



R.M.K.

COLLEGE OF ENGINEERING AND TECHNOLOGY

RSM NAGAR, PUDUVOYAL-601206

(An Autonomous Institution)

*Affiliated to Anna University, Chennai/ Approved by AICTE, New Delhi
All Eligible Courses Accredited by NBA / NAAC "A" GRADE / ISO 9001-2015
Certified*

22.08.2022

Annual Report 2021-22

College Name	:	R.M.K. College of Engineering and Technology
IIC ID	:	IC201811617

A. About IIC Institute



Vision of IIC RMKCET

- To empower the students as well as faculty entrepreneurs with innovative ideas of social relevance and promoting a culture of entrepreneurship activity in campus.



Mission of IIC RMKCET

- To develop a system with required infrastructure that can enable students and faculty to innovate and prototype their ideas.
- To create vibrant local innovation ecosystem
- To support Start-up culture through IIC
- To develop better cognitive ability among budding entrepreneurs.
- To promote entrepreneurship in the key thrust areas of Engineering and Technology by strengthening industry- institute collaboration



Journey of IIC established at the Institute

- The RMKCET IIC Established in the year of 2018 as per the guidelines of MHRD and IIC.
- Further, various activities were conducted during the year 2018-2019 and achieved two-star rating from IIC

- Then IIC 2.0 was well planned and structured guidelines were given by MoE.
- Various programs were conducted in the area of Innovation, startup and Entrepreneurship and also our students participated in the National Innovation Contest.
- For the Academic year 2020-2021, we got **"Four star"** rating from MoE IIC.
- In the IIC 3.0, various programs were adopted by institution to promote the startup and entrepreneurship culture among students and faculty.
- In Q1 and Q2, we got Two stars, further submitted all the reports of Q3 and Q4. We hope this year also we will get Five star rating.
- Our IIC has formulated NISP and implemented in our Institute. The same has been disseminated among students and Faculty.
- Our IIC got funding of Rs. 2,25,000/- from MIC/AICTE under Mentor-Mentee Scheme. We have extended our support to Five Mentee Institutions in organizing various IIC activities and participated in Quarterly planning meetings. We have also organized Two day Exposure visit to all mentee Institutions.

IIC EXTERNAL Members

EXTERNAL MEMBERS			
1	Mr.Raja Krishnan	Finetech Industries	Industrial Expert/ External Member
2	Mr.A.N.Rajendran	Nutech Pvt. Ltd	Entrepreneur/ External Member
3	Mr.M.Ramjawahar	Assistant Controller of Patents	Patent Expert/ External Member
4	Mr.S.Venkatasubramanian	Alumnus	External Member

B. Brief mention of key functionaries at the IIC Institute

S.No	Name	Designation & Department	Role	Responsibility
1.	Dr. DEVAN PK	Professor/MECH	President NISP Coordinator YUKTI Coordinator Innovation Contest Coordinator Incubation Centre	Initiate, identify and form the council and assign the role and responsibility to members. Overall data collection regarding YUKTI, KAPILA, IA.
2.	Mr.A.Balajikrishnabharathi	Assistant Professor/MECH	Convener Mentor Mentee Coordinator Start-up Coordinator	Organizing and coordinating IIC activities Coordinating Mentor-Mentee Scheme. Start-up promotion activities and extend support to other activities.
3.	Dr. SHANTHI KG	Professor/ECE	ARIJA Coordinator NIRF Coordinator	Creating repository and advising on more innovation and startup activities in campus to increase the ranking in ARIJA & NIRF and also extend support to other activities.
4.	Dr. AKILA A	Assistant Professor/CSE	YUKTI- Coordinator Innovation Contest Coordinator	Organizing and coordinating after IPR mentoring, awareness opportunity to promote innovation activities and extend support to other activities.
5.	Dr.C.J.Catherine	Associate Professor/EEE	KAPILA Coordinator IPR Activity Coordinator	Organizing and coordinating after Innovation promotion activities and extend support to other activities
6.	Mr. SATHYARAJ P	Assistant Professor/ECE	Innovation Ambassador portal update Startups ATL School,	Organizing and coordinating Innovation ambassador activities and ensuring the upload of those activities in IA portal. Looking after the activities related to ATL School scheme. Engage students in Start-ups, innovation labs and incubation Centre etc. to promote innovation activities and extend support to startup activities.

S.No	Name	Designation & Department	Role	Responsibility
7.	Mr.PRAVEEN D.S	Assistant Professor/CSE	Incubation and Pre-incubation Coordinator	Facilitating the available Infrastructure from all the Departments to students and Faculty who are willing to develop products.
8.	Ms. KATHIJA NASREEN A	Assistant Professor/CSE	Incubation and Pre-incubation Coordinator	Facilitating the available Infrastructure from all the Departments to students and Faculty who are willing to develop products.
9.	Ms.IDA	Assistant Professor/S&H	Social Media Coordinator	Organizing and coordinating after social media promotion and public relation and effectively communicating regarding various activities undertaken to promote innovation activities and extend support to other activities.
10.	Mr. NARESH SAMMETA	Assistant Professor/CSE	Website update	Updating data related to IIC
11.	Dr.NARMATHA SU	Assistant Professor/S&H	NISP Co-Coordinator	Organizing and coordinating NISP policy after Start-up promotion activities and extend support to other activities

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

S.No	Description	Count
1.	Total No. of IIC Members	327
2.	Total No. of IAs	18
3.	Total No. of faculty Mentors From Portal	83
4.	Pre-Incubation Units, If any	01 (RMKCET Pre-incubation Unit)
5.	Incubation Units, If any	01 (Venture Sprout)
6.	IP Facilitation Unit, If any	01 (RMKCET IPR Unit)

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

- MSME Incubator of RMKCET – “**VENTURE SPROUT**”
- Ministry of Micro, Small and Medium Enterprises (MSME), Government of India has recognized our Institute as Host Institute (Hi) / Business Incubator (BI), for Implementation of the scheme “Support for Entrepreneurial and Managerial Development of SMEs Through Incubator”.
- Through This Scheme Rs. 1.5 Crores has been sanctioned for developing ten Innovative Products.
- EDC organizes a chain of events to inculcate the entrepreneurial culture among the students. From EDII, under the DST-NIMAT scheme, EDC receives funds to conduct awareness camps.
- The ED cell of the college has registered under the EDI-IEDP programme to cater to the needs of students by organizing online programs.

E. Highlight Achievements

S.No	Description	Count
1.	Number and Different types of I&E and IPR activities Conducted	90
2.	No. of student's & faculty ideas generated	122
3.	No. of student's & faculty Innovation/prototypes developed	15
4.	No. of IPs generated, published and granted	20

S.No	Description	Count
5.	No. of Student & Faculty Start-ups/Ventures established	1
6.	Amount spent on promotion and awareness generation on Innovation Entrepreneurship in the campus	1 lakh
7.	Amount grant or fund supported to student & Faculty lead Innovations, start-ups and IPR	=
8.	No. of Technology Transfer and Commercialisation happened	=

F. Highlight few best IIC Faculty/Student members and their achievements/ Rewarded for the innovations at different forum

The following faculty members are actively participating all IIC related activities:

1. Mr.A.Balajikrishnabharathi, Asst. Prof/Mech & IIC Convener

Mr.A.Balajikrishnabharathi has been nominated as Coordinator for Mentor-Mentee Scheme which is funded by MIC/AICTE and also In-charge for Startup. He also puts effort in establishing Pre-Incubation Centre in R.M.K.College of Engg. & Tech. He is a certified Innovation Ambassador and delivered invited talks on Entrepreneurship in more Seven Technical Institutes and Schools. It has been well received by stake holders.


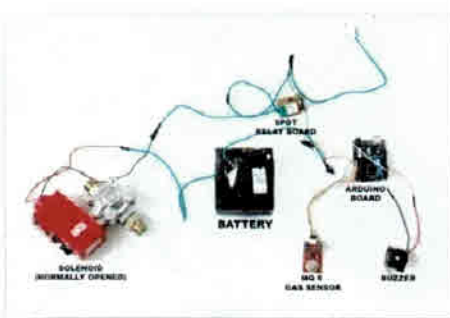
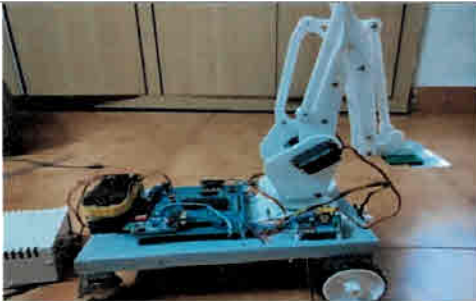
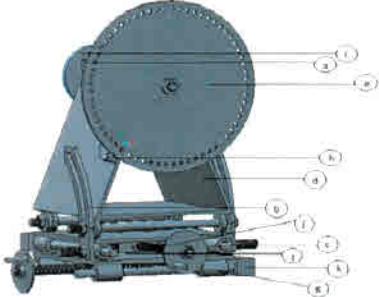
2. Ms. A.Akila, Asst. Prof/AI &DS & IIC Coordinator


Ms. A.Akila is actively participating in all IIC activities. She also guides and mentors the students to take part in Hackathons.



3. Mr.P.Sathyaraj, Asst. Prof/ECE, & IIC Coordinator

Mr.P.Sathyaraj has involved in moulding the students to take part Innovation contests, Hackathons and guiding them in preparing prototypes and making them to present in Contests.

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

S.No.	Patented Innovation	Inventors	Photo Images	Patent Status
1	Emission Control Using New Chemical Composition Applied In Engine Exhaust Line (Muffler) Of A Stationary Diesel Engine	Dr.P.K.DEVAN Mr.Thangadurai Mr.Thula Lokesh		Granted (Patent No. 387556)
2	New Approach To Arrest Flammable Gases Using Microcontroller Operated Solenoids	<u>Dr.M.Balasubramanian</u> <u>Dr.P.K.Devan</u> <u>Dr.T.G.Loganathan</u>		Granted (Patent No. 386813)
3	Development of Portable Robot Base and Robotic Arm for Cleaning Inner Surface of the Tanks using Ultrasonic Sensors	Dr.P.K.DEVAN		Reply to FER filed
4	New Methodology For Generating Spur Gear And Helical Gear Using Radial Drilling Machine	<u>Dr.M.Balasubramanian</u> <u>Dr.P.K.Devan</u> <u>Dr.T.G.Loganathan</u>		Granted (Patent No. 391195)

5	Urban Agro-Farming In Rain Water Harvesting Channels	Dr.K.Sudhakar Dr.G.Devi		Reply submitted to FER
6	Eco Friendly Interlinked Hybrid Absorbent Polymer As Planting Medium For Reducing Frequency Of Irrigation	Dr.K.Sudhakar Dr.G.Devi		FER Issued
7	A Foldable Motorbike And The Method Of Manufacturing Therof	Dr.K.Vinothkumar or Dr.T.G.loganathan an Mr.A.Balajikrishnabharathi		Patent Filed

	
<p>HUMANIM TRUCE Detection of animals is done by using passive Infra-red sensors</p>	<p>Fan components made from Composites</p>

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

In the process of establishing Faculty & Student startups

I. List if any break through Innovations / Technology Developed at the institute (2-3 technology with 2-3 lines about technology and innovation



1. New Approach To Arrest Flammable Gases Using Microcontroller Operated Solenoids (Patent No. 386813)


The use of flammable gases is very high in our day to day life, at the same point of time the number of accidents that occur due to these flammable gases is also high. There is a serious note to overcome these accidents as it takes precious human life. So, there is high need in the world to develop a method which will prove to overcome the accidents caused by flammable gases, and this method proves to be well organized one to overcome these accidents. The solenoid valve of NO type serves in arresting the flammable gases and the electronic system that comprises of a gas sensor, arduino board, SPDT switch serves a in controlling the entire process of arresting the flammable gases at the time of leakage. The use of flame proof enclosure to make the electronic controls as a single unit and also to protect it in case of any accidents makes it much reliable. The key feature is the use of alarm, which produces alarm sound at the time of flammable gas leakage, which brings it to the notice of the person who is nearer to it.

2. Emission Control Using New Chemical Composition Applied In Engine Exhaust Line (Muffler) Of A Stationary Diesel Engine

Today most of the vehicles are run on fuels like petrol and diesel They emit more pollutants like CO,CO₂,NO_x,HC etc. The present work is done with the help of a single cylinder, Air cooled diesel engine equipped with AVL data acquisition system, AVL 437 smoke meter, and AVL DI Gas-444 five gas analyzer. The exhaust gas is treated by attaching sprayer which consists of nozzle, pump assembly to spray the chemical solution into the silencer. The inner circumference of the silencer is coated with the chemical paste, namely, activated charcoal. The spraying is done with chemicals like Potassium hydroxide, Ammonical cuprous chloride which are in the liquid form. The solution is sprayed into the silencer by means of nozzle at high pressure. When the exhaust gas passes through the modified silencer, the emissions like NO_x, HC, CO₂ and CO are considerably reduced by 63.11%, 39.28%, 64.7% and 50% respectively at 80% load.

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

 <p>Certificate of Recognition</p> <p>This is to certify that</p> <p>R.M.K. COLLEGE OF ENGINEERING AND TECHNOLOGY</p> <p>is recognized in the band "EXCELLENT" under the category "Colleges/Institutes (Private / Self Financed) (Technical)" in the Banding of Institutions (as determined in the assessment) AICTE a flagship program of the Ministry of Education, Government of India.</p> <p>20th December 2021</p> <p>Dr. Anil U. Sankar, Director, AICTE Dr. Anand, IIC, Staff In-Charge Officer, R.M.K. Engineering Coll.</p>	<p>R.M.K. College of Engineering and Technology, Thiruvallur is recognised in the band "EXCELLENT" under the category "Colleges/Institutes (Private / Self Financed) (Technical)"</p>
 <p>National INNOVATION and STARTUP Policy 2019 for Students and Faculty <small>A Guiding Framework for Higher Education Institutions</small></p>	<p>NISP Policy adopted and implemented in RMKCET as per the guidelines of MoE.</p>
<p>https://rmkcet.ac.in/NISPAbout.php https://rmkcet.ac.in/pdfviewer.html?&pdf=http://rmkcet.ac.in/IIC/events/RMKCET%20NISP%20POLICY.pdf</p>	
<p><u>Mentor Mentee Scheme</u></p>	<p>RMKCET –IIC has been recognised as Mentor with funding of Rs.2.25 lakhs. Five Institutions have been attached to us and we are conducting IIC activities , Orientation programs, Participation IIC Quarter Planning meetings and conducting Exposure visit. Also guiding them in various schemes like ARIIA, NISP, SIH, YUKTI, KAPILA.</p>
<p>Smart India Hackathon</p>	<p>RMKCET students have submitted 29 ideas in the smart India hackathon and 03 team have gone to Grand Finale</p>

 <p>SMART INDIA HACKATHON 2022</p>	
YUKTI	RMKCET students have submitted 115 ideas in the National Innovation Repository
KAPILA	SIX patent applications have been submitted to KAPILA for funding.
Refer Institute for IIC registration	Nine Institutions have been identified and uploaded in IIC portal for further process sing.
ATL School Linkage	Four schools have been adapted by our Institution.
Innovation Ambassador	18 faculty members have completed IA training successfully and conducting IIC related activities.

K.Detail of Social Media& Connections of IIC institute

	https://www.linkedin.com/company/rmkcet-institutions/
	https://twitter.com/cetinstitution
	https://www.instagram.com/rmkcet_institution/
	https://www.facebook.com/Rmkcet.institution

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

TESTIMONIALS

IIC – Resource Person



I have been in association with R.M.K. College of Engineering & Technology for quite long time. It is indeed a happy moment to be a part of IIC of R.M.K. College of Engineering & Technology. I am Dr.E.Bhaskaran, Joint Director, Dept. of Industries & Commerce, Govt. of Tamil Nadu. I acted as a Resource person for various workshops, Seminars and Invited talks in the areas of Entrepreneurship, Innovation, Startup. This institution has put in lots of efforts to make students undergo various workshops, seminars and exposure to various platforms to convert their ideas into product. I appreciate the IIC team members of R.M.K. College of Engineering & Technology for taking much care in bringing up new innovations and transforming the digital world by nurturing the students to make better India.

IIC – Resource Person



It is indeed a happy moment to be a part of IIC of R.M.K. College of Engineering & Technology. I am **Dr. E.Muthukumaran, Associate Dean (Research & Innovation)** Dr. B.R. Ambedkar Institute of Technology, Port Blair, Andaman and Nicobar Islands. I acted as a Resource person for the workshop organized by IIC on "Design Thinking, Critical Thinking/Product Design" during the year 2021-22. This institution has put in lots of efforts to make students undergo various workshops, seminars and exposure to various platforms to convert their ideas into product. Planning and execution of activities related with Innovation, Startup, IPR and Entrepreneurial

culture are amazing. I appreciate the IIC team members of R.M.K. College of Engineering & Technology for taking much care in bringing up new innovations and transforming the digital world by nurturing the students to make better India.

IIC-Internal Faculty Member:



I am Mrs.A.AKILA working as an Assistant Professor in the Department of Artificial Intelligence and Data Sciences. I am happy to be one of the internal faculty coordinators of IIC in R.M.K. College of Engineering & Technology. MIC's Innovation Cell (MIC) is systematically upholds the culture of Innovation, Entrepreneurship, Incubation and start up amongst the students. We have organized lectures, talks, webinars and Panel discussions as part of IIC activities to the internal and external participants to nurture them to work with new ideas and transform them into prototypes, to organize ideathons and hackathons etc. I have mentored few student teams to implement their ideas and apply the same for hackathons. I have acquired the leadership skills by organizing the IIC activities on behalf of our department.

IIC-STUDENT MEMBER



I am Yeshwanth V G, IIC Student Member pursuing my 3rd year in the Department Electronics and Communication Engineering in R.M.K. College of Engineering & Technology. I have gained good experience by attending various events organized by IIC of our college. I am very much Inspired by entrepreneurship success stories and encouraged to participate in various innovative challenges and hackathons. I got the confidence and aspiration to be an entrepreneur in near future. I have attended IIC's e-sessions in the areas of Innovation, IPR and Start-up/Entrepreneurship as e-activities for all IIC-institutes

M.Images



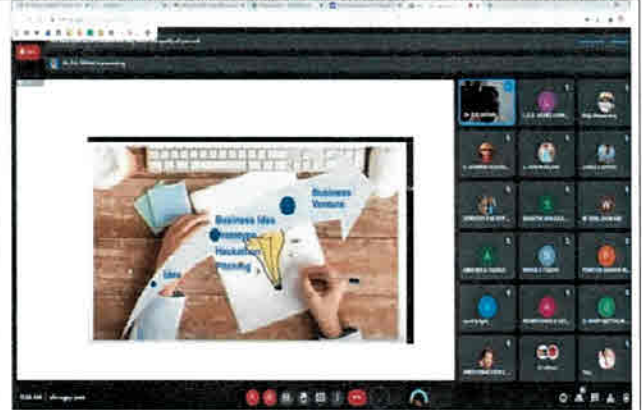
IIC President Dr.P.K.Devan presenting Fourth Quarter Action plan during IIC Council meeting



The Principal, Dean Research, HoDs and Coordinators attending the IIC Council meeting



Inauguration of Mentor-Mentee Exposure Visit



Inauguration of Mentor-Mentee Exposure Visit





Participants from Mentee Institutions



Dr. M. KANTHA BABU, Director (CIPR) Anna University delivering speech on IPR



Dr. E. BHASKARAN
Joint Director, DIC,
Govt. of Tamil Nadu



Participants from Mentee Institutions



Dr. E. Muthukumar, Associate Dean
Dr. B.R. Ambedkar Institute of
Technology, Port Blair is delivering
talk on Lean Startup & MVP (For
Mentee Institutions)



Dr. P.K. Devan, IIC President & Innovation
Ambassador delivering lecture on Business
Model Development

N.Contact

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Dr. P.K DEVAN
Prof/MECH
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PRESIDENT
INSTITUTION'S INNOVATION COUNCIL
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R 24/8/22

Head of the Institution
Dr.K.RAMAR
PRINCIPAL
RMKCET

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