3rd International Conference on Higher Education Institute Challenges Solutions for Sustainable Development Goals 2024

SDG 14 Report - Life below water

Organized by the Department of Biochemistry and Department of Biotechnology, FSH, Centre for Research in Environment, Sustainability Advocacy and Climate CHange (REACH), Directorate of Research, Directorate of Research, SRMIST
In Association with
Department of Clinical Nutrition and Dietetics,
SRM Medical College Hospital and Research Centre.

3RD INTERNATIONAL CONFERENCE

INTERNATIONAL CONFERENCE ON ADVANCEMENTS IN UNDERSTANDING LIFE BELOW THE SURFACE THROUGH AQUATIC EXPLORATIONS

Organized by

Department of Biochemistry Faculty of Science and Humanities SRMIST
Department of Biotechnology, Faculty of Science and Humanities SRMIST
Centre for Research in Environment, Sustainability Advocacy and Climate CHange (REACH), Directorate of Research, SRMIST

In Association with

Department of Clinical Nutrition and Dietetics, SRM Medical College Hospital and Research Centre.

03 - 05 DECEMBER 2024

SDG GOALS 14: LIFE BELOW WATER

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ABOUT THE CONFERENCE

Oceans and marine ecosystems are essential to sustaining economies, societies, and the environment. However, the relentless overexploitation of marine resources has resulted in widespread degradation. Current conservation efforts, including safeguarding key marine ecosystems, supporting small-scale fisheries, and investing in oceanic research, fall significantly short of addressing the critical need for ocean conservation. The health of the oceans is intricately tied to human well-being, as highlighted by UNESCO, which underscores the ocean's potential to combat various human diseases. Additionally, the ocean's vast biodiversity offers promising opportunities for pharmaceutical discoveries.

Marine fisheries are crucial to global food security and livelihoods, providing employment for 57 million people worldwide and serving as a primary protein source for over 50% of the population in the least developed countries. International cooperation is essential for ensuring sustainability in the world's oceans and deep-sea regions. Protecting fragile marine habitats requires the establishment of well-managed, comprehensive networks of government-protected areas to conserve biodiversity and secure the future of the fishing industry.

The SRMIST conference aims to explore these themes in depth, providing a platform for international collaboration and action toward sustainable ocean management.

NAAC A++ | Category I with 12B Status | (2024) 12th Ranked University | (2024) 11th Rank - Architecture | (2025) World Ranking one among 46 Indian Universities | (2024) World Ranking one among 91 Indian Universities | QS I-GAUGE PLATINUM + Architecture (2024-26) | VERY GOOD QS 4 Star Rated Globally | (2024) World Ranking Ranked 5-7 in Indian Universities

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03 - 05 DECEMBER 2024 SDG GOALS 14: LIFE BELOW WATER

Name of the Event		**3rd INTERNATIONAL CONFERENCE 2025-SDG 14 Life below water**	
Program Date	03/12/2024 - 05/12/2024	**Program Time**	8.30 A.M – 5.00 P.M
Venue		Mini hall 1, Dr. T.P.Ganesan Auditorium, SRMIST	
No. of Registration		111	

1. Introduction

The **3rd International Conference on Advancements in Understanding Life Below the Surface Through Aquatic Explorations** was organized by the **Department of Biochemistry and the Department of Biotechnology, Faculty of Science and Humanities, SRMIST**, in association with the **Centre for Research in Environment, Sustainability Advocacy and Climate Change (REACH), Directorate of Research, SRMIST, and the Department of Clinical Nutrition and Dietetics, SRM Medical College Hospital and Research Centre**. Held from **December 3rd to 5th, 2024**, this prestigious event brought together researchers, academicians, and industry experts to explore pressing issues related to **SDG 14: Life Below Water**.

The conference aimed to address the critical challenges of **marine ecosystem degradation, overexploitation of resources, sustainable fisheries management, and the vast potential of marine biodiversity in scientific advancements**. With **111 registered participants** from

renowned institutions, the event fostered interdisciplinary discussions spanning **biochemistry, clinical nutrition, genetic engineering, chemical oceanography, and aquatic environment management**.

Featuring **keynote sessions by eminent scientists and professionals**, the conference delved into **marine biotechnology innovations, nanotechnology applications in ocean sustainability, and the impact of nutrition and endocrinology on marine-based health solutions**. Through **oral, paper, and poster presentations in both online and offline formats**, participants had the opportunity to showcase their research, contributing to the broader mission of sustainable marine conservation.

This report highlights the key proceedings, discussions, and outcomes of the conference, emphasizing its role in **promoting research, fostering collaborations, and advancing solutions for the sustainable management of marine resources**.

2. **Key focuses:**

- The overexploitation of marine resources leads to environmental degradation.
- Conservation efforts include marine ecosystem protection, small-scale fisheries support, and increased investments in oceanic research.
- The crucial link between ocean health and human well-being, with the potential for marine biodiversity to contribute to pharmaceutical discoveries.
- The role of marine fisheries in food security, employing 57 million people worldwide and serving as a primary protein source for over 50% of the population in the least developed countries.
- The importance of international collaboration for sustainable ocean management and marine biodiversity protection.

3. **Themes:**

- Stem Cells: Revolutionizing Healing and Regeneration
- Beneath the Waves: Unveiling the Secrets of Ocean Life
- Nanotechnology: Engineering the Next Frontier of Innovation
- Revolutionizing Aquaculture: Science-Driven Advances in Fish Nutrition
- Innovative Bioprocesses: Pioneering the Future of Production and Sustainability

- Aquaculture: Cultivating the Future of Sustainable Seafood Production

4. Event structure and participation

The SDG 14 conference witnessed enthusiastic participation, with around 111 participants registering from esteemed institutions such as CSIR - National Institute of Oceanography, Goa, Kerala University of Fisheries and Ocean Studies, National Centre for Coastal Research (NCCR), SRM Institute of Science and Technology, Marwadi University, SRM Medical College, Sri Sairam Institute of Technology, and Hospital and Research Center Kathankulathur Potheri. Participants from diverse disciplines, including Clinical Nutrition and Dietetics, Medical Biochemistry, Biochemistry, Chemical Oceanography Division, Genetic Engineering, and Aquatic Environment Management, showcased their research. The event featured oral, paper, and poster presentations conducted on both online and offline platforms. Outstanding contributions were recognized with awards, ensuring an engaging and insightful experience for all.

5. Awards and winners

Oral Presentation		
Prize	Name	Department, College
First Prize	Karthikaiselvi L	Biochemistry, SRMIST
Second Prize	Anu Thomas	Biochemistry, SRMIST
Third Prize	Ramya Ranjan Nayak	Biochemistry, SRMIST
First Prize	Nija R J	Biochemistry, SRMIST
Second Prize	Aishwarya S	Biochemistry, SRMIST

Third Prize	Naveen Palani	Physics and Nanotechnology, SRMIST
Paper presentation (Undergraduates)		
First Prize	Tejaswini K M	Clinical Nutrition
Second Prize	G Sai Kavya Shree	Clinical Nutrition
Third Prize	P R Vethavikasini	Clinical Nutrition
Paper presentations (Postgraduates)		
First Prize	Keerthana A	Clinical Nutrition
Second Prize	Balaji R S	Clinical Nutrition
Third Prize	Ayeesha Sidikka E	Clinical Nutrition


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6. Speakers

Report on Keynote Speakers at the 3rd International Conference on Advancements in Understanding Life Below the Surface through Aquatic Explorations (SDG 2025)

The 3rd International Conference on Advancements in Understanding Life Below the Surface through Aquatic Explorations, held from December 3rd to 5th, 2024, was a collaborative effort by the Department of Biochemistry and Department of Biotechnology, Faculty of Science and Humanities, SRMIST, along with the Centre for Research in Environment, Sustainability Advocacy, and Climate Change (REACH), Directorate of Research, SRMIST, in association with the Department of Clinical Nutrition and Dietetics, SRM Medical College Hospital and Research Centre. The conference revolved around SDG Goal 14: Life Below Water, focusing on sustainable marine and aquatic ecosystems, cutting-edge biotechnological advancements, and innovative research in aquaculture, nanotechnology, and regenerative medicine.

7. Keynote Speakers and Their Contributions

7.1 Dr. Raghu Babu

(Technical Director, Acadicell Innovations Pvt Ltd, Crescent Innovation and Incubation Council, Chennai)

Theme: Stem Cells – Revolutionizing Healing and Regeneration

Dr. Raghu Babu delivered an engaging keynote on the transformative potential of stem cell research in medical and regenerative therapies. He emphasized how stem cells are paving the way for tissue engineering, organ regeneration, and personalized medicine, significantly improving healthcare outcomes. His talk also explored bioprocess innovations in stem cell cultivation and therapeutic applications, highlighting their role in sustainable and ethical medical advancements. He discussed emerging trends in stem cell-based therapies for chronic diseases, regenerative treatments for neurodegenerative disorders, and advancements in wound healing and orthopedic medicine.

7.2 Dr. D. Ravi Shankaran

(Professor, National Centre for Nanosciences and Nanotechnology, University of Madras, Chennai)

Theme: Nanotechnology – Engineering the Next Frontier of Innovation

Dr. Ravi Shankaran provided deep insights into the role of nanotechnology in revolutionizing various scientific fields, particularly environmental sustainability, marine biology, and biomedical sciences. His talk highlighted the use of nano-based sensors and biosensors for detecting marine pollutants, microplastics, and harmful algal blooms. He also emphasized the integration of nanomaterials in sustainable aquaculture, including nanoparticles for disease detection and targeted drug delivery in aquatic organisms. His presentation reinforced how nanotechnology is driving innovations in marine conservation, medical diagnostics, and sustainable industrial processes.

7.3 Dr. S. Renganathan

(Professor, Department of Biotechnology, Anna University, Chennai)

Theme: Innovative Bioprocesses – Pioneering the Future of Production and Sustainability

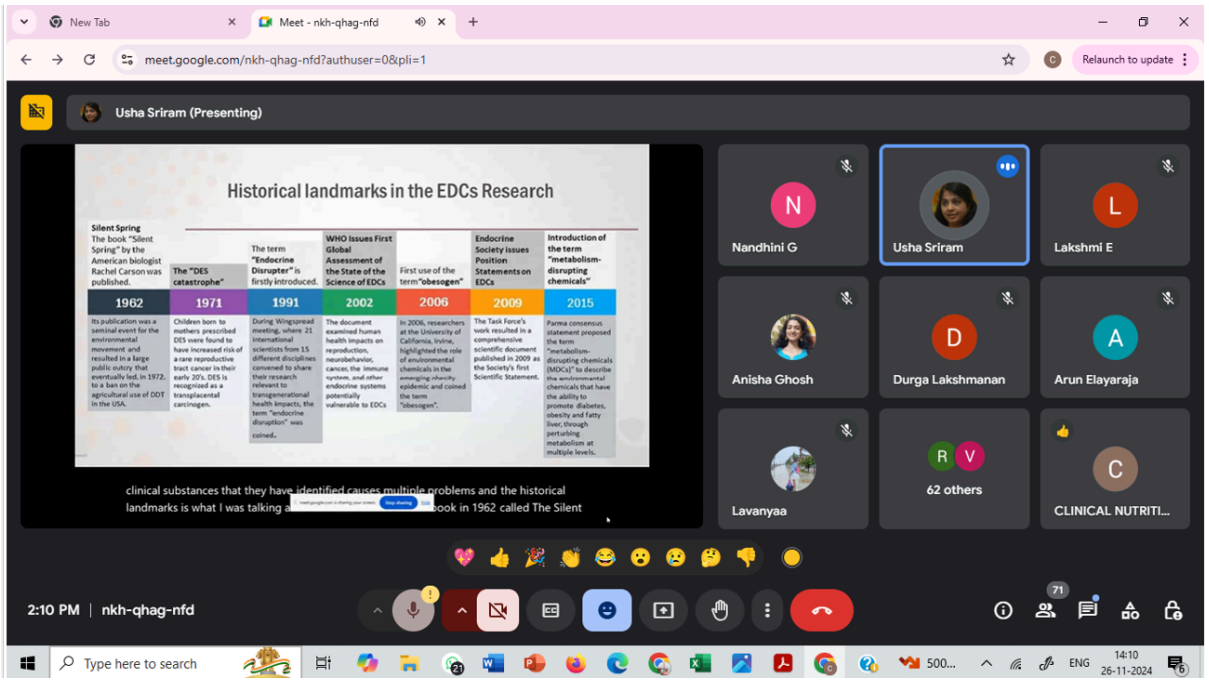
Dr. Renganathan's address focused on bioprocess engineering and its applications in achieving sustainable production systems, particularly in the biopharmaceutical and aquaculture industries. He detailed novel bioprocess techniques that optimize the production of marine bioactive compounds, probiotics for aquaculture, and bioengineered feed additives. He also discussed the advancements in biotechnological waste management systems that help mitigate ocean pollution, ensuring sustainable resource utilization and minimal environmental impact. His talk stressed the importance of integrating bioprocessing with circular economy principles to enhance sustainability.

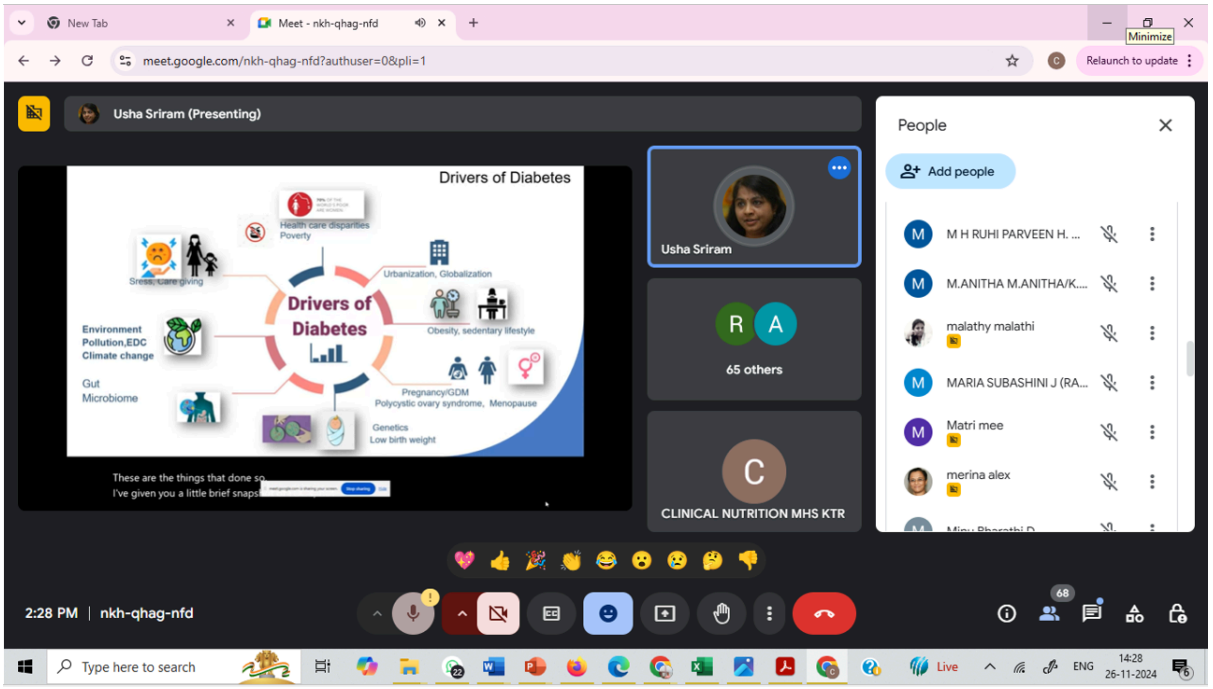
7.4 Dr. Usha Sriram

(Physician, Endocrinology and Diabetes Specialist, ACEER Clinic, Chennai)

Theme: Beneath the Waves – Unveiling the Secrets of Ocean Life

Dr. Usha Sriram focused on the intersection of marine-derived compounds and human health, exploring the potential of marine bioresources in developing new treatments for metabolic and endocrine disorders. She highlighted research on marine-based bioactive peptides, omega-3 fatty acids, and algae-derived pharmaceuticals for managing diabetes, obesity, and cardiovascular diseases. She emphasized the need for sustainable marine biodiversity conservation while harnessing its potential for medical applications.





7.5 Dr. R. Jeya Shakila

(ACEER Clinic, Chennai & Dr. M.G.R Fisheries College and Research Institute)

Theme: Revolutionizing Aquaculture – Science-Driven Advances in Fish Nutrition

Dr. Jeya Shakila's keynote centered on sustainable aquaculture practices, particularly the advancements in fish nutrition and feed formulations. She presented groundbreaking research on nutrient-enriched, eco-friendly aquafeeds, discussing how probiotics, prebiotics, and marine-sourced bioactive compounds enhance fish health and productivity. She also addressed the significance of sustainable fisheries management, advocating for policies that promote environmentally friendly aquaculture to combat overfishing and maintain ecological balance.

8. Conclusions

The 3rd International Conference on Advancements in Understanding Life Below the Surface Through Aquatic Explorations, organized by SRMIST in collaboration with esteemed research institutions, served as an impactful platform for advancing discussions on SDG 14: Life Below Water. With around 111 participants from various institutions and disciplines, the conference facilitated meaningful exchanges on marine conservation, sustainable fisheries, and oceanic research. The event featured insightful keynote addresses by distinguished experts on cutting-edge topics such as marine biotechnology innovations, nanoscience

applications in ocean sustainability, advancements in biotechnology, and the role of endocrinology and nutritional sciences in marine-based health solutions. These discussions underscored the interdisciplinary nature of ocean conservation and its vital link to human well-being.

With engaging oral, paper, and poster presentations across online and offline platforms, the conference allowed researchers to showcase their work in diverse fields, including Clinical Nutrition and Dietetics, Biochemistry, Genetic Engineering, and Chemical Oceanography. Recognizing outstanding contributions, the event emphasized the need for sustainable ocean management, responsible marine resource utilization, and technological advancements in marine research. The outcomes of this conference will contribute significantly to future research collaborations and policy recommendations aimed at preserving marine ecosystems. By fostering international cooperation and scientific advancements, the conference reinforced the collective responsibility to protect our oceans for future generations.