

**INDIAN INSTITUTE OF TECHNOLOGY PALAKKAD**

**A QUICK GLANCE 2016-2017**



**IIT  
PKD**

**INFRASTRUCTURE AND DEVELOPMENT**

**ACADEMIC PROGRAMMES AND ACTIVITIES**

**STUDENT LIFE AND ACTIVITIES**

**EVENTS AND PROGRAMMES**





## INFRASTRUCTURE AND DEVELOPMENT

### History

The Indian Institutes of Technology (IITs) were established by the Government of India as *Institute of National Importance* through a Central Statute, the Institutes of Technology Act, 1961. The success of the five initially founded IITs at Kharagpur (1951), Bombay (1958), Madras (1959), Kanpur (1959) and Delhi (1961) led to the demand for establishment of more such institutions across the country. An IIT in the state of Kerala was proposed in the July 2014 union budget and on November 20, 2014 IIT Madras was designated as the mentor institute by the Ministry of Human Resources and Development.



IIT Palakkad came into existence and is currently functioning from a temporary place in the premises of Ahalia integrated campus Kozhipara, Palakkad. Approximately 500 acres of land bordering the Sahya Mountain range and adjoining the Coimbatore-Kanyakumari national highway at Palakkad, was identified as the site for the permanent campus on January 17, 2015. The academic activities at IIT Palakkad were formally launched, with a welcome

Programme for the first batch of B.Tech students on August 03, 2015. Lok Sabha passed a bill for the establishment of six new IITs on July 25, 2016. Prof. P.B. Sunil Kumar assumed charge as the first Director of IIT Palakkad on January 18, 2017.

A vibrant campus with world-class sustainable green buildings has been planned. The first phase of construction consisting of infrastructure required to accommodate two batches of students and has already commenced and the civil work is expected to be completed by early 2018.



### Facilities

The infrastructure required to start the B. Tech Program with the allotted student strength of 120 were established by July 2015: These include, an auditorium, multimedia enabled large and small classrooms, Physics and Chemistry student laboratories, Computer Laboratory, Library and a Canteen. The physics laboratory has latest instruments and aims to reinforce the concepts students learn while simultaneously acquiring the skills and developing confidence to carryout experiments on their own. The Chemistry Laboratory is a spacious and well-ventilated with all



necessary safety features. It is equipped with modern instruments and worktables. The computer lab has 60 all-in-one desktops connected centrally to a file server with LDAP system. Computer aided design classes are also conducted here. The campus, including the hostels, is fully Wi-Fi enabled with mobility in Internet access. The Central Library, provides information / knowledge resources and has a balanced collection of books, magazines and newspapers. The library stacks about 2700 books including reference resources, audio-visual material, scientific kits, etc. The users are registered with the National Digital Library sponsored by MHRD. The necessary infrastructure for the second year was in place by July 2016 and almost all facilities required for the third year are available. Highlights of the facilities developed during July 2016 to June 2017 are presented in the subsequent sections.

### **Teaching Laboratories**

#### **Applied Mechanics Laboratory**

The Applied Mechanics Laboratory houses facilities in the broad areas of Strength of Materials and Fluid Mechanics. On the Strength of Materials part there are experimental facilities to study deflection of beams, torsion and buckling. Strain gauge demonstration, a photo elastic set up for demonstrating the stress patterns in loaded transparent models and a Universal Testing Machine (UTM) of loading capacity upto 5.0kN are also available. On the Fluid Mechanics part, there are tabletop facilities for demonstrating fundamentals of Fluid Mechanics. These include set ups for pressure gauge calibration, friction losses in pipes and fittings, demonstration of Bernoulli's principle, visualization of forced vortices and incompressible fluid flow.



#### **Electronics Laboratory**

The Electronics Technology Lab provides an integrated environment for students to understand the working of analog and digital circuits, microprocessors, microcontrollers, and the interplay between computational tools and electronics hardware. Each desk is equipped with digital storage oscilloscopes, arbitrary waveform generators, power supplies and various prototyping boards (Field Programmable Gate Arrays, Micro-controllers, etc.) and a desktop PC. In addition, it houses set-ups for control experiments. Digital Electronics, Analog Electronics, Computer Aided Design and Control Systems lab courses can be run in this lab.



#### **Surveying laboratory**

The lab is used for the Surveying practical course; Students get hands-on training on the use of a variety of surveying instruments and the measurement techniques. The practical sessions include linear measurements using chain and tape, angular measurements and traversing using compass and theodolite, elevation measurement using traditional (Dumpy) and automatic levels and the plane tabling methods. The use of modern instruments such as total stations and GPS is demonstrated as well. The list of instruments includes several, GPS, Total





stations, Vernier theodolites, Automatic levels, Dumpy levels, Prismatic compasses, Sets of plane table accessories (drawing board, alidade, trough compass, plumbing fork) and chain survey equipment (metric chain, tape, ranging rod, offset rod, optical square, cross-staff, arrow, peg, etc.).

### **Workshop**

Workshop is an integral part of the curriculum and has four parts: Electrical, Electronics, Instrumentation and Machining. In the last part students are introduced to sheet metal work, moulding and foundry practices. A unique and modern transit machine shop with Lathes, hydraulics machinery, drilling machinery, etc. is set up in a container adjacent to the main building.



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### **Central Facilities**

#### **Innovation laboratory**

The Innovation Lab is a student run hobby-lab that allows students to translate their ideas into prototypes and products. Such a facility holds immense potential in pushing forward the 'Make-in-India' initiative of the Govt. of India. It has latest equipment such as a dual-head 3D printer, a CNC router, a CNC milling machine and a CNC lathe. These machines will enable the precise fabrication of prototypes in plastic, wood and soft metals such as aluminum.



#### **Advanced laboratory instruments**

Apart from the teaching laboratories certain facilities at the student level have been created. The primary aim is to introduce the students to sophisticated instruments at an early stage. Such an initiative may also motivate students towards research and development. As a part of this initiative, a Scanning Tunnelling Microscope has been procured and is in operation since December 2016. Another interesting equipment, which is being considered, is cloud chamber.



#### **High performance computing facility**

A High performance computing cluster (HPC) that will provide a powerful computing platform for research in engineering and physical sciences is being installed. The system is expected to be operational by the

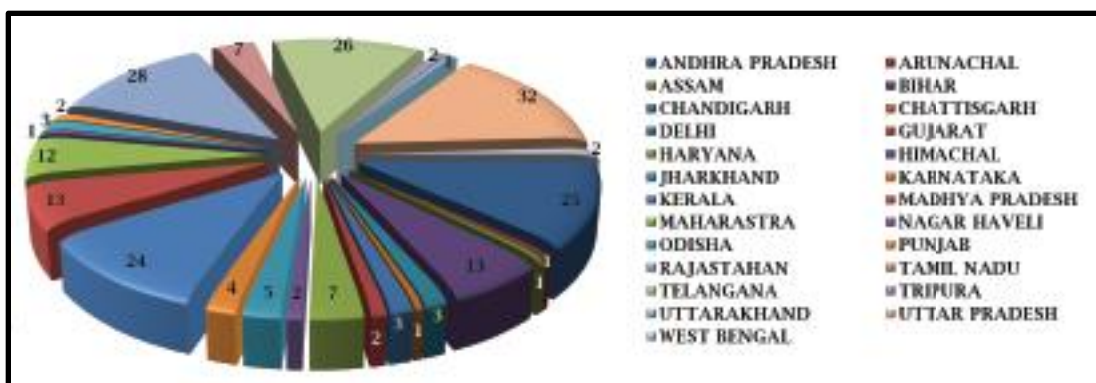


beginning of July 2017. The HPC consists of 64 compute nodes, each having a dual 12-core Intel processor running at 2.2 GHz with 4 GB of RAM per core. The HPC will also be one of the first systems in India to use a 100 Gbps high-speed OmniPath interconnect from Intel. The HPC will be used by faculty, research staff and students at IIT Palakkad to investigate complex research problems in science and engineering. The HPC will enable researchers at IIT Palakkad to undertake computer simulation based consultancy projects for various industries in the aerospace, semiconductor, bio-technology, civil, mechanical and other sectors.

**ACADEMIC PROGRAMMES AND ACTIVITIES**

**B.Tech Programme**

IIT Palakkad offers four-year B.Tech programme in four branches: Civil Engineering, Computer Science and Engineering, Electrical Engineering and Mechanical Engineering. The yearly intake is about 120 students, equally distributed in all four branches. Students have come from almost all parts of the country, providing a truly cosmopolitan and multicultural environment. The following pie chart displays the student composition in the first two years.

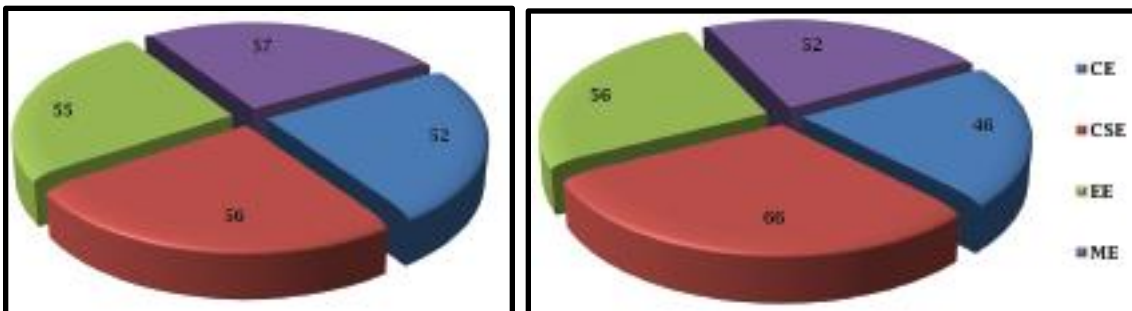


**B.Tech Curriculum**

The curriculum is periodically updated and that is being followed for the 2015 and 2016 batch is based on the 2014 curriculum of IIT Madras. The courses for the B.Tech programme fall into five major categories: Humanities and social sciences, Basic sciences, Basic Engineering Theory / Skills and Professional Major & Minor Theory and Laboratory. Revision of curriculum for the 2017 batch students has been initiated and the curriculum for the first year is finalized. A curriculum advisory committee with members drawn from academia and industry is being set up to examine and revise the curriculum.

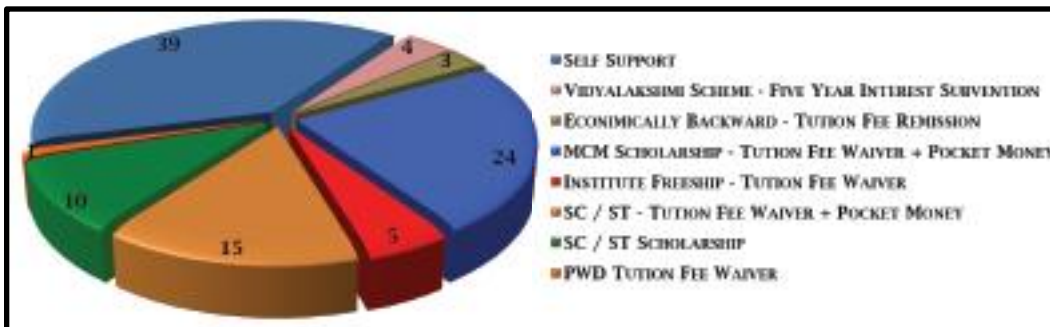
**Branch Change**

IIT Palakkad allows students to change their branch based on their academic performance in the first semester. The change comes into effect at the end of their first year. The main criterion for change of branch, apart from academic performance, is the restriction on student strength, as specified by the B.Tech Ordinances. The following figure shows the change of branch composition before (left panel) and after (right panel) branch change for the two years.



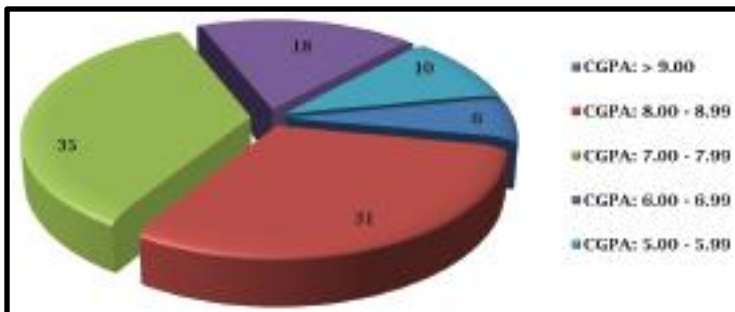
### Scholarship Support

Merit-Cum-Means scholarships, Institute free studentships, Scholarships for SC/ST students and students with disability are available to the students of IIT Palakkad, as per the Government of India norms. IIT Palakkad has signed an MOU with SBI, Kanjikode and eligible students can avail loans for Tuition fee under Vidyalakshmi educational loan scheme. The following pie chart summarizes the student beneficiaries (in percentage) of scholarships.



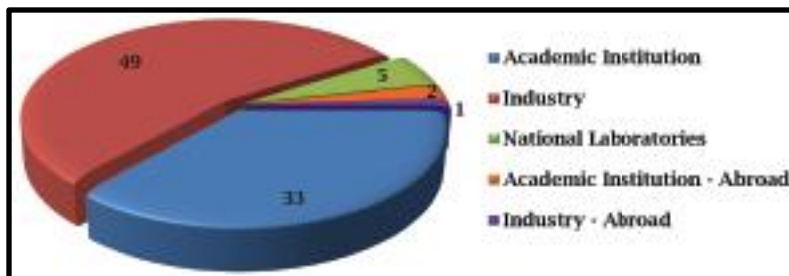
### Courses and Student Performance

Courses are handled by a combination of young faculty of IIT Palakkad, Senior faculty from IIT Madras and scientists from national scientific organizations. Few courses are conducted through NKN facility. Performance of students is monitored periodically and those who are found academically weak are given special attention through the help of Teaching Assistants after regular classes. Grading policy is based on continuous assessment. Grades are awarded on a 10 point scale denoted S, A, B, C, D, E and U, with E being the minimum grade to pass a subject. The respective credits are 10, 9, 8, 7, 6, 4 and 0. Performance is quantified by Grade point average (GPA) and cumulative grade point average (CGPA). The former is a weighted average of the grades of successfully completed course in a given semester, while the latter is a weighted average of the grades secured in all semesters. The performance of the first two batches is shown in the following figure, which gives the % of students in a given CGPA range.



### Internship

Internship is an integral part of the curriculum, wherein the students get to spend a part of their summer / winter holidays in an Industrial or Research environment, depending on their interest. Usually internships are done in the third year (after sixth semester). However, at IIT Palakkad, motivated by the faculty and the academic atmosphere, a large number of students had taken internship in the second year itself. Eighty-eight students of 2015 batch and two students of 2016 batch are currently engaged in internship. The pie chart shown above provides a summary of internship.



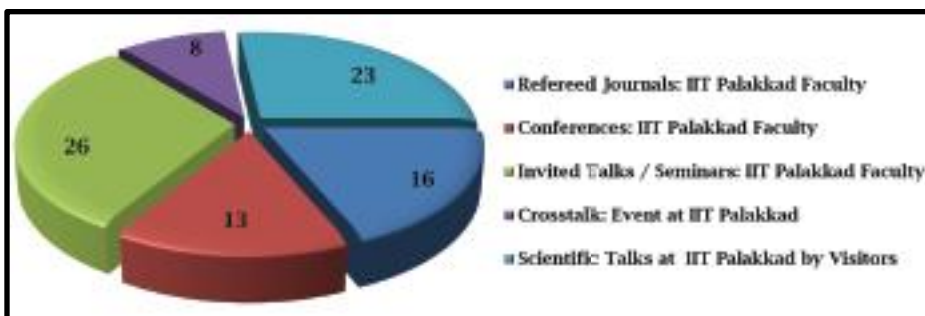


## Ph.D programme

Research Programme leading to Ph.D degree in the existing engineering (Civil, Computer Science, Electrical and Mechanical) branches and Science (Chemistry, Mathematics and Physics) branches has been initiated. Student selection is underway and the programme will commence from 2017-18 academic year.

## Research Activities

Although IIT Palakkad is in its very nascent stage, the faculty of IIT Palakkad has been quite active in the research front. There has been a significant contribution by the faculty in the form of journal publications, conference presentations and invited talks / seminars. In addition, the research atmosphere at IIT Palakkad has been vibrant with a large number of multidisciplinary research talks and seminars by researchers from abroad and India. Crosstalk is a unique event where mainly faculties from IIT Palakkad present their work for a general audience *over sip and gossip*. The following figure summarizes the research activity.



## Research output of IIT Palakkad faculty

### Chemistry

#### Refereed Journal

1. **Chatterjee D**, and Vilgis T, Scaling laws of bottle-brush polymers in dilute solutions, *Macromolecular Theory and Simulations*, **25** (2016) 518.
2. Przemyslaw Dopieralski, Jordi Ribas-Arino, **Padmesh Anjukandi**, Martin Krupicka, and Dominik Marx, Unexpected mechanochemical complexity in the mechanistic scenarios of disulfide bond reduction in alkaline solution, *Nature Chemistry*, **9** (2017) 164.

#### Invited Talk

1. **Padmesh Anjukandi**, *Diversity of Disulfide Bond Towards Their Reduction in Mechanochemical Regime*, 15<sup>th</sup> Indian Theoretical Chemistry Symposium-TCS201 Department of Chemistry, University of Hyderabad, Telangana, December 2016
2. **Chatterjee D**, *Scaling laws of bottle-brush polymers in dilute solutions*, Theoretical Chemistry Symposium, 14.12.2016-17.12.2016, University of Hyderabad, India.
3. **K. L. Sebastian**, Recent Advances in Theoretical Chemistry and Theoretical Physics, IISER Kolkata at January 20 and 21, 2017.
4. **K. L. Sebastian**, International conference, Recent Advances in Electronic Structure Theory, 2017 at Goa during February 9-12, 2017 (lectured on February 12).
5. **K. L. Sebastian**, International Conference New Trends in Applied Chemistry (NTAC2017) Kochi, February 9-11, 2017.

### Civil Engineering

#### Refereed Journal

1. **Sudheesh Thiyyakkandi**, Michael McVay, Peter Lai and Rodrigo Herrera. Suitability of Jetted and Grouted Precast Pile for Supporting Mast Arm Structures. *Canadian Geotechnical Journal*, 2017, DOI: 10.1139/cgj-2016-0467.
2. **Kumar M.V.A**, and Kalyanaraman V, Strength of CFS compression member under interaction of local, distortional and overall buckling, *Journal of Structural Engineering*, ASCE (To appear).



## Conference

1. **Sudheesh Thiyyakkandi**, Michael McVay, Peter Lai, and Rodrigo Herrera, *Field Measurement of Noise and Ground Surface Vibration during Pile Jetting and Grouting*, Geotechnical frontiers, 2017, ASCE Geo-Institute and GMA, Orlando, USA.

## Computer Science and Engineering

### Conference

1. **Jasine Babu**, Areej Khoury, Ilan Newman, *Every Property of Outerplanar Graphs is Testable*. Random-Approx 2016, Institut Henri Poincaré (IHP)-Paris, France September 7 - 9, 2016.
2. Jasine Babu, Manu Basavaraju, L. Sunil Chandran, Mathew Francis, *On Induced Colourful Paths in Triangle-free Graphs*. To be presented at European Conference on Combinatorics Graph Theory and Applications (Eurocomb17), Vienna, August 28 - September 1, 2017.
3. Ilan Newman, Yuri Rabinovich, **Deepak Rajendraprasad**, and Christian Sohler, *Testing for forbidden order patterns in an array*, 28th ACM-SIAM Symposium on Discrete Algorithms (SODA 2017).

## Electrical Engineering

### Refereed Journal

1. S. Panda, **S. Sahoo** and G. Pandithurai, Time Series Analysis of Ground-Based Microwave Measurements at K- and V-Bands to Detect Temporal Changes in Water Vapor and Temperature Profiles, 2016, *Geosci. Instrum. Method. Data Syst.*, doi:10.5194/gi-2016-16.
2. Timothy B. Boykin, **Arvind Ajoy**, Hesameddin Ilatikhameneh, Michael Povolotskyi and Gerhard Klimeck, Unfolding and effective band structure calculations as discrete real and reciprocal space operations, *Physica B*, **491** (2016) 22.

### Conference

1. **S. Sahoo**, Session Chair, Second International Conference on Intelligent and Efficient Electrical Systems, 2017, PSG College of Technology, Coimbatore, Jan 20-21.

### Invited Talk

1. **S. Sahoo**, *Microwave Radiometer Design* at PSG College of Technology sponsored by TEQIP-II during one day research workshop on Microwave Engineering and Radar Imaging, September 23, 2016.
2. **Arvind Ajoy**, Faculty Development Programme, on *Semiconductor Devices: from Micro to Nano* at Model Engineering College Kochi.
3. **Arvind Ajoy**, Guest Lecture, M.Tech in Nano Science and Technology at PSG College Coimbatore.

## Humanities

### Conference

1. **Shalina Susan Mathew**, “*Reviving Trends in Women’s Employment in Kerala: A Survey of Household Economic Attributes*”, 15<sup>th</sup> National Conference on Women’s Studies, University of Madras, Chennai, January 22 to 25, 2017.

## Mathematics

### Refereed Journal

1. **C. R. Jayanarayanan** and S. Lalithambigai, Strong ball proximality and continuity of metric projection in  $L_1$ -predual spaces, *J. Approx. Theory*, **213** (2017) 120.
2. M. Chhetri, **Lakshmi Sankar K**, R. Shivaji, and B. Son, An existence result for superlinear semipositone p-Laplacian systems on the exterior of a ball, *Differential Integral Equations*, 2017 (To appear).

### Conference

1. **C.R. Jayanarayanan**, one of the organizer, TSSRK Fest-an International conference to honor Prof. T. S. S. R. K. Rao, Indian Statistical Institute, Bangalore, 22-24 September, 2016.
2. **Lakshmi Sankar K**, International IFCAM Conference on Nonlinear PDEs at TIFR-CAM, Banaglore, March 2017.
3. Lakshmi Sankar K, TIMC-AMS Conference in Varanasi, December 2016.

### Invited Talk

1. **C.R. Jayanarayanan**, TSSRK Fest-an International conference to honor Prof. T. S. S. R. K. Rao, Indian Statistical Institute, Bangalore, 22-24 September, 2016.

2. **C.R. Jayanarayanan**, *State level workshop on Topology and Analysis*, Sree Narayana College Alathur, Palakkad, March 24, 2017.
3. **C.R. Jayanarayanan**, Department of Mathematics, Government College, Chittur, Palakkad, March 30, 2017.
4. **Lakshmi Sankar K**, *Conference on Emerging issues in nonlinear elliptic equations* to be held in Bedlewo, Poland, June 2017.
5. **Lakshmi Sankar K**, Department of Mathematics, University of West Bohemia, Czech Republic, June 2017.
6. **Lakshmi Sankar K**, *National seminar on recent trends in mathematics* at Vimala College, Thrissur, January 2017.
7. **Lakshmi Sankar K**, *National seminar on recent advances in Mathematics*, G.V.G. Visalakshi College for women in Udumalpet, Tamil Nadu, February 2017.
8. **Lakshmi Sankar K**, *Teaching in Training Program in Mathematics*, NISER Bhubaneswar, May 22 to June 3, 2017.
9. **Lakshmi Sankar K**, Government College, Chittur, Kerala, March 2017.

### Physics

1. P. Anees, **M.C. Valsakumar**, B.K. Panigrahi, Effect of strong phonon–phonon coupling on the temperature dependent structural stability and frequency shift of 2D hexagonal boron nitride, *Physical Chemistry Chemical Physics* **18** (2016) 2672.
2. P. Anees, **M.C. Valsakumar**, B.K. Panigrahi, Anharmonicity of optic modes in monolayer MoS<sub>2</sub> *Applied Physics Letters*, **108** (2016) 101902.
3. Thomas, K.M. Ajith, **M.C. Valsakumar**, Directional anisotropy, finite size effect and elastic properties of hexagonal boron nitride S. *Journal of Physics: Condensed Matter*, **28** (2016) 295302.
4. G. Hari Krishnan, K.M. Ajith, Sharat Chandra, **M.C. Valsakumar**, Evolutionary algorithm based structure search and first-principles study of B<sub>12</sub>C<sub>3</sub> polytypes, *Journal of Alloys and Compounds* **695** (2017) 2023.
5. P. Anees, **M.C. Valsakumar**, B.K. Panigrahi, Delineating the role of ripples on the thermal expansion of 2D honeycomb materials: graphene, 2D h-BN and monolayer (ML)-MoS<sub>2</sub> *Physical Chemistry Chemical Physics* **19** (2017) 10518.
6. S. Bukkuru, U. Bhardwaj, M. Warriar, A.D.P. Rao, **M.C. Valsakumar**, Identifying self-interstitials of bcc and fcc crystals in molecular dynamics, *Journal of Nuclear Materials* **484** (2017) 258.
7. Siby Thomas, K M Ajith, **M.C. Valsakumar**, Empirical potential influence and effect of temperature on the mechanical properties of pristine and defective hexagonal boron nitride, *Mater. Res. Express* **4** (2017) 065005.
8. S. Sanjeevi Prasath, J. Brijitta, **B. V. R. Tata**, R. G. Joshi, K. Chennakesavulu, Deepak K. Gupta, Optical and rheological studies on weak gel-sol transition in aqueous solutions of poly (N-isopropylacrylamide)-block-polystyrene *EXPRESS Polymer Letters* **11** (2017) 589.

### Conference

1. MS Mrudul, KM Ajith, **MC Valsakumar**, Young's modulus of defective graphene sheet from intrinsic thermal vibrations S Thomas, *Journal of Physics: Conference Series* **759** (2016) 012048.
2. M.S. Manju, G. Hari Krishnan, K.M. Ajith, **M.C. Valsakumar**, Effect of pressure on the band structure of BC<sub>3</sub> *AIP Conference Proceedings* **1731** (2016) 090015.
3. S. Thomas, K.M. Ajith, **M.C. Valsakumar**, Structural analysis of graphene and h-BN: A molecular dynamics approach *AIP Conference Proceedings* **1728** (2016) 020608.
4. N Yedukondalu, G Vaitheeswaran, P Anees, **MC Valsakumar**, Computational study of solid energetic oxidizer ammonium nitrate under high pressure, *AIP Conference Proceedings* **1832** (2017) 090040.

### Invited Talk

1. **Uma D**, *Sudden quenches and semiclassical theory* Statphys. Kolkata IX, 13-16 December 2016, Saha Institute of Nuclear Physics.
2. **M.C. Valsakumar**, *Elucidation of Non Classical Aspects of Quantum Mechanics using Light and (b) Applications of Non Classical Aspects of Quantum Mechanics*, Two Day National Workshop on Theoretical Physics, February 26-27, 2016, Alva's College Moodbidri, Mangalore.
3. **M.C. Valsakumar**, Six lectures on, *Principles of Quantum mechanics Through Optical Experiments*, Govt College Madappally, 14-16 December, 2016.
4. **Uma D**, *Local quenches and semiclassical theory*, International Conference on Complex Quantum Systems, February 20-23, 2017, BARC, Mumbai

5. **B.V.R. Tata**, *Colloidal Stability: Physics and Applications*, National Workshop on Mud Banks of Kerala: Status, Issues and Societal Concerns, CSIR-National Institute of Oceanography Regional Centre, Kochi (10-11 Feb., 2017), Kerala.
6. **M.C. Valsakumar**, Two lectures on *Conceptual Aspects of Quantum Mechanics*, Two-Day National Seminar on Theoretical Physics, Calicut University, 24 - 25 March 2017.

### **Academic seminars and talks at IIT Palakkad**

#### **Crosstalk series**

1. February 14, 2017  
*Surmounting barriers cooperatively*  
Prof. K. L. Sebastian, IIT Palakkad.
2. February 28, 2017  
*Laser Based Diagnostics of Thermo-Fluid Dynamic Phenomena*  
Prof. Job Kurian, IIT Palakkad
3. March 9, 2017  
*Like likes Like: Experiments & Simulations on Charged Colloids*  
Prof. B. V. R. Tata University of Hyderabad,
4. March 22, 2017  
*To Breath of Drive*  
Prof. Pramod S. Mehta IIT Palakkad
5. April 5, 2017  
*Designs For Purpose: Nature is a Brilliant Designer*  
Dr. Padmesh A, IIT Palakkad
6. April 24, 2017  
*Electronic Warfare during World War II*  
Dr. Swaroop Sahoo, IIT Palakkad.
7. April 26, 2017  
*Pee-dynamics*  
Dr. P. Deepu, IIT Palakkad.
8. May 9, 2017,  
*Studies on droplets and sprays*  
Dr. Anand TNC, Department of Mechanical Engineering, IIT Madras.

#### **Research Talks / Seminars**

1. August 18, 2016  
*MOSFET: Working and Fabrication - An Industrial Perspective*  
Dr. Muthubalan V, Associate Professor, Sastra University.
2. *Maxwell's equations and its applications*  
Dr. Srikumar Sandeep, PDF, Ecole Polytechnique, Montreal.
3. August 26, 2016  
*Droplets in turbulent flow*  
Dr. Deepu P, ICTS, Bangalore,
4. September 15, 2016  
*The Strange and Beautiful World of Quantum Mechanics*  
Prof: K L Sebastian, Inorganic and Physical Chemistry Department, IISc Bangalore,
5. October 4, 2016  
*Video based courses and the initiatives being taken at IIT Madras*  
Prof. Prahtap Haridoss, IIT Madras.
6. October 10, 2016  
*Digital Electronics: Perspectives from Industry & Academia*  
Prof. Nitin Chandrachoodan, Department of Electrical Engineering, IIT Madras



7. October 14, 2016  
*Radio Frequency IC design: From system to silicon, and overview of the design challenges in designing a cellular handset* (Two talks)  
Dr. Venkata Narayana Rao Vanukuru, Global Foundries Bangalore.
8. October 25, 2016  
*Silicon-On-Insulator based Optical Devices*  
Dr. Revathy Padmanabhan, PDF, Israel Institute of Technology, Haifa.
9. November 11, 2016  
*Aerodynamic Aspects Of Automobile Design (MESA Talk)*  
Prof. Babu Viswanathan, Department of Mechanical Engineering, IIT Madras,
10. December 27, 2016  
*Friction modeling, friction-induced vibrations and control of such vibrations.*  
Dr. Ashesh Saha, NIT Calicut.
11. December 28, 2016  
*Power Systems.*  
Dr. Sudipta Ghosh, Assistant Professor, Shiv Nadar University, Greater Noida.
12. January 03, 2017  
*Engineering your Education' in the age of Cognitive Machines*  
Dr. Paul M Koola, Professor of practice, Ocean engineering department, Texas A&M university.
13. January 4, 2017  
*Early Model Driven Timing Analysis to Automotive Embedded Systems*  
Mr. Sakthivel Manikandan Sundaram, Doctoral-researcher in Laboratory of Advanced Software Systems, University of Luxembourg,
14. January 16, 2017  
*Exponential Fermi Acceleration and Genomic Signal Processing*  
Dr. Kushal Shah, Assistant Professor (EE) IIT Delhi.
15. January 17, 2017  
*Controlling light with light and generating new colors: Nonlinear photonics in confined media*  
Dr. Vivek Venkataraman, Harvard University, Cambridge, USA.
16. *Isolating and Studying Individual Atoms and Molecules: The Science and Engineering of Ion Trapping,*  
Dr. Vaishnavi Rajagopal, Northwestern University, Evanston, Illinois, USA
17. January 24, 2017  
*Chemistry under Strong Coupling*  
Dr. Jino George from Laboratoire des Nanostructures, Université de Strasbourg, France.
18. February 24, 2017  
*Why Diagonalisation?*  
Prof. Krishna Kumar Vellat, NISER Nhubaneswar
19. March 2, 2017  
*Set up of the windmills at Ahalia and their functioning*  
Prof. Sasi K. Kottayil, Amrita University, Coimbatore
20. March 8, 2017  
*Exploring Structure - Property Relationship in Molecular Materials: Structural, Optical and Photo-physical Properties*  
Dr. Shinto Varghese, Marie Skłodowska-Curie Research Fellow, University of St-Andrews, UK.
21. March 16, 2017  
*Grid-tied Inverters for Renewable Energy Applications*  
Dr. Deepak Somayajulu, SineWatts Inc., USA.
22. Apr 4, 2017  
*Curvature remodeling of cell membranes: Biophysics at multiple scales*  
Dr. Ramakrishnan Natesan, PDF, Department of Bioengineering, University of Pennsylvania
23. April 13, 2017  
*First principles investigation on Quantum Materials*  
Dr. Subhasish Mandal, Postdoctoral Research Associate, Department of Applied Physics, Yale University.

## STUDENT LIFE AND ACTIVITIES

### Student hostels

IIT Palakkad is fully residential with separate hostels for girls and boys. There are two boys hostels and one girls hostel and a third boys hostel (figure shown in left) is almost ready to house the 2018 batch of students. All students are provided accommodation on twin-sharing basis and all rooms are bath-attached. The hostel buildings and the academic building are situated within a radius of three hundred meters. The necessary facilities like a spacious dining hall and a well-equipped recreational area, an indoor games area, a fitness center, RO based drinking water system and a heavy-duty washing machine in each floor of the hostels were set in place in the first year itself. The other amenities provided in the last one year include an In-house facility for playing football, volleyball, basketball and table tennis. There are professional coaches for athletics, football, volleyball and cricket. Students can also get training at a professional badminton center, 4GB badminton academy, at Palakkad. The common space in the hostel is Wi-Fi enabled.



### Student wellness

#### Anti-ragging measures

The motto of the Institute is zero tolerance to ragging. To achieve this, documents and posters intended to sensitize the students and their parents on the highly immoral side of ragging, have been prepared. A structured mechanism has been put into place to monitor ragging related issues and mete out the most stringent punishment to the wrong doers and enforce the anti-ragging regulations in letter and spirit.

#### Counseling service

A professional counseling service has been set in place in order to ensure that the students receive help when they face social/emotional issues that require professional approach. At present, a NIMHANS trained counselor visits IIT Palakkad every week from Friday after noon to Saturday. Apart from an office at the academic building the counselor has also provided with a room in the student hostel so that the counselor spends time in proximity to the students. An exclusive student wellness center is being planned on priority basis and the counselor office will be integrated into to the wellness center shortly.

#### Life skill classes

The students are given a course in life skills to cope with stress, improve communication skills and manage conflicting objectives. This course, conducted by experts, provides the students with a platform to discover new friends and develop new bonding. It makes the students come out of their shell and easily mix with the new faces. They are also taught the art of forming well-knit close teams to whom they can lean when in need, without hesitation. The course is mainly aimed at developing inter-personal relationships, building confidence, and making them comfortable while facing the public, interview boards and so on.



### **Faculty Advisor**

Faculty advisors serve primarily as mentors from academic viewpoint. They provide guidance in choosing the courses of study and give general advice on the academic programme, which aid students in setting meaningful objectives to realize their educational and professional goals. A group of about 20 students are assigned to one Faculty member of IIT Palakkad. Periodic meetings with the students are arranged and in certain situations the faculty advisors also helped the advisees overcome minor emotional conflicts.

### **Health Care**

The students are covered by a comprehensive medical insurance scheme for a nominal yearly subscription. IIT Palakkad has an MOU with Athani Hospital, Palakkad for cash-less medical attention. The students can also go to Hospitals of Ahalia foundation for treatment as outpatients.

### **Sports**

Students are provided a number of avenues to keep them physically fit. There is a gym with modern equipment, and an enthusiastic faculty member provides training for the students. In house facilities exist for playing football, volleyball, basketball and table tennis. There are professional coaches for athletics, football, volleyball and cricket, and with their help the students get an opportunity to use facilities in Palakkad city, and also play with class players. Some of the students adept in badminton regularly visits 4GB badminton academy, a professional sports center. IIT Palakkad students also participated in Inter IIT Sports meet 2016, held at IIT Kanpur.



### **Various clubs**

IIT Palakkad has a good number of students with excellent artistic inclination. There are various clubs for pursuing their interest in science (robotic club) music (both vocal and instrumental), drama, dance, photography, journalism, etc. They have the necessary musical instruments, camera, and so on for pursuing the activities of these clubs. The students do spend considerable amount of time on these activities, and the results are commensurate with the efforts.



### **National Social Service**

The students under the National Service Scheme (NSS) undertake a variety of socially relevant activities. This included interaction with students of the neighboring schools so as to help them grasp fundamental principles of science, blood donation camp, celebration of important national days, and landscape development and gardening in the hostel premises.





## Student Activities

A variety of student-centric activities and events were organized. The primary goal of such activities was to stimulate and cultivate the intellectual, logical and scholastic potential of every student and increase the awareness of social responsibility. Extramural lectures aim to expose the students to a variety of topics beyond their curriculum and also provide a platform for them to interact / exchange ideas with speakers. Workshops were conducted in order to impart specialized technical skills in a short duration. A glimpse of the activities is given below.

1. June 21, 2016  
International Yoga day
2. August 14, 2016  
Mass run at IIT Palakkad
3. October 31, 2016  
Rashtriya Ekta Diwas run
4. January 18, 2017  
*New "Hitlers" and Some Old Cartoons*  
Extramural Lecture by Mr. E.P. Unny,  
Chief political cartoonists, The Indian Express
5. January 25, 2017  
*Touch the Sky with Glory*  
Extramural Lecture by Air Marshal S. Varthaman  
*PVSM AVSM VM VSM (Retd)*
6. March 08, 2017  
*Journalism and the state of media in the country*  
Extramural Lecture by Mr. Sadanad Menon,  
Adjunct Faculty, Indian College of Journalism, Chennai.
7. March 25, 2017  
Blood donation camp and First aid camp organized by NSS
8. March 29, 2017  
*My Inspirations for the theatre*  
Extramural Lecture by Shri Nakul Balla, Engineer turned  
theatre artist
9. March 31, 2017 and April 01, 2017  
Institute day celebrations  
*5k Marathon within Ahalia campus*  
*Debate: India is Ready for Cashless Economy*  
Judges: Prof. Milind Brahme and  
Dr. Shalina Susan Mathew  
*Cultural program*  
*Sketching competition*  
Judge: Mr. E.P Unny, Chief political cartoonists,  
The Indian Express  
*Quiz*  
Judge: Shri. Aravind Anil,  
Chief Quiz Coordinator, Kerala



## EVENTS AND PROGRAMMES

IIT Palakkad was quite active during 2016-17 session and a large number of events and programmes have been arranged. This includes Institute day, Industry-Academia meet and Visit by Eminent personalities. Industry-Academia meet, in particular is an interactive panel discussion involving members from Industry, Academic Institution and National Labs. The purpose was to create awareness among students about internships and placements.

### Events and Programmes

1. July 27, 2016  
Admissions 2016
2. August 15, 2016  
70<sup>th</sup> Independence Day celebrations
3. October 31, 2016 to November 5, 2016  
Vigilance Awareness Week
4. November 9, 2016  
Inauguration of Mechanical Engineering Student Association (MESA)
5. December 1, 2016  
Video Conference with VCs / Directors / Heads of HE institutions by Secretary MHRD and Hon'ble HRM Shri. Prakash Javadekar
6. January 10, 2017  
Address through Video conferencing by, The President of India to all students of and faculty IITs, other central institutions of higher learning and Officer trainees at Civil services academies.
7. January 11, 2017  
Legal Awareness Programme
8. January 26, 2017  
68<sup>th</sup> Republic Day celebrations
9. March 4, 2017  
Panel Discussion and Interaction with 2<sup>nd</sup> year Students on Industry-Institute Interaction and Internships
10. March 10, 2017  
Inauguration of Civil Engineering Association, Chief Guest: Jose Kurian, Chief Engineer (Retd.) CPWD.





11. March 31, 2017

Institute Day, Chief Guest: Prof. M.S. Ananth, Member, IIT Council and former Director, IIT Madras



12. April 26, 2017

Master Plan Committee meet

### Visitors to IIT Palakkad

1. November 18, 2016

Professor Jagadeesh Moodera, MIT, USA

2. February 20, 2017

Visit of The Professor in charge IIT Dharwad (Prof. Siva Prasad, IIT Bombay) and Director Designate, IIT Dharwad (Prof. Schsu, IIT Bombay)

3. April 02, 2017

Additional Secretary (Technical Education) MHRD, Shri. R. Subramanyam, IAS



4. May 18, 2017

Visit of Dr. Mahendra Nath Pandey, Hon'ble Minister of State for HRD (Higher Education)







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# IIT PALAKKAD

## **Proposed New Logo for IIT Palakkad**

*This unique concept highlights the notion of synergy and dynamic inter-relationship between research, theory and practice in academics.*

*Inspired from the (5,3) torus knot, the cyclic form rendered in a continuous single line symbolises the process of continuous evolution.*

*The form also has a hidden question mark – representing curiosity. The subtle semblance to the form of a light bulb suggests enlightenment*

*of knowledge, essential to dispel the darkness. The pentamerous elements are symbolic of the 'pal' flower.*

*The white star in the centre stands for the illustrious graduates who aspire to make the world a better place.*

*The colour palette is unique with the golden yellow representing the rising sun and its energy; and the silver gray representing the propriety of science education.*

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Designer: Prof. Tarun Deep Girdher  
Design Firm: National Institute of Design, Ahmedabad  
2017.