

Dr. Mahalingam College of Engineering and Technology, Pollachi - 642 003

(An Autonomous Institution)

Office of Dean Research and Innovation

&

Department of Mechanical and Automobile Engg.

Report on

KSS on “Contribution to Society through Research ”

About the Session

The Office Dean of Research and Innovation and the Department of Mechanical, Mechatronics & Automobile Engineering organized a **Knowledge Sharing Session on Contribution to Society through Research** for the benefit of the Faculty members of MCET. The session details are given below for your kind reference.

S.No	Name of the Resource Person	Topic	Date & Time	Venue	No of Participants
1	Dr. S. Senthivelan Professor Department of Mechanical Engineering IIT Guwahati	Knowledge Sharing Session on “Contribution to Society through Research“	20.09.2024 & 2.00PM	Mechanical Engineering Conference Hall	18

Dr. Rama Thirumurugan, HoD of Mechanical delivered the Welcome address and welcomed the participants of the **Knowledge Sharing Session**. He briefed the department achievements in Journal Publication, Patent Publication and grants for the last 5 years and discussed individual faculty members' research area and development. **Dr.D.Nathan, Associate professor** delivered the chief guest's introduction. He wishes everyone to utilize this session to its fullest potential and encouraged them to apply for funding in the upcoming year.

The sessions covered a wide range of topics related to intellectual property rights, including:

Agenda:

1. Introduction
2. Application of Banana Leaf: A Sustainable Packaging Solution
3. Micro Pulverizer for Ayurvedic Medicine
4. Cost-Effective Ideas for Social Contribution
5. Conclusion
6. Q & A Session

1. Introduction

Research is essential in solving societal problems and contributing to the well-being of communities. Even simple research projects can lead to effective solutions in areas like health, agriculture, and sustainable living. This report explores how basic research ideas like the application of banana leaves for packaging, the use of micro pulverizers in Ayurvedic medicine, and cost-effective innovations can positively impact society.

2. Application of Banana Leaf: A Sustainable Packaging Solution

Banana leaves have been traditionally used in several cultures for food serving, packaging, and other purposes. Today, they are emerging as a viable, eco-friendly alternative to plastic and synthetic materials.

2.1 Benefits of Banana Leaves

Biodegradable: Unlike plastic, banana leaves decompose naturally, reducing landfill waste.

Non-Toxic: They are safe for the environment and health, offering a chemical-free alternative for food packaging.

Cultural Heritage: In countries like India, Indonesia, and Thailand, banana leaves are traditionally used to serve food, helping preserve cultural practices.

2.2 Research Applications

Research in the treatment and processing of banana leaves can make them more durable for commercial applications. For instance, coating them with natural wax or using dehydration techniques can extend their shelf life, allowing for wider usage in packaging industries.

2.3 Impact on Society

Using banana leaves for packaging can:

Reduce plastic pollution.

Support local farmers by creating a market for banana leaves.

Foster sustainable practices that benefit the environment.

3. Micro Pulverizer for Ayurvedic Medicine

Ayurvedic medicine, which has been practiced in India for centuries, requires the use of finely powdered herbs and natural ingredients. The micro pulverizer, a simple machine, plays a significant role in this industry by grinding herbs into fine powder.

3.1 Importance of Micro Pulverizers in Ayurveda

Precision in Grinding: The micro pulverizer ensures that herbs are ground to the right consistency, making the medicines more effective.

Cost-Effective: It provides a low-cost method to process medicinal herbs in small to medium-scale setups, making Ayurvedic treatments accessible to a larger population.

Preservation of Potency: The machine grinds herbs without overheating them, ensuring that their medicinal properties remain intact.

3.2 Research Focus

Improving the efficiency and accessibility of micro pulverizers can help small-scale Ayurvedic producers expand their operations. Research could focus on enhancing the energy efficiency of the machine and making it more user-friendly for rural entrepreneurs.

3.3 Impact on Society

Promotion of Traditional Medicine: Ayurveda is gaining popularity worldwide, and improving its production process can help make it more accessible.

Rural Employment: Low-cost machines like micro pulverizers can create jobs in rural areas where many traditional Ayurvedic ingredients are sourced.

4. Cost-Effective Ideas for Social Contribution

Innovation does not always require large-scale investments. Simple, cost-effective ideas can make a significant difference in improving the quality of life for people.

4.1 Examples of Cost-Effective Ideas

Low-Cost Water Purifiers: Simple filtration techniques using sand, gravel, and charcoal can provide clean water in rural areas without the need for expensive equipment.

Solar-Powered Devices: Solar-powered lamps, cookers, and water heaters are affordable and sustainable alternatives to conventional energy sources, particularly in off-grid areas.

Basic Sanitation Solutions: Constructing affordable, hygienic toilets using local materials can prevent diseases and improve public health in underdeveloped regions.

4.2 Research Focus

Research in low-cost solutions could explore ways to enhance their durability and efficiency. Additionally, studying local resources and community needs can lead to the development of customized solutions for specific areas.

4.3 Impact on Society

Improvement in Public Health: Basic innovations like water purifiers and sanitation solutions can drastically reduce disease outbreaks in underserved communities.

Energy Access: Low-cost solar-powered devices can bring light and power to remote areas, improving education and quality of life.

Community Empowerment: When communities are empowered with simple tools and knowledge, they become self-sufficient and more resilient to economic and environmental challenges.

5. Conclusion

Simple research and innovations have immense potential to contribute to societal development. The application of banana leaves in packaging, the use of micro pulverizers in Ayurvedic medicine, and the development of cost-effective ideas all demonstrate how basic research can provide practical, sustainable solutions. By continuing to explore these avenues, society can benefit from improved environmental sustainability, access to traditional medicine, and the adoption of low-cost technologies that improve living standards, especially in rural and underprivileged areas.

6. Q&A Session:

1. For product research, whether a patent or a journal publication is more suitable

For product research, patents are more suitable when you need detailed technical information about existing technologies and their commercial applications, while journal publications are better for understanding emerging scientific theories and experimental research that could inspire new products.

2. What are all research going on Micro Pulverizer for Ayurvedic Medicine.

Research on micro pulverizers for Ayurvedic medicine focuses on optimizing the pulverization process to enhance the particle size reduction of herbs and medicinal plants, improving bioavailability and therapeutic efficacy. Studies often explore the design improvements for better efficiency, preservation of active compounds, and integration of these machines in modern herbal processing for mass production while maintaining the quality of Ayurvedic formulations.

3. Why did you begin research on Pudam?

Research in **Pudam** (a traditional Ayurvedic purification method involving heat treatment) is started to enhance the safety, efficacy, and potency of Ayurvedic medicines. Pudam helps in detoxifying raw materials, improving bioavailability, and activating medicinal properties. It also ensures that the substances used in formulations are safe for consumption and therapeutically effective, aligning traditional practices with modern scientific validation.

4.what are machines are used in Pudam traditional process used in Siddha medicine:

In the traditional **Pudam** process used in Siddha medicine, the primary equipment includes **clay pots, herbal leaves, and cow dung cakes**. The materials are placed inside the clay pot, sealed, and subjected to heat using cow dung cakes as fuel. This process ensures gradual heating for detoxification and purification of medicinal substances.

Attendance Sheet of Participants

Dr.Mahalingam College of Engineering and Technology Pollachi 642003
Department of Mechanical Engineering
Knowledge sharing session on Contribute to society through Research
on 20-09-2024

S.No	Staff Name	Designation	Signature
1.	Dr.S.Senthil velan	Professor Department of Mechanical Engineering IIT Guwahati	-
2.	Dr.Rama Thirumurugan	Professor (HoD)	<i>[Signature]</i>
3.	Dr. S.Ayyappan	Associate Professor	<i>S. Ayyappan</i> 20/9/24
4.	Dr.M.Jayaraj	Assistant Professor (SG)	<i>M. Jayaraj</i>
5.	Mr.M.Padmanaban	Assistant Professor (SS)	<i>M. Padmanaban</i>
6.	Mr.K.Vijayakkannan	Assistant Professor(SS)	<i>K. Vijayakkannan</i>
7.	Mr.Sreejith S. Nair	Assistant Professor (SS)	<i>Sreejith S. Nair</i>
8.	Mr.M.Gideon Ganesh	Assistant Professor (SS)	<i>M. Gideon Ganesh</i>
9.	Dr. S.V Gurupranes	Assistant Professor	<i>S.V. Gurupranes</i>
10.	Mr.S.Nachimuthu	Assistant Professor	<i>S. Nachimuthu</i>
11.	Mr.J.Dinesh Kumar	Assistant Professor	<i>J. Dinesh Kumar</i>
12.	Dr.S.K.Ashok /Auto	Asst Prof (Auto)	<i>S.K. Ashok</i>
13.	Dr.D.Shanmugam/Auto	Professor	<i>D. Shanmugam</i> 20/9/24
14.	S. LOGESH	M.E-CAD/CAM (2nd year)	<i>S. Logesh</i>
15.	M.NAVANEETHAN	Lecturer /NPTE	<i>M. Navaneethan</i>
16.	N. KALINGARAJ	LECTURER/NPTE	<i>N. Kalingaraj</i>
17.	N. Akhil Kumar	M.E CAD/CAM 3rd year	<i>N. Akhil Kumar</i>
18.	P. Srinivasan	Research scholar / Lecturer NPTE	<i>P. Srinivasan</i> 20/9/24
19.			
20.			

M. Jayaraj 20-9-24
Coordinator
(M. Jayaraj / APCM)
Team

[Signature]
20/9/24
HoD/Mech

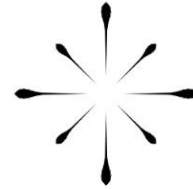
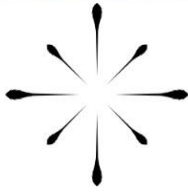
Poster of the Event

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**Office of Dean - Research & Innovation
&
Department of Mechanical Engineering**

**Knowledge Sharing Session on
Contribution to Society through Research**



Dr. S. Senthilvelan

Professor

**Department of Mechanical Engineering
IIT Guwahati**

Date : 20.09.2024, Friday

Venue: C214B- Mechanical Conference Hall

Time: 02.00 P.M

Welcome You All!



S. Prakash

Dean R&I

[Signature]

Principal

--Sd--
Secretary