



**PAAVAI ENGINEERING COLLEGE**  
**(Autonomous)**  
**Annual Report 2022-2023**



**A. About IIC Institute**

**Vision / Mission of IIC established at the Institute Vision:**

- To inculcate, develop and enhance the entrepreneurial potential of the budding professionals for producing ethical, innovative and successful entrepreneurs by creating an entrepreneurial ecosystem for individuals with creative minds and ideas for substantial business opportunities.

**Mission:**

- To dispense opportunity and encourage innovative ideas for transforming them into start-up establishments.
- To become the centre of excellence, inspire, and enable the students to become entrepreneurs by providing platforms for developing novel technologies catering to current market stipulations and developing their own enterprises.
- To produce socially responsible, economically viable, legally bound and ethically sound young entrepreneurs.

**Journey of IIC established at the Institute**

IIC was established in 2018 at Paavai Engineering College. Right from its establishment till date we are regularly,

- Regular execution of IIC, MIC, Self-Driven and Celebration activities.
- For the academic year 2022-2023 we have received 3.5-star rating and selected in the Consortium college and contributed as Mentor for other colleges.
- Received a fund of **Rs.2,25,000** to act as a mentor under **AICTE MENTOR MENTEE scheme 2023-2024**.
- Our college team received a fund of **Rs.1,00,000/-** under the **YUKTI Innovation** contest for 23-24.
- Acted as **Nodal centre for Smart India Hackathon 2022**.

- We have received appreciation certificate for NIPAM KAPILA.
- Actively participating in the **Smart India Hackathons** and **Regional Meets** organised by AICTE.
- Organizing workshops every quarter to motivate the students to become **Entrepreneurs**.
- Established Paavai PreIncubation and Incubation Centre to support IIC activities.
- Conducting regular **online and offline activities** in association with **Entrepreneurship Development Cell** promoting Entrepreneurship, IPR and Innovation.
- Arranging **interactive sessions** with successful Entrepreneurs and InnovationAmbassadors periodically.
- Conducting **competitions** in every quarter to exhibit their Entrepreneurial talents,creativity and innovation.
- Organizing **industrial visits**, at least once a year.
- Arranging **special lectures** on topics like design thinking and creativity, innovation, IPR, start-ups, business planning, team building, generation of resources and other business-related concepts.

**Diversified representation in the IIC established at the institute from industry, Interdisciplinary & Departments/ Units etc.**

We have representatives from industries, Colleges (Incubation Centre Head), the banking sector, and alumni from our Institute who participates in our Quarterly meetings and give suggestions for the growth and improvement of entrepreneurship, start-up and innovation activities throughout.

**B. Brief mention of key functionaries at the IIC Institute**

**President** - Dr.M.Premkumar, President of IIC, Paavai Engineering College. His role involves motivating the faculty members and students to adopt innovative methods of teaching, and learning and encouraging them in doing innovative projects that may end in start-ups.

**Vice President** - Dr.K.Sundaramurthy, Vice-President of IIC, Paavai Engineering College. His role involves guiding both the Convenor and Coordinators in conducting various events and functions in IIC and motivating the students to start the new business in their areas.

**Convenor** - Dr.R.Mohana Priya, Convenor of IIC, Paavai Engineering College. Her role involves in guiding and giving key points to various departments to organize events and workshops related to IIC for developing the student's skills

related to entrepreneurship. In addition, to monitor the execution of various calendar activities and reports to the President. **Coordinators** - The role of the coordinators is to organize various seminars, workshops and events regarding IIC. In addition, to guide the student's projects related to their innovative ideas.

**C. Portfolio/graphical/Tabular representation of Resource strength (human capital and Physical capital) of the IIC institution**

Total No. of IIC Members	
Total No. of IAs	(Basic and Advanced Level )
Total No. of faculty Mentors from Portal	
Pre-Incubation Units, If any	Paavai Incubation Centre
Incubation Units, If any	Paavai MSME Incubation Centre
IP Facilitation Unit, If any	Nil

**D. Highlight Facilities, Infrastructure of Pre-Incubation & Incubation kind and Studentbodies/clubs engaged in the promotion of Innovation and Entrepreneurship on the campus.**

- Paavai Pre-Incubation centre
- Paavai Incubation centre
- Paavai Soft Innovation Centre
- Entrepreneur Development cell
- Software development and information management club
- Microbytes innovative club
- Resource club
- TVS Harita centre
- Google Developer Students lub
- Bootcamps and activities through EDII


**E. Highlight Achievements (Narrative/Graphical/tabular representation)**



Number and Different types of I&E and IPR activities Conducted	80
No. of student's & faculty ideas generated	75
No. of students & faculty Innovation/prototypes developed	45
No. of IPs generated, <b>published</b> and granted ( <b>published alone</b> )	
No. of Student & Faculty Start-ups/Ventures established.	21
Amount spent on promotion and awareness generation on Innovation Entrepreneurship on the campus	Rs.3,00,000
Amount grant or fund supported to student & Faculty lead Innovations, start-upsand IPR	Rs.3,50,000
No. of Technology Transfer and Commercialization happened	03





**F. Highlight a few best IIC Faculty/Student members and their achievements/  
Rewarded for the innovations at different forum  
[Profile of few faculties with 2-lines of their achievements]**






No	Name of the faculty/ Student	Award/Achievement	Organised /Event Name	Date
1	Dr.A.Vivekanandhini / Balamurugan M (Agri)	MSME 2.0 Solar Insect Trapper	AICTE	AY 2023-2024
2	Dr. A.Vivekanandhini / Ajay K (Agri)	YUKTI Innovation Challenge 2023	Institution's Innovation Council (IIC), Ministry of Education's Innovation Cell	AY 2023-2024
3.	J.Vishwa (MCT) L.Prem (MCT) R.Kavin Kumar	Participated in the “ 3 day Boot – Camp for EDII's Hackathon- 2023-24”	Knowledge institute of technology/ EDII(Bootcamp)	3.9.2024 - 5.9.2024
4.	Surya Raja AP(Civil)	Got grants 13.35 lakhs from MSME 2.0	MSME 2.0 Hackathon	08.08.2023
5.	S.Swathi (III-CSE-C) 1.R.Dhivyasri (III- CSE-A) 2.S.Thilagan (III-CSE- C)	3 <sup>rd</sup> Prize	AGRI Hackathon	26.06.2024
6	Amarnath	3 <sup>rd</sup> Prize	AGRI Hackathon	31.05.2024





**G. Highlight selected best Innovations & images with mention of inventor/innovation name**

S.No	Innovations	Inventors	Images
1.	Smart system for stock management	Staff Dr.D.Boopathi ASP / EEE  Student A.Sasi prakash III / EEE	

<p>2.</p>	<p>Drip Lateral Pipe Winding Machine with Bunching</p>	<p>Staff Dr A Vivekanandhini</p> <p>Student Sandheesh .K. R IV –Agri</p>	
<p>3.</p>	<p>Design And Fabrication of Rechargeable Electronic Pruner</p>	<p>Staff Mr B Mano</p> <p>Student Ramkumar. R (Agri)</p>	

4.	Non Destructive Testing of Pesticides in Horticultural Products	<p>Staff Dr .T. Arun kumar, Prof./Biomedical</p> <p>Students Arihara. V and Jayasri A / IV BME</p>	
5.	Menstrual Pain Relief Pad with Integration of IR	<p>Staff Dr. S.Rajasekaran, ASP/Biomedical</p> <p>Students Ariharan V and Jayasri A / IV BME</p>	
6.	Wireless EV - vehicle charging	<p>Staff Dr.D.R.P. Rajaratham (MCT)</p> <p>Students J.vishwa L.Prem R.kavin Kumar (3rd year MCT)</p>	
7.	Agricultural soil nutrition Autosprayer	<p>Staff S. Manikandan (MCT)</p> <p>Students S.V.Thamaraiselvan S.Srikanth (3rd year MCT)</p>	

8.	<p align="center"><b>Rapid Decomposition of solid waste</b></p>	<p align="center"><b>Students</b> Surya Raja (Civil)</p>	  
9.	<p align="center"><b>Topic Automated Irrigation and Soil Nutrients Management system based upon crops</b></p>	<p align="center"><b>Staff</b> Santhanalakshmi. K AP/CSE</p> <p align="center"><b>Student</b> Udhayarasu E / III / CSE</p>	
10.	<p align="center"><b>AeroRevive - Next Generation Aerial Reforestation System for High- Altitude Ecosystem Restoration</b></p>	<p align="center"><b>Staff</b> Raj kumar D (AERO)</p> <p align="center"><b>Students</b> Kokila G (Aero) Dharani Sri V (Aero)</p>	

11.	<p align="center"><b>Design and fabrication of electric go-kart rear wheel drive</b></p>	<p align="center"><b>Staff</b> R. Meiyazhagan AP/Mechanical <b>Student</b> S. Gowtham S.Pradeepkumar M.Siva sakthi S.Jayasurya (III Mech)</p>	
14.	<p align="center"><b>Manual drive of bicycle using solar energy along with dynamo and battery for easy ride</b></p>	<p align="center"><b>Staff</b> Dr.V.SenthilKannan ASP/Mechanical <b>Student</b> Aakash.S Anbarasan.A Gopalakannan.M Sasidharan.V</p> <p align="center">IV Mech</p>	
15.	<p align="center"><b>Formulation of herbal health drink</b></p>	<p align="center"><b>Staff</b> Mr.M.Ponmanian, M.tech., <b>Student</b> B. Karishma V. Jansirani (IV Pharma)</p>	
16.	<p align="center"><b>Robotic Solar Grass Cutter</b></p>	<p align="center"><b>Staff</b> Dr. R. Mohana Priya <b>Student</b> Adhilabanu A (IV ECE)</p>	

**H. Highlight selected start-ups established by students/faculties with mention of founder/cofounder name**

**Founder and Co-founder :** N.Nisha and G.Sandhiya (Dept of ECE)

**Startup Name:** Lucky Charms

**Address :** 2/320-A,NatrajanIllam,

Chokkalingapura

m Kottampatti,

Melur Madurai-

625 103

**Founder :** K. Praveen (Dept of Agri)

**Startup Details:** K.S. Tissue Culture Industry

**I.List of any breakthrough Innovations / Technology Developed at the institute (2-3 technology with 2-3 lines about technology and innovation).**

**Solar Insect Trapper :** Insect traps are used to monitor or directly reduce populations of insects or other arthropods by trapping individuals and killing them. They typically use visual lures, chemical attractants and pheromones as bait and are installed so that they do not injure other animals or humans or results in residues. Visual lures use lights, bright colors and shapes to attract pests. SOLAR INSECT TRAPPER is a solar energy based insect trapper can trap many pests and helps farmers to cultivate more quality and quantity of crops. Farmer faces the problems of various types of pests that harm crops right from sowing till the crop harvested. This project uses UV LEDs were safer than using ordinary fluorescent lamps. Moreover India is a tropical country, solar power is readily available and also it requires less maintenance. The device seems promising to farmers since it has been capturing adults of many pests, bores, and flies thereby reducing the dependence on bio pesticide usage to the tune of 50%. Then simple design was created for easily to teach to farmers. LED bulbs with 12 volts were safer to use more than fluorescent bulbs with 220 volts. If the electrical short or leakage current were happened, the users were would not get seriously hurt. The trap should be improved for light scattering as 360 degrees from the trap. The ways into LED should be provide more for more insects and effectively trap.

**Light Emitting Tiles:** Light-emitting tiles are a green construction material designed to illuminate roads, and bicycle lanes without using electricity. Light-emitting tiles absorb solar energy during the day and radiate light at night. The light emitting pigments include a titanium powder, a Strontium Aluminate powder, resins, cement, sand, and water. The present trend in tile technology is towards increasing the durability and appearance of tiles into different shapes. This study mainly focuses on the experimental work of adding Strontium Aluminate to give the photo luminescent property. The experimental results are based on the test conducted such as CTM, Water absorption Test and duration of light emitting, to support all the weather conditions.

**Smart Kit for amyloidosis :** Amyloidosis is a group of rare diseases that occur when abnormal protein, called amyloid, builds up in organs and tissues. One type of amyloidosis is caused by the overproduction of free light chains (FLCs) of immunoglobulins. This type is called AL amyloidosis and it affects multiple organs, leading to organ dysfunction and eventually death. Therefore, early diagnosis and treatment are essential for improving the prognosis of this disease. In this, we propose a smart kit for the detection of FLC antibodies in urine samples using green synthesis of silver nanoparticles from *Hydrocotyle verticillata*, a medicinal plant that is abundant in many regions of the world. To demonstrate the effectiveness of the smart kit, we perform a series of experiments using urine samples from patients with AL amyloidosis and healthy controls. The results show that the smartkit can detect FLC antibodies in the urine samples of patients with AL amyloidosis with high specificity and sensitivity. The limit of

detection of the kit is 0.01 mg/L, which is much lower than the clinical cutoff for the diagnosis of AL amyloidosis. In conclusion, our study presents a green and cost-effective approach for the synthesis of silver nanoparticles from *Hydrocotyle verticillata* and their use in the development of a smart kit for the detection of FLC antibodies in urine samples. This kit has the potential to improve the early diagnosis of AL amyloidosis and facilitate the timely initiation of treatment, thereby improving patient outcomes.

**Polyherbal formulation for Allergic Rhinitis :** The unique Drug-Drug combination has the less cytotoxicity as compared to the toxicity imposed by the Drug-Drug Interaction in the Western

Medicine. The potential interaction effect on the herbal product includes the mutual enhancement, mutual assistance, and the mutual antagonism.

**Preparation Of Bioplastic From Organic Waste :** Nowadays plastic waste has become one of the biggest problems due to their excessive use, its difficulty in decomposition, also its huge mass cause a lot of negative impact to landfill and water pollution. Environmental sustainability has been a real challenge for a living being due to the rising of population, urbanization and standard of living. The most possible solution is to substitute synthetic polymeric material to biodegradable materials, which will be degraded by microorganisms and minimize the adverse ecological impact. On the other side, Food waste is one of the major things that need to be concern. Food waste is generally of two types, Avoidable and Unavoidable. Avoidable food waste can be prevented by proper planning, Unavoidable waste cannot be prevented such as peels of fruits and vegetables, bones of meat, etc. The objective of our project is to develop bioplastic from food waste that has double benefits, namely reducing the plastic waste and food waste that include fibre as a residue at the same time, thereby promoting environmental sustainability.

**Participation of IIC-institute in various programs of Central and State Govt. Highlighting specially for the schemes or programs**

- **AICTE Internshala Rank** - Ranked Number 1 in Internshala ranking among all the colleges in India for 23-24.
- Participated in **MSME 3.0 hackathon** and one batch from Paavai Engineering College **have received a grant of for MSME 3.0 Hackathon.**
- **ARIIA** – Positioned in the band of **101-150 in the Innovation Category** under **National Institutional Ranking Framework 2023.**
- **CII Innovation** award
- Paavai Engineering College received the “**Design and Innovation award**” on 17.07.2023 at Siddaganga TBI, SIT, Tumakuru.
- Has applied for patents under **KAPILA** scheme.

**A. Detail of Social Media & Connections of IIC institute**

Instagram: <https://www.instagram.com/paavaipecprincipal/?hl=en>

Twitter: <https://twitter.com/paavaipecprincipal>

Facebook: <https://www.facebook.com/pecprincipal.pecprincipal/>

YouTube: <https://bit.ly/3BvEYA>

**B. Testimonials from IIC members and external about IIC institute and IIC of MoE's Innovation Cell.**

**Testimonial YouTube Link: President IIC-**

**<https://www.youtube.com/watch?v=S6okGNHCi2o> Testimonial YouTube Link:**

**Convener IIC- <https://www.youtube.com/watch?v=XvM1bl-quMY> Testimonial by Vice President, IIC**

IIC plays a major role in Paavai Engineering College to nurture young minds to become entrepreneurs. IIC helps us to set up a strong innovation and entrepreneurial eco-system in our institution and provides a platform to organise various activities related to entrepreneurship, innovation and IPR. It helps the students to participate in many events like idea contests, project exhibitions, Smart India Hackathon etc. Our faculty members who have completed innovation ambassador training have gained awareness of IPR, innovation, entrepreneurship, startups, and design thinking, guiding and supporting aspiring young entrepreneurs. IIC is an excellent initiative by the Ministry of Education, Government of India to encourage the student community to come up with innovative ideas and promote them to create start-ups and entrepreneurial ventures.

**Dr.K.Sundaramurthy, Vice President,  
IIC  
Paavai Engineering College  
Testimonial by Vice President, IIC**

### C. Images

**NEP 2020 -Inaugural Address Session. Seminar -Startup -Legal and Ethical steps.**

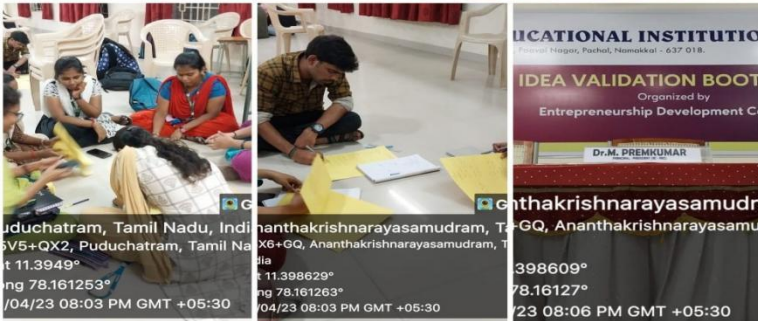


**MIC - Leadership Talk**

**Idea Validation Bootcamps**



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**IDEA VALIDATION BOOT**  
 Organized by  
 Entrepreneurship Development Ce  
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**Women's Day Celebration**



**World Innovation and Creativity Day**

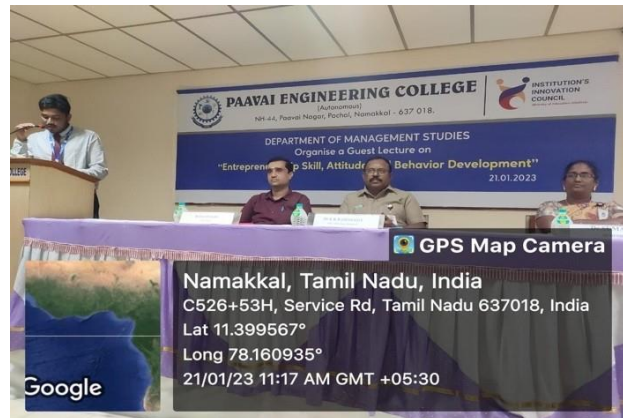
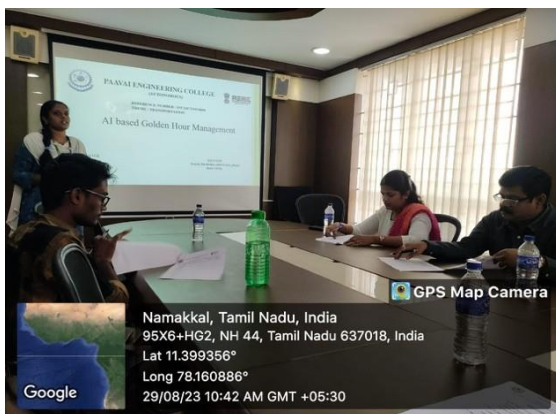
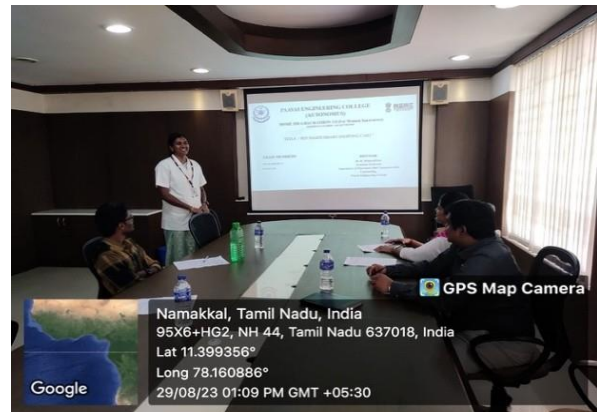


**SASTRA & Indian Institute of Food Processing Technology**



**Exposure visit to incubation centre at**

## MSME Women Hackathon 3.0 Glimpses.



### Commercialisation of Lab Technologies Workshop

#### D. Contact

**Dr.M.Premkumar,**  
President / Principal,  
Institution's Innovation  
Council, Paavai Engineering  
College Pachal, Namakkal –  
637018.  
Email: [pecprincipal@paavai.edu.in](mailto:pecprincipal@paavai.edu.in)  
Mobile: 9965466888.

### Project Presentation of Innovations