

# **Innovation and Entrepreneurship at PTU**

## **Atal Incubation Centre - PEC Foundation (AIC-PECF)**

### **About AIC-PECF**

#### **Overview**

AIC-Pondicherry Engineering College Foundation offers incubation facilities for early-stage startups and innovators with viable product ideas. The foundation aims to assist young entrepreneurs in launching technology-based startups by providing essential services. It supports the commercial exploitation of technologies developed by startups.

AIC-Pondicherry provides a wide range of services covering the entire spectrum of startup needs, from mentorship to infrastructure. The foundation nurtures innovation and helps transform ideas into successful enterprises. With a focus on technology, it empowers startups to scale and succeed.

**Supported by:** Atal Innovation Mission (AIM), NITI Aayog, Government of India

**Website:** [www.aicpecf.org](http://www.aicpecf.org)

#### **Leadership**

**CEO, AIC-PECF** Mr. V Vishnu Varadan Email: [ceo@aicpecf.org](mailto:ceo@aicpecf.org) Contact: +91-8903467223

#### **Focus Areas**

##### **Electronics Design and Manufacturing**

PCB design and prototyping Surface Mount PCB Assembly PCB Through-Hole assembly PCB box build and final assembly PCB testing PCB conformal coating and potting Engineering support

##### **Internet of Things (IoT)**

Gateway management Connectivity of Devices Cloud Management Data Analytics Embedded Computing Artificial Intelligence System Implementation

##### **Unmanned Aerial Vehicle (UAV)**

UAV system Integration and Testing Ground station Control and Navigation support Trajectory generation and trajectory following control Vision-based navigation Flight planning in complex fields and atmospheric sensing Mapping algorithms

##### **AIC-PECF Infrastructure and Services**

##### ***Plug and Play Facilities***

##### **Co-Work Space**

24/7 High Speed Internet Connectivity World Class Amenities Flexible workspace for startups and innovators

##### ***Rapid Prototyping and Re-engineering***

##### **State-of-the-Art Rapid Prototyping Lab**

Additive Manufacturing Line Internet of Things (IoT) facility Electronic Design Manufacturing (EDM) PCB Fabrication Line Unmanned Aerial Vehicle (UAV) Simulation

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## **Partnership Opportunities**

### **For Startups and Innovators**

AIC-PECF offers a variety of services which enable startups, innovators, industries, academic institutes, teachers and students to collaborate for their growth. The foundation welcomes all stakeholders to productively engage and collaborate for taking innovation to the next level.

**Apply for Incubation:** Available through online application form

### **For Industry and Corporates**

For Industries, Corporates and R&D Labs, AIC-PECF offers exciting opportunities for collaborative product development, market research, facilitating and supporting innovation at community level, and promoting industry-institute connect.

**Join as Industry Partner:** Available through partnership application form

### **For Colleges and Schools**

AIC-PECF connects with Entrepreneurship development cells and innovation centers of colleges and universities to promote entrepreneurial ideas and products that contribute to societal change. The foundation supports university-based entrepreneurial ecosystems by providing resources and partnering events.

**Apply for MoU:** Available through partnership application form

### **For Mentors and Investors**

AIC-PECF constantly engages with Mentors who can help get the right talent on board, find the right investors, determine company worth, and help lay the foundations of company culture for startups. The foundation welcomes all Mentors and Investors to become part of this exciting ecosystem.

**Join as a Mentor or Investor:** Available through application form

### **For Government Departments**

For Government departments, AIC-PECF offers need-based technology solutions for customized requirements to increase productivity, skill development programs, workshops, collaborative product development, and supporting innovation. Government departments can sign MoU with AIC-PECF for collaborative activities.

**Join as Government Department Partner:** Available through partnership form

### **For Teachers and Students**

For Professors, Teachers, Students and budding Entrepreneurs, AIC-PECF offers a wide range of opportunities including participation in Pre-Incubation activities, training programs, skill development events, workshops and many more.

**Apply for Free Membership:** Available through membership application form

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## **Startups at AIC-PECF**

### ***Student Startups***

**Drone-as-a-Service (DaaS)** Make in India Micro class category autonomous drones for commercial and defense industry

**FlowGet** IoT based smart water metering product that monitors and controls the amount of water being pumped out of tube wells, solving ecosystem problem of over-exploitation of ground water table

**K12 STEM Training** Offline edtech offering K12 STEM training to young minds at school level by imparting skill-set of Robotics, Coding, IoT and creative ability

**Mobility Solution** Auto Service aggregator platform with innovative business model

**Bio Gas Plant** Environmental friendly bio gas plant design under R&D, which can reduce two-thirds of the cost with fixed maintenance amount per month

**Smart Safety Device for Women** Smart Safety security Device for Women with advanced features

### ***Faculty Startups***

**RH Radel Technology Solutions Private Ltd** A DPIIT recognized startup which provides quality affordable radiological education to train young doctors in their image interpretation skills and provides automated AI-based software for Doctors which helps in faster diagnosis

**E-Learning Platform** Aims to provide animated e-learning multimedia content for students to get in-depth understanding of concepts with visually engaging videos. The product connects important and complex topics to real-life events

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## **Institution's Innovation Council (IIC) at PTU**

### ***About IIC***

#### **Welcome to Institution's Innovation Council**

IIC aims to create a vibrant local innovation ecosystem and Startup supporting Mechanism in Puducherry Technological University (PTU). This helps to prepare PTU for Atal Ranking of Institutions on Innovation Achievements Framework. By establishing Function Ecosystem for Scouting Ideas and Pre-incubation of Ideas to develop better Cognitive Ability for Technology Students.

**Website:** <https://iicptu.weebly.com/>

#### **Vision**

To cater the needs of students as well as faculties innovative ideas of social relevance and thereby promoting an ecosystem of entrepreneurship in campus which will boost individual's self efficacy and attitude and growth of India's economic and social development.

#### **Mission**

To develop a competitive ecosystem that can enable students and faculty to innovate and prototype their ideas with industrial standards and support from Government, and incubation centers and help them to realize their potentials.

## Functions of IIC

To conduct various innovation and entrepreneurship-related activities prescribed by Central MIC in time-bound fashion

Identify and reward innovations and share success stories

Organize periodic workshops, seminars and 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 competitions, mini-challenges etc. with the involvement of industries

## IIC Leadership

**Convener and Innovation Ambassador** Dr. B. Hema Kumar Associate Dean (Innovation and Startup Relations) Email: [hemakumarbe@ptuniv.edu.in](mailto:hemakumarbe@ptuniv.edu.in) WhatsApp: 9994196804

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## IIC Achievements

### Best Performer Award

IIC of Puducherry Technological University won the BEST PERFORMER award for showcasing Best practices of Innovation Ecosystem in Higher Education Institutions. The award was given on 21st July 2022 at IIC Regional Meet in Sathyabama Institute of Science and Technology, Chennai.

### Student Achievement

MBA students Ms. Karthika S, Ms. Sarswathe B and Ms. Sangeetha S won a grant of Rs 8 Lakhs from AICTE and MIC for the project Smart safety watch for women. Mentor: Dr. B. Hema Kumar

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## IIC Events

**IIC Event Registration Link (for all events):** <https://forms.gle/8e5y1aqeVMiFuEZY8>

### Recent Events (IIC 6.0)

**12 June 2023** - Lean startup and MVP Speaker: Mr Vishnu Varadan, CEO, AICPECF Venue: AICPECF

**28 July 2023** - Value Proposition and Business Fit Speaker: Mr Reuben Bernard, EDGEVERVE

**22 Aug 2023** - Biofuels and Beyond Speaker: Kishan Karunakaran, CEO, Buyofuel Entrepreneurship Day Celebrations Special Webinar

**9 Sep to 14 Oct 2023** - CII EATON Garnishing Talents Program

**26 Sep 2023** - Smart India Internal Hackathon Speaker: Mr Vishnu Varadan, CEO of AICPECF Venue: AICPECF Board Room

**11 Oct 2023** - Entrepreneurship and innovation as a Career Opportunity Speaker: Dr. B. Hema Kumar First Year Induction Program Venue: Auditorium

**19 Oct 2023** - Growth Mindset and Consultation Skills Speaker: Dr Selvame Pazhany, Business Development and Life Coach Venue: Seminar Hall, Auditorium

**07 Nov 2023** - Legal Compliances for startups Speaker: Dr Jayakumar (Startup Consultant) Venue: CCE Hall

**17 Nov 2023** - How to be Financially Independent? Speaker: Ms Agathya Selvakumar, Founder of FIN-N-MIN Startup Venue: Seminar Hall, Auditorium

**19 Nov 2023** - Design Thinking Workshop Venue: EIE Third Year Classroom

**1 Dec 2023** - Participated in the IIC Regional meet at BSA Crescent Institute of Science and Technology Faculties: Dr B. Hema Kumar and Dr. N. Siva Kumar

**5 Dec 2023** - Patent Drafting Workshop Venue: Seminar Hall, EIE Department

**14 Dec 2023** - Tower Building Workshop Venue: EIE Third Year Classroom

**06 Jan 2024** - Six Thinking Hats Workshop Venue: EIE Third Year Classroom

**10 Jan 2024** - IPR Case Study based Quiz Venue: Seminar Hall, EIE Department

**15 Jan 2024** - Leadership skills workshop Venue: EIE Third Year Classroom

**22 Jan 2024** - 50 Rs Venture - Venture Creation Workshop Venue: Seminar Hall, EIE Department

**Note:** IIC regularly organizes various events including workshops, webinars, competitions, and training programs related to innovation and entrepreneurship.

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## **Yukthi - National Innovation Repository**

### **Objective**

The purpose of creating and building a repository of innovations at PTU is to scout and verify ideas, innovations, and startups developed by students, faculty members, staff, graduate alumni, and incubated startups.

To collaborate, provide coverage, and co-create opportunities for easy resource access, offer customized services and hand-holding support to innovators on a continuous basis in terms of one-to-one mentoring, pre-incubation support, investors and market linkage, IP and technology transfer, etc.

### **Idea and Prototype Submission**

#### **National Innovation Repository (NIR) Submission:**

Students can submit their ideas to National Innovation Repository (NIR) using the following link:

<https://yukti.mic.gov.in/login/SUMyMDE4MTAyMTQ=>

Nominations of Validated Innovations and Startups from NIR can take part in National Contests and Grand Challenges.

### **Guidelines**

Submission guidelines, common FAQs, idea and POC submission guidelines, and innovation prototype submission guidelines are available for download on the IIC website.

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## **National Innovation and Startup Policy 2019**

### **Overview**

The National Innovation and Startup Policy 2019 for students and faculty of Higher Education Institutions (HEIs) enables institutes to actively engage students, faculties and staff in innovation and entrepreneurship related activities. This framework brings uniformity across HEIs in terms of Intellectual Property ownership management, technology licensing and institutional Startup policy.

### ***Key Policy Guidelines***

#### **Strategies and Governance**

Entrepreneurship promotion and development should be one of the major dimensions of HEI strategy Minimum 1% fund of total annual budget should be allocated for innovation and startup activities Hierarchical barriers should be minimized to expedite decision making

#### **Startup Enabling Infrastructure**

Creation of pre-incubation and incubation facilities for nurturing innovations and startups 24/7 accessible facilities for students, staff and faculty Incubation facilities should preferably be registered under Section-8 of Company Act 2013

#### **Nurturing Innovations and Startups**

Allow students to work on startups while studying Students can take semester or year break to work on startups Faculty and staff can take sabbatical or leave to work on startups Institute may take 2% to 9.5% equity in startup based on support provided

#### **Product Ownership Rights**

IPR jointly owned by inventors and institute when institute facilities are used substantially Inventors have primary say in licensing decisions Royalties limited to 4% of sale price for incubated companies

#### **Organizational Capacity**

Recruit staff with innovation and entrepreneurial experience Faculty should be encouraged to do courses on innovation and entrepreneurship Performance matrix for evaluation should include innovation activities

#### **Innovation Pipeline**

Spreading awareness about entrepreneurship value Students exposed to experiential learning and design thinking Regular hackathons, competitions, workshops and bootcamps Establishment of Institution's Innovation Councils (IICs)

#### **Faculty Startup Norms**

Clear norms for faculty involvement in startups Faculty must separate institute research from startup work Leave policy for faculty pursuing startups

#### **Pedagogy and Learning**

Cross-disciplinary learning approach Annual Innovation and Entrepreneurship Awards Case studies on business failures and real-life experiences Entrepreneurship education at curricular and co-curricular level

### **Collaboration and Partnerships**

Stakeholder engagement with industry and external partners Knowledge exchange programs Single Point of Contact (SPOC) mechanism for stakeholders

### **Impact Assessment**

Regular evaluation of entrepreneurial initiatives Monitoring startup creation and support systems Commercial success as primary measure of impact

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### ***Scholarships Information***

#### **National Scholarship Portal (NSP)**

Students can register on the National Scholarship Portal to obtain their One Time Registration (OTR) number.

**For general information:** <https://scholarships.gov.in/>

**For OTR and applying for scholarships:** <https://scholarships.gov.in/Students>

Students who have already applied and received scholarships in previous years can apply for renewal of their scholarship through the NSP portal.

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### **Contact Information for Innovation and Entrepreneurship**

**AIC-PECF CEO:** Mr. V Vishnu Varadan Email: [ceo@aicpecf.org](mailto:ceo@aicpecf.org) Contact: +91-8903467223

**IIC PTU Convener:** Dr. B. Hema Kumar Associate Dean (Innovation and Startup Relations) Email: [hemakumarbe@ptuniv.edu.in](mailto:hemakumarbe@ptuniv.edu.in) WhatsApp: 9994196804

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### ***Submission Process***

#### **Research Proposal Submission**

Faculty and students can submit research proposals through the university's Research and Development cell. Proposals should clearly outline the research objectives, methodology, expected outcomes, and resource requirements.

#### **Innovation Idea Submission**

Students and faculty can submit their innovative ideas through multiple channels including the Institution's Innovation Council (IIC), Atal Incubation Centre (AIC-PECF), and the National Innovation Repository (Yukthi platform).

### ***Guide Selection***

#### **Research Guide Assignment**

For doctoral and postgraduate research programs, students are assigned research guides based on their area of interest and the faculty's expertise. The university maintains a panel of approved research supervisors across various departments.

### **Mentor Assignment for Innovation Projects**

Students working on innovation projects and startups are provided with mentors from academia and industry who guide them through the ideation, prototyping, and commercialization stages.

### **Faculty as Mentors**

Every faculty member is encouraged to mentor at least one startup or innovation project as part of their academic responsibilities.

### ***Publication Norms***

#### **Research Paper Publication**

Faculty and students are encouraged to publish their research findings in peer-reviewed national and international journals. The university provides support for publication fees and access to research databases.

#### **Quality Standards**

Publications in Scopus-indexed, Web of Science-indexed, and UGC-CARE listed journals are given priority and recognition in performance evaluations.

#### **Patent Filing**

The university supports faculty and students in filing patents for their innovations. The IPR cell provides guidance on patent drafting, prior art search, and filing procedures.

#### **Conference Participation**

Faculty and students are encouraged to present their research work at national and international conferences. Financial support is provided for participation in recognized conferences.

### ***Patenting Process***

#### **IPR Protection**

The university has established an Intellectual Property Rights (IPR) cell that assists faculty and students in protecting their innovations through patents, copyrights, trademarks, and design registrations.

#### **Patent Filing Support**

The IPR cell provides comprehensive support including patent search, patent drafting, filing procedures, and follow-up with patent offices. Faculty and students can avail these services at subsidized costs.

#### **Ownership Rights**

When institute facilities or funds are used substantially, the IPR is jointly owned by inventors and the institute. If developed independently without institute resources, the IPR is entirely owned by the inventors.

### **Patent Commercialization**

The university facilitates licensing of patented technologies to industry partners or startups for commercialization. Revenue sharing mechanisms are clearly defined in the university's innovation policy.

### ***Funding Opportunities***

#### **Internal Funding**

The university allocates a minimum of 1% of its total annual budget as an Innovation Fund to support research, innovation, and startup activities.

#### **Seed Funding for Startups**

AIC-PECF and IIC provide seed funding opportunities for promising student and faculty startups that demonstrate viable business models and market potential.

#### **External Funding Sources**

Faculty and students are encouraged to apply for research grants and funding from various government agencies including:

Department of Science and Technology (DST) Department of Biotechnology (DBT) Ministry of Human Resource Development (MHRD) All India Council for Technical Education (AICTE) Technology Development Board (TDB) Technology Information, Forecasting and Assessment Council (TIFAC) Defence Research and Development Organisation (DRDO) Council of Scientific and Industrial Research (CSIR) Biotechnology Industry Research Assistance Council (BIRAC) National Science and Technology Entrepreneurship Development Board (NSTEDB) National Research Development Corporation (NRDC) Startup India initiative Ministry of Electronics and Information Technology (MeitY) Ministry of Skill Development and Entrepreneurship (MSDE) Ministry of Micro, Small and Medium Enterprises (MSME)

#### **Corporate Funding**

The university actively engages with corporate partners to secure funding under Corporate Social Responsibility (CSR) as per Section 135 of the Company Act 2013.

#### **Alumni Network**

The university leverages its alumni network for generating funds and support for research and innovation activities.

#### **Competition Grants**

Students and faculty can participate in various national and international innovation competitions and hackathons that offer prize money and grants. Recent examples include AICTE and MIC grants awarded to PTU students.

### ***Incubation Support***

#### **Pre-Incubation Facilities**

The university provides pre-incubation support through IIC and AIC-PECF for early-stage ideas and prototypes. This includes access to makerspaces, fabrication labs, and mentorship.

## **Incubation Services**

AIC-PECF offers comprehensive incubation support including:

Co-working space with 24/7 access High-speed internet connectivity Prototyping and testing facilities  
Business mentorship and guidance Access to funding networks Legal and accounting support Market  
research assistance Technology commercialization support

## **Equity and Revenue Sharing**

Based on the level of support provided, the institute may take 2% to 9.5% equity in startups. For pure service-based support without seed funding, startups can avail facilities on a rental basis.

## **Cooling Period**

Startups are given a 3-month cooling period to evaluate incubation services on a rental basis before making equity commitments.

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## **Research and Development Cell**

The university has a dedicated Research and Development cell that coordinates all research activities, facilitates funding applications, manages collaborations with industry and other institutions, and ensures compliance with research ethics and guidelines.

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## ***Support Infrastructure***

### **Laboratory and Equipment Access**

Researchers and innovators have access to state-of-the-art laboratories and equipment across departments for conducting experiments and developing prototypes.

### **Rapid Prototyping Lab**

AIC-PECF houses a rapid prototyping lab with:

Additive Manufacturing equipment PCB fabrication and assembly line IoT testing facilities UAV  
simulation equipment Electronic Design Manufacturing tools

### **Technical Support**

Technical staff and engineers are available to assist researchers and student innovators in using advanced equipment and conducting experiments.

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## **Research Ethics and Compliance**

All research involving human subjects must obtain clearance from the institutional ethics committee. Researchers must adhere to ethical guidelines and ensure informed consent from participants.

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## **Performance Recognition**

Research and innovation activities are integral to faculty performance evaluation and promotion. Publications, patents, successful startups, and technology transfers are given significant weightage in annual assessments.

Students involved in research and innovation receive academic credits, certificates, awards, and recognition that enhance their career prospects.

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### Contact for Research and Innovation

**For Research Matters:** Director (Academic Research) Dr. K. Vivekanandan Email: [k.vivekanandan@ptuniv.edu.in](mailto:k.vivekanandan@ptuniv.edu.in)

**For Innovation and Startups:** Dr. B. Hema Kumar Associate Dean (Innovation and Startup Relations) Email: [hemakumarbe@ptuniv.edu.in](mailto:hemakumarbe@ptuniv.edu.in) WhatsApp: 9994196804

**For Incubation Support:** Mr. V Vishnu Varadan CEO, AIC-PECF Email: [ceo@aicpecf.org](mailto:ceo@aicpecf.org) Contact: +91-8903467223

## RESEARCH:

### VISION:

To evolve into a university of global eminence through transformative learning and research in frontier areas of engineering and technology towards developing holistic technology leaders, innovators and entrepreneurs.

### MISSION:

- To create a conducive environment and learning opportunities to shape, nurture and promote the innate scholastic capabilities of students and scholars through a socially relevant and outward-facing curriculum.
- To establish Centres of Research (CoRs) in cutting edge technology and create an ecosystem for innovation and independent thinking in multidisciplinary areas of science, engineering and technology.
- To build synergistic partnerships with technology corporates and leading universities around shared agenda towards enabling a smooth transition for graduates from university to industry and academia.
- To promote entrepreneurial spirit, sustainable development outlook and build strong leadership capabilities.