

भारत सरकार
अन्तरिक्ष विभाग



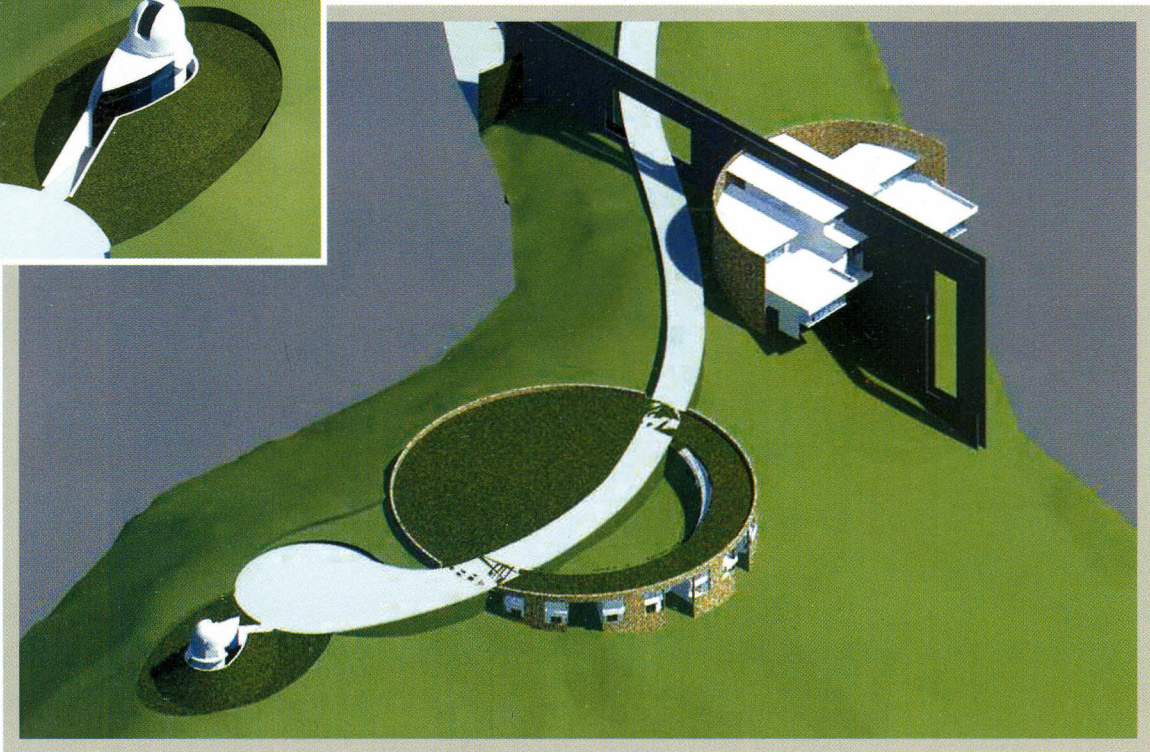
Government of India
Department of Space



Indian Institute of Space Science and Technology

Annual Report

2009-2010



Blue print of Space Complex at Ponmudi



Government of India
Department of Space



Indian Institute of Space Science and Technology

Thiruvananthapuram - 695 547, India

Annual Report

2009-2010

Vision and Mission of the Institute

Vision

To be a world class educational and research institution contributing significantly to the space endeavours.

Mission

- Create a unique learning environment enriched by the challenges of the Space Programme.
- Nurture the spirit of innovation and creativity.
- Establish Centres of Excellence in niche areas.
- Provide ethical and value based education.
- Promote activities to address societal needs.
- Network with national and international institutions of repute.

Foreword



I have great pleasure in penning this, sitting in my new office in IIST's permanent campus at Valiamala, Thiruvananthapuram. On 15 August 2010, when we observed the Independence Day at our new campus, our hearts were filled with profound joy and boundless pride. Moving to the new campus in such a short time against many odds was, by no means, easy. That we could accomplish this task without shifting focus from the core academic and other institutional priorities is evident from the range of activities depicted in the Third Annual Report of the Indian Institute of Space Science and Technology for the year 2009-10.

It was a momentous occasion for all of us when the Honorable Prime Minister of India, Dr. Manmohan Singh inaugurated the campus through satellite link on 25th August 2009, in a function held simultaneously in Delhi and Valiamala. This was witnessed by several dignitaries including Union Ministers, Members of the Kerala State cabinet and other elected representatives, besides a large number of officials. It was an occasion of great joy, when the documents of the land donated by Government of Kerala were handed over to us by the Honorable Ministers of the State Cabinet.

Another major milestone was the laying of the foundation stone for IIST's "Space Science Complex" by Shri T.K.A. Nair, Principal Secretary to the Prime Minister.

During the year in question, IIST continued to function from the alternative campus at Veli. Additional facilities like hostels and a few laboratories had to be established there to accommodate the third batch of students. A team appointed by University Grants Commission visited us and placed on record the appreciable progress being made by IIST as a Deemed to be University. During this period, many more highly qualified and experienced faculty members opted to join the IIST fraternity.

This was also the year in which we decided to conduct our own All India Admission Test for our B Tech programmes. Needless to say, this was an exercise that required massive logistics and it was successfully organised with the help of a large number of ISRO/DOS personnel. It is a sign of the growing popularity of the Institute that more than 86,000 candidates applied for admission to the 156 seats in the Institute.

This was also the year of many new initiatives. IIST started two PG programmes in select areas and efforts are on to increase this component. The first open doctoral programme of the Institute started this year and received an overwhelming response from all parts of the country. The Institute conducted an outreach programme for school children in Kerala, giving them a thrilling exposure to vistas in space science and technology. The event, titled "IIST@Schools" was inaugurated by our beloved Chancellor and former President of India, Dr. A.P.J. Abdul Kalam. The students of IIST travelled to the tribal heartland of Attappady to get a first hand experience of the tribal life. IIST's first Astronomy festival, titled "Aparimit" was aptly celebrated in the International Year of Astronomy. The Institute also played host to several eminent personalities who made their mark in a variety of fields.

IIST's saga has just begun. Every day we strive to move closer and closer to our vision of making the Institute a centre of eminence in Aerospace Science & Technology with proper blend of learning and research.

Dr. B.N. Suresh
Director

IIST Board of Management

1. Secretary, Department of Space, Government of India - Chairman
2. Secretary, Department of Atomic Energy, Government of India
3. Secretary, Higher Education, Government of India
4. Chief Secretary, Government of Kerala, Thiruvananthapuram
5. Prof Roddam Narasimha, Member, Space Commission
6. Director, Indian Institute of Technology, Madras
7. Director, Indian Institute of Technology, Bombay
8. Director, Indian Institute of Science, Bangalore
9. Director, Vikram Sarabhai Space Centre, Thiruvananthapuram
10. Director, Space Applications Centre, Ahmedabad
11. Additional Secretary, Department of Space, Government of India
12. Scientific Secretary, ISRO, Antariksh Bhavan, Bangalore
13. Nominee of UGC Chairman
14. Director, IIST, Thiruvananthapuram - Member Secretary

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Introduction

Indian Institute of Space Science and Technology entered its third year in 2009-2010. Since inception in September 2007, the institute has journeyed far beyond to come closer to its vision of becoming a world class centre of education and research in space science and technology. Established to identify and nurture high quality human resources for ISRO, IIST is a Deemed to be University funded by the Department of Space, Government of India. In a very short period, IIST has made significant all-round progress in academics, research and extension activities.

IIST offers B. Tech programmes in the streams of Aerospace Engineering, Avionics and Physical Sciences and M.Tech programme in "Soft Computing and Machine Learning". M. Tech programmes in "Adaptive and Applied Optics", "RF & Microwave Systems" and "Chemical Systems" are on the anvil. Various doctoral programmes have also commenced from the Academic year 2009-10.

Admissions 2009-10

The B Tech students for the academic year 2009-2010 were selected from those who figured in IIT-JEE rank list. The candidates drawn from category-wise rank lists were invited for Counselling at Thiruvananthapuram on 20th -21st July 2009 and on 8th August 2009.



Table 1: Admissions to IIST in the Academic year 2009-2010

Branch	Proposed intake in different categories					Actual admission in different categories				
	SC	ST	OBC	General	Total	SC	ST	OBC	General	Total
B Tech Avionics	10	5	17	33	65	10	5	17	32	64
B Tech Aerospace Engg	8	4	14	26	52	8	4	14	25	51
B Tech in Physical Sciences	6	3	10	20	39	4	2	10	20	36
TOTAL	24	12	41	79	156	22	11	41	77	151

M.Tech Admission

Fourteen students selected from various centres of ISRO/DOS were admitted for the first M.Tech programme in Soft Computing and machine learning on February 15, 2010.

Infrastructure

The construction of a permanent campus for IIST was accorded the highest priority from the very beginning. A part of the ISRO land in Liquid Propulsion System Centre (LPSC) at Valiamala, admeasuring about 50 acres was identified for this purpose. This would be supplemented with about 54 acres of land, acquired by Government of Kerala, next to LPSC. Additionally, 20 acres of land at Ponmudi was donated by Govt. of Kerala for setting up a Space Science Complex.



Progress of work in the new campus at Valiamala



Hostel

A turn-key contract was awarded to M/S Shapoorjee-Pallonjee Company Ltd., Mumbai, a reputed construction company, in July 2008. The construction work, which commenced in the ISRO land in December 2008, made significant headway in the report year. Seven hostels and one academic block (Aerospace Building) were targeted for completion by early 2010. This would enable IIST to shift its campus from VSSC premises to its permanent abode at Valiamala.

The tele inauguration of the Valiamala campus on 25th August 2009 by the Honorable Prime Minister of India, Dr. Manmohan Singh was a major milestone for the Institute. In a programme conducted simultaneously at the Prime Minister's residence at New Delhi and Valiamala campus at Thiruvananthapuram, the inaugural stone was unveiled by the Prime Minister from New Delhi. The event was witnessed by an elite gathering, assembled at both the places and connected through satellite link.



Prominent leaders of the Central and State Government attended the function, both at New Delhi and Thiruvananthapuram, Shri Jayapal Reddy, Hon' Minister for urban Development, Smt. Sheila Dixit, Hon' Chief Minister of Delhi, Shri Prithviraj Chawan, Hon' Minister of State for Science and Technology, and Dr Shashi Tharoor, Hon' Minister of State for External Affairs attended the function from Prime Minister's residence. The function at Thiruvananthapuram was inaugurated by Shri M A Baby, Hon' Minister for Education and Culture. Shri K P Rajendran, Hon' Minister for Revenue, Shri M Vijayakumar, Hon' Minister for Law and Parliamentary Affairs, Shri N K Premachandran, Hon' Minister for Water Resources, Shri Oommen Chandy, Leader of Opposition, Government of Kerala, Shri A Sambath, Member of Parliament, Attingal Constituency and other leaders were present. Prominent members from ISRO Centres across the country also attended the function. The documents of the land allocated by the Government of Kerala to IIST were officially handed over to Director, IIST in this function.



IIST Inauguration

The distribution of Annual ISRO awards to distinguished scientists also took place on the same day. A select few received their awards from the Prime Minister at New Delhi and the rest were honoured in Thiruvananthapuram by the State Ministers who graced the function. 403 officials from various Centres/Units of ISRO were honoured with certificates and cash awards on this occasion for their contributions in various fields of Space research.

Present Campus at VSSC

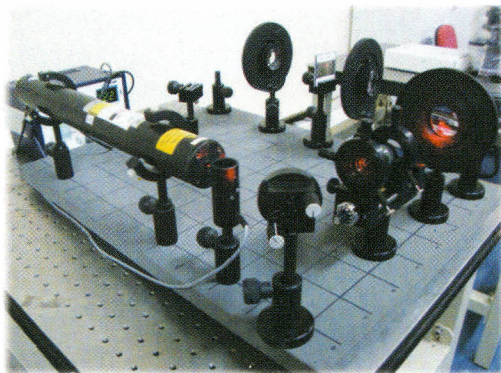
The Institute continued to function from the picturesque alternative campus at ATF area of Vikram Sarabhai Space Centre [VSSC], Thiruvananthapuram. But as the facilities in this campus were not adequate to accommodate the third batch of students, two more buildings were completed on a war footing within the ATF campus of VSSC. Dr G Madhavan Nair, Chairman, ISRO inaugurated the new buildings in a simple function held on 27th August 2009. Shri Jacob Punnoose, Director General of Police, Kerala, was the Chief Guest of the function.



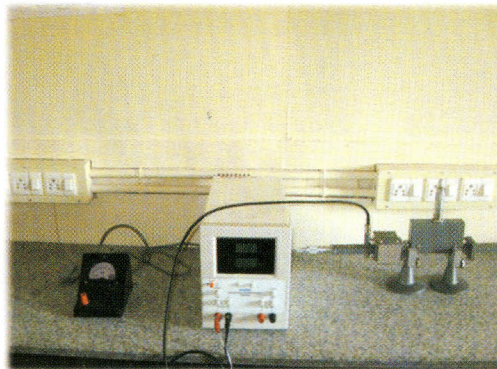
New Hostel Inauguration at ATF, VSSC

New Laboratory Facilities

In addition to the existing laboratories for Communication Skills and Programming, new laboratories with cutting edge technology have been set up at TERLS area of VSSC, for Physics, Chemistry and Avionics.

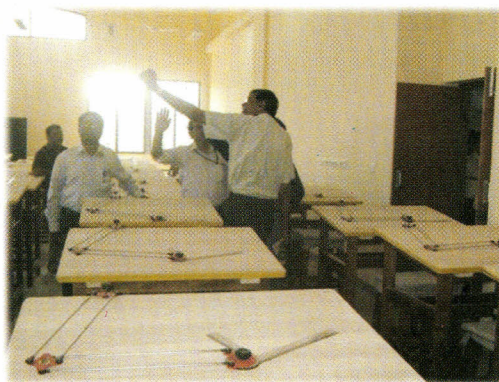


Optics Lab at TERLS



Avionics Lab at TERLS

The Engineering drawing Lab was the first laboratory facility in the new campus which was inaugurated by Dr B N Suresh, Director, IIST on March 31st 2010.



First Laboratory Facility in the new campus-Engineering Drawing Lab

Facilities in Mar Ivanios College and College of Engineering were also utilized as in the previous years.

Library

A fully computerized library with a collection of 6379 books and 3171 e-journals provides membership to 567 members including students, faculty members and other staff. The library timings have been extended beyond normal working hours to accommodate the increased demand of readership. The IIST library features many best practices, noteworthy among them being the Student Peer Group, which play an active role in the management of the Library, especially after regular working hours. The Institute has an Online Public Access Catalogue (OPAC) to browse books and journals, and to reserve books in advance. IIST is connected to the UGC INFONET Journal Consortium of INFLIBNET. IIST Library is a fully computerized one, which facilitate intranet and internet browsing. The faculty members and students also have access to the VSSC library, the largest and the oldest of ISRO libraries.



Canteen facilities

Being a residential institute, IIST is also taking utmost care to provide healthy and wholesome food to the students through three canteens manned by excellent catering staff. The Canteen Advisory Committee has a representation from student peer groups and faculty members.

Sports facility

Along with the academic activities, IIST also encourages the co-curricular and extracurricular facets of its primary stakeholders. The institute in its temporary campus has a Basketball court, a Volley ball court and a cricket pitch. An exclusive indoor recreation room is provided for playing Table Tennis, Caroms and Chess. The Multipurpose Hall also doubles as Badminton Court, when it is not in use for conducting seminars and student gatherings. Two sports instructors have been appointed to impart professional coaching in sports to the students.



Basketball Court

Internet facility

Apart from the internet labs at ATF, TERLS area and Aakulam Hostels, Wi Fi connections in the main campus enable the students as well as the faculty members to access internet from anywhere.

Medical Facility

Every student of IIST gets a medical insurance coverage of ₹ One Lakh, which is funded from the Assistanceship fee granted by the Department of Space. A well experienced medical team with a Chief Medical Consultant, a Medical Officer and paramedical staff offer their services to students and staff throughout the working hours on all days. A clinic has been established in the campus with sufficient medicines and equipment to take care of the day-to-day medical needs. For ailments requiring treatment outside, a Memorandum of Understanding with M/S Ananthapuri Health Services has been entered into.

Official Language Implementation Committee

An Official Language Implementation Committee (OLIC) has been constituted by the Director with the Registrar, IIST as Chairman. The Committee meets at regular intervals and reviews the implementation of Hindi in the Institute. Several measures were taken to encourage and popularise the use of Hindi as a national language in the Institute.

IIST Women's Cell

On 22nd April 2009, Smt. Aleyamma Vijayan, the co-coordinator of Sakhi (Resource Centre for Women) and NGO Member of IIST Women's Cell, addressed the IIST students and faculty members on women's rights, gender discrimination and sexual harassment at the work place.

Counselling Centre

An MoU was signed with Loyola Extension Center (LEC) to extend counselling service to the students, as and when necessary. LEC conducted an orientation programme for the fresh batch of students and arranged counselling services regularly in the campus. In addition to this, faculty members extend counselling to the students during the mentoring sessions held every Wednesday.



Talk by Dr. Aleyamma Vijayan

Academics

Faculty Strength

The faculty strength increased to fifty two during the year. Several highly qualified and experienced faculty members joined the IIST fraternity during this period.

Syllabus and Curriculum

The syllabi and curricula of IIST have been fine tuned after considerable debates, with valuable contributions from some of the best academicians and space scientists of the country. In doing so, the Institute has striven to maintain a healthy balance between the generic requirements of engineering and science and the specific demands of a highly specialized field like Space Science and Technology. The syllabi have been reviewed in detail by the Board of Studies constituted for this purpose with members drawn from Academia and Research Institutions. Subsequent to this, the Academic Council has reviewed and approved the syllabus. The designs of the practical experiments are the result of the feedbacks received from ISRO Centres.

Research at IIST

Initially, the doctoral programme in IIST was restricted to ISRO Scientists/ Engineers. Doctoral programmes for open candidates began in IIST this year, when the first batch of ten candidates registered for Ph.D. Two faculty members of IIST also registered for the Ph.D programme.

Details of ongoing /completed research project

1. **Title:** Development of high performance impermeable membranes from halobutyl rubber nanocomposites for critical space applications.
Principal Investigator: Dr. Kuruvilla Joseph
Funding Agency: IIST
2. **Title:** Development and Feasibility study of polymeric scaffold for tissue culture under microgravity (From March, 2009).
Collaborating Institute: Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum.
Principal Investigators: Dr Nirmala Rachel James, Dr Anil Kumar
Funding Agency: IIST
3. **Title:** Polymer-Nano Composites for Electronic and Photonic Applications
Principal Investigators: Dr. Honey John, Dr. Bindu Krishnan, Dr. Pramod Gopinath
Funding Agency: IIST
4. **Title:** Synthesis of Polymers from Renewable Resources and Development of Green Composites Based on Cellulose Microfibrils and Nanoparticles
Principal Investigator: Dr. Kuruvilla Joseph
Funding Agency: UGC
5. **Title:** 'Synthesis and Characterization of Radiopaque Polyurethanes for Medical Applications' (From March 2006 - March 2009).
Principal Investigators: Dr. Nirmala Rachel James, Dr Roy Joseph
Funding Agency: Kerala State Council for Science, Technology and Environment
6. **Title:** Development of transducer from conducting composites
Principal Investigators: Dr. Honey John, Dr. Rani Joseph, Dr K T Mathew
Funding Agency: ISRO (RESPOND)

7. Title: Low Temperature Vulcanization system for NR latex prevulcanization and production of antistatic sheet.
Principal Investigators: Dr .Honey John, Dr. Rani Koseph and Dr Shainy Palaty
Funding Agency: Kerala State Council for Science, Technology and Environment
8. Title: Pre Vulcanization of Natural Rubber latex at Room Temperature and Industrial Production of Low Cost Gloves and Balloons
Principal Investigator: Dr. Honey John, Dr Shainy Palaty
Funding Agency: UGC
9. Title: Development of Polymer composites having EMI shielding property
Principal Investigator: Dr. K T Mathew, Dr. Anandan C. K. and Dr. Honey John
Funding Agency: DRDO
10. Title: Numerical simulation of turbulent reacting flows in semi- cryogenic and tri-propellant engines
Principal Investigator: Dr M Deepu, Dr Abdusamad Salih
Funding Agency: IIST
11. Title: Multi wavelength study of massive star forming regions
Principal Investigator: Dr Anandmayee Tej
Funding Agency: IIST
12. Title: Control Systems of Partial Differential Equations
Principal Investigator: Dr Mythily Ramaswamy, Dr J P Raymond and Dr Raju K George
Funding Agency: IFCPAR [Indo – French]

Other Academic Activities

Faculty members of IIST actively participate in National and International Conferences, Seminars etc. to keep abreast of the latest developments in their respective academic fields. A number of research papers have been published by IIST faculty members during 2009.

Research publications

Peer-reviewed journals

AEROSPACE

1. Salih, A. and Ghosh Moulic, S., "Some numerical studies of interface advection properties of level set method". Sadhana, Indian Academy of Sciences, 34, Part 2, pp271-298, 2009.
2. Salih, A. and Ghosh Moulic, S., "Numerical Simulation of Buoyancy-driven Bubble Motion Using Level Set Method". International Journal for Computational Methods in Engineering Science and Mechanics, 11, issue 4, pp 211-229, 2010.
3. P Nair, T Jayachandran, M. Deepu, B.P. Puranik, U.V. Bhandarkar, "Numerical simulation of interaction of zonic jet with high speed flow over a blunt body using solution mapped higher order accurate AUSM \pm UP based flow solver" Journal of Applied fluid mechanics, Vol.3, No.1, p.15-23, 2010.
4. V. Lijo, H. D. Kim, G. Rajesh, and T. Setoguchi, "Numerical simulation of transient flows in a vacuum ejector-diffuser system," Proc. of the Institution of Mechanical Engineers (IMEchE), Part G, J. Aerospace Engineering, 224(7), pp.777-786, 2010.
5. K. Jayakumar, Jose Mathew and M.A. Joseph "Prediction and Optimal Parameter Selection for Surface Roughness and Cutting Forces in CNC End Milling of Al/SiCp MMC " Proceedings of the COPEN 2009 Conference, Coimbatore, India., pp.J.7-J.11, December 11-12, 2009.

6. K.Jayakumar, Jose Mathew and M.A.Joseph "Experimental Investigation on Mechanical and Wear properties of A356-SiCp Metal Matrix Composites" Proceedings of the COPEN 2009 Conference, Coimbatore, India., pp.H.14-H.2, December 11-12, 2009.
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8. S.Srinivasan, P.Kanagasabapathy, and N.Selvaganesan, "Fault Identification and Analysis Using AI Techniques for Three-Tank System", International Journal of Automation and Control, Vol. 4, No.1, pp. 84-101, 2010.
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CHEMISTRY

12. S. Palaty, P.V.Devi and HoneyJohn, "Studies on the Optimisation of the preparation method and the characterisation of Zinc Butile Xanthate", "Progress in Rubber, Plastics, and Recycling Technology", Vol.25, No.3, 2009.
13. G. Abhilash, S. Sabharwal, Abhinav Dubey, Jose Paul, Honey John, Rani Joseph "Preparation of Low-Protein Natural Rubber Latex: Effect of Polyethylene Glycol", Journal of Applied Polymer Science, Vol. 114, 806-810, 2009.
14. Rinku M Thomas, Honey John, K.T.Mathew, Rani Joseph "Optimization of preparation conditions on the dielectric properties of polyaniline" Journal of Applied Polymer Science, Volume 112, Issue 5, pp 2676-2682, June 2009.
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16. K. Prabhakaran, E.M. Jayasingh, S. Raghunath, C. Durgaprasad, S.C. Sharma, "Effect of slurry loading and diameter of vermicelli on the thickness of PZT microtubes by dip-coating process" Adv. Appl. Ceram.108, pp189-193, 2009.
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20. M.Kannan, S.S. Bhagawan, Kuruvilla Joseph, "Effect of sequence of nanoclay addition in TPU/PP blends: Thermomechanical properties", Journal of Materials Science, Volume 45: pp 1078-1085, 2010.
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29. Sarita A and Kuruvilla Joseph, "Design, Development and Testing of Rubber Nanocomposites", *Key Engineering Materials*, Vol. 425, pp 61-93, 2010.
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MATHEMATICS

51. Raju K George and T.P. Shah, "Asymptotic Stability of Semi-linear Discrete Dynamical Systems Involving(sp) Matrix, Nonlinear Studies", Vol. 16, No. 1, pp.23-29,2009.
52. Raju K George and Manjusha .K"Application of Artificial Neural Networks to Predict the Probability of Extreme Rainfall and Comparison with the Probability by Fisher Tippet Type-II Distributions ", International Journal of Applied Mathematics and Computations, Vol 1(3), pp.118-131 , 2009.
53. Raju K George,Chalishajar D.N, Nandakumar A.K and Acharia F.S,"Trajectory controllability of nonlinear integro-differential system" , Journal of Franklin Institute, 347 (7), pp.1065-1075, 2010.

54. Moosath. K.S.S., Levi-Civita connection and energy functional. Proceedings of International Conference on P.D.E., Geometry and Num theory, University of Calicut, August 2009.

PHYSICS

55. C.S. Narayana Murthy. "Fringe localization in Michelson interferometer using temporal coherence and Fourier optics", European Journal of Physics(IOP), Vol. 30, P 147-155, 2009
56. S Murugesh and M. Lakshmanan "Bifurcation and chaos in spin-valve pillars in a periodic applied Magnetic field Chaos". 19, 04311, 2009.
57. C. Sudheesh, S. Lakshminbala and V. Balakrishnan. "Recurrence statistics of observables in EPL (Europhysics quantum mechanical wave packet dynamics Letters)" EPL (Europhysics Letters) 90 50001: p1-p6. 2010.
58. Nir Bar-Gill, Gershon Kurizki, Boris A. Malomed and C. Sudheesh. "Dynamical control of nonlinear symmetry breaking under decoherence". Phys. Rev. A (Physical Review A) 82 013610:1-5. 2010.
59. Prasanth, N.P.; Ibrahim, S.; Bindu Krishnan, Dayas, K.R., "Effect of process variables on dispersion and tape casting of nickel manganite based thermal sensors ; Advances in Applied Ceramics", Volume 108, Number 2, pp. 118-122(5), February 2009.

CREATIVE

60. Dr. Babitha Justin was the Featured Poet in English in "The Poetry Slam: Young Voices of Kerala" , jointly organized by the US Embassy and DC Books in Vailoppally Samskriti Bhavan.

Honours Conferred

1. Dr. B.N Suresh, Director, IIST was decorated with the Aryabhata Award, the highest honour instituted by ASI (Astronautical Society of India), Bangalore for his life time contributions to the development of Space Technology.
2. Dr. K.N. Ninan Emeritus Professor, IIST was conferred HONORARY FELLOWSHIP by the High Energy Materials Society of India in Dec. 2009 in recognition of exemplary contributions to the science and technology of composite propellants for ISRO's launch vehicle programmes.
3. Dr. Bindu Krishnan, Reader, IIST has been awarded the prestigious Asan Prize of this year for her anthology of poems titled 'Thottaal Vaadaruthu.' The award, instituted by the Asan Memorial Association to promote young poets, carries a cash prize of Rs.10,000 and a citation.
4. Dr. R.Krishnan, Dean (Academic), IIST has been elected as Chairman and Dr.V.Poompavai, Reader, IIST as Joint Secretary of Indian Society of Remote Sensing - Thiruvananthapuram Chapter for the period 2010-2012.

Papers presented in Conferences and Seminars

AEROSPACE ENGINEERING

1. R V Ramanan, "Interplanetary Trajectories", Presentation in Training Programme in Orbital Mechanics and Flight Dynamics,VSSC Trivandrum,. 29th October 2009
2. R V Ramanan "Interplanetary Trajectory Design", Presentation in Training Programme in Trajectory Design and optimization,VSSC,Trivandrum, 9th November 2009.
3. Fazil Mohammed, S. Anil Lal, Z. A. Samitha, G. Rajesh, and P. Balachandran, "A Parametric Study Based On Numerical Investigation of Supersonic Ejectors," 1st International Symposium on Mechanics, Materials and Management, , College of Engineering, Trivandrum, Kerala, India. Jan-10, 2010.

4. Anand Raj Hariharan, S. Anil lal, Z. A. Samitha, **G. Rajesh**, and P. Balachandran, "*Thermal Mixing Analysis Of Three Lobed Clover Nozzle*" 1st International Symposium on Mechanics, Materials and Management, College of Engineering, Trivandrum, Kerala, India, Jan-10, 2010.
5. Anand Raj Hariharan, Z. A. Samitha, S. Anil lal, **G. Rajesh**, and P. Balachandran, "*Numerical Analysis of Thermal Mixing with Clover nozzle*," The 20th International Symposium on Transport Phenomena, Canada, July, 2009.
6. Fazil Mohammed, S. Anil lal, Z. A. Samitha, **G. Rajesh**, and P. Balachandran, "*A Parametric Study for the Optimization of a Supersonic Ejector*," The 20th International Symposium on Transport Phenomena, Canada July 2009.
7. Jayakumar, Jose Mathew and M.A. Joseph " *Prediction and Optimal Parameter Selection for Surface Roughness and Cutting Forces in CNC End Milling of Al/ SiCp MMC* " in Proceedings of the COPEN 2009 Conference, Coimbatore, India, pp.J.7-J.11, December 11-12, 2009.
8. K. Jayakumar, Jose Mathew and M.A. Joseph " *Experimental Investigation on Mechanical and Wear properties of A356-SiCp Metal Matrix Composites* " in; Proceedings of the COPEN 2009 Conference, Coimbatore, India, pp.H.14-H.20, December 11-12, 2009
9. S. Anup, S. M. Sivakumar, G. K. Suraish Kumar, Tough of bio-composites: Influence of Constituents ISAMPE National Conference on Composites 4-5 December 2009

AVIONICS

10. N.Selvaganesan, lecture to VSSC Engineers/Scientists titled "*Conventional method of identification of linear / non-linear; Neural based identification*" held at IIST on July 9, 2009.
11. N.Selvaganesan, key note address in the inauguration of first year titled "*Research in engineering education*" held at Maha College of Engineering in Salem on Sep 5, 2009.
12. N.Selvaganesan, lecture on "*Fuzzy in electrical and power circuits*" held at EEE department, Kongu engineering College, Erode on Sep 25, 2009.
13. N.Selvaganesan, Lecture on "*Fault diagnosis and control for SR Motor*" in the short term course on "Control system" held at Kongu engineering College, Erode on Dec 5, 2009.
14. N.Selvaganesan, Lecture on "*Intelligent observer for Cryptography systems*" held at Oxford Engineering College, Trichy on Dec 21, 2009.
15. N.Selvaganesan, Lecture on "*Intelligent instrument*" in the National level technical symposium cum workshop – RADIANT-EISA at JJ College of Engineering, Trichy on February 19, 2010.
16. **Rajesh Joseph Abraham**, D. Das & Amit Patra, "*Bilateral Load Following in a Restructured Power system with Local Controller*"s, 7th Asian Control Conference (ASCC 2009), Hong Kong, August 27-29, 2009.
17. Chavali Krishna Bharadwaj & **Rajesh Joseph Abraham**, "*Automatic Generation Control of a Hydrothermal Power System with Capacitive Energy Storage*", International Conference on System Dynamics and Control 2010, Manipal, India, August. 19 - 22, 2010.
18. J. Herman, J. Sheeba Rani, D. Devaraj " *Face Recognition using Generalized Pseudo Zernike Moment* " in; Proceedings of the INDICON 2009 Annual IEEE India Conference, pp.1-4, , December 18-20, 2009

DEPARTMENT OF CHEMISTRY

19. Nirmala Rachel James, Invited Talk : "*Polymers in Tissue Engineering*" Conference : Emerging Trends in Chemistry for Medical Applications. Nesamony Memorial Christian College, Marthandam 19th March, 2010.
20. Nirmala Rachel James, National Conference on "Chemical and Biological Waste treatment Processes for Green Environment" Trivandrum, July 25-26 2010.

DEPARTMENT OF EARTH AND SPACE SCIENCES

21. Poompavai. V., *"Building Lives Better! - Remote Sensing and GIS for Solar Building"*, International Conference on Environmental Sustainability with Green Building Technology ICESGBT '10 MeenakshiSundararajan Engineering College, Chennai, India, pp.226-229, March 15-17, 2010.
22. Poompavai. V. *National Conference for ISRO Women Employees on the occasion of International Women's Day Education as Empowering Tool for Women SatishDhawan Space Centre(SDSC)*, SHAR, Andhra Pradesh March 8,2010
23. Poompavai. V. Microwave Remote Sensing and Applications Training Programme on Remote Sensing and its Applications in Civil Engineering for College Faculty College of Engineering, Thiruvananthapuram November 19, 2009

DEPARTMENT OF HUMANITIES

24. Babitha Justin, *"Women Over Ages: A Look at the Representation of Women as Essence of India in Two Travel Text"*. International Conference on Culture, Globalisation and the Ethics of Humanities, SB College Changanasserry. 9th-10th July 2009
25. Babitha Justin ,Invited Lecture on *"Women Represented by the Print Media: Issues to be Pondered and Addressed: Two Case Studies"* One Day Seminar on Women's Writing: New Perspectives organised by the Post Graduate Dept of English and Research Centre, Govt. Brennan College, Thalassery, 23rd Sept 2009
26. Babitha Justin, Resource person for the Refresher course in Comparative Literature in UGC staff Academic college and delivered a lecture on *"Many Shakuntalas: A Comparative Study of Shakuntala Represented over ages"*. 18th January 2010.
27. Babitha Justin Resource Person for the Refresher for the Refresher course in Culture Studies in UGC staff Academic college and delivered a lecture on *"Women and Media: Media Representations of Women's Magazine in Kerala"* , 10th March 2010.
28. Gigy J. Alex, *Humanities and Artificial Intelligence Translating Intelligence-From the Homo sapiens to the Mind machines*.International Conference on Rethinking Humanities in the Age of the Visual Centre for Performance Research and Cultural Studies in South Asia CPRAC SIS, Thrissur, June 27th - 28th, 2009.
29. Gigy J. Alex, *The Other India- Story behind a call Centre and a (fusion) musician-Culture, Globalization and the Ethics of Humanities*. International Seminar on Cultural, Globalization and the Ethics of Humanities. Dept of English. S. B College,Chenganacherry, July 9th -10th, 2009.
30. Gigy J. Alex, *When the Identity Eludes: Shifting paradigms of culture and identity in Parzania and 1947: Earth*. International Conference on Language, Culture and Identity: Issues and Challenges. Central Institute of Languages,Mysore, Indian Council of Social Sciences Research, New Delhi and Aligarh Muslim University, Aligarh. February 8th -10th

DEPARTMENT OF MATHEMATICS

31. N.Sabu, *A series of lectures on "Homogenization"* in the workshop on "PDE and related analysis" at IISc, Bangalore in Sep'09.
32. N.Sabu, *A series of lectures on "Differential Equations and its applications"* in the workshop on "Mathematics for Engineers" at College of Engineering, Trivandrum, in Jan'10.
33. Deepak T. G, delivered an invited talk on 'Matrix Analytic Methods in Stochastic Modelling' in the International Conference on Statistics, Probability and related areas and International Indian statistical Association(IISA) joint stastical meeting organized by Andhra university,Vishakhapatnam during 4-8 January 2010.
34. E. Natarajan, S. Roy, Spectral element analysis of seismic wave propagation, Proceedings of International conference on recent advances in Mathematics and Application, January, 2010.

35. Raju K George, "Dynamical Systems described by Differential Equations", 75th annual conference (Platinum Jubilee), of the Indian Mathematicians, The Kalasalingam University, Anand Nagar, Dec 27 --- 30, 2009.
36. Raju K George, "Control of Artificial Satellites", Trivandrum, Kerala, Dec 28 - 29, 2009.
37. Raju K George, "Application of differential equations to Control theory", A refresher course in Mathematics, Academic Staff College, May 18, 2010
38. Raju K George, "Differential Equations and its Applications", Invited Talk, Scott Christian College, Nagercoil, April 03, 2009.
39. Raju K George, "Introduction to Neural Networks", Invited Talk, Department of Physics, University of Kerala, Kariyavattom, April 23, 2009.
40. Raju K George, "Basics of Matlab", Workshop on Matlab and Simulink for VSSC Scientist, IIST, Thiruvananthapuram, July 07 - 10, 2009.
41. Raju K George, "Finite Dimensional Controllability Theory", Workshop on PDE and Related Analysis, Department of Mathematics, Indian Institute of Science, Bangalore, Sept 07 - 11, 2009.

DEPARTMENT OF PHYSICS

42. N Murthy, Dept of Physics, Delivered an invited talk at the XXXIV Optical Society of India symposium held at CSIO, Chandigarh on "*Fringe localization and Optical coherence*" during October 30th, 31st and 1st November 2009.
43. N Murthy, Presented a paper entitled *Analysis of fringe formation and localization in optical interferometry using optical coherence* at the 6th International workshop on Advanced optical metrology held at Nutringen, Stuttgart, Germany during 14th, 15th, 16th and 17th September, 2009
44. N Murthy, Chaired a session in the International Conference ICRAES'10 at KSR college of Technology, January 9, 2010.

Ph D Awarded

Ms. Sheeba Rani was awarded Ph. D. for the thesis, 'Development of Novel Models of Face Recognition using Orthogonal Polynomial Transforms and Neural Networks' by Anna University, Chennai, January 2010.

Shri. Shaijumon C.S. was awarded Ph.D. for the thesis, 'Changing Structure of Market for Agricultural Product: A Case Study' by the University of Kerala in March 2010.

Other Activities and Events

ISAT-2010

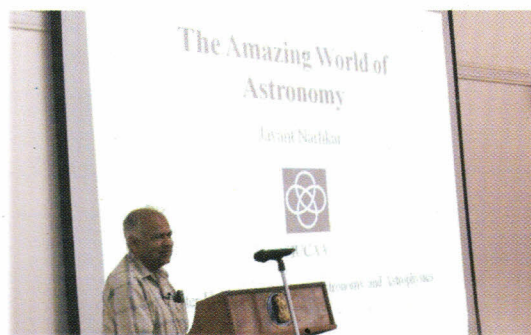
One of the landmark decisions in IIST during the report period was the announcement of ISAT- 2010, the IIST Admission Test for B Tech programmes. The first three batches of students of IIST were admitted from the IIT- JEE list, but for the academic year 2010-11, it was decided to conduct IIST's own All India Admission Test. The date of the test was fixed as 16th April 2010 and 26 centers across the country were identified for the conduct of the test. High level committees were set up to carry out the herculean task of conducting the all India admission test. 86500 candidates applied for tests. Rs 500/- was charged as registration fee for general candidates and Rs 250/- for female students, SC and ST categories.

Astronomy Day Aparimit - 09

APARIMIT, a Sanskrit word meaning 'limitless' is the IIST's annual festival of astronomy. It was a great coincidence that the first astronomy fest of IIST was celebrated in the international year of Astronomy, in memory of the 400th anniversary of first astronomical observation by Galileo Galeli. APARIMIT was launched on 1st April 2009. Befitting the status of

World's third space university, this occasion was graced by none other than the doyen of Indian Astronomy, Prof. Jayant V Narlikar. Prof. Narlikar gave a talk on "The Amazing World of Astronomy".

APARIMIT also had a programme called 'Doorbeen' where students were taught to make telescopes under the guidance of Shri Arvind Paranjpye of IUCCA, Pune. Documentaries on astrophysics and a technical poster competition named ASTROREFLECTIONS were also organized.



Talk by Dr. Jayant Narlikar during APARIMIT

Visit of UGC team

The UGC Review Committee visited IIST during 16th -18th September 2009. The six member Committee was drawn from various IITs /IISc. The Committee inspected the facilities of the Institute and held detailed discussions with faculty members and students. IIST presented the status of the Institute as a deemed to be University and submitted a detailed report of all the activities and achievements, clearly revealing the Institute's efforts towards building a centre of eminence in space technology.

Cultural Activities

IIST students' Cultural Fest, "Dhanak" was organized from 6th April -8th April 2009, with several competitions in literature, arts, music and dance. The event was inaugurated by Dr. K. Radhakrishnan, Director, VSSC, himself an accomplished singer and Kathakali artist. The students of "Freedom Center", a special school for mentally challenged children in Thiruvananthapuram, gave a scintillating display of their talent in singing and dancing.



Inauguration - Dhanak 2009



Dance by members of Freedom Centre

IIST Day

The second IIST Day was celebrated on 8th May 2009 at Co - Bank Tower, Thiruvananthapuram. Dr G Madhavan Nair, Chairman, ISRO graced the occasion along with other dignitaries such as Shri K J Mathew, Chief Secretary to the Government of Kerala, Dr. K. Radhakrishnan, Director, VSSC and Dr E D Jemmis, Director, IISER. The second edition of the Students' In-house Magazine 'Drishtikon' was released by the Chairman on the occasion. Awards and prizes for students in Academics, Sports and Cultural areas were distributed in the function. Various cultural programmes were presented by the students and faculty on the occasion.



Sports Activities

Major Sports events organized in IIST during the year include the Inter-House Cricket, Football and Badminton Tournaments in which students participated with great enthusiasm. The IIST Basketball team participated in several Inter-Collegiate Basketball Tournaments and proved that they are a force to be reckoned with in this sport.



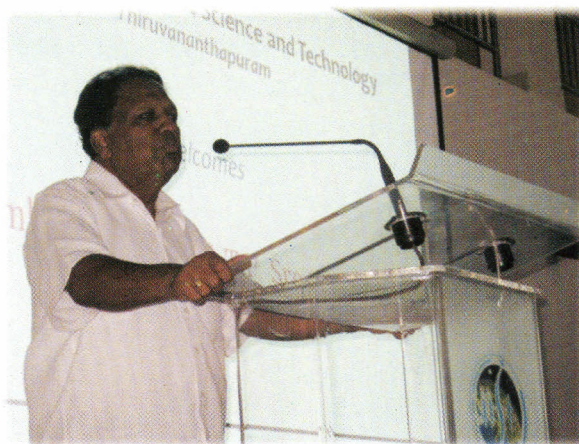
Independence day Celebrations

Dr. BN Suresh Director, IIST hoisted the National Flag and addressed the gathering. This was followed by a Quiz Competition conducted by Sri Vijayakumar, a well known name in the field of Quiz. The event evoked enthusiastic participation from students, both as quiz team members and as spectators.



Talk by Sri T P Sreenivasan

Shri T P Sreenivasan, former Ambassador, gave a talk on "Practice of Diplomacy – Charms and Challenges" on 19th August 2009. The talk highlighted the importance of diplomacy and organizational behavior.



Foundation stone laying of IIST Space Science Complex

IIST proposes to construct a Space Science Complex at Ponmudi to promote studies in astronomy and space science. The space science complex will initially house a telescope, laboratories, lecture halls and other facilities to promote studies in space science. The foundation stone for the Complex was laid by Principal Secretary to the Prime Minister, Shri. T.K.A. Nair on 31st August 2009. The guests of honour were Dr. K. Radhakrishnan, Chairman, ISRO, Dr. G. Madhavan Nair, former Chairman, ISRO and Dr. B.N. Suresh, Director, IIST.



Fresher's Welcome Party

IIST's third batch of students was given a spectacular welcome on 14th September 2009 by their predecessors, soon after the former joined the Institute. The IIST community was treated to a spirited performance by students from both the batches.



Robotics Workshop

Workshop India conducted a beginner level instruction and training programme on 7th and 8th November 2009 to help students understand and develop micro-controllers for autonomous robots.

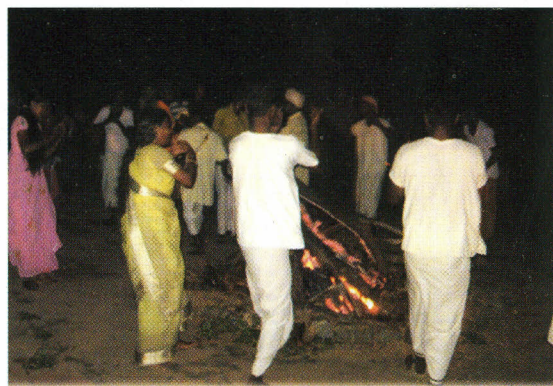
Vox Materia Inauguration

On 9th November 2009, Vox Materia, IIST's materials club was inaugurated by Dr. B. N. Suresh, Director, IIST. Dr. S. C. Sharma, Head of MMG Department, VSSC, delivered a talk on Metallic Materials on the occasion.



Field trip to Attappady

As part of the course in Social Science and Ethics, the Department of Humanities organized a field trip to the tribal heart land of Attappady in Palakkad District of Kerala on 12th -14th November 2009. This gave the students an exposure to the tribal way of life and the government efforts in ameliorating their condition. The trip was organized with help of Attappady Hills Area Development Society (AHADS), an autonomous body under Government of Kerala, which is implementing a unique ecological restoration project in the tribal heartland of Attappady. Students also visited the Silent Valley National Park and appreciated the beauty of the pristine forests.



Workshop on Earth and Space Science

Earth and Space Science club conducted an introductory workshop for its members on 18th and 19th November 2009. The Chief Guest was Prof. A. Jayaraman, Director NARL and Prof. J.S Ray, PRL.

Talk by Prof. T. Pradeep

Prof. T Pradeep of IIT Madras delivered a talk on the Colours of Gold on 23rd Nov 2009.



An evening with Adoor Gopalakrishnan

The renowned Filmmaker, Shri Adoor Gopalakrishnan, visited the Institute on 24th November 2009 and shared his thoughts with the students and faculty members of IIST.



Visit of Honourable Minister of State for Science and Technology, Personnel, Public Grievances and Pension

Shri Prithviraj Chawan, Honorable Minister of State for Science and Technology, Personnel, Public Grievances and Pension visited IIST campus on 5th December 2009 and addressed the faculty members.



IIST@Schools

"IIST@Schools" is the science outreach programme of IIST, specifically targeting the school students. The pioneering programme of IIST@Schools was a three-day camp for school students organized from 5th to 7th January 2010, with space programme as its theme. The programme was intended to motivate the school students to pursue science as a career and to kindle their interest in space science. It also made them aware of the various missions of ISRO and their societal implications.



The programme was a great opportunity for the young minds to have a rendezvous with many inspiring personalities like Dr. A.P.J Abdul Kalam, former President of India, Dr. K. Radhakrishnan, Chairman, ISRO and Dr. G. Madhavan Nair, former Chairman, ISRO. It also gave them a chance to interact with many space scientists, and to visit the Space Museum, Planetarium etc. to gauge a better understanding of space and space programmes.



Faculty Development Programme

A three-day Faculty Development Programme on Teaching Skills was conducted from 26th–28th February 2010, by ASCI, Hyderabad. The programme had interesting sessions focussing on different topics like innovation in teaching, case method teaching, leading and motivating students, enumerating pedagogical tools, bench-marking and technology fusion for education and teaching strategies for an institute of excellence. Concurrently, a workshop was also held in communication and presentation skills.

Conscientia 2010

The annual technical festival of IIST, Conscientia 2010 was inaugurated by the Chancellor of IIST, Dr. A.P.J Abdul Kalam on 4th March 2010. The event saw a convergence of talent in both science and technology and the coming together of experience and novitiate. Conscientia saw enthusiastic participants from all over the country, making it a grand success.



Inauguration of Conscientia 2010



Dr. APJ Abdul Kalam, Chancellor, IIST with the students

Telescope-making Workshop

As part of the annual Techfest Conscientia 2010, a five-day workshop on telescope making was organized at IIST. About 50 students participated in the workshop. As part of the annual Techfest Conscientia 2010, 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 views of the moon. The workshop was conducted by Mr. Arvind Paranjpye of IUCAA, Pune and Mr. Makarand Paranjpye and Mr. Tushar Purohit of Dhaval Udyog, Pune. The workshop was co-ordinated by Dr. Anandmayee Tej.



Moon viewed through students telescope



Annual Sports Meet 2010

IIST Annual Athletic Meet 2010 was held on 27th March 2010 from 7.00 am to 5.30 pm at Chandrasekharan Nair Stadium, Trivandrum. The event was inaugurated by Shri. M. Vijayakumar, Honorable Minister of Sports, Law and Parliamentary Affairs, Govt. of Kerala. Registrar, IIST welcomed the gathering. The meet began with an impressive March Past by the students representing various houses and the NCC cadets of IIST. This was followed by a number of competitive events for students as well as faculty members.



Auditors' Report

To the members of
Indian Institute of Space Science and Technology (IIST)
Thiruvananthapuram

- 1 We have audited the attached Balance Sheet of Indian Institute of Space Science and Technology (IIST) as at 31st March 2010, the Income and Expenditure Account and the Receipt and Payment Account for the year ended on that date both annexed thereto. These financial statements are the responsibility of the IIST's management. Our responsibility is to express an opinion on these financial statements based on our audit.
- 2 We conducted our audit in accordance with the auditing standards generally accepted in India. These standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and the significant estimates made by the management, as well as evaluating the overall financial statements presentation. We believe that our audit provides a reasonable basis for our opinion.
- 3 We further report that :
 - a) We have obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purposes of the audit.
 - b) In our opinion proper books of accounts have been maintained by IIST, so far as appears from our examination of those books.
 - c) The Balance Sheet , the Income and Expenditure Account and the Receipts and Payments Account dealt with by this report are in agreement with the books of Accounts.
 - d) In our opinion and the best of our information and according to the explanations given to us the aforesaid financial statements read with the statements read with the statement on significant accounting policies and notes to the accounts show a true and fair view in conformity with the accounting principles generally accepted in India.
 - i. in case of Balance Sheet of the state of affairs of IIST as at 31.03.2010,
 - ii. in the case of Income and expenditure Account of the excess of income over expenditure of IIST for the year ended on that date and
 - iii. in case of Receipt and Payments Account of the receipt and payments of IIST during the year ended on that date.

Thiruvananthapuram
03rd Nov 2010

For Jose and Hemachandran
Chartered Accountants
Regn. No. 001360S

Jose Zachariah. F.C.A.
(Partner, Mem. No. 80570)

Indian Institute of Space Science and Technology

Government of India, Department of Space (DOS)

Valiamala PO, Thiruvananthapuram 695 547, India

Balance Sheet as at 31st March 2010

2009 - 2010

	Sch	As at 31.03.2010 Rupees	As at 31.03.2009 Rupees
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SOURCES OF FUNDS

Corpus fund	1	1,006,793,057.46	464,242,233.59
Unspent Grant	2	1,681,926,461.00	515,068,902.00
Current Liabilities	3	54,704,944.00	7,566,884.00

TOTAL		2,743,424,462.46	986,878,019.59
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APPLICATION OF FUNDS

Fixed Assets	4		
Gross Block		269,609,259.00	107,985,423.00
Less: Depreciation		76,123,623.54	27,192,572.41
Net Block		193,485,635.46	80,792,850.59
Capital work-in-progress		553,298,385.00	280,079,780.00
Total		746,784,020.46	360,872,630.59

Current Assets and Advances

Cash and Bank Balances	5	1,993,441,452.00	625,017,759.00
Advances to Suppliers, staffs, etc..	6	2,628,273.00	411,878.00
Prepaid Expenses		570,717.00	575,752.00

TOTAL		2,743,424,462.46	986,878,019.59
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Significant Accounting Policies and
Notes to the Accounts 14

As per our report of even date attached.

For Jose And Hemachandran
Chartered Accountants
Regn. No. 001360S

For and on behalf of
Indian Institute of Space Science and Technology (IIST)

Jose Zachariah. F.C.A
(Partner, Mem. No. 80570)

Dr. B.N. Suresh
Director

P.Sreenathan
Finance Officer

Place : Trivandrum
Date : 03rd Nov 2010

Indian Institute of Space Science and Technology

Government of India, Department of Space (DOS)

Valiamala PO, Thiruvananthapuram 695 547, India

Schedules Forming Part of Balance Sheet

	As at 31.03.2010 Rupees	As at 31.03.2009 Rupees
Schedule 1: Corpus Fund		
Opening Balance	464,242,233.59	113,357,469.98
Add: Excess of Income over Expenditure	107,708,382.87	28,704,665.61
Add: Grant Utilized for capital asset	434,842,441.00	322,180,098.00
	1,006,793,057.46	464,242,233.59
Schedule 2: Unspent Grant		
Opening Balance	515,068,902.00	599,999,000.00
Add: Grant received during the year	1,776,250,000.00	326,250,000.00
Less: Revenue Grant	174,550,000.00	89,000,000.00
Less: Amount utilized for Capital Expenditure	434,842,441.00	322,180,098.00
	1,681,926,461.00	515,068,902.00
Schedule 3: Current Liabilities		
Provident Fund		
Employees' Contribution	4,388,892.00	1,297,963.00
Employer's Contribution	1,654,665.00	650,449.00
	6,043,557.00	1,948,412.00
Add: Interest payable on Provident Fund	384,570.00	95,568.00
	6,428,127.00	2,043,980.00
Respond Project	-	231,710.00
Sundry Creditors		
CNC India Tools & Services (P)LTD.	162,403.00	-
Edutech India Private Limited	97,631.00	-
Gedee Weilfer Pvt. Ltd.	161,985.00	-
Holmarc Opto-Mechatronics Pvt. Ltd.	1,086,930.00	-
Innovative Instruments INC	1,040.00	-
Kadavil Electro Mechanical Industries	562.00	-
Kitek Technologies Pvt. Ltd.	10,125.00	-
Microtek Instruments	5,550.00	-
Mono Tech Engineers Pvt.Ltd	189,880.00	-
MTAB Engineers Pvt. Ltd.	3,928,087.00	-
Prompt Machine Tools Co	500,658.00	-
Unicorn Power Solutions Pvt. Ltd.	101,992.00	-
Bhagya Stores	-	12,164.00
Premeir Office Equipment Co.	-	7,268.00

Sree Bhagavathi Industries	-	9,321.00
Sri Rajalekshmi Commercial Kitchen Equipment	-	8,679.00
Technocraft Appliances Pvt. Ltd.	-	66,367.00
Young India Films	-	435,510.00
HCL Infosystems Ltd	203,680.00	-
Ideal Systems Pvt. Ltd.	4,015,086.00	-
Canteen and Kitchen Appliances	8,800.00	-
Voltas LTD.	13,151.00	13,151.00
	10,487,560.00	552,460.00
Other Current Liabilities		
Group Insurance Recovery	78,540.00	34,680.00
Net Salary Payable	85,325.00	20,297.00
Scholarship Payable	4,000.00	10,000.00
Security Deposits	681,991.00	937,367.00
Stale Cheque	-	173.00
TDS Payable	1,760,200.00	3,697,546.00
Canteen Recovery	-	5,581.00
ISAT examination fee received	35,090,081.00	-
Motor car Advance Suspense account	45,000.00	-
Audit fee Payable	44,120.00	33,090.00
	37,789,257.00	4,738,734.00
	54,704,944.00	7,566,884.00

Schedule 5 :Cash and Bank Balances

Cash in Hand	5,321.00	8,000.00
DD'S IN HAND	27,483,001.00	-
Balances with Scheduled Banks		
In Current Accounts & MOD	974,826,522.00	340,955,362.00
In Fixed Deposits	926,451,262.00	256,841,206.00
Accrued Interests on Fixed Deposits	64,675,346.00	27,213,191.00
	1,993,441,452.00	625,017,759.00

Schedule 6 :Advances to Suppliers, staffs etc.

Contingent Advances	46,000.00	78,050.00
Staff Advances	951,518.00	84,835.00
Travelling Advances	5,000.00	-
Security Deposits	105,480.00	21,000.00
Century Sports	-	17,714.00
Chandrashekharan Nair Stadium	-	5,618.00
Hazeena Chemi Dies	-	15,844.00
Jos Electricals	-	9,439.00
Nandilath G Mart	-	6,400.00
Sphere Hobbies	-	172,912.00
Accounts Officer, VSSC, AVN Accounts	819,700.00	-
Godrej & Boyce Mfg. Co.Ltd	397,575.00	66.00
Accounts Officer, VSSC	303,000.00	-
	2,628,273.00	411,878.00

Indian Institute of Space Science and Technology

Government of India, Department of Space (DOS)

Valiamala PO, Thiruvananthapuram 695 547, India

Income and Expenditure Account for the year ended 31st March 2010

	Sch	2009-10 Rupees	2008-09 Rupees
Income			
Revenue Grant from Government of India	7	174,550,000.00	89,000,000.00
Bank Interest	8	105,650,164.00	49,686,950.00
Fees from Students		2,064,858.00	75,000.00
Exam Fees (Phd).		1,190,750.00	-
Other Income	9	252,091.00	4,492.00
	Total	283,707,863.00	138,766,442.00
Expenditure			
Salary & Allowances(Admin & Faculty)	10	43,808,822.00	19,055,618.00
Staff welfare		231,367.00	-
Travel Allowances to Candidates		279,333.00	-
Wages		174,346.00	-
Honararium		388,036.00	49,825.00
Medical Expenses for Staff		631,052.00	175,178.00
Office Expenses		3,056,773.00	2,580,642.00
Security Expenses		1,185,359.00	-
Supplies & Materials		271,536.00	-
Academic Expenses	11	15,278,464.00	18,421,542.00
Research and Development		917,484.00	-
Telephone and Internet		1,014,384.00	801,669.00
Repairs & Maintenance		1,565,012.00	249,709.00
Campus Landscaping		862,321.00	-
Mess Expenses for Students		18,591,466.00	10,968,142.00
Consultancy and Manpower Hire Charges		4,157,835.00	508,953.00
Admission Expenses		936,327.00	1,211,069.00
Students Activities		1,045,534.00	-

Inaugural and Other Functions	1,101,839.00	-
Annual Day & Sports day celebration	397,950.00	360,520.00
Conveyance	3,981,329.00	5,968,154.00
Travelling Expenses-Domestic	4,233,904.00	3,759,974.00
Travelling Expenses-Foreign	515,995.00	1,110,953.00
Legal and Professional Expenses	128,812.00	246,801.00
Advertisement and Publicity	13,284,307.00	5,720,856.00
Seminars & Sponsorship	118,180.00	166,425.00
Newspaper & Periodicals	48,803.00	44,305.00
Retirement Benefits to Employees	-	3,503,824.00
Interest on PF Contribution	290,407.00	108,595.00
Bank charges	9,100.00	6,847.00
Library Services	265,000.00	-
Meeting Expense	328,838.00	449,455.00
Miscellaneous Expenditure	59,546.00	-
Temporary Construction	7,498,923.00	12,845,477.00
Electricity	365,925.00	-
Audit Fee	44,120.00	33,090.00
Depreciation	48,931,051.13	21,714,153.39

Total	175,999,480.13	110,061,776.39
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Excess of Income over Expenditure	107,708,382.87	28,704,665.61
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Significant Accounting Policies and
Notes to the Accounts

14

As per our report of even date attached.

For Jose And Hemachandran
Chartered Accountants
Regn. No. 001360S

For and on behalf of
Indian Institute of Space Science and Technology (IIST)

Jose Zachariah. F.C.A
(Partner, Mem. No. 80570)

Dr. B.N. Suresh
Director

PSreenathan
Finance Officer

Place : Trivandrum
Date : 03rd Nov 2010

Indian Institute of Space Science and Technology

Government of India, Department of Space (DOS)

Valiamala PO, Thiruvananthapuram 695 547, India

Schedules to Income and Expenditure Account

	2009-10 Rupees	2008-09 Rupees
Schedule 7: Revenue Grant from Government of India		
Grant from Govt. of India DOS	1,450,000,000.00	652,500,000.00
Add: Amount transferred from Unspent Grant of previous year	-	547,500,000.00
	1,450,000,000.00	1,200,000,000.00
Less: Amount attributable to Capital Grant	1,275,450,000.00	1,111,000,000.00
	174,550,000.00	89,000,000.00
Schedule 8: Bank Interest		
Interest on Deposits received	40,974,818.00	22,473,759.00
Add: Accrued Interest	64,675,346.00	27,213,191.00
	105,650,164.00	49,686,950.00
Schedule 9: Other Income		
Sponsorship for IIST Cultural Fest	200,000.00	-
Penal Interest	42,240.00	-
Sale of Tender Document	5,074.00	4,390.00
Miscellaneous Income	4,777.00	102.00
	252,091.00	4,492.00
Schedule 10: Salary & Allowances (Admin & Faculty)		
Salary and Allowances	32,576,707.00	16,888,677.00
Leave Encashment	106,494.00	-
Salary for Contract Employee	9,700,010.00	1,879,805.00
Children Education Assistance to Staff	321,650.00	89,186.00
LTC	728,761.00	197,950.00
Pension	375,200.00	-
	43,808,822.00	19,055,618.00
Schedule 11: Academic Expenses		
Books to Students	1,473,705.00	259,597.00
Lab Expenses	11,342,880.00	14,516,675.00
Medical Expenses	794,994.00	787,921.00
Rent, Water & Electricity for Hostel	-	1,981,460.00
Hostel Expenses	667,465.00	251,344.00
Travelling Expenses	171,898.00	53,509.00
Sports Expenses	291,086.00	481,180.00
Faculty Development Programme	408,391.00	-
Other Expenses	8,685.00	89,856.00
Lectures and Seminars	119,360.00	-
	15,278,464.00	18,421,542.00

Indian Institute of Space Science and Technology

Government of India, Department of Space (DOS)

Valiamala PO, Thiruvananthapuram 695 547, India

Receipts and Payments Account for the year ended 31st March 2010

	Sch	2009-10 Rupees	2008-09 Rupees
Receipts			
Opening Balances	12	597,804,568.00	652,954,829.00
Grant received towards Respond Project		-	443,000.00
Grant received from Govt. of India		1,776,250,000.00	326,250,000.00
ISAT Examination Fees		35,090,081.00	
Fees from Students		2,064,858.00	75,000.00
Exam Fees (Phd)		1,190,750.00	
Amt received from NCERT towards scholarship		16,600.00	42,000.00
Security Deposits received from Contractors		753,344.00	1,147,483.00
Stale Cheque		-	173.00
Bank Interest		68,188,009.00	22,473,759.00
Other Income		251,918.00	4,492.00
Motor Car Advance Suspense		45,000.00	-
Total		2,481,655,128.00	1,003,390,736.00

Payments

Salary & Allowances(Admin & Faculty)	39,542,974.00	17,323,985.00
Staff welfare	231,367.00	-
TA To Candidates	279,333.00	-
Wages	174,346.00	-
Honararium	388,036.00	49,825.00
Medical Expenses for Staff	631,052.00	175,178.00
Office Expenses	3,053,723.00	2,564,053.00
Security Expenses	1,185,359.00	-
Supplies and Materials	271,536.00	-
Academic Expenses	15,239,288.00	18,103,378.00
Research and Development	917,484.00	-
Mess Expenses for Students	18,572,003.00	10,968,142.00
Telephone and Internet Expenses	438,632.00	801,669.00
Repairs & Maintenance	1,565,012.00	249,709.00
Campus Landscaping	862,321.00	-
Consultancy and Manpower Hire Charges	4,157,835.00	508,953.00
Decrease in TDS Payable	1,937,346.00	(3,697,546.00)
Admission Expenses	936,327.00	1,211,069.00
Students Activities	990,534.00	-

Inagural and Celebration expenses	1,101,839.00	-
Annual Day & Sports Day Celebration	397,950.00	360,520.00
Travelling	4,735,664.00	4,870,927.00
Conveyance	3,981,329.00	5,968,154.00
Expenses towards Respond Project	231,710.00	211,290.00
Legal and Professional Expenses	128,812.00	246,801.00
Advertising and Publicity	13,284,307.00	5,720,856.00
Seminars & Sponsorship	118,180.00	166,425.00
Newspaper & Periodicals	48,803.00	44,305.00
Retirement Benefits to Employees	-	3,503,824.00
Bank charges	9,100.00	6,847.00
Library Services	265,000.00	-
Meeting Expense	328,838.00	449,455.00
Interest on PF Contribution	1,405.00	13,027.00
Miscellaneous Expenditure	59,546.00	-
Temporary Construction	7,498,923.00	12,845,477.00
Audit Fee Paid	33,090.00	33,708.00
Electricity Expenses	365,925.00	-
Scholarship paid to students	22,600.00	32,000.00
Security Deposits repaid	1,008,720.00	210,116.00
Advances to Suppliers, staffs, etc..	2,603,532.00	411,878.00
Prepaid Expenses	570,717.00	575,752.00
Fixed Assets	150,960,610.00	41,576,611.00
Sundry Creditors (2008-09)	539,309.00	-
Capital Work in Progress	273,218,605.00	280,079,780.00
Closing Balances	13	1,928,766,106.00
	Total	2,481,655,128.00
		1,003,390,736.00

Significant Accounting Policies and
Notes to the Accounts 14

As per our report of even date attached.

For Jose And Hemachandran
Chartered Accountants
Regn. No. 001360S

For and on behalf of
Indian Institute of Space Science and Technology (IIST)

Jose Zachariah. F.C.A
(Partner, Mem. No. 80570)

Dr. B.N. Suresh
Director

P.Sreenathan
Finance Officer

Place : Trivandrum
Date : 03rd Nov 2010

Indian Institute of Space Science and Technology

Government of India, Department of Space (DOS)

Valiamala PO, Thiruvananthapuram 695 547, India

Schedules to Receipts and Payments Account

	2009-10 Rupees	2008-09 Rupees
Schedule 12: Opening Balances		
Balances with the scheduled Banks		
In Current Accounts & MOD	340,955,362.00	599,999,000.00
In Fixed Deposits	256,841,206.00	50,000,000.00
Add: Accrued Interest		2,953,829.00
Cash in Hand	8,000.00	2,000.00
	597,804,568.00	652,954,829.00

Schedule 13: Closing Balances		
Balances with the scheduled Banks		
In Current Accounts & MOD	974,826,522.00	340,955,362.00
In Fixed Deposits	926,451,262.00	256,841,206.00
Cash in Hand	5,321.00	8,000.00
DD's in hand	27,483,001.00	-
	1,928,766,106.00	597,804,568.00

Schedule 4 : Fixed Assets

	Gross Block (at cost) as at 01.04.2009	Additions for the Year	Gross Block (at cost) as at 31.03.2010	Depreciation as at 01.04.09	Depreciation for the Year	Depreciation as at 31.03.10	Net Block as at 31.03.10	Net Block as at 01.04.09
Land	33,252,000.00	-	33,252,000.00	-	-	-	33,252,000.00	33,252,000.00
Plant & Machinery	2,257,585.00	106,243,117.00	108,500,702.00	263,801.90	15,055,752.80	15,319,554.70	93,181,147.30	1,993,783.10
Furniture & Fittings	27,113,590.00	14,638,582.00	41,752,172.00	7,647,522.73	8,829,693.70	16,477,216.43	25,274,955.57	19,466,067.27
Motor Car	6,346,839.00	-	6,346,839.00	1,990,096.60	1,127,960.61	3,118,057.21	3,228,781.79	4,356,742.40
Motor Buses & Truck	3,464,533.00	-	3,464,533.00	1,403,135.87	618,419.14	2,021,555.01	1,442,977.99	2,061,397.13
Canteen Equipments	2,789,695.00	959,096.00	3,748,791.00	441,875.75	459,991.91	901,867.66	2,846,923.34	2,347,819.25
Computers	18,570,789.00	29,602,055.00	48,172,844.00	8,797,800.72	15,750,017.31	24,547,818.03	23,625,025.97	9,772,988.28
Software	7,392,353.00	6,943,480.00	14,335,833.00	3,553,167.32	4,313,066.27	7,866,233.59	6,469,599.41	3,839,185.68
Library Books	6,454,439.00	3,237,506.00	9,691,945.00	2,751,571.52	2,776,149.39	5,527,720.91	4,164,224.09	3,702,867.48
Soft Furnishings	343,600.00	-	343,600.00	343,600.00	-	343,600.00	-	-
Total	107,985,423.00	161,623,836.00	269,609,259.00	27,192,572.41	48,931,051.13	76,123,623.54	193,485,635.46	80,792,850.59
Prev. Year	65,885,105.00	42,100,318.00	107,985,423.00	5,478,419.02	21,714,153.39	27,192,572.41	80,792,850.59	60,406,685.98

SCHEDULE 14

Statement on Significant Accounting Policies and Notes to the Accounts

A. Significant Accounting Policies

1. Basis of Accounting

The financial statements have been prepared under the historical cost convention, on accrual basis of accounting and in conformity with accounting principles generally accepted in India except in the case of Leave Encashment which is accounted on cash basis.

2. Fixed Assets and Depreciation

Land is valued at cost of acquisition. Other Fixed assets are shown at cost of acquisition less depreciation. Cost comprises the purchase price or acquisition cost, installation charges and any attributable cost of bringing the assets to working condition for its intended use.

3. Revenue Recognition

Out of the total grant received the amount provided in the budget towards revenue is treated as Revenue Grant.

4. Taxation

Being an institution existing solely for education purposes and not for the purpose of profit and is wholly financed by Government of India, the income of the institution is exempt under section 10[(23C)][iiiab] of the Income Tax Act 1961.

5. Capital Grant

Out of the total grant received the amount spent towards capital expenditure is added to Corpus Grant. The unutilized portion of the capital grant is treated as Unspent Grant.

B. Notes to the Accounts

1. Depreciation

Depreciation on fixed assets has been provided in the accounts on written down value basis at the rates prescribed under the Companies Act 1956.

2. Land

There is a stay by the Honorable High Court of Kerala on carrying out construction activities on approximately 80 acres of land purchased at Ponmudi in Trivandrum district for setting up the Institute.

3. Temporary Construction

Constructions carried out in the land owned by ISRO at Trivandrum, being a temporary measure for running the Institute, is debited to Income and Expenditure Account. Expenditure incurred for establishing the institute at Valiyamala which are temporary in nature is also charged to revenue.

4. Unspent Grant

Unspent Grant represents grant received towards capital expenditure less additions to fixed assets and capital work in progress.

5. Interest on PF Contribution

This represents the interest paid by the institute on the individual balances of the employees. The interest earned from funds contributed by employer and employees parked in a separate account has been accounted as income.

6. Group Insurance

The amount collected from employees for group insurance are retained with the institute as no arrangement has yet been made with any outside agency.

7. Respond Project

The expenses incurred towards Respond project exceeded by Rs.4,398/- and the same is charged to the Income and Expenditure Account.

8. Figure for the previous year

Figures of the previous years have been regrouped wherever found necessary.

As per our report of even date attached.

For Jose And Hemachandran
Chartered Accountants
Regn. No. 001360S

For and on behalf of
Indian Institute of Space Science and Technology (IIST)

Jose Zachariah, F.C.A
(Partner, Mem. No. 80570)

Dr. B.N. Suresh
Director

P.Sreenathan
Finance Officer

Place : Trivandrum
Date : 03rd Nov 2010



Proposed Entry Point for new campus of IIST



Indian Institute of Space Science and Technology

(Deemed to be University u/s 3 of UGC Act, 1956)

Government of India, Department of Space (DOS)

Valiamala PO, Thiruvananthapuram 695 547, India

Tel : +91 471 2568452, 2568422, 2568453 Fax: +91 471 2568477

www.iist.ac.in

