



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 2020-2021

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 5-star ratings for the academic years 2018-19 and 2019-20

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

➤ Startup representation:

- a. Prof. Saji Varghese, Associate Professor, Christ University, Bangalore

- b. Mr. Siddharth Nair, Founder – Xfinito Biodesign
- c. Mr. Prasanth Ommanakuttan, Founder, Managing Partner, Green Era Recyclers.
- d. Mr. Abhijith, Co-founder, Tagnquire Technologies Pvt Ltd.
- e. Mr. Sasi Varnakumar, Founder and CEO, Teal Orca, Coimbatore
- f. Mr. Karthickeyan.C, Managing Director, MAGNIC Technologies Pvt Ltd
- g. Mr. Gokul Srinivas, Founder /CEO, Minionlabs, Bengaluru
- h. Adarsh Warrier, CEO & Co - Founder, Vicara, Bengaluru
- i. Mr. Suraj Mohan, Co-founder, Solavio labs & Fixodo, Coimbatore
- j. Mr. G.Senthilkumar & Vikas Badami, MADIEE Games, Chennai

➤ **Industry representation**

- a. Mr. P. N. Sreekumar, Chairman and Managing Director, M/S Guideline Technology Groups, Kochi
- b. Mr. Karthick R, Founder, and Managing Director, TAARK Equipment's Pvt Ltd, Pollachi
- c. Mr.S.Senthil Basavaraj, Manager Products, Allstate, Bangalore
- d. Mr.G.T.Ramesh, Director, Coral Group of Companies, Erode
- e. Mr.S.Jegatheeshkumar, JKS Builders, Theni
- f. Mr. Arun Subramanian, Managing Director, EarthFokus, Chennai
- g. Mr. Pradeep Thangavel, Terzo Technologies, Chennai

➤ **IPR**

- a. Mr. Muruganatham Senthilrajan, President and Patent Attorney of M/s Metayage IP Strategy Consulting LLP
- b. Dr.D.Balaji, KPR Institute of Technology, Coimbatore

➤ **Investors**

- a. Mr. Shashank Randev, Founder VC, 100X.VC, Mumbai
- b. Mr. Siddharth Nair, Investment Partner, Campus Fund
- c. SIDBI Team & Dr. P. Karthikeyan, Associate Professor / MBA

➤ **Departments/ Units**

- a. Dr P. Navaneethakrishnan, CCO/ planning
- b. Dr U. S. Ragupathy, CCO/Accreditation
- c. Dr G Murugesan CCO/Academics
- d. Dr. P. Karthikeyan, Associate Prof./ MBA

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. Faculty Coordinator – Dr. N. Kasthuri/ Prof. ECE
- e. Innovation activity coordinator – Dr. S. M. Senthil/ Asst. Prof. (Sr. G) MECH
- f. Start-up activity coordinator – Mr. R. P. Karthik/ Asst. Prof. ECE
- g. Internship coordinator – Dr. S. Albert Alexander/ Asso. Prof. EEE
- h. IPR activity coordinator- Dr. G. S. Rampradheep/ Asso. Prof Civil
- i. Social Media Coordinator- Mrs. D. Hemalatha/ Asst. Prof. (Sr. G) CT-UG
- j. SIH & YUKTI Coordinator- Dr. T. Abirami/ Asso. Prof IT
- k. ARIIA & NIRF Coordinator – Dr. P. Senthivelmurugan/ Professor MECH
- l. IP / Patent Expert – Mr. ArjunBala/ Metayage IP Strategy Consulting LLP
- m. Startup / Alumni entrepreneur – Mr. S. P. Rajakumaran/ MOBITECH
- n. Startup / Alumni entrepreneur – Mr. C. Karthikeyan / MAGNIC
- o. Expert from nearby Industry- Mr. G. Hariprakash / Logic Research Labs
- p. Expert from Nearby Incubation Center – Dr. K. Suresh Kumar / PSG STEP

C. Resource strength (human capital and Physical capital) in IIC@KEC:

- Total No. of IIC Members:
 - a. Faculty Members: 37
 - b. Student Members: 91
 - c. Non-Teaching staff members: 04
- Total No. of IAs:
 - a. Advanced level training: 06
 - b. Foundation level training: 10
- Total No. of faculty Mentors: 22
- Pre-Incubation Unit: Department level (10 Numbers)
- Incubation Unit: Kongu Technology Business Incubator (TBI@KEC)
- IP Facilitation Unit: IPR Cell@KEC

D. 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

b. Prototype development

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

c. 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

d. Student bodies/ cells

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

E. Achievements by IIC@KEC:

- No. of different types of I&E and IPR activities Conducted
 - a. I&E Activities: 68
 - b. IPR Activities: 4
- No. of student's & faculty ideas generated: 67
- No. of student's & faculty Innovation/prototypes developed: 10
- No. of IPs generated, published and granted
 - a. IPs generated: 02
 - b. IPs published: 07

- c. IPs granted : 01
- No. of Student & Faculty Start-ups/Ventures established
 - a. Student Star-ups: 04
- Amount spent on I&E activities in the campus: Rs. 2,50,000/-
- Fund supported to student & Faculty lead Innovations, start-ups and IPR
 - a. Innovations: Rs. 1,90,800/-
 - b. IPR : Rs. 56,000/-
- No. of Technology Transfer and Commercialisation happened
 - a. Commercialization: 03

F. Best IIC Faculty/Student members and their achievements:

➤ **Faculty Members:**

- a. Dr. S. Praveen Kumar- Winner of National Innovation Contest (NIC 20) <https://sites.google.com/a/kongu.edu/praveenkumar-mts/>
- b. Dr. R. P. Karthik – Received Rs.1,00,000/- for 5G Hackathon <https://sites.google.com/a/kongu.edu/rpkarthik/>
- c. Dr. G. S. Rampradheep- Winner of Toycathon 2k20 <https://sites.google.com/a/kongu.edu/g-s-rampradheep-civil/>

➤ **Student Members:**

- a. Mr. P. T. Bijoy Antony – National level 4th rank in Engineering Olympiad Chairman/ IIC@KEC
- b. Mr. P. Ranjith Kumar –Recipient EDII- IVP Voucher-A worth Rs.2,50,000/- Innovation Activity Coordinator/ IIC@KEC

G. Best Innovations:

Following are the top 3 innovations during the academic year 2020-2021

➤ **Automatic sugarcane transplanting machine**

Inventor	Co-Inventor(s)	Mentor	Department
Mr. N. Gokul Raja	Mr. M. S. Dhisvanth Mr. P. M. Goutham	Dr. P. Sivarajanji Prof. / ECE	ECE

Abstract:

An Automatic Sugarcane transplanting machine setup which can be attached to existing power-tiller or mini-tractor and driven by one person. The major operations of the proposed technology are Furrow Formation, Automatic seedlings dispensing and planting process.



➤ **Automated solar powered planting machine with soil stirrer and power sprayer**

Inventor	Co-Inventor(s)	Mentor	Department
Mr. T. Jagathesh	Mr. R. Deepak	Mr. P. Rajkumar	EIE
	Mr. N. Gokul Raja	Asst. Prof / EIE	
	Mr. S. Saran		

Abstract:

Turmeric is one of the major crops harvested in India. Most of the planting process involved skilled labours with high wages. The proposed project aims for automatic planting of turmeric seeds powered through solar panels. In-order to enhance the utilization of developed machine, soil stirrer and power sprayers are additionally incorporated. Hence, the proposed machine reduces the labor wages incurred for planting of turmeric seeds which enhances the financial status of farmers.



➤ **Investigation on Geopolymer Paver Blocks made with Steel Slag aggregates towards sustainable urban/smart cities development**

Inventor	Co-Inventor(s)	Mentor	Department
Mr. A. Amarnath	Mr. S. Abhinantha	Dr. A. R. Krishnaraja	Civil Engg.
	Mr. A. Chowndharian	Asst. Prof. (Sr. G) / CIVIL	

Abstract:

Usually, paver blocks are made with cement, natural aggregates and water. Cement causes air pollution and global warming, Production of natural aggregates destroys eco system, hydrological resources and causes air and noise pollution. This product is made up of fly ash,

GGBS and steel slag aggregates where usage of cement, natural aggregates and water is entirely neglected.



H. Start-ups established by students

➤ **M/s. SNIFTY TECHNOLOGIES**

Founder: Mr. P. Ranjith Kumar

➤ **M/s. NATIVE GURU PRIVATE LIMITED**

Founder: Mr. Thangavel Vignesh Prabhu

Co-Founders: Mr. Ansar Athif Shah & Mr. Subramani Prabu

I. Break through Innovations / Technology Developed at the institute

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

S. No	Item	Quantity	Expenditure Incurred
1.	M19- Face Shield	685	62,300.00
2.	3D Printed N-95 Mask	60	18,000.00
3.	Ecological Hyperacid (Waterless) Dyeing System	Received a fund of Rs. 2,50,000/- from EDII IVP	
4.	Incentivized tech bin	Winners of National Innovation Contest (NIC 2020)	

1. M-19 Face Shield:

A total of 685 face shields using OHP sheets and MDF & Acrylic materials were designed and developed by faculty members of IIC@KEC was provided to the front-line workers.

FACE SHIELD

Total: 685 Nos.

Collector Office, Erode District, Tamil Nadu

Provided to:

1. Salem Government Hospital: 150 Nos.
2. Erode Government Hospital: 50 Nos.
3. Erode CK Hospital: 145 Nos.
4. Erode Town Police Station: 50 Nos.
5. Perundurai Medical College Hospital: 290 Nos.

Police Constable and Doctors at work

2. N-95 Masks:

Reusable 3D printed N-95 masks were developed in house using PLA material and was provided to Government Hospitals at Salem and Erode.

3D Printed Mask

Testimonial by Dr. D. Sasikumar

Dr. D. Sasikumar RVS Cataract & Retina Services

- Cataract
- Refractive Laser Surgery
- Paediatric Ophthalmology
- Orbit
- Oculoplasty

Timings

Provided to:

1. Salem Government Hospital: 50 Nos.
2. Perundurai Medical College & Hospital: 10 Nos

3. Ecological Hyperacid (Waterless) Dyeing System

In conventional dyeing process water act as a solvent, it was replaced by carbon dioxide. The main objective of the project is to avoid the over usage of water and to eliminate the pollution due to waste water released in the natural bodies (river, underground using bore-wells)



4. Incentivized Tech Bin

The current problem in today's social attitude is negligence to keep the environment clean. This project aims to provide a gamified experience to throw trash for the users which would result in cleaner surroundings. Gamification is required for engaging people to throw trash into the bin. This smart bin provides incentives to the users by taking in the account of trash thrown.



J. Participation of IIC@KEC in various programs of Central and State Govt.

- **ARIIA**
 - a. Participation: Since 2018
 - b. Rank: Band A- 6th to 25th (Private/ Self-Financed College)
- **NISP Adoption status**
 - a. Trained Faculty - 01
 - b. Policy Formulation - Completed
 - c. Policy Implementation – In Process
- **Innovation Ambassador**
 - a. Advanced level training: 06
 - b. Foundation level training: 10

- **Smart India Hackathon**
 - a. Hardware Category: One Project - Winners (Team Snifty)
 - b. Software Category: Two projects – National finalist
- **National Innovation Contest**
 - a. Institution Level: Five Projects
 - b. Regional Level: Three Projects
 - c. National level: One Project – Winners (10th Position in top 127)
- **Toycathon**
 - a. National level Finalists: Eight teams
 - b. National Winners: One team (Cash award worth Rs.25,000/-)
- **5G Hackathon**
 - a. National level semi-finalist: One team (Grant of Rs.1,00,000/-)
- **India International Science Festival**
 - a. Finalist: Three teams
- **AICTE Chhathra Vishvakarma Award**
 - a. Regional Finalists: Four teams

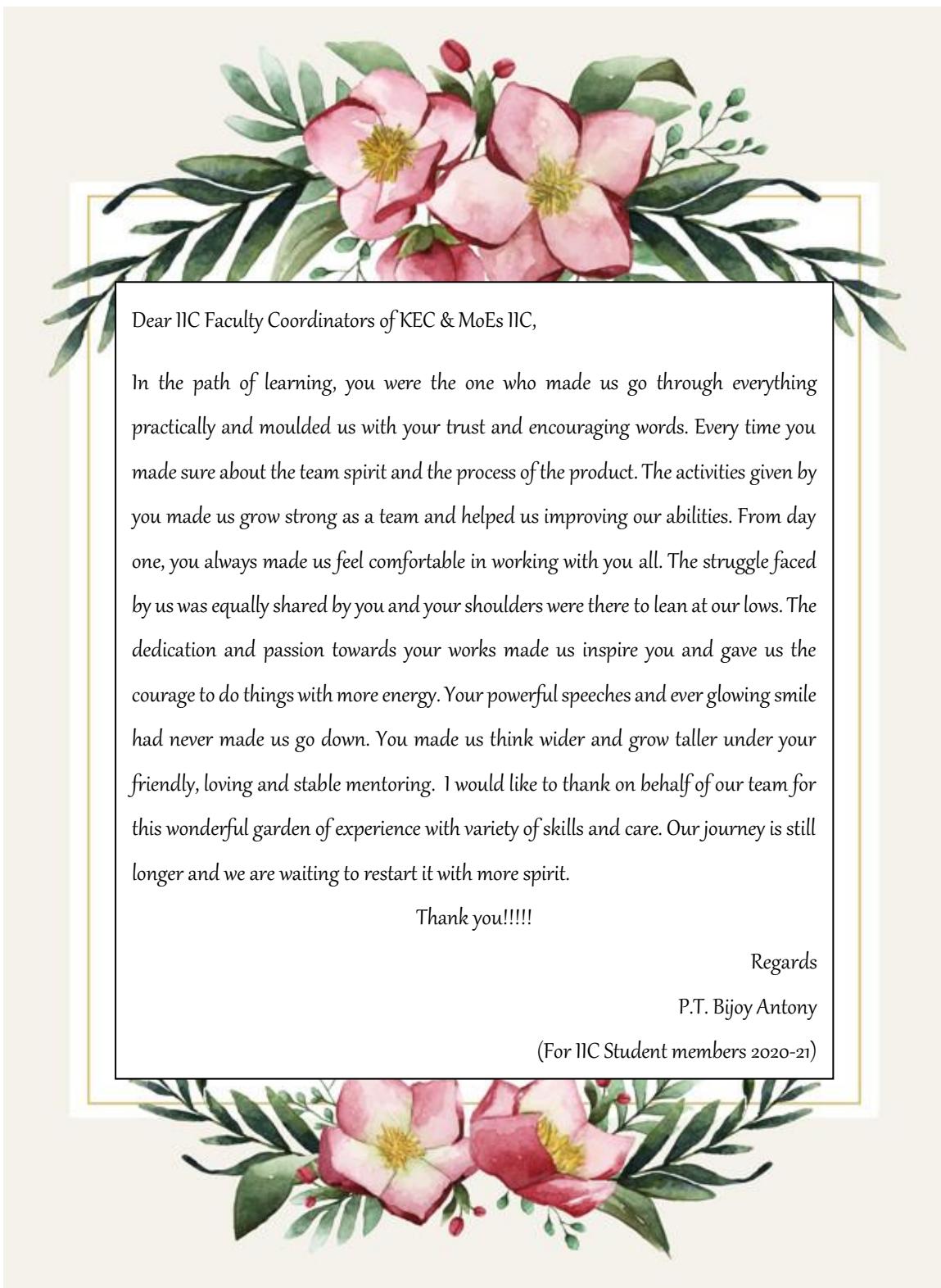
K. Detail of Social-Media & Connections of IIC @KEC

- Twitter** <https://twitter.com/licKongu>
Instagram https://www.instagram.com/iic_kec/
Facebook <https://www.facebook.com/iickec>

L. Images



M. Testimonials



N. Contact

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