



Indian Institute of Space Science and Technology (IIST) NEWSLETTER

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Republic Day Celebration

IIST celebrated the 75th Republic Day with great enthusiasm and patriotism, commemorating the occasion with a series of activities and events. The day commenced with Dr. Unnikrishnan Nair S, Director of IIST, unfurling the national flag. Registrar, Deans, faculty, students, staff, and family gathered to witness the ceremony, with students and teachers from the Government Tribal School, Idinjar, attending this year's celebration as special guests.



CISF welcomes the Director

During the event, Director delivered a comprehensive speech highlighting the institute's achievements over the last year, outlining future programs and initiatives. The speech covered a range of topics, including academic excellence, research, infrastructure development, international collaborations, industry partnerships, technological integration, and outreach programs. Director also discussed IIST's active participation in space programs,



CISF and NCC cadets participating in the Republic Day celebration

emphasizing the institute's role in making and launching small satellites and supporting ISRO's programs. He highlighted the promising developments in the space domain, expressing optimism about the opportunities awaiting IIST in the upcoming year. He urged everyone to work together to elevate IIST to the status of a distinguished institute and hoped for a successful year ahead

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He highlighted the institute's smooth transition plan for the next academic year based on NEP and expressed gratitude for government support, including a visit from Dr. S Jaishnakar, Honourable Minister for External Affairs. Director proudly noted IIST's recognition with the 5G Use Cases Labs under the "100 5G Use Cases Labs Initiative" of Government of India.



Dr. Unnikrishnan Nair, Director, IIST, delivering the 75th Republic Day speech

Following his speech, the CISF provided a captivating demonstration on the importance of security in the office environment. A skit highlighting unity among people was also performed, and prizes were awarded to winners of various competitions, including those held for the children of CISF personnel.

Dazzling cultural programmes by the student community, comprising music, dance, and drama, were organized in the SAC, conveying messages of unity, equality and patriotism. Prizes were distributed to winners of Hindi competitions, Departmental awards, and competitions organized as part of GIS Day 2023.



Glimpses of cultural programmes

Contributions in Space Missions

The collaborative research efforts of IIST faculty, along with ISRO scientists, have provided unique opportunities for the students to participate in some of the space missions. PSLV-PS4-POEM platform based microgravity experimentations, and associated missions are some typical examples that make IIST unique in research efforts and contributions to the Indian space program. The first student-built sounding rocket mission is also credited to IIST.

Following is the list of mission successfully accomplished by IIST faculty student groups in close collaboration with ISRO Centres during the period:

PILOT (Pslv-orbital Obc and Thermals), successfully launched in April 2024, where indigenously developed sub-systems at IIST such as OBC for the future missions such as AHAN (IIST student satellite) were tested in the PS4 stage.

Earlier in April 2023, a payload for LEO Ionospheric studies – ARIS 201F, was launched on the POEM2 platform of PSLV C55.

The PILOT is a technology demonstration student payload designed for PSLV Orbital Experimental Module (POEM). The main mission objectives were the following:

- To demonstrate the 3D printed metal structure performance for satellite related applications

designed by IIST and fabricated with the support of L&T Aerospace Pvt. Ltd., Coimbatore.

- To demonstrate the thermal simulation model with flight data acquired through sensors

placed at strategic locations.

- To demonstrate the performance of the indigenously designed OBC along with the flight software.

Annual Sports Day – 2024

The annual sports meet for the academic year 2023-24 was conducted on 29th January 2024. The students participated in various sports events under the flags of five houses, namely; Akashganga, Devyani, Kritika, Saptarshi and Sharmista.



Ms. Leena A, the Chief Guest, addressing the audience

The sports meet was inaugurated at 9.30 AM by the chief guest Ms. Leena A (Sports Council Secretary & Joint Secretary, Govt of Kerala). Prof. Kuruvilla Joseph (Registrar and Dean-Students Activities) welcomed the gathering.



Welcome Speech by Prof. Kuruvilla Joseph, Registrar and Dean, IIST

The Chief Guest received the salute from the march-pasts of various house teams. The Chief Guest ceremoniously commenced the sports meet by raising the IIST flag and lighting the torch. Following the formal inauguration function, the finals of various track and field events were conducted. Prof. N Sabu, Chairman IIST sports committee, presented the vote of thanks.



Unleashing the Spirit of Sports

'Dhanak', the three-day cultural extravaganza held from March 17-20, 2024, witnessed a massive turnout of 1030 students from various colleges and universities. Smt. Merin Joseph IPS, Police Commissioner, Kollam, inaugurated the event while Shri. Mohan Raghavan, Head of Heritage, Science and Technology, IIT Hyderabad, served as the Guest of Honour.



Inaugural session of Dhanak 2024

The program, spanning four days, had 33 engaging events that kept participants captivated throughout. The highlights included the group dance competition, battle of the bands, solo singing and dancing contests, treasure hunt, and fashion show, all of which drew large crowds. A standout moment was the Street Play, which tackled the serious issue of drug abuse in an



Smt. Merin Joseph IPS, inaugurating Dhanak 2024



Prof. Kuruvilla Joseph, Registrar, IIST addressing the audience

entertaining and impactful way. The workshops at schools were highly informative, offering students a valuable opportunity to learn and develop new skills.



Rhythms and Creativity

The organisers ensured the event ran seamlessly, from registration to stage setups and food stalls. The friendly and helpful staff and volunteers contributed significantly to the overall positive experience.



Shri S. Somanath, Secretary, Department of Space and President, Governing Body, IIST addressed the student community of IIST on 4th April 2024. Dr. S.



Shri S. Somanath addressing the IIST academic community



Unnikrishnan Nair, Director, VSSC/IIST, and Dr. Kuruvilla Joseph, Registrar, IIST, were present on the dais.

In his address to the student community, Shri S. Somanath highlighted the significance of expertise in individual domains, but emphasized the importance of acquiring diverse skills and the ability to collaborate effectively within a team for achieving success. He emphasized that academic institutions serve as repositories of learning methodologies, and it is the students' responsibility to apply these methods throughout their careers.

The programme started with the welcome speech by the Director. Registrar, IIST, proposed the vote of thanks.

IIST-MUN 2024

IIST-MUN returned back for its 11th edition on the 2nd and 3rd of March, 2024. This edition of MUN was inaugurated under the esteemed presence of Dr. S. Unnikrishnan Nair, Director VSSC/IIST. The director emphasized the need of conducting events of such nature in all educational institutes, due to the importance of India's role in the upcoming years on the global stage. He also mentioned the need to have such dialogues specially in the domain of Space Technology and Space Laws, as the coming years would undoubtedly belong to the nations who would have their presence in the horizons up above fully established.

The guest of honor for the event, Smt. Jeeva Maria Joy, IFS, also echoed similar beliefs, informing briefly to everyone on the role India currently plays on the global stage of diplomacy and deliberations. She iterated the belief that the onus was on India



Shaping Future Diplomats: a glimpse of MUN

and Indian citizens to take the world forward in the upcoming years. The event was thus officially inaugurated.

Dr. Shaijumon C S, Faculty Coordinator - IIST MUN, welcomed the gathering and presented a brief history of IIST MUN. The inauguration program

ended with the Student Coordinator of IIST-MUN 2024, Shri. Aditya Mishra presented a vote of thanks.

For this iteration of IIST-MUN, there were three councils.

1. UNGA (United Nations General Assembly)
2. UNCOPUOS (United Nations Council on the Peaceful Uses of Outer Space)



MUN team with the Director, IIST

3. G20 (Group of 20)

Apart from IIST delegates were students from various colleges across Kerala and some other states such as College of Engineering, Trivandrum (CET), Government Law College, Trivandrum

(GLCT), Government Law College, Kozhikode (GLCK), Mar Athanasius College of Engineering Kothamangalam, CSI College for Legal Studies, Kottayam, University College, Mar Gregoris College of Law, Trivandrum, Sree Chitra Thirunal College of Engineering, Trivandrum



Diplomacy in Action

International Women's Day Celebration

March 08 is marked and celebrated as International Women's Day every year. At IIST the International Women's Day was celebrated on the afternoon of 14 March, 2024. The event was held at the Multipurpose Hall in the Students Activity Centre (SAC).

Ms. Nigar Shaji, URSC, Project Director - Aditya-L1 Mission, was the Chief Guest for the function who shared her personal experiences and made a



Ms. Nigar Shaji, the Chief Guest addressing the audience



Dr. Unnikrishnan Nair, Director, IIST, delivering welcome speech

technical presentation regarding the mission. As Aditya-L1 marks a landmark achievement for ISRO, with a first time advent at the L1 point, this event provided a unique opportunity for the



Women's Day Moments Captured

students to interact with the Project Director of the mission.

On this occasion, an exhibition cum sale of handicrafts by the staff of IIST was on display outside the Multipurpose Hall.

TEDx at IIST: Igniting Ideas and Inspiring Change

The TEDx@IIST event was successfully conducted on April 20, 2024, featuring captivating presentations by prominent figures from diverse fields. The event was a platform for speakers to share their insights on success, emphasizing its continuous nature and the importance of innovation.

The distinguished speakers were:

Smt. R. Sheena Rani, Associate Director of Advance Systems Lab, DRDO

Dr. C. Anandharamakrishnan, Director of NIIST, Trivandrum

Dr. Manju S. Nair, Project Director of HTEP, LPSC, ISRO

Shri. Prateep Basu, CEO of SatSure

These leaders shared their expertise and success strategies, offering valuable perspectives to the audience. This event has drawn substantial engagement from the scholarly community and reflects the pioneering nature of our institute. The



event fostered intellectual curiosity and meaningful connections among students, inspiring them to broaden their horizons and collaborate on initiatives that drive positive change. The captivating videos from the TEDx program are receiving widespread acclaim on the TEDx platform, attracting a growing audience. The TEDx event at IIST highlighted the significance of shared knowledge and the collective ability to foster innovation for a brighter future.

TEDx IIST Trivandrum
an independently organised TED event

**"Breaking Boundaries":
Unleashing Human Potential**

SPEAKERS

2:00pm - 6:00pm
Venue:
MPH, IIST

20th April

Prateep Basu
CEO, SatSure

Dr. Manju S Nair
Project Dir. HTEP, LPSC, ISRO

C Anandharamakrishnan
Dir. NIIST, Trivandrum

R Sheena Rani
Associate Dir.
Advanced systems
Lab, DRDO

For more Details

Tedxiist Trivandrum | tedxiisttrivandrum | https://tedxiist.org.in | TEDxIIST Trivandrum



1. Agasthya – Biodiversity Park



Dr. Unnikrishnan Nair, S, Director, IIST inaugurating 'Agasthya'

Agasthya – the biodiversity park was inaugurated by Dr. Unnikrishnan Nair, S, Director VSSC/IIST, on March 14, 2024. This park serves as a sanctuary for diverse flora and fauna native to the region. It symbolizes IIST's commitment to sustainability and provides an open space for discussions and relaxation, offering students and faculty a living laboratory to explore the wonders of nature while promoting conservation and environmental responsibility. This initiative aligns with the institute's vision of integrating ecological balance with scientific innovation.

2. New Gate and Security Complex

The new Gate and Security Complex at IIST was inaugurated by Dr S. Somanath, Secretary, DOS and President, Governing Body, IIST. The state-of-the-

art facility is designed to streamline campus security while offering a modern and welcoming entrance that reflects the institution's stature.



Dr S. Somanath, Secretary, DOS, inaugurating the New Gate and Security Complex

3. Football and Basket Ball Facilities



Inauguration of new football and basket ball facilities

Dr. S. Unnikrishnan Nair, Director, VSSC/IIST, inaugurated the new football and basket ball facilities on 24th January 2024 at 4 PM. Prof. Kuruvilla Joseph, Outstanding Professor and Registrar, IIST, Deans, HoDs, faculty, students and staff joined the inauguration ceremony.



4. Electron Microscopy Facility

Dr. Unnikrishnan Nair S, Director VSSC/IIST, inaugurated the electron microscopy facility in the Department of Chemistry on 24th April 2024. The facility is equipped with a field emission scanning electron microscope (FE-SEM) and an energy dispersive spectroscopy (EDS). The FESEM helps to analyse nanomaterials, ceramic materials, battery



Inauguration of the Electron Microscopy Facility in the Department of Chemistry

materials, functional materials, composite materials, metals and alloys. It helps to understand the surface morphology, particle size



and material composition. The facility is available to all the students of IIST.

Conferences / Symposia

Fourth Semicon India Roadshow

IIST took part in organising the 4th Semicon India Roadshow in collaboration with ISRO on March 6, 2024 at Dr Srinivasan Auditorium. VSSC. Shri Rajeev Chandrasekhar, Honourable Minister of State for Electronics and Information Technology, Minister of State for Skill Development and Entrepreneurship, and Minister of State for the Ministry of Jal Shakti inaugurated the programme. Dr. S.Unnikrishnan Nair, Director, VSSC/IIST

welcomed the Minister and dignitaries.

The Semicon India Future Design is an initiative of Ministry of Electronics and Information Technology (MeitY), with CDAC as Nodal Agency for implementation of the DLI Scheme to incentivize entrepreneurs in the creation and development of intricate semiconductor IPs, System on Chip (SoC), and products, thereby to attain self-sufficiency and

to position India as a significant contributor to the global semiconductor supply chains. At the 4th FutureDesign Roadshow, the Honourable Minister announced that the upcoming Bharat Semiconductor Research Centre (BSRC) will have a regional centre at IIST, Thiruvananthapuram, catalysing the city's start-ups and tech ecosystem. The proposed centre will be a "comparable institution" to its esteemed counterparts such as the Belgium-based Interuniversity Microelectronics Centre (IMEC), the renowned Massachusetts Institute of Technology (MIT) in the U.S., and Taiwan's Industrial Technology Research

Institute (ITRI).

Dr. V. Narayanan, Director, LPSC; Dr. Kuruvilla Joseph, Registrar and Dean (Academics); Shri. Sandip Patel, M.D and G.M (India), IBM; Smt. Malini Narayanamoorthy, Electronics Country Head, Renesas Technology; Shri. Navin Bishnoi, Country Head, Marvell Technology; Shri. Vishal Dhupar, M.D. (South Asia), NVIDIA; Shri. Jayashankar Narayanankutty, Group Director, Cadence Design Systems also talked during the program.



Shri. Rajeev Chandrasekhar, Honourable Minister, addressing the participants



Hon. Minister Visiting the stalls

Workshop / Lecture / Short Term Course /Outreach Programmes

1. Short Term Course on Mission Design and Avionics for Launch Vehicles

IIST on behalf of Indian National Space Promotion and Authorization Centre (IN_SPACE) conducted a skill development Short Term Course on Mission Design and Avionics for Launch Vehicles. This unique course was designed to benefit NGEs and Academia with more insights into launch vehicle technologies. The course was conducted from 19 May to 24 May 2024 with a befitting inaugural function chaired by Dr B. N Suresh, Hon. Chancellor, IIST and attended by dignitaries including Dr S. Unnikrishnan Nair, Director,

VSSC/IIST and Dr Vinod Kumar, Director, PD, IN_SPACE, Prof. Kuruvilla Joseph, Registrar, IIST. The course gave an overview of launch vehicle mission design and development of avionics systems. The course included 28 lectures delivered by eminent faculty chosen from Vikram Sarabhai Space Centre and IIST and also had four practical demonstrations. The course was well received by the 51 participants who enjoyed this fully residential course at IIST, visit to VSSC and the fruitful interactive sessions.



Dr B. N Suresh, Hon. Chancellor, IIST



Participants of the short term course

2. IIST@Schools

IIST @ Schools was organised from Jan 5-6, 2024 as part of Promotion of Excellence among Gifted Students, a programme for children of grades VIII and IX standard from all the Districts of Kerala. An initiative of the Department of Education, Government of Kerala, this programme seeks to integrate Mathematics, Science (Physics, Chemistry & Biology), English, IT and Counseling using a hands-on approach and thus create a social and cultural awareness coupled with science temper. The students from the different schools of Kerala through several sessions were provided a platform for building a new academic discipline, sustainability science, which can point the way to a sustainable global society.



3. IIST-SPL-Aditya L1 Workshop

IIST in collaboration with the Space Physics Laboratory, VSSC and the Aditya L1 Outreach Team, organized a four-day workshop from June 3 to June 6, 2024, focusing on heliophysics, space weather, and the role of India's Aditya space solar observatory in advancing our understanding of the Sun and its impact on Earth.



Prof. Chandrasekhar, Dean R&D and Prof. Kuruville Joseph, Registrar & Dean, addressing the audience

Forty participants, primarily post-graduate physics students, were selected from a pool of applicants to attend the workshop. The event



Participants of Aditya L1 workshop

featured lectures by principal scientists, the project director, the mission director of Aditya L1, the principal investigators of the Aditya L1 payloads, and experts in launch vehicles, trajectory calculation, telemetry, and tracking.

The workshop concluded with a written examination. The top performers in this exam will be given the opportunity to work on a project related to solar physics and/or space weather.

4. Glider Workshop-cum-Competition

A two-day glider workshop-cum-competition was organized at IIST, attracting over 70 participants during March 9 -10,2024. The event was designed to engage students in the principles of aircraft design, particularly focusing on the unique challenges of glider development.

To deepen their understanding, participants were introduced to basic design calculations, such as estimating the optimal wing loading and



determining the aspect ratio of the wings to maximize glide performance. This was followed by fabricating their gliders. Once fabrication was complete, the gliders were put to the test in a competition, where students competed against each other to see whose glider could achieve the greatest range and longest flight time. This blend

5. Workshop on UAV Design

In the workshop at VSSC school, students were introduced to the fundamentals of UAV (Unmanned Aerial Vehicle) design, starting with the basics of aerodynamics. The session on March 24, 2024 began by explaining key aerodynamic principles such as lift, drag, thrust, and weight, which govern the flight of any aerial vehicle. These forces were discussed in the context of how they work together to achieve and maintain steady flight.

A live demonstration of a UAV was conducted, allowing students to observe the key concepts in action. The demonstration included take-off,

of theory, hands-on design, and friendly competition provided an immersive learning experience, helping students grasp the complexities of aircraft design while fostering creativity and teamwork.

controlled flight maneuvers, and landing, showing the students how theoretical principles are applied in real-world UAV operations.



Participants of UAV workshop

6. International Asteroid Search Campaign

The Astronomy Club participated in the International Asteroid Search Campaign from January 5- 30, 2024. In a thrilling achievement, the club made 7 discoveries out of 70 worldwide, with these 7 accounting for half of all asteroid

discoveries made in India during the campaign as of January 28, 2024. This success showcases the technical expertise and dedication of the club members.

7. Night Sky Telescope Observation at Manvila

On February 29, 2024, the Astronomy Club members organized a night sky observation session at Manvila, Thiruvananthapuram, for 7th-grade students. The event allowed the young

students to observe the night sky through telescopes and learn about celestial objects, sparking curiosity and enthusiasm for astronomy.



Students with the Astronomy Club members of IIST

8. Solar Observation at Nedumangad College



On March 14, 2024, the Astronomy Club hosted a solar observation session at a college in Nedumangad. Students and faculty had the opportunity to observe solar phenomena using specialized filters and equipment.

9. School Workshop at VSSC Central School

On March 23, 2024, the Astronomy Club conducted a hands-on solar observation workshop at VSSC Central School in Trivandrum. Using handheld spectrographs, students learned about star spectra

and solar composition. The workshop also included lectures on stellar evolution and spectroscopy.



Enthusiastic students participating in the workshop

Science Camps / Remedial Classes at Schools

The social outreach club of IIST- Nirmaan organised camps for the students of Idinjar Tribal School and Karipoor Government Higher Secondary school. This camps organized from January- April 2024 was an attempt to transform a routine curriculum subject into a lifelong passion among the school students.

Through the different classes, the vounteers had made an attempt to simplify concepts and scientific principles to help students enjoy science and understand its significance and application in our everyday life. The first session, Vihang the water rocket workshop, introduced them to "the

science of rocketry", de-constructed with simple water rockets, the second one, Lumiere, threw light on optics. The participants also designed a water rocket with the guidance of the NIRMAAN volunteers. in the third session, aptly named after the Harry Potter spell, the students observed simple phenomena that at first sight seem so mysterious but in fact can be attributed to basic scientific laws and principles, such as friction and static electricity. Night sky observation with a telescope was the most sought after session. A number of villagers also turned up for the sky watch and many were excited to observe the magnified image of moon with all the craters. It



Nirmaan team with students of Idinjar Tribal School

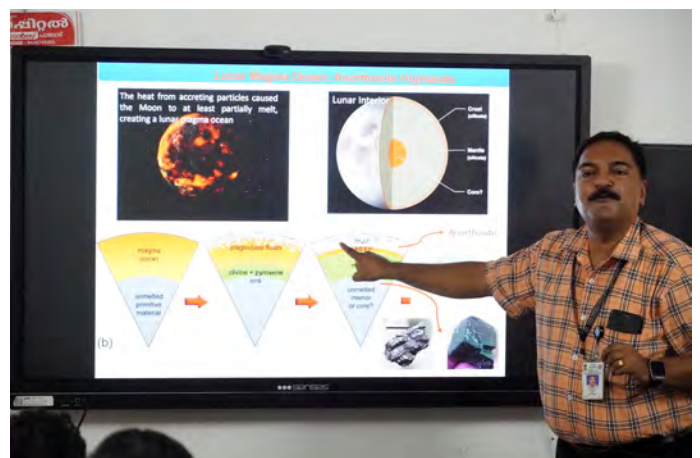
took them on a virtual tour of the universe by unravelling the mysteries of space. The final session, Hakuna Matata (meaning 'no worries' in Swahili), takes a thematic deviation and had classes on career guidance and personality development to help prepare the students for their journey ahead. Details about different kind of Government schemes for the tribal community, internet banking, investment schemes etc were discussed which was followed by an introduction to computer and its basic working principles, working of social media, Wikipedia etc. Based on the special request from the officers of the forest department a special lecture on the harmful effects of drugs among the youth was also arranged. From lectures with demonstrations and do-it yourself experiments, the sessions really ignited the scientific curiosity among the students.



Demonstration during the session

2. Session on origin and geology of the Moon

High school students received an additional session focusing on the origin and geology of the Moon, led by Prof. Rajesh V. J. and research scholars where they shared intriguing insights about its formation and structure. Two rock samples were showcased resembling the lunar surface, captivating the students' imaginations and igniting their passion for space exploration.



Prof. Rajesh V. J. taking class on 'Origin and Geology of the Moon'

Students Visit to LEOS, URSC, IIA and Vainnu Bappu Observatory

The students of DD M. Tech Optical Engineering (2020 batch), MS DD-Solid State Physics (2020 batch), and M. Tech Optical Engineering (2023 batch) visited LEOS, URSC, IIA and Vainnu Bappu Observatory from 16.05.2024 to 20.05.2024. The academic visit was very fruitful as the students got an opportunity to visualize and learn more thoroughly about different instruments and techniques which they have studied in their courses. They learnt about many advanced instruments and techniques, such as, adaptive optics, optical testing and fabrication, optical system design and analysis, semiconductor physics, quantum communication, experimental physics, etc., which are being used and applied for design and fabrication at facilities under ISRO. Visiting ISRO Centers such as UESC and LEOS gave them an understanding about the technology that has gone through in developing the systems and payloads, challenges faced and the methods of mitigation. Moreover, interaction with the scientists/engineers helped the students understand practical use of different concepts and techniques.



Prahasna

The Drama Club of IIST, Prahasna, has etched its name in history with a resounding victory by securing first position at street play competition hosted at the fest of NIT Surathkal. Their debut performance captivated the audience at NITK Surathkal, earning accolades for its emotional depth and impeccable realism. This triumph not only showcases the talent and dedication of the club members but also sets a new standard for excellence in dramatic arts. The unwavering support from faculty, particularly Dr. Babitha Justin, deserves special mention for nurturing and guiding the team to success. With this win, the Drama Club has made its mark by redefining the essence of NukkadNatak and inspiring future generations of performers. Their journey is a testament to the power of passion, teamwork, and artistic expression.



Prahasna team at NIT Surathkal

Battle of Bands



The Neptunes - Music Club of IIST participated in the Cultural Fest of NIT Suratkal on March 01, 2024 with two bands, Rockstrom and Aaroh. Rockstrom showcased their exceptional talent and secured second place in the Rock genre Battle of Bands Competition.

Literary Club



Sarovar, the Literature Club of IIST, was inaugurated on February 27, 2024 in the Admin Council Hall. Ms. Juana Adcock, distinguished Scottish poet and translator,, was the Chief Guest. She also led an engaging workshop, enriching the literary skills of participants. Her presence added a

significant dimension, as she offered valuable guidance and inspiration to all budding writers and literary enthusiasts. The activities of the club included book discussions, writing workshops, literary Games, themed reading, literary tiled visits, book swaps, guest lectures etc

World Environment Day Celebration

World Environment Day serves as a poignant reminder of our responsibility towards the earth. It is a day to reflect on the impact of human actions on the environment and to take concrete steps towards its preservation and restoration. As part of the Environment Day Celebration, Eco Club Council, Swachh Bharath Abhiyam Implementation Committee and CMD, IIST, organised a "Tree Plantation Drive" on 6th June 2024. Dr. S. Unnikrishnan Nair, Director, VSSC/IIST, and Prof. Kuruvilla Joseph, Registrar/Dean (Academics), led the programme, in which other dignitaries, students, faculty, and staff enthusiastically participated. The drive started with planting sapling of a banyan tree by the Director and the Registrar. One hundred saplings of fruit-bearing and other trees were planted in the campus, as part of this event.



International Day of Yoga Celebration

As part of the International Day of Yoga celebrations, IIST organised two programs on June 21. The day commenced with an early morning Yoga Session by Dr. Priyanka, an Ayurveda Physician and Yoga Practitioner associated with the CVN Kalari. The session took the participants through various yoga asanas and breathing techniques.

The yoga session was followed later that day by a talk on "Building Inner Resilience for High Performance" by Dr. Beela G K, from the Department of Community Sciences at Kerala Agricultural University and former Director of the Centre for Disability Studies, shared valuable insights into the need to focus on emotional quotient. She presented a few practical ways to develop inner resilience through practices that are aligned with yoga. The event successfully highlighted the importance of integrating yoga and mindfulness into daily life.



Faculty Laurels

Books Authored by IIST Faculty

'A Course on Linear Algebra' by Prof. Raju K George, (Dean, (SA, Student Welfare & Outreach Programme)) and Shri Abhijith, published by Springer Nature.



Patents Awarded

1. Dr V. S. Sooraj and Shri Sarath Babu Thekkott Surendran (Dept. of Aerospace Engineering) have been granted patent for their work

"Reconfigurable Grinding Wheel with In-Built Cooling and Self-adaptable Lubrication System via Additive Manufacturing" Patent No: 502722

Description: Development of a reconfigurable - segmented grinding wheel which is capable of (a) self-generating and delivering cold air for cooling purpose and (b) delivering controlled quantity of lubricant in self-adaptable mode to the grinding zone, according to the cutting temperature and cutting speed (similar to sweating action). It is an example of using additive manufacturing (3D printing) for potential green and sustainable subtractive manufacturing applications (typically for machining of difficult-to-cut aerospace / other engineering materials). This is the second

indigenous methodology for abrasive finishing developed at Manufacturing Processes lab, IIST after "Multi-purpose elasto-Magnetic abrasive spheres for fine finishing", which already received a patent in the year 2020.

2. Shri. Mrudul C., Dr. Sam Noble and Prof. K.G. Sreejalekshmi, have been granted patent for their work " Flapping wing mechanism for a bionic micro aerial vehicle". The mechanism is capable of mimicking all the key aspects in the kinematics of common swift flight i.e. fore and aft movement, wing rotation, and elliptical trajectory of the wingtip. There are several advantages for the mechanism in terms of complexity (control input, number of links, mechanical joints) and performance (kinematics like wing trajectory, wing rotation, and amplitude). Patent No. 503237

Students Corner

Ms. Shreya Parvati, Research Scholar, HSS, has been selected as one of the authors for the prestigious PM YUVA Mentorship Scheme of the Ministry of Education, Government of India, with NBT as the Implementing Agency. She will be the recipient of ₹3 lakhs for a book grant and a book deal which will be released by the Prime Minister of India, during the Delhi Book Fair 2025.

Ms. Muthuamirthambal S, PhD Scholar, working under the guidance of Dr. Umesh Kadhane, has been awarded the prestigious TRIL fellowship by ICTP, UNESCO. Under this fellowship she will be able to spend a few months to one year in chosen Italian laboratory. ICTP will fully support travel and monthly fellowship for the entire duration. Ms. Muthuamirthambal will spend a few months doing research in space initiative and participate in building an advanced spectrometer for a large

research facility at Elettra synchrotron facility. She has extensive experience in building such instrumentation at AMP lab IIST.

A research work by Ms. Arya J. S. Nair and Prof. K.Y. Sandhya, of Department of Chemistry, was published as cover page of the journal Materials Advances. The illustration depicts electrochemical sensing of sodium azide, a hazardous primary explosive using a hexagonal boron nitride nanosheets. (Arya Nair J.S., and K. Y. Sandhya, Materials Advances, 2024, 5, 3177 – 3185.)

Ms. Saumya Vilas Roy, Department of Avionics secured third prize in the Flash talk held in the Frontiers Symposium organised in the IISER, Thiruvananthapuram during 9 - 10 February 2024.

Alumni News

IIST alumni Ms. Prachi Prajapati (Dual Degree Astronomy & Astrophysics; 2014-19), Mr. Naman Jain (Dual degree Solid State Physics; 2015-20) and Ms. Garima Aggarwal (BTech Aerospace Engineering; 2015-19) were invited to attend the 73rd Lindau Nobel Prize Laureate Meeting (Physics) to be held from June 30 to July 5, 2024 in Lindau, Germany. Since its founding in 1951, the Lindau Nobel Laureate Meetings have developed into a unique international scientific forum. The annual conferences offer the opportunity for exchange between different generations, cultures and scientific disciplines. Around 30-40 Nobel Prize winners gather every year in Lindau to meet the

next generation of leading scientists from all over the world.

The current meeting includes a Sciathon for the participants with a theme of 'Physics as a driver of a Sustainable World'. We are glad to know that 'Cleaning Up Our Planet – Through Physical Engineering of Bacterial Enzymes Capable of Degrading Plastics' is one of the top three Sciathon projects this year, of which Prachi is a part.

Hearty congratulations to Prachi, Naman and Garima for this prestigious selection.

विश्व हिंदी दिवस समारोह - 2024

आईआईएसटी में विश्व हिंदी दिवस समारोह-2024 के उपलक्ष्य में जनवरी 10, 2024 को हिंदी में विशेष व्याख्यान का आयोजन किया गया। डॉ. उमेश आर. कढ़णे, सह डीन एवं आचार्य, भौतिकी विभाग, आई आई एस टी ने 'गालिले से गैलीलियो तक: दार्शनिक अभिव्यक्तियाँ' विषय पर व्याख्यान दिया। इसके साथ-साथ जनवरी 11, 12, 2024 को संस्थान के कर्मचारियों के लिए हिंदी टंकण, चुन लो और बोलो, तस्वीर क्या बोलती है और छात्रों के

लिए जनवरी 16, 17 एवं 18, 2024 को कहानी रचना, हिंदी देशभक्ति गीत गायन एवं वैज्ञानिक/तकनीकी सामग्री का अनुवाद जैसी विभिन्न हिंदी प्रतियोगिताएं आयोजित की गईं। जनवरी 26, 2024 को गणतंत्र दिवस समारोह के दौरान आयोजित पुरस्कार वितरण समारोह में हिंदी प्रतियोगिताओं के विजेताओं को नकद पुरस्कार और प्रमाण पत्र प्रदान किए गए।



डॉ. उमेश आर. कढ़णे व्याख्यान देते हुए



डॉ. उणिक्कृष्णन नायर, निदेशक, आईआईएसटी से चल वैजयंती ग्रहण करते हुए छात्र एवं कर्मचारी गण

आईआईएसटी हिंदी गृह पत्रिका 'अंतरिक्ष धाराएं' - छठा अंक का विमोचन

संस्थान के सांस्कृतिक उत्सव धनक 2024 में हिंदी गृह पत्रिका 'अंतरिक्ष धाराएं' के छठे अंक का विमोचन किया गया। पत्रिका में आईआईएसटी के छात्रों एवं कर्मिकों के लेख, कविताएं, तकनीकी लेख और विविधता से भरे रोचक कृतियों का समावेश किया गया है।



हिंदी कार्यशालाओं का आयोजन

वर्ष के दौरान हर तिमाही में कर्मचारियों को प्रशिक्षित करने के लिए हिंदी कार्यशालाओं का आयोजन किया जाता है। इस अवसर पर आईआईएसटी में चयनित प्रवर्ग के लोगों को राजभाषा के उपयोग के संबंध में कार्यशाला का आयोजन किया गया।

i) तकनीकी क्षेत्र के कर्मचारियों के लिए मार्च 20, 2024 को हिंदी कार्यशाला का आयोजन किया गया। कार्यशाला का उद्घाटन डॉ. कुरुविला जोसफ, कुलसचिव एवं डीन (छात्र गतिविधियाँ, छात्र कल्याण एवं आउटरीच) ने किया। श्रीमती आर. महेश्वरी अम्मा ने 'हिंदी व्याकरण' विषय पर सत्र संचालन किया। श्रीमती सिमी

असफ़, सहायक निदेशक (रा.भा.), आईआईएसटी ने 'विभिन्न टिप्पणियों एवं तकनीकी शब्दावलियों' पर अभ्यास कराया। सभी प्रतिभागियों ने इस कार्यशाला के आयोजन पर अपना संतोष व्यक्त किया और सत्रांत में हुए विचार – विमर्श में प्रतिभागियों ने बड़े उत्साह के साथ भाग लिया।



ii) आईआईएसटी में राजभाषा कार्यान्वयन की गतिविधियों के भाग के रूप में, संस्थान के कार्यपालकों (सभी डीन, विभागाध्यक्ष, प्रभाग प्रधान एवं प्रशासनिक क्षेत्र के अधिकारी) के लिए जून 26, 2024 को एक अर्ध दिवसीय हिंदी कार्यशाला का आयोजन किया

गया जिसमें 22 कार्यपालकों ने सक्रिय रूप से भाग लिया। सत्र का संचालन डॉ. पी. आर. हरींद्र शर्मा, सहायक निदेशक (रा. भा.) ने किया। उन्होंने 'राजभाषा कार्यान्वयन में प्रभाग / विभाग प्रधान एवं उच्च अधिकारियों की भूमिका एवं संसदीय राजभाषा समिति – निरीक्षण प्रश्नावली पर अपनी प्रस्तुती दी।



कार्यशाला का संचालन करते हुए डॉ. पी. आर. हरींद्र शर्मा

राजभाषा कार्यान्वयन समिति की बैठकें

आईआईएसटी, वलियमला में राजभाषा नीति के कार्यान्वयन में हुई प्रगति की समीक्षा करने के लिए राजभाषा कार्यान्वयन समिति की दो तिमाही बैठक 25.03.2024 एवं 25.06.2024 को आयोजित कीं और संस्थान में हिंदी के प्रभागी प्रयोग से संबंधित दो तिमाही

प्रगति रिपोर्ट राजभाषा विभाग को भेज दी। इन बैठकों में राजभाषा हिंदी में अधिकाधिक कार्य करने पर जोर दी गई और इसके लिए आवश्यक कदम उठाने के निर्णय लिए गए।

जाँच बिंदुओं की स्थापना

राजभाषा अधिनियम 1963, राजभाषा नियम 1976 और राजभाषा विभाग द्वारा समय समय पर जारी किए जाने वाले

संबंधित आदर्शों का अनुपालन सुनिश्चित करने के लिए जाँच बिंदु पुनः स्थापित किए गए।

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