Six years of IIT in Kerala
A Retrospective on IIT Palakkad

As India marched into the 21st century, the issues of access and equity in higher education and those of quality and standards in professional and technical education were assuming significance as never before. The economy had opened up and the demographic dividend of a predominantly young population could only be realised if human capital formation matched the aspirations and potential of young people across the country. IIT Palakkad joins this journey with the following objectives.

1. To nurture students into technically competent global citizens who are perceptive of and responsive to their surroundings.
2. To continuously expand the frontiers of human knowledge and creativity through research and innovation.
3. To serve as a knowledge partner to society and industry through joint explorations.
4. To collaborate with other educational institutions in the region to increase access to quality education.
5. To reach out to the public, especially children, and ignite their curiosity and help develop their scientific temper.

When IIT Palakkad began in 2015, on the temporary premises of the picturesque Ahalia Campus, it did so with bachelors programmes (B.Tech) in four core Engineering disciplines – Civil, Computer Science, Electrical and Mechanical. Research programmes in Engineering, the Sciences, and the Humanities, leading up to the award of MS (by Research) and PhD degrees, commenced soon after. After the first batch graduated in 2019, M.Tech programmes in Geotechnical Engineering and Manufacturing and Materials Engineering and M.Sc programmes in Physics and Chemistry were started. In the following year an M.Sc programme in Mathematics, an M.Tech programme in Power Electronics and Power Systems and three interdisciplinary M.Tech programmes in Computing and Mathematics, System-on-Chip Design and Data Science also got underway.

World class infrastructure and top notch research facilities are facets of all IITs and IIT Palakkad is no exception. It has state of the art centres, workshops and laboratories for Research and Development in areas like data science, computational imaging, high performance computing, micro-nano fabrication, materials and manufacturing, and instrumentation. IIT Palakkad recently added a state-of-the-art studio classroom to its infrastructure. This studio facilitates multi-camera recording, lightboard recording, chroma-keying, live-streaming and web-based video conferencing and editing. In addition to lectures, the Institute's major online events are also hosted from the studio. The Central Library of the Institute has a carefully curated collection of books, journals, magazines and newspapers. From just 700 printed books in August 2015, it has witnessed almost 9 fold growth to now having over 6000+ printed and digital resources.

A key quality parameter for higher education today, and more so for technical and professional education, as the National Policy on Education (NPE) 2020 also highlights, is its relevance to real world problems and ability to allow for the seamless and meaningful integration of students into the world of work. The Centre for Industry Collaboration and Sponsored Research (IC&SR) at IIT Palakkad represents an attempt to institutionalise such outward accountability in the education imparted here. The centre represents a creative, collaborative and dynamic space to engage with relevant actors from the public as well as private sphere, both from within the country and beyond. Since its inception in 2018, the Centre has actively coordinated the undertaking of consultancy projects and assignments by faculty, facilitated innovation, and tapped into funding essential to support all this, that comes with forging mutually beneficial partnerships. With close to 70 funded projects as of today, the Centre leverages the intellectual and material resources of the institute in exemplary ways.

To strengthen the Institute's relationships with industry in ways that may lead to sustainable partnerships in the long-run, the Industry-Academia Conclave was conceived and launched in 2019 and a second edition held virtually in 2020. This programme is focused on enhancing and initiating industry collaboration and consultancy activities as well as placement and internship opportunities for students. Dedicated industry interaction sessions for each engineering discipline and a panel discussion were conducted.

IIT Palakkad has put in place a strong ecosystem to encourage innovation related activities within the student community. The CSquare Innovation Lab is a well equipped facility for the fabrication of any prototype, proof-of-concept idea or project work. The facility has state-of-the-art machines for working with soft and hard materials. It provides a physical space for the various student-run technical clubs to conduct their activities. To further accelerate the Institute's Research and Development activities, earlier this year, the Technology Innovation Foundation of IIT Palakkad (TECHIN) was launched. TECHIN is set up as a collaborative entity with Institutes and Industry to create an impactful innovation ecosystem, discover disruptive technologies and enable entrepreneurs and startups.

The institute has also established a Technology Innovation Hub on Intelligent Collaborative System (TIH-ICS) as a part of the National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS). TIH-ICS aims to create a seamless ecosystem for Cyber-Physical Systems technologies. TIH-ICS is expected to develop technology / products that enable intelligent collaboration among major cyber-physical systems, building blocks including but not limited to modelling-analysis-control, devices, networks, security, robots, data and simulation. The Institute has also established the IIT Palakkad Technology IHub Foundation (IPTIF) to facilitate the TIH-ICS. TIH-ICS, through IPTIF, plans to attract potential and harness expertise available nationwide, thus fostering research innovation, world class technology and product development. IPTIF also plans to build linkages with research institutes and labs within and outside India. One of the primary goals of this company is to work in close collaboration with industry to deliver commercial technology and products, and build a vibrant innovation ecosystem by providing a reliable platform for technology-based start-ups and entrepreneurs.

IIT Palakkad has been recognized as a Nodal Centre for Training in High Performance Computing (HPC) and Artificial Intelligence (AI) by the National Supercomputing Mission, an initiative of the Government of India, in 2020. The centre at IIT Palakkad, and its sister nodal centres at IIT Madras, IIT Goa, and IIT Kharagpur are tasked with training manpower in all aspects of HPC to meet the current and future needs of our nation.

Application oriented teaching-learning processes, where mini projects and non-perfunctory assignments are part of every subject are part of the student experience at IIT Palakkad. The encouragement for cross-disciplinary enquiry and option to choose electives across disciplinary boundaries is another aspect to be highlighted. The atmosphere conducive to study and personal development in all its facets, and the quality of facilities and services made available, also earn student appreciation and approval across the board.

As a testimony to the quality inputs and training imparted here, IIT Palakkad students have done very well in various hackathons and competitions. A team from the institute was among the finalists at the national level of the hardware round of the Smart India Hackathon 2020, the flagship innovation event conducted by the Government of India. They worked on designing a warm blanket that can be used during MRI scans. Two teams figured among the top 100 in the Young Innovators Programme - 2019, organised by the Government of Kerala. They worked on an Infrared Imaging of Tooth Decay and an Eye movement based speller device, respectively. Four teams have also been selected for the pre-final round of the Young Innovators Programme - 2020, which is currently being conducted. Also, the Institute team secured the first rank in the Build O' Innovate competition conducted by Association of Civil Engineers, IIT Patna, in 2020.

In addition to academic and research activities, the Institute has also been actively involved in furthering its social responsibility. Since late 2019, IIT Palakkad has been the Regional Coordinating Institute of Unnat Bharat Abhiyan (UBA) for the districts Palakkad, Kozhikode, Kannur, Wayanad and Kasargod. IIT Palakkad UBA Cell coordinates with the participating institutions and relevant local governments to support activities and sustainable rural development anchored in locally-relevant technical know-how in adopted villages. As an extension of the Institute's UBA activities a Public Lecture Series, Pale Blue Dot, was launched in January 2020. The series, jointly organised with the District Public Library, Palakkad, aims to instill and nourish scientific temper and demystify science by providing a forum for regular conversations between the scientific community and the public. The Institute's National Service Scheme (NSS) unit was approved as an aided unit under the Ministry of Youth Affairs and Sports, Government of India, in 2020. The unit has been actively engaged in organising Blood Donation Camps, Campus Cleanliness Drives and COVID-19 Vaccination Awareness Campaigns.

IIT Palakkad also embarked on several projects in collaboration with industries, hospitals and the general public to battle Covid 19. These projects include Low-cost Medical Ventilator, Automated Lung Ultrasound for COVID-19 Screening and Monitoring, Pulse Oximeter Design and Development, Low-cost Test Kit for Fast

Screening of COVID-19 Patients, Real-time Crowd Sensing using Mobile Phone tracking, Design and Manufacture of Respirator Masks, Preparation and Supply of Hand Sanitizer, Glove making machines, Foot operated hand sanitizer dispensers, and Modeling and Simulation.

Establishing Math Circles in district schools to help develop mathematical enrichment activities and promote a culture of mathematical thinking among middle school students in partnership with teachers, has been another outreach effort. Veterans with longstanding interest and experience in math education and outreach were part of the initiative. Science popularisation activities undertaken include a Science and Technology Meet organised on National Science Day, 2020, an Open Day consisting of lectures, demonstrations, hands-on workshops and puzzles for school students and a hands-on workshop on Annular Solar Eclipses.

With one-third of the faculty being women, and a conscious effort to foster gender egalitarian relationships through teamwork in and outside the classroom, the Institute is a space that contributes to challenging and breaking regressive gender stereotypes. In the two years since its official launch in 2019, the Women's Forum, Kadambini, has organised several activities to amplify relevant women-centric conversations. Invited lectures and talks and observances around days like International Women's Day, further support this process. In order to provide students and faculty the opportunity to interact with distinguished academicians and industrialists, the Institute Colloquium series hosts a considerable number of invited talks regularly. To engage with renowned personalities from diverse fields and on topics beyond their curriculum, students also take the lead in regularly organising Extra Mural Lectures.

As on all vibrant campuses, enthusiastic participation of students in a plethora of sports, literary, cultural and technical intra-institute events and competitions is the norm here. Petrichor, the Techno-Cultural Fest of IIT Palakkad, witnessed participation from over 100+ colleges and 3000+ footfalls in 2020. From 6 cultural events and 5 technical events in its first year to 17 cultural and 9 technical events last year, Petrichor promises to be bigger and better every subsequent year. Petrichor aims to provide a perfect platform for participants from all around to come together and cherish technology, science and culture in tandem.

IIT Palakkad organises a Research Scholars' Day (RSD) every year to showcase the work done by research scholars through oral and poster presentations. This is a day-long event consisting of keynote addresses, seminars and poster presentations by students and faculty. It is noteworthy that accolades earned by the research scholars are already putting this fledgling institute on the global map.

The Alumni Cell of IIT Palakkad was inaugurated in July 2019, when the first batch of students graduated. The cell is founded to establish and sustain an organic network between our alumni, students and faculty that facilitates communication, mentoring and learning.. The year 2020 witnessed a plethora of events like Student-Alumni Virtual Age Talks, Faculty Alumni Meet, Alumni Talks, Career Oriented Sessions-Making Own Strategies, Videothon, Back to the Beginning: Alumni Club Meets and   Project Mentorship Programmes. A newsletter titled "Footprints" is published regularly for the current student community to be in touch with the alumni and vice-versa. The Alumni Cell has also instituted an annual "Undergraduate Research and Innovation" award to recognize and reward undergraduate students of their achievements in research and/or entrepreneurial endeavours.

The motto of the institute is 'Nurturing minds for a better world' and the earnestness with which it has embraced the idea and put in place structures and systems, and tapped into various avenues, to walk this talk, in a relatively short span of time, is what is both inspiring and exemplary. The commitment to create a creative, multidisciplinary institution which delivers quality education, original research and practice, is palpable in every aspect of the Institute's working. From student support services for their psychological well being and to improve English language competencies, to the strong focus on enabling environments for hands-on learning and its practical deployment in the real world, no aspect is left unaddressed. As IIT Palakkad gears up to its goal of becoming a world-class institution with a population of 5000 students in a span of 10 years, it envisions to be a leader in cross-disciplinary inquiries and a source for knowledge, technology, and policy for the betterment of humanity.

IIT PALAKKAD

Indian Institute of Technology Palakkad
भारतीय प्रौद्योगिकी संस्थान पालक्काड
Nurturing Minds For a Better World
Under Ministry of Education, Government of India
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