

Annual Report 2021-22
Muthoot Institute of Technology & Science,
Ernakulam, Kerala



A. About IIC Institute

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

□ **Journey of IIC established at the Institute**

The Institute's Innovation Council was established in our institute in the academic year 2018 – 2019. Activities planned and conducted to promote I & E within the stakeholders was the prime focus in the initial stages of establishment. Programs to improve the awareness on I & E and its importance in the development of an individual, institute and the nation were conducted regularly since inception. Hackathons, idea pitching competitions, employability conclaves, Internships programs, Idea exhibitions, etc are conducted consistently every academic year in the institute. Due to the passion and initiatives from the MIC, a revamped and highly motivated team has been constituted in the institute level to ensure active conduct, promotion and execution of I & E related activities. The incubation and pre-incubation units and facilities like CIDRIE (Centre for Industrial Consultancy, Inter disciplinary Research, Innovation & Entrepreneurship) has intensified the I & E activities to a larger extent. Student & Faculty internships offered under CIDRIE is playing a vital role in exposing young innovators to the world of possibilities to build their own startups and to become successful entrepreneurs. Our IEDC has been recognized as "Technology Business Incubator" by Kerala Startup Mission.

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

The Institute's Innovation Council of MITS is led and coordinated by a team that has been handpicked to ensure a rich blend of expertise from the different disciplines of engineering, Industry and innovators. The council comprises of members from all the engineering disciplines within the institute along with experienced and innovated faculty from industry. The nominated and trained innovation ambassadors are also from diversified streams of engineering to ensure availability of mentors and verifiers for the ideas & innovations envisaged by the MITS fraternity. Seeking the help of external members rich in industry experience as mentors and verifiers is another key point of execution to ensure diversity in the resource pool for promoting quality I & E activities.

B. Brief mention of key functionaries at the IIC Institute

Sr. No.	Name of Member	Member Type (Teaching /Non-Teaching/Student/External Expert)	Key Role / Position assigned in IIC
1.	Dr. Neelankantan P. C.	Teaching	President
2.	Mr. Daniel A. V.	Teaching	Convener
3.	Dr. Anjali Varghese C	Teaching	ARIIA Coordinator
4.	Mr. Vipin Vijayan	Teaching	Internship Activity Coordinator
5.	Dr. P. Suresh	Non-Teaching	Start-up Activity Coordinator
6.	Dr. Pramod Kumar M.	Teaching	NIRF Coordinator
7.	Dr. Praveen K M.	Teaching	IPR Activity Coordinator
8.	Dr. Arunkant A Jose	Teaching	Innovation Activity Coordinator
9.	Dr. Cerene Mariam Abraham	Teaching	Social Media Coordinator
10.	Ms. Breeza Paulose	Teaching	Member - IA
11.	Mr. Rajesh Kumar	Teaching	Member - IA
12.	Ms. Jereena Jawahar	Teaching	Member - IA
13.	Ms. Binu Manohar	Teaching	Member - IA
14.	Mr. Eldhose P Sim	Teaching	Member – IA
15.	Mr. Mahalingam P R	External	Member
16.	Dr. Unnikrishnan K C	External	Member

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

- Total No. of IIC Members - 22
- Total No. of IAs - 5
- Total No. of faculty Mentors - 2

□ **Pre-Incubation Units**

CIDRIE(Centre for Industrial Consultancy, Inter disciplinary Research, Innovation & Entrepreneurship) - The centre will help to bring faculty and students together to develop, refresh and exercise their research skills by helping to solve real world problems facing businesses, government and the community in general. The centre would primarily be having the following four goals:

To teach applied research methods to students and interested faculty , to provide faculty with applied research opportunity, to produce high quality low cost information for the local stakeholders (the Institute, Muthoot Group, Small & Medium Industries and Businesses, Government Bodies, Social Welfare Workers, NGOs) & be an incubation centre for start-ups and help guide entrepreneurs. [Muthoot Institute of Technology and Science \(mgmits.ac.in\)](http://mgmits.ac.in)

□ **Incubation Units**

MITS B Hub – An area of 151.20 sq.m is provided for this purpose in the institute. Four startup spaces are arranged in this area as the first phase which includes a well-furnished conference hall and a waiting area. [Muthoot Institute of Technology and Science \(mgmits.ac.in\)](http://mgmits.ac.in)

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

The most active club ensuring the promotion of I&E activities within the institute is the Innovation & Entrepreneurship Development Cell (IEDC). Each department association along with student professional bodies play a vital role in developing and molding the entire institute fraternity with the right attitude towards I & E related activities.

The following facilities within the institute campus ensures proper propagation and training of I & E activities.

- CIDRIE(Centre for Industrial Consultancy, Inter disciplinary Research, Innovation & Entrepreneurship)
- MITS Business Hub (MITS B Hub)
- Industry Institute Interaction Cell
- Research & Consultancy Cell
- Academic Partnerships/Internships
- Innovation & Entrepreneurship Development Cell (IEDC)
- Department Level Research Parks & well equipped Lab facilities.

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

□ Number and Different types of I&E and IPR activities Conducted

Sl. No.	EVENT	College/State/National level Event	Expense	No of Participants	Date
1	“BUSS-B”, INVITED TALK ON BUSINESS PLAN	College Level	nil	30	13-06-2021
2	IDEA TO PATENT	College Level	2000	MITS Faculty Members	20-10-2021
3	Workshop on Internet of Things	College Level	585	55	27-11-2021
4	HACKTALK	College Level	3000	66	27-11-2021
5	App Development Workshop	College Level	11270	49	04-12-2021
6	SmartOThon (Software + Hardware)	College Level	109586	90	10-12-2021 to 12-12-2021
7	How To Become A CEO From A BTech Graduate	College Level	2000	90	27-01-2022
8	IDEA TO DREAM	College Level	11000	34	18-06-2022

- **No. of student’s & faculty ideas generated – 5**
- **No. of student’s & faculty Innovation/prototypes developed - 22**
- **No. of IPs generated, published and granted**
Patents filed – 3
Patents Published – 1
Copyright filed – 1
- No. of Student & Faculty Start-ups/Ventures established.
- **Amount spent on promotion and awareness generation on Innovation & Entrepreneurship in the campus – Rs:- 1,39,441**
- **Amount grant or fund supported to student & Faculty lead Innovations, start-ups and IPR - 140200**
- No. of Technology Transfer and Commercialization happened

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

[Profile of few faculties with 2-3 line of their achievements]

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

Innovation Name	Inventor (Team Lead)
MITs Admission Assistant Chatbot	Joel Denny Joseph
Multi-model DeepFake Detection using Deep and Temporal Features	Jerry John
Utilisation of banana pseudostem and fish scales in developing novel bio composite for bone tissue engineered scaffold applications.	Gregory James
Low-cost Portable Emergency Mechanical Ventilator	Dr. Gylson Thomas
Development of an Augmentative and Alternative Communication Device for Disabled people	Dr. Jani Das
Automated Infiltrometer	Sunith John David

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

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

J. Participation of IIC-institute in various programs of Central and Stage Govt.

Highlighting specially for the schemes or programs

□ **ARIIA – participation and Rank**

ARI-C-51533, Recognized in the band “Performer” under the category “Colleges/Institutes (Private / self-Financed) (Technical)”

□ **NISP Adoption status**

Trained Faculty- Dr. Arunkant A Jose, Asst. Professor, ECE MITs, completed Policy Implementation Training Program Offered by Ministry of Education's Innovation Cell.

Policy Formulation- Experts Committee was Formed at MITs to Formulate the Policy. Conducted Committee Meetings to prepare an implementable Innovation and Entrepreneurship Policy Document with KPIs (Key Performance Indicators) / Milestones. Approval of the Innovation and Entrepreneurship Policy of the institute by concern Competent Authority was done. A dedicated section in the MITs webpage for one page stop for I&E policy and other policy documents of state and central government for reference and all I&E and IPR-related programs and opportunities was created.

Policy Implementation- Attended Policy Implementation Training organized by MoE’s Innovation Cell. Submission of the approved I&E policy to the IIC of the institute for discussion and implementation

completed. Completed Benchmarking the current status of the I&E ecosystem of the institute (as per ARIIA indicators) by developing KPIs and setting annual targets to achieve. Developed quarter/semester vice plan for I&E activity aligned with the plan of IIC institute for implementation.

A few more steps to complete in implementation, such as upload of policy regarding the 1% allocation of college budget for NISP activity.

□ **Smart India Hackathon etc.**

Student participation from our institute was there and its details are as follows.

Organization(Industry Personnel): Gas Authority of India Limited(GAIL)

Problem Statement: Smart Attendance System

Team Name: The Unchained

Institution Code: C-51533

Institution name: Muthoot Institute of Technology and Science

Theme name: Blockchain and Cybersecurity

TEAM MEMBERS:

Team Leader : Jithin Prakash K

Team Member 1: Joel Denny Joseph

Team Member 2: Hamda Fizal

Team Member 3: Sreehari Premkumar

Team Member 4: Hitha Nair

Team Member 5: Hanna Sabu Mampallil

Team Mentor 1: Dr Cerene Mariam Abraham

K. Detail of Social Media & Connections of IIC institute

Facebook - <https://www.facebook.com/mgmits.official>

Twitter - <https://twitter.com/mitskochi>

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

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

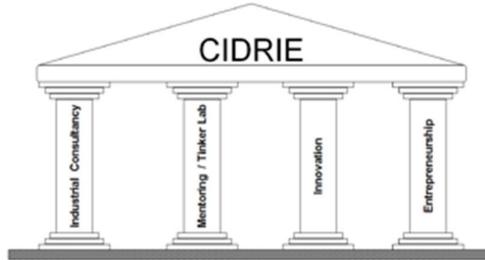
“IIC is an initiative by MIC that is well structured and determined to change the way in which the technology enthusiasts think, identify, innovate and create solutions. The guided path in mentoring the youth through pre planned training activities helps HEI to organize and conduct programs that proved to be highly effective.” IIC Convener- MITS

M. Images

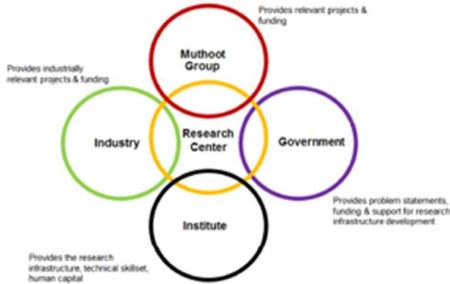


Center for Industrial Consultancy, Interdisciplinary Research, Innovation and Entrepreneurship (CIDRIE)

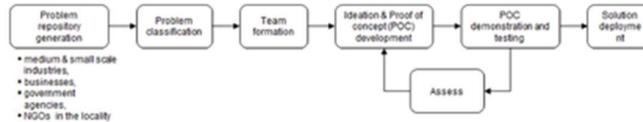
STRUCTURE



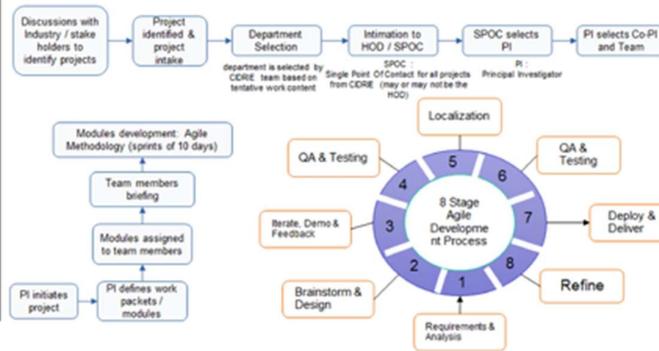
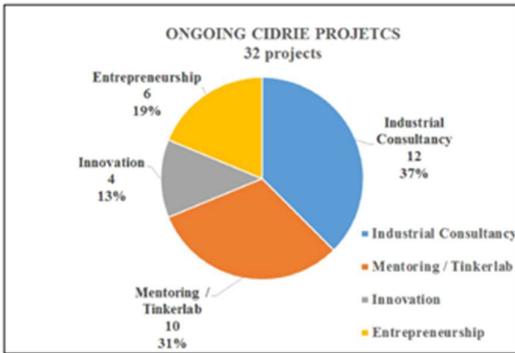
STAKEHOLDERS



Project Intake and Execution Process



ONGOING CIDRIE PROJECTS



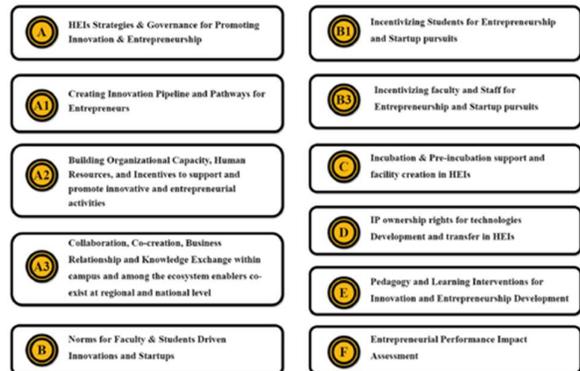
NATIONAL INNOVATION AND STARTUP POLICY

VISION

This policy is a guiding framework to envision an educational system oriented towards startups and entrepreneurship opportunities for students and faculties. The guidelines provide ways to institutions for developing entrepreneurial agenda, managing Intellectual Property Rights (IPR) ownership, technology licensing and equity sharing in Startups or enterprises established by faculty and students. In order to achieve the cultural and attitudinal shift and to ensure that 'Innovation and Startup' culture is the primary fulcrum of our higher education system a policy framework and guidelines is created. These guidelines will enable institutions to actively support their faculty, staff and students to participate in innovation and entrepreneurship (I&E) related activities, thus encouraging students and faculty to consider startups and entrepreneurship as a career option.



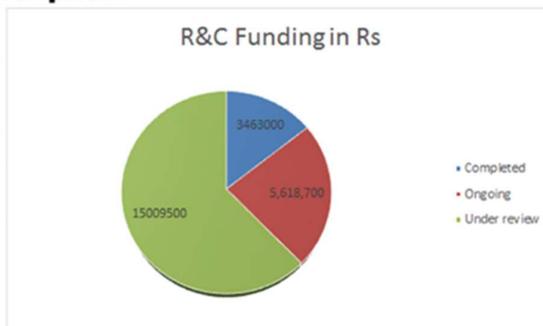
MITS - NISP FRAMEWORK



Research and Development

COPYRIGHT AND PATENTS

Sl. No	Title of patent	Owned by	Year of Award	Agency where patent is registered
1	Wearable for bedridden	Dr. Arunkant A Jose, Rishikesh P H	29 April 2019	Govt. of India
2	Optical Touch Switch	Rishikesh P H, Dr. Arunkant A Jose	29 April 2019	Govt. of India
3	Linear Agitator	Rishikesh P H, Dr. Artun Joy	18 June 2020	Govt. of India
4	Copyright on "Bio Inspired Algorithm for Proton Exchange Membrane Fuel Cell Performance Optimization"	Dr. Dhanya.S Dr. Anand Hareendran S	8 th August 2020	Govt. of India
5	A Method for Maintaining Polymer Electrolyte Membrane Fuel Cell Under Optimum Operating Conditions	Dr. Dhanya S,	18 January 2021	Australian Government
6	A dual input buck, boost and inverted mode switched capacitor-based voltage converter	Dr. Chikku Abraham	8 th March, 2019 (Patent Published)	Govt. of India

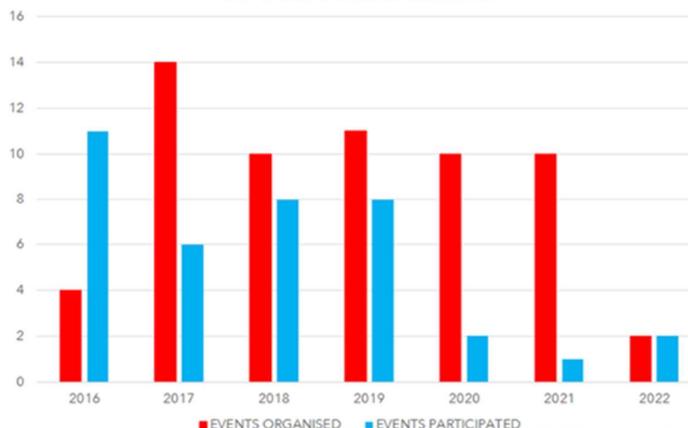


Innovation and Entrepreneurship Development Centre (IEDC) MITS

The Innovation and Entrepreneurship Development Centre (IEDC) is being promoted in educational institutions by KSUM to "develop institutional mechanism to create entrepreneurial culture in academic institutions to foster growth of innovation and entrepreneurship amongst the faculty and students". IEDC MITS is established in 2016.

SL. NO.	YEAR	NUMBER OF EVENTS		NO. OF STUDENTS PARTICIPATED	
		ORGANISED	PARTICIPATED	WITHIN MITS	OUTSIDE MITS
1	2016	4	11	270	47
2	2017	14	6	897	30
3	2018	10	8	488	138
4	2019	11	8	556	72
5	2020	10	2	541	29
6	2021	10	1	636	3
7	2022	2	2	100	17

IEDC MITS EVENT DETAILS



N. Contact

IIC President (MITS) – Dr. Neelakantan P C
principal@mgits.ac.in
 9447330360

IIC Convener (MITS) – Mr. Daniel A. V.
danielav@mgits.ac.in
 9895143580