



# PIE Tech

**POLLACHI INSTITUTE OF ENGINEERING AND TECHNOLOGY**

(Approved by **AICTE** and Affiliated to **Anna University**)

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*sky is the limit*



**INSTITUTION'S  
INNOVATION  
COUNCIL**  
(Ministry of HRD Initiative)



# *Impressions*

Issue – May 26 – Edition 68

**e-NEWS LETTER**

## From the Editor's Desk

“**Impressions**” aims to bring out the activities & happenings in our Institution. We are elated to present the sixty-eighth edition of “**PIE Tech – Impressions**” for the month of May-2026.

### 5 Days STEM Science Camp for school children:

The Pollachi Institute of Engineering and Technology (PIE Tech), in association with Sevalayam Trust and eSTEAM Enricher, successfully organized a five-day STEM Science Camp from 25th May to 29th May 2026 for school students of Class 8 to 12.

The camp was designed to inspire young minds through experiential learning and hands-on exposure to emerging technologies in the fields of Science, Technology, Engineering, and Mathematics (STEM). Students from various schools actively participated and explored innovative concepts through expert sessions, demonstrations, and interactive activities.

The program featured distinguished resource persons and industry experts who delivered insightful sessions on contemporary technological advancements:

1. The camp was inaugurated by Mr. Vivekanand Kamaraj, Founder and CEO of Ardor Biomed India Private Limited. He shared his journey in developing wound and skin care products using mature coconut water work that earned him recognition from the President of India, Smt. Droupadi Murmu.

*Inaugural Address By*  
**நம்ம ஊரு விஞ்ஞானி...**

Scheduled on 25 MAY 2026 as part of the Five Day STEM Science Camp

**Mr. Vivekanand Kamaraj**  
Founder and CEO  
Ardor Biomed India Private Limited

Received recognition from the President of India, Droupadi Murmu, for his innovative work on using mature coconut water to produce wound and skin care products.

REGISTER NOW

<https://forms.gle/vQr82fU4vsqQHJiPA>

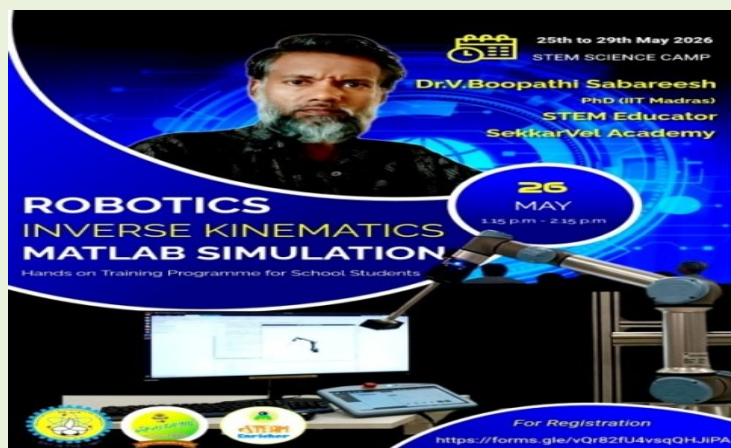
2. Dr. P. T. Saravanakumar, Head of the Department – Mechatronics Engineering, Hindustan College of Engineering and Technology, presented a session on **Robotics: Science and System** on 25<sup>th</sup> May, 2026.



3. Dr. D. Giridhar, Head – Product Management, shared insights on **Trigonometry- The Core Mathematics of Robotics** on 26<sup>th</sup> May, 2026.



4. Dr. V. Boopathi Sabareesh, STEM Educator, conducted a hands-on session on **Robotics, Inverse Kinematics, and MATLAB Simulation** on 26<sup>th</sup> May, 2026.



5. Dr. S. Dhanalakshmi, Professor and Dean, Gautam Buddha University, presented a session on **From Idea to Impact: The Dynamics of Invention and Innovation** on 26<sup>th</sup> May, 2026



6. Dr. P. Sasikumar, ISRO Scientist, Vikram Sarabhai Space Center, conducted a hands-on session on the theme **The Rice of Robots and Their Future** on 27<sup>th</sup> May, 2026.



7. Er. G. K. Sharan Rajkumar, President, Association of Civil Engineers, shared insights on **Automation in Civil Engineering and its role in transforming the construction industry** on 27<sup>th</sup> May, 2026.



8. Mr. J.P. Somasundaram, Drone Pilot and Motivational Speaker, presented a session on **High-Potential Drone Business Opportunities** on 28<sup>th</sup> May, 2026.



9. Dr. Sreehari Sathyavelu, Zonal Co-Ordinator, Indian Medical Association, delivered a lecture on **The Future of Robotics in Healthcare** on 28<sup>th</sup> May, 2026.



10. Dr. Makesh Karuppiah, Director/ Data Scientist – AI & Data Projects Enviro Apps Inc, USA, delivered a lecture on **AI Agents and Autonomous Intelligent system** on 29<sup>th</sup> May, 2026.



The camp showcased creativity, innovation, problem-solving, and practical learning. Participants gained valuable knowledge about robotics, healthcare technologies, drone applications, engineering automation, and career opportunities in emerging fields.

Certificates were awarded to all participants, and special recognition was given to outstanding performers. The program received an enthusiastic response from students, parents, and educators, making it a memorable and impactful learning experience.

The Management, Principal, faculty coordinators, and organizing team expressed their gratitude to all resource persons, participants, and partnering organizations for contributing to the success of the STEM Science Camp 2026.



The poster is for the STEM Science Camp 2026, organized by SEVALAYAM TRUST and eSTEAM Enricher in association with PIE Tech (Pollachi Institute of Engineering and Technology). The camp is held from May 25-29, 2026, at the Pollachi Institute of Engineering and Technology. It is open to students in 8th, 9th, 10th, 11th, and 12th classes. Registration is free for government and government-aided school students, and Rs. 500 for private school students. The program highlights experiential learning, enhancing creativity and innovation, certificates for all participants, and awards for best performers. Contact information for registration and more details is provided at the bottom.

**SEVALAYAM TRUST and eSTEAM Enricher**  
in association with  
**PIE Tech**  
POLLACHI INSTITUTE OF ENGINEERING AND TECHNOLOGY  
(Approved by AICTE and Affiliated to Anna University)

**STEM SCIENCE CAMP**  
Eligibility: 8, 9, 10, 11 and 12 Class

**MAY 25 - 29 2026**

Venue: **Pollachi Institute of Engineering and Technology Pollachi**

**Registration Fees**

- FREE** FOR GOVT AND GOVT AIDED SCHOOL STUDENTS
- Rs.500** FOR PRIVATE SCHOOL STUDENTS

**Programme Highlights**

- EXPERIENTIAL LEARNING
- ENHANCE CREATIVITY AND INNOVATION
- CERTIFICATES FOR ALL PARTICIPANTS
- AWARDS FOR BEST PERFORMERS

**For Registration:** <https://forms.gle/vQr82FU4vsqQHjPA>

**For more details** 94425 61452, 99523 11387, 96009 85679  
93422 21459, 88703 50273, 93422 24893

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## Faculty Achievements:

### 1. NPTEL

S.NO	Name of The Faculty	Department	Course Name	Duration	Certificate Type
1	V.Sureshkumar	EEE	Non Conventional Energy Resources	12 Weeks	Elite
2	K.Jayanthi	CSE	Cloud Computing	12 Weeks	Elite + silver
3	M.Vignesh	ECE	Introduction To Industry 4.0 And Industrial Internet Of Things	12 Weeks	Elite + silver
4	V.Thenmozhi	S&H (Mathematics)	Discrete Mathematics	12 weeks	Elite + Gold
5	Dr. R.SenthilAmutha	S&H (Mathematics)	Advanced Engineering Mathematics	12 weeks	Elite + Silver
6	R.Subasini	S&H (Mathematics)	Outcome based Pedagogy principles for effective Teaching	8 weeks	Elite
7	T.Shanthi	CSE	Computer Networks and Internet Protocol	12 weeks	Elite
8	A.Ramkumar	EEE	Non Conventional Energy Resources	12 Weeks	Pass
9	Dr.E.Kamalavathi	ECE	Non Conventional Energy Resources	12 Weeks	Pass

2. **Mrs. R. Keerthana**, Assistant Professor, Department of Electronics and Communication Engineering, had actively participated in the 5-Day faculty development program on **Intelligent Electronics and Communication System: An AI-Centric Faculty Upskilling Series** organized by the department of Electronics and Communication Engineering between **6<sup>th</sup> April, 26 and 10<sup>th</sup> April, 2026** at Akshaya College of Engineering and Technology
3. **Mrs. B. Menakadevi**, Assistant Professor, Department of Electronics and Communication Engineering, had actively participated in the 5-Day faculty development program on **Intelligent Electronics and Communication System: An AI-Centric Faculty Upskilling Series** organized by the department of Electronics and Communication Engineering between **6<sup>th</sup> April, 26 and 10<sup>th</sup> April, 2026** at Akshaya College of Engineering and Technology.

## FacultyForum:

### I. The AI and Machine Learning Revolution in Pure Math

Mathematicians are increasingly using formal proof verification software like Lean. Major projects have successfully formalized complex modern mathematics such as Peter Scholze's work on condensed mathematics proving that computer systems can verify highly abstract, cutting-edge theories. Applied mathematicians have found faster algorithms for fundamental computational problems. This includes lowering the theoretical exponent for the speed of matrix multiplication a core operation underpinning all modern physics simulations and deep learning architectures. While machine learning relies heavily on classical calculus and linear algebra for optimization (Lindberg et al., 2010), mathematicians are working heavily on "Explainable AI." They are developing topological and statistical frameworks to rigorously explain *why* neural networks work so efficiently, turning empirical observations into rigid mathematical truths.

**R. Subasini,**  
**Assistant Professor/ Mathematics**  
**Department of Science and Humanities,**  
**Pollachi Institute of Engineering and Technology.**



## II. The AI and Machine Learning Revolution in Pure Math

### 1. Avoid:

It sounds suspiciously simple but there is a lot of aggravation in life we can simply walk away from. We cannot control everything in life, but we do not have to be in stressful surroundings or with stressful people. If we face a stressful prospect, we have to ask ourselves “can we just avoid this whole thing?”. If we can do so, do so. It is a way of simplifying and streamlining life and getting in touch with our guiding values.

### 2. Alter:

If we cannot avoid the stressful situation, we might need to find ways to change it. That is altering it. We can actually step in and tweak our lives so that stressful thought do not get as much change to appear in the first place.

### 3. Accept:

If we cannot avoid stressful situation, then we might need to go one step further and accept it. It is an acknowledgement that it is okay to feel that way. Validate your own emotions and own them. Acceptance diffuses and softens that anxiety and allows us to realize that it cannot be changed

### 4. Adapt:

Adapting means making more lasting changes to our world view, our goals, our perception and our expectations. Adapting to stress means we change ourselves to better cope with life. When we adapt to stress, we find ways to make ourselves stronger. We build a world view for ourselves that empowers us.

With time, practicing meditation, we can achieve some of these core level changes and genuinely alter how we see ourselves and the world. So, those are the 4A’s Mantra of stress management. When you find yourself feeling anxious, pause and run through each of them in a sequence. No matter how stressful the situation, there is a way for you to engage with it mindfully and proactively.

**Mrs. K. Devi,**  
**Assistant Professor/ Mathematics**  
**Department of Science and Humanities,**  
**Pollachi Institute of Engineering and Technology.**



### III. Bio-orthogonal Chemistry: A Powerful Tool for Studying Biological Systems

Bio-orthogonal chemistry is a branch of chemical biology that involves chemical reactions capable of occurring inside living systems without interfering with native biological processes. The term "bio-orthogonal" was introduced by chemist **Carolyn R. Bertozzi**, whose pioneering work revolutionized the ability to visualize and manipulate biomolecules within living cells and organisms. Bio-orthogonal reactions enable scientists to selectively label, track, and modify biological molecules under physiological conditions, providing valuable insights into cellular functions, disease mechanisms, and therapeutic development.

#### Principles of Bio-orthogonal Chemistry

A bio-orthogonal reaction must satisfy several important criteria:

1. **Specificity** – The reacting groups should interact only with each other and not with naturally occurring cellular components.
2. **Bio-compatibility** – The reaction should proceed under physiological conditions without harming living cells.
3. **Rapid Kinetics** – The reaction should occur quickly to enable real-time biological studies.
4. **High Yield** – The desired products should form efficiently.
5. **Non-toxic Reagents** – Reactants and products should not disrupt cellular processes.

These characteristics allow bio-orthogonal reactions to be performed directly within living organisms.

#### Development of Bio-orthogonal Reactions

The field originated from efforts to study glycans (complex carbohydrates) on cell surfaces. Traditional labeling methods often interfered with biological processes. To overcome this limitation, researchers developed reactions involving synthetic functional groups absent from natural biomolecules.

One of the earliest examples was the **Staudinger ligation**, which involves the reaction between an azide and a phosphine. Although highly selective, its relatively slow reaction rate encouraged the development of faster alternatives.

#### Click Chemistry

A major breakthrough came with the development of **click chemistry**, particularly the copper-catalyzed azide-alkyne cycloaddition (CuAAC). This reaction is highly efficient and selective. However, copper ions can be toxic to living cells. To address this issue, researchers developed **strain-promoted azide-alkyne cycloaddition (SPAAC)**, a copper-free click reaction that uses strained cyclooctynes to react rapidly with azides. SPAAC became one of the most widely used bio-orthogonal reactions in living systems.

## Tetrazine Ligation

Tetrazine ligation is among the fastest known bio-orthogonal reactions. It involves the inverse electron-demand Diels–Alder reaction between tetrazines and strained alkenes such as trans-cyclooctene. The exceptional speed and specificity of this reaction make it ideal for live-cell imaging and targeted drug delivery.

## Applications of Bio-orthogonal Chemistry

### 1. Cellular Imaging

Bio-orthogonal chemistry enables fluorescent labeling of biomolecules within living cells. Researchers can track proteins, lipids, nucleic acids, and glycans in real time, helping to understand cellular organization and dynamics.

### 2. Drug Delivery

Bio-orthogonal reactions can activate therapeutic agents selectively at disease sites. This approach minimizes systemic toxicity and improves treatment efficacy, particularly in cancer therapy.

### 3. Glycobiology

The technique has transformed glycobiology by allowing visualization and analysis of glycans on cell surfaces. Understanding glycan functions is important in immunity, infection, and cancer progression.

### 4. Protein Engineering

Scientists can introduce non-natural amino acids containing bio-orthogonal functional groups into proteins. These modified proteins can then be selectively labeled or manipulated for structural and functional studies.

### 5. Diagnostic Applications

Bio-orthogonal probes facilitate the detection of disease biomarkers with high sensitivity and specificity. This capability supports early diagnosis and monitoring of diseases.

### 6. Therapeutic Development

Researchers are exploring bio-orthogonal chemistry for in vivo drug synthesis, targeted therapeutics, and controlled activation of pharmaceuticals. These approaches offer promising strategies for precision medicine.

## Future Perspectives

Bio-orthogonal chemistry is expected to play an increasingly important role in biomedical research and clinical medicine. Emerging applications include targeted cancer therapies, advanced molecular imaging, regenerative medicine, and personalized treatment strategies. Integration with nanotechnology, gene editing, and synthetic biology may further expand its capabilities.

**Mrs.A.P.Vijayalakshmi,**  
**Assistant Professor/Chemistry,**  
**Department of Science and Humanities,**  
**Pollachi Institute of Engineering and Technology**



## Students Spotlight:

1. **S.K. Abishek**, a Second-Year student from the Department of Artificial Intelligence and Data Science, successfully completed the **NPTEL** Online Certification Course – The Joy of Computing using Python and secured 60%, during the January–April 2026 session.

2.



**Kavya Sri.B**  
**II- AI&DS**

### 3. நினைவுகள்

மீண்டும் கிடைக்காத என்று என்னும் அளவிற்கு அனைவரும் ஏதோ ஒன்றை தொலைத்திருப்போம் !

#### காத்திருப்பு

சிறையில் இருப்பதுபோல்நான் அறையில் இருக்கிறேன் எப்போது வருவாய் என்னை இந்த சிறையில் இருந்துவிடுவிக்க?

#### தனிமை

என்னை சுற்றி ஆயிரம் உறவுகள் இருந்தாலும் நான்தேடுவது தனிமை மட்டுமே !

#### நட்பு

இரதம் சேர்க்காத உறவு  
இதயம் சேர்த்த உறவு  
என் சிரிப்பின் காரணம் பலர் இருக்கலாம்,  
ஆனால் என் துயரத்தின்ஆறுதல் என் நண்பன் மட்டுமே.

### மேகம்

உயரமாக பறக்க வேண்டும் என்ற ஆசைக்கு சிறகுகள் தேவையில்லை, ஒரு கனவு இருந்தால் போதும்

### பெண்

"பெண் என்பவள் கூண்டில் அடைக்கப்பட்ட பறவை அல்ல... வானம் தொட்டுபறக்கப் பிறந்தவள்..."

பெண்ணின் வழிகள் பூக்கள் நிறைந்த பாதை அல்ல, முட்கள் நிறைந்த பாதையிலும் புன்னகையுடன் நடக்கும் பயணம்."



**Thashbeega Fathima.S**  
**I- IT**

#### 4. செயற்கை நுண்ணறிவும் (AI) மனிதனும்:

வார்த்தைகள் இல்லாகவிதையாய் எந்திரங்கள் பேசும் காலம்இது,தேடலின்றி அறிவு தரும் கணினி என்னும்மாயப் பேழை!

#### இணையமும் விண்வெளியும்:

காகிதமில்லா கல்வி உலகம்கையடக்கமான விண்வெளிபயணம், புரியாத புதிர்களை எல்லாம் புன்னகையோடு தீர்க்கும் தொழில்நுட்பம்!

**ரோபோவின்வருகை** உயிரில்லா உருவமெனினும் உரிமையோடு உதவிசெய்யும், மனிதனின் சிந்தனை ஆற்றலால் மண்ணில் புதியயுகம் செய்யும்!



**A.Ajay Anto**

**I – Mechanical**

## 5 .கல்வி

கல்வியின் சிறப்பு அன்னைதரும் அன்பைவிட அறிவுதரும் கல்வி பெரிது!

கண்ணைதிறக்கும் தமிழ்மொழி,கருத்தை உயர்த்தும் நல்வழி! ஊக்கம் தரும் வரிகள்

கற்க கசடறக் கற்பவை கற்ற பின் நிற்க அதற்குத்தக.

திருவள்ளுவர் தன்னம்பிக்கை கவிதைகள் எண்ணம்போல் வாழ்வு, முயற்சியே நமது முதல் ஊற்று!

விழுந்தால் எழுந்து ஓடு, வெற்றி உன்னைச்சேரும்! கல்விபொன்மொழிகள் "கற்றோருக்குச்சென்ற இடமெல்லாம் சிறப்பு."

"கல்வி என்பது இருளில் இருந்து ஒளியை நோக்கி நகர்வது.""

எந்த ஒரு விஷயத்தையும் கற்றுக்கொள்ளும் போதுவரும் சிரமங்கள் தற்காலிகமானவை,ஆனால் அதிலிருந்து கிடைக்கும் அறிவு நிலையானது."



**K.Naveen kumar**  
**I - AI&DS**

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