KPR Institute of Engineering and Technology
(Autonomous)
Avinashi Road, Arasur, Coimbatore - 641 407
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INSTITUTION'S INNOVATION COUNCIL
(Ministry of Education Initiative)

## INSTITUTION'S INNOVATION COUNCIL

# ANNUAL REPORT

# ACADEMIC YEAR 2022-23

# INSTITUTION'S INNOVATION COUNCIL

## 2022 – 2023

### A. ABOUT IIC

**Ministry of Education (MoE)**, Govt. of India has established 'MoE's Innovation Cell (MIC)' to systematically foster the culture of Innovation among all Higher Education Institutions (HEIs). The primary mandate of MIC is to encourage, inspire and nurture young students by supporting them to work with new ideas and transform them into prototypes while they are informative years.

MIC has envisioned encouraging creation of 'Institution's Innovation Council (IICs) across selected HEIs. **A network of IICs** are established to promote innovation and entrepreneurship in the Institution through multitudinous modes leading to an innovation promotion ecosystem in the campuses. MIC has established Institution's Innovation Council in more than 2200 Institution's till November 2020.

**Vision and Mission of IIC established at the Institute**

To create a vibrant local innovation ecosystem.

Start-up supporting mechanism in HEIs.

Prepare institute for Atal Ranking of institutions on innovation achievements framework.Establish function ecosystem for scouting ideas and pre-incubation of ideas.

Develop better cognitive ability among students.

**Functions of IIC**

To conduct various Innovation, IPR and entrepreneurship-related activities prescribed by MIC in time bound fashion.

Identify and reward innovations and share success stories.

Organize periodic workshops/ seminars/ interactions with entrepreneurs, investors, professionals and create a mentor pool for student innovators.

Network with peers and national entrepreneurship development organizations.

Create an Institution's Innovation portal to highlight innovative projects carried out by institution's faculty and students.

Organize Hackathons, idea competition, mini-challenges etc. with the involvement of industries.

**Diversified representation in the IIC established at the Institute from Industry, Interdisciplinary and Departments / Units etc.**

The aim of this Centre is to achieve excellence in R&D using latest technology at the global level and produce trained professional manpower for the industry. In addition to many of the core engineering and science departments several state-of-the-art research units of the Institute carry out research under the academic umbrella of KPR.

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

**KPR- IIC -ID : IC201810247**

**KPR-IIC-PRESIDENT : Dr.M.RAMASAMY, PRINCIPAL, KPRIET**

**KPR-IIC-VICE PRESIDENT : Dr.K.RAVI KUMAR, PROFESSOR / MECH**

**KPR-IIC-CONVENOR : Dr.P.SREELATHA, PROFESSOR / BME**

## MEMBERS

### COUNCIL MEMBERS - INTERNAL

| Sl.No | Name Of Faculty Member | Designation | Department | Keyrole / Position Assigned In IIC |
|---|---|---|---|---|
| 1. | Dr.M.Ramasamy | Principal | Principal | President |
| 2. | Dr.K.Ravi Kumar | Professor | Mech | Vice-President |
| 3. | Dr.P.Sreelatha | Professor | BME | ARIIA Coordinator, Convener |
| 4. | Dr.R.Kiruba Shankar | Professor | ECE | Internship Activity Coordinator |
| 5. | Dr.M.Kathirvelu | Professor | ECE | NIRF Coordinator |
| 6. | Dr.R.Dharmaraj | Associate Professor | Civil | Startup Activity Coordinator |

| | | | | |
|---|---|---|---|---|
| | Dr.Nisha Soms | Associate Professor | CSE | Social Media Coordinator |
| 8. | Mr.D.Balaji | Assistant Professor (Sl.G) | Mech | IPR Activity Coordinator |
| 9. | Mr.R.Navaneetha Krishnan | Associate Head - CIIED | ECE | Innovation Activity |
| 10. | Dr.S.Karthikeyan | Associate Professor | AIML | Member |
| 11. | Mr. K. Kathireshan / AD | Professor | AD | Member |
| 12. | Dr.P.Arunkumar | Assistant Professor (Sr.G) | BME | Member |
| 13. | Dr.E.Nakkeeran | Assistant Professor (Sr.G) | Chemical | Member |
| 14. | Mr.R.Sampath Kumar | Assistant Professor (Sl.G) | EEE | Member |
| 15. | Mr.S.Satheesh Kumar | Assistant Professor (Sl.G) | ECE | Member |
| 16. | Ms.B.S.Meenakshi | Assistant Professor | Civil | Member |
| 17. | Dr.S.Arivazhagan | Assistant Professor | Mech | Member |
| 18. | Ms. L. Dharani / CH | Assistant Professor | Chemical | Member |
| 19. | Mr. N. Udhaya Kumar / ME | Assistant Professor | Mech | Member |
| 20. | Dr. K. Prabakaran / SH | Assistant Professor | S&H | Member |

## COUNCIL MEMBERS – EXTERNAL

| Sl.No | Name Of Member | Industry | Role |
|---|---|---|---|
| 1. | Mr.P.S.Kannan | TBI – Kongu Engineering College, Perundurai | Member |
| 2. | Mr.Ravikumar | Roots Multiclean Ltd., Coimbatore | Member |
| 3. | Mr.Soundararaj | Renso Automotive and Aerospace Services, Coimbatore. | Member |
| 4. | Ms.Aruna Thangaraj | AGT Electronics | Member |
| 5. | Mr.R.S.Venkatachalam | Wizaard systems | Member |
| 6. | Mr.Janakiraman Purushothaman | Helix Pvt Ltd, Bangalore | Member |
| 7. | Mr. Ramprathap | L&T | Member |
| 8. | Mr. S.Karthikeyan | M/S-ARKTECH Automation solutions (P) Ltd | Member |
| 9. | Dr.V.S.Saravanan | Indo Shell Cast Private Limited | Member |
| 10. | Mr. Mohammed Khaleel | E.K.M. Leather Processing Company | Member |
| 11. | Mr.Moses Sam Paul | Growth On Demand LLP | Member |
| 12. | Mr. C.V.Renjith | Philips India LTD | Member |

**COUNCIL MEMBERS -STUDENTS**

| Sl.No. | Name of the Student Incharge | Department | Position Assigned In IIC |
|---|---|---|---|
| 1. | K.K.Thitheaswar | CIVIL | Innovation Coordinator |
| 2. | Akash D | ECE | Startup Coordinator |
| 3. | Dhanush M | EEE | Internship Coordinator |
| 4. | Sushmitha. A. S | MECH | Social Media Coordinator |
| 5. | Rishikesh Shyam RS | AD | IPR Coordinator |
| 6. | M Sriram S | AD | Member |
| 7. | Hema Varshini.B | BME | Member |
| 8. | Sakthikumar.K | BME | Member |
| 9. | Priyadharshini. S | CH | Member |
| 10. | M.Hariprasath | CIVIL | Member |
| 11. | Brijesh A Ba | CSE | Member |
| 12 | Ragul S | CSE | Member |
| 13. | Venkatraghavan M | ECE | Member |
| 14. | Anburam R | EEE | Member |
| 15. | Meha sri A | CSE | Member |
| 16. | Krishnika K | CSE | Member |

**C. Portfolio / Graphical /Tabular Representation of Resource strength (Human capital and Physical Capital ) of the IIC Institution**

| Sl.No. | Data | Volume |
|---|---|---|
| 1 | Total Number of IIC Members | 48 |
| 2 | Total Number of IAs | 21 |
| 3 | Total Number of Faculty Members from Portal | 43 |
| 4 | Pre-Incubation Units , if any | 3 |
| 5 | Incubation Units, if any | 1 |
| 6 | IPR & TTO Centers | 2 |

**D. Higher Facilities, Infrastructure of Pre-Incubation and Incubation kind and Student bodies / Clubs engaged in promotion of Innovation and Entrepreneurship in the campus**

In the promotion of Innovation and Entrepreneurship in the campus, **Centre for Innovation Incubation and Entrepreneurship Development cell (CIIED)** is initiated. Students can utilize this cell for the purpose to establish startup, utilization of pre-incubation unit to promote innovative ideas to prototype with further evaluation by industry experts it is converted to product.

**E. Highlight Achievement (Narrative / Graphical /Tabular Representation)**

| **Sl. No.** | **Highlight Achievement** | |
|---|---|---|
| **1** | Number and Different types of I&E and IPR activities Conducted | 125 |
| **2** | Number of students and faculty ideas generated | 183 |
| **3** | Number of student's faculty innovation / prototype developed | 52 |
| **4** | Number of IPs generated, published and granted | 170 |
| **5** | Number of Student & Faculty startup/ ventures established | 4 |
| **6** | Number of Copyright Registered | 2 |
| **7** | Number of Industrial Designs obtained | 7 |
| **9** | Number of Technology transfer and Commercialization happened | 42 |
| **10** | Amount spent on promotion and awareness generation on Innovation Entrepreneurship in the campus | Rs.2,50,000 |
| **11** | Amount grant or fund supported to student & faculty lead , Innovations, startups and IPR | Rs.15,00,000 |

**F: Highlight selected best Innovations with mention of inventor/innovation name**

**1. Robotized Lithium Battery Spot Machine**

- The primary goal is to develop and manufacture a cutting-edge product that will transform the Lithium Battery Industry by significantly increasing production capacity, enhancing battery pack quality and minimizing human errors through automation and precision technology.
- Our plan is to use Embedded system controls automation with pneumatic valves, precise stepper motors for X and Y axes, ball screws for micron-level spot welding, and current sensors for quality checks.
- Boosts capacity, accuracy, and compliance in manufacturing. Provides real-time quality control, micron-level spot welding precision, and an IoT interface for comprehensive production documentation.

Product Done by:

B.E. Computer Science Engineering students:

1. Aravind RM
2. Arunprakash SK
3. Dheepadarshan LB
4. Chitra devi S
5. Sangamithra S

Guided by:

Mr.Raguvaran S, AP/ CSE

**2. IoT Go KART**

- The objective is to integrate various technical aspects to create thrilling and safe lightweight vehicles. It incorporates temperature, fire, and GPS sensors to ensure both driver safety and an exhilarating driving experience.
- Process includes layout design, sourcing materials (wheels, motors, and steel tubes), frame fabrication, engine installation, wiring (ignition, lighting), performance tuning, testing, painting, innovation integration, and final operation.
- The go-kart is a fun, agile, and affordable vehicle for various uses. Temperature sensors monitor engine and exhaust heat, fire sensors detect flames for safety, and GPS sensors track location and speed, providing real-time or stored data for performance analysis, safety, and racing needs.

Product Done by:

B.E. Mechanical Engineering students:

1. Paul abisheik E
2. Manmathan A
3. John ephraim
4. Naveen kumar A

5. Thejshwar M

6. Ashwanth M

Guided by:

Dr.Saravanan B K AP/MECH

**3. BIO EFFLUENT TREATMENT**

- The objective is to Process to remove pollutants from wastewater by utilizing natural biological process.
- The process includes Water hyacinth's porous structure traps and holds dye molecules, aided by its cellulose-rich composition, making it an efficient absorbent for various chemicals, including dyes.
- The treatment control water quality and water gains good nutrition and minerals in an ecofriendly process

Product Done by:

B.E. Chemical Engineering students:

1. Archana M

2. Sushmita A S

3. Mageswarii M R

4. Kishore N

Guided by:

Dr.Karunakaran S, AP/CE

**4. Self-Power Generating Electric vehicle**

- The objective is to replace the fossil fuel-powered vehicle by using the self-charge device.
- The process by Proposing Axial Flux Permanent Magnet (AFPM) motors for electric vehicles due to their minimal permanent magnet usage, simple construction, and ability to function as a generator during free-wheeling.
- Through this innovation grid charging energy can get reduced, enhance Km per charge ratio and seamlessly integrate the device into existing EVs for dynamic improvements.

Product Done by:

B.E. Electrical and Electronics Engineering students:

1. Mithunesh Sanjay A

2. Mithuneshwar S

3. Mithunesh kumar SS

Guided by:

Mr. Vignesh .C.J, AP (Sr.G)/EEE

**5. Smart Bin Smart City**

- The objective is creating a smart dustbin using Arduino for efficient waste management. It detects when full, initiates emptying, and connects to a central system for optimized collection routes. This promotes cleanliness, reduces littering, and contributes to health and hygiene while striving for affordability.
- The Smart dustbins use sensors to detect fullness and simplify waste separation (e.g., Metal, Wet, Dry), making waste collection easier for workers. A step towards smart cities, enhancing efficiency and cleanliness in waste management.
- Smart dustbins reduce litter, promote cleanliness, and offer convenient recycling options, contributing to a cleaner environment

Product Done by:

B.E. Chemical Engineering students:

1. Sibi siddharth RM
2. Arunajayan
3. Sakthivelan
4. Sanjay
5. Girithar RR
6. Sam jeromiyaa E

Guided by:

Mr.Vijayaganth V, AP/CSE

Mrs.Sasikala C, AP/CSE

**6. Roamio**

- The objective of Roamio is digital tool that offer personalized travel recommendations and itineraries, encompassing destinations, attractions, transportation, and costs.
- Roamia collects data from various sources, processes it using algorithms, and offers personalized travel recommendations. Users input preferences and constraints, and the tool provides interactive itineraries, reviews, and booking options, enhancing the travel planning experience.
- Roamio simplifies travel planning with itinerary building, destination suggestions, and real-time flight and hotel search. Stress-free trip planning for all types of adventures.

Product Done by:

B.E. Chemical Engineering students:

1. Sree varsha P
2. Amritha A
3. Aravind T
4. Hariharan V P
5. Sanjay K

Guided by:

Dr. Rajasekaran T, AP (Sl.G)/CSE

**7. Asset management and Tracking System**

- The objective is to streamline asset management through a robust tracking system, optimizing asset utilization, and reducing costs to enhance organizational efficiency and improve Return on Assets (ROA).
- Streamline asset tracking, reduce losses, and enhance operational efficiency with resource-efficient Bluetooth beacon-based management, ensuring real-time accuracy and improved physical space organization.
- Asset visibility through real-time tracking of equipment, staff, vehicles, and facilities, while eliminating ghost assets and the need for manual record-keeping. Access cloud-based asset data anytime, streamlining operations and improving overall efficiency.

Product Done by:

B.E. Electronics and communication Engineering students:

1. Akash D
2. Akshya shree AD
3. Vinod akash SS
4. Akshai SD

Guided by:

MR.S.Satheesh Kumar, AP/ECE

**8. Navigation system for Visually Challenged People**

- The objective is to build a navigation system that will be able to guide a visually impaired person safely and with ease, in an indoor and outdoor environment
- The plan is to create a navigation system for visually impaired individuals, employing a camera module and neural network.
- The key factors are camera module for object recognition and audio cues for navigation enables greater independence, helping them identify objects and navigate their surroundings with confidence, enhancing their quality of life.

Product Done by:

B.E. Bio Medical Engineering students:

1. Vishnu K
2. Priyanga S
3. Swetha AK
4. Prakash raja K
5. Gokulachalam K

Guided by:

Dr. A. Allwyn Gnanadas,AP/BME

**9. Mappers Internal Navigation**

- The objective is to find a specific location or a room within a closed environments such as college campuses, hospitals, shopping malls and other large indoor spaces.
- The plan is to provide with the navigation assist within a large building to have seamless and hassle free experience.
- The key factors are GPS, AI and Google maps by utilizing these advances technologies creating a powerful and user friendly navigation system.

Product Done by:

B.E. Artificial Intelligence and Data Science students:

1. William Renaldy A
2. Vishal SV
3. Upendran P
4. Mohamed ameen MI
5. Pranavv J

Guided by:

Dr. Saranya. N, AP/AI&DS

**10. Autonomous Wheelchair**

- The objective enable independent mobility for physically challenged individuals.
- The plan is by using wheelchair control systems with an Auto Pilot-based solution, ensuring freedom of movement without reliance on hand mobility.
- The key factors are Auto pilot system, obstacle detection system, driver assist and Brain-Computer Interface (BCI). These technologies collectively create a Smart Power Wheelchair (SPW) with advanced driver assist features and autonomous capabilities, significantly improving mobility for users.

Product Done by:

B.E. Artificial Intelligence and Data Science students:

1. Sri shiran CS
2. Fariq F
3. Hari prasanth PM
4. Jawahar R
5. Shamsudeen

Guided by:

Dr. Devi Priya, Prof/CSE

**G. Highlight selected best Innovations with Images**


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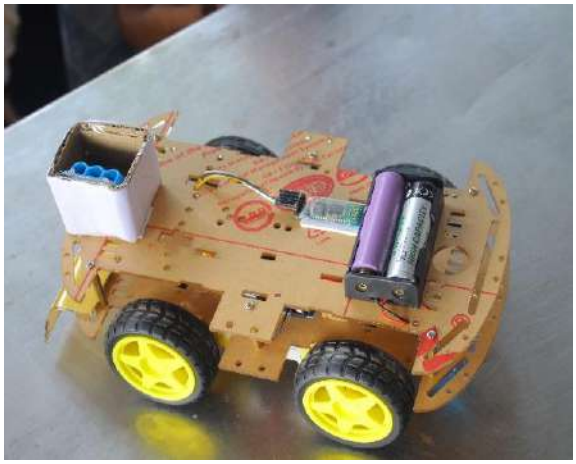




**H. Highlight selected start-ups established by students/faculties with mention of founder/co founder name**

**LIST OF STARTUPS INCUBATED BY KIC**

| Name of the Startup | Name and contact details of the founders | About Startup | Kind of support byKIC |
|---|---|---|---|
| **KPRIET INCUBATION CENTRE** | Dr.K.Ravi Kumar ravikumar.k@kpriet.ac 9994157654 https://www.kpriet.ac.in/student-services/ciied | Access to knowledge report, E-Library and Library at Institute | Mentoring Support, Seed Grant support, Pre-Incubation facility Support, Incubation Support |

| | | | |
|---|---|---|---|
| **Lurkhs power systems** | Ms.U Ramya, M.S. Kawin | SMPS Battery charger | Mentoring Support, Seed<br>Grant support, Pre-Incubation facility Support, Incubation Support |
| **Macro Loop Tech Pvt Ltd** | D Akash | IoT Learner Kit | Mentoring Support, Seed<br>Grant support, Pre-Incubation facility Support, Incubation Support |
| **Escape Rat Race Media** | Mr. K.K Thitheashwar | Local brand to global presence | Mentoring Support, Seed<br>Grant support, Pre-Incubation facility Support, Incubation Support |
| **Dream Infra** | Mr.S.Vinoth | Building plan approval support | Mentoring Support, Seed<br>Grant support, Pre-Incubation facility Support, Incubation Support |

**I. Break through Innovations / Technology Developed at the institute**

Innovative start up ID IR2022-78745 dated 11/09/2022 titled MYCOBLOOMS MUSHROOMERY in TRL Title - TRL 5 was registered as a start up for Academic Research Assignment under Industry Sponsored Project by a faculty Lt Dr A K Priya with a funding.

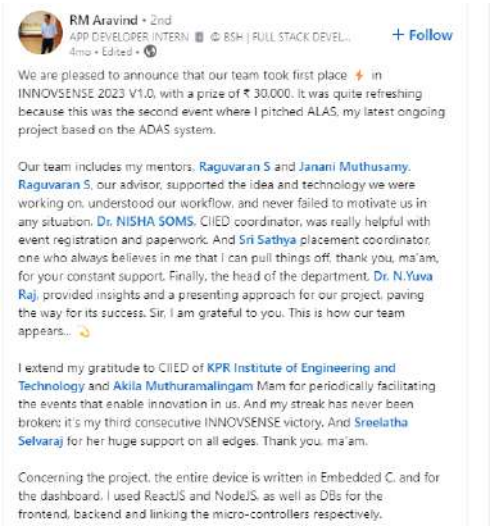
**J. Participation of IIC-institute in various programs of Central and stage Govt. Highlighting specially for the schemes or programs**

- ARIIA – participation and Rank **: Innovation ranking 51-100**
- NISP Adoption status - Trained Faculty, Policy Formulation, Policy Implementation **: Implemented**
- Smart India Hackathon etc. **: Conducted**

## K. Detail of Social Media & Connections of IIC institute

- Facebook : https://www.facebook.com/KPRIETonline
- Instagram : https://www.instagram.com/kprietonline
- Twitter : https://twitter.com/KPRIETonline

## L. Testiminials from IIC members and external about IIC institute and IIC of MoE's Innovation Cell

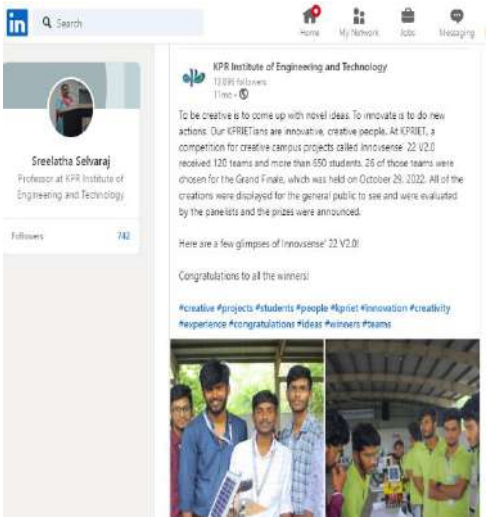

RM Aravind • 2nd
APP DEVELOPER INTERN | © BSH | FULL STACK DEVEL...
4mo • Edited • + Follow

We are pleased to announce that our team took first place in INNOVSENSE 2023 V1.0, with a prize of ₹ 30,000. It was quite refreshing because this was the second event where I pitched ALAS, my latest ongoing project based on the ADAS system.

Our team includes my mentors, Raguvaran S and Janani Muthusamy. Raguvaran S, our advisor, supported the idea and technology we were working on, understood our workflow, and never failed to motivate us in any situation. Dr. NISHA SOMS, CIIED coordinator, was really helpful with event registration and paperwork. And Sri Sathya placement coordinator, one who always believes in me that I can pull things off, thank you, ma'am, for your constant support. Finally, the head of the department, Dr. N.Yuva Raj, provided insights and a presenting approach for our project, paving the way for its success. Sir, I am grateful to you. This is how our team appears...

I extend my gratitude to CIIED of KPR Institute of Engineering and Technology and Akila Muthuramalingam Mam for periodically facilitating the events that enable innovation in us. And my streak has never been broken; it's my third consecutive INNOVSENSE victory. And Sreelatha Selvaraj for her huge support on all edges. Thank you, ma'am.

Concerning the project, the entire device is written in Embedded C, and for the dashboard, I used ReactJS and NodeJS, as well as DBs for the frontend, backend and linking the micro-controllers respectively.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Sreelatha Selvaraj
Professor at KPR Institute of Engineering and Technology
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KPR Institute of Engineering and Technology
To be creative is to come up with novel ideas. To innovate is to do new actions. Our KPRIETians are innovative, creative people. At KPRIET, a competition for creative campus projects called Innovsense '22 V2.0 received 120 teams and more than 550 students. 26 of those teams were chosen for the Grand Finale, which was held on October 29, 2022. All of the creations were displayed for the general public to see and were evaluated by the panelists and the prizes were announced.
Here are a few glimpses of Innovsense' 22 V2.0!
Congratulations to all the winners!
#creative #projects #students #people #kpriet #innovation #creativity #experience #congratulations #ideas #winners #teams

## M.Images

**J.Contact**

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