

# KERALA PHYSICS CONGRESS 2025

11<sup>th</sup> & 12<sup>th</sup> OCTOBER 2025

GOVT. COLLEGE MADAPPALLY, VADAKARA, KOZHIKODE



KPC 2025 Begins with Inspiring Inaugural Ceremony

Kerala Physics Congress 2025 Inaugurated at Govt. College Madappally



The 2025 edition of the Kerala Physics Congress began on October 11 with registration at 9.00 AM, welcoming over 200 students and teacher delegates from across the state. The Inaugural ceremony at 9.30 AM was graced by Mr. Rajesh Kumar R, Regional Deputy Director, DHSE, Kozhikode. In his chief

guest address, he stressed the urgent need to nurture scientific curiosity at the Higher Secondary level and praised the Congress for bridging the gap between classroom Physics and real-world research. The ceremony set an energetic tone, reminding delegates that Physics is not just a subject, but a way of thinking that can shape Kerala's future.

## VSSC- SPL Director Takes Students "Sun, Earth and Beyond"

Dr. Tarun Kumar Pant's Keynote: Where School Physics Meets Space Science

Dr. Tarun Kumar Pant, Director of the Space Physics Laboratory at VSSC Thiruvananthapuram, delivered the keynote address of KPC 2025. His talk, "Sun, Earth and beyond: Scientific challenges and opportunities," connected textbook chapters on magnetism and waves to ISRO's live missions. Students were captivated as he explained how solar storms affect satellites and how space weather research protects India's communication networks. The session showed +2 students that the equations they learn today could one day help them design India's next Mars orbiter.



## Charting a Research Path After +2

From Classroom to Lab: Dr. Suchand Sandeep on Careers in Physics Research

Many students ask, "What after +2 if I love physics but not engineering?" Dr. Suchand Sandeep from Manipal Institute of Technology answered exactly that. In his session "The Next Step: Perspectives on Pursuing Higher Education and Research," he mapped out B.Sc. and integrated M.Sc. options, research fellowships, and the reality of a scientist's life. By sharing his own journey, he demystified research careers for students from smaller towns, proving that world-class physics isn't limited to IITs alone.

## Watch, Wonder, Learn – Physics Comes Alive

Dr. Rajeshmon V G Proves Physics is Best Taught by Doing. Textbooks came to life from 1.45 to 3.45 PM as Dr. Rajeshmon V G of St. Paul's College Kalamassery led "Physics by Demonstration." Using buckets, lasers, and low-cost kits, he showed how to teach Newton's laws, interference, and induction without an expensive lab. Teachers left with ready-to-use demos, while students finally saw why a rolling ball slows down. The session was a masterclass in the Congress theme: "Study by Doing."



## "What is Light?" – A 300-Year Question reopened at NITK

Dr. Sreenath V from NITK Surathkal Revisits Physics' Most Beautiful Mystery

Is light a wave or a particle? Dr. Sreenath V took KPC 2025 delegates on a 300-year journey from Newton to Einstein to answer "What is Light?" His talk wove history, philosophy, and quantum mechanics together, showing students that science progresses by asking simple questions fearlessly. Many delegates said this 1-hour session has changed how they will teach optics forever.

## Telescopes, Stars, and Awe – KPC 2025's Night Sky Session

Dr. Nijo Varghese Helps 200+ Students Touch the Stars

For most delegates, 6.00 PM on Day 1 was their first time looking through a telescope. Dr. Nijo Varghese of Sacred Heart College, Chalakkudi, hosted "Exploring the Night Sky: An Evening with the Telescopes." Students identified Jupiter's moons, learned star maps, and understood why light pollution matters. The collective gasp when Saturn's rings came into view captured the real goal of KPC 2025: turn abstract wonder into personal experience.

## The Story of Modern Physics in 60 Minutes

Dr. Harikrishnan G Traces Physics from Newton to Quantum



Day 2 started with Dr. Harikrishnan G of Govt. College Madappally explaining "Evolution of Modern Physics." In just one hour, he showed how a few failed experiments in the 1900s forced scientists to rewrite the rules of reality. For +2 students struggling with dual nature of matter, this historical lens made quantum mechanics feel less like magic and more like human detective work.

## College Labs Come to School – Hands-On Experiments

### Dr. Nithyaja B Bridges the +2 to B.Sc. Lab Gap

Why wait for college to do real experiments? From 9.00 to 11.00 AM, Dr. Nithyaja B ran “Demonstration of Experiments in College Level” where students measured Planck’s constant and studied interference with equipment they’d only seen in diagrams. Teachers noted down procedures to replicate in their own schools. This session directly tackles Kerala’s biggest practical-lab challenge: exposure.

### The Beauty of Unanswered Questions – Prof. N Shaji

CUSAT’s Prof. N Shaji Asks: What Makes a Physics Question Beautiful?

Not every lecture gives you answers. Prof. N Shaji’s “On Some Beautiful Questions in Physics” celebrated the questions we can’t yet answer. Why is the universe left-handed? Why does time move forward? Students realized that physics isn’t a finished book but an ongoing mystery novel. Several said this session gave them permission to stay curious instead of just chasing marks.



## A New Way to Solve Physics Problems

### Quantum Computing Expert Dr. R K Sunil Kumar on Teaching Problem Solving



In the first parallel teacher session, Dr. R K Sunil Kumar, Director of the Centre for Quantum Computing at Kannur University, introduced “Problem Solving in Physics – A New Paradigm Shift.” He argued that teaching algorithms and computational thinking is as important as teaching formulas.

Teachers left with strategies to help students model problems instead of memorize solutions.

### Nuclear Physics Updates for the +2 Classroom

#### Prof. Suresh Babu K Brings Nuclear Physics Back to Life for Teachers

Nuclear physics often gets 2 pages in textbooks. Prof. Suresh Babu K, Former HOD at Govt. College Madappally, spent an hour showing teachers new animations, reactor videos, and medical applications to make the topic relevant. His talk ensured that Kerala's students hear about fusion and cancer therapy, not just mass defect formulas.

### 30 Years of Teaching Tricks in 75 Minutes

#### Dr. B. Premlet Shares "Tips and Tricks in Physics" from a Lifetime in Classrooms

The final parallel session was pure gold for teachers. Dr. B. Premlet, Former HOD at TKM College of Engineering, packed decades of classroom wisdom into "Tips and Tricks in Physics." From memory hooks for electromagnetism to lab hacks using household items, teachers called it the most immediately useful session of KPC 2025. As one delegate said, "I'm using his pendulum trick on Monday."



### Valedictory Function

After lunch, "Sparks & Reflections" at 1.30 PM allowed delegates to share takeaways and feedback. The Valedictory Function at 2.00 PM concluded the Congress, with organizers distributing certificates and reiterating the mission to carry the research spirit back to schools across Kerala.



Each session was curated to serve the Congress objectives — research exposure for students, skill upgrade for teachers, and hands-on science for all. The mix of ISRO scientists, NIT/CUSAT faculty, and experienced school teachers ensured both inspiration and practical value.