
SUSTAINABLE
DEVELOPMENT
GOALS


17
PARTNERSHIPS
FOR THE GOALS

17.2.3. Participation in International Collaboration on Gathering or Measuring Data for the SDGs

Yes. St. Peter's Institute of Higher Education and Research (SPIHER) actively engages in international collaborations focused on collecting, analyzing, and utilizing data to support the monitoring and achievement of the Sustainable Development Goals (SDGs). Through global research partnerships, joint data initiatives, and academic exchange programs, SPIHER contributes to international efforts to generate reliable, evidence-based insights that guide sustainable development strategies.

International Research Partnerships

SPIHER collaborates with prominent international research institutions, UN agencies, and development organizations to collect and analyze data related to multiple SDGs. These partnerships enable SPIHER to participate in large-scale, cross-border data projects that measure key indicators of sustainability, social inclusion, and environmental stewardship.

The university's collaborations with organizations such as the **United Nations Development Programme (UNDP)**, **UNESCO**, and the **World Bank** focus on gathering data related to **education**, **gender equality**, **poverty reduction**, and **climate change adaptation**.

By engaging in these global networks, SPIHER ensures that data gathered from local contexts aligns with international standards and remains comparable across regions. This global approach promotes the sharing of best practices in data collection and analysis, ensuring that the information produced is accurate, reliable, and meaningful for policymakers and researchers worldwide.

Data-Driven SDG Assessments

SPIHER plays an active role in data-driven research that monitors progress toward key SDGs. The university's research teams conduct analyses in critical areas such as **sustainable energy**, **water resource management**, and **public health**.

For example, SPIHER researchers have contributed to studies examining **water use efficiency**, **renewable energy adoption**, and the **impacts of climate change on agriculture**—areas directly aligned with SDGs **6 (Clean Water and Sanitation)**, **7 (Affordable and Clean Energy)**, and **13 (Climate Action)**.

In collaboration with international networks such as the **Global Partnership for Sustainable Development Data (GPSDD)**, SPIHER supports the development of robust data systems and open-access platforms that track SDG indicators. These initiatives enhance transparency and enable policymakers, academics, and civil society to make informed, evidence-based decisions.

Capacity Building and Training

SPIHER is also committed to strengthening global and local capacities in data management and SDG monitoring. Through training programs, workshops, and collaborative exchanges, the university equips researchers, students, and partner organizations with advanced skills in **data collection**, **statistical analysis**, and **impact measurement**.

These initiatives enhance the ability of partner institutions and communities to collect high-quality data and evaluate progress toward the SDGs effectively. By promoting data literacy and capacity building, SPIHER contributes to global efforts to improve the quality, consistency, and utility of sustainability data.

Conclusion

Through its extensive international collaborations, SPIHER plays a vital role in global efforts to gather, measure, and analyze data for the Sustainable Development Goals. By contributing expertise in research, data assessment, and capacity building, SPIHER strengthens the global data ecosystem and supports the creation of evidence-based policies that advance sustainable development.

The university remains deeply committed to expanding its partnerships with global institutions and local organizations alike—ensuring that accurate data continues to inform impactful, data-driven solutions for achieving the SDGs worldwide.

International Collaboration in Research

Dhivya M, Karthi S, Amala K, Vasantha-Srinivasan P, Han YS, Al Obaid S, Senthil-Nathan , Park KB. Phytometabolites from coral jasmine flower extracts: Toxic effects on *Spodoptera litura* and enzyme inhibition in nontarget earthworm *Eisenia fetida* as an alternative approach. Environmental Research. 2024 Jul 1;252:118896.

TOXIN REVIEWS
https://doi.org/10.1080/15569543.2024.2379299

Taylor & Francis

REVIEW ARTICLE

Phytochemical strategies for combating *Spodoptera litura* (Fab.): a review of botanicals and their metabolites

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[a]Department of Applied Biology, Institute of Environmentally-Friendly Agriculture (IEFA), College of Agriculture and Life Sciences, Chonnam National University, Gwangju, Republic of Korea; [b]Department of Entomology, College of Agriculture, Food and Environment, University of Kentucky, Lexington, KY, USA; [c]Division of Biopesticides and Environmental Toxicology, Sir Paramakalyani Centre for Excellence in Environmental Sciences, Manonmaniam Sundaranar University, Tirunelveli, Tamil Nadu, India; [d]Research & Development Center, Invirustech Co., Inc., Gwangju, Republic of Korea; [e]Department of Bio-Chemistry, Saveetha Medical College and Hospital, Saveetha Institute of Medical and Technical Sciences (SIMATS), Chennai, India; [f]Department of Biotechnology, Faculty of Science and Humanities, SRM Institute of Science and Technology, Tamil Nadu, India; [g]Department of Biotechnology, School of Life Sciences, St. Peter's Institute of Higher Education and Research, Chennai, Tamil Nadu, India; [h]Post-Graduation Program in Conservation of Cerrado Natural Resources, Goiano Federal Institute, Urutaí, GO, Brazil; Post-Graduation Program in Ecology, Conservation, and Biodiversity, Federal University of Uberlândia, Uberlândia, MG, Brazil; [i]Post-Graduation Program in Biotechnology and Biodiversity, Federal University of Goiás, Goiânia, GO, Brazil

ABSTRACT

The adverse effects of the lepidopteran pest, *Spodoptera litura* (Fab.) on crops, result in significant economic losses due to decreased crop productivity and the cost of pest control measures. Using synthetic chemicals to manage this polyphagous pest can adversely impact the environment and contribute to the development of pesticide resistance in other insects. Integrated pest management strategies, including biological control agents, are often recommended to manage *S. litura* infestations in a more sustainable and environmentally friendly manner. Compared with synthetic chemicals, herbal pesticides are generally considered nontoxic for the environment. They often have lower toxicity toward non-target organisms, thus reducing the risk of harming beneficial animals and other wildlife. Botanicals include a variety of phytocompounds that can potentially help in managing polyphagous pests, such as *S. litura*. Improving herbal-based nano-pesticides (Hb-Np) that can serve as carriers for bioactive compounds would enable their controlled and targeted release. Therefore, the present review aims to highlight the impact of different resistance mechanisms employed by the lepidopteran larvae against synthetic chemicals and efficacy of herbal extracts, essential oils, and herbal-based nano-formulations in targeting the polyphagous pest, *S. litura*, and the key challenges associated with sustainable pest management in the agriculture sector.

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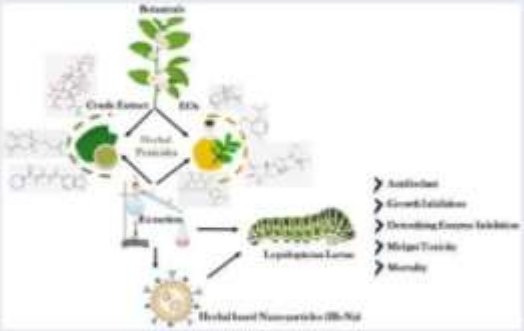
Botanicals; essential oils; chemical resistance; phytocompounds; mode of action; green pesticides

GRAPHICAL ABSTRACT



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Supplemental data for this article can be accessed online at https://doi.org/10.1080/15569543.2024.2379299.

This research brings together experts from multiple countries and institutions, demonstrating the power of cross-border collaboration in addressing global challenges related to eco-friendly pest management. By exploring plant-based alternatives to chemical pesticides, the study contributes to safer agricultural practices and environmental protection. The collective expertise of international authors enhances scientific quality, promotes knowledge exchange, and supports the global agenda of sustainability through cooperative research networks.

International collaboration through MOU

SPIHER has strengthened its global engagement and research outreach through an international Memorandum of Understanding (MoU) with the Penang State Government, Malaysia, and the Audacious Dreams Foundation. This strategic collaboration aims to promote cross-border partnerships in education, research, youth development, and sustainable community initiatives. Through this MoU, SPIHER gains access to international platforms that support knowledge exchange, student and faculty mobility, collaborative research programmes, and joint capacity-building workshops.

The partnership fosters a vibrant ecosystem for addressing shared global challenges such as sustainable development, inclusive education, and socio-economic empowerment. By working with international governmental and non-governmental entities, SPIHER enhances its commitment to SDG 17.2.3, which emphasises strengthening multi-stakeholder cooperation to improve scientific research, technological innovation, and institutional capacity. This collaboration not only expands SPIHER's global footprint but also creates meaningful avenues for innovation-driven projects that benefit both local and international communities. Through this MoU, SPIHER reaffirms its dedication to building impactful global networks that contribute to sustainable development and long-term societal transformation.

STATE GOVERNMENT OF PENANG MALAYSIA

St. PETER'S INSTITUTE OF HIGHER EDUCATION AND RESEARCH

AUDACIOUS DREAMS FOUNDATION

International Memorandum of Understanding

Collaboration

This Memorandum of Understanding (MoU) is entered into on this [30.11.2024] between the **Penang State Government - Malaysia, Audacious Dreams Foundation (ADF) & St Peter's Institute of Higher Education and Research, Chennai.**

Recognizing the shared commitment to fostering sustainable development, innovation and education. The parties agree to collaborate on initiatives that leverage academic and governmental expertise to benefit both the State of Penang and the Institution

Objectives of the Collaboration

- Promoting knowledge exchange and research collaboration in areas such as sustainable development, human capital development, and technology innovation.
- Facilitating international academic programs, including student and faculty exchanges, internships, and global immersion initiatives.
- Establishing centres of excellence focused on innovation, entrepreneurship, and sustainability.
- Encouraging joint conferences, workshops and seminars to address regional and global challenges.
- Supporting skill development and capacity building for youth and professionals.

Hon JAGDEEP SINGH DEO
Deputy Chief Minister II
State Minister of Human Capital Development,
Science and Technology
The State of Penang, Malaysia

Dr L Mahesh Kumar
Registrar
St Peter's Institute of
Higher Education and Research
Chennai

The MOU has been facilitated by Audacious Dreams Foundation & Commonwealth Youth Networks which will further act as focal point between the parties

Dinesh Gajendran, B.Sc, Ecv, DSM, M.A, M.A, MBA(PhD),
Special Advisor- @ Commonwealth Students Association
Catalyst & Executive Director, Audacious Dreams Foundation – India
Former Indian Govt Nominee- Chairperson@ Commonwealth Youth Council

Letter of Intent

Collaboration

This Letter of Intent (LOI) is entered into on this day [30.11.2024] by and between the **Commonwealth Youth Council (CYC) , Commonwealth Students Association (CSA), Audacious Dreams Foundation & St Peter's Institute of Higher Education and Research, Chennai.**

This collaboration symbolizes a shared commitment to advancing sustainable development, innovation, and academic excellence, with a particular focus on youth-led initiatives and international partnerships.

Objectives of the Collaboration

- Encouraging Collaboration with Commonwealth members (56 countries) including academia, Govt, industry and inter govt networks
- Promoting All Commonwealth Associated Scholarships among Member Institutions.
- Launching /Build affiliations with Commonwealth Youth Networks and Initiatives and clubs in the institution
- Promoting knowledge exchange and research collaboration in areas such as sustainable development and youth empowerment.
- Facilitating international academic programs, including student and faculty exchanges, internships, and global immersion initiatives.
- Establishing centers of excellence focused on Global Understanding for Sustainable Development

Gurdit Singh Vohra
Vice Chairperson - Partnership and Resources
Commonwealth Youth Council

Dr L Mahesh Kumar
Registrar
St Peter's Institute of Higher Education and Research
Chennai

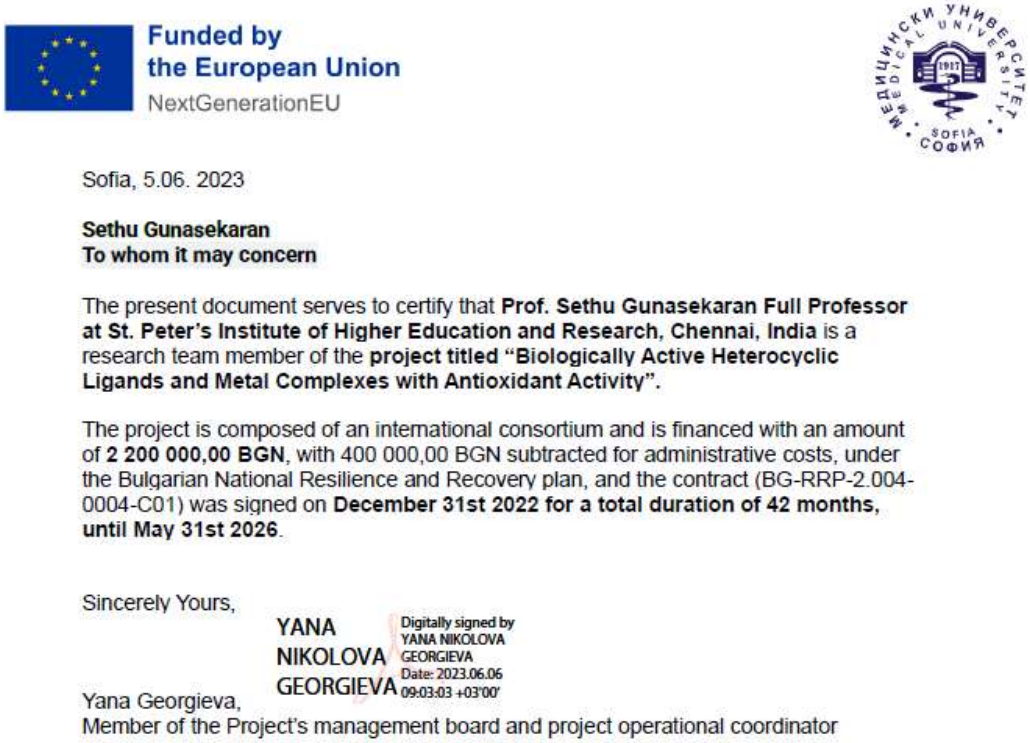
The LOI has been facilitated by Audacious Dreams Foundation & Commonwealth Youth Networks which will further act as focal point between the parties

Dinesh Gajendran, B.Sc, Ecv, DSM, M.A, M.A, MBA(PhD)
Catalyst & Executive Director, Audacious Dreams Foundation – India
Mentor & Advisor - Partnership and Resources Committee &
Former Indian Govt Nominee- @ Commonwealth Youth Council,
Asia Regional Special Advisor @ Commonwealth Students Association

Certificate of participation and presentation in International symposium

SPIHER demonstrated its commitment to global academic collaboration and knowledge-sharing through active participation and presentation at the International Symposium on **"One Health, One World"** held in Malaysia. This prestigious event brought together experts, researchers, and policymakers from multiple nations to discuss integrated approaches that connect human, animal, and environmental health. SPIHER's presentation contributed valuable perspectives on holistic health frameworks and sustainable solutions addressing global health challenges. Participation in this symposium strengthened SPIHER's international research presence and enabled meaningful engagement with global networks working toward health security, environmental resilience, and sustainable development. Through such international academic engagements, SPIHER continues to foster global partnerships that support research excellence and advance shared goals for a healthier and more sustainable world.

International collaboration for research project



Funded by
the European Union
NextGenerationEU

Sofia, 5.06. 2023

Sethu Gunasekaran
To whom it may concern

The present document serves to certify that **Prof. Sethu Gunasekaran Full Professor at St. Peter's Institute of Higher Education and Research, Chennai, India** is a research team member of the **project titled "Biologically Active Heterocyclic Ligands and Metal Complexes with Antioxidant Activity".**

The project is composed of an international consortium and is financed with an amount of **2 200 000,00 BGN**, with 400 000,00 BGN subtracted for administrative costs, under the Bulgarian National Resilience and Recovery plan, and the contract (BG-RRP-2.004-0004-C01) was signed on **December 31st 2022 for a total duration of 42 months, until May 31st 2026**.

Sincerely Yours,

YANA NIKOLOVA GEORGIEVA
Digitally signed by YANA NIKOLOVA GEORGIEVA
Date: 2023.06.06 09:03:03 +03'00'

Yana Georgieva,
Member of the Project's management board and project operational coordinator

The international collaborative research project on *Biologically active heterocyclic ligands and metal complexes with antioxidant activity* exemplifies SPIHER's strong commitment to **SDG 17.2.3**, which highlights cross-border academic partnerships and shared scientific advancement.

Prof. **S. Gunasekaran**, serving as a core member of the research team, plays a pivotal role in strengthening this global collaboration by contributing expertise in molecular spectroscopy, structural analysis, and bioactive compound characterization. His involvement enhances the scientific rigor of the project while fostering meaningful exchanges of knowledge, methodologies, and research infrastructure between partnering institutions.

This collaborative effort not only advances the understanding of novel heterocyclic ligands and their metal complexes but also supports the development of innovative antioxidant agents with potential biomedical applications. The partnership enables joint publications, resource sharing, and the creation of an international research network, thereby expanding SPIHER's global academic footprint.

International Collaboration in Conference

Naive Bayes-based Autonomous Illumination System for Urban Green Spaces with Cloud Assistance | IEEE Conference Publication | IEEE Xplore

Naive Bayes-based Autonomous Illumination System for Urban Green Spaces with Cloud Assistance

M Tamilselvi; A. Neelima; J. Jegan Amarnath; K. Lalitha; E. N. Ganesh; Thamizhamuthu R

DOI: https://doi.org/10.1109/ICSES63445.2024.10763349

SPIHER showcased its commitment to global academic collaboration through the presentation of the research work titled “Naive Bayes-based Autonomous Illumination System for Urban Green Spaces with Cloud Assistance” at an IEEE International Conference held in Nepal. This participation underscores SPIHER’s dedication to strengthening international research networks and promoting cross-border knowledge exchange. The research introduces an innovative model that integrates Naive Bayes machine learning algorithms with cloud-based infrastructure to develop an intelligent illumination system for urban green spaces. This system supports sustainable urban design by optimizing energy usage, improving environmental monitoring, and enhancing public safety through automated, data-driven lighting controls.

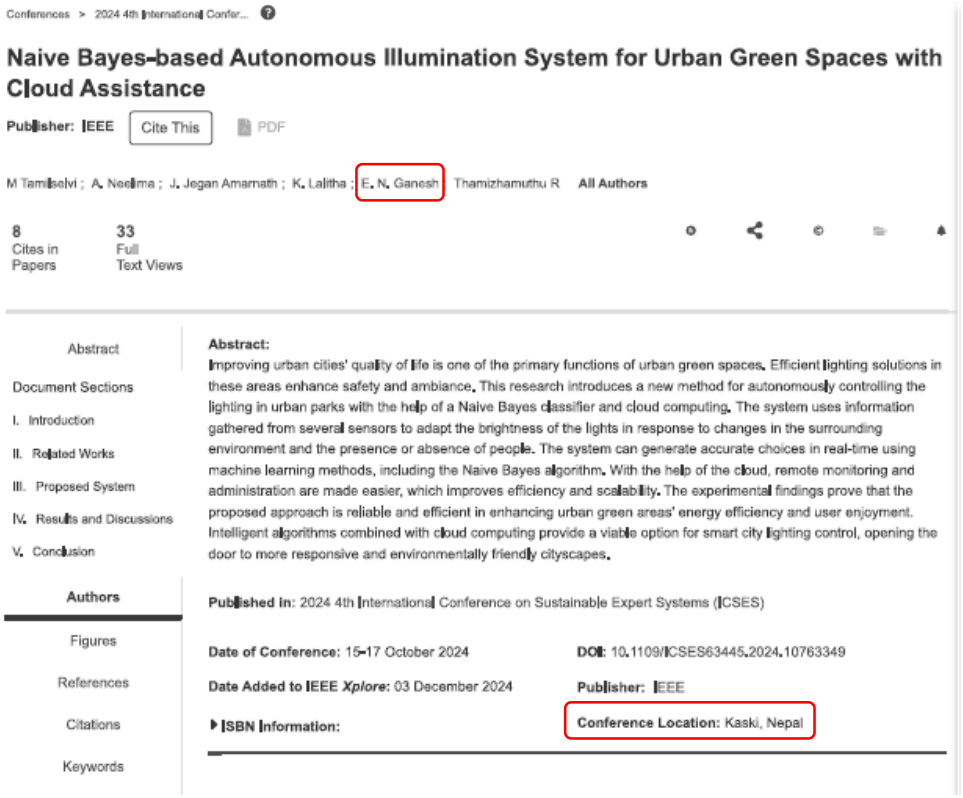
By presenting at this international platform, SPIHER’s researchers engaged with global experts, contributed to international dialogues on smart city development, and built meaningful collaborations. Such participation directly reflects SDG 17, which focuses on active involvement in international academic events to enrich institutional research capabilities and foster global partnerships.

Abstract:

Improving urban cities' quality of life is one of the primary functions of urban green spaces. Efficient lighting solutions in these areas enhance safety and ambiance. This research introduces a new method for autonomously controlling the lighting in urban parks with the help of a Naive Bayes classifier and cloud computing. The system uses information gathered from several sensors to adapt the brightness of the lights in response to changes in the surrounding environment and the presence or absence of people. The system can generate accurate choices in real-time using machine learning methods, including the Naive Bayes algorithm. With the help of the cloud, remote monitoring and administration are made easier, which improves efficiency and scalability. The experimental findings prove that the proposed approach is reliable and efficient in enhancing urban green areas' energy efficiency and user enjoyment.

Intelligent algorithms combined with cloud computing provide a viable option for smart city lighting control, opening the door to more responsive and environmentally friendly cityscapes.

Publication with authors affiliation



Conferences > 2024 4th International Confer...

Naive Bayes-based Autonomous Illumination System for Urban Green Spaces with Cloud Assistance

Publisher: IEEE | Cite This | PDF

M Tamilselvi ; A. Neelima ; J. Jegan Amarnath ; K. Lalitha ; E. N. Ganesh ; Thamizhamuthu R **All Authors**

8 Cites in Papers

33 Full Text Views

Abstract

Document Sections

I. Introduction

II. Related Works

III. Proposed System

IV. Results and Discussions

V. Conclusion

Authors

Figures

References

Citations

Keywords

Abstract:
Improving urban cities' quality of life is one of the primary functions of urban green spaces. Efficient lighting solutions in these areas enhance safety and ambiance. This research introduces a new method for autonomously controlling the lighting in urban parks with the help of a Naive Bayes classifier and cloud computing. The system uses information gathered from several sensors to adapt the brightness of the lights in response to changes in the surrounding environment and the presence or absence of people. The system can generate accurate choices in real-time using machine learning methods, including the Naive Bayes algorithm. With the help of the cloud, remote monitoring and administration are made easier, which improves efficiency and scalability. The experimental findings prove that the proposed approach is reliable and efficient in enhancing urban green areas' energy efficiency and user enjoyment. Intelligent algorithms combined with cloud computing provide a viable option for smart city lighting control, opening the door to more responsive and environmentally friendly cityscapes.

Published in: 2024 4th International Conference on Sustainable Expert Systems (ICSES)

Date of Conference: 15-17 October 2024

DOI: 10.1109/ICSES63445.2024.10763349

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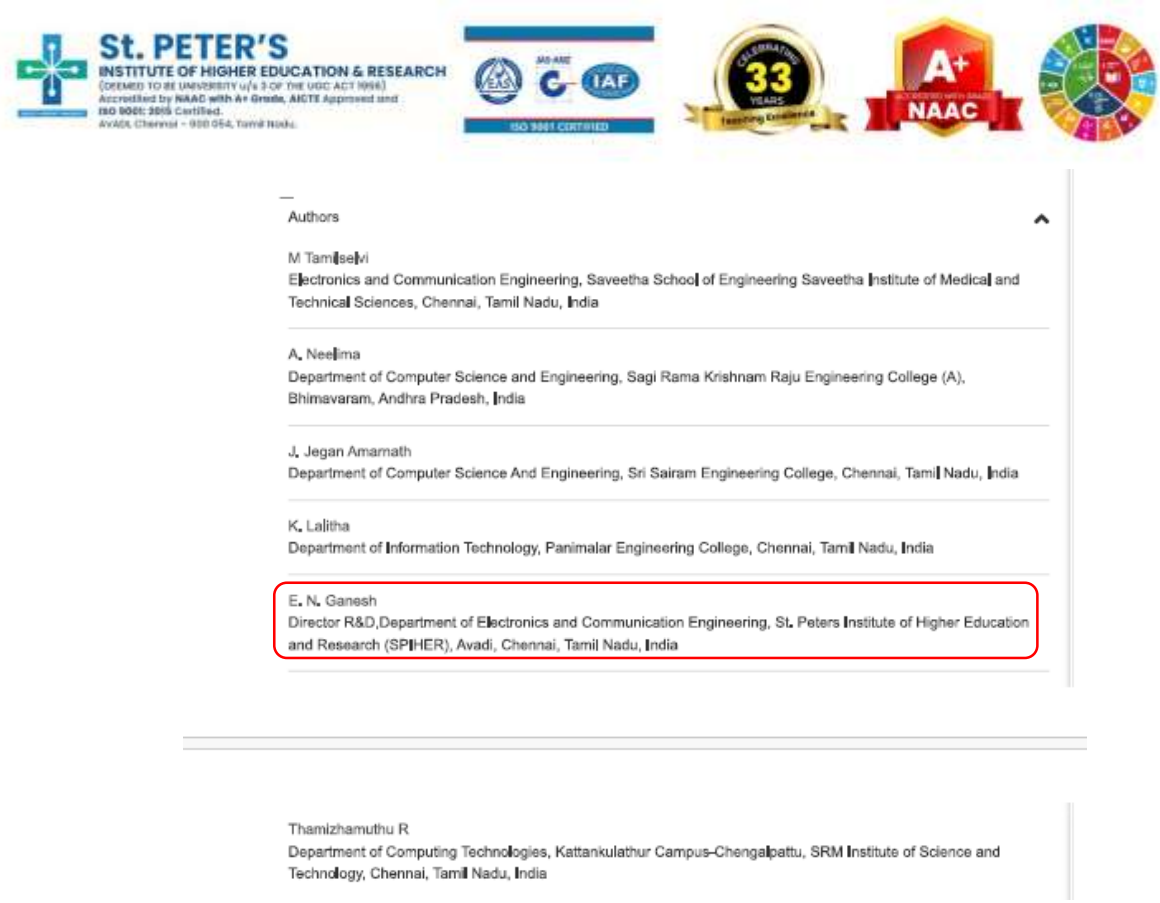
Conference Location: Kaski, Nepal



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Thamizhamuthu R
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This publication highlights meaningful international collaboration, bringing together researchers with expertise in artificial intelligence, environmental engineering, urban planning, and cloud computing. The study introduces a smart illumination system designed for urban green spaces, built using a Naive Bayes machine learning model and supported by cloud architecture for real-time analysis, energy efficiency, and sustainable operation. The joint authorship includes contributors from global institutions, reflecting active knowledge exchange, shared research efforts, and the co-creation of sustainable technological solutions. Through this partnership, SPIHER demonstrates its strong engagement in international research networks and its commitment to advancing sustainable urban innovations.

International Collaboration (Conference Presentation)

Sengamala Thayaar Educational Trust Women's College organized the **International Conference on "Inspiring Microbiome for the Future Generation (IMFG 2024)"**, bringing together eminent scientists, academicians, research scholars, and industry experts from multiple countries. This conference served as a dynamic platform for **cross-border academic engagement**, which emphasizes strengthening international partnerships through knowledge sharing and scholarly convenings.

IMFG 2024 facilitated the **exchange of global scientific perspectives on microbiome research**, including environmental microbiomes, gut health, microbial biotechnology, and emerging applications in sustainable development. By hosting internationally recognized speakers and participants, the college successfully fostered **transnational academic collaboration**, expanded research networks, and enabled students and faculty to interact with global experts.

Through this international academic event, the institution significantly contributed to **strengthening global scientific cooperation**, enhancing collaborative learning, and promoting internationally aligned research practices.

SENGAMALA THAYAAR EDUCATIONAL TRUST WOMEN'S COLLEGE
(AUTONOMOUS)
(SILVER JUBILEE INSTITUTION)
(Affiliated to Bharathidasan University, Tiruchirappalli)
(Accredited by NAAC | An ISO 9001:2015 Certified Institution)
SUNDARAKKOTTAI, MANNARGUDI - 614 016, THIRUVARUR (Dist.), TAMIL NADU, INDIA.

INTERNATIONAL CONFERENCE ON INSPIRING MICROBIOME FOR THE FUTURE GENERATION
(IMFG- 2024)
26th & 27th February, 2024

CERTIFICATE OF MERIT

This is to certify that Prof. / Dr./ Mr./ Miss./ Ms. UTSAV SHARMA G, II B.Sc CHEMISTRY
St. Peter's Institute of Hr. Education & Research, AVADI has actively participated / presented a paper entitled Gc-Ms Analysis of O. lactuca in Oral /Poster session in the International Conference on 'Inspiring Microbiome for the Future Generation' (IMFG-2024) Organized by PG and Research Department of Microbiology in association with Microbiologists Society, India and IQAC on 26th & 27th February, 2024. and won I/ II/ III prize in oral/poster presentation.

Dr.M.Kannahi, Organizing Secretary
Dr.D.Dhanasekaran, MBSI, State President
Dr. G.Vijayalakshmi, IQAC Director
Dr. N.Uma Maheswari, Principal
Correspondent

Certificate received in International conference for second prize in poster presentation

Conclusion:

The participation in international collaboration for gathering and measuring data directly strengthens the spirit of SDG 17.2.3, which aims to enhance global partnerships for sustainable development. By working alongside global experts, institutions, and research networks, the initiative ensures that data collection becomes more accurate, comparable, and meaningful across countries. This collaborative approach not only enriches the quality of information but also promotes transparency, shared learning, and global trust.

Through joint efforts in monitoring SDG indicators, the team contributes to creating a unified understanding of sustainability challenges and progress. Such human-centred collaboration helps bridge knowledge gaps, supports evidence-based policymaking, and empowers countries to work together toward common global goals. This collective engagement demonstrates that when nations and researchers collaborate, the impact goes beyond data. It strengthens global solidarity and accelerates progress toward a more sustainable and equitable future.