



## KONGU ENGINEERING COLLEGE

(Autonomous)

PERUNDURAI, ERODE – 638 060

INSTITUTION'S INNOVATION COUNCIL KEC (IIC@KEC)



Transform Yourself

### **Annual Report of IIC@KEC for the academic year 2022-2023**

#### **A. About IIC@KEC:**

##### **1. Vision / Mission of IIC@KEC**

- a. To provide skill-based trainings and create a conducive environment for the innovators to commence their entrepreneurial journey in liaison with National Innovation and Start-up Policy (NISP)
- b. To nurture ideation centric approaches like design thinking, collaborative innovation, sustainability and Product life cycle management for successful product commercialization
- c. To bring out innovative solutions for industrial and societal problems by exhibiting interpersonal and acquired skills
- d. To facilitate IPR activities and assist early start-up by connecting innovators with TBI and Angel investors/ Venture capitalists
- e. To be a Science and Technology led entrepreneurial hub for students, faculty, industry personals, unemployed youths and self-help groups for societal upliftment

##### **2. Journey of IIC@KEC**

- a. IIC@KEC was inaugurated in the academic year 2018-2019
- b. IIC@KEC was shortlisted as one in three best performing IICs of SRO during the academic year 2018-2019
- c. Received Top star ratings for all the academic years 2018-19, 19-20, 20-21 & 21-22

##### **3. Diversified representation in the IIC@KEC from industry, Interdisciplinary & Departments/ Units etc.**

###### **➤ Startup representation:**

- a. Mr. Nagaraj Prakasam, Chairman & CEO/ NATIVELEAD.
- b. Mr. Kamalakannan G, Co-Founder & CCO, Kalycito Infotech Pvt., Ltd., Coimbatore.
- c. Mr. S. P. Rajakumaran Director, Mobitech Wireless Solution Private Limited, Erode.
- d. Mr. Dhruv Suyamprakasam, Founder – iCliniq.

- e. Mr. Pradeep Yuvaraj, Secretary – TiE Coimbatore, MD Prezantim, Coimbatore.
- f. Ms Kiruba ravi, Founder, K Cake’s room, Tirupur.
- g. Mrs. Vedha Arun, Head, Investor relations, Native lead Foundation.
- h. Pradeep Yuvaraj / Prezantim, Coimbatore.
- i. Mohan Dinesh / Management & Governance consultant.
- j. Senthil Kumar Rajappan Founder & CEO Halcyon Ventures.
- k. Mr .K.P.Rajaganesh, Founder & CEO K.G. Automation, Tirupur.
- l. Mr.D. Thiruvignesh, Founder & CEO, The Cloud Company, Perundurai.
- m. Mr. A.K. Gowtham, Founder & CEO, Nutz Technovation Pvt Ltd, Erode.
- n. Mr. A. S. Prabhu Kumar, Chair, Yi Innovation – Erode Chapter.
- o. Mr. Sahanraj, Maker Manager, CISCO- ThigQbator.
- p. Ms.Janani Santhosh, Founder, Janani’s Makeup Artistry.
- q. Mr. Vijay Pravin Maharajan, Founder &CEO, Bitscrunch, Germany.
- r. Ms. Priya Dharshini, MD, Aathira Natural Dyeing, Tirupur.
- s. Mr. A.Mohandinesh, Auditor & Company Registration, Consultant, Erode.
- t. Mr. Premananth Founder & CEO @ Start Insights.
- u. Ms. Yazhini Shanmugam, Founder - Ticket 9, Director – Aveniron Technocrop Solutions PVT Ltd, Coimbatore.
- v. Amar Prab Engineering – Rupeek.
- w. Pritesh Asher, Co-founder & CEO- Juicy Chemistry.
- x. Senthilkumar Murugesan, Co-founder & CEO - JioVio Healthcare.
- y. Mr. S.Shanmugavadivel ,Co-Founder Tohands & Founder – IcOnT, Bengaluru.
- z. Mr.T.Sakthivel, Director & Co-Founder, Yali Mobility Pvt Ltd, Chennai.

➤ **Special Invitees – Impact Lecture**

- a. Dr. A. Velumani, Founder – Thyrocare.
- b. Padmashri Arunachalam Muruganantham, Founder, Jayaashree Industries, Coimbatore.
- c. Mr. T. Sathishkumar, Founder and MD, Milky Mist Dairy Food Pvt., Ltd., Erode.

➤ **Industry representation:**

- a. Mr. S. Maruthappan, General Manager, DIC , Erode.
- b. Mr. G. Anandakumar, Divisional Manager, Canara Bank, LDM, Erode.
- c. Mr. M. Sabarigiri, AD (Electrical), DFO,Coimbatore.
- d. Ms.T.Isha, Loan Consultant-MSME BNI Flyer.
- e. R. Thirukumara Raja Vallaban, M.E., Managing Director - Prodel Market verse Pvt Ltd.

- f. Mr. Prakashkumar Mayilsamy, Bosch Global software Technologies, Coimbatore.
- g. Mr.Ramasamy Varatharajan, Project Manager, Senior Mobile Application, Developer, Tec Tackle Software Solution, Coimbatore.
- h. Mr.Naven Arumugam, Full-Stack Software Engineer, Tringapps Research Labs Pvt Ltd Limi, Chennai.
- i. Mr. G. Sai Vaibhav, Examiner of Patents & Designs, NIPAM, Patent office, Chennai.
- j. Mr. Prakashkumar Mayilsamy, Bosch Global software, Technologies, Coimbatore.
- k. Mr. E. Yuvaraj, Manager – Quality, Roca-Parryware, SIPCOT.
- l. Dr. K. Natarajan Professor & Head, Department of chemistry Bharathiya University, Coimbatore.
- m. Ms. Radha Manoharan, Rajendra Institutions, Erode.
- n. Mr. Sounder Kannan, Vice Chairman, CII – Madurai Director - NAGA Limited, Dindigul.
- o. Dr. A. Balaji Ganesh, Director & Founder, IP EVER LLP, Director & Co-Founder Emsensing Technologies PVT LTD, Chennai.
- p. Dr. K. Sampath kumar / Professor & Head, Agricultural Engineering, KIT, Coimbatore.
- q. Mr. K. Shanmugam (Shan Karuppusamy), Vice President, ELB learning.
- r. Mr. R. Srinaath, Director, i6 Techlabs Pvt Ltd, Coimbatore.
- s. Dr. K Suresh Kumar, President, Indian Steps and Business Incubators Association (ISBA) Executive Director / PSG-STEP (Science & Technology Entrepreneurial Park), Coimbatore.
- t. Col Henry Robert J, Ex Commanding Officer, 15(TN) BN NCC Erode.
- u. Mr Durai Palanisamy, Executive Director, Pallavaa Textiles Private Limited | Vice Chairman - Southern India Mills' Association (SIMA) | Past Chairman - CII Erode Zone.

## **B. Key functionaries at the IIC@KEC:**

- a. President – Dr. R. Parameshwaran / Professor MTS
- b. Vice President – Mr. P. S. Kannan/ Manager TBI@KEC
- c. Convener- Dr. S. Praveen Kumar / Asst. Prof. (Sr. G) MTS
- d. Innovation activity coordinator – S. M. Senthil / Asst. Prof. (Sr. G) Mech
- e. Start-up activity coordinator – Ms. M. Sangeetha/ Asst. Prof. (Sr. G) CSE
- f. Internship coordinator – Mr. M. Suresh/ Asst. Prof. EEE
- g. IPR activity coordinator- Dr. G. S. Rampradeep/ Asst. Prof CIVIL
- h. Social Media Coordinator- Dr. L. Rahunathan/ Asso. Prof MCA
- i. SIH Coordinator - Dr. T. Abirami/ Asso. Prof IT
- j. YUKTI Coordinator- Ms. K. Karthika/ Asso. Prof CTPG
- k. ARIIA & NIRF Coordinator – Dr. P. Senthilvel Murugan / Prof/ Mechanical
- l. IP / Patent Expert – Mr. Arjun Bala

- m. Startup / Alumni entrepreneur – Mr. S. P. Raja Kumaran
- n. Startup / Alumni entrepreneur – Mr. C. Karthikeyan
- o. Expert from nearby Industry- Mr. Hariprakash Govindarajulu
- p. Expert from Nearby Incubation Center – Dr. K. Suresh Kumar, PSG STEP
- q. Resource strength (human capital and Physical capital) in IIC@KEC:

- Total No. of IIC Members:
  - a. Faculty Members: 45
  - b. Student Members: 80
  - c. Non-Teaching staff members: 4
- Total No. of IAs:
  - a. Advanced level training: 24
  - b. Up Skilling : 03
- Total No. of faculty Mentors: 12
- Pre-Incubation Unit: Department level (10 Numbers)
- Incubation Unit: Kongu Technology Business Incubator (TBI@KEC)
- IP Facilitation Unit: IPR Cell @KEC

**C. Facilities, Infrastructure of Pre-Incubation & Incubation kind and Student bodies/clubs engaged in promotion of Innovation and Entrepreneurship in the campus:**

**a. Ideation & Product design**

- CAD centre (AutoCAD, CATIA, SOLIDWORKS, CREO, ANSYS, MATLAB)
- Analog System Design lab (in collaboration with Texas Instruments)
- Modelling and Simulation Laboratory
- Bell Communication System Design Lab
- NI LabVIEW Academy School (Virtual instrumentation)
- Embedded system laboratory (Free scale Semiconductors Inc., USA)
- High Performance Computing Lab (collaboration with C-DAC, Bengaluru)
- IOT lab (Cyber Physical system design)
- Cloud Computing and mobile application Laboratory
- e-Yantra laboratory (in association with IIT-Bombay)
- Process Dynamics and Control Laboratory
- Food Analysis and Quality Control Laboratory
- Self- Development Cell
- Foundation Lab (Mechanical, Manufacturing, Robotics, Electrical, Electronics, IoT)

**b. Incubation Unit**

- Technology Business Incubator (TBI@KEC)

**c. Prototype development**

- Nidhi Prayas Shala at Kongu TBI
- Project cubicles and pre-incubation centers of each department
- Workshop Complex
- CAD/CAM centre
- Occupational Training Centre (OTC) sponsored by BOSCH

**d. Business canvas model and business plan development**

- Business Application lab
- Centre for conducting Certificate course in Accounting by ICWAI
- Mentorship through Entrepreneurs: CII, CODISSIA, EEDISSIA, Yi

**e. Student bodies/ cells**

- Entrepreneurship and Management Development Centre (EMDC)
- Self-Development Cell (SDC)
- Women Development Cell (WDC)
- Citizen Consumer / Legal Literacy Club
- Business Cell

**D. Achievements by IIC@KEC:**

- No. of different types of I&E and IPR activities Conducted
  - a. I&E Activities: 55
  - b. IPR Activities: 4
- No. of student's & faculty ideas generated: 458
- No. of student's & faculty Innovation/prototypes developed: 152
- No. of IPs generated, published and granted so far:
  - a. IPs generated: 13
    - a. IPs published: 8
    - b. IPs granted : 5
  - b. No. of Student/Faculty Start-ups/Ventures established: 20
- Amount spent on I&E activities in the campus: Rs. 6,75,200/-
- Fund supported to student & Faculty lead Innovations, start-ups and IPR
  - a. Innovations: Rs. 1,06,000/-
  - b. Start-ups : Rs. 77,05,000/-
  - c. IPR : Rs. 1,97,920/-

## **E. Best IIC Faculty/Student members and their achievements:**

### **➤ Faculty Members:**

- a. Mr. R. P. Karthik – Received Rs. 4,00,000/- for 5G Hackathon  
<https://sites.google.com/a/kongu.edu/rpkarthik/>
- b. Mr. S. Pranav- Winner of SIH 2022  
<https://sites.google.com/a/kongu.edu/pranav-chem/>
- c. Mr. K. Nithyanandham- Winner of KPIT SPARKLE 2022  
[https://sites.google.com/a/kongu.edu/nithyanandhan-k\\_auto/](https://sites.google.com/a/kongu.edu/nithyanandhan-k_auto/)

### **➤ Student Members:**

- a. Mr. K.R. Pranav Balaji– Winner in SIH 2022
- b. Mr. S. Sivakarthick - Winner KPIT SPARKLE
- c. Ms. S. Kausika – Honorable Mention @ Yesist'12, Global event

## **F. Best Innovations:**

### **1. Energy Generation in Highways Using Moving Vehicles**

| Inventor               | Co-Inventor(s)   | Mentor                      | Dept. |
|------------------------|--|-----------------------------|-------|
| Mr.S.Narasimmabharathi | Mr. P. Kavin Kumar<br>Mr. S. ElamathiKumaran<br>Mr. M. Subieshek<br>Mr. J. Ram Kumar | Mr. K. Nithyanandhan<br>AP. | AUTO  |

### **Abstract**

To maximize electricity production, the vertical axis wind turbines are designed and placed along the highways. These turbines are designed for efficiency, harnessing wind energy from vehicles traveling at a minimum of 50 km/hr to 100 km/hr with a wind velocity of 20 m/s and an Induction generator also developing for energy production. This energy will power EV charging stations every 50 km and given to the grid. A complete renewable energy charging Station.



## 2. AQI Based Smart System To Monitor And Control Fan, Air Conditioner And Indoor Ventilation

| Inventor       | Co-Inventor  | Mentor                                      | Department |
|----------------|--|---|------------|
| Ms. S. Kausika | Ms. S. Akalya<br>Mr. D. Rajashekhar<br>Mr. M. K. Nagul | Dr. S. Praveen Kumar<br>Asst. Prof. (Sr. G) | MTS        |

### Abstract

People have more and more expectations for thermal comforts, such as indoor temperature humidity and wind speed as technology advances and they pay greater attention to air quality. Poor indoor air quality affects the elderly, children and people with respiratory allergies and also leads to hypersensitivity. As a result air quality monitoring network is used to identify higher index values, higher categories and darker display colours suggest that higher amounts of pollution are more hazardous to human health, particularly the respiratory system.

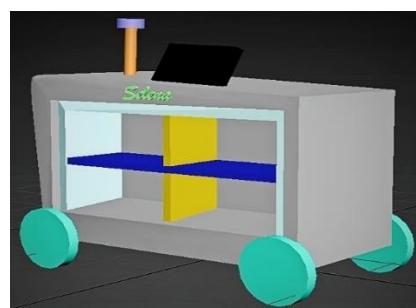
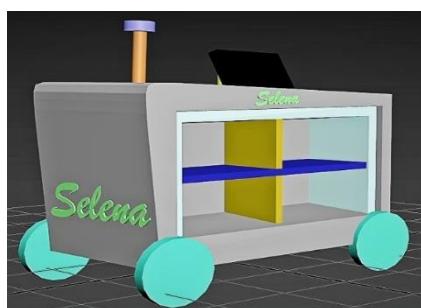


## 3. Autonomous Food Delivery Robot

| Inventor     | Co-Inventor(s)                      | Mentor  | Department |
|--------------|-------------------------------------|---|------------|
| Mr. B. Saran | Mr. J. Siddharthan<br>Mr. P. Sriram | Dr. C. Maheswari<br>Associate Professor / MTS | MTS        |

### Abstract:

Autonomous food delivery robots have emerged as a groundbreaking solution to address the evolving demands of the food service industry and the growing need for contactless and efficient food delivery systems. These robots leverage advanced technologies such as artificial intelligence, computer vision, and robotics to navigate through complex environments, interact with customers, and securely transport food orders from restaurants to consumers.



#### 4. Removal Of Weeds Using Chemicals On Existing Structures

| Inventor        | Co-Inventor(s)     | Mentor                           | Department |
|-----------------|--------------------|----------------------------------|------------|
| Mr. Mohan Ram N | Ms. Pooja Shri A M | Dr. D. Ambika<br>Associate Prof. | CIVIL      |

##### Abstract:

A solution that can kill plants which has grown out of the cracks and damaged openings of buildings and structures without bringing any harm to the buildings materials like concrete, paint and reinforcement which has been placed inside as well. The solution have a desired pH range which can only kill the plant without bringing any damage to the user as well.



#### 5. Clean X – Autonomous cleaning Bot

| Inventor              | Mentor                    | Department |
|-----------------------|---------------------------|------------|
| Mr. Pranav Balaji K R | Dr. K. Kannan / Professor | Chemical   |

##### Abstract:

Households and industries of today are becoming smarter and more automated. Domestic robots are entering the homes and people's daily lives, but it is yet a relatively new and immature market. The purpose of this project is to design and implement a Vacuum Robot, Autonomous and Manual via Phone Application. Rover is designed to make cleaning process become easier rather than by using manual vacuum. Also this will have a UV strip so that it can sanitize the floor completely.



#### G. Start-ups established by students

- M/s. ZIPCAD, Founder: Mr. A. Dilip Vijay Ram

## **H. Break through Innovations / Technology Developed at the institute**

The following are the break through innovations that were developed in house at our institute by the faculty and student members of IIC@KEC during the year 2022-2023.

### **1. Design And Development Of Efficient Indigenous Hydroxy Gas Generation System Using Dry Cell Electrolysis Method**

A smart HHO kit which can be retrofitted in both existing as well as in new vehicles. This innovative kit not only boosts vehicle performance but also plays a crucial role in mitigating harmful emissions. With the ability to enhance your vehicle's efficiency while reducing its environmental impact



### **2. Novel sanitary Napkin**

It is a double side napkin in single set. So they can use one side for particular time and they can remove top side and thrown away and can use other side for another particular period so, it reduce the necessity of carrying additional napkins along with them. It is made with organic agro-waste absorbent material so it decompose easily in the environment.



## **I. Participation of IIC@KEC in various programs of Central and Stage Govt.**

- ARIIA: Since 2018 - Rank: 51 -100 Band (Innovation Category)
- National Innovation Repository
  - Total Registrations: 540
  - Idea Submitted / Recommended: 475 / 371
  - Prototypes Submitted / Recommended: 155/ 120
  - Business / Startup Ideas Submitted / Recommended: 20/ 20
- KAVACH
  - National level Finalists: **One Team**
- Inventors Challenge (AICTE)
  - Semi Finalist: **Four Teams**
- YI Innovation Phase Imagine
  - National level Finalists: **Five Teams**

- **KPIT SPARKLE**
  - National level Finalists: **Four Teams**
  - **Most Admired Team : One Team (Grant of Rs. 1,00,000/-)**
- **CISCO ThinQbator – Sustainability Hackathon Cohort 5**
  - National level Runners: **Two Teams (Grant of Rs. 5,000/- per team)**
- **TIE University - Hackathon**
  - National level Semi-Finalists: **One Team**
- **Startup TN- “Theerkathan” Startup Thiruvizha**
  - Gold category: **One Team (Grant of Rs. 10,000/-)**
  - Silver category: **Four Teams (Grant of Rs. 5,000/- per team)**
- **AICTE- Bharath Cycle Design Contest**
  - Finalist: **Two Teams (Grant of Rs. 40,000/- per team)**
- **National Level Kart Design and racing Event**
  - Overall Runner up: **One Team (Grant of Rs. 40,000/-)**
- **V-Guard Big Idea Design Contest**
  - National level Third Prize: **One team (Grant of Rs. 25,000/-)**

#### **J. Detail of Social-Media & Connections of IIC @KEC**

- Instagram:** [https://www.instagram.com/iic\\_kec/](https://www.instagram.com/iic_kec/)  
**Facebook:** <https://www.facebook.com/iickec> ;  
**Twitter:** <https://twitter.com/IicKongu>

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

**Mr. V. A. Nithin, Chairman, IIC@KEC**

Being the chairman of IIC@KEC I have got a chance to work with a great team of faculties and students. We organized about 59 events in this academic year, which boosts innovation and entrepreneurial skills of students.



**Ms. A. Priyanga, Alumni, Va Tech Wabag, Chennai**

We are the first batch to win in SIH'2022. This happened only due to constant reviewing and mentoring by our faculty coordinators of IIC.



#### **Contact:**

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