shift towards sustainable consumption and production

- e) Achieve sustainable management and efficient use of natural resources by 2030 thereby having the expected Material footprint, material footprint per capita, and material footprint per GDP
- f) Have a reduced Food Waste Index by translating food waste recycling technologies for fuel production and activated carbon synthesis, thereby diverting waste to useful product of higher value.
- g) make the collaboration established with Vans Chemistry fruitful to handle E-Waste which is hazardous. The Institution will jointly develop a technology in handling the hazardous e-waste by translating the preliminary work done on recovery of Mercury from Compact Fluorescent Lamps part from establishing an E-Waste Collection hub.
- h) will focus on establishing startups related to Waste Management and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment by 2030 .
- i) will substantially reduce waste generation through prevention, reduction, recycling and reuse within the institution and also develop strategies and protocols jointly with environmental management companies like Wasmanpro Solutions, Vans Chemistry, Transenergistics etc., to reduce waste disposal, increase recycling rate by encouraging companies to adopt sustainable practices.
- j) Promote public procurement practices that are sustainable, in accordance with national policies and priorities
- k) involve in outreach activities, training programmes, workshops and conferences among different beneficiaries and stake holders including students, teachers, industry personnel and general public to render relevant information and awareness for sustainable development and lifestyles in harmony with nature

- l) implement renewable and alternate energy technologies in large.
- m) promote sustainable tourism in Chennai where the institution is located by implementing green concepts in terms of clean energy usage (biodiesel from Waste Cooking Oil), waste management in hotels (Biogas from food waste) promoting Installed renewable energy-generating capacity.
- n) acquire subsidies for implementing sustainable consumption and production

The Centre for Waste Management, Sathyabama Institute of Science and Technology has

- Established practices of waste sorting, waste collection, recycling, concept of ‘Circular Economy’ and ‘Resource Efficiency’ in school and college/university curriculum
- Undertaken research on resource flows, life cycle analysis, secondary materials and provide capacity building and ventured into technical support for setting up MSMEs/start-ups in the waste sector
- Introduced short training courses on different aspects of resource efficiency such as resource efficient designs, recycling and waste reduction in all public administration, health, engineering, training and education programs
- Engaged in multi-disciplinary research and development, establishment and testing of developed frameworks and tools to address the implementation and challenges of resource efficiency

SDG 13 - CLIMATE ACTION



Sustainable Development Goal 13 (SDG 13) focuses on taking urgent action to combat climate change and its impacts. Climate change is a global crisis that affects all nations and ecosystems, driven largely by human activities that release greenhouse gases, such as carbon dioxide (CO₂) and methane (CH₄), into the atmosphere. This goal underscores the need for immediate and coordinated actions to reduce emissions, adapt to climate impacts, and strengthen resilience, recognizing that the effects of climate change—rising temperatures, sea-level rise, extreme weather events, and biodiversity loss—threaten human livelihoods, health, food security, water resources, and natural habitats worldwide.

The Intergovernmental Panel on Climate Change (IPCC) has warned that the global temperature rise should be limited to 1.5°C above pre-industrial levels to avoid catastrophic consequences. However, the current trajectory, marked by increasing fossil fuel consumption, deforestation, and unsustainable agricultural practices, points to a rise beyond this threshold if substantial mitigation measures are not implemented. SDG 13 aligns with the Paris Agreement, where countries committed to reducing emissions and enhancing adaptive capacities, while fostering sustainable development pathways. It emphasizes collective responsibility and urgent measures by all sectors of society, from governments and industries to individuals and communities.

One of the primary targets of SDG 13 is to integrate climate action into national policies, strategies, and planning processes. Countries are encouraged to develop and implement Nationally Determined Contributions (NDCs), which outline each country's commitments to reducing greenhouse gas emissions and adapting to climate impacts. NDCs play a crucial role in translating global commitments into actionable, localized goals that align with each country's unique circumstances, resources, and developmental priorities. These plans not only set targets for emissions reductions but also encompass policies to protect vulnerable populations, enhance disaster resilience, and promote climate-friendly infrastructure and technologies. The development of early warning systems, sustainable land and water management practices, and

investments in renewable energy are just a few of the measures that contribute to strengthening climate resilience.

A significant component of SDG 13 also centers around the importance of climate adaptation and resilience-building. Climate adaptation entails making adjustments in social, economic, and environmental practices to reduce vulnerability to the adverse impacts of climate change. As communities face threats like sea-level rise, desertification, changing rainfall patterns, and intensified storms, adaptation strategies become critical to protect lives, livelihoods, and ecosystems. Countries at high risk of climate impacts—often low-income nations and small island states—require substantial support to build adaptive capacities, strengthen infrastructure, and enhance emergency preparedness. Through SDG 13, there is a call for developed countries to mobilize resources, provide financial aid, and transfer technology to vulnerable nations, enabling them to implement climate-resilient policies and reduce their reliance on carbon-intensive systems.

Mitigating climate change is a central aim of SDG 13, with a primary focus on reducing greenhouse gas emissions to stabilize global temperatures. The energy sector remains the largest source of emissions, and a global shift toward renewable energy sources, such as solar, wind, and hydroelectric power, is critical. In addition, improving energy efficiency, advancing low-carbon technologies, and fostering sustainable urban planning are necessary steps to reduce the climate footprint of industries, cities, and households. The promotion of green technologies, sustainable transport options, and waste reduction programs contributes to emission reductions, creating a pathway toward a low-carbon economy. Governments are urged to provide incentives for clean energy investments, support the decarbonization of high-emission industries, and engage in global carbon markets to encourage the reduction of carbon-intensive practices.

Another key element of SDG 13 is climate education and awareness, recognizing that public understanding and participation are essential to drive behavioral changes and policy support. Increasing awareness of climate risks and promoting sustainable practices can inspire collective action, empowering communities and individuals to make environmentally conscious decisions. Educational programs, media campaigns, and community initiatives play a crucial role in highlighting the urgency of climate action and motivating diverse stakeholders to contribute to climate solutions.

SDG 13 acknowledges that climate action must be comprehensive, engaging all sectors, levels of government, and segments of society. The achievement of this goal depends on international cooperation, robust policies, innovation, and financial investments in sustainable development. Addressing climate change is intrinsically linked to the realization of other Sustainable Development Goals, as it impacts food security, water resources, health, and economic stability. Through a united global effort, SDG 13 aims to protect the planet for current and future generations, ensuring that all communities can adapt, survive, and thrive in a changing climate.

India's Performance in Climate Action

India's performance in climate action in 2023 reflects its commitment to addressing the challenges of climate change, focusing on both mitigation and adaptation. As one of the world's largest emitters of greenhouse gases, India plays a critical role in global climate efforts, with actions that directly impact its developmental goals and environmental sustainability. India has made substantial progress toward its climate targets, particularly through renewable energy expansion, policy initiatives, and international partnerships, although challenges remain in balancing economic growth with emissions reductions.

A central focus of India's climate action is its commitment to renewable energy. In 2023, India continued to make strides toward achieving its ambitious goal of 500 gigawatts (GW) of installed renewable energy capacity by 2030, with a focus on solar, wind, and hydropower. Solar energy, in particular, has seen remarkable growth. Programs like the National Solar Mission and initiatives promoting rooftop solar installations have contributed to rapid expansion. India's government has implemented policies to incentivize renewable energy investments, attract private sector participation, and support innovation in green technology. By the beginning of 2023, India's installed renewable capacity had surpassed 173 GW, placing the country on a strong trajectory toward meeting its targets. However, achieving 500 GW by 2030 will require continued investment, infrastructure development, and policy support, especially as energy demand continues to rise.

India's commitment to electric vehicles (EVs) has also gained momentum, with efforts to reduce emissions from the transportation sector, which is a significant contributor to air pollution and greenhouse gases. The Faster Adoption and Manufacturing of Electric Vehicles (FAME) scheme has been instrumental in promoting EV adoption by providing incentives to manufacturers and buyers. In 2023, India expanded EV charging infrastructure and introduced tax benefits to encourage the transition to electric mobility. Major urban centers have witnessed a gradual increase in EV usage, which contributes to emissions reductions and improved urban air quality. However, a nationwide transition to EVs faces challenges, such as charging infrastructure limitations and dependency on coal for electricity, which underscores the need for a broader shift to clean energy.

In addition to renewable energy, India has focused on reforestation and afforestation to enhance carbon sequestration and restore degraded land. Initiatives like the Green India Mission aim to increase forest cover and improve the quality of forests to serve as carbon sinks. India's pledge under the Bonn Challenge to restore 26 million hectares of degraded land by 2030 reflects its commitment to ecosystem restoration and biodiversity conservation. In 2023, India continued to implement these programs, but forest degradation and urban expansion remain pressing issues that impact forest cover and biodiversity.

India's climate adaptation efforts in 2023 addressed the need to build resilience against climate-related risks, including heatwaves, droughts, floods, and cyclones, which are increasingly frequent and intense. Recognizing the vulnerability of its agricultural sector and water resources to climate impacts, India has implemented adaptive strategies, such as drought-resistant crop varieties, rainwater harvesting, and community-based watershed management. The National Action Plan on Climate Change (NAPCC) and various state action plans provide frameworks for climate resilience. In 2023, India enhanced its early warning systems and disaster preparedness to mitigate the impact of extreme weather events on communities and infrastructure. These efforts are particularly critical for rural areas and vulnerable populations, who bear the brunt of climate impacts.

India has also been a vocal advocate for climate justice on international platforms, highlighting the principle of Common but Differentiated Responsibilities (CBDR) and urging developed nations to fulfill their commitments to provide climate finance and technology transfer.

India's stance emphasizes that countries with historical emissions responsibilities, primarily developed nations, should support developing countries through financial aid and technology transfer to enable sustainable and equitable climate action. At international platforms like the COP28 (Conference of the Parties) and the G20 summit hosted by India in 2023, India advocated for fair and equitable climate policies that acknowledge the diverse capabilities and vulnerabilities of different nations. India's leadership in the International Solar Alliance (ISA) and the Coalition for Disaster Resilient Infrastructure (CDRI) has further cemented its role as a champion for climate resilience, renewable energy, and sustainable infrastructure in the Global South.

However, India faces several challenges in its path to climate action. Despite significant progress in renewables, India still relies heavily on coal, which accounts for around 70% of its electricity generation. The energy transition from coal to cleaner alternatives remains a gradual process due to infrastructure and economic constraints, especially as India's energy demand grows to support industrialization and urbanization. Balancing these demands while reducing emissions is a complex task that requires policy consistency, large-scale investments, and innovative solutions.

Additionally, India's vast agricultural sector, which supports over half of the population, is particularly vulnerable to climate impacts. Extreme weather events such as floods and droughts threaten food security and rural livelihoods, making climate adaptation measures essential. While India has developed policies for drought-resistant crops and water management, these adaptation measures need to be scaled up and adapted to local contexts for broader effectiveness.

India's climate action in 2023 also highlighted the importance of public awareness and community involvement in driving sustainable practices. Programs and campaigns on sustainable lifestyles, water conservation, and afforestation are increasingly engaging citizens in climate action, reflecting the government's emphasis on "Lifestyle for Environment" (LiFE), a global

movement promoted by India. This initiative aims to inspire individual and community-led actions that contribute to environmental sustainability, emphasizing that climate action is a shared responsibility.

In summary, India's performance in climate action in 2023 reflects a multifaceted approach that combines renewable energy expansion, climate resilience, and international advocacy. While India has made significant progress, achieving its climate goals will require overcoming structural challenges, enhancing public and private sector collaboration, and securing international support. India's commitment to both mitigation and adaptation underlines its dual focus on sustainable development and climate resilience, with a vision to protect its people, economy, and ecosystems from the impacts of climate change. Through continued efforts and global cooperation, India aims to contribute significantly to global climate goals while ensuring a sustainable future for its population.

13.1 Who we are?

The Centre for Climate Change Studies (CCCS) was established in the year 2011 at International Research Centre (IRC) with the primary mandate of investigating the impact of predicted climate change on marine organisms associated to various ecosystems like coral reefs, sea grass meadows, seaweeds, intertidal zones and mangrove ecosystems etc. In addition, we are committed to achieve United Nation's Sustainable Development Goals (SDGs), mainly SDG 13 and SDG 14 that cover's Climate Action and Life Below Water by 2030.

At present, in the CCCS, the following activities are going-on: (i) Implications of climate change on natural life history traits of coral reef caridean shrimps; (ii) Response of micro-planktons to elevated temperature and decreased pH using multidisciplinary approach including proteomics, biochemical and physiological assays; (iii) Contribution of seaweeds towards sustainable future by playing a role in climate change mitigation and adaptation; (iv) Diversity and status of coral reef shrimps in Gulf of Mannar Biosphere Reserve, Tamil Nadu and Lakshadweep and (iv) Plant-insect interaction under climate change scenario. Besides, the Centre is also instrumental in spreading awareness about conservation of marine ecosystem to schools and teachers through citizen science program.

Researchers at CCCS have been actively working at Sathyabama Marine Research Station (SMRS), recently established at Rameswaram to encourage research on cutting-edge marine ecology and climate change to sustainably use, manage, and conserve natural ecosystems for the benefit of the coastal communities of Gulf of Mannar and Palk Bay regions.

13. 2 Research Areas

- **Seaweed ecophysiology under climate change condition to ocean acidification**
- **Understanding the impact of ocean acidification on marine invertebrates**
- **Unraveling the thermal tolerant symbiodinium clade from the Scleractinian corals of Palk Bay**

Under the SDG the Centre for Climate Change Studies (Marine Biology Lab) has been extensively understanding the impact of climate change on marine organisms under the physiological perspective.

We have been investigating how marine organisms, in particular tropical seaweeds, sea anemones and associated organisms respond to the predicted ocean acidification (pH 8.1 vs 7.7) and varying temperature (27, 30 and 33). The model experimental set up is shown in figure below. As response variables, we measure growth, productivity, redox state, primary and secondary metabolites.

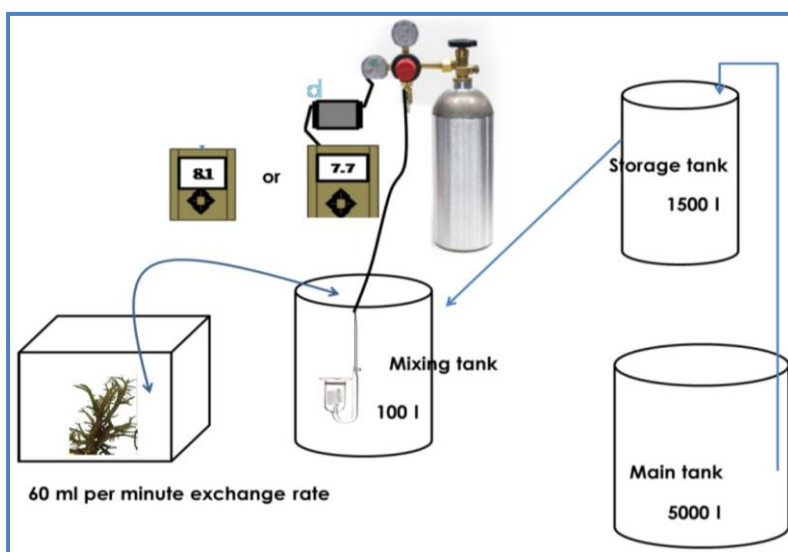


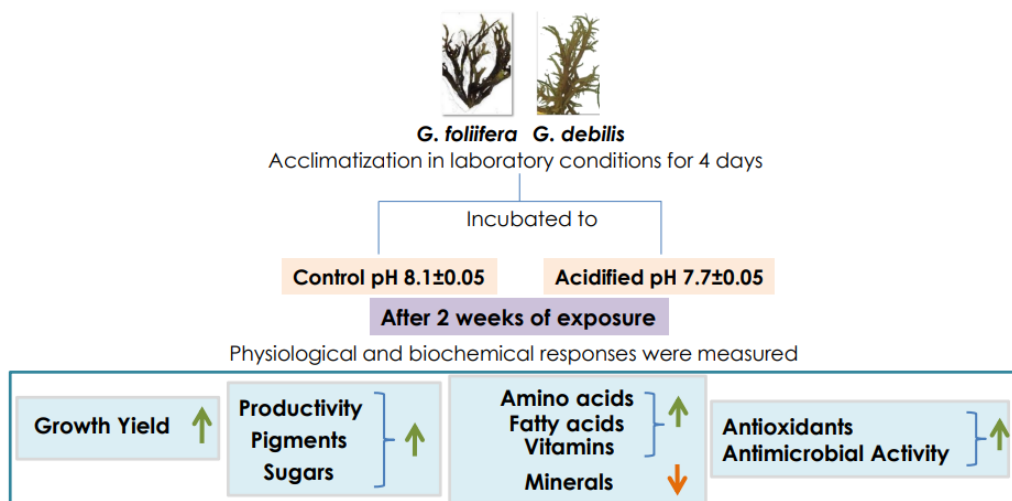


Fig. A model experimental set up for ocean acidification

1. Evaluation of growth, primary productivity, nutritional composition, redox state, and antimicrobial activity of red seaweeds *Gracilaria debilis* and *Gracilaria foliifera* under pCO₂-induced seawater acidification

The genus *Gracilaria* is an economically important group of seaweeds as several species are utilized for various products such as agar, used in medicines, human diets, and poultry feed. Hence, it is imperative to understand their response to predicted ocean acidification conditions. In the present work, we have evaluated the response of *Gracilaria foliifera* and *Gracilaria debilis* to carbon dioxide (pCO₂) induced seawater acidification (pH 7.7) for two weeks in a controlled laboratory conditions. As a response variable, we have measured growth, productivity, redox state, primary and secondary metabolites, and mineral compositions. We found a general increase in the daily growth rate, primary productivity, and tissue chemical composition (such as pigments, soluble and insoluble sugars, amino acids, and fatty acids), but a decrease in the mineral contents under the acidified condition. Under acidification, there was a decrease in malondialdehyde. However, there were no significant changes in the total antioxidant capacity and a majority of enzymatic and non-enzymatic antioxidants, except for an increase in tocopherols, ascorbate and glutathione-s-transferase in *G. foliifera*. These results indicate that

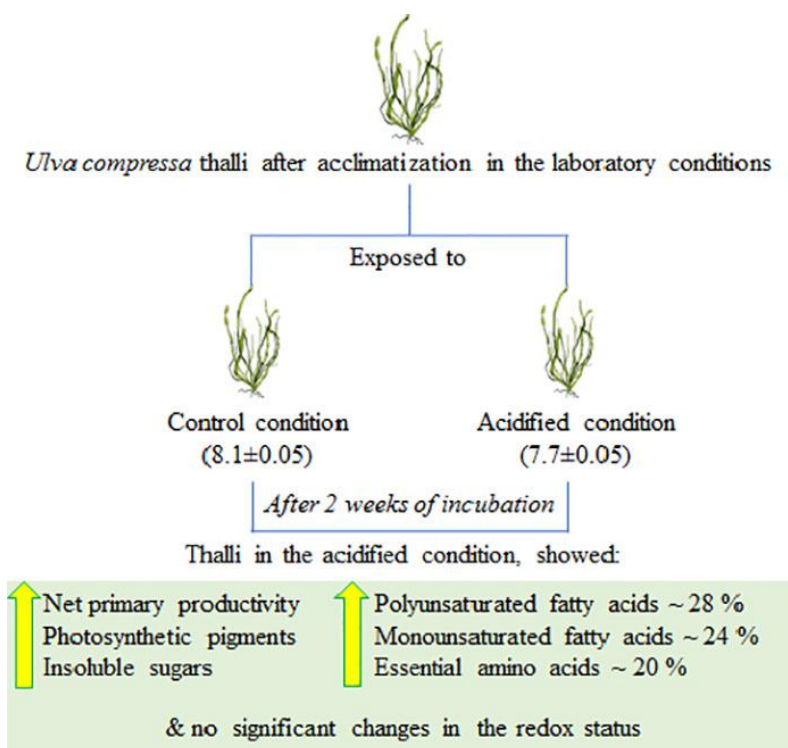
elevated pCO₂ will benefit the growth of the studied species. No sign of oxidative stress markers indicating the acclimatory response of these seaweeds towards lowered pH conditions. Besides, we also found increased antimicrobial activities of acidified samples against several of the tested food pathogens. Based on these observations, we suggest that *Gracilaria* spp. will be benefited from the predicted future acidified ocean.



2. Influence of seawater acidification on biochemical composition and oxidative status of green algae *Ulva compressa*

The sequestration of elevated atmospheric CO₂ levels in seawater results in increasing acidification of oceans and it is unclear what the consequences of this will be on seaweed ecophysiology and ecological services they provide in the coastal ecosystem. In the present study, we examined the physiological and biochemical response of intertidal green seaweed *Ulva compressa* to elevated pCO₂ induced acidification. The green seaweed was exposed to control (pH 8.1) and acidified (pH 7.7) conditions for 2 weeks following which net primary productivity, pigment content, oxidative status and antioxidant enzymes, primary and secondary metabolites, and mineral content were assessed. We observed an increase in primary productivity of the acidified samples, which was associated with increased levels of photosynthetic pigments. Consequently, primary metabolites levels were increased in the thalli grown under lowered pH conditions. There was also richness in various minerals and polyunsaturated fatty acids, indicating that the low pH elevated the nutritional quality of *U. compressa*. We found that low pH reduced malondialdehyde (MDA) content, suggesting reduced oxidative stress. Consistently

we found reduced total antioxidant capacity and a general reduction in the majority of enzymatic and non-enzymatic antioxidants in the thalli grown under acidified conditions.



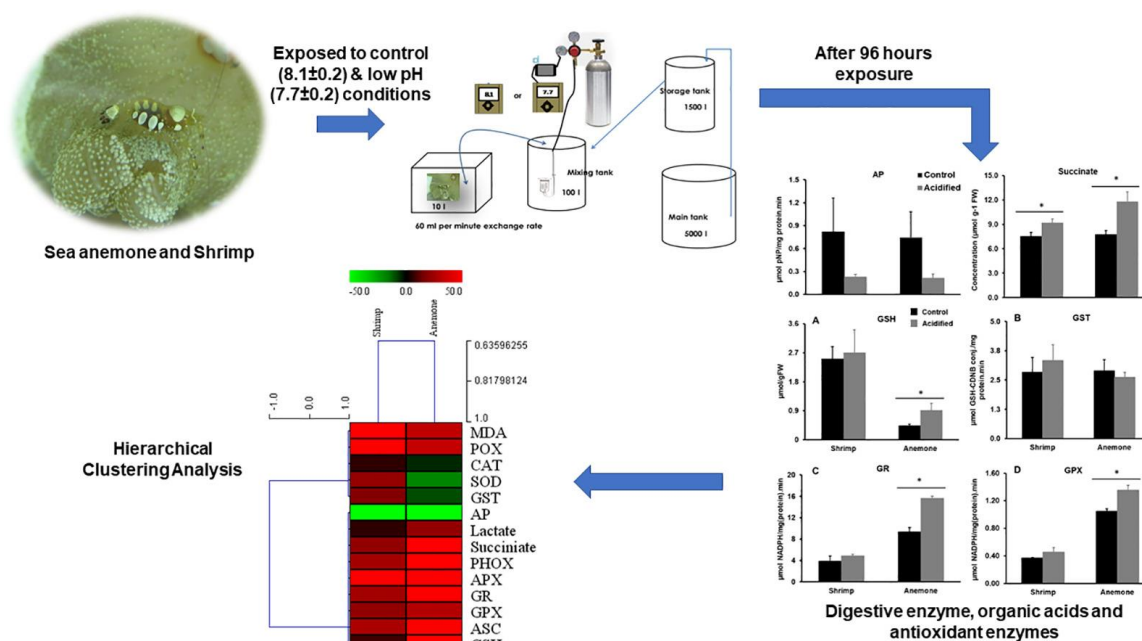
3. Seasonal Changes in the Biochemical Constituents of Green Seaweed *Chaetomorpha antennina* from Covelong, India

Seaweeds are well known for having a wealth of nutritional benefits and providing ecological support to associated fauna. Seasonality influences the biochemical characteristics, affecting their ecological and economic values. In the present study, we evaluated pigments, primary and secondary metabolites, minerals, and antioxidant properties of green seaweed *Chaetomorpha antennina* growing on the intertidal rocks along the Covelong coast, India, in different seasons (from June 2019 to March 2020). Significant variations were found in the levels of antioxidants, minerals, and metabolites in different seasons, e.g., amino acid levels were the highest in post-monsoon and the lowest in summer. In monsoon, we found the highest concentration of fatty acids in the thalli. Lipid peroxidation and total antioxidant activity were at their maximum levels during post-monsoon, which indicated oxidative damage responses. No significant variations were found in the levels of photosynthetic pigments. The outcomes indeed suggested seasonal variations in the biochemical and nutrient profile of *C. antennina*. We suggest that the

harvesting/collection of *C. antennina* for different nutrients and metabolites should be performed in the respective seasons.

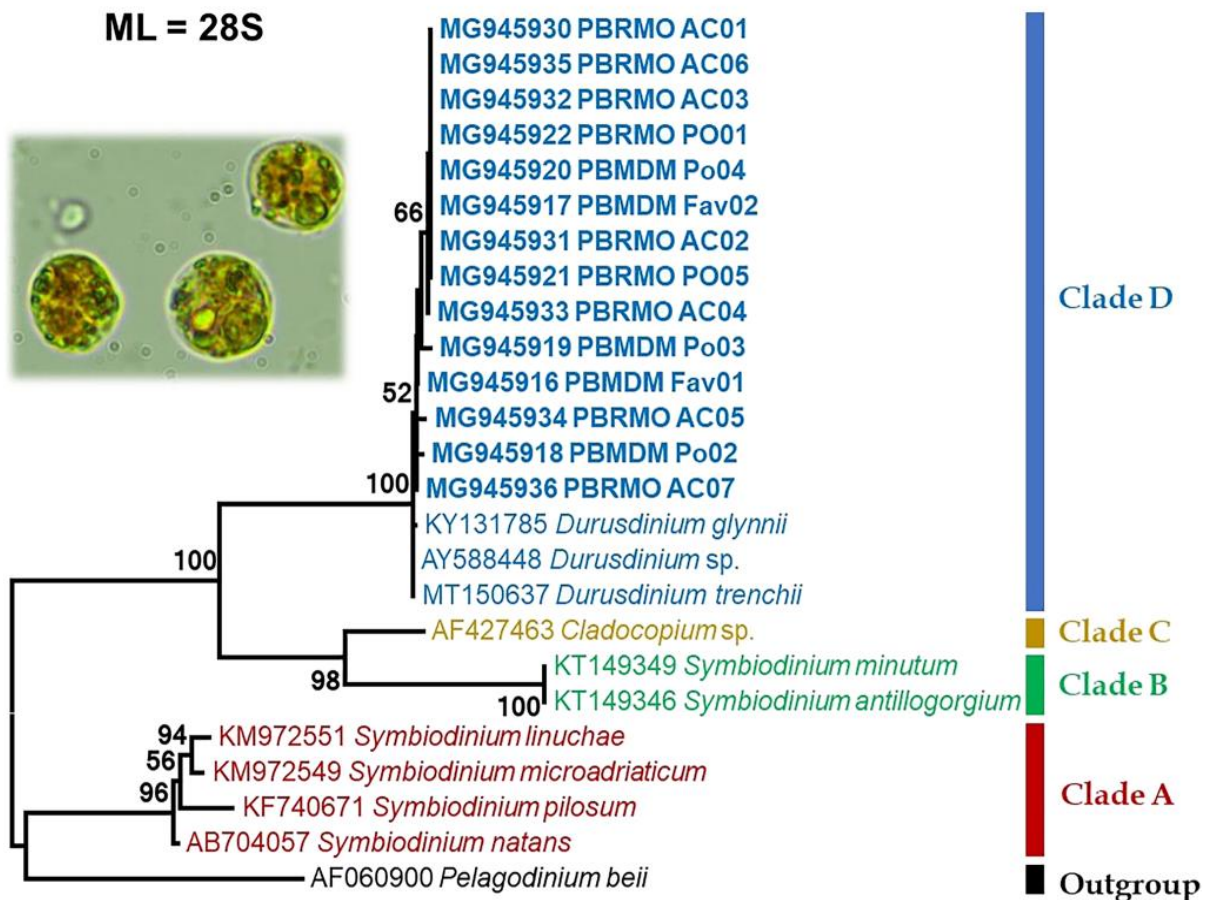
4. Physiological responses of the symbiotic shrimp *Ancyllocaris brevicarpalis* and its host sea anemone *Stichodactyla haddoni* to ocean acidification

In this study, the physiology of symbiotic ‘peacock-tail’ shrimp *Ancyllocaris brevicarpalis* and its host ‘Haddon’s carpet’ sea anemone *Stichodactyla haddoni* were tested under lowered pH (7.7) and control (8.1) conditions. The biochemical responses such as digestive enzyme (AP), organic acids (lactate and succinate), oxidative damages (MDA), antioxidants metabolites/enzymes (ASC, GSH, SOD, CAT, APX, GPX, GR, POX, and PHOX), and detoxification enzyme (GST) were measured. The AP showed insignificantly reduced values in both the organisms in lowered pH conditions compared to control indicating the effect of abiotic stress. The hierarchical clustering analysis indicated low MDA in sea anemone can be explained by higher POX, APX, GR, ASC, and GSH levels compared to shrimps. However, the detoxification enzyme GST showed less activity in sea anemones compared to shrimps. The results suggest that *A. brevicarpalis* and sea anemone *S. haddoni* may have deleterious effects when exposed to short-term acidification stress.



5. Probing the thermo tolerant endosymbiont genus *Durusdinium* (Clade D) in the scleractinian corals of Palk Bay, Southeast coast of India

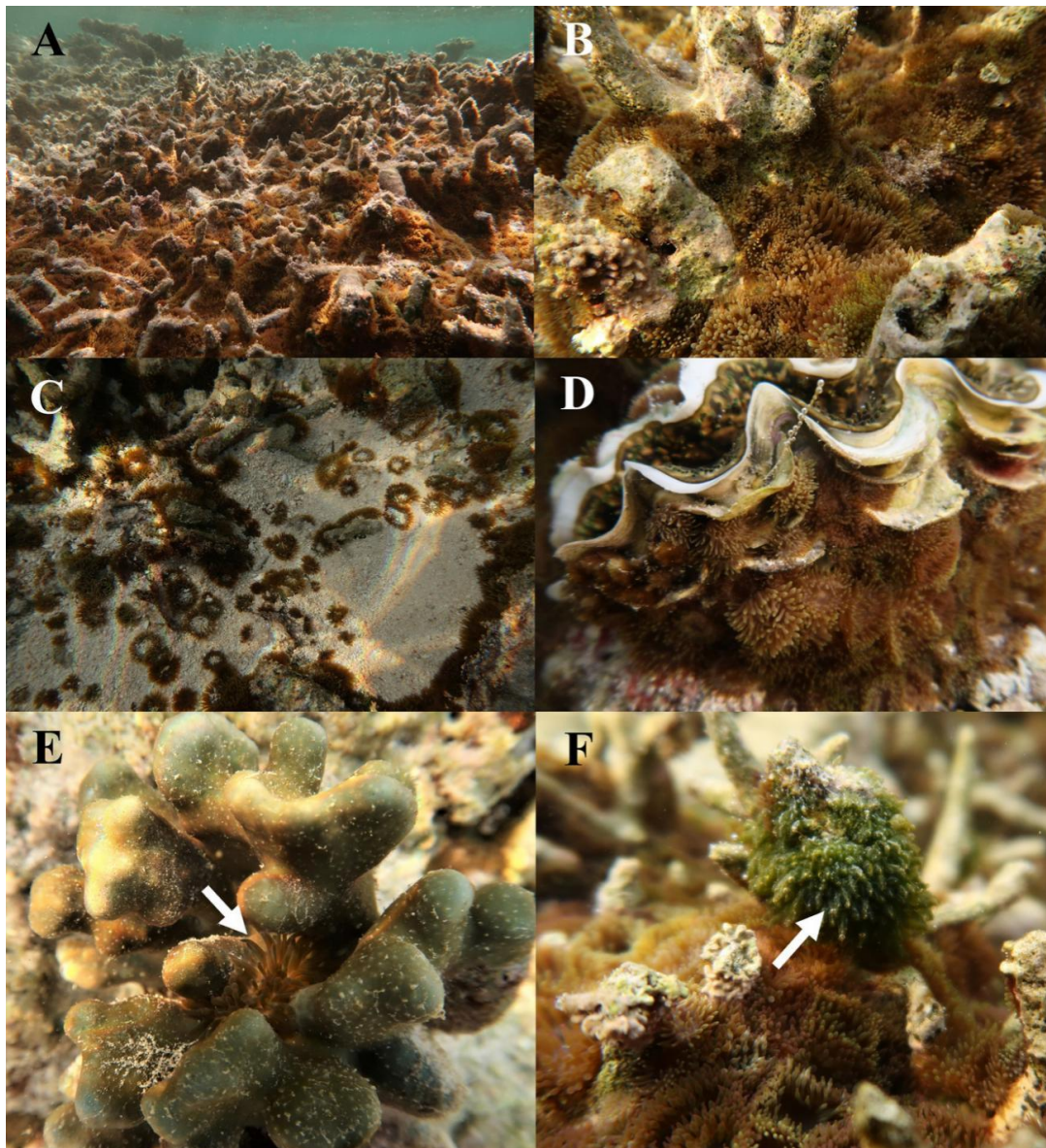
The world's coral reef ecosystems are built by a symbiotic relationship between reef corals and the dinoflagellates of the family Symbiodiniaceae. Climate change has already impacted the world's coral reef ecosystems. Some corals can survive in extreme environmental conditions through the acquisition of stress-tolerant endosymbionts. In the present study, the genetic diversity of endosymbionts of fourteen coral genera such as *Porites* (Five), *Favia* (Two), and *Acropora* (Seven) sampled from the reefs of Mandapam and Rameswaram, Palk Bay, Tamil Nadu, India was assessed by sequencing both large (LSU) and small subunit (SSU) gene fragments. The phylogenetic construction of LSU revealed the diversity of thermo tolerant Clade D that was monophyletic throughout various coral taxa. Comparison of thermo tolerant clade D with SST (>32 °C) has provided valid evidence for the presence of the endosymbiont *Durusdinium* sp. (Clade D) across different coral species in the Palk Bay.



6. Sea anemone infestation on the coral reefs of Lakshadweep

Coral reefs have undergone a phase shift in several instances due to the dominance of soft corals, sea anemones or sponges. Such phase shifts could be triggered either by natural calamities or due to the anthropogenic disturbances that resulted in the reduction in coral cover and coral health³. One such instance has been documented recently (February 2021), during an intertidal survey along the reef edges (lagoon side) of Agatti Island, Lakshadweep, India. The dead corals, shells of giant clams and some live corals were infested by corallimorph sea anemone (Figure 1). These are invasive and naturally thrive in man-made or environmentally disturbed coral reef habitats. They are considered as secondary colonizers that cover as a carpet the empty spaces of coral reefs. They are also resistant to pollutants and could be a potential indicator for pollution studies. The present corallimorph sea anemone species was identified as *Condylactis* sp. due to its typical brown colour, short tentacles with pink-coloured tips and oral disk diameter of 0.5–4 cm with

mouth turned upside down, which are characteristic features of corallimorph sea anemones. Like other sea anemones, the corallimorph sea anemones also possess zooxanthellae inside their bodies to perform photosynthesis and provide nutrients to the host. The present infestation of corallimorph sea anemones in Lakshadweep is only observational and subsequent damage to the coral reefs needs to be examined.



13.3 Other Research Areas Related to SDG13

- Evaluating carbon sequestration potential of marine macrophytes and understanding photophysiology
- Understanding temporal variations in nutritional values of green seaweed *Chaetomorpha antennina* and their associated faunal communities.
- Deployment of underwater sensors to obtain real time data on seawater biogeochemistry
- Establishing Long Term Ecological Monitoring (LTEM) site at Palk Bay



13.4 Conservation and Outreach

Scientists at the Centre for Climate Change Studies are active at disseminating information by organizing conservation outreach programs for the students, researchers and the general public.



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ONE DAY ONLINE SYMPOSIUM ON

BATOIDS(RAYS) OF INDIA

The symposium aims to raise awareness and bring attention to the species-rich yet under-studied group of Rays in India.

Theme I : Taxonomy and phylogeny
Theme II: Ecology and Behaviour
Theme III: Rays in fisheries
Theme IV: Socio-cultural perceptions

14th March 2023; 9:15 AM - 1 PM
on ZOOM

Anyone interested to learn about rays can attend

List of confirmed speakers (so far)

Dr. Shoba Joe Kizhakudan Central Marine Fisheries Research Institute, Chennai	Dr. Amit Kumar Sathyabama Institute of Science and Technology, Chennai
Trisha Gupta University of Oxford, United Kingdom	Dr. Divya Karnad Ashoka University, Haryana
Shrutika Raut Sathyabama Institute of Science and Technology, Chennai	

* E-certificates will be provided to all the active participants

To register, click here or scan: <https://forms.gle/2QYYdpQ9RTuNajIZ7>

Organizers:
Dr. Amit Kumar
Ms. Shrutika Raut
Dr. S. Prakash
Ms. Kunjulakshmi

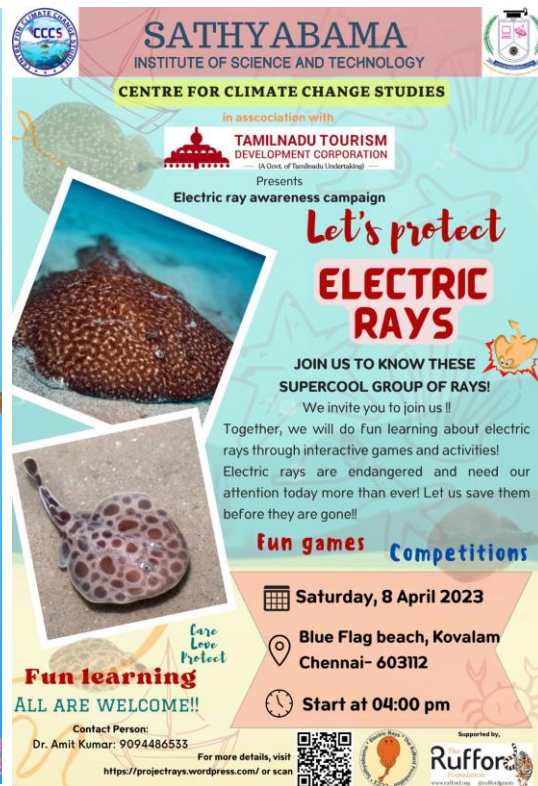
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Dr. T. Sasipraba, Vice Chancellor



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in association with
TAMILNADU TOURISM DEVELOPMENT CORPORATION
(A Govt. of Tamil Nadu Undertaking)

Presents
Electric ray awareness campaign

Let's protect ELECTRIC RAYS

JOIN US TO KNOW THESE SUPERCOOL GROUP OF RAYS!

We invite you to join us!!

Together, we will do fun learning about electric rays through interactive games and activities! Electric rays are endangered and need our attention today more than ever! Let us save them before they are gone!!

Fun games Competitions

Saturday, 8 April 2023

Blue Flag beach, Kovalam Chennai- 603112

Start at 04:00 pm

Fun learning ALL ARE WELCOME!!

Contact Person:
Dr. Amit Kumar: 9094486533

For more details, visit <https://projectrays.wordpress.com/> or scan

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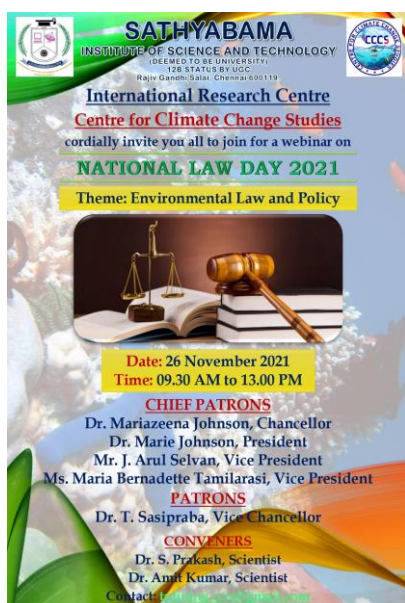
13.5 Teaching and Learning

We are committed to provide a high-quality education that enables our students to engage with sustainability challenges and to create indigenous solutions to the burning issues of climate change at the local, national and international levels. In support of this, we will encourage

organizational training inviting subject experts from different university/institutions towards sustainability-oriented change.

In addition, CCCS join hands with the Centre for Professional and Career Development at Sathyabama to provide curriculum innovation, research-led practice and staff training.

1. UG – Environmental Science and Engineering – SBTA1001
2. Certificate course in Marine Biology and Climate Change
3. Field course in Intertidal Ecology and Climate Change
4. Practical course in DNA Taxonomy and Phylogeny
5. Coordinating activities for the South Asian Regional Hub on Ocean Acidification



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**International Research Centre
Centre for Climate Change Studies**
cordially invite you all to join for a webinar on
NATIONAL LAW DAY 2021
Theme: Environmental Law and Policy

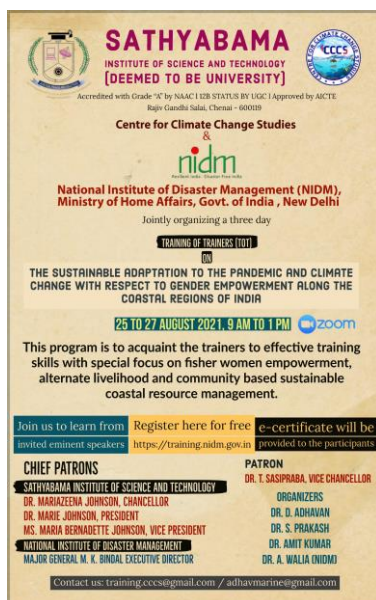
Date: 26 November 2021
Time: 09.30 AM to 13.00 PM

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CONVENERS
Dr. S. Prakash, Scientist
Dr. Anni Kumar, Scientist

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Centre for Climate Change Studies
&
nidm
National Institute of Disaster Management (NIDM),
Ministry of Home Affairs, Govt. of India, New Delhi

Jointly organizing a three day
TRAINING OF TRAINERS (TOT)

**THE SUSTAINABLE ADAPTATION TO THE PANDEMIC AND CLIMATE
CHANGE WITH RESPECT TO GENDER EMPOWERMENT ALONG THE
COASTAL REGIONS OF INDIA**

25 TO 27 AUGUST 2021, 9 AM TO 1 PM 

This program is to acquaint the trainers to effective training
skills with special focus on fisher women empowerment,
alternate livelihood and community based sustainable
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12B STATUS BY UGC

First National Virtual Event for Budding
Marine Biology Enthusiasts

**"MARINE BIOLOGY RESEARCH SYMPOSIUM"
MBRS 2021**

Organized by
CENTRE FOR CLIMATE CHANGE STUDIES
In association with
**ICAR -
NATIONAL BUREAU OF FISH GENETIC RESOURCES**
Lucknow

DATES
26th TO 30th JULY 2021



Registration Link: <https://forms.gle/BgQnzp7558qej9K8>



SATHYABAMA
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3-days hands-on training workshop in
**INTEGRATIVE TAXONOMY OF
MARINE INVERTEBRATES**
(Sample to sequence analysis)
Organized by
**Integrative Taxonomy Lab
CENTRE FOR CLIMATE CHANGE STUDIES**

When: 4th to 6th January 2023
Time: 9 AM to 4 PM
Venue: NEXT-GEN Lab, 2nd Floor,
International Research Centre

Who can apply: Anyone
interested to learn integrative
taxonomy of marine
invertebrates

Highlights:

- This course will deliver training in taxonomic skills and field techniques in the collection and preservation, identification of marine invertebrates using conventional methods
- The course will give training in DNA taxonomy, phylogeny and other bioinformatic tools.
- The course will entail three days of lectures, hands-on practical sessions and one day field sample collection at Covelong beach (fish landing and intertidal walk)
- The course is mostly delivered by the scientists at the Integrative Taxonomy Lab and Marine Biology Lab at Centre for Climate Change Studies.
- The course also includes guest lectures by taxonomic experts across the country.

Register here: <https://forms.gle/m7wvdfdrQKXfVv93>
Deadline to register: 15th Dec. Results: 16th Dec. 2022.
Last date to Pay the fees: 20 Dec. 2022. Limited to 20 seats

Eligibility:

- The course is available to all the enthusiastic environmental science students and faculty.
- Applicants can fill the registration form
- Only selected candidates may pay a fee of Rs. 2000 (for B.Sc/M.Sc/Ph.D) & Rs. 3000 (Postdocs/Faculty)
- Participants have to arrange their own accommodation.
- Registration fee includes workshop kits, local field trip cost, lunches and refreshments.
- Participants have to bring their own laptop.

Outcomes:

After completing the course, participants will i) how to use the taxonomic keys and microscopic techniques for identification, ii) field technique skills for sample collection, preparation, and preservation, iii) importance of DNA taxonomy and phylogenetic tree construction, iv) required bioinformatic tools for sequence analysis, v) have confidence to take back the techniques and tools back to their lab and research work

Patrons:
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Dr. Marie Johnson, President
Ms. Maria Bernadette Tamilarasi, Vice President
Mr. J. Arul Selvan, Vice President
Ms. Maria Catherine Jayapriya, Vice President
Dr. T. Sasipraba, Vice Chancellor

Conveners:
Dr. S. Prakash and Dr. Amit Kumar
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Scan and Register





**SAROA hub
WEBINAR series**

Ocean acidification in the northern Indian
Ocean: Role of atmospheric pollutants
23 March 2023; 5 PM IST



Dr. VSS Sarma
Chief Scientist and Scientist-In-Charge
CSIR-NIO Regional Centre, Visakhapatnam

Register here: <https://forms.gle/FLR0xccaV92qivTQ8>
You will receive zoom link after registration





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INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)
17B STATUS BY UGC

Centre for Climate Change Studies
We cordially invite you all to join us on

WORLD WETLANDS DAY 2022



WETLANDS: THROUGH THE EYES OF A NATURE ENTHUSIAST

Invited speakers

Date & Time:
02 Feb 2022 (Wednesday)
12 PM to 2 PM

Registration Link:
<https://forms.gle/WVWVWP-CFvxyHBgk2A>

Only registered participants will get the ZOOM link

Chief patrons
Dr. Mariazeena Johnson, Chancellor
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Organizers:
Ms. Kunjulakshmi K
Dr. Amit Kumar
Dr. S. Prakash

Email
training.cccs@gmail.com

Invited speakers:
Basil Peter, Nishand Venugopal

Profile of the invited speakers

A nature enthusiast, Nishand Venugopal quit his 15-year-old job as a producer in a leading English news channel to pursue his passion for nature and wildlife conservation. He's an avid nature photographer, writes poetry and prose that focus on nature and conservation, and uses his website (www.nishandphotoark.com/) and social media channels to encourage people to observe and conserve nature. His articles and poems have been featured on websites such as Lonely Conservationists, Science Next Door, The False Trail, Kate on Conservation, Spillwords, Conservation Optimism, East Mojo etc. He was selected as Saevus Wildlife magazine's Gallery Member of the Month for March 2020 and his interview was published in the magazine. Recently his blog got published in the book named 'The Secret Life of Conservationists' by Lonely Conservationists.

Wildlife & Nature Photographer, Peter Basil is a member of Cochin Natural History Society (CNHS). He serves as a resource person for Kerala Forest Department. He is instrumental in spreading awareness for nature conservation. He delivers frequent talks about Birds & conservation to schools & colleges, nature clubs in India and abroad. He is also a guest speaker in Iowa University, Chicago. He has conducted photo exhibitions "Whispers from Nature" at Durbar Hall for Kerala Forest Department, and in the High Court of Kerala. He has given interview to All India Radio on important days related to nature. His photos are published in leading newspapers, magazines such as The Hindu, Indian Express, Malayala Manorama & Mathrubhumi and in the books of reputed Naturalists.



Nishand Venugopal

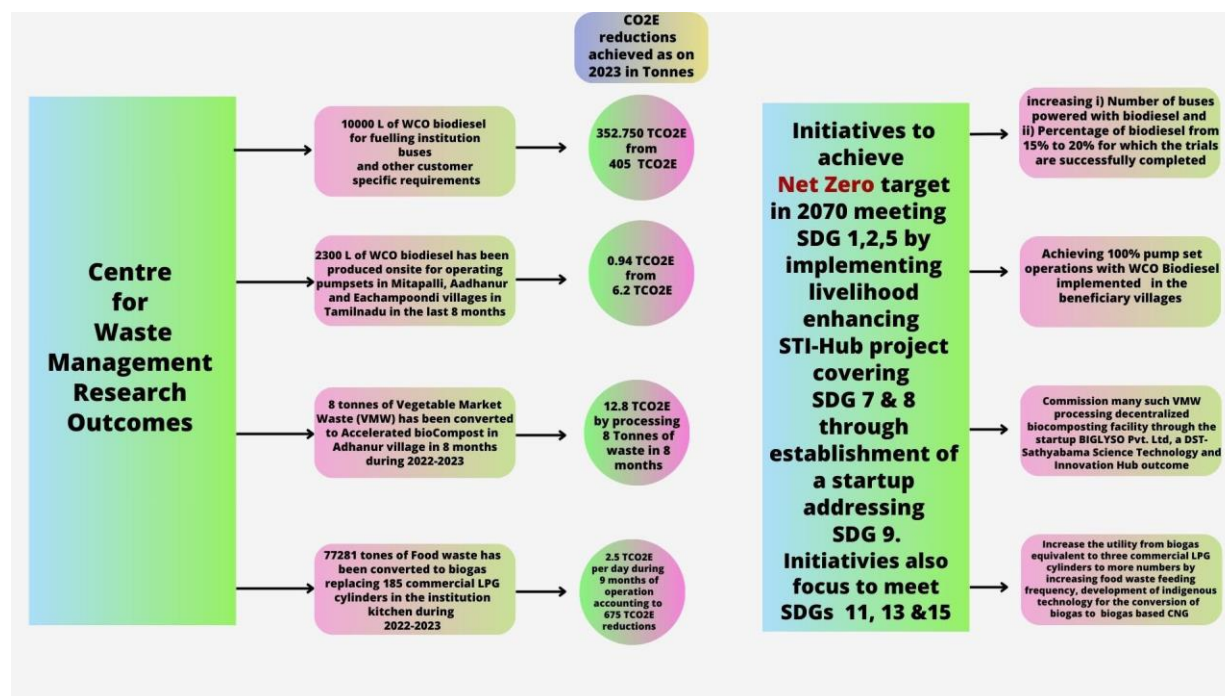


Basil Peter

13.6 Centre for Waste Management's Initiatives towards Climate Action

Centre for Waste Management's commitment to managing and reducing various types of waste contributes to climate action by minimizing environmental pollution and greenhouse gas emissions. For example, e-waste management policies are implemented following the E-Waste Management Rules, 2016, ensuring that electronic waste is disposed of responsibly through authorized recyclers. By segregating waste at the source, following color-coded disposal systems, and using authorized recyclers, the institution avoids landfill dumping and the associated release of toxic chemicals, thereby reducing air and soil pollution. Additionally, periodic waste audits help the institution track, analyze, and improve waste management

practices, further contributing to climate resilience by promoting sustainable waste disposal and reducing harmful emission.



Several initiatives from Centre for Waste Management have contributed to Sustainable Development Goal 13 (SDG 13: Climate Action) by addressing climate change and promoting eco-friendly practices:

Bio-Diesel from Waste Cooking Oil: By converting waste cooking oil into biodiesel, the Centre for Waste Management reduces reliance on fossil fuels, lowering greenhouse gas emissions from transportation. Using biodiesel in institutional buses and other machinery promotes sustainable energy practices, supporting climate action by reducing carbon emissions and promoting renewable energy sources. The biodiesel produced in the institution premises is used regularly for operating five of the institution buses in blends with diesel on a regular basis, while the biodiesel produced in the project site at Kattumannarkoil taluk, Cuddalore district is sold for genset, pumpset and heavy vehicles' (lorries) fueling. Sathyabama is looking forward to integrate the source to enhance the biodiesel production rate.



Centre for Waste Management, Centre of Excellence for Energy Research jointly with Centre for Aquaculture Sathyabama Institute of Science and Technology organized a Biodiesel production and Characterization training in MRK College, Kattumannarkoil on 23rd February 2023. Around 100 students have participated and got benefited during the training programme.



Biochar from Agro-Waste: Producing biochar through the pyrolysis of agro-waste offers a carbon sequestration solution. Biochar locks carbon in a stable form, preventing it from re-entering the atmosphere as CO₂. This process contributes to climate action by mitigating greenhouse gas emissions, while biochar's soil-enhancing properties improve agricultural resilience against climate impacts, aligning with SDG 13.



A 100 kg capacity high temperature furnace housed at the project site in Eachampoondi village, Kattumannarkoil Taluk, Cuddalore district, Tamilnadu, India addresses the huge quantum of agro waste generated within and the nearby villages and prevents tonnes of agro waste from getting decomposed and leading to GHG emissions. The agro waste is processed in a controlled environment leading to the production of biochar.



Accelerated Biocomposting of Vegetable Market Waste (VMW): Accelerated biocomposting of organic waste reduces methane emissions typically produced from landfill decomposition. Additionally, the compost produced replaces synthetic fertilizers, which are energy-intensive to produce, further supporting climate mitigation by lowering agricultural carbon footprints. Tonnes of vegetable market waste generated in Meensuruti village in Cuddalore is managed by the accelerated biocomposting facility established in the Eaachampoondi village. The furnace and biocomposting machine handle agro waste and vegetable market waste and the products are tested for usage in improving the nutrient value of the soil. The details are given below. By this initiative, the Centre for Waste Management has involved itself in 25.6 TCO₂E reduction.

Output of the initiative at Eachampoondi, involving 63 beneficiaries

- 16 tonnes of VMW processed, 500 Kgs of Biocompost sold
- 2 Tonnes of Agrowaste Converted, Biochar-Biocompost improves water retention ; Bioremediation

**Awareness and Training on
Vegetable Market Waste
Conversion to accelerated compost
given to the beneficiaries**



Characteristics	Bio-compost	Biochar	Units
Physical Properties			
Bulk Density	0.36	0.23	gcm⁻³
Particle Density	2.54	0.69	gcm⁻³
Porosity	70.02	88.56	%
Moisture Content	27.32	1.06	%
Mobile matter	19.00	16.03	%
Fixed Matter	23.64	83.60	%
Chemical Properties			
pH	7.50	6.45	
EC	3.57	0.32	dSm⁻³
CEC	22.06	18.73	cmol⁺ kg⁻¹
Organic carbon	296.00	756.00	gkg⁻¹
Total Nitrogen	138.36	77.00	gkg⁻¹
Total Phosphorus	35.9	26.4	mgkg⁻¹
Total Potassium	36.0	26.5	cmol⁺ kg⁻¹

Geopolymers from Industrial Waste: Developing geopolymers from industrial by-products as an alternative to conventional cement significantly reduces CO₂ emissions linked to traditional cement production. Using geopolymers for construction also diverts waste from landfills, contributing to sustainable waste management and infrastructure development with a reduced climate impact.

Sanctioned Project:

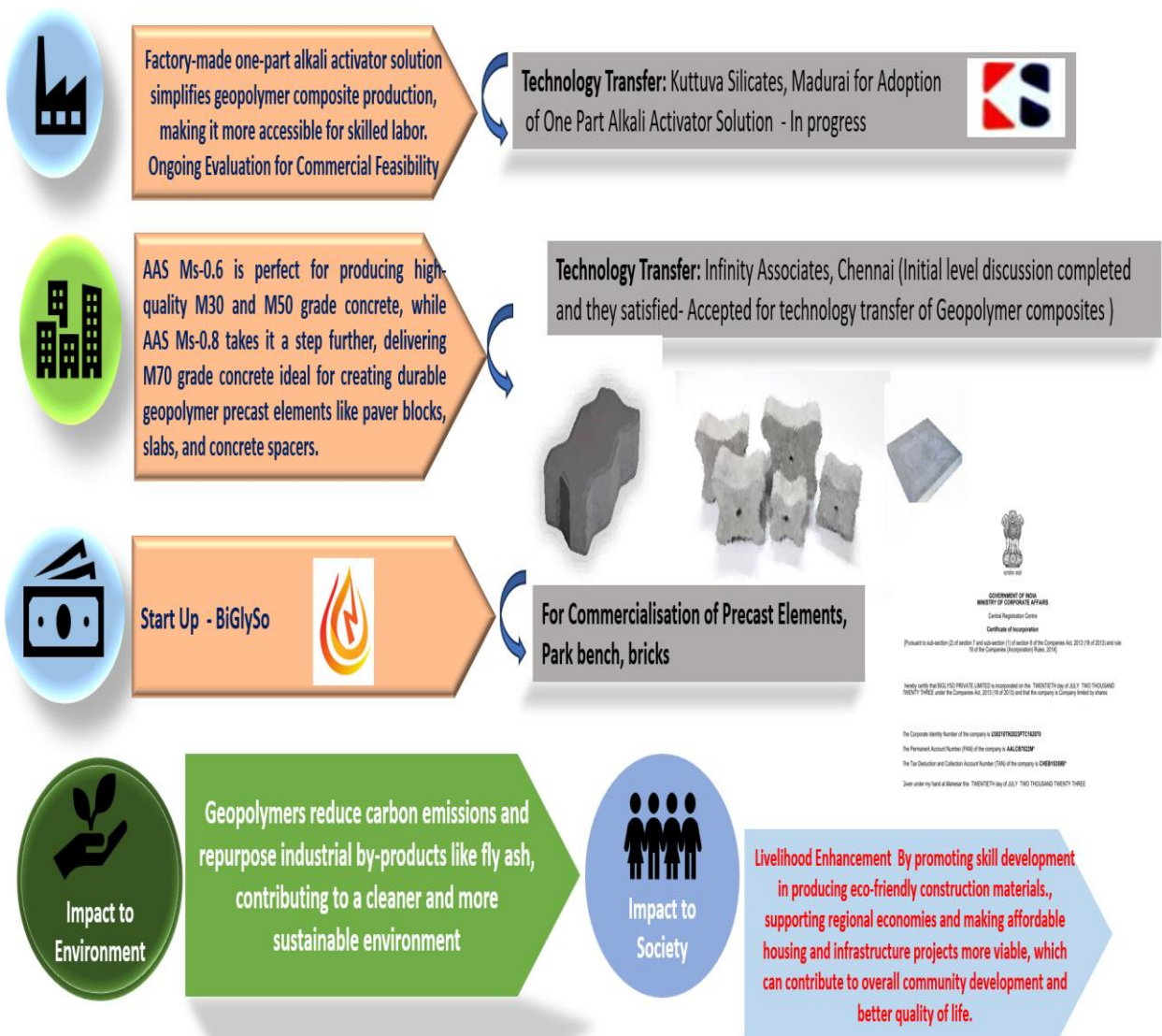
- Title : Optimization and Life Cycle Assessment of the One Part Alkali Activator Solution for the Production of Geopolymer Composites (SPG/2021/002467)
- Principal Investigator : Dr. SIVASAKTHI M, Research Scientist C / Assistant Professor (Research)
- Address : Centre for Waste Management,

International Research Centre,

Sathyabama Institute of Science and Technology,

Rajiv Gandhi Salai, OMR, Chennai – 600119.
- Date of Start and Completion of project : 02, August 2022 – 02, August 2025
- Total Sanctioned Cost (Recurring and Non-Recurring) : INR 26,76,025 /-
- The Centre for Waste Management's work on SDG 13 focuses on mitigating climate impact through sustainable waste management practices. Their waste recycling and resource recovery initiatives through geopolymer production reduce the carbon footprint by diverting waste from landfills.

Future Directions



- Additionally, they engage in research collaborations and community training programs to raise awareness and implement waste segregation techniques, all contributing to effective climate action by lowering environmental impact and promoting sustainable practices.

Brochures



Details of Workshop/Training Programs Conducted

S.No	Event Name	Organization and Duration	Beneficiaries Type and Number	Date
1.	Compressive strength of Novel, Conventional and Reinforced composites - Testing and Evaluation CoNCRETE- Series I, II, III	Sathyabama Institute of Science and Technology, One Day	Academicians, UG and PG students, Research Scholars, Faculty members of Engineering/Material science background and the researchers working in Geopolymer/Cementitious Material	22-09-2023 28-10-2023 20-09-2024

Photos Taken During Compressive strength Testing and Evaluation

Image 1. Lecture on theoretical Compressive Strength Testing



Image 1. Hands on Training for Compressive Strength Evaluation



Feedback from Participants

Feedback from Participants

Name: _____

College/Institute: _____

Branch: _____

Roll No: _____

Feedback: _____

Signature: _____

Date: _____

- Furthermore, initiatives like the "One Day National Conference on Low Carbon Materials" were organized in association with Carbon Craft on World Earth Day, aiming to raise awareness about sustainable construction practices and encourage the adoption of eco-friendly materials in construction. The collaboration with industry and educational institutions underscores a commitment to broader climate action by promoting green materials for infrastructure, which could help mitigate environmental impact



- Centre for Waste Management, Centre of Excellence for Energy Research, Sathyabama Institute of Science and Technology organized a “One Day National Conference on Low Carbon Materials (CarES 2024)” on April 22, 2024 in association with Carbon Craft, Hubli, Karnataka,

Events like the Geopolymer Camp, attended by the principal investigator, provided insights from global experts, influencing future research in geopolymer technology for high-temperature applications and potential extraterrestrial uses, demonstrating the versatility and far-reaching impact of this low-carbon technology.

International



16th Geopolymer Camp: 2024, July 08 to 10th, with TUTORIAL (short courses for Newcomers)

Geopolymer Institute, University of Picardie, Saint Quentin, France

Key In-sights from Geopolymer Camp 2024

At the 16th Geopolymer Camp, organized by Ralph Davidovits at the University of Picardie in Saint Quentin, France, I had the opportunity to meet Prof. Joseph Davidovits and engage with global experts in geopolymers. Prof. Davidovits' insights were profound and influential for my research. Notably, he discussed the potential for creating lunar habitats using solar wind-derived water and detailed the exothermic reactions and mechanisms involved. He also presented on 3D-printed ceramic geopolymers made from metakaolin and offered invaluable advice on high-temperature ceramic composites using kaolin under controlled conditions. His perspectives on 3D ceramic applications have inspired new directions in my work.

Welcome message by Professor Joseph Davidovits - Father of Geopolymer



Presentation on Geopolymer for Ceramic Type 3D Printing Applications



Collaborative workshops held with institutes like CSIR-CLRI, Chennai, Commemorating world Ozone day as well as partnerships with industry stakeholders, bridge the gap between academia and industry, enabling participants to see the real-world applications of low-carbon technologies and their impact on reducing environmental footprints

Centre for Waste Management in association with Dr. S.V. Srinivasan, Principal Scientist, CSIR – CLRI, Sathyabama Institute of Science and Technology organized a guest lecture on "Global Environmental Issues and Remedial Measures.". Commemorating World Ozone Day -2024



The project's partnerships with industry players like Kuttuva Silicates and Infinity Associates facilitate technology transfer, ensuring that these low-carbon materials move from research to real-world applications. These collaborations are integral for scaling sustainable construction materials in urban development, such as the commercialization of M30 to M70 grade concrete, which is used for durable paver blocks, slabs, and other precast components. Additionally, the startup initiative “BiGlySo” aims to commercialize these materials for broader community use, potentially impacting low-cost housing and infrastructure, enhancing environmental sustainability through increased durability and reduced material waste.

Collaboration with Infinity Associates, Chennai for Commercialization of Precast Products like Paver Block, Concrete Spacer, Slab, Column



Through these eco-innovations, the Centre aligns with SDG 13 by promoting climate-friendly waste management, renewable energy, and sustainable construction practices.

Our Outreach Initiatives through Science Technology and Innovation Hub established at Cuddalore with the support of Department of Science and Technology, Govt. of India towards Climate Action

The initiatives are compiled and given below

Bio-Compost Production



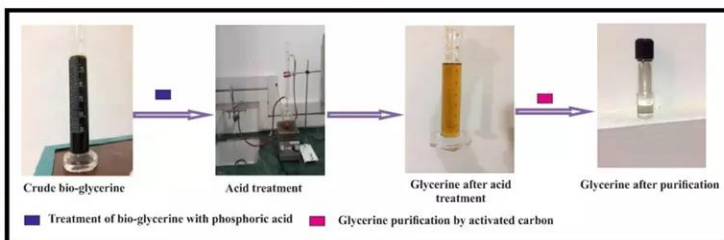
Bio-char production



Bio-diesel production



Bio-glycerol purification



Fly ash Brick production



Incense Sticks production



Hydroponics : Microgreen Cultivation



Hydroponics : Dutch bucket cultivation



13.7 International Visits related to SDG 13

Kaohsiung Medical University, Taiwan as a visiting researcher (Funded by Ministry of Science and Technology, Taiwan)



Invited talk at The Ocean in a High CO₂ world, Lima, Peru



13.8 MoUs

1. With Neelithal Aquaponics, Mettupalayam - For aquaponics and hydroponics related work, feed testing, etc



SDG 14 - LIFE BELOW WATER



The ocean is essential to Earth's systems, offering invaluable goods and services. Oceans are the backbone of livelihoods, sustenance, and economic activities, particularly in sectors like fisheries and tourism. Yet, the coastal and marine ecosystems that support this wealth of life are increasingly threatened by urbanization, pollution, overfishing, climate change, rising sea levels, and illegal fishing activities. These pressures jeopardize marine biodiversity and risk the livelihoods of millions dependent on healthy oceans. To address these issues, the United Nations established Sustainable Development Goal 14 (SDG 14), known as "Life Below Water," as part of its 17 Sustainable Development Goals (SDGs) in 2015. SDG 14 aims to conserve and sustainably use the oceans, seas, and marine resources, recognizing their critical role in sustaining biodiversity, promoting economic stability, and supporting human communities worldwide. The goal promotes actions to protect marine ecosystems, enforce sustainable fishing practices, and reduce marine pollution, ensuring that marine ecosystems can thrive alongside human development. Aligned with SDG 14, Sathyabama Institute of Science and Technology has a strong commitment to ocean and marine conservation through its specialized research initiatives.

Established in 2007 in collaboration with the National Institute of Ocean Technology (NIOT), Chennai, the Centre for Ocean Research (COR) at Sathyabama plays a leading role in advancing sustainable marine practices. The COR, alongside the Centre for Climate Change Studies, Centre for Remote Sensing and Geoinformatics, and Centre for Earth and Atmospheric Sciences, focuses on various critical oceanic goals: reducing marine pollution, protecting and restoring ecosystems, mitigating ocean acidification, supporting sustainable fishing, conserving coastal areas, and ending subsidies that contribute to overfishing. These efforts also resonate with Sustainable Development Goal 17 (SDG 17), "Partnerships for the Goals." By fostering collaboration with national and international institutions, Sathyabama promotes research,

innovation, and knowledge exchange aimed at ocean conservation. Initiatives led by COR include promoting sustainable fishing, enhancing economic benefits from marine resources, supporting small-scale fishers, and reinforcing international maritime law to protect ocean health. Additionally, Sathyabama's team actively engages with coastal communities, organizes annual coastal clean-ups, and raises public awareness on the impacts of plastic pollution. Through these endeavors, Sathyabama Institute of Science and Technology advances SDG 14 and SDG 17, bridging science and society to secure a sustainable future for marine ecosystems, supporting the resilience of coastal communities, and upholding a global commitment to ocean health.

Our Centre for Ocean Research, and Sathyabama Ocean Research Field Facility in association with Ministry of Earth Sciences, Govt. of India, organized a comprehensive Workshop on Aquaculture Water Quality Analysis on 23rd & 24th September 2024, focusing on sustainable water management in aquaculture systems. This event addressed crucial water quality parameters, conservation practices, and their broader impact on aquatic ecosystems. In-house and external participants across Colleges from Tamil Nadu, gained hands-on experience in monitoring and managing water quality, learning techniques that foster responsible aquaculture practices aimed at enhancing marine biodiversity while minimizing pollution. The workshop covered critical topics such as maintaining optimal levels of dissolved oxygen, pH balance, and managing waste effluents, emphasizing the importance of sustainable aquaculture for the health of marine ecosystems. Practical sessions provided participants with the skills to effectively monitor water quality using advanced instruments, while discussions highlighted the role of aquaculture in global food security and environmental conservation.





Our Centre for Ocean Research, Sathyabama Institute of Science and Technology conducted a Workshop on Live Feed Culture Techniques for Finfish and Shellfish from 29th - 31st October, 2024, focusing on sustainable aquaculture food practices. The event focused on the key aspects of cultivating live feed to enhance the growth and survival rates of finfish and shellfish species, emphasizing sustainability and ecosystem health. In total 30 students were explored in the aquaculture facility and the preparation of live feed for the fresh water and marine organisms existing at the field facility. The workshop highlighted the importance of maintaining water quality and minimizing pollution to foster healthier aquaculture

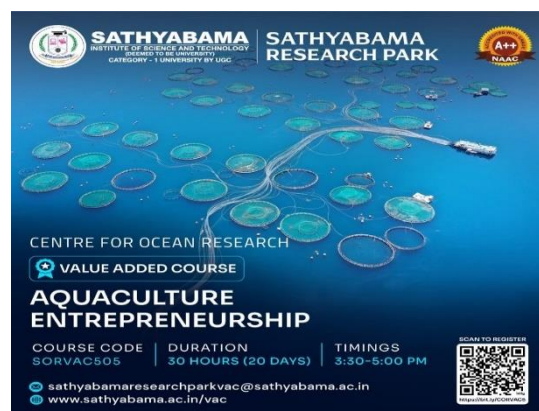


environments. Practical sessions offered hands-on experience in culturing live feed such as rotifers, copepods, and microalgae, which are critical to the early development of marine species. The integration of these techniques with biodiversity monitoring tools empowered participants to adopt eco-friendly practices that promote marine conservation while boosting aquaculture productivity.



The Centre for Ocean Research at Sathyabama Institute of Science and Technology

offered a Value Added Course on “Aquaculture Entrepreneurship” for 20 days, aimed at equipping students with the knowledge and skills to build sustainable businesses in aquaculture. This intensive program covered various aspects of aquaculture, including sustainable fish farming, water quality management, feed technology, and financial planning. The course encouraged students to develop innovative and eco-friendly aquaculture practices and irrigation practices, which promotes the sustainable use of fresh water resources and the



aquaculture practices minimize pollution and enhance fresh water and marine biodiversity. The course also highlighted the importance of

protection of aquatic ecosystems. Through hands-on sessions and expert lectures, students learned how to balance economic growth with environmental conservation, ensuring that



sustainable water management, offering insights into freshwater ecosystems, including water irrigation practices and conservation techniques, which are vital for both local and national communities. By fostering entrepreneurship rooted in sustainability, the course empowered future leaders in the aquaculture industry.

The Centre for Ocean Research, Sathyabama Institute of Science & Technology, Chennai has organized the DST-SERB sponsored Scientific Social Responsibility programme on “Outreach act towards Seagrass ecosystem services, Conservation and Restoration” for Olaikuda fisher community at Olaikuda Community hall, Rameswaram on 26th August, 2023. The program was



aimed to raise awareness among the

fisherman community about the vital importance of Seagrass ecosystems along Tamil Nadu Coasts and to bring attention to the plight of seagrass meadows, encourage people to protect, take action and promoting solutions for their sustainable management, conservation and restoration. Around 60+ fisher men and women benefited on this awareness workshop. With the gracious presence of Dr. B. Sheela Rani, Director (Research), SIST; Dr. Raju Saravanan, Senior Scientist ICAR- Central Marine Fisheries Research Institute; Mr. V. Abdul Kadhar Jailani, Assistant Director, Tamil Nadu Fisheries Department; Mr. C. Kalidas, Sub-Inspector of Police, Marine Station, Rameswaram and Mr. S. Jebamaalai Baskar, Village Leader were delivered their social responsibility awareness talks. Media and press also attended the workshop. The program was organised by Dr. D. Jayaprakash and Dr. D. Inbakandan, Scientists, Centre for Ocean Research.



Centre for Ocean Research, Sathyabama Institute of Science and Technology organized a hands-on training program on Toxicological studies using the zebrafish model from 23rd to 27th September 2024, focusing on sustainable management practices in fisheries and aquaculture. This program aimed to equip participants with essential skills to assess the impacts of environmental pollutants on aquatic ecosystems. During the training, participants learned to utilize zebrafish as a



model organism for studying the effects of various toxins, including heavy metals and microplastics, on fish health and development. They engaged in practical sessions that involved exposure experiments, monitoring physiological changes, and evaluating behavioural responses. The insights gained from these studies are crucial for developing strategies to mitigate pollution in aquatic environments, thereby supporting sustainable fisheries and aquaculture. By fostering a better understanding of toxicological impacts, the program empowered participants to contribute to healthier marine ecosystems and promote responsible resource management within their communities.



Sathyabama Institute of Science and Technology actively engages in various educational outreach initiatives targeting local and national communities. Through the Centre for Ocean Research, the university organized interactive community-based program that educate the students and public on critical issues like overfishing, illegal, unreported, and unregulated (IUU) fishing, and destructive fishing practices. Events like "SCIENCE COURT - Youth Voices on Fisheries Law" foster awareness and youth engagement by presenting legal perspectives on fisheries management in collaboration with the Sathyabama School of Law and the International Union for Conservation of Nature (IUCN-CEM). Additionally, the university's partnerships with national and international environmental organizations support sustainable fisheries, encouraging responsible fishing practices. These initiatives include practical awareness programs on marine conservation, sustainable fishing techniques, and policy implications for coastal communities. By involving young minds in interactive platforms, Sathyabama promotes conservation-driven

fisheries laws while contributing to national objectives like SDG 14, aimed at preserving life below water.



Yes, Centre for Ocean Research, Sathyabama Research Park, provided a guest talk for Capacity building programme organized by Fish Quality Management and Sustainable Fishing (NETFISH-MPEDA) for the fisher community in Puducherry. His efforts focused on educating the fishers about sustainable fisheries management practices to ensure long-term livelihood security. During the program, he addressed the significant environmental impacts of ghost nets, which are abandoned or lost fishing gear that continue to harm marine life and ecosystems. Our team have emphasized how ghost nets contribute to the depletion of fish stocks, urging the community to adopt sustainable practices such as responsible fishing techniques and the use of biodegradable fishing gear. He delivered a special lecture that covered the broader impacts of overfishing, stressing the need for sustainable approaches to preserve marine biodiversity and

prevent the collapse of fish populations. His message reinforced the idea that sustainable fishing benefits both the environment and the local economy in the long term.



NETWORK FOR FISH QUALITY MANAGEMENT
AND SUSTAINABLE FISHING (NETFISH)
(C/o MPEDA, Ministry of Commerce & Industry, Government of India)

11.10.2023

Certificate of Appreciation

This is to certify that Dr.S. Kumaralingam, Assistant Professor (Research), Centre for Ocean Research, Sathyabama University of Science and Technology, Chennai for his contribution as a Chief Guest and delivered a guest lecture on Sustainable Fishing and Conservation of Marine Resources during the Capacity Building Training Programme for Killai Fishers through video conference mode on 10.10.2023.

State Coordinator
NETFISH - MPEDA

STATE-COORDINATOR,
NETFISH-MPEDA,
MPEDA Regional Office,
Chennai - 600 010.

The Centre for Ocean Research at Sathyabama Institute of Science and Technology, in collaboration with the Bay of Bengal Programme (BOBP), recently organized an online meeting focused on Fisheries Policy and addressing the growing issue of illegal fishing. This event underscores the university's commitment to promoting conservation and the sustainable utilization of marine resources. Illegal, unreported, and unregulated (IUU) fishing is a global concern, threatening marine biodiversity, food security, and the livelihoods of coastal communities. Through this forum, experts, policymakers, and stakeholders came together to

explore sustainable solutions and regulations that could mitigate the impacts of IUU fishing in the Bay of Bengal region. This event aligns with our university's broader mission of supporting ocean conservation through various initiatives. Our university organizes awareness programs, research collaborations, and community-driven conservation projects that aim to protect and sustain oceanic and coastal ecosystems. By hosting discussions and developing frameworks around issues like illegal fishing, our Centre for Ocean Research actively contributes to the sustainable use and management of marine resources.





Our Centre for Ocean Research recently organized a National Workshop on Blue Biotechnology to promote sustainable marine resource utilization and conservation. This significant event brought together prominent figures, including Dr. Ravichandran, Secretary of the Ministry of Earth Sciences, Government of India, along with directors from INCOIS, the National Institute of Ocean Technology, the National Centre for Coastal Research, the Bay of Bengal Programme, and other senior scientists from leading national institutions. The workshop provided a platform to share advancements in marine biotechnology, fostering collaboration between research institutions and the marine industry. Notably, during this event, our university signed a Memorandum of Understanding (MoU) with these esteemed national institutes to enhance joint research efforts in blue biotechnology and marine conservation. This partnership strengthens our commitment to sustainable marine resource management, reinforcing our university's role in organizing impactful events for ocean conservation and fostering the sustainable use of marine resources.





The Centre for Ocean Research, Sathyabama Research Park, organized a DST-SERB sponsored International Conference on “Climate Change and Marine Biodiversity Conservation” dated 08th and 09th August, 2024. This event aimed to promote conservation and sustainable utilization of marine resources and the strategies that mitigate the climate change. Participants included researchers,

students, and industry professionals across Tamil Nadu who engaged in various sessions focused on the impacts of climate change on marine biodiversity. Through interactive workshops and expert-led discussions, attendees learned about innovative conservation strategies and the importance of protecting marine ecosystems in the face of climate change. The participants have done oral and poster presentations on the sustainable marine biodiversity research and conservation. The conference fostered collaboration among stakeholders, emphasizing the necessity of sustainable practices to preserve ocean health and promote responsible use of marine resources for future generations.

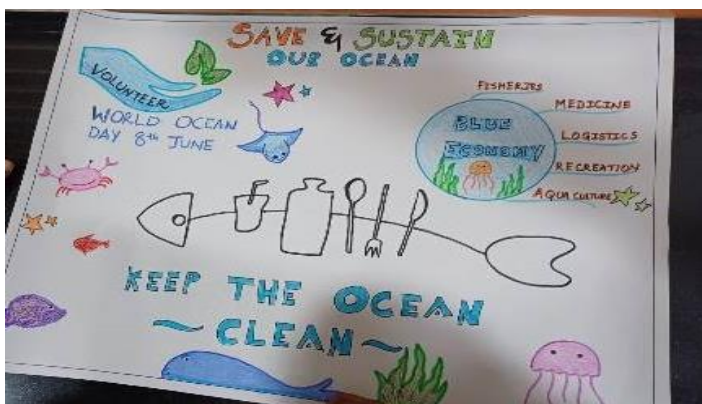
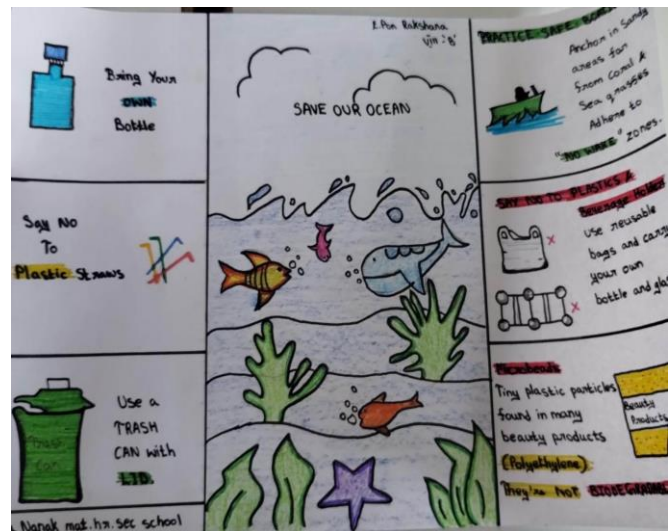


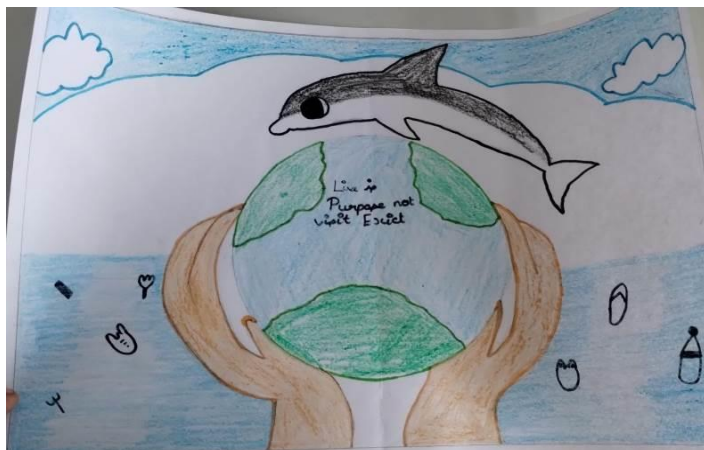
The Centre for Ocean Research, Sathyabama Research Park, Sathyabama Institute of Science and Technology, Chennai organized the “World Ocean Day Celebration 2024” under the theme “Ocean Literacy for Students” on June 15, 2024. The event was held in association with the Earth Science and Technology Cell - MoES, the Ocean Society of India - Chennai Chapter, and the Eco-Club Student Development Cell, SIST. This program was financially supported by the Ocean Society of India and the primary objectives of this celebration were to raise awareness about ocean conservation, promote sustainable practices among the younger generation, and foster a deeper understanding of marine biodiversity and the impact of human activities on ocean ecosystems. The most exciting part of this event was the creative artwork competition on “Sustainable Ocean Conservation” among School and college students across Tamil Nadu were held in order to express their understanding and ideas about ocean conservation through artistic posters. The competition observed with an enthusiastic participation, with students showcasing



their creativity and knowledge.

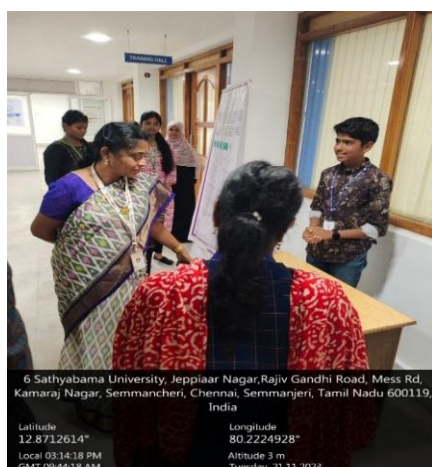
CREATIVE ARTWORKS BY THE SCHOOL STUDENTS DURING WORLD OCEAN DAY





The World Fisheries Day Celebration 2023 was hosted by the Centre for Ocean Research at Sathyabama Research Park in association with the School of Bio and Chemical Engineering, Sathyabama Institute of Science and Technology (Deemed to be University) on 21st November 2023. The event was graced by Dr. B. Sheela Rani, Director (Research). To emphasize the importance of World Fisheries Day, a competition was organized for school and college students to showcase models, posters, paintings, and photography. Over 60 students from various schools and colleges participated, along with research faculty. The program was coordinated by Dr. D. Inbakandan, Professor (Research) & Head, and convened by Dr. D. Jeyapragash, Assistant Professor (Research). Special lectures were delivered by Dr. R. Thirugnanasambandam, Dr. Kumar, Dr. Srinivasan, and Dr. P. Marimuthu on various marine research topics. The entries were evaluated by Dr. K. Nagamani, Dr. Sivakumar J, and Dr. Venu S. Dr. Sheela Rani interacted with the participants and awarded prizes and certificates.





Our research team at the Centre for Ocean Research is actively engaged in seagrass conservation and restoration in the Palk Bay region through a project supported by ANRF, Govt. of India. Seagrass, a key blue carbon sequesters and climate change mitigator, is facing a global decline. Our research focuses on the seagrass ecosystem, which acts as an ecological engineer and helps mitigate climate warming through carbon sequestration. Due to the decline in global seagrass biodiversity, we are working to extend seagrass meadows along the Palk Bay region. As part of this effort, we have established a Halophyte Conservation Lab, where we propagate seagrass under laboratory conditions and conduct field trials to acclimatize them for expansion. This initiative aims to conserve the ecosystem and develop management strategies for seagrass conservation and restoration, contributing to the broader goal of preserving threatened ecosystems and biodiversity.





The Centre for Ocean Research and team is actively involved in assessing the health of biodiversity in marine and estuarine environments. Human-induced pressures, especially from urbanization and harbor activities, have led to increased concentrations of heavy metals like Fe, Pb, and Mn in estuaries. This pollution, often from land-based activities such as industrial waste, poses a serious threat to marine ecosystems. Our research highlights the presence of pollution-tolerant species in the Kaduvaiyar estuary, signaling a shift in biodiversity toward opportunistic species that thrive in degraded environments. This shift indicates a decline in habitat quality and emphasizes the urgency of conserving and restoring estuarine habitats affected by human activities. Our findings underscore the need for pollution reduction and ecosystem management strategies to maintain healthy marine environments and mitigate the adverse impacts of human activity. These efforts are critical to safeguarding the biodiversity and sustainability of threatened coastal ecosystems and our team is working on it.

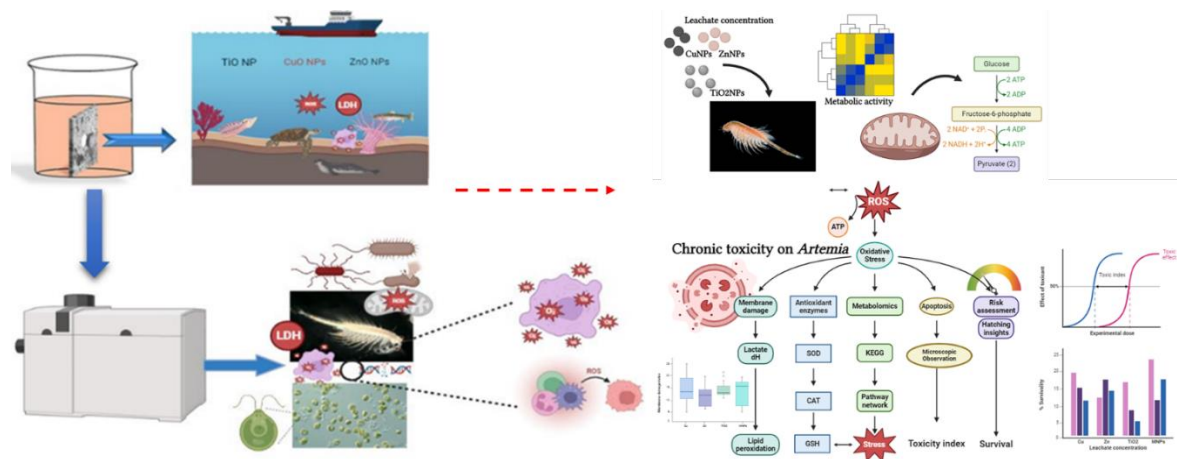
Our Centre for Ocean Research received a research project sanctioned by Bay of Bengal Programme which is directly involved in research and practices that help the marine industry minimize or prevent damage to aquatic ecosystems, particularly through our studies on microplastic-biofilm formation and its co-contaminated effects on the marine environment. This project examines how microplastics, which are common in marine industrial activities, act as carriers for biofilms and harmful pollutants, such as heavy metals and organic contaminants. These biofilms create a pathway for toxic substances to spread throughout marine ecosystems,



posing serious risks to biodiversity and environmental health. Our research aims to understand the mechanisms behind microplastic-biofilm interactions and co-contamination, providing crucial insights for developing mitigation technologies. By working with marine industries, we aim to foster sustainable practices that reduce plastic pollution, minimize contaminant spread, and protect marine ecosystems, in alignment with efforts to promote sustainable ocean use and protect aquatic life from industrial impacts.

Our Centre for Ocean Research at Sathyabama Institute of Science and Technology actively engages in cutting-edge research through the MoES-ESTC-sponsored Marine Biotechnology Network Project, focusing on minimizing potential ecological impacts from the marine industry. This project explores the interactions and effects of engineered nanoparticles (NPs) in marine ecosystems. Specifically, our researchers study NP accumulation in primary producers like diatoms and secondary producers like copepods to understand the transfer of NPs across trophic levels through bio imaging techniques. We further delve into molecular ecotoxicology by analyzing transcriptomic profiles, which reveal the impact of NPs on cellular and genetic levels in these organisms. Additionally, the project evaluates the antimicrobial effects of chitosan–selenium nanocomposites on aquatic pathogens using microbial transcriptomic, exploring their potential in minimizing disease risks. The study also assesses the effectiveness of nanocomposites in wastewater treatment and monitors microbial loads in aquaculture systems through 16s rRNA-based metagenomics. This research exemplifies our commitment to

developing sustainable technologies and practices that reduce environmental risks, supporting both ecological health and industrial innovation in marine systems.



Our

Centre for Ocean Research at Sathyabama Institute of Science and Technology is set to embark on an Indo-Bangladesh research project titled "Unveiling the Marine Litter - Mapping, Distribution, and Identification in the Indian and Bangladesh parts of Sundarbans Mangroves along the Bay of Bengal," which has received endorsement from the Bay of Bengal Programme (BOBP). This collaborative project aims to map and analyze the extent, types, and sources of marine litter in the Sundarbans, one of the largest mangrove ecosystems in the world and a critical biosphere for biodiversity and coastal resilience. Through field studies and data analysis, the project will help uncover the pathways of marine litter that compromise the health of this UNESCO World Heritage site and impact local communities' dependent on the Sundarbans for their livelihoods. This initiative is part of the university's broader commitment to engaging in research that directly supports technologies and practices to reduce marine pollution and protect aquatic ecosystems.

Our Centre for Ocean Research is advancing its impact with a new Indo-Thailand research project titled "Integrated Ecological and Socio-Economic Assessment of Tropical Seagrasses and Associated Macro-Faunal Community for Sustainable Small-Scale Fisher Livelihoods and Community-Driven Conservation." Recently recommended by the Bay of Bengal Programme (BOBP), this project aims to assess the health, biodiversity, and ecological role of seagrass beds and their macro-faunal communities. By evaluating both ecological dynamics and socio-

economic benefits, the project highlights the vital role that seagrass ecosystems play in sustaining small-scale fisher communities and fostering sustainable coastal livelihoods. This project aligns with Sathyabama's broader commitment to sustainability, particularly in research initiatives that reduce human impact on marine ecosystems.

The Centre for Ocean Research has initiated an Indo-Myanmar research project titled "Assessment of Microplastic Contamination in Commercially Important Marine Fishes from India, Myanmar, and Bangladesh Coastal Regions" recommended by the Bay of Bengal Programme (BOBP), this project aims to evaluate the prevalence and impacts of microplastics in marine fish species crucial to regional fisheries and the economy. By analyzing contamination levels in fish along the coasts of India, Myanmar, and Bangladesh, the project seeks to understand the extent of microplastic pollution within these ecosystems, its potential health risks to consumers, and its impact on marine biodiversity. By understanding and addressing the impact of microplastics, Sathyabama supports the marine industry in adopting sustainable practices, ensuring the health of fisheries and the long-term resilience of marine habitats, and advancing global initiatives to protect ocean health.

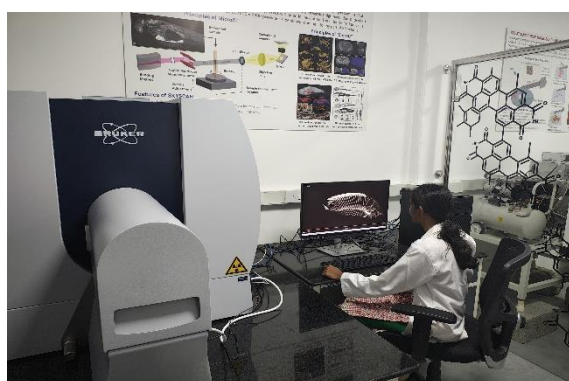
The Centre for Ocean Research advancing its commitment to sustainable marine practices with the Indo-Bangladesh research project titled Assessment of Harbour Pollution for Sustainable Fisheries Management, which has recently been recommended by the Bay of Bengal Programme (BOBP). This project focuses on identifying and analysing pollution levels in major harbours that support fisheries across India and Myanmar. By examining contaminants, waste sources, and their ecological impact, the research aims to provide actionable insights that can guide better management practices and promote sustainable fisheries. It emphasizes protecting fish populations, minimizing pollution, and securing the livelihoods of coastal communities' dependent on these resources. This initiative aligns closely with the university's broader mission of actively engaging in research and collaborations that minimize marine industry impacts on aquatic ecosystems. Sathyabama collaborates with industries, local governments, and environmental bodies to develop effective pollution management strategies, particularly for areas impacted by industrial and commercial activities.

Sathyabama Institute of Science and Technology has established a National Facility for Coastal and Marine Research, inaugurated by Hon. Chancellor Dr. Mariazeena Johnson, which was officially recognized by the Ministry of Earth Sciences, Government of India, specifically to advance the monitoring and conservation of aquatic ecosystems. This cutting-edge facility is equipped with state-of-the-art instruments and technology that allow for continuous observation, research, and data collection on various marine health indicators. We operate 14 specialized laboratories, each serving a unique function in coastal and marine research. For instance, our Next Generation Sequencing (NGS) Hub supports genetic and microbial studies, enabling us to track biodiversity, monitor genetic adaptations, and assess the impact of climate change on marine species at a molecular level. The Cellular Agriculture Lab is focused on sustainable food



production and resilience in aquatic organisms, contributing to food security research. Our Underwater Monitoring Labs provide real-time assessments of water quality, temperature variations, pollution levels, and other environmental parameters, offering essential data that aid in protecting the aquatic ecosystem. These labs work in unison to provide a comprehensive, multidisciplinary approach to marine health and biodiversity conservation, making our university a key body in ecosystem monitoring and sustainable coastal management.







Our Centre for Ocean Research at Sathyabama Institute of Science and Technology actively monitors the health of aquatic ecosystems through its state-of-the-art facilities supported by the Department of Biotechnology (DBT) and Department of Science and Technology - Science and Engineering Research Board (DST-SERB). These include specialized laboratories such as the Applied Phycology Lab, Halophyte Conservation Lab, and Biomolecule Separation Lab. The Applied Phycology Lab focuses on studying algae's ecological roles and contributions to aquatic health, while the Halophyte Conservation Lab specializes in propagating salt-tolerant plants, essential for coastal ecosystem stability and habitat restoration. The Biomolecule Separation Lab facilitates advanced analyses of aquatic biomolecules, helping to assess ecosystem responses to



environmental stressors. These facilities are essential for research on biodiversity, water quality, and the impact of climate change on marine life, aligning with the university's commitment to aquatic ecosystem preservation. In conjunction with other projects and collaborations, such as the Department of Science and Technology (DST) projects on thermal tolerance in seagrasses and National Centre for Coastal Research initiatives on plastic pollution, these labs play a pivotal role in supporting sustainable marine environments and promoting environmental stewardship in alignment with national conservation goals.



Seaweed-assisted preparation of Fe_2O_3 nanoparticles and their antiviral activity against White Spot Syndrome Virus (WSSV) study was performed by our research professor Dr. K. Govindaraju, Centre for Ocean Research reflected an interdisciplinary approach that integrates nanotechnology, marine biology, and virology, which directly contributing to the monitoring and protection of aquatic ecosystems. Our centre, particularly those research scientists who are working with marine background developed innovative antiviral solutions using natural resources like seaweed, to address critical challenges in aquaculture, such as disease management and ecosystem health. Through research and collaborations, Centre for Ocean Research not only engage in cutting-edge scientific developments but also actively monitor aquatic ecosystems. This includes assessing water quality, biodiversity, and the health of species in marine and freshwater environments. The development of nanoparticle-based antiviral

treatments aligns with the broader goal of protecting these ecosystems, demonstrating the university's commitment to sustainable aquaculture and ecological conservation.

The synthesis and characterization of gold nanoparticles using *Brevibacterium casei* (SOSIST-06), isolated from Southern Ocean water samples, and their anti-WSSV (White Spot Syndrome Virus) activity was carried out by Dr. K. Govindaraju, Centre for Ocean Research showcases the university's commitment to advancing aquatic health through innovative research. This study exemplifies how universities contribute to monitoring and maintaining aquatic ecosystems by leveraging marine microorganisms for nanotechnology applications. By isolating strains from the Southern Ocean and using them to develop antiviral agents, this research addresses the critical issue of viral outbreaks in aquaculture, directly impacting ecosystem health and sustainability. Universities often monitor aquatic ecosystems by integrating research across disciplines like microbiology, nanotechnology, and environmental science. Through such projects, universities contribute to protecting biodiversity, assessing water quality, and preventing disease outbreaks. This study's approach to combating WSSV highlights how universities apply cutting-edge science to improve aquaculture practices, ensuring ecosystem balance and promoting long-term sustainability.

Studies on the bioaccumulation and health risks of metal contamination from different tiers of the food chain in the Ennore estuary, Southeast coast of India, was performed by Dr. Sivaraj, Assistant Professor (Research) from Centre for Ocean Research highlighted the university's vital role in monitoring aquatic ecosystems. By investigating metal contamination across various trophic levels, this research provides critical insights into the health of the estuarine ecosystem and its impact on both biodiversity and human health. Such studies are essential for assessing the environmental risks posed by industrial and urban pollution, ensuring ecosystem resilience, and safeguarding local communities reliant on these resources. Universities, particularly those with marine and environmental science programs, play a pivotal role in ecosystem monitoring. Through continuous research on pollutants, like heavy metals in estuaries, universities track ecological health, biodiversity, and water quality. The results of these studies contribute to environmental management policies and help mitigate the negative impacts of contamination, demonstrating the university's commitment to the health and sustainability of aquatic ecosystems.

To monitor the health of the aquatic ecosystems, our research professor Dr. K. Govindaraju from Centre for Ocean Research using computational approach to identify peptide inhibitors against White Spot Syndrome Virus (WSSV) in the aquatic organisms, particularly targeting the virus's envelope protein, aligns with the broader goal of monitoring and protecting aquatic ecosystems. Our research centre plays a critical role in these efforts, often serving with interdisciplinary research that integrates computational biology, virology, and environmental sciences. By utilizing advanced computational methods to design peptide inhibitors for WSSV, a major pathogen in aquaculture, universities can help mitigate the impact of viral outbreaks on shrimp populations. These initiatives, when combined with ongoing ecological health monitoring programs, contribute to the sustainability of aquatic ecosystems. Through departments and research centers, university often engage in monitoring water quality, biodiversity, and disease outbreaks in aquatic environments. Such holistic monitoring, paired with cutting-edge research like peptide inhibitor design, strengthens the university's commitment to safeguarding both economic interests in aquaculture and the ecological balance of marine and freshwater ecosystems.

Centre for Ocean Research, is actively involved in a community-driven seagrass conservation project in partnership with the Fisher Community in Olaikuda, Rameswaram. This collaboration exemplifies the university's commitment to engaging local communities in efforts to preserve and sustain shared aquatic ecosystems. By integrating traditional ecological knowledge with scientific research, the university fosters a participatory conservation approach, empowering local fishers to contribute to the protection and restoration of vital seagrass beds. These ecosystems are crucial for marine biodiversity, support livelihoods, and act as carbon sinks, playing a significant role in climate resilience. The university's partnerships with local stakeholders demonstrate how academia can work hand-in-hand with communities to promote sustainable resource management and biodiversity conservation, ensuring long-term ecosystem health and socio-economic benefits.



At our university, a dedicated facility has been established under the Centre for Ocean Research, specifically for aquaculture research and development. This specialized facility is designed to support various aspects of fish maintenance, breeding, and health management. Within this setup, our team focuses on fish culture techniques aimed at improving production efficiency and sustainability. In addition, the facility is equipped to carry out advanced studies on fish breeding, where we explore breeding patterns, optimize breeding conditions, and enhance reproductive success. Another significant area of research at the facility revolves around fish diseases. Our team investigates disease outbreaks, develops preventive measures, and explores innovative treatment methods to safeguard fish populations. By addressing these critical aspects of

aquaculture, we aim to contribute to sustainable fish farming practices that support both local fisheries and the broader marine ecosystem.



At our Centre for Ocean Research, we have established a dedicated unit known as "Zebra Fish Unit," specifically designed for utilizing zebrafish as an animal model in diverse research studies. This specialized setup integrates a watershed management system, ensuring that the aquatic environment remains optimal and sustainable for the zebrafish. The setup is equipped with advanced water filtration, recycling, and monitoring technologies that closely regulate water quality parameters essential for the health and well-being of these model organisms. By managing water quality in this controlled environment, we can replicate specific natural conditions and ensure consistent data in research on genetics, disease mechanisms, environmental toxicology, and more. The watershed management strategy within this unit not only supports zebrafish maintenance but also serves as a foundation for broader ecological studies that may involve location-specific aquatic diversity.



Sathyabama actively contributes to national and regional Sustainable Development Goals (SDG) policy development through its involvement with organizations such as the IUCN Commission on Ecosystem Management (IUCN CEM). Recently, at institution research centre, Dr. D.



Inbakandan, Professor & Head, Centre for Ocean Research got recognized and awarded appreciation by IUCN CEM for translating the IUCN Nature-based Solutions (NBS) Global Standards into Tamil. This translation initiative plays a vital role in making global conservation strategies accessible to regional stakeholders, thereby facilitating local implementation of SDG policies. By translating these standards, we contribute to addressing regional challenges in ecosystem management and enhancing the understanding of nature-based solutions among local

communities and policymakers. Our engagement extends to identifying problems, developing policies, modelling future scenarios with and without interventions, and monitoring and reporting on their effectiveness. Through this collaborative effort, our university supports adaptive management strategies, helping to shape policies that align with global SDG targets for ecosystem conservation.

In celebration of International Coastal Cleanup Day, Sathyabama Institute of Science & Technology, in collaboration with the National Centre for Coastal Research under the Ministry of Earth Sciences, Government of India organized a coastal cleanup drive at Akkarai Beach in the Chennai Coastal region. This event, held on 22nd September 2024, was part of our commitment to student outreach and environmental stewardship. Approximately 100 students from Sathyabama's National Service Scheme and 30 faculty members from the Centre for Ocean Research, Sathyabama Research Park, participated actively, highlighting their dedication to coastal conservation and marine biodiversity protection.



SDG 15 - LIFE OF LAND

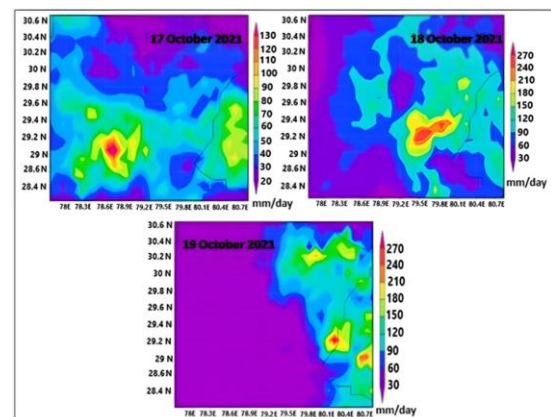


In 2015 the United Nations adopted 17 interconnected Sustainable Development Goals (SDGs) addressing the global challenges of poverty, inequality, climate change, environmental degradation, prosperity, peace, and justice. The goals are to be achieved by 2030.

The 15th Sustainable Development Goal is to protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss. It has 12 specified targets related to how to preserve and sustainably use the Earth's terrestrial species and ecosystems.

Centre for Remote Sensing and Geoinformatics of Sathyabama Institute of Science and Technology has taken significant steps for achieving these targets. We have undertaken a major research project sponsored by Council for Scientific and Industrial Research (CSIR), India focussing on developing flash flood monitoring. Flash flooding is responsible for heavy loss and degradation of land and environment.

This research project contributes a devised a unique approach of flash flood forecasting by using a set of hydrological parameters (2021 – 2022). a lot towards SDG 15.1 (CONSERVATION AND RESTORATION OF TERRESTRIAL AND FRESHWATER ECOSYSTEMS). Figure below highlights the visual representation of the distribution of rainfall over the course of three days.



Many studies adopted a remote-sensing approach to undertake analysis on the SDG 15 components. We have conducted a national workshop on “Hyperspectral Remote Sensing and Its Applications. This conference was sponsored by IIT Tirupati Navavishkar I-Hub Foundation (DST) and aimed at exchanging ideas on attempt to address this dearth of knowledge on Hyperspectral Remote Sensing (LINK: https://drive.google.com/file/d/1LPxGA2bpmtSmYNGPv9stf76rf0LMleZJ/view?usp=share_link .) Students learnt a lot about hyperspectral techniques to monitor Urban Studies, Water Resources Studies, Agriculture and Soil Studies, Environmental Studies.. This workshop also aids at addressing SDG 15

Sustainable water management means meets current, ecological, social, and economic needs without compromising the ability to meet those needs in the future on SDG 15.3. We have conducted an International Conference on Sustainable Water Management and Ecosystem Restoration. the focusses of the conference is to analyse the relations between human society, water resources and ecosystems, to clarify why and how vital ecosystems have to be protected and to indicate how this effort can be better incorporated in integrated water resources management.(Link: https://drive.google.com/file/d/1_5eGM_m3EYRngYBHw8pRk08WliWp_R-C/view?usp=drive_link) Students learnt how to manage the ecosystem in a sustainable way.

We are engaged in research focussing on Simulation of chain of tanks to augment water supply: a case study from Tamil Nadu. This work examined The peculiar problems faced by watersheds include over exploitation, large scale development due to fast urbanization and continuous reduction in cropping area. This research pertains to a scientific approach to access the available surface water potential from a chain of tanks in Guduvanchery watershed and groundwater in the area to harness and augment the utilisable water. The study concludes that for semi-arid region like Tamil Nadu, accurate estimation of runoff is essential for effective management and utilization of the available water resources. NRCS – model with simulation modelling can be effectively utilised for irrigation scheduling of small watersheds for sustainable management of available water resources. (Marykutty Abraham, K. Venugopala, R. Arunkumar and S. K. Pramada. "Simulation of chain of tanks to augment water supply: a case study from Tamil Nadu.

("AQUA — Water Infrastructure, Ecosystems and Society Vol 71 No 9, 975 doi: 10.2166/aqua.2022.038.). This significant work contributes to SDG 15.3.1 (CONSERVATION, RESTORATION AND SUSTAINABLE USE OF TERRESTRIAL ECOSYSTEMS)

To represent the territorial subsurface water flow is a worthwhile contribution to the regulation and governing of underwater reserves as they provide the components of hydrological processes as well as the flow of water in an aquifer was explored for a case study in Thirukkazhukundram block, Southern India. An attempt is made in applying this type of modeling study in the Palar river basin, Thirukkazhukundram block, southern India, which is chosen as the study area. The research area is signalized by multiple aquifer system consumed for agrarian and intake purposes. This model is helpful in forecasting the active groundwater flow under various pumping tests also, in monitoring the release and recharge of water. This important research contributes towards to SDG 15.3 (END DESERTIFICATION AND RESTORE DEGRADED LAND). This research work yielded few quality publications (Amuthini Sambhavi ArunaJadesan, Nagamani Kattukota, Senthilkumar Mohanavelu, Gowtham Balu, Venkatesan Selvaraj, Jothi Karmegam, Vinodh Kumar.. Three-dimensional numerical model to simulate regional groundwater flow in Thirukkazhukundram block, Southern India. *Arabian Journal of Geosciences* (2021) 14:1425 <https://doi.org/10.1007/s12517-021-07119-x>).

Remote sensing techniques present an advanced tool for improved monitoring of marine plastics and natural habitats. We have conducted a two days national Workshop funded by Ministry of Earth Sciences on “Advanced Space Technologies for Measuring Marine Plastic Debris”. Various techniques to monitor marine plastics and natural habits were discussed in the workshop and students learnt a lot about these tools. Sustainable Development Goal 15.5 (PROTECTION OF BIODIVERSITY AND NATURAL HABITATS) was addressed during this workshop. A picture showing Dr. Pravakar Mishra, Scientist G, National Centre for Coastal Research, Ministry of Earth Science, Government of India, NIOT campus, Chennai inaugurated the workshop and insisted that sustained observations are required to determine the marine plastic debris mass balance and to support effective policy for planning remedial action.



We have devised a unique technique by integrating methods combining the information obtained by geo-hydrological field mapping and those obtained by analysing multi-source remotely sensed data in a GIS environment for better understanding the Groundwater condition in hard rock terrain. This work contributes very significantly towards conservation of mountain ecosystems. Thus, this work adds to partial accomplishment of 15.2 (SUSTAINABLE MANAGEMENT OF LAND FOR AGRICULTURE). Research finding has been published in (K. Nagamani, Prabhu Dass Batvari, S. Packialakshmi, C. Sai Kumar Reddy and B. Anuradha. Groundwater Recharge Planning Using Field Survey for Talupula Mandal in Anantapur District, Andhra Pradesh, India. *Vol. 20, No. 5 (Suppl), 2021 • Nature Environment and Pollution Technology*)

We also have devised techniques for exploring the detection of freshwater possible sites in the hard rock terrain of Sakkottai, Sivagangai zone, using thematic layers such as lithology, geomorphology, steepness, and drainage density with the use of advanced techniques such as satellite data, GIS-based raster, and AHP. Thus, this significant work is very crucial for the accomplishing the goal 15.4 (ENSURE THE CONSERVATION, RESTORATION AND SUSTAINABLE USE OF TERRESTRIAL ECOSYSTEMS). Results were published in peer reviewed journals with following details:

Rajani Ramachandran, Mohana Perumal, Udayaganesan Palaniraj, Muthusamy Subramaniam, Dhinesh Selvam, "Geospatial and an AHP approach for delineating potential groundwater zone for Sakkottai block, Tamil Nadu", Arabian Journal of Geosciences (2022) 15:633 <https://doi.org/10.1007/s12517-022-09783-z>

We only have one planet, and we are proud to be working hard to protect it. We are committed to use it responsibly now, and conserve it for the future and for the betterment of our next generation.

SDG 16 - PEACE, JUSTICE AND STRONG INSTITUTIONS



Conflict, insecurity, weak institutions and limited access to justice remain a great threat to sustainable development. Goal 16 is dedicated to the promotion of peaceful and inclusive societies for sustainable development, the provision of access to justice for all, and building accountable institutions at all levels. National and global institutions have to be more transparent and effective, including local governance and judicial systems which are critical to the guarantee of human rights, law and order, and security.

Application of sustainability principles is of paramount importance and teaching SDG-16 related issues is the most direct way to contribute towards implementation, Sathyabama Institute of Science and Technology(Deemed to be University) at the front line in terms of contributing to the generation of sustainable practices, improving the ways sustainability is perceived, taught, modeled, and implemented. Towards this end sathyabama **included** proper education and training, involve new ways of doing research, and promoting an authentic engagement with the community. Education for sustainable development (ESD plays a central role in our unavoidable commitment to build a sustainable future for the good of our society and the planet. One of the key areas of is the reorientation of the curriculum towards sustainability.

Sathyabama implements changes in areas such as leadership; management; research; and, mainly, in the training of teachers.

16.1 Access to Justice



SDG16 to reflect that creating peaceful, just and inclusive societies requires simultaneous efforts in other interlinked SDGs. Justice is a thread that runs through all 17 Sustainable Development Goals (SDGs). SDG16.3 promises to ensure equal access to justice for all by 2030. Without increased justice, the world will not be able to end poverty, reduce inequality, reach the furthest behind first, create conditions for shared and sustainable poverty, or promote peace and inclusion. Importance of Alternative Dispute Resolution is one such measure that can help and training of trainers is an initiative towards the change. The School of law conducts two days International Virtual symposium on Alternative Dispute Resolution.

School of Law offers a great opportunity for the successful implementation of the SDG 16. The school functions with a people-centered approach to justice starts with an understanding of people's justice needs and designs solutions to respond to them. School of law in collaboration with Indian Red Cross Society, Tamil Nadu Branch and Help Age India has organized Healthy ageing and Sustainable development Goals.

Human trafficking is a global problem that often crosses borders. Access to justice in cases of transnational trafficking requires international cooperation and agreements to facilitate the extradition of traffickers and the protection of victims.

To significantly reduce illicit financial and arms flows, strengthen the recovery and return of stolen assets and combat all forms of organized crime- Awareness programs conducted on organized crime. School of law organizes legal aid camp in Mambakkam.

II National Online Debate Competition. School of Law organized National Debate Competition on the topic Access to Justice to Promote and enforce non-discriminatory laws and

policies for sustainable development. Access to justice refers to the ability of individuals and communities to seek and obtain a fair and effective resolution to their legal problems, regardless of their social and or Economic status.

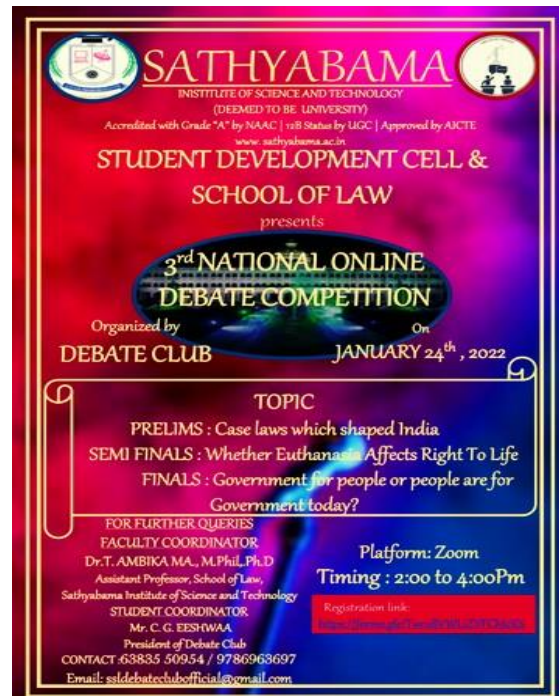


Faculty Development Program on Intellectual Property Rights – 26th to 31st July 2021. The relationship between intellectual property (IP) rights and access to justice is an important and complex one. Intellectual property encompasses patents, copyrights, trademarks, and other legal protections for creations of the mind, such as inventions, artistic works, and brand identities. Access to justice, on the other hand, involves the ability of individuals and entities to seek legal remedies and protection when their rights are violated.



Virtual Mock Parliamentary Debate Competition – 17th & 18th September 2021. School of law organizes Debate Competition. Debates can raise awareness about legal and justice issues, making them more visible to the public and policy makers. This increased awareness can lead a better understanding of the challenges faced by marginalized and undeserved communities in accessing justice. Debates can empower communities and individuals to actively engage with the justice system. The outcome of debates can influence the development of policies aimed at improving access to justice.

One day International Workshop on Research and Law, 13th January 2022. The one day international workshop on Research and Law was held on 13th January 2022 at 03.00 pm. The one day international workshop on Research and Law was organised by school of law, Sathyabama institute of science and technology. The speakers for the workshop are Dr. Sai Ramani Garimella, Associate Professor, Faculty of Legal Studies, South Asian University, New Delhi. Dr. Chandrashekar, Associate Professor, Saveetha School of Law, Chennai. Mr. Mohd Imran, Lecturer, Faculty of Shariah and Law Villa College, Maldives.



National Online Debate Competition, 24th January 2022. The 3rd National online debate competition was held on January 24th 2022 at 02.00 pm through Zoom platform. The national debate competition was organised by Debate club of Student development cell and School of Law, Sathyabama institute of science and technology. The topic for Prelims are “Case laws which shaped India” and the topic for Semi finals was “Whether euthanasia affects right to life”. The topic for the finals was “Government for people or people are for Government today?”

Online Extempore Competition on Anti Human Trafficking, 24th January 2022.

On the occasion of 73rd Republic day celebration, online extempore competition on Anti Human trafficking was held at 24th January 10.15 am. It was organized by Anti Human Trafficking Club, School of Law. The judges for the event was Dr. A. Vijayalakshmi, Assistant Professor, The Tamil Nadu Dr. Ambedkar Law University, Chennai. Tmt. Adhilakshmi Logamurthy, Advocate, High Court of Madras. The resource person was Shri.R. Venkatesan, Senior Examiner of Trademarks and G.I Trademarks registry, Intellectual Property Office, Chennai.

LIST OF EVENTS
ONLINE EXTEMPORE COMPETITION
On
ANTI HUMAN TRAFFICKING

Organized by
Anti Human Trafficking Club

On
24th January 2022 @ 10.15 – 11.45 am

Judges



Dr.A.Vijayalakshmi,
Assistant Professor (SS),
The Tamilnadu Dr.Ambedkar Law
University, Chennai



Tmt.Adhilakshmi Logamurthy
Advocate
Madras High Court

Organizing Secretary
Mrs.V.Poojasree, M.L.,(Ph.D)
Assistant Professor
School of Law

Student Co-Ordinator
Ms.K.Aishwarya, 4th year B.B.A.L.L.B(Hons)
President
L.Raja Dharani, 4th year B.Com.L.L.B(Hons)
Vice President
Anti Human Trafficking Club
Sathyabama Institute of Science and Technology
(Deemed to be University)

GOAL 17 - PARTNERSHIPS FOR THE GOALS



Stronger partnerships are very essential for sustainable development to mobilize resources, share knowledge and technologies and gain synergistic advantage. Sathyabama Institute of Science and Technology strives to promote partnerships and collaborative agreements with national and international organisations and Universities that facilitate the achievement of sustainable development.

Sathyabama is well connected both at national and international level. It is involved in the collaborative activities such as Joint Academic Programmes and Joint research Programmes with partners across the world. The collaboration has resulted in knowledge sharing with academicians, scientists and researchers across the world. The Collaborations keeps the research and development efforts of our Institution on par with the research and development happening throughout the world. We are able to set targets, goals and benchmarks for us when we work with international counterparts, so that we are sure that we don't lag behind anyone in terms of quality education, research and innovation.

We work in coordination with many Government organisations, Government Agencies, local administrative bodies and Non-Governmental organisations to enhance, support and achieve the sustainable development goals.

17.1 Research Collaborators at National level

The Institution is involved in various sponsored and collaborative R&D projects funded by National Organizations like

- Indian Space Research Organization (ISRO)
- Department of Science and Technology (DST)

- Department of Bio Technology (DBT)
- Indira Gandhi Centre for Atomic Research (IGCAR)
- Defence Research and Development Organization (DRDO)
- Board of Research in Fusion Science and Technology (BRFST)
- Combat Vehicles Research and Development Establishment (CVRDE)
- Central Leather Research Institute (CLRI)
- Bharatiya Nabhikiya Vidyut Nigam Limited (BHAVINI)
- All India Council for Technical Education (AICTE)
- Indian Space Research Organization (ISRO)
- Indian council for Medical Research (ICMR).

Many of our research projects are sponsored by various Ministries like

- Ministry of Human Resource Development (MHRD),
- Ministry of Earth Sciences (MoES) and
- Ministry of Environment and Forests (MoEF).

Our researchers have also collaborated with the Universities across India for doing joint research and made joint publications with the faculty working in other Indian Universities.

17.2 Internationalization at Sathyabama

Over the past 10 years India has become an increasingly attractive study destination for students across the globe. To cater to the growing demands of Internationalization of education, Indian Universities are undergoing transformation transcending National boundaries.

With its admirable academic ambience and excellent research facilities, Sathyabama Institute of Science and Technology has all the features of a world class University that has the potential to become an attractive destination for Higher Education to the students across the Globe.

Objectives of Internationalization

- To promote internationalization and create a favourable impact on the institution's international reputation.

- To promote international academic and research cooperation and engage in collaborative activities like joint research, joint academic programmes and the exchange of staff and students.
- To improve the global rankings

17.3 Centre for Academic Partnership and International Relations

Sathyabama Institute of Science and Technology has a devoted Centre, known as Centre for Academic partnership and International Relations that establishes international linkages and alliances to promote collaborative activities. The Centre has been instrumental in the establishment of international tie ups and has initiated collaborations with International Universities and Research Organisations across the globe. The Centre coordinates all the International Programmes.

Functions of the Centre

- Facilitating academic and research collaboration with partners
- organizing and participating in International Education Fairs, participating in networking events and Summits
- Responsible for coordinating Faculty Exchange Programmes, Student Exchange Programmes, Semester Abroad Programmes, Internship Abroad Programmes and Summer Schools with Partnering Universities
- Applying for various funded Programmes and International Credit Mobility Projects for Faculty and Students
- Coordinating International Joint seminars/symposiums/conferences
- Taking care of international students on campus

17.4 International Alliances and Collaboration

Sathyabama has alliances with leading Universities and research establishments across the globe. Institution has more than 200 partner universities across the world. It is involved in the following collaborative activities with international partners:

- Student exchange
- Faculty exchange

- Twinning programmes
- Semester abroad programmes
- Internships and summer schools
- Joint research
- Joint publication
- Joint conference, symposium and workshop, webinars
- Participation in bilateral research calls announced by India and the partner country to promote academic and research collaborations

In a truly globalised institution, everyone should have opportunities to acquire international exposure, and career experience. Sathyabama aims at promoting internationalisation and believes that internationalisation strategies are to be driven by educational imperative. The University wishes to provide international exposure and learning experience to students and thereby improving their employability through Student mobility programmes. The University also provides opportunity to the Faculty members to network and learn among international counterparts through staff exchange programmes. Our Institution sends faculty members on exchange programmes to partnering Universities and receives Faculty members from the Partnering Universities across the world.



Our Students at MAHSA University, Malaysia

17.5 Erasmus Plus-International Credit Mobility Programme

We send our staff and students to our partner universities in the European Union through the Erasmus+ Staff Mobility Programme and Erasmus+ Student Mobility Programme (International Credit Mobility Project).

Sathyabama has signed Inter-Institutional agreement with the following universities:

- Wszechnica Polska Academy of Applied Sciences in Warsaw, Poland
- Powislanski College in Kwidzyn, Poland
- Transilvania University in Brasov, Romania
- Craiova University, Romania
- Cukurova University, Turkey
- Andolu University, Turkey



Student from the Department of Business Administration at Powislanski University, Poland on the Erasmus Plus Student Mobility Programme,



Faculty members at Cukurova university, Turkey on Erasmus Plus Staff Mobility Programme



Faculty member at Vogograd State University, Russia

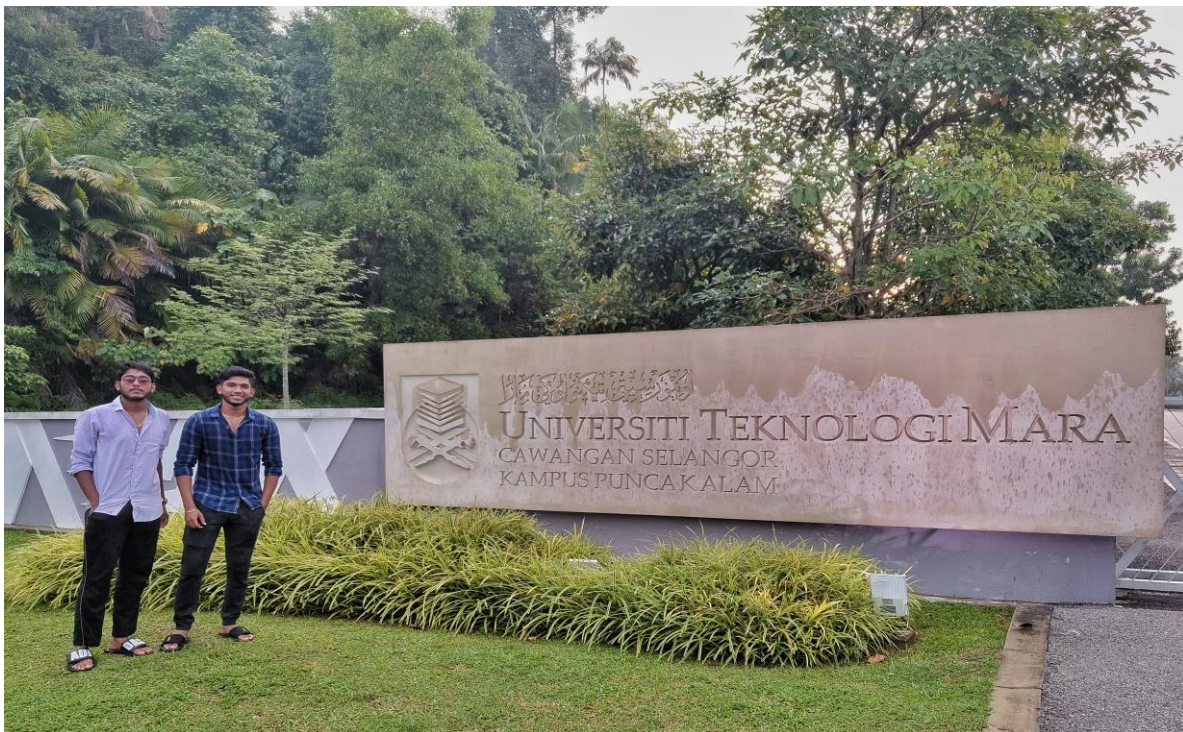


AIRTF Research Fellow from the AIMST University, Malaysia, visited our institution on faculty exchange Program

Students at National University of Singapore(NUS), Singapore



Students at University of Texas at Dallas, USA



Students at University Technology Mara (UiTM), Malaysia



Student from Daffodils International University, Bangladesh

17.6 Visiting International Professors

Our Institution invite Professors working in Universities abroad as Visiting International Professors, who come and work for a period ranging from 2-12 weeks. We have Professors from France, Malaysia, Singapore, Bangladesh, and Indonesia working with us.

Collaborations

Collaboration	Number
International Universities	178
National Universities	10
National Industries	103

17.7 A Glimse of MoU Signing

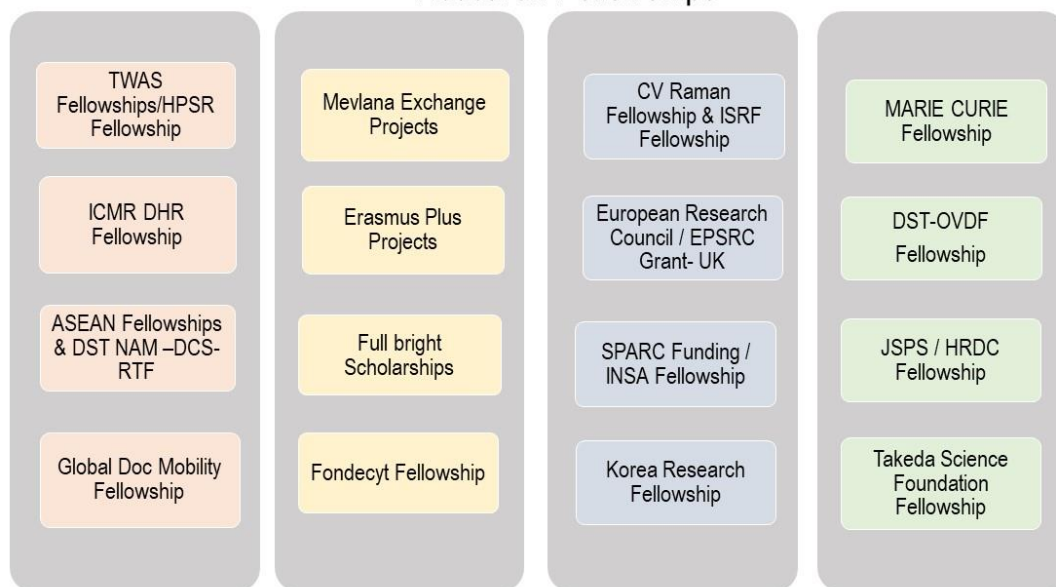


MoU with New Hampshire University, USA



MoU with Deakin University, Australia

Research Fellowships



17.9 International/ National Collaborative Activities

Sl. No.	Title of the collaborative activity	Name of the collaborating agency with contact details	Name of the participant	Year of collaboration	Duration	Nature of the activity
1	ASEAN – India Research & Training Fellowship (AIRTF)	Myanmar Institute of Information Technology, Myanmar	Ms. Kay Thinzar Phu	2023-2024	7th September 2023 - 29th February 2024	Research & Training Fellowship
2	ASEAN – India Research & Training Fellowship	Myanmar Institute of Information Technology, Myanmar	Mr. Soe Paing	2023-2024	7th September 2023 - 29th February	Research & Training Fellowship

	(AIRTF)				2024	
3	Faculty Exchange Programme	MAHSA University, Malaysia	Dr. Liew Fong Fong	2023-2024	22nd September 2023 - 27th September 2023	Faculty Exchange Programme
4	Erasmus + Teaching Staff Mobility Programme (STA)	Transilvania University of Brasov, Romania	Dr. Anglea Repanovici	2023-2024	4th February 2024 - 10th February 2024	Erasmus + Teaching Staff Mobility Programme (STA)
5	ASEAN – India Research & Training Fellowship (AIRTF)	Myanmar Institute of Information Technology, Myanmar	Nay Kyi Tun	2023-2024	February 2024 - July 2024	Research & Training Fellowship
6	ASEAN – India Science & Technology Development Fund (AISTDF) under AIRTF Scheme	AIMST University, Malaysia	Mr. S. Maheswaran	2023-2024	2nd January 2024 - 30th April 2024	Research & Training Fellowship
7	Academic &	Universiti	Dr. Gobi Krishna	2023-2024	5th	Academic

	Cultural Exchange Programme	Teknologi Malaysia (UTM), Malaysia	Sinniah		March 2024 - 14th March 2024	& Cultural Exchange Programme
8	Academic & Cultural Exchange Programme	Universiti Teknologi Malaysia (UTM), Malaysia	Mrs Punithavalli Marimuthu	2023-2024	5th March 2024 - 14th March 2024	Academic & Cultural Exchange Programme
10	Faculty Exchange Programme	Nottingham Trent University , UK	Dr. Dilshad Shaik	2023-2024	17th July 2023 to 28th July 2023	Faculty Exchange Programme
11	Faculty Exchange Programme	MAHSA University, Malaysia	Dr. M.Masilamani Selvam	2023-2024	26th July 2023 to 12th August 2023	Faculty Exchange Programme
12	Faculty Exchange Programme	MAHSA University, Malaysia	Dr. Annam Renita	2023-2024	26th July 2023 to 12th August 2023	Faculty Exchange Programme

13	MI-IRICT23 (MAHSA International Conference on Industrial Revolution Information & Communicati on Technology (Mi_IRICT) 2023	MAHSA University, Malaysia	Dr. S. Murugan	2023-2024	27th October 2023 to 28th October 2023	Internation al Conferenc e
14	MI-IRICT23 (MAHSA International Conference on Industrial Revolution Information & Communicati on Technology (Mi_IRICT) 2023	MAHSA University, Malaysia	Dr. S. Revathy	2023-2024	27th October 2023 to 28th October 2023	Internation al Conferenc e
15	MI-IRICT23 (MAHSA International Conference on Industrial	MAHSA University, Malaysia	Dr. R.Sethuraman	2023-2024	27th October 2023 to 28th October	Internation al Conferenc e

	Revolution Information & Communication Technology (Mi_IRICT) 2023				2023	
16	MI-IRICT23 (MAHSA International Conference on Industrial Revolution Information & Communication Technology (Mi_IRICT) 2023	MAHSA University, Malaysia	Dr. R.Subhashini	2023-2024	27th October 2023 to 28th October 2023	Internation al Conferenc e
17	STA Scholarship (Staff Mobility Programme for Teaching Assignments) through Erasmus Plus	Cukurova University, Turkey	Dr.V. Nirmalrani	2023-2024	28th October 2023 to 5th Novemb er 2023	Erasmus + Teaching Staff Mobility Programm e (STA)

18	STA Scholarship (Staff Mobility Programme for Teaching Assignments) through Erasmus Plus	Cukurova University, Turkey	Dr. S. Gowri	2023-2024	28th October 2023 to 5th November 2023	Erasmus + Teaching Staff Mobility Programme (STA)
19	Erasmus + Teaching Staff Mobility Programme (STA)	Cukurova University, Turkey	Dr. Karthikeyan	2023-2024	20th May 2024 to 24th May 2024	Erasmus + Teaching Staff Mobility Programme (STA)
20	Erasmus + Teaching Staff Mobility Programme (STA)	Cukurova University, Turkey	Dr. Ramesh Kumar V	2023-2024	20th May 2024 to 24th May 2024	Erasmus + Teaching Staff Mobility Programme (STA)
21	Faculty Exchange Programme	Universiti Teknologi Malaysia (UTM), Malaysia, Manipal University College, Malaysia	Dr. S.Sathish	2023-2024	26th May 2024 to 4th June 2024	Faculty Exchange Programme

22	Faculty Exchange Programme	Universiti Teknologi Malaysia (UTM), Malaysia, Manipal University College, Malaysia	Dr. V.Sivachidambar	2023-2024	26th May 2024 to 4th June 2024	Faculty Exchange Programme
23	Post-Doctoral Fellowship	Shinawatra University, Thailand	Dr. T Prem Jacob	2023-2024	28th May 2024 to 3th June 2024	Post-Doctoral Fellowship
24	Post-Doctoral Fellowship	Shinawatra University, Thailand	Dr. Sonia Jenifer Rayen	2023-2024	28th May 2024 to 3th June 2024	Post-Doctoral Fellowship
25	Internship on Machine Learning and Big Data	University of Texas, Dallas, USA	Yogashree S	2023-2024	June 1st 2023 - July 15th 2023	Internship Programme
26	Internship on Machine Learning and Big Data	University of Texas, Dallas, USA	Thridhath GP	2023-2024	June 1st 2023 - July 15th 2023	Internship Programme
27	Internship on Machine	University of Texas, Dallas,	Pranav Sharma Kocherlakota	2023-2024	June 1st 2023 -	Internship Programme

	Leaning and Big Data	USA			July 15th 2023	e
28	Internship on Machine Leaning and Big Data	University of Texas, Dallas, USA	Gubbala Aishwarya	2023-2024	June 1st 2023 - July 15th 2023	Internship Programme
29	Internship on Machine Leaning and Big Data	University of Texas, Dallas, USA	Daya sagar	2023-2024	June 1st 2023 - July 15th 2023	Internship Programme
30	Global Academic Internship Programme on Data Analytics using Deep Learning	National University of Singapore(NU S), Singapore	Shivranjani Balaji	2023-2024	June 3rd - June 24th 2023	Internship Programme
31	Global Academic Internship Programme on Data Analytics using Deep Learning	National University of Singapore(NU S), Singapore	Abhishek Manikandan	2023-2024	June 3rd - June 24th 2023	Internship Programme
32	Global Academic	National University of	B.Rushidharan	2023-2024	June 3rd - June	Internship Programme

	Internship Programme on Data Analytics using Deep Learning	Singapore(NU S), Singapore			24th 2023	e
33	Global Academic Internship Programme on Data Analytics using Deep Learning	National University of Singapore(NU S), Singapore	Adapa Meghana Sai	2023-2024	June 3rd - June 24th 2023	Internship Programme
34	Global Academic Internship Programme on Data Analytics using Deep Learning	National University of Singapore(NU S), Singapore	P. Shashank	2023-2024	June 3rd - June 24th 2023	Internship Programme
35	Global Academic Internship Programme on Data Analytics using Deep Learning	National University of Singapore(NU S), Singapore	S. Karthikeyan	2023-2024	June 3rd - June 24th 2023	Internship Programme

36	Global Academic Internship Programme on Data Analytics using Deep Learning	National University of Singapore(NU S), Singapore	Naganjan kumar	2023-2024	June 3rd - June 24th 2023	Internship Programme
37	NTU Global Summer Global School Short Course	Nottingham Trent University(NTU), UK	Karthikeyan Ramalakshmi	2023-2024	July 17th - July 28th 2023	Summer School Programme
38	NTU Global Summer Global School Short Course	Nottingham Trent University(NTU), UK	Sundarakanth Charumathi	2023-2024	July 17th - July 28th 2023	Summer School Programme
39	NTU Global Summer Global School Short Course	Nottingham Trent University(NTU), UK	Sankara Narayanan Sugumar Srivatshan	2023-2024	July 17th - July 28th 2023	Summer School Programme
40	NTU Global Summer Global School Short Course	Nottingham Trent University(NTU), UK	Elena Sherlin Arul Chandran	2023-2024	July 17th - July 28th 2023	Summer School Programme
41	NTU Global Summer Global	Nottingham Trent University(NTU)	Yuvasree Sankar	2023-2024	July 17th - July	Summer School Programme

	School Short Course	U), UK			28th 2023	e
42	NTU Global Summer Global School Short Course	Nottingham Trent University(NTU), UK	Esakkidurai Mahalakshmi	2023-2024	July 17th - July 28th 2023	Summer School Programme
43	NTU Global Summer Global School Short Course	Nottingham Trent University(NTU), UK	Amutha Viswanathan Inddu	2023-2024	July 17th - July 28th 2023	Summer School Programme
44	NTU Global Summer Global School Short Course	Nottingham Trent University(NTU), UK	Subash Chandrabose Shyla Shree	2023-2024	July 17th - July 28th 2023	Summer School Programme
45	NTU Global Summer Global School Short Course	Nottingham Trent University(NTU), UK	Arumugam Harish	2023-2024	July 17th - July 28th 2023	Summer School Programme
46	NTU Global Summer Global School Short Course	Nottingham Trent University(NTU), UK	Sundarraganesh Shanmughapriya Sreram	2023-2024	July 17th - July 28th 2023	Summer School Programme
47	Two Week Summer Internship Programme	MAHSA University, Malaysia	Aloy Fernando Kedrick	2023-2024	July 26th - August 11th	Internship Programme

					2023	
48	Two Week Summer Internship Programme	MAHSA University, Malaysia	Balaji Sasikala Madhumitha	2023-2024	July 26th - August 11th 2023	Internship Programme
49	Two Week Summer Internship Programme	MAHSA University, Malaysia	Rajamanickam Mithila	2023-2024	July 26th - August 11th 2023	Internship Programme
50	Two Week Summer Internship Programme	MAHSA University, Malaysia	Balasubramani Oviya	2023-2024	July 26th - August 11th 2023	Internship Programme
51	Two Week Summer Internship Programme	MAHSA University, Malaysia	Mothilal Shivani	2023-2024	July 26th - August 11th 2023	Internship Programme
52	Two Week Summer Internship Programme	MAHSA University, Malaysia	Sannepalli Deekshitha	2023-2024	July 26th - August 11th 2023	Internship Programme
53	Two Week Summer Internship Programme	MAHSA University, Malaysia	Anbazhagan Saraswathi	2023-2024	July 26th - August 11th	Internship Programme

					2023	
54	Two Week Summer Internship Programme	MAHSA University, Malaysia	Yatham Sashank Reddy	2023-2024	July 26th - August 11th 2023	Internship Programme
55	Two Week Summer Internship Programme	MAHSA University, Malaysia	Samantaray Aakankshya	2023-2024	July 26th - August 11th 2023	Internship Programme
56	Two Week Summer Internship Programme	MAHSA University, Malaysia	Saravanan Abirami	2023-2024	July 26th - August 11th 2023	Internship Programme
57	Two Week Summer Internship Programme	MAHSA University, Malaysia	Manzoor Amrin	2023-2024	July 26th - August 11th 2023	Internship Programme
58	Two Week Summer Internship Programme	MAHSA University, Malaysia	Senthil Kumar Dharshini	2023-2024	July 26th - August 11th 2023	Internship Programme
59	Two Week Summer Internship Programme	MAHSA University, Malaysia	Sakkir Farheen	2023-2024	July 26th - August 11th	Internship Programme

					2023	
60	Two Week Summer Internship Programme	MAHSA University, Malaysia	Lekkala Hema	2023-2024	July 26th - August 11th 2023	Internship Programme
61	Two Week Summer Internship Programme	MAHSA University, Malaysia	Jose Jeffin	2023-2024	July 26th - August 11th 2023	Internship Programme
62	Two Week Summer Internship Programme	MAHSA University, Malaysia	Ravichandran Kiruthika	2023-2024	July 26th - August 11th 2023	Internship Programme
63	Two Week Summer Internship Programme	MAHSA University, Malaysia	Busennagari Preeti	2023-2024	July 26th - August 11th 2023	Internship Programme
64	Two Week Summer Internship Programme	MAHSA University, Malaysia	Surapureddy Likitha	2023-2024	July 26th - August 11th 2023	Internship Programme
65	Two Week Summer Internship Programme	MAHSA University, Malaysia	Gangaraju Shamitha	2023-2024	July 26th - August 11th	Internship Programme

					2023	
66	Two Week Summer Internship Programme	MAHSA University, Malaysia	Anand Advait	2023-2024	July 26th - August 11th 2023	Internship Programme
67	Two Week Summer Internship Programme	MAHSA University, Malaysia	Suresh Pramila Nihilsurya	2023-2024	July 26th - August 11th 2023	Internship Programme
68	Two Week Summer Internship Programme	MAHSA University, Malaysia	Joseph Stanly Raja Sam Daniel	2023-2024	July 26th - August 11th 2023	Internship Programme
69	Semester Abroad Programme	University Malaysia Pahang (UMP), Malaysia	B. Janarth	2023-2024	October 2023 - February 2024	Semester Abroad Programme
70	Semester Abroad Programme	University Putra Malaysia (UPM), Malaysia	A. Catherin	2023-2024	October 2023 - February 2024	Semester Abroad Programme
71	Semester Abroad Programme	University Putra Malaysia (UPM), Malaysia	Michelle Faustina Maria	2023-2024	October 2023 - February 2024	Semester Abroad Programme
72	Semester	University	B. Pavithra	2023-2024	October	Semester

	Abroad Programme	Putra Malaysia (UPM), Malaysia			2023 - February 2024	Abroad Programme
73	Semester Abroad Programme	University Technology MARA (UiTM), Malaysia	L. Priyadharshini	2023-2024	October 2023 - February 2024	Semester Abroad Programme
74	Semester Abroad Programme	University Technology MARA (UiTM), Malaysia	L. Fazil	2023-2024	October 2023 - February 2024	Semester Abroad Programme
75	Thirteenth Winter Course on Cyber Laws & Immersion Programme in James Cook University, Singapore	James Cook University, Singapore	Inddu.A.V	2023-2024	26th November - 9th December 2023	Internship Programme
76	Semester Abroad Programme	LeTourneau University, USA	Kanaga Sabrina Milly	2023-2024	January - May 2024	Semester Abroad Programme
77	Semester Abroad Programme	LeTourneau University, USA	Ramesh Pranav	2023-2024	January - May 2024	Semester Abroad Programme

78	Semester Abroad Programme	LeTourneau University, USA	Sandra Maria George	2023-2024	January - May 2024	Semester Abroad Programme
79	Semester Abroad Programme for 1 year	The University of New South Wales, Australia	Shivranjani Balaji	2023-2024	January 2024 - December 2024	Semester Abroad Programme
80	55th Session of United Nations Human Resource Council (GTNHRC)	UN Global Assembly, Switzerland	Ms. Carmine Tanya Newman	2023-2024	11th March - 25th March 2024	Internship Programme
81	Semester Abroad Programme	University Malaysia Pahang (UMP), Malaysia	Nagarajan Sunanda	2023-2024	March - July 2024	Semester Abroad Programme
82	Semester Abroad Programme	University Malaysia Pahang (UMP), Malaysia	Thilakar Adeeth Shanthanu	2023-2024	March - July 2024	Semester Abroad Programme
83	Semester Abroad Programme	University Malaysia Pahang (UMP), Malaysia	Martin Gladson Anto	2023-2024	March - July 2024	Semester Abroad Programme

84	Semester Abroad Programme	University Malaysia Pahang (UMP), Malaysia	Dhanasekar Stephy Colin	2023-2024	March - July 2024	Semester Abroad Programme
85	Semester Abroad Programme	University Malaysia Pahang (UMP), Malaysia	Murali Santhosh	2023-2024	March - July 2024	Semester Abroad Programme
86	Semester Abroad Programme	University Malaysia Pahang (UMP), Malaysia	Parthiban Shanmuga Priya	2023-2024	March - July 2024	Semester Abroad Programme
87	Erasmus + Student Mobility Programme	Powiślański University, Poland	Vishali D	2023-2024	March - July 2024	Semester Abroad Programme
88	Inbound Semester Abroad Programme	STIKI Malang, Indonesia	Fauzan Ramelan	2023-2024	June 2023 - October 2023	Inbound Semester Abroad Programme
89	Inbound Semester Abroad Programme	STIKI Malang, Indonesia	Muhammad Akbar Ababil	2023-2024	June 2023 - October 2023	Inbound Semester Abroad Programme

17.10 Faculty Exchange/Research Programme – 2023 - 2024

Our faculty members visited International Universities on academic and research exchange programmes. The following is the

S.N O	NAME OF THE FACULTY	DEPT	UNIVERSITY	DURATIO N	PROGRAMM E	PERIO D
1.	Dr. Dhivya Sathish	School of Manag ement Studies	Powislanski University, Poland	1 week	Erasmus Plus Staff Mobility Programme	16th May 2023 to 20th May 2023
2.	Dr. M Lavanya	School of Manag ement Studies	Powislanski University, Poland	1 week	Erasmus Plus Staff Mobility Programme	16th May 2023 to 20th May 2023
3.	Dr. Dilshad Shaik	Dean - School of Law	Nottingham Trent University , UK	12 Days	Faculty Exchange	17th July 2023 to 28th July 2023
4.	Dr. M.Masilamani Selvam	Depart ment of Biotech	MAHSA University, Malaysia	18 Days	Faculty Exchange	26th July 2023to

		nology				12th August 2023
5.	Dr. Annam Renita	Depart ment of Chemic al Engine ering	MAHSA University, Malaysia	18 Days	Faculty Exchange	26th July 2023to 12th August 2023
6.	Dr. S. Murugan	Depart ment of CSE	MAHSA University, Malaysia	2 Days	MI-IRICT23 (MAHSA International Conference on Industrial Revolution Information & Communication Technology (Mi_IRICT) 2023	27th October 2023 to 28th October 2023
7.	Dr. S. Revathy	Inform ation Techno logy	MAHSA University, Malaysia	2 Days	MI-IRICT23 (MAHSA International Conference on Industrial Revolution Information & Communication Technology (Mi_IRICT)	27th October 2023 to 28th October 2023

					2023	
8.	Dr. R.Sethuraman	Department of CSE	MAHSA University, Malaysia	2 Days	MI-IRICT23 (MAHSA International Conference on Industrial Revolution Information & Communication Technology (Mi_IRICT) 2023	27th October 2023 to 28th October 2023
9.	Dr. R.Subhashini	Information Technology	MAHSA University, Malaysia	2 Days	MI-IRICT23 (MAHSA International Conference on Industrial Revolution Information & Communication Technology (Mi_IRICT) 2023	27th October 2023 to 28th October 2023
10.	Dr.V. Nirmalrani	Department of Computer Science and Engine	Cukurova University, Turkey	9 Days	STA Scholarship (Staff Mobility Programme for Teaching Assignments) through	28th October 2023 to 5th November 2023

		ering			Erasmus Plus	
11.	Dr. S. Gowri	Depart ment of Compu ter Science and Engine ering	Cukurova University, Turkey	9 Days	STA Scholarship (Staff Mobility Programme for Teaching Assignments) through Erasmus Plus	28th October 2023 to 5th Novemb er 2023

17.11 Publications/Patents Related to SDGs

S.N O	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor	DOI of the Published Paper
1	Dr.B.Sathiyaprasad	School of Computing	Classification of malware for security improvement in IoT using heuristic aided adaptive multi-scale and dilated ResNeXt with gated recurrent unit	Applied Soft Computing	7.2	https://doi.org/10.1016/j.asoc.2024.111838
2	Dr.R.Jeberson Retna Raj	School of Computing	A Bi-Directional GRU Architecture for the Self-Attention Mechanism: An Adaptable, Multi-Layered Approach with Blend of Word Embedding	International Journal of Engineering and Technology Innovation	1.3	DOI: 10.46604/ijeti.2023.11510
3	Dr T Prem Jacob	School of Computing	A Congestion-Aware Routing System in Wireless Sensor Networks Based on Bee Colonies and Intelligent Butterfly Optimisation	Wireless Personal Communications	1.9	https://doi.org/10.1007/s11277-024-11107-1
4	Dr.M.Nafees Muneera	School of Computing	A Cryptographic based I 2ADO-DNN Security Framework for Intrusion Detection in Cloud Systems	https://www.mecspress.org/ijcnis	2.05	DOI: 10.5815/ijcnis.2023.06.04
5	Dr.S.Revathy	School of Computing	A hybrid boosted neural sensitive attribute detection machine learning algorithm for HABAC systems	Multimedia Tools and Applications	3	https://doi.org/10.1007/s11042-024-18215-x
6	Dr P.Ajitha	School of Computing	A hybrid heuristic-assisted deep learning for secured routing and malicious node detection in wireless sensor networks	Peer-to-Peer Networking and Applications	3.3	https://link.springer.com/article/10.1007/s12083-024-01735-6

S.N O	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor	DOI of the Published Paper
7	Dr.P.Jeyanthi	School of Computing	A hybrid multilayered classification model with VGG-19 net for retinal diseases using optical coherence tomography images.	soft computing	3.1	DOI: http://dx.doi.org/10.1007/s00500-023-08928-w
8	D Usha Nandini	School of Computing	A multi-criteria aware integrated decision making routing protocol for IoT communication toward 6G networks	Wireless Networks	2.1	https://doi.org/10.1007/s11276-024-03739-9
9	Dr. Sankari M	School of Computing	A novel and Fast hybrid design of cryptosystems for Image via 5-D chaos based random keys and DNA	Multimedia tools and applications	3.6	https://link.springer.com/article/10.1007/s11042-023-17742-3
10	Dr P.Ajitha	School of Computing	A novel blockchain enabled resource allocation and task offloading strategy in cloud computing environment	Automatika-Journal for Control, Measurement, Electronics, Computing and Communications	1.7	https://doi.org/10.1080/00051144.2024.2314906
11	Dr.S.L.JANY SHABU	School of Computing	A novel framework for entertainment robots in personalized elderly care using adaptive emotional resonance technologies	Entertainment Computing	2.8	https://doi.org/10.1016/j.entcom.2024.100796
12	Dr.K.Lalitha Devi	School of Computing	A Novel Fuzzy Marine White Shark Optimization Based Efficient Routing and Enhancing Network Lifetime in MANET	Wireless Personal Communications	1.9	https://doi.org/10.1007/s11277-023-10675-y

S.N O	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor	DOI of the Published Paper
13	Dr. V. Nirmalrani	School of Computing	A novel model for enhancing cloud security and data deduplication using fuzzy and refraction learning based chimp optimization	International Journal of Machine Learning and Cybernetics	3.6	https://doi.org/10.1007/s13042-023-01953-z
14	Dr.S.Revathy	School of Computing	A novel model for Sybil attack detection in online social network using optimal three-stream double attention network	The Journal of Super Computing	2.5	https://doi.org/10.1007/s11227-023-05677-3
15	Dr.R.Jeberson Retna Raj	School of Computing	A Novel Paradigm for Sentiment Analysis on COVID-19 Tweets with Transfer Learning Based Fine-Tuned BERT	Advances in Technology Innovation	1.9	DOI: 10.46604/aiti.2023.11743
16	Dr.S.Jayanthi	School of Computing	A Shearlet-Based Second Order System for Classifying Oral Cancer: An Analysis of Histopathological Images	Traitement du Signal (International Information and Engineering Technology Association	1.2	https://doi.org/10.18280/ts.400445
17	Dr G Nagarajan	School of Computing	A trust-centric approach to intrusion detection in edge networks for medical internet of thing Ecosystems	Computers and Electrical Engineering	4	https://doi.org/10.1016/j.compeleceng.2024.109129
18	Dr D Saravanan	School of Computing	Adaptive activation Functions with Deep Kronecker Neural Network optimized with Bear Smell Search Algorithm for preventing MANET Cyber security attacks	Network: Computation in Neural Systems	7.3	https://doi.org/10.1080/0954898X.2024.2321391

S.N O	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor	DOI of the Published Paper
19	Dr.A.Sivasangar i	School of Computing	Adaptive real-time reconfiguration gate scheduling scheme using time perceptive stream	Automatika Journal for Control, Measurement, Electronics, Computing and Communications	1.7	https://doi.org/10.1080/00051144.2023.2243142
20	Dr.A.Deepa	School of Computing	Advancements in Neural Network Architectures for Image Recognition in Computer Vision System	Journal of Electrical Systems	0.5	https://journal.esrgroups.org/jes/article/view/4122
21	Dr.Subathra.G	School of Computing	An active learning machine technique based prediction of cardiovascular heart disease from UCI- repository database	Scientific Reports	3.8	10.1038/s41598-023-40717-1.
22	Ms. QUEEN MARY VIDYA M	School of Computing	An effective framework of human abnormal behaviour recognition and tracking using multiscale dilated assisted residual attention network	ELSEVIER-Expert Systems With Applications	7.5	https://doi.org/10.1016/j.eswa.2024.123264
23	Mrs Scinthia Clarinda S	School of Computing	An effective reconstructed pyramid crosspoint fusion for multimodal infrared and visible images	Springer (Web of Science)	2	https://doi.org/10.1007/s11760-024-03350-7
24	Dr.A.jemshia Miriam	School of Computing	An efficient approach for detecting brain tumours using a modified artificial neural network	Computer methods and n biomechanics and biomedical engineering imaging and visualisation	1.238	10.1080/21681163.2023.2245069

S.N O	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor	DOI of the Published Paper
25	Dr D Saravanan	School of Computing	An efficient self-attention-based conditional variational auto-encoder generative adversarial networks based multipath cross-layer design routing paradigm for MANET	Expert Systems With Applications	8.665	https://doi.org/10.1016/j.eswa.2023.122097
26	Ms. HEMALATHA S	School of Computing	An idiosyncratic MIMBO-NBRF based automated system for child birth mode prediction	Artificial Intelligence in Medicine	6.1	https://doi.org/10.1016/j.artmed.2023.102621
27	D.Nancy kirupanithi	School of Computing	An Optimized Ensemble Support Vector Machine-Based Extreme Learning Model for Real-Time Big Data Analytics and Disaster Prediction	Cognitive Computation	4.3	10.1007/s12559-023-10176-x
28	Dr.Senduru Srinivasulu	School of Computing	Analysis of Climate Change for Drought Forecasting Using HighResolution Data and Ensemble Learning with Optimized Pruning Model	Global NEST Journal	1.123	https://doi.org/10.30955/gnj.06002
29	Dr S Prayla Shyry	School of Computing	Analysis of traffic flow prediction from spatial-temporal data using hybrid GSA- Adam optimizer based LSTM network for intelligent transport system	MULTIMEDIA TOOLS AND APPLICATIONS	3	10.1007/s11042-023-16253-5
30	Dr.P.S.Maya Gopal	School of Computing	Analysis of structural and electrical properties on rubidium doped barium titanate ceramics	MRS Advances	0.8	https://doi.org/10.1557/s43580-024-00858-5

S.N O	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor	DOI of the Published Paper
31	Niveditha	School of Computing	Application of response surface and artificial neural network optimization approaches for exploring methylene blue adsorption using luffa fiber treated with sodium chlorite	Journal of water process engineering	7.53	https://doi.org/10.1016/j.jwpe.2024.104778
32	Dr.A.Sivasangari	School of Computing	Artificial Intelligence based Epilepsy Seizure Prediction and Detection	Journal of Survey in Fisheries Sciences	0.8	10(3S) 1260-1271 2023
33	Dr S Vigneshwari	School of Computing	Atmospheric Wind Estimation Using Adaptive Block James–Stein Technique for Higher Range Coverage in MST Radar	Journal of the Indian Society of Remote Sensing	2.2	https://doi.org/10.1007/s12524-024-01916-z
34	Dr.Subathra.G	School of Computing	Author Correction: An active learning machine technique based prediction of cardiovascular heart disease from UCI-repository database		3.8	https://doi.org/10.1038/s41598-024-66981-3
35	Dr.Vijay Ramalingam	School of Computing	Balancing data privacy and sharing in IIoT: Introducing the GFL-LFF aggregation algorithm	Computer Networks	4.4	https://doi.org/10.1016/j.comnet.2024.110401
36	Dr T Prem Jacob	School of Computing	Beyond chat-GPT: a BERT-AO approach to custom question answering system	Multimedia Tools and Applications	3	https://doi.org/10.1007/s11042-024-19474-4
37	Dr.V.Surya	School of Computing	Bigdata clustering and classification with improved fuzzy based deep architecture under MapReduce framework	Intelligent Decision Technologies	0.6	10.3233/IDT-230537

S.N O	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor	DOI of the Published Paper
38	Mr.R.Vignesh	School of Computing	Blockchain assisted AHMFA authentication in employee performance assessment system	Multimedia Tools and Applications	2.57	https://doi.org/10.1007/s11042-023-15846-4
39	Dr D Saravanan	School of Computing	Bolstering IoT security with IoT device type Identification using optimized Variational Autoencoder Wasserstein Generative Adversarial Network	Network: Computation in Neural Systems	1.1	https://doi.org/10.1080/0954898X.2024.2304214
40	Dr. Rajasekar P	School of Computing	Budget-based resource provisioning and scheduling algorithm for scientific workflows on IaaS cloud	Multimedia Tools and Applications	3	10.1007/s11042-023-17549-2
41	Parveen . A	School of Computing	Chaotic Technique for high information security based on dual hiding asynchronous logic AES accelerator with high resistance to prevent side - channel attacks.	IEEE Xplore	3	DOI: 10.1109/ICCSP60870.2024.10543679
42	Dr.V.Ulagamuthalvi	School of Computing	Characterization of rigid electromagnetic interference shielding composite using biomass-derived musa fiber and industry waste functional filler	biomass conversion and biorefinery	3.5	https://doi.org/10.1007/s13399-024-05459-8
43	DR.S.PRINCE MARY	School of Computing	Classification of Intracranial Hemorrhage (CT) Images Using CNN- LSTM Method and Image-Based GLCM Features	JOURNAL OF ELECTRICAL SYSTEMS	0.5	https://doi.org/10.52783/jes.3470
44	Dr Jabez J	School of Computing	Classifying Alzheimer's Disease Phases from sMRI Data Using an Adaptive Clonal Selection Approach	Journal of Advances in Information Technology	0.9	10.12720/jait.15.6.756-763

S.N O	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor	DOI of the Published Paper
45	Dr.V.R.Niveditha	School of Computing	Contextual Information based scheduling for service Migration in Mobile Edge Computing	International Journal of Computers, Communications and Control	2	https://doi.org/10.15837/ijccc.2024.3.6143
46	Dr. A. Viji Amutha Mary	School of Computing	Cross Model Attention based Deep Learning for Multi Modal Epilepsy Detection	international journal of intelligent engineering and systems	1.1	10.22266/ijies2023.1031.07
47	Dr.A.Pravin	School of Computing	CSO-DQN: Circle Search Optimization- based Deep Q-Learning Network for Intrusion Detection System in Cloud Environment	IETE Journal of Research	1.3	https://doi.org/10.1080/03772063.2024.2351556
48	Dr.A. RONALD DONI	School of Computing	Deep convolutional neural network- based Henry gas solubility optimization for disease prediction in data from wireless sensor network	Soft Computing	3.1	https://doi.org/10.1007/s00500-023-08859-6(0123456789(),-
49	Dr. K. Anita Davamani	School of Computing	Deep transfer learning technique to detect white blood cell classification in regular clinical practice using histopathological images.	Multimedia Tools and Applications	3	https://doi.org/10.1007/s11042-024-19133-8.
50	Dr. SHANMUGA PRABHA P	School of Computing	Detecting diabetic retinopathy using a hybrid ensemble XL machine model with dual weighted- Kernel ELM and improved mayfly optimization	Expert Systems with Applications	7.5	https://doi.org/10.1016/j.eswa.2024.124221
51	Dr S Prayla Shyry	School of Computing	Detection of tampered real time videos using deep neural networks	NEURAL COMPUTING & APPLICATIONS	4.5	10.1007/s00521-024-09988-1

S.N O	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor	DOI of the Published Paper
52	Parveen . A	School of Computing	Dynamic Key Generation and Distribution Comparison Using Machine Learning Integrated Node Authentication Routing Protocol for Improving QOS in VANET	Malaysian Journal of Computer Science	1.1	https://doi.org/10.22452/mjcs.sp2023.no1.2
53	Dr S Prayla Shyry	School of Computing	Efficient Compression of Multimedia Data using Lempel-Ziv-Markov Chain Adaptive Block Compressive Sensing (LZMC-ABCS)	WIRELESS PERSONAL COMMUNICATIONS	1.9	10.1007/s11277-024-11187-z
54	Dr.V.Surya	School of Computing	Enhancing IoT security in MANETs: A novel adaptive defense reinforcement approach	Peer-to-Peer Networking and Applications	3.3	https://link.springer.com/article/10.1007/s12083-024-01702-1
55	Dr D Saravanan	School of Computing	Enhancing radiographic image interpretation: WARES-PRS model for knee bone tumour detection	Network: Computation in Neural Systems	7.8	https://doi.org/10.1080/0954898X.2024.2357660
56	Dr.S.Revathy	School of Computing	Enhancing security in online social networks: introducing the DeepSybil model for Sybil attack detection	Multimedia Tools and Applications	3	https://doi.org/10.1007/s11042-023-16851-3
57	Dr D Saravanan	School of Computing	Enhancing natural disaster analysis and waste classification" a novel VGL-FL approach	Environmental Monitoring and Assessment	2.9	https://doi.org/10.1007/s10661-024-12745-5
58	Dr.M.SELVI	School of Computing	Ensemble Model for Stock Price Forecasting: MapReduce Framework for Big Data Handling: An Optimal Trained Hybrid Model for Classification	Journal of Circuits, Systems and Computers	0.9	https://doi.org/10.1142/S0218126624502025

S.N O	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor	DOI of the Published Paper
59	Mrs.D.Deepa	School of Computing	ESSR-GAN: Enhanced super and semi supervised remora resolution based generative adversarial learning framework model for smartphone based road damage detection	Multimedia Tools and Applications	2.57	https://doi.org/10.1007/s11042-023-15850-8
60	Dr.R.Jeberson Retna Raj	School of Computing	Face Identification Based on Active Facial Patches Using Multi-Task Cascaded Convolutional Networks	Journal of Advances in Information Technology	0.9	doi: 10.12720/jait.15.1.118-126
61	Dr. B.Ankayarkanni	School of Computing	Facial expression recognition for stress detection: A Conv-XGBoost Algorithm approach	Journal of Intelligent & Fuzzy Systems	1.7	10.3233/JIFS-237820
62	Dr.T.Sasikala	School of Computing	FEDRESOURCE:Federated Learning Based Resource Allocation in Modern Wireless Networks	International journal of Electrical and Computer Engineering Systems	0.8	https://doi.org/10.32985/ijeces.14.9.7
63	Dr.V.R.Niveditha	School of Computing	High-Performance Technique for Item Recommendation in Social Networks using Multiview Clustering	International Journal of Computers, Communications and Control	2	https://doi.org/10.15837/ijccc.2024.1.5818
64	Dr.M.D.Anto Praveena	School of Computing	Human activity-based anomaly detection and recognition by surveillance video using kernel local component analysis with classification by deep learning techniques	Multimedia Tools and Applications	3	https://doi.org/10.1007/s11042-024-18711-0

S.N O	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor	DOI of the Published Paper
65	Dr. P. Asha	School of Computing	Human Emotion Recognition Based on Machine Learning Algorithms with low Resource Environment	ACM Transactions on Asian and Low-Resource Language Information Processing	1.8	https://dl.acm.org/doi/10.1145/3640340
66	Dr P.Ajitha	School of Computing	Hybrid Multi-Objective-Derived Horse Herd and Dragonfly Algorithm-Based Energy-Efficient Secured Routing in WSN	Journal of Information & Knowledge Management	1.1	DOI: 10.1142/S0219649223500570
67	Dr. D. Adhimuga Sivasakthi	School of Computing	HybridRobustNet: enhancing detection of hybrid attacks in IoT networks through advanced learning approach	Cluster Computing	4.4	https://doi.org/10.1007/s10586-023-04248-8
68	Dr S Vigneshwari	School of Computing	Implementation of Adaptive-Bayesian DStoch technique for obtaining winds from MST radar covering higher	Heliyon	3.4	https://doi.org/10.1016/j.heliyon.2024.e26316
69	Dr.S.Revathy	School of Computing	Industry 4.0 transformation: adaptive coat deep convolutional neural network-based oral cancer diagnosis in histopathological images for clinical applications	Optical and Quantum Electronics	3.3	https://doi.org/10.1007/s11082-023-05716-6
70	Sageengrana S	School of Computing	Intelligent Learners Distraction and Drowsiness Prediction through EEG Signal and Iris Angel position with Brain Vision Algorithm	Journal of Intelligent & Fuzzy Systems	1.7	10.3233/JIFS-237016

S.N O	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor	DOI of the Published Paper
71	Dr.L.Mary Gladence	School of Computing	Leveraging Brain MRI for Biomedical Alzheimer's Disease Diagnosis Using Enhanced Manta Ray Foraging Optimization Based Deep Learning	IEEE Access	3.7	10.1109/ACCESS.2 023.3294711
72	N. Senthamilarasi	School of Computing	Multidimensional calcium phosphate coatings for bio activation of titanium implant surfaces using methodological approach	Journal of Industrial and Engineering Chemistry	5.9	https://doi.org/10. 1016/j.jiec.2023.11 .061
73	Dr. P. Sardar Maran	School of Computing	Multi-Layered Architecture Convolution Neural Networks For Diagnosing And Predicting Heart Diseases On Multi-Modal Data	Malaysian Journal of Computer Science	1.1	https://doi.org/10. 22452/mjcs.sp2023 no1.3
74	Dr. Mercy Paul Selvan	School of Computing	Nature-inspired energy enhancement technique for wireless sensor networks	Energies	3	https://doi.org/10. 3390/en16207021
75	Dr.R.ShaliniRaj an	School of Computing	Novel energy consumption and reduces number of transmission attempts (ECRTA) model for heterogeneous wireless muti- hop network	Wireless Networks	2.1	https://doi.org/10. 339/en16207021
76	Dr.K.Ashokkum ar	School of Computing	Novel optimised deep learning approach for an efficient traffic state prediction based on CAE- ICCDCS-GRU model	International Journal of Bio-Inspired Computation	1.7	https://doi.org/10. 1504/ijbic.2024.13 6747
77	S.PRINCE MARY	School of Computing	Optimal Ensemble Transfer Learning Espoused Detection and Classification of Intracranial Haemorrhage	IETE JOURNAL OF RESEARCH	1.877	https://doi.org/10. 1080/03772063.20 24.2351548

S.N O	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor	DOI of the Published Paper
78	Ms. Yogitha. R	School of Computing	Optimal load balancing in cloud: Introduction to hybrid optimization algorithm	Expert Systems with Applications	7.5	https://doi.org/10.1016/j.eswa.2023.121450
79	Dr D Saravanan	School of Computing	Optimised feature selection-driven convolutional neural network using gray level co-occurrence matrix for detection of cervical cancer	Open Life Sciences	1.311	https://doi.org/10.1515/biol-2022-0770
80	Sageengrana S	School of Computing	Optimized RB-RNN: Development of hybrid deep learning for analyzing student's behaviours in online-learning using brain waves and chatbots	Expert Systems with Applications	8.1	doi.org/10.1016/j.eswa.2024.123267
81	Dr. P. Sardar Maran	School of Computing	Optimized shuffle attention based Lidar signal denoising and temperature retrievals in the middle atmosphere	Optical and Quantum Electronics	3.3	https://doi.org/10.1007/s11082-024-07022-1
82	Sageengrana S	School of Computing	Performance analysis of study material recommendation system to reduce dropout in online learning using optimal behavior prediction cluster and online poll bot	Interactive Learning Environments	3.7	doi.org/10.1080/10494820.2023.2232823
83	Dr. B.Bharathi	School of Computing	Predicting human behavior from social media using mRMR with COA	International Journal of System Assurance Engineering and Management	1.6	https://doi.org/10.1007/s13198-022-01786-z

S.N O	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor	DOI of the Published Paper
84	Sreekrishna M	School of Computing	Quantitative feature extraction of unstructured data from GitLab BioAI pathology reports of cancer using an enhanced RPA NLP method	Journal of Intelligent & Fuzzy Systems	1.7	10.3233/JIFS-231625
85	Dr J Albert Mayan	School of Computing	Recognition and detection of unusual activities in ATM using dual-channel capsule generative adversarial network	Expert Systems With Applications	8.3	https://doi.org/10.1016/j.eswa.2023.122987
86	Dr.R.Sathya Bama Krishna	School of Computing	Review of Next-Generation Wireless Devices with Self-Energy Harvesting for Sustainability Improvement	Peer Reviewed Open Access Semimonthly Journal	3	https://doi.org/10.3390/en16135174
87	Aishwarya D	School of Computing	Revolutionizing Connectivity: Unleashing the Power of 5G Wireless Networks Enhanced by Artificial Intelligence for a Smarter Future	Results in Engineering	6	10.1016/j.rineng.2024.102334
88	Dr. G Kalaiarasi	School of Computing	Revolutionizing neural network efficiency: introducing FPAC for filter pruning via attention consistency	Neural Computing and Applications	4.7	https://doi.org/10.1007/s00521-023-09037-3
89	Dr.R.Rajalakshmi	School of Computing	Secure smart city application using webservice model and mayfly optimization-based lightweight CNN	Transactions Emerging Telecommunication Technologies	2.5	DOI: 10.1002/ett.4869
90	Dr. L. Lakshmanan	School of Computing	Securing communicating networks in the age of big data: an advanced detection system for cyber attacks	Optical and Quantum Electronics	3.3	https://doi.org/10.1007/s11082-023-05715-7

S.N O	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor	DOI of the Published Paper
91	Dr.E.Srividhya	School of Computing	Towards blockchain based federated learning in categorizing healthcare monitoring devices on artificial intelligence of medical things investigative framework	BMC Medical Imaging	2.8	https://doi.org/10.1186/s12880-024-01279-4
92	Dr. A. Mary Posonia	School of Computing	Tuned weighted feature fusion with hybridized DNN-RNN framework for plant disease detection and classification	International Journal of Remote Sensing	3	https://doi.org/10.1080/01431161.2024.2313995
93	Dr.V.R.Niveditha	School of Computing	Water Quality Prediction Based on Hybrid Deep Learning Algorithm	Advances in Civil Engineering	1.5	10.1155/2023/6644681
94	Dr. V. Malathi	School of Computing	An Explainable AI framework for Credit Evaluation and Analysis	Applied Soft Computing	7.2	https://doi.org/10.1016/j.asoc.2024.111307

SCHOOL OF MECHANICAL ENGINEERING

S.NO	NAME OF THE FACULTY	SCHOOL/ RESEARCH CENTRE	TITLE OF THE PUBLISHED PAPER	NAME OF THE JOURNAL	IMPACT FACTOR (JCR 2024)	DOI OF THE PUBLISHED PAPER
1	DR.J.Senthil Kumar	School of Mechanical	Impact of nano catalyst in the biodiesel production for direct injection diesel engine: A review	Environmental Quality Control	1.5	DOI: 10.1002/tqem.22057
2	DR.J.Senthil Kumar	School of Mechanical	Optimization of cutting force during turning of custom 450 steel using TiAlSiN coated WCtool inserts	International Journal on Interactive Design and Manufacturing (IJIDeM)	2.1	https://doi.org/10.1007/s12008-024-01934-8
3	Dr.M.Purusothaman	School of Mechanical	Review on emission reduction of VCR system using various nano-refrigerants	Environmental Quality Management	1.5	https://doi.org/10.1002/tqem.22119
4	Dr.A.Anderson	School of Mechanical	A carboethoxy quinoline-Derived Schiff base chemosensor: Crystal structure, selective Hg ²⁺ ion detection and its computational study	Environmental Research	8.4	https://doi.org/10.1016/j.envres.2024.118983
5	Dr.G.Senthil Kumar	School of Mechanical	A novel approach for thermal conductivity improvement of metal oxide nanofluids	Journal of Thermal Analysis and Calorimetry	3	https://doi.org/10.1007/s10973-024-13278-2
6	Dr.M.Purusothaman	School of Mechanical	A review on environmental effect of various designs and types of drying methods	Environmental Quality Management	1.5	https://doi.org/10.1002/tqem.22019
7	Dr.R.Narmadha	School of Mechanical	A Systematic Literature Review on Multimodal Image Fusion Models With Challenges and Future Research Trends	International Journal of Image and Graphics	0.8	https://doi.org/10.1142/S0219467825500391

S.NO	NAME OF THE FACULTY	SCHOOL/ RESEARCH CENTRE	TITLE OF THE PUBLISHED PAPER	NAME OF THE JOURNAL	IMPACT FACTOR (JCR 2024)	DOI OF THE PUBLISHED PAPER
8	Dr.S. GANESAN	School of Mechanical	Ammonia-enriched biogas as an alternative fuel in diesel engines: Combustion, performance and emission analysis	Fuel	6.7	https://doi.org/10.016/j.fuel.2024.131755
9	Dr.A.Anderson	School of Mechanical	Assessment of ammonia-diesel fuel blends on compression ignition engine	Fuel	6.7	https://doi.org/10.1016/j.fuel.2024.132135
			performance and emissions using machine learning techniques			
10	Dr.M.Anish	School of Mechanical	Bio-waste mediated synthesis of zirconium nanoparticle fuel: Energy management strategy for performance evaluation in a diesel engine	Environmental Research	7.7	https://doi.org/10.1016/j.envres.2023.116655
11	E Manoj	School of Mechanical	Characterization study on eco-friendly break pad material using sorghum husk- derived Si ₃ N ₄ and biochar friction modifier	BIOMASS CONVERSION AND BIOREFINERY	3.5	https://doi.org/10.1007/s13399-023-04917-z
12	Dr.A.Karthikeyan	School of Mechanical	Combined influence of n-butanol and ethyl hexyl nitrate on engine characteristics of the plastic oil-diesel blend fueled CI engine	Petroleum Science and Technology	1.3	https://doi.org/10.1080/10916466.2023.2254803
13	Dr.A.Anderson	School of Mechanical	Comparative analysis of ammonia and hydrogen fuel blends in diesel engines on performance, emission, vibration, and acoustic profiles	Fuel	6.7	https://doi.org/10.1016/j.fuel.2024.131753

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14	Manigandan Sekar	School of Mechanical	Critical review on the formations and exposure of polycyclic aromatic hydrocarbons (PAHs) in the conventional hydrocarbon-based fuels:Prevention and control strategies	Chemosphere	8.1	10.1016/j.chemosphere.2023.141005
15	Dr.G.ARUNKUMAR	School of Mechanical	Current technologies for plastic waste treatment for energy recovery, it's effects on polyaromatic hydrocarbons emission and recycling strategies	FUEL - ELSEVIER PUBLICATIONS	6.7	https://doi.org/10.1016/j.fuel.2023.129379
16	Dr.J.Jayaprakash	School of Mechanical	Effect of Alumina and Bio-Based Calcium Oxide Nanoadditives on Reduction of Emissions and Performance Improvement in a Common Rail Direct Injection Diesel Engine Fueled with B20 Blend of Waste Cooking Oil Biodiesel	Energy Technology	3.6	https://doi.org/10.1002/ente.202301107
17	Dr.R.B.Durairaj	School of Mechanical	Effect of e-waste nanofillers on the mechanical, thermal, and wear properties of epoxy-blend sisal woven fiber-reinforced composites	Green Processing and Synthesis	3.8	doi.org/10.1515/gps-2023-0164
18	Dr.G.ARUNKUMAR	School of Mechanical	Effects of MWCNT nanoparticles injection points on incompressible laminar hydrogen flow through discrete phase modeling by CFD approach	FUEL	6.7	https://doi.org/10.1016/j.fuel.2023.129137

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19	Sangeetha.M	School of Mechanical	Effects of nano-additives and ammonia on performance and emission characteristics of diesel engine fueled with Aleurites moluccanus	Fuel	6.7	https://doi.org/10.1016/j.fuel.2023.130787
20	Dr.A.Anderson	School of Mechanical	Effects of Scenedesmus dimorphus, spirulina biodiesel, hydrogen and nanoparticles fuel blends on mass burn fraction, emission, noise and vibration characteristics	Fuel	6.7	https://doi.org/10.1016/j.fuel.2023.129010
21	Dr.J.Jayaprakkar	School of Mechanical	Emission study on a direct injection diesel engine powered with blends of Moringa oleifera biodiesel-diesel	Environmental Quality Management	1.5	DOI: 10.1002/tqem.22088
22	Dr.M.Anish	School of Mechanical	Enhancing heat transfer efficiency in shell-and-tube heat exchangers with SiC and CNT-infused alkaline water nanofluids	Desalination and Water Treatment	1	https://doi.org/10.1016/j.dwt.2024.100157
23	Dr.S. GANESAN	School of Mechanical	Enhancing sustainable fuel solutions: Castor oil biodiesel with nanoparticles and ammonia, utilizing as a green substitute for diesel engines	Fuel	6.7	https://doi.org/10.1016/j.fuel.2024.131597
24	K Balachandar	School of Mechanical	Enhancing tensile properties of pulsed CMT–MIG welded high strength AA2014–T6 alloy joints: Effect of post weld heat treatment	International Journal of Lightweight Materials and Manufacture	1.8	https://doi.org/10.1016/j.ijlmm.2023.10.004

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25	Manigandan Sekar	School of Mechanical	Enhancing the mixing characteristics of multi-hydrogen jets in scramjet engines through the implementation of fuel injection strategies and vortex generator positioning	Fuel	6.7	10.1016/j.fuel.2023.129466
26	Dr.B.Kanimozhi	School of Mechanical	Evaluation of karanja and safflower biodiesel on engine's performance and emission characteristics along with nanoparticles in DI engine	Fuel	6.7	https://doi.org/10.1016/j.fuel.2023.129101
27	Dr.A.Anderson	School of Mechanical	Experimental evaluation of bamboo natural fiber composite reinforced with SiO ₂ nanoparticles for aircraft applications	Aircraft Engineering and Aerospace Technology	1.2	https://doi.org/10.1108/AEAT-03-2023-0073
28	Dr.R.B.Durairaj	School of Mechanical	Experimental investigation of the effect of e-waste fillers on the mechanical properties of Kenaf woven fiber composites	Environmental Quality Management	1.5	DOI: 10.1002/tqem.22165
29	Dr.M.Purusothaman	School of Mechanical	Fabrication of TiO ₂ nanotubes with effect of water and in-situ condition for biomedical application	Environmental Quality Management	1.5	https://doi.org/10.1002/tqem.22048
30	Dr J R Deepak	School of Mechanical	High efficiency lipid production, biochar yield and chlorophyll a content of Chlorella sp. microalgae exposed on sea water and TiO ₂ nanoparticles	Environmental Research	7.7	https://doi.org/10.1016/j.envres.2023.116263

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31	Manigandan Sekar	School of Mechanical	Hydrodynamic cavitation phenomena and flow instabilities in wastewater treatment: A multiphase VOF study with a venturi cavitator	Journal of the Taiwan Institute of Chemical Engineers	5.5	10.1016/j.jtice.2024.105355
32	Dr.M.Anish	School of Mechanical	Hydrodynamics and heat transfer characteristics of bio-synthesized SiC- alkaline water and ZnO-alkaline water nanofluids in an aluminum plate pin-fin heat sink	Desalination and Water Treatment	1	https://ui.adsabs.harvard.edu/link_gateway/2023DWatT.307..232R/doi:10.5004/dwt.2023.29912
33	Manigandan Sekar	School of Mechanical	Impact of sludge density and viscosity on continuous stirred tank reactor performance in wastewater treatment by numerical modelling	Journal of the Taiwan Institute of Chemical Engineers	5.5	10.1016/j.jtice.2024.105368
34	Manigandan Sekar	School of Mechanical	Improving the performance of a diesel engine using nanomaterials and chlorella vulgaris microalgae blends assisted with biogas	International Journal of Hydrogen Energy	8.1	10.1016/j.ijhydene.2023.09.171
35	Dr.A.Anderson	School of Mechanical	In-depth study of waste cooking oil blends with hydrogen and ammonia in internal combustion engine: Performance and emission study	Fuel	6.7	https://doi.org/10.1016/j.fuel.2024.131663
36	Manigandan Sekar	School of Mechanical	Influence of the swirl vanes in convergent-divergent nozzle on screech tones and mixing efficiency at subsonic and supersonic jet flow	Aircraft Engineering and Aerospace Technology	1.1	10.1108/AEAT-02-2024-0046

S.NO	NAME OF THE FACULTY	SCHOOL/ RESEARCH CENTRE	TITLE OF THE PUBLISHED PAPER	NAME OF THE JOURNAL	IMPACT FACTOR (JCR 2024)	DOI OF THE PUBLISHED PAPER
37	Jayaprakash Venugopal	School of Mechanical	Investigation On The Influence Of The Mwcnt, Al ₂ O ₃ , And Cu Nanofluid In The Ets	THERMAL SCIENCE	1.1	https://doi.org/10.2298/TSCI220919246K
38	Dr.R.Narmadha	School of Mechanical	Multimodality medical image fusion analysis with multi-plane features of PET and MRI images using ONSCT	Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization	1.3	https://doi.org/10.1080/21681163.2023.2255684
39	Dr.J.Jayaprakash	School of Mechanical	Nano materials for green hydrogen production: Technical insights on nano material selection, properties, production routes and commercial applications	International Journal of Hydrogen Energy	8.1	https://doi.org/10.1016/j.ijhydene.2023.06.109
40	Dr.G.Senthil Kumar	School of Mechanical	Novel Approach to Augment Thermal Conductivity of Dihybrid Nanofluids	Journal of Thermophysics and Heat Transfer	1.3	https://doi.org/10.2514/1.T6932
41	Dr.R.Siva	School of Mechanical	Novel banana core stem fiber from agricultural biomass for lightweight textile applications	Industrial Crops and Products	5.6	https://doi.org/10.1016/j.indcrop.2023.117985
42	Dr.G.Senthil Kumar	School of Mechanical	Novel strategy of mixing MgO in CuO/water nanofluid for thermal conductivity improvement: Experimental study	Case Studies in Thermal Engineering	6.4	https://doi.org/10.1016/j.csite.2023.103723
43	Dr.G.Senthil Kumar	School of Mechanical	Novel use of CuO nanoparticles additive for improving thermal conductivity of MgO/water and MWCNT/water nanofluids	Journal of Thermal Analysis and Calorimetry	3	https://doi.org/10.1007/s10973-023-12374-z

S.NO	NAME OF THE FACULTY	SCHOOL/ RESEARCH CENTRE	TITLE OF THE PUBLISHED PAPER	NAME OF THE JOURNAL	IMPACT FACTOR (JCR 2024)	DOI OF THE PUBLISHED PAPER
44	Sangeetha.M	School of Mechanical	Numerical analysis on the effect of passive control geometry in supersonic jet mixing enhancement	International Journal of Turbo & Jet-Engines	0.7	https://doi.org/10.1515/tjj-2023-0068
45	Manigandan Sekar	School of Mechanical	Numerical simulation of industrial gas burners fueled with hydrogen-methane mixtures for enhanced combustion efficiency and reduced greenhouse gas emissions	Fuel	6.7	10.1016/j.fuel.2024.131807
46	Dr.A.Karthikeyan	School of Mechanical	Optimization of port injection of n-decanol in a PCCI engine using response surface methodology	Heat Transfer	2.8	https://doi.org/10.1002/htj.22930
47	Jayaprakash Venugopal	School of Mechanical	Performance Enhancement Of Water Output Via Latent Heat Storage System With Single Slope Solar Stills	THERMAL SCIENCE	1.1	https://doi.org/10.2298/TSCI221225250V
48	Dr.J.Jayaprakash	School of Mechanical	Polyaniline/gallic acid/cupric oxide nanocomposite with silver nanoparticles for increased photocatalytic degradation of 4-nitrophenol: structural, thermal and magnetic properties	Digest Journal of Nanomaterials and Biostructures	1	DOI: 10.15251/DJNB.2024.191.459
49	Manigandan Sekar	School of Mechanical	Production of waste tyre pyrolysis oil as the replacement for fossil fuel for diesel engines with constant hydrogen injection via air intake manifold	Fuel	6.7	10.1016/j.fuel.2023.129458

S.NO	NAME OF THE FACULTY	SCHOOL/ RESEARCH CENTRE	TITLE OF THE PUBLISHED PAPER	NAME OF THE JOURNAL	IMPACT FACTOR (JCR 2024)	DOI OF THE PUBLISHED PAPER
50	Dr.J.Jayaprakar	School of Mechanical	Prospectus of hydrogen enrichment in internal combustion engines: Methodological insights on its production, injection, properties, performance and emissions	Fuel	6.7	https://doi.org/10.1016/j.fuel.2024.131034
51	Dr.Nivin Joy	School of Mechanical	Purification and investigation of bio- glycerol as heat transfer fluid and as coolant in automobile radiators	Case Studies in Thermal Engineering	6.4	https://doi.org/10.1016/j.csite.2024.104656
52	Dr.J.Jayaprakar	School of Mechanical	Review on hybrid electro chemical energy storage techniques for electrical vehicles: Technical insights on design, performance, energy management, operating issues & challenges	Journal of Energy Storage	8.9	https://doi.org/10.1016/j.est.2023.108689
53	Dr. L. Jino	School of Mechanical	Revolutionizing EV battery cooling: Innovative hybrid nanofluid solution in an inverted right-angled triangular porous cavities for enhanced thermal regulation via natural convection	Journal of Energy Storage	8.9	https://doi.org/10.1016/j.est.2024.112470
54	Gokulnath R	School of Mechanical	Role of spirulina microalgae blends in the micro gas turbine on engine	Aircraft Engineering and Aerospace	1.478	10.1108/AEAT-02-2023-0052
55	Dr.J.Jayaprakar	School of Mechanical	Synthesis and characterization of calcium oxide nano particles obtained from biowaste and its combustion characteristics in a biodiesel operated compression ignition engine	Fuel	6.7	https://doi.org/10.1016/j.fuel.2023.128839

S.NO	NAME OF THE FACULTY	SCHOOL/ RESEARCH CENTRE	TITLE OF THE PUBLISHED PAPER	NAME OF THE JOURNAL	IMPACT FACTOR (JCR 2024)	DOI OF THE PUBLISHED PAPER
56	Dr.A.Anderson	School of Mechanical	Utilization of the Nannochloropsis microalgae biochar prepared via microwave assisted pyrolysis on the mixed biomass fuel pellets	Environmental Research	7.7	10.1016/j.envres.2023.116078

SCHOOL OF ELECTRICAL AND ELECTRONICS

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
1	Dr.V.Vijayakumar	School of Electrical & Electronics	Green synthesis, characterisation, optical properties of graphene quantum dots with anti bacterial characteristics	Optical and Quantum Electronics	3.3	https://doi.org/10.1007/s11082-023-05396-2
2	Dr.V.Vedanarayanan	School of Electrical & Electronics	High-sensitivity chemical sensing and detection applications based on octagonal-shaped hybrid photonic crystal fiber with a hexagonal core	Journal of Optics - INDIA	1.6	https://doi.org/10.1007/s12596-024-01654-y
3	Dr.V.Vijaya Baskar	School of Electrical & Electronics	" Hybrid model with optimal features for non-invasive blood glucose monitoring from breath biomarkers	Biomedical Signal Processing and Control	4.9	https://doi.org/10.1016/j.bspc.2023.105036
4	Dr. G.D.Anbarasi Jebaselvi	School of Electrical & Electronics	A bidirectional four-port DC–DC converter for grid connected and isolated loads of hybrid renewable energy system using hybrid approach	Analog Integrated Circuits and Signal Processing	1.2	10.1007/s10470-024-02251-6

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
5	W. Abitha Memala	School of Electrical & Electronics	A Classification Approach for Induction Motor Faults Based on Empirical Mode Decomposition and Machine Learning Algorithms	Electrica	0.9	https://www.electricaajournal.org/en/a-classification-approach-for-induction-motor-faults-based-on-empirical-mode-decomposition-and-machine-learning-algorithms-162114
6	V.Sivachidambaranathan	School of Electrical & Electronics	A Comparative Study on the Performance of the Induction Motor with Fuzzy-Based Power Converters	Electric Power Components and Systems	1.7	10.1080/15325008.2023.2290116
7	Dr S D SUNDARSINGH JEBASEELAN	School of Electrical & Electronics	A comprehensive comparative study on intelligence based optimization algorithms used for maximum power tracking in grid-PV systems	Sustainable Computing: Informatics and Systems	3.8	https://doi.org/10.1016/j.suscom.2023.100946
8	Dr.M.Sumathi	School of Electrical & Electronics	A guided optimized recursive least square adaptive filtering based multi-variate dense fusion network model for image interpolation	SIGNAL IMAGE AND VIDEO PROCESSING	2	DOI10.1007/s11760-023-02805-7

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
9	Dr.V.Vijaya Baskar	School of Electrical & Electronics	A Non-Invasive Blood Glucose Monitoring For Diabetics with Breath Biomarkers	Journal of Mechanics in Medicine and Biology	0.8	https://doi.org/10.1142/S0219519423500082
10	MS.R.SUBRAJA	School of Electrical & Electronics	A novel DbneAlexnet with Gazelle Hunting Optimization Algorithm enabled wild animal detection in WMSN data communication in IoT environment	International Journal of Communication Systems	1.7	https://doi.org/10.1002/dac.5787
11	Dr.Naresh Kumar Thapa	School of Electrical & Electronics	A novel enhanced security architecture for sixth generation (6G) cellular networks using authentication and Acknowledgement	Results in Engineering	6	https://doi.org/10.1016/j.rineng.2023.101669
12	Dr.S.Radhika	School of Electrical & Electronics	A novel Jarratt butterfly Ebola optimization-based attentional random forest for data anonymization in cloud environment	Journal of Supercomputing	2.5	https://doi.org/10.1007/s11227-023-05606-4
13	Dr.R.Pandian	School of Electrical & Electronics	A real-time image captioning framework using computer vision to help the visually impaired	Multimedia Tools and Applications	3	https://link.springer.com/article/10.1007/s11042-023-17849-7

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
14	Dr.M.Subramoniam	School of Electrical & Electronics	A Review of Machine Learning Algorithms for Biomedical Applications	Annals of Biomedical Engineering	3	https://doi.org/10.1007/s10439-024-03459-3
15	Dr.M.Subramoniam	School of Electrical & Electronics	A smart Iot-based waste management system using vehicle shortest path routing and trashcan visiting decision making based on deep convolutional neural network	Peer-to-Peer Networking and Applications	3.3	https://doi.org/10.1007/s12083-024-01623-z
16	Dr.S.Jayaprakash	School of Electrical & Electronics	Advanced Machine Learning Techniques for Accurate Very-Short-Term Wind Power Forecasting in Wind Energy Systems Using	Energies	3	doi.org/10.3390/en16145459
17	Dr.L.Megalan Leo	School of Electrical & Electronics	Advanced model based machine learning technique for early stage prediction of ankylosing spondylitis under timely analysis with featured textures	Multimedia Tools and Applications	3	https://doi.org/10.1007/s11042-024-18236-6
18	Dr. KRUTI DEEPA	School of Electrical & Electronics	An Accurate Drain Current Model of Multichannel Cylindrical High-K HfO ₂ -/Si ₃ N ₄ -Based GAA-MOSFET for SRAM Application	IEEE TRANSACTIONS ON ELECTRON DEVICES	3.27	https://doi.org/10.1109/TED.2023.3326792

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
19	Dr.M.Sumathi	School of Electrical & Electronics	An Intelligent Deep Learning Architecture Using Multi-scale Residual Network Model for Image Interpolation	Journal of Advances in Information Technology	0.9	DOI10.12720/jait.14.5.970-979
20	Dr.B.RAJASEKAR	School of Electrical & Electronics	An intelligent weather prediction model using optimized 1D CNN with attention GRU	Global NEST Journal	1	https://doi.org/10.30955/gnj.005408
21	Dr.B.RAJASEKAR	School of Electrical & Electronics	An intelligent weather prediction model using optimized 1D CNN with attention GRU	Global Nest Journal	1	DOI: 10.32604/cmc.2024.047608
22	Dr.B.RAJASEKAR	School of Electrical & Electronics	Falcon Optimization Algorithm-Based Energy Efficient Communication	CMC Computers, Materials and Continua	2	DOI: 10.32604/cmc.2024.047608
23	Dr.S.Radhika	School of Electrical & Electronics	An Optimal Modified Bidirectional Generative Adversarial Network for Security Authentication in Cloud Environment	Cybernetics and Systems	1.1	https://doi.org/10.1080/01969722.2024.2343988
24	LALITHAKUMARI.S	School of Electrical & Electronics	Analysis of Wave Propagation in Hybrid Metamaterial Structure for Terahertz Applications	Brazilian Journal of Physics	1.5	https://doi.org/10.1007/s13538-023-01351-4
25	R Sakthi Prabha	School of Electrical & Electronics	Anticipating brain tumor classification and severity levels: employing the CDF-BILSTM model approach	Optical and quantum electronics	3.3	https://link.springer.com/article/10.1007/s11082-023-05760-2

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
26	W. Abitha Memala	School of Electrical & Electronics	Artificial Intelligence Applications in Renewable Energy Systems	Journal of Electrical Systems	0.5	https://journal.esrgroups.org/jes/article/view/4759/3509
27	Dr.E.Anna Devi	School of Electrical &	Automatic detection and classification of disease in citrus fruit and leaves using a	Boletin Latinoamericano y	0.7	https://doi.org/10.37360/blacpma.24
28	Dr.S.Radhika	School of Electrical & Electronics	Backdoor Attacks Prediction in IIoT Network using Optimal Double Mask Region Convolution Model	IETE Journal of Research	1.3	https://doi.org/10.1080/03772063.2023.2230174
29	KANIMOZHI M	School of Electrical & Electronics	Bernstein approximation-based adaptive local thresholding for enhanced edge detection	Computers and Electrical Engineering	4	https://doi.org/10.1016/j.compeleceng.2024.109397
30	Dr. G.D.Anbarasi Jebaselvi	School of Electrical & Electronics	Boundary Value Controlled Gamma Z- Source Inverter for Pump Applications	IEEE Access	3.4	10.1109/ACCESS.2024.3363440
31	Dr.E.Logashanmugam	School of Electrical & Electronics	Chicken swarm optimization modelling for cognitive radio networks using deep belief network-enabled spectrum sensing technique	PLOS ONE	2.9	https://doi.org/10.1371/journal.pone.0305987
32	Dr.S.Poornapushpakala	School of Electrical & Electronics	Chronological Dingo Optimizer-based Deep Maxout Network for skin cancer detection and skin lesion segmentation using Double U-Net	Multimedia Tools and ApplicationsThis link is disabled.	3	https://doi.org/10.1007/s11042-024-18229-5

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
33	Dr.E.Anna Devi	School of Electrical & Electronics	Content-based medical image retrieval using fractional Hartley transform with hybrid features	Multimedia Tools and Applications	3	https://doi.org/10.1007/s11042-023-16462-y
34	Dr.A.Sahaya Anselin Nisha	School of Electrical & Electronics	Coordinating Electric Vehicle Charging with Multiagent Deep Q-Networks for Smart Grid Load Balancing	Sustainable Computing: Informatics and Systems	3.8	DOI: https://doi.org/10.1016/j.suscom.2024.100993
35	Dr.L.Megalan Leo	School of Electrical & Electronics	Deep learning in skin lesion analysis for malignant melanoma cancer identification	Multimedia Tools and Applications	3	https://doi.org/10.1007/s11042-023-16273-1
36	Dr.Bharathi.M.L	School of Electrical & Electronics	Deep learning technique for patients healthcare monitoring using IoT body based body sensors and edge servers	Journal of Intelligent & Fuzzy Systems	1.7	10.3233/JIFS-231239
37	Dr.E.Anna Devi	School of Electrical & Electronics	Design and Analysis of Microstrip Patch Antenna Array and Electronic Beam Steering Linear Phased Antenna Array with High Directivity for Space Applications	ACS Omega	3.7	https://doi.org/10.1021/acsomega.3c06691
38	Dr. POONGUZHALLI S	School of	Design and Investigation of Photonic	Brazilian Journal of	1.5	https://doi.org/10.1007/s11042-023-16462-y
39	DR.M.R.EBENEZAR JEBARANI	School of Electrical & Electronics	Design of frequency reconfigurable antenna based on μ C- μ EMS switch	International Journal of Electronics and Communications	3	https://doi.org/10.1016/j.aeeu.2023.154911

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
40	Dr.E.Anna Devi	School of Electrical & Electronics	Detection of cervix tumor using an intelligent system accompanied with PNN classification approach	Signal Image and Video Processing	2	https://doi.org/10.1007/s11760-023-02616-w
41	Dr.Ramya.D	School of Electrical & Electronics	Effectiveness of deep learning in early- stage oral cancer detections and classification using histogram of oriented gradients	Expert Systems	3	https://doi.org/10.1111/exsy.13439
42	Dr. S. Emalda Roslin	School of Electrical & Electronics	Emerging network communication for malicious node detection in wireless multimedia sensor networks	Optical and Quantum Electronics	3.3	https://doi.org/10.1007/s11082-023-05659-y
43	Dr S D SUNDARSINGH JEBASEELAN	School of Electrical & Electronics	Enhanced machine learning for nanomaterial identification of photo thermal hydrogen productio	International Journal of Hydrogen Energy	8.1	https://doi.org/10.1016/j.ijhydene.2023.07.128
44	Dr M. Pushpavalli	School of Electrical & Electronics	Enhancing Electrical Power Demand Prediction Using LSTM-Based Deep Learning Models for Local Energy Communities	Electric Power Components and Systems	2.7	https://doi.org/10.1080/15325008.2024.2316246
45	Dr.S.Radhika	School of Electrical & Electronics	Enhancing image processing performance with attention long short-term domain adversarial crossover orchard algorithm	Earth Science Informatics	2.7	https://doi.org/10.1007/s12145-024-01331-5

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
46	Dr.V.Vijaya Baskar	School of Electrical & Electronics	Exhaled breath signal analysis for diabetes detection: an optimized deep learning approach	Computer Methods in Biomechanics and Biomedical Engineering	1.7	doi.org/10.1080/10255842.2023.2289344
47	Dr.L.Megalan Leo	School of Electrical & Electronics	Expert System for Smart Virtual Facial Emotion Detection Using Convolutional Neural Network	Wireless Personal Communication	1.9	https://link.springer.com/article/10.1007/s11277-024-10867-0
48	Dr. KRUTI DEEPA	School of Electrical &	Exploration of Linearity Analysis in Nanotube GAA MOSFET Through	Transactions on Electrical and	1.6	https://doi.org/10.1007/s42341-024-
49	Dr.V.MEENAKSHI	School of Electrical & Electronics	Exploring the relationship between fuel injection pressure and nanoparticle additives on the combustion, performance and emission characteristics of diesel engine fueled with animal waste-based blends	FUEL	6.7	https://doi.org/10.1016/j.fuel.2024.132065

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
50	T GOMATHI	School of Electrical & Electronics	Fabrication Model Design and Analysis of Flexible Polarization Surface Polariton Resonance with A dual Wing Antenna Structure Platform for Diverse Multi-band Characteristics in the Measurement Environment"	Plasmonics	3.3	https://doi.org/10.1007/s11468-023-02141-z
51	Dr.B.RAJASEKAR	School of Electrical & Electronics	Falcon Optimization Algorithm-Based Energy Efficient Communication Protocol for Cluster-Based Vehicular Networks	CMC Computers, Materials and Continua	2	DOI: 10.32604/cmc.2024.047608
52	Dr. D. GODWIN IMMANUEL	School of Electrical & Electronics	Grid-Connected RES Integration for Power Optimization Using Multi-Level Inverters and AI Techniques	Electric Power Components and Systems	1.7	https://doi.org/10.1080/15325008.2023.2270485
53	Dr.G.Rajalakshmi	School of Electrical & Electronics	Investigation of W and M shaped solitons in an optical fiber for eighth order nonlinear Schrödinger (NLS) equation	Optical and Quantum Electronics	3.3	https://ui.adsabs.harvard.edu/link_gateway/2024OQEle..56..973U/doi:10.1007/s11082-024-06730-y

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
54	Dr.S.Radhika	School of Electrical & Electronics	Lung tumor cell classification with lightweight mobileNetV2 and attention-based SCAM enhanced faster R-CNN	Evolving Systems	2.7	https://doi.org/10.1007/s12530-023-09564-3
55	Dr. R. M. JOANY	School of Electrical & Electronics	Mild Steel Corrosion Inhibition in 1 M HCl by an Alcoholic Extract of Sargassum Muticum	Portugaliae Electrochimica Acta	1.1	
56	Dr.V.Vijayakumar	School of Electrical & Electronics	Minimization of Electrical Signal Interference with Appropriate Core Material for 3D IC at THz Applications	Transactions on Electrical and Electronic	1.6	https://doi.org/10.1007/s42341-023-00496-y
57	Dr K V Karthikeyan	School of Electrical & Electronics	Multiple-Controlled Toffoli and Multiple- Controlled Fredkin Reversible Logic Gates- Based Reversible Synchronous Counter	IETE JOURNAL OF RESEARCH	1.3	https://doi.org/10.1080/03772063.2023.2228747
58	KAVITHA M	School of Electrical & Electronics	Multi-UAV computing enabling efficient clustering-based IoT for energy reduction and data transmission	Journal of Intelligent & Fuzzy Systems	1.7	10.3233/JIFS-231242

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
59	Dr.L.Megalan Leo	School of Electrical & Electronics	Octagonal PCF with Square Core for Surface Enhanced Spectroscopic Properties: a New Frontier in Terahertz Chemical Sensing	Plasmonics	3.3	https://doi.org/10.1007/s11468-023-02074-7
60	Dr S D SUNDARSINGH JEBASEELAN	School of Electrical & Electronics	Optimal allocation of solar PV and wind energy power for radial distribution system using spider monkey optimization	Sustainable Computing: Informatics and Systems	3.8	https://doi.org/10.1016/j.suscom.2024.100986
61	Dr K V Karthikeyan	School of Electrical & Electronics	Optimizing Chemical Sensing Performance: A New Terahertz Waveguide Plasmonic Sensor with Hybrid Refractive Index Integration	Plasmonics	3.3	https://doi.org/10.1007/s11468-024-02221-8
62	Dr. L.Magthelin Therase	School of Electrical & Electronics	Performance evaluation of pair selection algorithms in device-to-device communication using relay-assisted techniques	Eurasip Journal on Wireless Communications and Networking	2.3	https://doi.org/10.1186/s13638-024-02336-w
63	Dr.A.Sahaya Anselin Nisha	School of Electrical & Electronics	Performance Measurement of Small Cell Power Management Mechanism in 5G Cellular Networks using Firefly Algorithm	International Journal of Electrical and Computer Engineering Systems	0.8	DOI: https://doi.org/10.32985/ijeces.15.5.6

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
64	Dr.R.Pandian	School of Electrical & Electronics	Photonic crystal based hour glass patch antenna for the detection of breast cancer	Optical and Quantum Electronics	3.3	https://doi.org/10.1007/s11082-024-06657-4
65	Dr.M.Subramoniam	School of Electrical & Electronics	Prediction of lung cancer with a sensor array based e-nose system using machine learning methods	Microsystem Technologies Micro- and Nanosystems Information Storage	1.6	https://doi.org/10.1007/s00542-024-05656-5
66	Dr.Ramya.D	School of Electrical & Electronics	Radial basis function neural network-based algorithm unfolding for energy-aware resource allocation in wireless networks	Wireless networks	2.1	https://link.springer.com/article/10.1007/s11276-023-03540-0
67	Dr.R.Pandian	School of Electrical & Electronics	Real-Time Photo Captioning for Assisting Blind and Visually Impaired People Using LSTM Framework	IEEE Sensor Letters	4.3	https://ieeexplore.ieee.org/document/10295567
68	Dr. S. Emalda Roslin	School of Electrical & Electronics	Secure opportunistic based void-hold routing for underwater acoustic sensor networks	Optical and Quantum Electronics	3.3	https://doi.org/10.1007/s11082-023-05725-5
69	Dr.E.Anna Devi	School of Electrical & Electronics	Slime Mould Algorithm (SMA) and Adaptive Neuro-Fuzzy Inference (ANFIS)-Based Energy Management of FCHEV Under Uncertainty	IETE Journal of Research	1.3	https://doi.org/10.1080/03772063.2023.2273300

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
70	Dr.M.Sumathi	School of Electrical & Electronics	Speaker recognition using Improved Butterfly Optimization Algorithm with hybrid Long Short Term Memory network	Multimedia Tools and Applications	3.1	DOI10.1007/s11042-024-18298-6
71	Dr.Ramya.D	School of Electrical & Electronics	Stability and Reliability Analysis for Multiple WT Using Deep Reinforcement Learning	Electric Power componenets and systems	1.7	https://doi.org/10.1080/15325008.2023.2220313
72	Dr.A.Sahaya Anselin Nisha	School of Electrical & Electronics	Statistical Computing and Analysis of apple peel bio carbon and beta vulgaris cellulosic fiber vinyl based EMI Shielding Composite	Biomass Conversion and Biorefinery	3.5	DOI:10.1007/s13399-024-05463-y
73	Dr.M.Sumathi	School of Electrical & Electronics	Study and implementation of automated system for detection of PCOS from ultrasound scan images using artificial intelligence	Imaging Science Journal	1.1	https://doi.org/10.1080/13682199.2023.2229016
74	Dr.S.Karthikeyan	School of Electrical & Electronics	Terahertz Square Core Photonic Crystal Fiber Sensor: Revolutionizing Efficient Blood Cell Detection Through Refractive Index Sensing Based on Surface-Enhanced Spectroscopic Properties	Plasmonics	3.3	https://doi.org/10.1007/s11468-023-02182-4

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
75	Dr.L.Megalan Leo	School of Electrical & Electronics	Theoretical analysis of earth-abundant solar cell based on green absorber CuFeO ₂	Optical and Quantum Electronics	3.3	https://doi.org/10.1007/s11082-023-05499-w
76	Dr.M.Sugadev	School of Electrical & Electronics	THz Microstrip Antenna for Terabit Wireless Local Area Networks	Applied Computational Electromagnetics	0.6	https://doi.org/10.13052/2023.ACES.J.380708
77	Dr.A.Sahaya Anselin Nisha	School of Electrical & Electronics	Transactive energy management system for smart grids using Multi-Agent Modeling and Blockchain	Sustainable Computing: Informatics and Systems	3.8	DOI: https://doi.org/10.1016/j.suscom.2024.101001
78	Dr.S.Radhika	School of Electrical & Electronics	YOLO-ECG: multi-stage ECG arrhythmia classification using deep learning based YOLO network for portable monitoring	Journal of Intelligent and Fuzzy Systems	1.7	10.3233/JIFS-235858

SCHOOL OF BIO & CHEMICAL ENGINEERING

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
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S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
1	DR.Jayshree Nellore	School of Bio and Chemical Engineering	A Review on Biohydrogen Sources, Production Routes, and Its Application as a Fuel Cell	Sustainability	3.3	DOI:10.3390/su151612641
2	Dr H Jemmy christy	School of Bio and Chemical Engineering	A short review of saturated fatty acids: applications and microalgal sources	Research Journal of Biotechnology	0.2	doi: https://doi.org/10.25303/1905rjbt1430154
3	Dr.S.Jayashree	School of Bio and Chemical Engineering	Advances in functional lipid nanoparticles: from drug delivery platforms to clinical applications	3 Biotech	2.6	https://doi.org/10.1007/s13205-023-03901-8
4	Dr. Saqib Hassan	School of Bio and Chemical Engineering	Alleviation of migraine through gut microbiota-brain axis and dietary interventions: Coupling epigenetic network information with critical literary survey	Trends in Food Science & Technology	15.1	https://doi.org/10.1016/j.tifs.2023.104174
5	Dr.D.Prabu	School of Bio and Chemical Engineering	Biochar from Manihot esculenta stalk as potential adsorbent for removal of reactive yellow dye	Desalination and Water Treatment	1	http://dx.doi.org/10.1016/j.dwt.2024.100120
6	Dr. A.Dayanandan	School of Bio and Chemical Engineering	Biodiesel Production from Rice-Wash Water with Streptomyces fradiae Fermentation: Improved Free Fatty Acid Concentration	Journal of pure and applied microbiology	0.7	DOI:10.22207/jpam.18.2.33
7	Dr. INDUMATHI S M	School of Bio and Chemical Engineering	Biotechnological interventions for monitoring and mitigating microplastic pollution and development of alternatives to single-use plastics	ENVIRONMENTAL QUALITY MANAGEMENT	1.5	https://doi.org/10.1002/tqem.22186

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
8	Dr. ANIMA NANDA	School of Bio and Chemical Engineering	Carbon nanoparticles fabricated microfilm: A potent filter for microplastics debased water	Environmental Pollution	7.6	https://doi.org/10.1016/j.envpol.2023.122502
9	Dr D Venkatesan	School of Bio and Chemical Engineering	Carbon-supported Co9S8 hollow spheres assembled from ultrathin nanosheets for high-performance supercapacitors	Journal of Materials Science: Materials in Electronics	2.8	https://doi.org/10.1007/s10854-024-12832-w
10	Dr. A.Dayanandan	School of Bio and Chemical Engineering	Characterization of raw starch hydrolysing and detergent-compatible amylase from newly isolated Bacillus subtilis from bakery chimney	Biocatalysis and Biotransformation	1.4	https://doi.org/10.1080/10242422.2024.2380428
11	Dr.M.Bavanilatha	School of Bio and Chemical Engineering	Chracterization and Utilisation of Coriandrum sativum seeds and fibers for bioremediation	Biomass conversion and Biorefienery	4.06	https://doi.org/10.1007/s13399-023-04451-y
12	Dr.D.Prabu	School of Bio and Chemical Engineering	Deep insights into kinetics, optimization and thermodynamic estimates of methylene blue adsorption from aqueous solution onto coffee husk (Coffee arabica) activated carbon	Environmental Research	7.7	https://doi.org/10.1016/j.envres.2023.116735
13	Dr. INDUMATHI S M	School of Bio and Chemical Engineering	Development of smart core-shell nanoparticlesbased sensors for diagnostics of salivary alpha-amylase in biomedical and forensics	E-POLYMERS	3.2	https://doi.org/10.1515/epoly-2023-0051

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
14	Dr.JAYSHREE NELLORE	School of Bio and Chemical Engineering	Effects of Morpholino-mediated knockdown of the Angiotensin-converting enzyme 2 (ACE-2) on dopamine Neurogenesis and the Hypothalamic Pituitaryadrenal (HPA) Axis in Larval Zebrafish (Danio rerio)	Indian Journal of Biochemistry and BiophysicsThis link is disabled.	1.5	https://doi.org/10.56042/ijbb.v60i5.477
15	Annam Renita. A	School of Bio and Chemical Engineering	Emerging aspects of metal ions-doped zinc oxide photocatalysts in degradation of organic dyes and pharmaceutical pollutants–A review.	Journal of Environmental Management	8	https://doi.org/10.1016/j.jenvman.2023.118614
16	Dr. Saqib Hassan	School of Bio and Chemical	Endocrine disrupting chemicals and their effects on the reproductive health in men	Environmental Research	7.7	https://doi.org/10.1016/j.envres.2023.116825
17	Annam Renita. A	School of Bio and Chemical Engineering	Energy Recovery and Clean water remediation using anti fouling PAN Hollow Fiber membrane obtained via green route synthesis	Energy	9	https://doi.org/10.1016/j.energy.2024.130635
18	Sathish	School of Bio and Chemical Engineering	Facile synthesis of iron nanoparticles from Camellia Sinensis leaves catalysed for biodiesel synthesis from Azolla fliculoides	Scientific Reports	3.8	https://doi.org/10.1038/s41598-024-61113-3
19	Dr H Jemmy christy	School of Bio and Chemical Engineering	Hydrogen-bonded keto-enol mechanized chalcone material for optical and antibiofilm applications	Journal of Molecular Structure	4	https://doi.org/10.1016/j.molstruc.2023.136109

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
20	DR.JAYSHREE NELLORE	School of Bio and Chemical Engineering	Impact of food additives on neurodevelopmental processes in zebrafish (Danio rerio): Exploring circadian clock genes and dopamine system	Developmental Neurobiology	2.7	doi.org/10.1002/dneu.22947
21	Dr. Prabhakar Singh	School of Bio and Chemical Engineering	Implications of Myconanotechnology for sustainable agriculture- applications and future perspectives	Biocatalysis and Agricultural Biotechnology	3.4	https://doi.org/10.1016/j.bcab.2024.103110
22	Dr. PRAKASH P	School of Bio and Chemical Engineering	Integrating cutting-edge technologies: AI, IoT, blockchain and nanotechnology for enhanced diagnosis and treatment of colorectal cancer - A review	Journal of Drug Delivery Science and Technology,	4.5	10.1016/j.jddst.2023.105197
23	Sathish	School of Bio and Chemical Engineering	Metal organic framework anchored onto biowaste mediated carbon material (rGO) for remediation of chromium (VI) by the photocatalytic process	Chemosphere	8.1	https://doi.org/10.1016/j.chemosphere.2024.141963
24	Dr D Venkatesan	School of Bio and Chemical Engineering	Microfluidic paper-based device coupled with 3D printed imaging box for colorimetric detection in resource-limited settings	HardwareX	2	https://doi.org/10.1016/j.ohx.2023.e00456
25	Dr. Saqib Hassan	School of Bio and Chemical Engineering	Microplastics in the environment: A critical overview on its fate, toxicity, implications, management, and bioremediation strategies	Journal of Environmental Management	8	https://doi.org/10.1016/j.jenvman.2023.119433
26	Dr. Saqib Hassan	School of Bio and Chemical Engineering	Mitigating microplastic pollution: A critical review on the effects, remediation, and utilization strategies of microplastics	Journal of Environmental Management	8	https://doi.org/10.1016/j.jenvman.2023.119988

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
27	Dr.D. ROSELIN JENIFER	School of Bio and Chemical Engineering	Molecular structure and bioactivities of 2, 4-Ditert butyl phenol extracted from <i>Plumbago zeylanica</i> , investigated using HPLC and NMR	Biomass Conversion and Biorefinery Login to get access	3.5	DOI : 10.1007/s13399-023-04514-0
28	Dr.Prakash P	School of Bio and Chemical Engineering	Natural biopolymer mediated green synthesis of silver nanoparticles and its applications in environmental remediation	Biomass Conversion and Biorefinery	3.5	10.1007/s13399-024-05282-1
29	Sathish	School of Bio and Chemical Engineering	Noteworthy synthesis strategies and applications of metal-organic frameworks for the removal of emerging water pollutants from aqueous environment	Chemosphere	8.1	https://doi.org/10.1016/j.chemosphere.2024.142729
30	Dr. Saqib Hassan	School of Bio and Chemical Engineering	Pre-polycystic ovary syndrome and polymenorrhoea as new facets of polycystic ovary syndrome (PCOS): Evidences from a single centre data set	CLINICAL ENDOCRINOLOGY	3	https://doi.org/10.1111/cen.14964
31	DR T.SUDHAKAR	School of Bio and Chemical Engineering	Production, characterization and biomedical application of pyocyanin pigment produced by competent <i>Pseudomonas</i> species	PROCESS BIOCHEMISTRY	3.7	https://doi.org/10.1016/j.procbio.2024.02.006
32	Dr.Prakash P	School of Bio and Chemical Engineering	Sources of Antibiotic Contamination in Wastewater and Approaches to Their Removal—An Overview	sustainability	3.3	https://doi.org/10.3390/su151612639

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
33	Dr H Jemmy christy	School of Bio and Chemical Engineering	Structure-based pharmacophore modeling and DFT studies of Indian Ocean-derived red algal compounds as PI3K α inhibitors	Molecular Diversity	3.9	https://doi.org/10.1007/s11030-023-10695-7
34	Sathish	School of Bio and Chemical Engineering	Sustainable approach for the expulsion of metaldehyde: risk, interactions, and mitigation: a review	ENVIRONMENTAL GEOCHEMISTRY AND HEALTH	3.2	https://doi.org/10.1007/s10653-024-02001-7
35	Annam Renita.A	School of Bio and	The box-Behnken experimental approach of emerging contaminant-Ciprofloxacin	Discover Applied Sciences	2.8	https://doi.org/10.1007/s42452-024-06031-9
		Chemical Engineering	antibiotic removal from aqueous solution using Kigelia Africana peel-activated carbon: optimization, kinetics, and isotherm studies.			
36	Dr.S.Sathish	School of Bio and Chemical Engineering	Waste shrimp shell mediated Chitosan-Magnesium Oxide nanocomposite: Synthesis, characterization and exploitation towards acenaphthene removal from aqueous solution	Alexandria Engineering Journal	6.2	https://doi.org/10.1016/j.aej.2024.06.014

SCHOOL OF SCIENCE AND HUMANITIES

S.No	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
1	Dr.J.Reegan Jebadass	School of Science and Humanities	Color image enhancement technique based on interval- valued intuitionistic fuzzy set	Information Sciences	8.1	https://doi.org/10.1016/j.ins.2023.119811

S.No	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
2	Dr.P.Malliga	School of Science and Humanities	A Novel Centrosymmetric Crystal Structure of Bis 15- Crown-5 Ether Cadmium Tri Potassium Thiocyanate [2(C ₁₀ H ₂₀ O ₅) K][Cd (SCN) ₃] Single Crystal ...	Brazilian Journal of Physics	1.6	10.1007/s13538- 023-01340-7
3	Dr.J.Reegan Jebadass	School of Science and Humanities	A novel intuitionistic fuzzy generator for low-contrast color image enhancement technique	Information Fusion	14.7	https://doi.org/10.1016/j.inffus.2024.102365
4	D.S.Jayalakshmi	School of Science and Humanities	Active Bi layers of lead titanate for optoelectronic applications— computational full potential study	International Journal of Computational Materials Science and Engineering	1.4	https://doi.org/10.1142/S2047684123500379

S.No	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
5	Dr. Swetha Sunkar	School of Science and Humanities	Adsorptive removal of acid blue dye 113 using three agricultural waste biomasses: The possibility of valorization by activation and carbonization – A comparative analysis	Environmental Research	7.7	https://doi.org/10.1016/j.envres.2023.116486
6	Dr.E.Priyadarshini	School of Science and Humanities	Aeroengine gas trajectory prediction using time-series analysis auto regressive integrated moving average	Aircraft Engineering and Aerospace Technology	1.2	10.1108/AEAT-01-2023-0018
7	DR. T. ANAND	School of Science and Humanities	Aggregation-Induced Emission Active Benzidine-Pyridoxal Derived Scaffold for Detecting Fe ³⁺ and pH	Journal of Fluorescence	2.6	https://doi.org/10.1007/s10895-023-03503-w

S.No	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
8	Dr.P.Malliga	School of Science and	An investigative study on optical and dielectric characteristics of Thiourea	International Journal of Modern	2.6	https://doi.org/10.1142/S021797922
		Humanities	Cadmium Hydrogen Borate NLO crystal for photonic applications	Physics B		4503946
9	HELEN MERINA ALBERT	School of Science and Humanities	Biosynthesis, Spectroscopic, and Antibacterial Investigations of Silver Nanoparticles	Journal of Fluorescence	2.6	https://doi.org/10.1007/s10895-023-03398-7
10	S. Srividhya	School of Science and Humanities	Buyers- Suppliers win-win cash flow inventory model with Linear Demand under various production industries	Communications on Applied Nonlinear Analysis	0.7	https://doi.org/10.52783/cana.v31.592

S.No	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
11	Dr. S. SUPRIYA	School of Science and Humanities	Carbon and metal based magnetic porous materials - Role in drug removal: A Comprehensive review	Chemosphere	8.1	https://doi.org/10.1016/j.chemosphere.2024.142533
12	Dr.P.Malliga	School of Science and Humanities	Centrosymmetric crystal structure and third order nonlinear optical properties of [2(C ₁₀ H ₂₀ O ₅) NH ₄] [Cd (SCN) ₃]: CCTC single crystal for optical application	Optical and Quantum Electronics	3.3	10.1007/s11082-023-05432-1
13	Dr. Swetha Sunkar	School of Science and Humanities	Computational analysis of Linum usitatissimum-derived peptides: Toward therapeutic applications	Indian journal of natural products and resources	0.8	DOI: 10.56042/ijnpr.v14i4.6821

S.No	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
14	Dr. T. KRITHIGA	School of Science and Humanities	Conventional biosensors transformation into nanobiosensors: spotlighting of current strategies, challenges, and recommended solutions for diverse applications	Chemical papers	2.1	doi.org/10.1007/s11696-024-03501-7
15	HELEN MERINA ALBERT	School of Science and Humanities	Crystal formation, structural, optical, and dielectric measurements of l-histidine hydrochloride hydrate (LHHCLH) crystals for optoelectronic applications	Journal of Materials Science: Materials in Electronics	2.8	https://doi.org/10.1007/s10854-023-11396-5

S.No	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
16	HELEN MERINA ALBERT	School of Science and Humanities	Crystallization, structural, dielectric, mechanical, and SHG studies of l-histidine glutarate monohydrate crystal for nonlinear optical device applications	Journal of Materials Science: Materials in Electronicstron	2.8	https://doi.org/10.1007/s10854-023-11238-4
17	HELEN MERINA ALBERT	School of Science and Humanities	Crystallization, vibrational, optical, dielectric, and hardness analyses of L- histidine hydrochloride hydrate crystals for nonlinear optical uses	Journal of Nonlinear Optical Physics & Materials	2.9	https://doi.org/10.1142/S0218863523500881
18	HELEN MERINA ALBERT	School of Science and Humanities	Dielectric, structural, and optical studies of l- histidine glutarate monohydrate (LHGMH): an organic crystal	FERROELECTRICS	0.6	https://doi.org/10.1080/00150193.2023.2296289

S.No	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
19	Dr Parasuraman K	School of Science and Humanities	Synthesis, characterization, and enhanced photoluminescence of ZrO ₂ :Dy ³⁺ phosphors by incorporating Li ⁺ , Na ⁺ and K ⁺ ions for LED applications	Ceramics International	5.1	https://doi.org/10.1016/j.ceramint.2024.01.233
20	DR.R. MANOHARAN	School of Science and Humanities	Enhanced hyperspectral image segmentation and classification using K- means clustering with connectedness theorem and swarm intelligent-BiLSTM	Computers and Electrical Engineering	4	https://doi.org/10.1016/j.compeleceng.2023.108897
21	Dr.J.Anita Lett	School of Science and Humanities	Evaluation of biological activity for gadolinium-incorporated zinc oxide nanostructures via hydrothermal method.	MRS Advances	0.8	https://doi.org/10.1557/s43580-024-00863-8

S.No	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
22	Dr. K. Vijai Anand	School of Science and Humanities	Flexible Copper Films Modification via Spontaneous Reduction of Aryldiazonium Gold Salts: Unraveling Surface Properties and Energy Profile	Langmuir	3.7	https://doi.org/10.1021/acs.langmuir.4c00977
23	Dr.J.Anita Lett	School of Science and Humanities	Green synthesis of CuO nanoparticles for biological applications	Inorganic Chemistry Communications	4.4	https://doi.org/10.1016/j.inoche.2023.111088
24	Helen Merina Albert	School of Science and Humanities	Green Synthesis of Zinc Oxide Nanoparticles Derived from Solanum Nigrum Leaf Extract: An Analysis of the Structural, Optical, and Antibacterial Properties	NANO	1	https://doi.org/10.1142/S1793292024500486

S.No	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
25	Dr. K. VIJAI ANAND	School of Science and Humanities	Highly flexible copper tape decorated with Ag nanoarrays as ultrasensitive SERS platforms for multi-hazardous pollutant sensing	Microchimica Acta	5.3	https://doi.org/10.1007/s00604-024-06276-6
26	Dr. T. ANAND	School of Science and Humanities	Improving Copper(II) Sensitivity by Combined use of AIEE Active and Inactive Schiff Bases	Journal of Fluorescence	2.6	https://doi.org/10.1007/s10895-023-03347-4
27	Dr.J.Reegan Jebadass	School of Science and Humanities	Interval type-2 fuzzy set based block-SBU for image fusion technique	Applied Soft Computing	7.2	https://doi.org/10.1016/j.asoc.2023.110434

S.No	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
28	Dr.P.Malliga	School of Science and Humanities	Investigation of novel organometallic and physicochemical properties of [Sr (C ₁₀ H ₂₀ O ₅) ₂ · Co (SCN) ₄]: SCCTC single crystal for NLO application	Optical and Quantum Electronics	3.3	10.1007/s11082-023-05040-z
29	HELEN MERINA	School of	Investigations of the structural, spectral,	Journal of Materials	2.8	https://doi.org/10.1007/s10854-023-11810-y
	ALBERT	Science and Humanities	dielectric, and electrical characteristics of l-histidine maleate-(1.5)-hydrate crystals for frequency conversion processes	Science: Materials in Electronics		1007/s10854-023-11810-y
30	Dr. M. Manjula	School of Science and Humanities	Mechanical properties of Ir ₃ V _{1-x} Ti _x intermetallic compounds	Materials Letters	2.7	https://doi.org/10.1016/j.matlet.2024.135867

S.No	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
31	Dr.E.S.Sowbakkiyavathi	School of Science and Humanities	Nickel selenide embedded polyaniline nanofibers as a counter electrode for high-performance dye-sensitized solar cell	Journal of Molecular Structure	4	http://doi.org/10.1016/j.molstruc.2024.137735
32	Dr. D. Rajkumar	School of Science and Humanities	Numerical investigation on MHD non- Newtonian pulsating Fe ₃ O ₄ -blood nanofluid flow through vertical channel with nonlinear thermal radiation, entropy generation, and Joule heating	Numerical Heat Transfer, Part A: Applications	2.8	https://doi.org/10.1080/10407782.2024.2314730

S.No	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
33	Dr. D. Rajkumar	School of Science and Humanities	Pulsating magnetohydrodynamic hybrid nanofluid flow with thermal radiation, viscous dissipation, and entropy generation: Application to bio- nanomedicine	Numerical Heat Transfer, Part A: Applications	2.6	https://doi.org/10.1080/10407782.2024.2314730
34	HELEN MERINA ALBERT	School of Science and Humanities	Spectral, optical, and thermal analyses of tris- (thiourea) zinc sulfate nonlinear optical crystals	FERROELECTRICS	0.6	https://doi.org/10.1080/00150193.2023.2243560
35	Dr. M. Manjula	School of Science and Humanities	Structure, electronic and thermoelectric properties of novel cubic Ir ₃ V (1-x) Ti _x (x= 0.125, 0.25, 0.75, 0.875) refractory materials for high temperature applications	Computational Condensed Matter	2.6	https://doi.org/10.1016/j.cocom.2024.e00892

S.No	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
36	Dr CP Surya	School of Science and Humanities	Synthesis, Characterization, Photophysical, Lifetime and NLO Studies of Chromenes	Chemistry Select	1.9	doi.org/10.1002/slct.202301340
37	Dr. D. Kanimozhi	School of Science and Humanities	Synthesis, growth, structural, optical, thermal and dielectric properties of novel bis(tetra- ethylammonium) bis(hydrogen l-tartrate) l- tartaric acid monohydrate single crystals	JOURNAL OF MATERIALS SCIENCE- MATERIALS IN ELECTRONICS	2.8	https://doi.org/10.1007/s10854-024-12402-0
38	Helen Merina Albert	School of Science and Humanities	Synthesis, Spectroscopic, Optical, and Thermal Characterizations of Zinc (Tris)-Thiourea Sulfate: A Metal-Organic	Journal of Fluorescence	2.6	https://doi.org/10.1007/s10895-023-03335-8

S.No	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
39	Helen Merina Albert	School of Science and Humanities	Synthesis, Structural, and Optical Properties of 2-(2- methyl 8- hydroxyquinoline) Magnesium Nanorods for Optical Display Systems	Journal of Fluorescence	2.6	https://doi.org/10.1007/s10895-024-03724-7
40	Helen Merina Albert	School of Science and Humanities	Synthesis, Structural, Spectroscopic, Fluorescence, and Dielectric Studies of Bis-(4-Aminopyridine)- Zinc(II) Acetate: A Metal– Organic Crystal	Journal of Fluorescence	2.6	https://doi.org/10.1007/s10895-023-03429-3
41	Helen Merina Albert	School of Science and Humanities	The growth aspects and experimental techniques for the characterization of amino acid L-histidine hybrid crystals for nonlinear optical device applications	Journal of Nonlinear Optical Physics & Materials	2.9	https://doi.org/10.1142/S0218863524300019

S.No	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
42	Dr.J.Anita Lett	School of Science and Humanities	Unveiling sustainable, greener synthesis strategies and multifaceted applications of copper oxide nanoparticles	Journal of Molecular Structure	4	https://doi.org/10.1016/j.molstruc.2024.137788
43	Dr.A.Mohamed Ismail	School of Science and Humanities	Using the genetic algorithm to reduce tardiness by tightening the deadline date for stochastic processing	Soft Computing	3.1	https://doi.org/10.1007/s00500-023-08728-2(0123456789(),-volV)(0123456789(),-volV)

SCHOOL OF BUILDING AND ENVIRONMENT

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
1	Dr.V.Sampathkumar	School of Building and Environment	A novel artificial intelligence algorithm for predicting air quality by analyzing the pollutant levels in air quality data in Tamilnadu	Advances in Electrical Engineering, Electronics and Energy	2.1	https://doi.org/10.1016/j.prime.2023.100234
2	Dr.S.Packialakshmi	School of Building and Environment	Evaluation of Tensile Strength of Glass Fiber Reinforced Polymer Rebars under the Marine Environment – A Durability Approach	International Journal of Civil Engineering	1.8	https://doi.org/10.14445/23488352/IJCE-V11I3P101
3	Dr.S.Packialakshmi	School of Building and Environment	Flexural behavior of fiber reinforced concrete beams with GFRP rebars under marine environmental conditions	The International Journal of Advanced Manufacturing Technology	2.9	https://doi.org/10.1007/s00170-023-12690-6

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
4	J.Vanjinathan	School of Building and Environment	Microbially – induced self – healing bio concrete for sustainable development	Biomass Conversion and Biorefinery	3.5	https://doi.org/10.1007/s13399-023-04640-9
5	Dr.S.Packialakshmi	School of Building and Environment	Utilization of agricultural, industrial waste and nanosilica as replacement for cementitious material and natural aggregates – Mechanical, microstructural and durability characteristics assessment	Environmental Research	7.7	https://doi.org/10.1016/j.envres.2023.116010
6	R.Padmapriya	School of Building and Environment	Wastewater recycling and groundwater sustainability through self-organizing map and style based generative adversarial networks	Ground water for sustainable development	4.9	https://doi.org/10.1016/j.gsd.2024.101092

SCHOOL OF PHARMACY

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
1	Dr M ArunSundar	School of Pharmacy	A commentary on ‘ChatGPT in medicine:prospects and challenges: a review article’ -correspondence	International Journal of Surgery	12.5	10.1097/JS9.0000000000001487
2	Dr. S. Arunkumar	School of Pharmacy	A Critical Review on Therapeutic Potential of Benzimidazole Derivatives: A Privileged Scaffold	Medicinal Chemistry	2.32	DOI: 10.2174/0115734064253813231025093707
3	Dr M ArunSundar	School of Pharmacy	Anthocyanins - dietary natural products with a variety of bioactivities for the promotion of human and animal health	Animal Science Papers and Reports	0.9	10.2478/aspr-2023-0020
4	Dr M ArunSundar	School of Pharmacy	Binding to the immutable targets: a novel strategy to combat surgical-site infections caused by multidrug-resistant superbugs	Annals of Medicine and Surgery	1.7	10.1097/MS9.0000000000001570

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
5	Dr M ArunSundar	School of Pharmacy	ChatGPT's Inconsistency in the Diagnosis of Alzheimer's Disease	Journal of Alzheimers Disease Reports	2.8	10.3233/ADR-240069
6	Dr. S. Arunkumar	School of Pharmacy	Coumarin: A Renowned Moiety For Gram-Negative Escherichia Coli – A Review	Pharmaceutical Chemistry Journal	0.9	DOI 10.1007/s11094-024-03033-0
7	Dr M ArunSundar	School of Pharmacy	Current Status and Emerging Trends in Colorectal Cancer Screening and Diagnostics	Biosensors	4.9	10.3390/bios13100926
8	Dr. S. Arunkumar	School of Pharmacy	Design, 2D Qsar Studies, Molecular Docking, and Synthesis of Novel Triazole Derivatives intended as an Antifungal Agents	Russian Journal of Bioorganic Chemistry	1.1	DOI: 10.1134/S1068162023080198
9	Kaviarasan L	School of Pharmacy	Development and validation of a chiral LC-MS method for the enantiomeric resolution of (+) and (-)-Mebeverine	Analytical Chemistry Letters	1	https://doi.org/10.1080/22297928.2023.2244492

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
			Hydrochloride in bulk drug by using polysaccharide-based chiral stationary phase			
10	Dr M ArunSundar	School of Pharmacy	Disease X: Combating the next pandemic needs the nifty wastewater-based epidemiology tool	International Journal of Surgery Open (IJS Open)	0.8	10.1016/j.ijso.2023.100701
11	Dr M ArunSundar	School of Pharmacy	Female house surgeon stabbed to death: High time for a multi-pronged action plan to prevent and manage violence against Health care workers	International Journal of Surgery Open (IJS Open)	0.8	10.1016/j.ijso.2023.100650
12	Dr M ArunSundar	School of Pharmacy	Immune encephalitis/meningitis, cerebral vasculitis, or HANDL syndrome following SARS-CoV-2 infection	Animal Science Papers and Reports	0.9	10.1016/j.neurop.2024.100157

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
13	Dr M ArunSundar	School of Pharmacy	Innovative Biosensing Approaches for Swift Identification of Candida Species, Intrusive Pathogenic Organisms	Life	3.2	10.3390/life13102099
14	Kaviarasan L	School of Pharmacy	In-silico screening and molecular dynamics simulation of quinazolinone derivatives as PARP1 and STAT3 dual inhibitors: a novel DML approaches	JOURNAL OF BIOMOLECULAR STRUCTURE AND DYNAMICS	2.7	https://doi.org/10.1080/07391102.2023.2259476
15	Dr M ArunSundar	School of Pharmacy	Mycobacterium tuberculosis: a new hitchhiker in the etiopathogenesis of periodontitis	International Journal of Surgery	12.5	10.1097/JS9.0000000000001122
16	Dr M ArunSundar	School of Pharmacy	Myositis after SARS-CoV-2 vaccination occurs more frequently than assumed and is probably causally related	Reumatismo	1.2	10.4081/reumatismo.2023.1601

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
17	Dr M ArunSundar	School of Pharmacy	Nanoencapsulated bioinks: The silver lining to safe tattoos and laser-assisted tattoo removal	International Journal of Surgery Open (IJS Open)	0.8	10.1016/j.ijso.2023.100672
18	Dr M ArunSundar	School of Pharmacy	Navigating Scientific Peer Review with ChatGPT: Ally or Adversary?	Advanced Pharmaceutical Bulletin	3.1	10.34172/apb.2024.053
19	Dr M ArunSundar	School of Pharmacy	Patent analysis of digital sensors for continuous glucose monitoring	Frontiers in Public Health	3	10.3389/fpubh.2023.1205903
20	Kaviarasan L	School of Pharmacy	Synthesis and pharmacological evaluation of selective MAO-A inhibitors using structure and pharmacophore-based drug	Journal of Molecular Structure	4	https://doi.org/10.1016/j.molstruc.2023.137302
21	Kaviarasan L	School of Pharmacy	Targeting STAT3 Enzyme for Cancer Treatment	Mini-Reviews in Medicinal Chemistry	3.3	https://doi.org/10.2174/0113895575254012231024062619

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
22	Dr M ArunSundar	School of Pharmacy	Unravelling two fungal meningitis outbreaks in Mexico: An urgent call for multi-faceted action	International Journal of Surgery Open (IJS Open)	0.8	10.1016/j.ijso.2023.100659
23	Dr M ArunSundar	School of Pharmacy	Urgent concerns regarding the recent dengue outbreak in Bangladesh	International Journal of Surgery Open (IJS Open)	0.8	10.1016/j.ijso.2023.100682

SCHOOL OF NURSING

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
1	Thivya N	School of Nursing	Assess the nutritional status among adolescent girls at selected Coastal Community, Chennai	International Neurourology Journal	1.8	DOI: 10.5123/inj.2023.4.in67
2	Dr.L.Lakshmi	School of Nursing	Assess the quality of life among Post COVID patients in selected community at Kanchipuram district, Tamilnadu	International Neurourology Journal	1.8	DOI: 10.5123/inj.2023.4.in66
3	Ms.Bhuvaneswari S	School of Nursing	Effectiveness of deep breathing exercise among Chronic Pulmoary Obstructive disease patients at selected Hospitals, Chennai	International Neurourology Journal	1.8	DOI: 10.5123/inj.2023.4.in68

SCHOOL OF ALLIED SCIENCES

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
1	Dr. James John	School of Allied Health Sciences	Blood-based microRNA profiling unveils complex molecular dynamics in breast cancer	Journal of Applied Genetics	2	https://doi.org/10.1007/s13353-024-00852-5
2	Dr. James John	School of Allied Health Sciences	Immune cell ratio and coagulation markers in assessing prognosis of Asthma: A crosssectional study from Saudi Arabia	Frontiers in Immunology, section Comparative Immunology	5.7	doi: 10.3389/fimmu.2023.1206636
3	Dr. James John	School of Allied Health Sciences	Enzyme-mediated adaptation of herbivorous insects to host phytochemicals	Phytochemistry Review	7.3	https://doi.org/10.1007/s11101-024-09933-z
4	Dr. James John	School of Allied Health Sciences	The molecular approaches and challenges of Streptococcus pneumoniae serotyping for epidemiological surveillance in the vaccine era	Polish journal of Microbiology	2	https://doi.org/10.33073/pjm-2023-023

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
1	Dr. Thiyagarajan Gopal	Sathyabama Research Park	A Pilot Study on the Proteomics Profile of Serum Exosome- Enriched Extracellular Vesicles from Normal Versus Individuals with Obesity-Related Insulin Resistance	Biomedicines	3.9	10.3390/biomedici nes12040799
2	Dr. D. Inbakandan	Sathyabama Research Park	abrication of microspore- structured replica-mediated silicone polymers for inhibition of cellular adhesion and biofilm formation	Journal of Coatings Technology and Research	2.3	10.1007/s11998- 024-01002-6

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
3	Dr. D. Inbakandan	Sathyabama Research Park	Adaptive mechanism of the marine bacterium <i>Pseudomonas sihuiensis</i> -BFB- 6S towards pCO ₂ variation: Insights into synthesis of extracellular polymeric substances and physiochemical modulation.	International journal of Biological macromolecules	7.7	https://doi.org/10.1016/j.ijbiomac.2024.129860
4	Dr. V. Karthick	Sathyabama Research Park	Advances in injectable hydrogel: Design, functional regulation, and biomedical applications	Polymers for Advanced Technologies	3.1	https://doi.org/10.1002/pat.6193
5	Srinivasan R	Sathyabama Research Park	Amorphous MoWS _x Alloy Nanosheets via Room-Temperature Precipitation Method for Enhanced Electrocatalytic Hydrogen Evolution Reactions	ACS Applied Energy Materials	5.4	https://doi.org/10.1021/acsaem.3c03098

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
6	Dr. Sivaraj Sigamani	Sathyabama Research Park	Assessment of ecological status of Uppanar and Vellar estuaries through multivariate pollution indices	Marine Pollution Bulletin	5.3	https://doi.org/10.1016/j.marpolbul.2024.116390
7	Dr. P. Mohana	Sathyabama Research Park	Assessment of Heavy Metal Contamination in the Surface Sediments of the Vedaranyam Coast, Southern India	Regional Studies in Marine Science	2.1	https://doi.org/10.1016/j.rsma.2023.103081
8	Dr. Sivaraj Sigamani	Sathyabama Research Park	Assessment of polychaete diversity in selected tropical Islands and estuaries on the Southeast coast of India	Regional Studies in Marine Science	2.1	https://doi.org/10.1016/j.rsma.2024.103482
9	Dr. Sivaraj Sigamani	Sathyabama Research Park	Bioaccumulation and health risk of metal contamination from different tiers of food chain in Ennore estuary, Southeast coast of India	Marine Pollution Bulletin	5.3	https://doi.org/10.1016/j.marpolbul.2024.116154

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
10	Dr. D. Jeyapragash	Sathyabama Research Park	Biogenic facile green synthesis of actinobacterium exopolysaccharide- fabricated zinc oxide nanoparticles for the diverse biomedical applications	Biomass Conversion and Biorefinery	3.6	https://doi.org/10.1007/s13399-023-05053-4
11	Dr.C.JAYASEELAN	Sathyabama Research Park	Biosynthesis of gold nanoparticles mediated by medicinal phytometabolites: An effective tool against Plasmodium falciparum and human breast cancer cells	Journal of Drug Delivery Science and Technology	5	https://doi.org/10.1016/j.jddst.2024.105520
12	Srinivasan R	Sathyabama Research Park	Capsicum chinense Jacq.- derived glutaredoxin (CcGRXS12) alters redox status of the cells to confer resistance against pepper mild mottle virus (PMMoV-I)	Plant Cell Reports	5.3	https://doi.org/10.1007/s00299-024-03174-2

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
13	Dr.K.Govindaraju	Sathyabama Research Park	Comparative analysis of the insecticidal activity against <i>Sitophilus oryzae</i> (L.) and agromorphological characteristics of maize using nonbiogenic and biogenic ZnO nanoparticles	Environmental Science Nano	5.8	DOI https://doi.org/10.1039/D3EN00839H
14	Dr.K.Govindaraju	Sathyabama Research Park	Computational identification and molecular dynamics simulation of potential circularRNA derived peptide from gene expression profile of Rheumatoid arthritis, Alzheimer's disease, and Atrial fibrillation	JOURNAL OF BIOMOLECULAR STRUCTURE AND DYNAMICS	2.7	https://doi.org/10.1080/07391102.2023.2241535

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
15	Dr.K.Govindaraju	Sathyabama Research Park	Differential gene expression analysis combined with molecular dynamics simulation study to elucidate the novel potential biomarker involved in pulmonary TB	Microbial Pathogenesis	3.3	https://doi.org/10.1016/j.micpath.2023.106266
16	Dr. M. Ravi	Sathyabama Research Park	DNA vaccine incorporated poly (lactic-co- glycolic) acid (PLGA) microspheres offer enhanced protection against Aeromonas	International Journal of Biological Macromolecules	7.7	https://doi.org/10.1016/j.ijbiomac.2023.127182
17	Dr. D. Jeyapragash	Sathyabama Research Park	Environmental-driven dynamics of phytoplankton assemblages in the Bay of Bengal, Southeast coast of India	Marine Ecology-An Evolutionary Perspective	1.5	https://doi.org/10.1111/maec.12812
18	Dr.K.Govindaraju	Sathyabama Research Park	Exploring the impact of circular RNA on ALS progression: A systematic review	Brain Research	2.7	https://doi.org/10.1016/j.brainres.2024.148990

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
19	Srinivasan R	Sathyabama Research Park	Expression and Immobilization of Tannase for Tannery Effluent Treatment from Lactobacillus plantarum and Staphylococcus lugdunensis: A Comparative Study	Applied Biochemistry and Biotechnology	3.1	https://doi.org/10.1007/s12010-024-04861-2
20	Dr.K.Nagamani	Sathyabama Research Park	Fluoride Contamination of Groundwater in a Coastal Region- A Growing Environmental Pollution Threat	Global NEST Journal	1	https://doi.org/10.30955/gnj.005213
21	Dr. Saravanan Durai	Sathyabama Research Park	Genetic association of TGFβ1 polymorphisms with Alzheimer's disease: A meta- analysis	Research Journal of Biotechnology	0.2	https://doi.org/10.25303/1906rjbt051055
22	Dr. P. Mohana	Sathyabama Research Park	Geochemical evaluation of groundwater around chrome pet tannery belt, southern india	Groundwater for Sustainable Development	4.9	https://doi.org/10.1016/j.gsd.2023.100963

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
23	Dr. Gopal V	Sathyabama Research Park	Geochemical evaluation, ecological and human health risk assessment of potentially toxic elements in urban soil, Southern India	Environmental Research	7.7	https://doi.org/10.1016/j.envres.2024.118413
24	Dr.V.Ganesh Kumar	Sathyabama Research Park	Green nanotechnology approaches using Mesobacillus jeotgali ADCG SIST 4 strain synthesized gold nanoparticles for anticancer studies	Journal of Drug Delivery Science and Technology	4.5	10.1016/j.jddst.2023.104976
25	Dr. B.Sheela Rani	Sathyabama Research Park	Image compression based on vector quantization and optimized code-book design using Genetic Mating Influenced Slime Mould (GMISM) algorithm	Web Intelligence	0.2	https://ip.ios.semcs.net/articles/web-intelligence/web220050

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
26	Dr.K.Govindaraju	Sathyabama Research Park	Impact of silver nanoparticles against stored product pest <i>Sitophilus oryzae</i> (L.) and effect on gromorphological	Process Safety and Environmental Protection	6.9	https://doi.org/10.1016/j.psep.2023.07.074
27	Dr.K.Govindaraju	Sathyabama Research Park	In silico Approach to Unveil Robust Anti-Vibrio parahaemolyticus Activity of Nano Complex	BioNanoScience	3	https://doi.org/10.1007/s12668-024-01325-z
28	Dr. D. Jeyapragash	Sathyabama Research Park	Morphological Deformities in Stingrays (Dasyatidae) from the Rameswaram Island, South India	Journal of Ichthyology	0.6	https://doi.org/10.1134/S0032945223060176
29	Dr. D. Jeyapragash	Sathyabama Research Park	Multifunctional application of seagrass- derived rosmarinic acid in mitigating biofilm and quorum-sensing virulence transcripts of methicillin- resistant <i>Staphylococcus aureus</i>	Journal of Environmental Chemical Engineering	7.4	https://doi.org/10.1016/j.jece.2024.113086

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
30	Dr.V.Ganesh Kumar	Sathyabama Research Park	MXene-Embedded Porous Carbon-Based Cu ₂ O Nanocomposites for Non- Enzymatic Glucose Sensors	ACS Omega	3.7	10.1021/acsomega .3c09659
31	Dr.K.Govindaraju	Sathyabama Research Park	Nano-bioformulations: emerging trends and potential applications in next generation crop protection	Environmental Science Nano	5.8	https://doi.org/10.1039/D4EN00263F
32	Dr. D. Jeyapragash	Sathyabama Research Park	Ocimum sanctum as a Source of Quorum Sensing Inhibitors to Combat Antibiotic Resistance of Human and Aquaculture Pathogens	Life (MDPI)	3.2	https://doi.org/10.3390/life14070785

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
33	Dr. D. Inbakandan	Sathyabama Research Park	Physiological and biochemical response in green mussel <i>Perna viridis</i> subjected to continuous chlorination: Perspective on cooling water discharge criteria	Chemosphere	8.1	https://doi.org/10.1016/j.chemosphere.2024.142191
34	Dr.C.Jayaseelan	Sathyabama Research Park	Phytosynthesis of zinc oxide nanoparticles for enhanced antioxidant, antibacterial, and photocatalytic properties: A greener approach to environmental sustainability	Environmental Research	8.3	https://doi.org/10.1016/j.envres.2024.118770
35	Dr.B.Lokesh Kumar	Sathyabama Research Park	Potential molecular mechanisms of myrtenal against colon cancer: A systematic review	Journal of Biochemical and Molecular Toxicology	3.2	https://doi.org/10.1002/jbt.23525

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
36	Dr.K.Govindaraju	Sathyabama Research Park	Preparation and characterization of silica nanoparticles using beach sand and their anti-viral activity against white spot	Aquaculture International	2.2	https://doi.org/10.1007/s10499-023-01378-z
37	Dr. V. Karthick	Sathyabama Research Park	Preparation and Thermophysical Properties of Ternary Eutectic Composite PCM for Thermal Energy Storage Applications	Iranian Journal of Chemistry and Chemical Engineering	1	10.30492/ijcce.2023.1999724.5953
38	Dr. Gopal V	Sathyabama Research Park	Quantifying regional rainfall dynamics in southern India: Unravelling monsoon characteristics and intense precipitation using satellite and observed data records	Physics and Chemistry of the Earth	3	https://doi.org/10.1016/j.pce.2024.103642
39	Srinivasan R	Sathyabama Research Park	Recent Development and Application of “Nanozyme” Artificial Enzymes—A Review	Biomimetics	3.4	https://doi.org/10.3390/biomimetics8050446

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
40	Dr. D. Jeyapragash	Sathyabama Research Park	reen Fabrication of Nerium oleander- Mediated Silver Nanomaterials: Synthesis, Structural, and Stability Analysis	BioNanoscience (Not include this paper last year. Kindly include and do the needful)	3.1	https://doi.org/10.1007/s12668-023-01148-4
41	Dr Mekalathur RojaRaman	Sathyabama Research Park	Regional and remote influences of ocean- atmospheric processes on northeast monsoon rainfall during 2021 over India	International Journal of Climatology	3.9	https://doi.org/10.1002/joc.8313
42	Dr Mekalathur RojaRaman	Sathyabama Research Park	SRS conversion efficiency assessment of a single cell Raman gas mixture for DIAL ozone lidar	Applied Optics	1.8	https://doi.org/10.1364/AO.503163

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
43	Dr. L. Stanley Abraham	Sathyabama Research Park	Synthesis of reduced graphene oxide using methanolic extract of Sargassum tenerrimum and its antiproliferative activity against human colorectal adenocarcinoma HT29 cell lines	Biomass conversion and Biorefinery	3.5	10.1007/s13399-024-05485-6
44	Dr. Thiyagarajan Gopal	Sathyabama Research Park	Syzygium cumini ameliorates high fat diet induced glucose intolerance, insulin resistance, weight gain, hepatic injury and nephrotoxicity through modulation of PTP1B and PPAR γ signaling	Environmental Toxicology	4.4	10.1002/tox.23989
45	Dr. Stalin Dhas T	Sathyabama Research Park	The Potential of Dutasteride for Treating Multidrug-Resistant Candida auris Infection	Pharmaceutics	4.9	10.3390/pharmaceutics16060810

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
46	Dr. M. Ravi	Sathyabama Research Park	Trophic transfer and their impact of microplastics on estuarine food chain model	Journal of Hazardous Materials	12.2	https://doi.org/10.1016/j.jhazmat.2023.132927
47	Dr.K.NAGAMANI	Sathyabama Research Park	Understanding flash flooding in the Himalayan Region: a case study	Scientific Reports	3.8	https://doi.org/10.1038/s41598-024-53535-w
48	R Ashokkumar	Sathyabama Research Park	Unlocking the Gut's Treasure: Lipase- Producing Bacillus subtilis Probiotic from the Intestine of Microstomus kitt (Lemon sole)	Applied biochemistry and Biotechnology	3.1	https://doi.org/10.1007/s12010-023-04749-7
49	Srinivasan R	Sathyabama Research Park	Vitamin C fortification: need and recent trends in encapsulation technologies	Frontiers in Nutrition	4	https://doi.org/10.3389/fnut.2023.1229243

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
1	Dr. Krupakar Parthasarathy	Centre of Drug Discovery and Development	Accelerated mutation by host protein APOBEC in Monkeypox virus	Gene Reports	1.3	https://doi.org/10.1016/j.genrep.2024.101878
2	Dr.V.Gopikrishnan	Centre of Drug Discovery and Development	Association between Polymorphisms of Vitamin D Receptor and Lung Cancer Susceptibility: A Systematic Review and Meta-Analysis	Korean Journal of Physiology and Pharmacology	1.6	DOI:10.25463/kjp.p.27.4.2023.1
3	Dr. Krupakar Parthasarathy	Centre of Drug Discovery and Development	Designing of a Novel and Potent HPV66 L1 major Capsid protein-epitope based Therapeutic Vaccine against Human Papillomavirus (HPV): A Bioinformatics Approach	Journal of Environmental Biology	0.6	http://doi.org/10.22438/jeb/45/2/MRN-5248

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
4	Dr. M. V .Rajeswari	Centre of Drug Discovery and Development	Effects of dietary Andrographis paniculata extract on growth, haematological, immune responses, immune related gene expression of ornamental gold fish (Carassius auratus) and its susceptibility to Aeromonas hydrophila infection	Aquaculture reports	3.2	https://doi.org/10.1016/j.aqrep.2023.101850
5	Dr. R. Sam Ebenezer	Centre of Drug Discovery and Development	Functionalized chitosan-G-poly caprolactone vaccine delivery system fabricated to display antigen–antibody immune complexes of Mycobacterium tuberculosis elicits immune response in Ex-vivo model	Beni-Suef University Journal of Basic and Applied Sciences	2.5	https://doi.org/10.1186/s43088-024-00520-x

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
6	Dr. Krupakar Parthasarathy	Centre of Drug Discovery and Development	Genomic variants driven drug repurposing for SARS-CoV-2 using bioinformatics- based approach	Research Journal of Biotechnology	0.2	https://doi.org/10.25303/1901rjbt033040
7	Dr.T.Rajasekar	Centre of Drug Discovery and Development	Identification of the Seaweed Metabolites as Potential Anti-tubercular Agents Against Human Pantothenate synthetase:	Current Microbiology	2.3	10.1007/s00284-023-03422-w
8	Dr. E. Thirumalaikumar	Centre of Aquaculture	Isolation and screening of antimicrobial biosurfactants obtained from mangrove plant root-associated bacteria	Naunyn-Schmiedeberg's Archives of Pharmacology	3.1	https://doi.org/10.1016/j.aqrep.2023.101850
9	Dr. Krupakar Parthasarathy	Centre of Drug Discovery and Development	Latent Tuberculosis: Challenges in Diagnosis & Treatment, Perspectives, and the crucial role of Biomarkers	Current Microbiology	2.3	https://doi.org/10.1007/s00284-023-03491-x

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
10	Dr. Krupakar Parthasarathy	Centre of Drug Discovery and Development	Lung Organoids: Systematic review of recent advancements and its future perspectives	Tissue Engineering and Regenerative medicine	4.4	https://doi.org/10.1007/s13770-024-00628-2
11	Dr. T.Rajasekar	Centre of Drug Discovery and Development	Selenium-chitosan engineered nanocomposite as efficient formulated fish diet evaluated for sustainable aquaculture practice of Oreochromis niloticus (Nile tilapia) fishes	Polym Adv Technol. 2024;35:e6436	3.1	https://doi.org/10.1002/pat.6436

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
12	Dr. M. Radhakrishnan	Centre for Drug Discovery and Development	Synthesis and characterization of gold nanoparticles using <i>Brevibacterium casei</i> (SOSIST-06) isolated from Southern Ocean water samples and their in vitro and in silico anti-WSSV activity	Aquaculture	3.9	https://doi.org/10.1016/j.aquaculture.2023.740205

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
1	Madhanagopal M	International Research Centre	Prediction of wear volume and friction coefficients of SS304 alloy using grey taguchi-based response surface methodology,	Materials research express, Materials today proceedings, Materials science forum	1.8	10.1088/2053-1591/ad45bb, 10.1016/j.matpr.2023.09.064, 10.4028/p-uAFP0k
2	Dr. G. Murugadoss	International Research Centre	4-Carboxyphenyl as efficient donor group in nano Zn-Porphyrin for dye sensitized solar cells	Environmental Research	7.7	https://doi.org/10.1016/j.envres.2024.118704
3	Kunjulakshmi K	International Research Centre	A New Species of the Genus Dendronephthya Kükenthal 1905 (Octocorallia: Alcyonacea: Nephtheidae) and Associated Crustaceans From Covelong, Chennai, India	Thalassas: An International Journal of Marine Sciences	0.7	

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
4	Dr.S.Johnson Retnaraj Samuel	International Research Centre	A novel BSA-coated nano selenium- impregnated scaffold showed improved strength, cellular attachment and proliferation in C2C12 cell.	Journal of King Saud University Science	3.7	10.1016/j.jksus.20 24.103307
5	Dr. J. Arun	International Research Centre	A review on recent advancements in extraction, removal and recovery of phenols from phenolic wastewater: Challenges and future outlook	environmental research	7.7	https://doi.org/10. 1016/j.envres.202 3.117005
6	Dr.Subha Krishna Rao	International Research Centre	A state-of-the-art review on plant-derived cellulose-based green hydrogels and their multifunctional role in advanced biomedical applications	International Journal of Biological Macromolecules	7.7	https://doi.org/10. 1016/j.ijbiomac.20 24.130991

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
7	Dr. J. Arun	International Research Centre	Advanced oxidation process (AOP) combined biological process for wastewater treatment: A review on advancements, feasibility and practicability of combined techniques	environmental research	7.7	https://doi.org/10.1016/j.envres.2023.116944
8	Dr. S. Jackson Durairaj	International Research Centre	Alternative to FBS in animal cell culture - An overview and future perspective	Heliyon	3.4	https://doi.org/10.1016/j.heliyon.2021.e07686
9	Dr. S. Jackson Durairaj	International Research Centre	An improved protocol for inducing the gut cleaning process in earthworm for various experiments	Animal Biology	1.4	https://doi.org/10.1163/15707563-bja10137

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
10	Dr.S.Preethi	International Research Centre	Analysis of microstrip low pass filter at terahertz frequency range in finite difference time domain method for radar applications	Zeitschrift für Naturforschung A: A Journal of Physical Science	1.8	https://doi.org/10.1515/zna-2023-0329
11	Dr.Subha Krishna Rao	International Research Centre	Annealing-induced enhancement of TiO ₂ - ZnO nanocomposites for high- performance room- temperature air pollutant detection in fiber optic sensors	Microchemical Journal	4.9	https://doi.org/10.1016/j.microc.2024.110329
12	Dr. Amit Kumar	International Research Centre	Assessing artisanal fishers' attitude and perception towards electric rays conservation along Indian coast	Marine Policy	3.5	https://doi.org/10.1016/j.marpol.2023.105826

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
13	Sudha Uthaman	International Research Centre	Assessment of causes and consequences of concrete deterioration and its remediation	Journal of Building Engineering	6.7	https://doi.org/10.1016/j.jobe.2023.107790
14	Dr Krishnamanikumar Premachandran	International Research Centre	Bacterial microbiome associated with cigarette beetle <i>Lasioderma serricorne</i> (F.) and its microbial plasticity in relation to diet sources	PLoS one	2.9	https://doi.org/10.1371/journal.pone.0289215
15	Dr.S.Johnson Retnaraj Samuel	International Research Centre	Biochemical and functional characterization of heat- inactivated coelomic fluid from earthworms as a potential alternative for fetal bovine serum in animal cell culture	Scientific Report	3.8	10.1038/s41598-024-56169-0

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
16	Dr. D. Balaji	International Research Centre	Dazzling Ca ₂ LuScAl ₂ Si ₂ O ₁₂ :Ce ³⁺ green- emitting garnet-type phosphors for blue- chip- pumped white light-emitting diodes: broad emission band, high quantum efficiency and excellent thermal stability	Crystal Eng Comm	2.6	https://doi.org/10.1039/D4CE00258J
17	Dr.Subha Krishna Rao	International Research Centre	Delineating the sensing analysis of discarded pencil graphite in biofuel ethanol–Experimental and theoretical	Materials Letters	2.7	https://doi.org/10.1016/j.matlet.2024.136118

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
18	Dr. N. Venkatesh	International Research Centre	Design and synthesis of simple quinoline- based organic molecules as dual/ multifunctional chemosensors for the detection of Cu ²⁺ /Fe ³⁺ ions	Journal of Molecular Structure	4	https://doi.org/10.1016/j.molstruc.2024.138530
19	Dr. V. Balachandar	International Research Centre	Dielectric relaxation of ice in a partially crystallized poly(N-isopropylacrylamide)microgel suspension compared to other partially crystalized polymer–water mixtures	Physical Chemistry Chemical Physics	3	https://doi.org/10.1039/D3CP02116E

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
20	Dr. K. Gobi Saravanan	International Research Centre	Effect of Copper Doping in Borate Bioactive Glass on Bacterial Colonization Prevention—An Insight Study on Protein/Carbohydrate Leakage for Biomedical Applications	Journal of COMposite science	3	10.3390/jcs80702 45
21	Dr. G. MURUGADOSS	International Research Centre	Electrochemical, magnetic and heterostructure of Y- SnO ₂ -CdO nanocomposite for multi-functional applications	Journal of Alloys and Compounds	5.8	https://doi.org/10.1016/j.jallcom.2024.175180

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
22	Dr. Sathish Kumar Ramachandran	International Research Centre	Enhancement of piezoelectric responses of electrospun PVDF nanofibers through mechanical stretching and annealing process	Materials Science & Engineering B Advanced Functional Solid- State Materials	3.9	10.1016/j.mseb.20 24.117538
23	Dr.Manjunath S Kamath	International Research Centre	Evodiamine release from interlinked porous polycaprolactone scaffold for cancer therapy	Process Biochemistry	3.7	https://doi.org/10. 1016/j.procbio.202 4.01.028

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
24	Dr.S.Preethi	International Research Centre	Examining the design characteristics of a dual-material gate all-around tunnel FET for use in biosensing applications	Zeitschrift für Physikalische Chemie - International journal of research in physical chemistry and chemical physics	3	https://doi.org/10.1515/zpch-2023-0476
25	Aruna V	International Research Centre	Experimental study of heat pipes for battery cooling technology in EVs, Performance analysis of closed loop pulsating heat pipe using nanofluid fused with refrigerant	Zeitschrift für Physikalische Chemie, AIP Conference Proceedings	3	https://doi.org/10.1515/zpch-2023-0502 , https://doi.org/10.1063/5.0177999

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
26	S. Nandha Gopal	International Research Centre	Exploring the mitochondrial genome of Caridina pseudogracilirostris: a comparative analysis within the Atyidae Family	Molecular Biology Reports	2.6	https://doi.org/10.1007/s11033-023-08700-1
27	Dr. G. Murugadoss	International Research Centre	Facile synthesis of Co-Cu metal organic framework as efficient non-noble bifunctional electrocatalysts for overall water splitting	Applied Surface Science Advances	7.5	https://doi.org/10.1016/j.apsadv.2024.100593
28	Dr. D. Balaji	International Research Centre	Full-visible-spectrum LED lighting by using a near-UV- excitable broadband blue- emitting Ca ₂ LuHf ₂ GaAl ₂ O ₁₂ :Ce ³⁺ garnet phosphor	Ceramics International	5.1	https://doi.org/10.1016/j.ceramint.2023.12.062

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
29	Dr. J. Arun	International Research Centre	Futuristic advancements in phytoremediation of endocrine disruptor Bisphenol A: A step towards sustainable pollutant degradation for rehabilitated environment	Waste Management	7.1	https://doi.org/.j.wasman...
30	Dr. Y. Beryl Vedha	International Research Centre	Green Synthesis of Multifunctional Silver Nanoparticles Using Plectranthus amboinicus for Sensitive Detection of Triethylamine, with Potential In Vitro Antibacterial and Anticancer Activities	Chemosensors	3.7	https://doi.org/10.3390/chemosensors11070373

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
31	Dr. Y. Beryl Vedha	International Research Centre	Hemostatic potency of sodium alginate/aloe vera/sericin composite scaffolds–preparation, characterization, and evaluation	Artificial Cells Nanomedicine and Biotechnology	4.5	https://doi.org/10.1080/21691401.2023.2293784
32	Dr.D.Balaji	International Research Centre	High-brightness red-emitting Eu ³⁺ - activated Ca ₂ LuZr ₂ Al ₃ O ₁₂ garnet phosphors with excellent thermal stability for near-UV-pumped white LEDs	Inorganic Chemistry Communications	4.4	https://doi.org/10.1016/j.inoche.2024.112232
33	Dr. Sathish Kumar R	International Research Centre	High-temperature oxidation behaviours of rare earth-based pyrochlore structured A ₂ B ₂ O ₇ /yttria-stabilized zirconia thermal barrier coatings	Materials Science and Technology	1.7	10.1177/02670836241249827

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
34	RAJASEKARAMOORTHY M	International Research Centre	Hot Corrosion Behavior of Plasma- Sprayed Gd ₂ Zr ₂ O ₇ /YSZ Functionally Graded Thermal Barrier Coatings	ceramics	2.7	https://doi.org/10.3390/ceramics7020038
35	Narthana K	International Research Centre	Hydrothermal Synthesis of β -NiS Layer structure nanoparticles for Supercapacitor Applications.	Materials Letters	2.7	https://doi.org/10.1016/j.matlet.2023.135837
36	Dr. G. MURUGADOSS	International Research Centre	Hydrothermally distributed heterostructure Ni-Mo-S/rGO nanocomposite for supercapacitor application	Inorganic Chemistry Communications	4.4	https://doi.org/10.1016/j.inoche.2023.111013

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
37	Dr. Y. Beryl Vedha	International Research Centre	Impact of double-strand breaks induced by uv radiation on neuroinflammation and neurodegenerative disorders	Molecular Biology Reports	2.6	https://doi.org/10.1007/s11033-024-09693-1
38	Narthana K	International Research Centre	Improved electrochemical performance of hydrothermally synthesized Zn-Ni-S/rGO nanocomposite as an electrode for supercapacitor application	Inorganic Chemistry Communications	4.4	https://doi.org/10.1016/j.inoche.2024.112628
39	Dr. S. Prakash	International Research Centre	Influencing intertidal food web: Implications of ocean acidification on the physiological energetics of key species the 'wedge' clam Donax faba	Marine Pollution Bulletin	5.3	https://doi.org/10.1016/j.marpolbul.2024.116366

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
40	Dr. D. Ramachandran	International Research Centre	In-situ biofabrication of bacterial nanocellulose (BNC)/graphene oxide (GO) nano-biocomposite and study of its cationic dyes adsorption properties	International Journal of Biological Macromolecules	7.7	https://doi.org/10.1016/j.ijbiomac.2023.126309
41	Dr.S.Johnson Retnaraj Samuel	International Research Centre	Live foldscope imaging of two environmentally beneficial earthworm species and their early developmental stages	Environmental quality management	1.5	10.1002/tqem.21997
42	Dr. Sathish Kumar Ramachandran	International Research Centre	Membrane-based techniques for pollutants removal: An outlook on recent advancements	Current Opinion in Environmental Science & Health	6.7	10.1016/j.coesh.2023.100513

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
43	Dr. G. Murugadoss	International Research Centre	Microwave assisted green synthesis of Ag doped CuO NPs anchored on GO-sheets for high performance photocatalytic and antimicrobial applications	Journal of Industrial and Engineering Chemistry	5.9	https://doi.org/10.1016/j.jiec.2023.08.002
44	Dr. A. Madan Kumar	International Research Centre	Mitochondrial Dysfunction-Associated Mechanisms in the Development of Chronic Liver Diseases	Biology Basel	3.6	DOI: 10.3390/biology12101311
45	Dr. Amit Kumar	International Research Centre	Molecular phylogeny reconstruction and biogeographic pattern of Rays	Indian Journal of Geo-Marine	0.4	https://or.niscpr.res.in/index.php/IJMS/article/view/6928
			(Elasmobranchii: Myliobatiformes) from Indian coastal waters	Sciences (IJMS)		

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
46	K. Viswanathan	International Research Centre	Multifunctional biomedical applications of MXene-based hydrogels: A review	Inorganic Chemistry Communications	4.4	https://doi.org/10.1016/j.inoche.2024.112457
47	Dr. P. Priyadharsini	International Research Centre	Nanohybrid photocatalysts in dye (Colorants) wastewater treatment: Recent trends in simultaneous dye degradation, hydrogen production, storage and transport feasibility	Journal of Cleaner Production	9.7	https://doi.org/10.1016/j.jclepro.2023.139180
48	Dr. Kunal Biswas	International Research Centre	Nanostructure-assisted wound dressing materials: a literature review	Macromolecular Research, Springer	2.8	https://doi.org/10.1007/s13233-024-00291-5

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
49	Dr. G. MURUGADOSS	International Research Centre	Nano-tablets and rods-shaped Fe and Ni oxide/hydroxide encapsulated graphene for asymmetric supercapacitor and OER applications	Journal of Energy Storage	8.9	https://doi.org/10.1016/j.est.2023.109435
50	Dr. J. Arun	International Research Centre	New insights into microbial electrolysis cells (MEC) and microbial fuel cells (MFC) for simultaneous wastewater treatment and green fuel (hydrogen) generation	Fuel	6.7	https://doi.org/10.1016/j.fuel.2023.129530
51	S. Nandha Gopal	International Research Centre	Nourishing the Cognition with Millets: A Comprehensive Review of Their Nutritional Impact and Potential as Cognitive Enhancers	Molecular Nutrition and Food Research	4.5	https://doi.org/10.1007/s11033-023-08700-1

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
52	Dr Sivasakthi M	International Research Centre	Novel porous ambient temperature cured fly ash geopolymer for lead adsorption from wastewaters	Energy Sources, Part A: Recovery, Utilization, and Environmental Effects	2.3	https://doi.org/10.1080/15567036.2023.2261413
53	Dr.Subha Krishna Rao	International Research Centre	Optimizing gas sensing performance of CuO nanoparticles via sol-gel synthesis approach for efficient detection of ammonia gas	Materials Research Bulletin	5.3	https://doi.org/10.1016/j.materresbu.2023.112556
54	Dr. S. Johnson Retnaraj Samuel	International Research Centre	Optimum performance of a novel biocompatible scaffold comprising alginate-pectin- selenium nanoparticles for cardiac tissue engineering using C2C12	Journal of Molecular Structure	4	10.1016/j.molstruc.2023.136457

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
			cells			
55	Dr. S. Prakash	International Research Centre	Palaemonid Shrimps from Lakshadweep Archipelago, India with a New Species of Periclimenes Costa, 1844	Thalassas: An International Journal of Marine Science	0.7	https://doi.org/10.1007/s41208-024-00735-w
56	Dr. A. Madan Kumar	International Research Centre	Polydiacetylene/lipid-coated red-emissive silica nanorods for the sustained release and ameliorated anticancer efficacy of a Ru(arene) complex bearing piperlongumine natural product	Dalton Transactions	3.5	https://doi.org/10.1039/D3DT02940A

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
57	Dr. D. Ramachandran	International Research Centre	Polyhydroxybutyrate (PHB)- Based sustainable bioplastic derived from Bacillus sp. KE4 isolated from kitchen waste effluent	Sustainable Chemistry and Pharmacy	5.5	https://doi.org/10.1016/j.scp.2024.101507
58	Dr. Kunal Biswas	International Research Centre	Potentialities of Bio- functionalized Carbon Nanotubes for Different Anti- cancerous Activities	Journal of Inorganic and Organometallic Polymers and Materials, Springer	3.9	https://doi.org/10.1007/s10904-024-03012-8

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
59	Dr. D. Ramachandran	International Research Centre	Production of bacterial nanocellulose as green adsorbent matrix using distillery wastes for dye removal: a combined approach for waste management and pollution mitigation	Biomass Conversion and Biorefinery	3.5	https://doi.org/10.1007/s13399-024-05561-x
60	Dr.S.Johnson Retnaraj Samuel	International Research Centre	Profiling microRNAs of earthworm, Perionyx excavatus and deciphering the expression of distinct novel miRNAs regulating epimorphosis regeneration	Genes	2.8	10.1016/j.gene.2024.148636

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
61	Dr. G. MURUGADOSS	International Research Centre	Rapid Photocatalytic Activity of Crystalline CeO ₂ -CuO-Cu(OH) ₂ Ternary Nanocomposite	Sustainability	3.3	https://doi.org/10.3390/su15211560 1
62	Dr. M. Rajasekar	International Research Centre	Recent advances in photoresponsive- based triazole sensors and their applications in biomaterials	Results in Chemistry	2.5	https://doi.org/10.1016/j.rechem.2024.101543
63	Dr. M. Rajasekar	International Research Centre	Recent developments in photoresponse- based zinc (II) sensors and biomaterials/biomedical applications	Results in Chemistry	2.5	https://doi.org/10.1016/j.rechem.2023.101111
64	Dr. M. Rajasekar	International Research Centre	Recent developments in sunscreens based on chromophore compounds and nanoparticles	RSC Advances	3.9	DOI: 10.1039/d3ra0817 8h

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
65	Dr.Subha Krishna Rao	International Research Centre	Recent trends in phyto-mediated iron- based nanomaterials for environmental remediation and biomedical applications	Inorganic Chemistry Communications	4.4	https://doi.org/10.1016/j.inoche.2023.111976
66	Dr. M. Rajasekar	International Research Centre	Recent trends in synthesis of photoluminescence based pyrene derivatives and their biomaterial applications	Results in Chemistry	2.5	https://doi.org/10.1016/j.rechem.2023.101008
67	Dr. M. Rajasekar	International Research Centre	Review of current developments in rhodamine derivatives-based photoresponsive chemosensors for ion detection	Inorganic Chemistry Communications	4.4	https://doi.org/10.1016/j.inoche.2024.112143

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
68	Dr. M. Rajasekar	International Research Centre	Review on anticancer activity of flavonoid derivatives: Recent developments and future perspectives	Results in Chemistry	2.5	https://doi.org/10.1016/j.rechem.2023.101059
69	Dr. M. Rajasekar	International Research Centre	Review on biomaterial applications of photoresponsive based chromophore Hydrogels: Recent developments and future perspectives	Results in Chemistry	2.5	https://doi.org/10.1016/j.rechem.2024.101462
70	Dr. M. Rajasekar	International Research Centre	Revisiting diosmin for their potential biological properties and applications	Carbohydrate Polymer Technologies and Applications	6.2	https://doi.org/10.1016/j.carpta.2023.100419

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
71	Dr.S.Preethi	International Research Centre	Revolutionizing medical imaging: a comprehensive review of optical coherence tomography (OCT)	Journal of Optics - Springer	1.6	https://doi.org/10.1007/s12596-024-01765-6
72	Dr. Kunal Biswas	International Research Centre	Rough edges of reduced graphene oxide (rGO) sheets elicit anticancerous activities: An in vitro study	Results in Chemistry, Elsevier	2.5	https://doi.org/10.1016/j.rechem.2023.101207
73	S. Prakash	International Research Centre	Sexual and mating system in Thor hainanensis (Decapoda: Natantia: Thoridae) from the Lakshadweep Archipelago, India	Journal of Crustacean Biology	1.2	https://doi.org/10.1093/jcbiol/ruad036

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
74	Dr Krishnamanikumar Premachandran	International Research Centre	Shifting of food sources affect abundance of yeast like symbionts in Lasioderma serricorne (F.)	Journal of applied entomology	1.7	10.1111/jen.1326 8
75	Dr. G. MURUGADOSS	International Research Centre	Silver Sulfide Anchored Anatase TiO ₂ Nanoparticles for Ultrafast Degradation of Selective Textile Dyes	ChemistrySelect	1.9	doi.org/10.1002/sl ct.202400099
76	Dr. G. MURUGADOSS	International Research Centre	Solar light-driven photocatalysis by Co doped SnS nanoparticles towards degradation of noxious organic pollutant: Mechanism and toxicity assessment	Journal of Alloys and Compounds	5.8	https://doi.org/10.1016/j.jallcom.2023.172624

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
77	Dr. K. Gobi Saravanan	International Research Centre	Sputtered zirconium based metallic glassy thin films onto electrospun PCL nanofibrous scaffolds for enriching bioactivity	Materials Chemistry and Physics	4.3	10.1016/j.matche mphys.2024.1295 66
78	Dr. Sony Varghese	International Research Centre	Structural and electrical properties of mol% (100 – x)Li ₂ SO ₄ :xP ₂ O ₅ solid electrolyte system ($0 \leq x \leq$ 20)	Zeitschrift für Physikalische Chemie	3	https://doi.org/10. 1515/zpch-2023- 0478
79	Dr.Manjunath Srinivas Kamath	International Research Centre	Structural, magnetic and evanescent wave gas sensing analysis of spin- frustrated rare earth doped Bi ₂ Fe ₄ O ₉ mullite ceramics at room temperature	Ceramics International	5.1	https://doi.org/10. 1016/j.ceramint.2 023.12.383

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
80	Dr.Manjunath Srinivas Kamath	International Research Centre	Sustained release of resveratrol from fused deposition modelling guided 3D porous scaffold for bone tissue engineering	Process biochemistry	3.7	https://doi.org/10.1016/j.procbio.2023.06.001
81	Dr. A. Madan Kumar	International Research Centre	Synergistic photocatalytic degradation of crystal violet dye using novel medical waste-derived carbon/ZnO composite: A study on toxicological assessment	Process Safety and Environmental Protection	6.9	https://doi.org/10.1016/j.psep.2024.04.096

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
82	Narthana K	International Research Centre	Synthesis of nickel– manganese sulfide decorated with reduced graphene oxide nanocomposite for ultra-fast photocatalytic degradation of organic dye molecules	Carbon Letters	5.5	https://doi.org/10.1007/s42823-023-00654-5
83	Dr. A. Madan Kumar	International Research Centre	Synthesis, characterization, and anticancer activity of Ru(p-cymene) complexes bearing pyrazolyl–pyridine type ligands	New Journal of Chemistry	2.7	DOI https://doi.org/10.1039/D4NJ00259H
84	Dr. B. Vigneshwaran	International Research Centre	Temperature-dependent Raman and dielectric studies of Sm and Zr Co-doped BaTiO ₃ ceramics	Journal of Materials Science: Materials in Electronics	2.478	https://doi.org/10.1007/s10854-024-12060-2

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
85	Dr. S. Jackson Durairaj	International Research Centre	The molecular mechanisms underlying the regeneration process in the earthworm,	In Vitro Cellular & Developmental Biology - Animal	1.5	https://doi.org/10.1007/s11626-023-00843-6
			Perionyx excavatus exhibit indications of apoptosis-induced compensatory proliferation (AICP)			
86	Dr. S. Jackson Durairaj	International Research Centre	Understanding the molecular mechanism of regeneration through apoptosis- induced compensatory proliferation studies - updates and future aspects	Apoptosis	6.1	https://doi.org/10.1007/s10495-024-01958-1
87	Dr. S. Jackson Durairaj	International Research Centre	Understanding the Multi-Functional Role of TCTP in the Regeneration Process of Earthworm, Perionyx excavatus	Tissue Engineering and Regenerative Medicine	4.4	https://doi.org/10.1007/s13770-023-00599-w

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
88	Dr.S.Johnson Retnaraj Samuel	International Research Centre	Understanding the process of angiogenesis in regenerating earthworm	In Vitro Cellular & Developmental Biology-Animal	1.5	10.1007/s11626- 023-00782-2
89	Dr.S.Preethi	International Research Centre	Unveiling the properties of layered 2D- based nano- material flexible electronics in biomedical applications: a review	Journal of Material Science	3.5	https://doi.org/10.1007/s10853-024-09825-9
90	Dr. j. arun	International Research Centre	Utilization of biosilica from Bermuda grass ash on silver- grey magnesium: influence of biosilica on its mechanical and tribological properties	biomass conversion and biorefinery	3.5	https://doi.org/10.1007/s13399-023-04502-4

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
91	RAMANJANEYA REDDY G	International Research Centre	Utilizing a sustainable surfactant from Cucurbita pepo seeds for eco-friendly flotation of non-coking coal in sustainable energy applications	biomass conversion & biorefinery	3.5	10.1007/s13399- 024-05359-x
92	Dr. Amit Kumar	International Research Centre	UV-B Halotolerant Bacteria from Marakkanam Saltpan and Biology of UV-B Tolerant Pontibacillus salipaludis Based on Whole Genome Sequencing	Geomicrobiology Journal	2.2	https://doi.org/10.1080/01490451.2024.2302489
93	Dr. G. MURUGADOSS	International Research Centre	Zinc oxide nanoflakes supported copper oxide nanosheets as a bifunctional electrocatalyst for OER and HER in an alkaline medium	Environmental Research	7.7	https://doi.org/10.1016/j.envres.2024.119030

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
94	Dr. T.Sasipraba	International Research Centre	Stochastic Gradient Descent long short-term memory based secure encryption algorithm for cloud data storage and retrieval in cloud computing environment	Journal of Cloud Computing	3.7	https://doi.org/10.1186/s13677-023-00442-6
95	Dr. Maharshi Bhaswant	International Research Centre	Optimizing Quality and shelf-life extension of Bor-thejera (Garcinia pedunculata) Juice: A	Foods	4.7	https://doi.org/10.3390/foods13030497
			Thermosonication Approach with Artificial Neural Network Modelling			
96	Dr. Maharshi Bhaswant	International Research Centre	Benincasa hispida alleviates stress and anxiety in a Zebrafish (Danio rerio) model	Life	3.2	https://doi.org/10.3390/life14030379

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
97	Dr. Maharshi Bhaswant	International Research Centre	Development of Germinated Brown Rice-Based Novel Functional Beverage Enriched with γ - aminobutyric acid: Nutritional and Bio- Functional Characterization	Foods	4.7	https://doi.org/10.3390/foods13081282
98	Dr. Maharshi Bhaswant	International Research Centre	Extraction, Modification, Biofunctionality, and Food Applications of Chickpea (<i>Cicer arietinum</i>) Protein: An Up-to-Date Review	Foods	4.7	https://doi.org/10.3390/foods13091398

S.NO	Name of the Faculty	School/ Research Centre	Title of the Published Paper	Name of the Journal	Impact Factor (JCR 2023)	DOI of the Published Paper
99	Dr. Maharshi Bhaswant	International Research Centre	Comparative analysis of macro- and micro- nutrients of <i>Perilla</i> <i>frutescens</i> var. <i>crispa</i> f. <i>viridis</i> microgreens and germinated seeds	Food Chemistry	8.5	https://doi.org/10.1016/j.foodchem.2024.139858
100	Dr. Subhenjit Hazra	School of Science and Humanities	Drug-loaded polymer-coated silver nanoparticles for lung cancer theranostics	Medical Oncology	2.8	https://doi.org/10.1007/s12032-024-02372-y

17.12 List of Product Patents

S.No	Name of the Faculty	Department/ Centre	Title of the Product Patent	Grant Number of the Product Patent	Date of the Grant	Name of the Inventors	Patent Certificate
1	Dr S KRISHNAKUMAR	Department of Biomedical	“Ultrasonic bone conductivity headphones for muffled ears”	491039	12/28/2023	S. KRISHNAKUMAR	https://drive.google.com/open?id=1OFQizvsFLFY2QMw7XL6PqLkZgPsUyFkQ
2	Dr.D.Susitra	Department of Electronics and Electrical Engineering	A Device For Converting Bio Waste Into Energy	499120	1/15/2024	Sathyabama Institute of Science and Technology	https://drive.google.com/open?id=1eCtCSm7j_NHplF1-aV-ZAmZk0_CEEKDd

S.No	Name of the Faculty	Department/Centre	Title of the Product Patent	Grant Number of the Product Patent	Date of the Grant	Name of the Inventors	Patent Certificate
3	Dr. K. Gobi Saravanan	Centre of Nanoscience and Nanotechnology	A Method to develop mechanically stable antimicrobial containing biocompatible ceramic coated titanium	479419	12/8/2023	Gobi Saravanan Kaliaraj, Vinita Vishwakarma, Karthik Alagarsamy, A.M. Kamal Kirubaharan, D. Dinesh Kumar	https://drive.google.com/open?id=1cgu_tW2D-fBh0DD0ey2p7wION7qpl_rfr

S.No	Name of the Faculty	Department/ Centre	Title of the Product Patent	Grant Number of the Product Patent	Date of the Grant	Name of the Inventors	Patent Certificate
4	Dr.S.Johnson Retnaraj Samuel	Centre of Molecular and Nanomedicine Sciences	Alternative supplement for serum in animal cell culture medium	487479	12/22/2023	S. Johnson Retnaraj Samuel; Mr. R. Kamarajan; S. Jackson Durairaj; Mr. C.V. Niranjan; R.P. Rajesh; SC. Karthikeyan; Ms. G. Mijithra; A. Ananthaselvam; J. Muralidharan	https://drive.google.com/open?id=1fUcO-KS-yCNd_aWQOydc-IxtSdyhmMK
5	Dr. Sathish	Department of Chemical Engineering	Amalgamation Of Nano Chitosan And Adsorbent Application Process For The Removal Of Reactive Dye	462008	10/25/2023	Dr. S. Sathish 2.Dr. D. Prabu 3.Dr. J. Aravind Kumar 4.Dr. D. Venkatesan 5. Dr. T. Krithiga	https://drive.google.com/open?id=1S3lJckF7lb dLI-xXG0b7zUKX5VzIyLXv

S.No	Name of the Faculty	Department/ Centre	Title of the Product Patent	Grant Number of the Product Patent	Date of the Grant	Name of the Inventors	Patent Certificate
6	Dr. T SUDHAKAR	Department of Biomedical	Antitremor Device For Parkinson Diseasepatients	542806	6/25/2024	T.SUDHAKAR, DR PREMKUMAR MS SINDU DIVAKARAN	https://drive.google.com/open?id=158eB3eeHgqpMsuQCI2Njmi2i9lI5TbGJ
7	Dr. Sindu Divakaran	Department of Biomedical	Automated Alert Device for the Hearing Impaired Device	523056	3/11/2024	Sindu Divakaran, Bethanne Janney J,	https://drive.google.com/open?id=1i2Rbq4FuZu9aW_BviRGs5XtAUfB4-CK6

S.No	Name of the Faculty	Department/ Centre	Title of the Product Patent	Grant Number of the Product Patent	Date of the Grant	Name of the Inventors	Patent Certificate
8	Dr.S.Jayaprakash	Department of Electronics and Electrical Engineering	Concealed Type Fire Extinguisher With Vertical and Horizontal Movement of Nozzle with Umbrella	522139	3/8/2024	Dr.S.JAYAPRAKASH, Dr.T .KARTHIKEYAN,Dr.V .S.K .VENKATACHALAPATHY & Dr.K.VELMURUGAN	https://drive.google.com/open?id=111pxXHBq2i87-IsJU0kvmlzcBwFasby
9	DR.TR.KALAI LAKSHMI	Department of Business Administration	Customer Loyalty Card For Retailers	543099	12/2/2017	DR.TR.KALAI LAKSHMI - MBA , DR.SUGADEV	https://drive.google.com/open?id=1DxWDjrglmqdXXuLWcvSOwYv5APrNyijC

S.No	Name of the Faculty	Department/ Centre	Title of the Product Patent	Grant Number of the Product Patent	Date of the Grant	Name of the Inventors	Patent Certificate
10	Dr. J. PREMKUMAR	Department of Biomedical	Design Of Pediaritic Wrist Bot For Upper Extremities	520986	3/6/2024	Dr. T. Sudhakar, Ms. Rayshma, Ms. M. Yaswanthini	https://drive.google.com/open?id=19eEwAflMmALyMArhvMgy1sikHZH3RZL8
11	Dr. M.SANGEETHA	Department of Mechatronics Engineering	Energy Effective Versatile Moving Device For Agricultural Operations	462775	10/27/2023	M.Sangeetha, T.N.Valarmathi, Kaja Banda Nawas	https://drive.google.com/open?id=1XJPSJ135D SWULheTU5wKwoorqy WvXqG

S.No	Name of the Faculty	Department/Centre	Title of the Product Patent	Grant Number of the Product Patent	Date of the Grant	Name of the Inventors	Patent Certificate
12	Dr. A. Viji Amutha Mary	Department of Computer Science	Exclusive Acute Bags for Striplings	523018	3/11/2024	A. Viji Amutha Mary, Mercy Paul Selvan	https://drive.google.com/open?id=1flgVPZJU Rf qUf9QC2ZhsFmwkuo0 UI Te-
13	Dr. M. Manjula	Department of Physics	Iridium Ternary Alloy Composition	527683	3/15/2024	Dr. M. Sundareswari & Dr. M. Manjula	https://drive.google.com/open?id=18XemE7Y 4 en7X60tUJCf5D5ZK4kf k rXpX

S.No	Name of the Faculty	Department/ Centre	Title of the Product Patent	Grant Number of the Product Patent	Date of the Grant	Name of the Inventors	Patent Certificate
14	Dr. K. Viswanathan	Centre of Nanoscience and Nanotechnology	Method For Development Of Carbon Nanotube Based Strain SENSOR	518917	3/5/2024	K. Viswanathan	https://drive.google.com/open?id=1fN1hd--1eeBt4gU0HhN9-zso5Ae8r8AT
15	Dr. P. Grace Kanmani Prince	Department of Biomedical	Non Invasive Anytime Health care Machine(ATHM)	543695	6/28/2024	Dr. SUndar Manoharan, Dr. P. Grace Kanmani Prince, Dr. Emmanuel Rajkumar, Dr. Premalatha	https://drive.google.com/open?id=1OL2XGNwxp_RgwF2UFZ3RmaMPa3uaNtOA

S.No	Name of the Faculty	Department/Centre	Title of the Product Patent	Grant Number of the Product Patent	Date of the Grant	Name of the Inventors	Patent Certificate
16	Dr.V.K.BUPESH RAJA	Department of Automobile Engineering	Portable Solar Welding Kit	508274	2/7/2024	V.K.Bupesh Raja, Pushkaraj D Sonawane	https://drive.google.com/open?id=1P1bCMaIgcIct4m6puiLPgo1dkV4jvyae
17	Dr. M Sugadev	Department of Electronics and Electrical Engineering	Robust Vehicle Crash Detection Sos System Using Lower Earth Orbit Satellite Communication	536927	5/6/2024	G.JEGAN, L. YOGESH, T. RAVI,M SUGADEV, S VIMAL KUMAR, P. SURYA VIGNESH, P.KAVI PRIYA , I. REXLINE SHEEBA	https://drive.google.com/open?id=1KgTXc-cQvSx_SQr_rlowYIFIVJH CVjNs

S.No	Name of the Faculty	Department/Centre	Title of the Product Patent	Grant Number of the Product Patent	Date of the Grant	Name of the Inventors	Patent Certificate
18	Dr.B.Kanimozhi	Department of Mechanical Engineering	Thermal Energy Storage Systems Using Pcm	493689	1/3/2024	Dr.B.Kanimozhi	https://drive.google.com/open?id=1rll1lIrfuGn b9vRadcZjsjg_7JlMOaGw
19	Dr.SHYJU T S	Centre of Nanoscience and Nanotechnology	Tunable Optoelectronic Properties And Highly Efficient P- Type Metal Nitride By Barium (Ba) Doping	521238	3/7/2024	Thankaraj Salammal Shyju	https://drive.google.com/open?id=1QYf0uHQFt ORPU3hochSrvro3CaGw USxu

S.No	Name of the Faculty	Department/ Centre	Title of the Product Patent	Grant Number of the Product Patent	Date of the Grant	Name of the Inventors	Patent Certificate
20	Dr G Nagarajan	Department of Computer Science	WEATHER MONITORING AND EARLY WARNING SYSTEM USING IOT ENABLED DEVICES AND 5G WIRELESS COMMUNICATION NETWORK	2.02024E+11	06-02-2024	Dr Nagarajan G,Dr Aroul Canessane R,Dr Prayla shyry S,,Dr RONALD DONI A	https://drive.google.com/open?id=1vkncNmwyJzj0Nc6dm0VhEzxZCdB0oLw9
21	Dr. T.Sasipraba	Centre of Nanoscience and Nanotechnology	ERGONOMICAL DRIVER SEAT FOR SPINAL PAIN RELIEF	531660	03/04/2024	Mr. K. Nirnai Balaji Mrs.P.Sivashankari Mr. Kaja Bantha Navas Raja Mohamed Dr. S. Prakash Dr.A. Krishnamoorthy	https://drive.google.com/open?id=1vkncNmwyJzj0Nc6d0VhEzxZCdB0oLw9

S.No	Name of the Faculty	Department/ Centre	Title of the Product Patent	Grant Number of the Product Patent	Date of the Grant	Name of the Inventors	Patent Certificate
22	Dr. G. MURUGADOS S	Centre of Nanoscience and Nanotechnology	A formulation for the synthesis of the ternary nanocomposite CeO ₂ -CuO-Cu(OH) ₂	2.02023E+11	19-10-2023	Govindasamy Murugados, Sathyabama Institute of Science and Technology, Subramani Meyvel, Mathivanan Parthibavarman, G. Mahalakshmi, Rajasekar Mani, Sunitha Salla	https://drive.google.com/open?id=1KlokWmQ S jV-0BHSRTcMvcpmh5-gXLyyp
23	DR.JAYSHREE NELLORE	Department of Biotechnology	A Papaya-Latex-based nano-agent carrier	2023105347	16-10-2023	Ganugula, Samhita, Chennai, Tamil Nadu, IN Nellore, Jayshree, Chennai, Tamil Nadu, IN	https://drive.google.com/open?id=1qzCSUme4Ft3hWMUQh2IGxOTko3eLerkB

S.No	Name of the Faculty	Department/ Centre	Title of the Product Patent	Grant Number of the Product Patent	Date of the Grant	Name of the Inventors	Patent Certificate
24	Dr. T.Sasipraba	Centre of Nanoscience and Nanotechnology	ENERGY EFFECTIVE VERSATILE MOVING DEVICE FOR AGRICULTURAL OPERATIONS	462775	27/10/2023	Dr.T.N.Valarmathi .Ms.M.Sangeetha Mr.Kaja Bantha Navas Raja Mohamed Mr.S.Lakshmi Sankar Mr.M.Purushothaman Dr.S.Prakash Mr.Danda Parthasarathy Reddy Mr.Ajay . J Mr.Abdul Maher Khaliq Mr.Arnab Roy Mr.Amarjeet Singh Dr.T.Sasipraba	https://drive.google.com/open?id=1KIokWmQ SjV-0BH\SRTcMvcpmh5-gXLyyp

17.13 Funded Fellowships

S. N O	Name of the Faculty	Department/ Centre	Name of the Funded Fellowships	Title of the Fellowship	Funding Agencies	Amount Received (Rs.)	Duration of the Fellowship	Proof of the Sanctioned Order
1	Dr. Sathish Kumar Ramachandran	Centre of Waste Management	INSA Visiting Scientist Programme	SURFACE MODIFICATION OF NANOCOMPOSITE PROTON EXCHANGE MEMBRANE WATER ELECTROLYSER BY FUNCTIONALIZED CARBON NANOMATERIAL FOR HYDROGEN PRODUCTION	INDIAN NATIONAL SCIENCE ACADEMY	200000	June 2024-May 2025	https://drive.google.com/open?id=1Mix6lzLtIAL-UmPIOaGFpPQIqLEO6xSs

2	Dr. A. Madan Kumar	Centre of Molecular and Nanomedicine Sciences	Indian National Science Academy (INSA) Fellowship	INSA Visiting Scientist Fellowship	Indian National Science Academy (INSA) - India	200000	February 2024 - January 2025	https://drive.google.com/open?id=1QvM-Y71HCVt2PRW7WDoEVH2GAwckDOEA
3	Dr.J.Baalamurugan	Centre of Ocean Reserach	TNSCST Young Scientist Fellowship	Young Scientist Fellowship	Tamil Nadu State Council for Science and Technology (TNSCST), Govt. of Tamil Nadu	23100	2 months	https://drive.google.com/open?id=1wb_yuxJoBWxATTJCEAk9K9jfoOWB26O9
4	Dr.M.S.Godwin Premi	Department of Computer Science and Engineering	ASEAN-INDIA Research Training Fellowship	Traffic sign recognition system using convolutional neural network	DST	415000	6 months	https://drive.google.com/open?id=1qpTXS5Vv6MxgdHD1LaqJ6caVZylPhP3B

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**SUSTAINABLE
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The logo for the United Nations Sustainable Development Goals, featuring a circular arrangement of 17 colored segments representing the goals, positioned between the words 'GO' and 'ALS' in the word 'GOALS'.