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Indian Institute of Space Science *and* Technology

(Declared as Deemed-to-be-University under Section 3 of the UGC Act, 1956)

Valiamala, Thiruvananthapuram 695 547

Newsletter Jan-Apr 2011

Vol.2, No.2 Jan-Apr 2011

Let me at the outset congratulate and complement the Editorial Board for the publication of the Newsletter. I also thank the Editorial Board for giving me an opportunity to share my views in this Newsletter. Before I discuss and deliberate my views, I would like to put on record the excellent leadership and vision provided by our former Director Dr BN Suresh for our Institute.

As you know, IIST is a unique Space University covering specialized courses in the field of Aerospace, Avionics and Physical Sciences. In addition to the undergraduate courses, the institute is also involved in advanced research in the field of basic sciences and engineering.

We all know creativity, innovation and research are the important tools for life long learning. Hence, we need to encourage creativity, motivate innovation, inculcate research. We should migrate from the Cartesian view of learning where knowledge is considered as substance and the goal is to transfer knowledge from teacher to students through improved pedagogical strategies. We should instead move to the social view of learning say "we participate, therefore we are" from the Cartesian view "I think, therefore I am". This perspective shifts the focus of our attention from content of subject to the learning activities and human interactions around which the content is situated.

We are aware that the students of this Institution seek more collaborative and immersive experiences; the demand of interdisciplinary research are stimulating new academic relationships and interactions; and learning is just likely to happen in virtual space as in physical space.

One of the strongest determinants of students' success in higher education: more important than details of their instructors' teaching styles: was their ability to form or participate in small study groups. Social learning is based on the premise that our understanding of content is socially constructed through conversation about that content and through active interaction, especially with others, around problems or actions.

Whether working in an environment of competition or directed work, successful collaboration is critical to achieve any mission. Our Institute besides providing undergraduate / postgraduate and PhD degrees collaborates with various R&D laboratories of ISRO. Our Institute should become a unique and path breaking institution in our country. By unique I mean encapsulate education with creativity, innovation and research. We should also be able to encourage learning mechanism that promote mastery or deep learning, help personalized learning based on learning style. IIST should be a path breaking Institute which will cater to the needs of the Indian space research and other related National R&D programmes. In my view any relevant collaboration will enhance a knowledge based intellectual resource, talent and will synergize complementary expertise and ability. I am sure our Institute will achieve this goal as we have excellent faculty members and also we have bright students who are selected through all India competitive test.

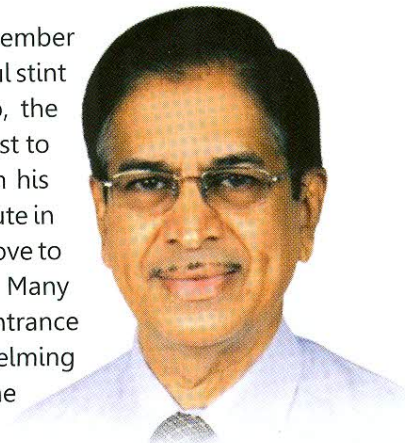
I take this opportunity to congratulate the members of the Publication Committee for bringing out this Newsletter.

KS Dasgupta
Director, IIST



Farewell to the Founder Director

Dr B. N. Suresh, the founder Director of IIST laid down office on 12th November 2010 after a long and distinguished career in ISRO, followed by an eventful stint as Director of India's first space institute. Under his able stewardship, the fledgling Institute weathered many storms and surged forward in its quest to become a premier academic and research institute of the country. With his commitment and clarity of vision, he laid a strong foundation for the Institute in its early days. It was only due to his perseverance that the Institute could move to its new abode in Valiamala in just under three years of its establishment. Many eyebrows were raised when IIST conducted its first ever All-India entrance examination, ISAT, in the year 2010. But it turned out to be an overwhelming success and established IIST firmly as a sought-after destination in the country to pursue higher technical education. Dr. Suresh left no stone unturned in maintaining high levels of quality standards in all aspects concerning the Institute. Whether it was staff recruitment, finalizing the syllabus, deciding the infrastructure of the Institute or conducting various institute events, his personal touch and attention to detail always ensured that the tasks were executed with finesse. Impeccable in dress and unflappable in conduct, Dr. Suresh's suave personality adorned with his exemplary humility won the hearts of students and staff alike. The Institute owes much to him and will cherish his contributions forever. IIST fraternity bade him farewell at a grand function, which was also graced by Dr. G. Madhavan Nair, former Chairman, ISRO.



Welcome to the New Director

Dr K. S. Dasgupta, eminent space scientist, who succeeded Dr Suresh as Director, IIST assumed office on 27th December 2010. Former Director of Development and Educational Communication Unit (DECU), Dr. Dasgupta was serving as Deputy Director and Outstanding Scientist in Space Application Centre, Ahmadabad before taking up the new assignment. Inducted into the Space Application Centre in 1974, he contributed significantly to the fields of Image Processing and Satellite Communications. He supervised the design and development of various communication systems for different GEOSAT projects and led a team of scientists and engineers in developing state-of-the-art communication payloads and ground systems for SATCOM applications. His role was critical in the development of various innovative SATCOM applications like Rural Telephony and Grid Computations, as part of the GSAT-4 applications programme. For instance, the ground terminal and the ground check-out system for GSAT-4 Regenerative Payload was fully developed under his supervision. The transfer of technology/knowhow in respect of Distress Alert Transmitter (DAT), MSS Type-D Terminal and UHF Terminal for GSAT-7 to Indian industries for production were successfully completed during this period. A widely respected scientist and an excellent team player, Dr. Dasgupta is a Senior Member of the IEEE and a Fellow of IETE. IIST looks up to him for inspiration, leadership and guidance in its formative years.



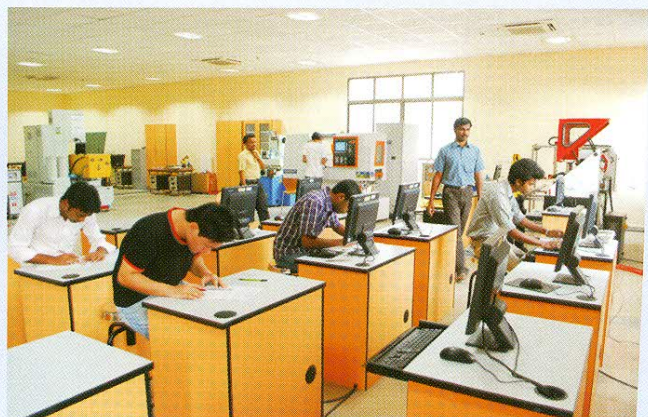
New campus

In one of the most significant developments in the history of IIST, the Institute moved to its permanent campus at Valiamala. With the unfurling of the tricolor by the Director on the auspicious day of Indian independence, we began our tryst with the new abode. Independence Day celebrations on 15th August 2010 thus became a major milestone for IIST, heralding a new era. The event will remain indelibly engraved in the minds of all students, faculty and staff at IIST, stirring them to aspire for greater accomplishments in their respective fields.

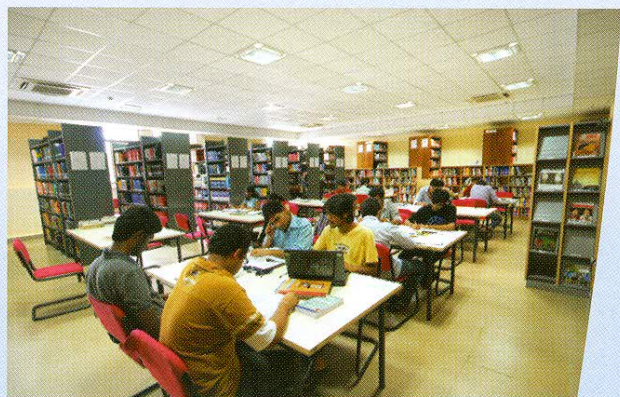
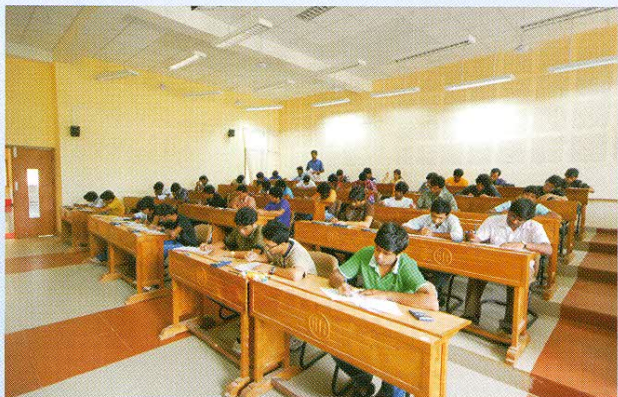


Equipping the New Campus

Shifting to the new campus, lock stock and barrel, naturally involved massive efforts. All the laboratories in the alternative campus at Veli, viz. Optics, Avionics, Communication and Programming labs, had to be re-established in the new campus. Additionally, new laboratories for Engineering Drawing, Material Characterization, General Chemistry, Strength of Materials and Wind Tunnel facility had to be set up in the academic block. Hostel rooms had to be made ready to accommodate all the students, for the first time, in one campus. Class rooms, faculty rooms, offices, conference facilities, library, dining halls, etc had to be furnished and kept ready.



Medical facility, Bank, ATM, Cafeteria and other auxiliary services had to be established. Several medical, security, housekeeping and maintenance personnel had to be newly deployed. Uninterrupted power and water supply had to be ensured. Though the process was laborious and painstaking, it was a successful endeavour undertaken on a war footing.



Admission of the New Batch

The fourth batch of B Tech students joined IIST after emerging successful in IIST's first All India Admission Test called ISAT-2010. A total of 142 students were admitted to the Institute, making the student strength, 575. With the induction of the new batch of B Tech students along with the students of the recently started M Tech and PhD programmes, the Institute has finally come of age.

ISAT 2011

The IIST Admission Test (ISAT 2011) for the selection of students for our undergraduate programme was successfully conducted on 16th April 2011. ISAT-2011 was held in 23 cities across the country. 1,20,957 candidates applied and 80,335 appeared in the test.

Academic Activities

Many dignitaries, eminent scholars and educationalist visited the Institute and enlightened the IIST community with their thought provoking lectures, inspiring insights and motivational wisdom. The lectures were enthusiastically received by the students and faculty of IIST.

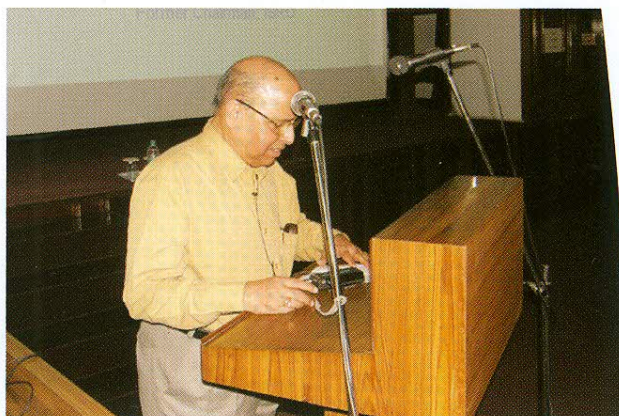
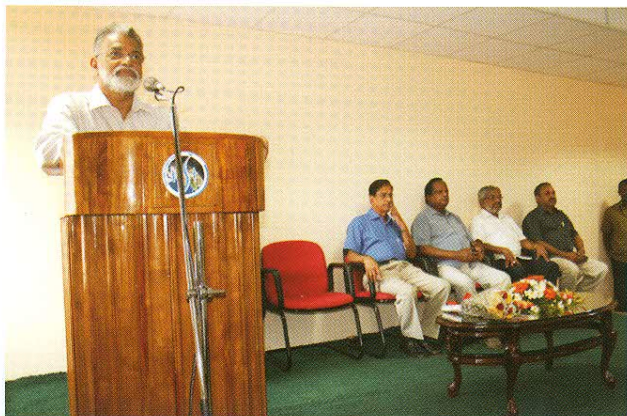
Dignitaries in the campus

Dr A.P. J. Abdul Kalam, Former President of India and Chancellor of IIST visited the Institute and interacted with students and faculty on 14th October 2010. IIST had the unique opportunity of celebrating his birthday.



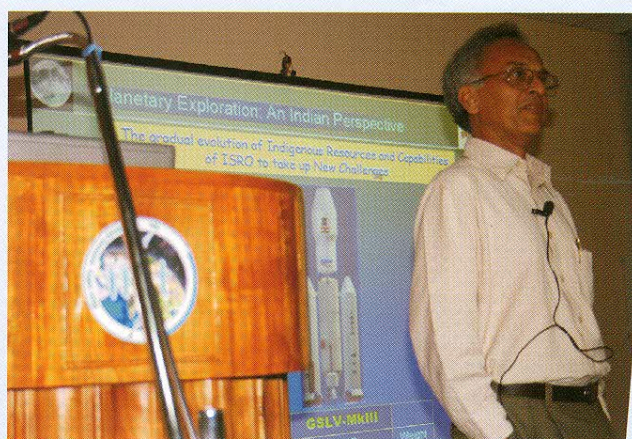
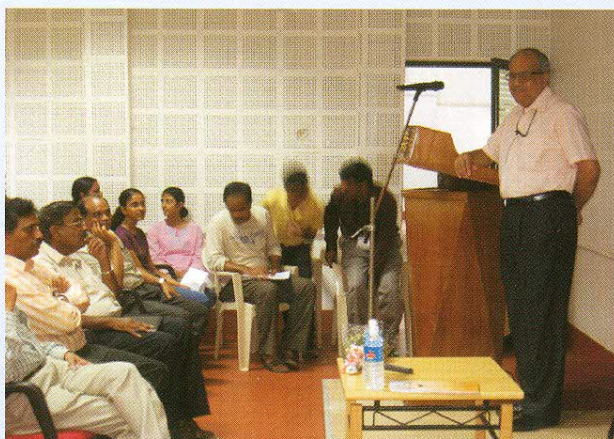
He said he has three visions for the country - first vision is that of freedom. His second vision for India is development and his third vision is that India must stand up to the world. Unless India stands up to the world, no one will respect us. Only strength respects strength. We must be strong not only as a military power but also as an economic power. Both must go hand-in-hand. His good fortune was to have worked with three great minds. Dr. Vikram Sarabhai, Professor Satish Dhawan, who succeeded him and Dr. Brahm Prakash, doyen of nuclear science in India. He said he was lucky to have worked with all three of them closely and consider this the great opportunity of his life.

Dr. K. Radhakrishnan, Chairman ISRO/Secretary DOS and Secretary BoM IIST visited the new campus and had close interactions with faculty and students. He said that Space Science demands the highest degree of professionalism which requires a quantum jump to higher degree of performance. For this, one has to continuously upgrade and update oneself. Shri. N Vasudevan, Registrar, IIST gave an overview of the work progressing in the campus. This was followed by the research scholars presenting their studies.



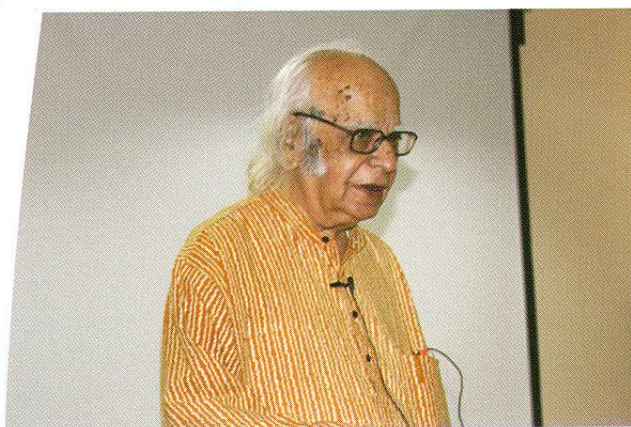
Dr K. Kasturirangan, Former Chairman, ISRO & Member, Planning Commission, Govt of India remembered his research life with Vikram Sarabhai. Under the guidance of Vikram Sarabhai the students will have to address a number of unlimited issues and answer many questions. He never provide solutions. Instead he asks a number of question which make the students go for alternatives. The net result is that when a program is launched all the ideas will be tested in a multi dimensional way. Dr Kasturirangan remembers the tenacity and determination of Dr Satish Dhawan to get things done in a high speed. Dr Rangan said that ISRO demands many qualities from a scientist which include sound technical knowledge, systematic understanding of the subject, ability to work with others, meticulous documentation, reliability, ability to make judgement and work within the given time and money. User is paramount in Space Science and there should always be a check which one cannot avoid.

Dr. R.R. Navalgund, Director, Space Application Centre [SAC], Ahmedabad delivered a special lecture on 26th May 2010 on "Space: Touching Humanity"



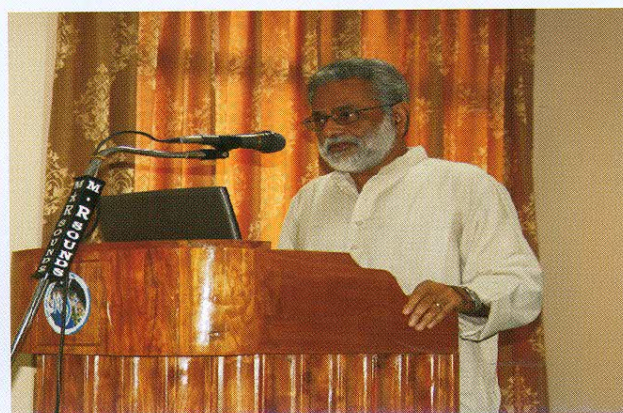
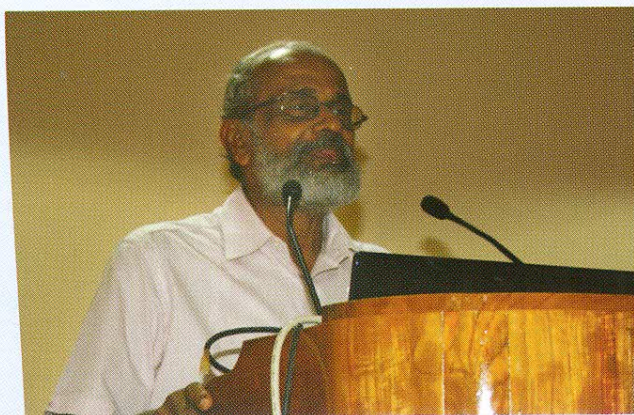
Dr. J.N. Goswami, Director, Physical Research Laboratory [PRL], Ahmedabad delivered a talk on "Chandrayaan-I and Beyond" on 22nd September 2010. Dr. Goswami's talk highlighted the fact that exploration of our own moon will continue with an ambitious mission called Chandrayaan-2, a collaboration between the Indian Space Research Organization and Roscosmos, the Russian Federal Space Agency. It will be a landmark of cooperation between India and Russia in the area of space exploration, just one more example of the new spirit of openness and interaction between nations engaged in space exploration.

Prof. Yashpal, Former Chairman of UGC and the unforgettable anchor of 'Turning Point' (telecast on Doordarshan), who made science endearing to young minds, visited IIST on 21st October 2010 and interacted with the students.



Shri. Sunny Joseph, Director and Cinematographer, delivered a lecture on the 'Images in Arts and Science'. He explained the basic elements of design which went into making an image, starting from a line to a circle and how it fitted into a visual frame. Explicating the techniques of movie making, he also showed very interesting movie clippings from several timeless classics.

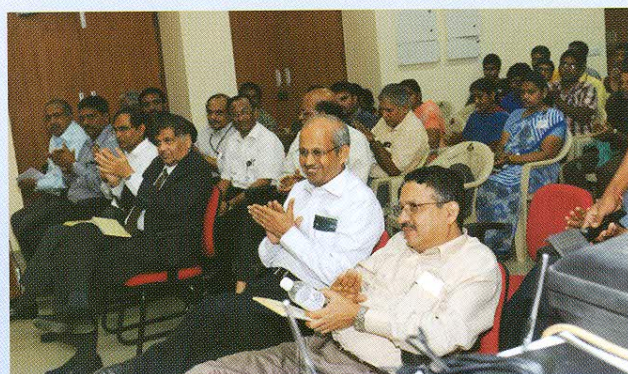
Prof. R.V.G. Menon, Former Director, Agency for Non conventional Energy and Rural Technology [ANERT] a popular figure in science programmes in media gave illuminating insights into the 'Lessons from History of Science & Technology', on 10th October 2010. Prof. RVG Menon talked about the expediency of connecting knowledge to practice by illustrating various examples from the history of Science and Technology.



Shri. P. Radhakrishnan, Former Deputy Director, Liquid Propulsion Systems Centre [LPSC] delivered an interesting talk on "Our Cosmic Quest" as part of Space Week Celebrations on 6th October, 2010.

Panel Discussion

A Panel Discussion on "Higher Technical Education in India: Issues and Prospects" was organized on 4th November 2010. The keynote address was delivered by **Dr. R. Natarajan**, Former Chairman, AICTE. The panelists included **Dr. A Jayakrishnan**, Vice Chancellor, University of Kerala, Thiruvananthapuram, **Dr. Ajay Chakrabarty**, Vice Chancellor, Birla Institute of Technology, Mesra, **Dr. E D Jemmis**, Director, Indian Institute of



Science Education and Research, Thiruvananthapuram, **Dr. A Subrahmanyam**, Professor, IIT Madras and **Dr B N Suresh**, Director, IIST.

Talks and Seminars

Ananya Ray, a student of III Year BTech. (Physical Sciences) visited the Centre for Climate Change Research, Indian Institute of Tropical Meteorology, Pune for his winter internship in Jan 2011. Based on his visit he gave a talk on Tropical Cyclones: Dynamics, Case study from Model Output and Future Aspects on 16th Feb 2011. He talked about the conditions of a tropical cyclogenesis along with the dynamics of the system from the developing stage to its dissipation stage. The future picture of occurrence of tropical cyclones in different ocean-basins and the effect of global climate change were also discussed.

Ashish Mahabal, Staff Scientist, Department of Astronomy, Caltech visited IIST on 27th January 2011. He talked to the faculty and students about "**Transient Science: The New Astronomy**". In the last few years development of new detectors and the undertaking of various sky surveys at different wavelengths has enabled astronomers, for the first time, to take digital movies of the sky instead of just snapshots. This has made possible enquiries from the structure of the solar system all the way to cosmology that were not possible before.

Dr. Apoorva Nagar and his fellow researcher from Physics Department, IIT Hyderabad visited our institute between 17th and 18th of February 2011. We got an opportunity to hear about their research work in the areas of Non equilibrium Statistical Physics and Biological Physics and Strongly correlated electron systems and Superconductivity. They have presented their results on a simple model that tries to capture the evolutionary dynamics of mutator and normal cells. Their model incorporated the conversion of normal cells to mutators and the reduction of fitness due to mutation.

Dr. Deepshikha Jayswal spoke on Magnetocaloric effect and magnetic cooling near a field-induced quantum-critical on 18th February 2011. In this talk, she presented measurements and theoretical calculations of the magnetocaloric effect (MCE) in a metal organic polymer system built from Cu_2^+ ($S = 1/2$) ions, which is a very good realization of a 1-d AfHC. She suggested the MCE experiments as a new means of exploring quantum criticality, one of the most interesting issues in modern condensed matter physics.

Dr Vinod Kumar PB from Rajagiri School of Engineering and Technology, Cochin gave a special lecture on Introduction to Fractals and its applications which was organised by IIST Mathematics Club.

Prof. Colin Sheppard delivered the talk on "Imaging into scattering media such as biological tissue using confocal microscopy" on 17th December 2010.

Prof. S Sritharan, Naval Postgraduate School, USA delivered a lecture on "Filtering and Control on Nonlinear Infinite Dimensional Systems that arise in Engineering and Physical Applications" on 1st March 2011. In this talk he showed how to generalize ideas of Kalman filtering and dynamic programming for nonlinear distributed systems governed by deterministic and stochastic partial differential equations of fluid dynamics and other physical processes.

Dr. Venugopal Reddy, Physician and Life Skills Coach USA delivered a lecture on "**How to Boost our Self Confidence and Self Esteem**" on 16th March 2011. He stressed the need for a proper investment in our soft skill development in the present day society.

Dr. Sunilkumar from L'Institut des Sciences Moléculaires d'Orsay (ISMO), Université Paris-Sud, France gave a seminar on "Photodissociation dynamics of small biological molecules". In the presentation, he talked about

a unique experimental setup that enables us to measure the complete information about the momenta of the fragments (including neutral) in coincidence, produced by UV photodissociation of small charged biomolecules such as amino acids, small peptides consisting of a few amino acids, nucleic acids and so on.

Prof. K. Muralidharan, Department of Statistics, M. S. University of Baroda talked on "Stochastic Modelling of Repairable Systems" by on 16th March, 2011. Repairable systems are those systems (machines, industrial plants, software etc.) which in the event of a failure can be repaired. Models for repairable systems must be able to describe the occurrence of events in time, and are inherently different from models for non-repairable components. The nonhomogeneous Poisson process (NHPP) and the renewal process (RP) are the commonly used models for repairable systems.

Prof. AN Ramprakash, IUCAA, Pune talked about Astronomy Ahead: Technology Challenges & Opportunities on 16th March 2011. The speaker introduced the state of technology in astronomy, over the entire electromagnetic spectrum, but with special emphasis on optical and near-infrared wavelengths. India's ambitious plans for ground and space based observatories over the next decade were discussed. Building these facilities will pose unique challenges for even the technologically advanced countries and therefore offer opportunities for India to enter the somewhat level playing field. Some of these opportunities were touched upon in the talk.

Prof. N. Sundararajan, School of Electrical & Electronic Engineering, Nanyang Technological University, Singapore delivered a talk on Neural Networks - Theory and Applications on 18th March, 2011.

Dr Madhurima spoke on Van Der Waals Interactions and Enabling MemS Technologies on 11th April 2011. In this talk she discussed about such weak molecular interactions between soft matter and oxide substrates relevant to MEMS technology, their study using experimental techniques such as contact angle measurements, IR and dielectric spectroscopy and some applications to MEM devices.

Dr A Chandrasekhar, Dr Rajesh VJ, Dr Gnanapazham, Dr Saritha Vig and Dr Sumitra Nair presented papers in the lecture series organized by the Department of Earth and Space Science every Wednesday.

Collaborative Ventures

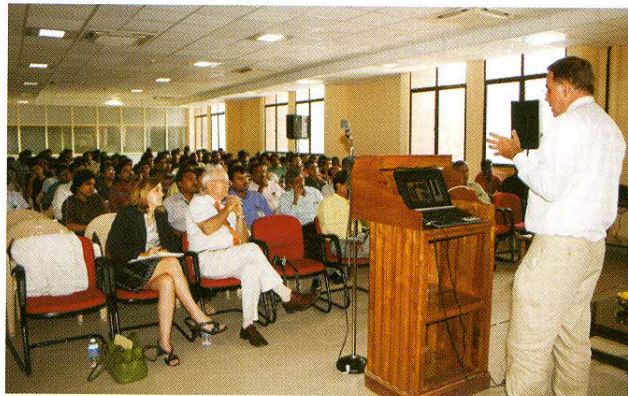
CALTECH

A team of three senior professors from CALTECH, USA visited the institute on 2nd August 2010, in connection with the ongoing collaborative programmes. They delivered two technical lectures on topics entitled "Nano/Micro Electro Mechanical System (NEMS/MEMS)" and "Engineering Smart Systems". Detailed discussions were held regarding collaborations at various levels and for establishing a Satish Dhawan fellowship at CALTECH.



USRA

A three member team from 'Universities Space Research Association' (USRA), the largest Association of Universities in the world, visited IIST and signed an MoU for collaboration in various areas. A workshop of the team with IIST faculty members and students was organized from 31st August 2010 to 2nd September 2010.



Workshops

As part of Research Methodology course, a two day workshop on "Introduction To Research Methods" By Prof. N. Sundararajan, NTU, Singapore was arranged for all Ph.D. scholars during 19th- 20th March 2011. The topics discussed included Research Preparation and Planning, Research Sources and Review, Academic Writing and Oral Presentation and Research Ethics.

Conferences

International Conference on Recent Trends in Material Science & Technology

The International Conference on Recent Trends in Material Science & Technology (ICMST), jointly organised by IIST and Material Research Society of India (MRSI), Trivandrum Chapter was held at Trivandrum during 28-31st October 2010. The Conference was inaugurated by Dr. D. Banerjee, Former Chief Controller, DRDO and Professor IISc, Bangalore in a function presided over by Dr. B.N. Suresh, Director, IIST. The conference proceeding was released by Prof. A. Jayakrishnan, Vice Chancellor, Kerala University. The Souvenir was released by Dr. B. C. Pai, Former Director, NIIST, CSIR, Thiruvananthapuram. Dr. R. Krishnan, Dean (Academics), IIST & Chairman, ICMST welcomed the gathering and Shri. N. Vasudevan IFS, Registrar introduced IIST to the delegates. The keynote address was delivered by Shri. M. Narayana Rao, Director, Mishra Dhatu Nigam Limited, Hyderabad. 'ICMST - At a glance' was presented by Prof. Kuruvilla Joseph, Convener, ICMST. Dr. M.R. Suresh, Chairman, MRSI, Trivandrum Chapter proposed the vote of thanks.



The presentation of papers and other activities were held at the Conference Village (ATF Campus) in VSSC premises. After the Special Plenary Sessions by Dr. Dipankar Banerjee & Dr. G.W. Greenwood, Professor, University of Sheffield, UK, several plenary, invited and contributory papers were presented by various national and international experts on different topics. The technical sessions were conducted in 4 (parallel) oral sessions and 2 poster sessions. These technical sessions were focussed on themes such as: Nano materials, Biomaterials, Polymer Blends and Composites, Energy materials, Ceramics, Metals and Alloys, Optical and Electronic Materials, Nano Composites, Smart and Functional Materials and Aerospace Materials.

This seminar was attended by about 400 delegates from 20 countries from five continents. A total of 20 plenary lectures, 70 invited talks, 45 contributory lectures and 150 posters were presented in this international conference. Awards were given to the best posters in each theme. The Conference concluded with a valedictory function on 31st October 2010.

Symposium on Contemporary Trends in Optics and Optoelectronics

The XXXV Optical Society of India Symposium on Contemporary Trends in Optics and Optoelectronics was inaugurated by Dr. K. Radhakrishnan, Chairman ISRO and Secretary, Department of Space at VSSC Campus, Veli, Thiruvananthapuram. The symposium was jointly organised by Optical Society of India (OSI) and Indian Institute of Space Science and Technology, Thiruvananthapuram. Dignitaries included, Shri P. S. Veeraraghavan, Director VSSC, Dr. T. K. Alex, Director ISAC, Bangalore, Prof. E. D. Jemmis, Director IISER, Thiruvananthapuram, Dr. K. S. Dasgupta, Director IIST, Prof. L. N. Hazra, University of Kolkata and over three hundred delegates from various parts of India and abroad. Industrial participants from many industries related to Optics and Optoelectronics participated in the conference.

Prof. James R. Fienup, Institute of Optics, University of Rochester, Wilmst, USA also delivered keynote address. Dr. K. Radhakrishnan gave a brief overview of the progress that ISRO has made in the last five decades and how it has helped to improve the planning, infrastructure and disaster management programs in the country. Dr. T. K. Alex underlined the importance of optics in remote sensing satellites and the fact that ISRO imagery has been in demand in India as well as abroad. He also expressed the possibility of offering ISRO imagery to develop a solution to



avoid tragedies like the recent one at Sabarimala pilgrimage site. Prof. Bishnu Pal, IIT Delhi was conferred with the OSI Award, 2010. Dr. R. Krishnan, Chairman, National Organizing Committee, welcomed the gathering. Shri. N. Vasudevan, Registrar gave a brief description about IIST and Dr. C. L. Nagendra explained about the significance of the Symposium. Dr. K. Radhakrishnan released the conference digest. Shri. P. Veeraraghavan inaugurated the Industrial Exhibition and released the Souvenir. Prof. Jemmis, Director, IISER felicitated the function. The program concluded with vote of thanks by Prof. C. S. Narayanamurthy.

Awards, Recognitions and Honors

Dr. Rajesh V J was awarded the Young Scientist award for his paper, 'Petrogenesis and Tectonic Implications of Alaskan type Ultramafic Rock in Palchat Cauvery Suture Zones' in the Kerala Science Congress 2011.

Dr. Kuruvilla Joseph, HoD, Department of Chemistry was invited as an expert in the 'Round Table Discussion on Nano Technology - Renewable Energy' organized by FAO-United Nations in collaboration with Federal Govt of Brazil as part of the International Conference on Food and Agricultural Application of Nano Technology.

Seven faculty members of IIST have been promoted to the senior level. **Dr. Abdusamad Salih**, Department of Aerospace Engineering as Associate Professor, **Dr. Sheeba Rani J**, Department of Avionics and **Dr. Pramod Gopinath** and **Dr. Bindu Krishnan**, Department of Physics as Assistant Professor, **Dr. Babita Justin**, **Dr. Shaijumon C S** and **Smt. Gigy J Alex**, Department of Humanities as Readers.

Other Activities and Events

Demonstration of the Week

An innovative programme, envisaged by Dr. Umesh R. Kadhane and a group of eager faculty members, evokes the inquisitive spirit of enthused students and goes beyond the frontiers of the conventional curricula. The limits of our educational system are evident in the way students compartmentalise knowledge into strict, water tight pedagogic discourses like Biology, Chemistry, Mathematics, Physics, etc. The main objective of the weekly programme is to provide a platform where all these subjects come together to understand and mediate with each other to solve a real and actual problem as if in an actual experimental laboratory. Learning is thus made a more enjoyable and discipline-independent activity.

Every week a simple topic is chosen and models are built with the help of students in IIST. Students are encouraged to innovate in such a way that the items and equipment are made from already available material around and the designs are kept very simple. Once the material is enough for a full episode, everybody is invited for the demonstration as well as encouraged to play with them. This is Phase I of the programme. A student who is haunted and tantalized by this, is encouraged and guided to Phase II of the programme, wherein an idea or experiment is further refined and made quantitative. Finally, if a student is willing to commit to longer term efforts, the project is taken to Phase III or the next

level of innovation in order to bring out an advanced application or product. This practical approach of putting together all the different branches of science into solving a problem will go a long way in our goal as an institute to create human resources for the future of space science in our country. Demonstrations on Quantum Effect, Polarisation of Light and the Phenomenon of Crystallization were very effective.



Visit to ISRO Centres

A tour was arranged to the ISRO Centre in Bangalore for the Final Year B.Tech (Physical Sciences) students who opted for the Remote Sensing stream. ISRO Satellite Centre, Regional Remote Sensing Centre and Laboratory for Electro-Optic Systems are the three places visited during the programme. At ISRO Satellite Centre, Sri. K. S. Prakash addressed the students with a video on the six major areas of ISAC namely, Mechanical Systems Area, Digital and Communication Area, Integration and Checkout Area, Power Systems and Avionics Production Area, Controls and Missions Area and Reliability and Components Area. The clean room facilities for space craft integration was demonstrated to the students while the Resourcesat-2 and Youth Satellites were in the assembling stage.

Tribal visit to Marayoor

The third semester students, as part of their course on 'Introduction to Social Science and Ethics', undertook a tribal visit to Marayoor, an important pre-historic site in Kerala in Idukki District, from 19th - 20th November 2010. The trip was organized by Dr. Lekshmi V. Nair. The other faculty members who accompanied the students were Dr. Rajesh Joseph Abraham, Dr. Rajesh V.J, Dr. Anand Narayanan and Dr. C.S. Shajumon.

Marayoor is the house of a forest-dwelling Scheduled Tribal community called Muthuvans. According to tribal legends, Muthuvans were the loyal subjects of the dynasty of Madurai. When the dynasty was deposed, the surviving royal members migrated to Travancore, Central Kerala, and established the famed Poonjar dynasty. Their level of economic, social and educational development is abysmal. In the jungle habitat, they take shifting cultivation as the primary mode of subsistence. Their most colourful social institution of dormitory system (bachelor halls), their festivities, collective eating and sharing of food known as koodi thinnuthu, beliefs and practices make the tribe unique.

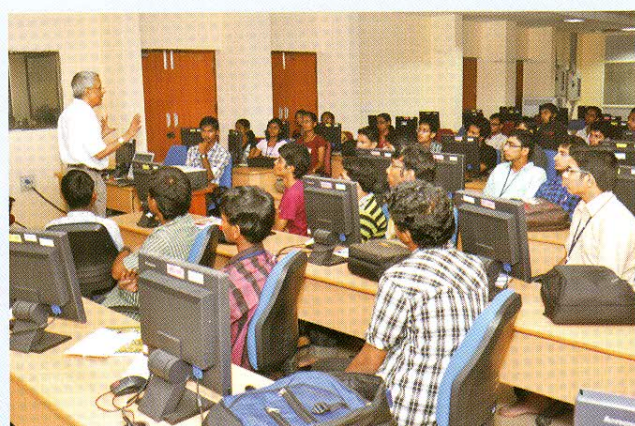


The third semester students of IIST were exposed to the tribal habitats and culture of the Muthuvans as they spent their time in the tribal area participating and observing the life and culture of Muthuvans.

Neuro Linguistic Programme (NLP)

The Department of Humanities organized an NLP Programme for the first semester students (2010 batch). The course was offered by Dr. Abraham Abraham (Mind Masters fame). It was a one-week programme, held from 25th to 29th October 2010.

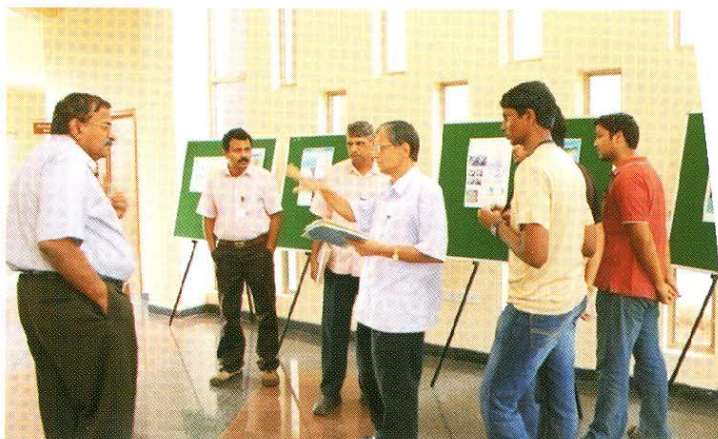
Neuro Linguistic Programming or NLP is one of those advanced methods in communication skills, which helps the student develop his or her expertise to the optimum to suit the day to day requirements of language and communications. It is also the study of how our mind works and an attitude of curiosity about how we think, feel and behave. This leaves behind a 'trail' of extraordinarily effective methodology and principles for enhancing any human ability, including resolving health, challenges in studentship, studies, profession, etc.



All the students attended the course avidly and the course definitely helped the students to a great extent in improving their confidence and interpersonal skills.

GIS Day Celebrations

The Indian Society of Remote Sensing Thiruvananthapuram Chapter, in association with IIST, organized the GIS Day Celebrations at IIST on 24th November, 2010. The event started at 1.30 pm in the Seminar Hall of IIST with a welcome address by Dr. R. Krishnan, Chairman ISRS (Tvpam Chapter) and Dean (Academic), IIST. Dr. R. Krishnan highlighted the importance of GIS for real time applications and stressed the need for GIS with the concept of "Think Globally, Act Locally". It was followed by a special talk on "Applications of Remote Sensing, GIS and IT for Natural Resource Management" by Shri. V. N. Neelakandan, Scientist and Head, Central



Geomatics Lab (CGL), Centre for Earth Science and Studies (CESS), Thiruvananthapuram. Sri. V. N. Neelakandan showcased the applications of GIS in various sectors like local planning, health monitoring and agriculture.

As part of the GIS day, a poster presentation competition was conducted for B. Tech students of IIST.

The posters were evaluated by Sri. V. N. Neelakandan and Sri. Sukumar of CESS and the following students were adjudged winners.

1. First Prize: R. Suraj Reddy - IV yr B.Tech (Phy Sci) - Coastal Vulnerability Analysis of Car Nicobar
2. Second Prize: P. Naga Vineeth - III yr B.Tech (Phy Sci) - Ocean Colour Parameter Retrieval using Oceansat-I OCM GIS Application
3. Third Prize: Vinayak Kumar, Jayant Singhal and Ashish Sachan - II yr B.Tech (Phy Sci) - Spatial Decision Support System for Disaster management

Visit to Kuthiramalika and Kilimanoor Palace

As part of the Institute Elective, "Visual Communications", offered by the Humanities Department, 16 students of Batch VII, accompanied by Prof. Kurien Issac, Dr. Lekshmi V. Nair and Dr. Babitha Justin, visited the historical museum of Kuthiramalika, the palace of the erstwhile King of Travancore, Shri. Swathi Thirunal Rama Varma, on 7th September 2010. The students took a tour of the splendors of Travancorean Art as well as witnessed the composite, yet simple tones of design in the architecture of the palace. This was also a trip in artistic history, as a few Ravi Varma portraits made in oil were also displayed in the Museum.

The students and faculty members also visited Kilimanoor palace and studied the Oleographs of Ravi Varma paintings. As the students analysed the oleographs very closely, they were also guided to every nook and corner of the Palace where history was cradled in a carefree and detached oblivion.

IIST@Schools 2011

The institute organized a three day Workshop for school children titled 'IIST@Schools', from 7th - 9th February, 2011. Based on the theme 'Science for the Future of Mankind', it explored the current trends in Space Science, and deliberated on the role of science in shaping the future of mankind. This Workshop was intended for students of the VIII and IX Std. The objectives of the proposed workshop were to bridge the perceptible gap between the pursuit of science and the fulfillment of societal needs and aspirations and to motivate and



inspire the participants to look at science as way of life and to acquaint them with the achievements and challenges of the Indian Space Programme.

The key attractions of the program included interaction with eminent personalities and space scientists, sky watch sessions with the unique opportunity to observe and appreciate the marvels of our universe, lectures and demonstration to kindle the spirit of innovation and scientific curiosity among students and to familiarize the students with ventures of ISRO like Remote Sensing, Chandrayaan, Oceanosat, etc.

Conscientia 2011

The annual technical festival of IIST, Conscientia 2011 was the event that saw a convergence of talent in both science and technology and the coming together of experience and innovation. It was a trigger for innovation and a journey into the unknown. From glider making to Robo-wars and Ethical Hacking workshops to breath-taking air shows, Conscientia 2011 had it all. Conscientia saw enthusiastic participants from all over the country, making this fest a grand success.



Telescope-making workshop

A five day workshop on telescope making was organized at IIST. There were close to 50 participants. The students took turns to complete the arduous task of manual grinding of glass blanks to obtain the perfect focal length and spherical shape. And sure enough, the hard work paid off when the telescopes obtained breathtaking view of the moon. The work shop was conducted by the Earth and Space Science Department

Owning the Disowned

As part of the Deepavali celebrations, the students of IIST along with four faculty members, Ms. Gigy J. Alex, Dr. Lekshmi Nair, Dr. Anand Narayanan and Dr. Rajesh V.J visited the Nirmala Shishu Bhavan, an orphanage run by the Missionaries of Charity. The objective was to have the students spend time with the orphaned children and thereby give them a glimpse of the harsh social realities.

The home had children in 2 sections. The former had very small children-below the age of 1, while the latter housed older children, who were differently abled. The students bought food and toys for the children. They played, laughed and cried with these little kids, most of whom were living without the fear of tomorrow. This helped in inculcating in the students a feeling of empathy towards this disadvantaged section of the society.

Cricket match between final year students and IIST faculty / staff

A cricket match was held on 27th November 2010 in the ATF premises of VSSC between final year students and the faculty and staff. The Faculty/Staff team was headed by Prof. Kurien Issac and included Dr. C S Shaijumon, Dr. Rajesh VJ, Dr. Rajesh G, Dr. Venkata Ramana, Dr. Deepak Mishra, Dr. Chakravarthy and Shri. Ramanathan. Students secured a predictable victory over the elders, but the match evoked great camaraderie and bonhomie among the participants and spectators.

Republic Day Celebrations

The Indian Institute of Space Science and Technology celebrated the 61st Republic Day of India in its own campus for the first time with pomp and splendour on 26th January 2011. Dr. K.S. Dasgupta, Director, IIST hoisted the national flag, and delivered an address delineating the achievements of the Institute since the last republic day, and describing the goals for the years ahead. There was a Republic Day Parade by the CISF personnel, and the Director received the guard of honour from the Sri. Naresh Chauhan, Assistant Commandant. Director distributed cash awards to the CISF jawans who had delivered valuable service and support to the International Conference on Recent Trends in Materials Science and Technology held in October 2010. Students as well as faculty members were all thrilled to celebrate the Institute's 4th Republic day in their own campus.

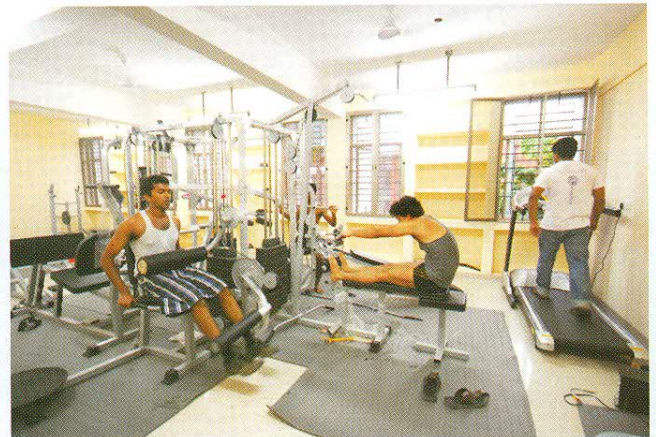


Class on Yoga

IIST is offering classes on yoga techniques to relax the mind and body of the faculty members and students.

Health Club and Gym

Gymnasium with all modern facilities was setup in the two hostels to cater to the health needs of the students.



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