भारत सरकार
अंतरिक्ष विभाग

सत्यमेव जयते

Government of India
Department of Space

INDIAN INSTITUTE OF SPACE SCIENCE AND TECHNOLOGY

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

Thiruvananthapuram

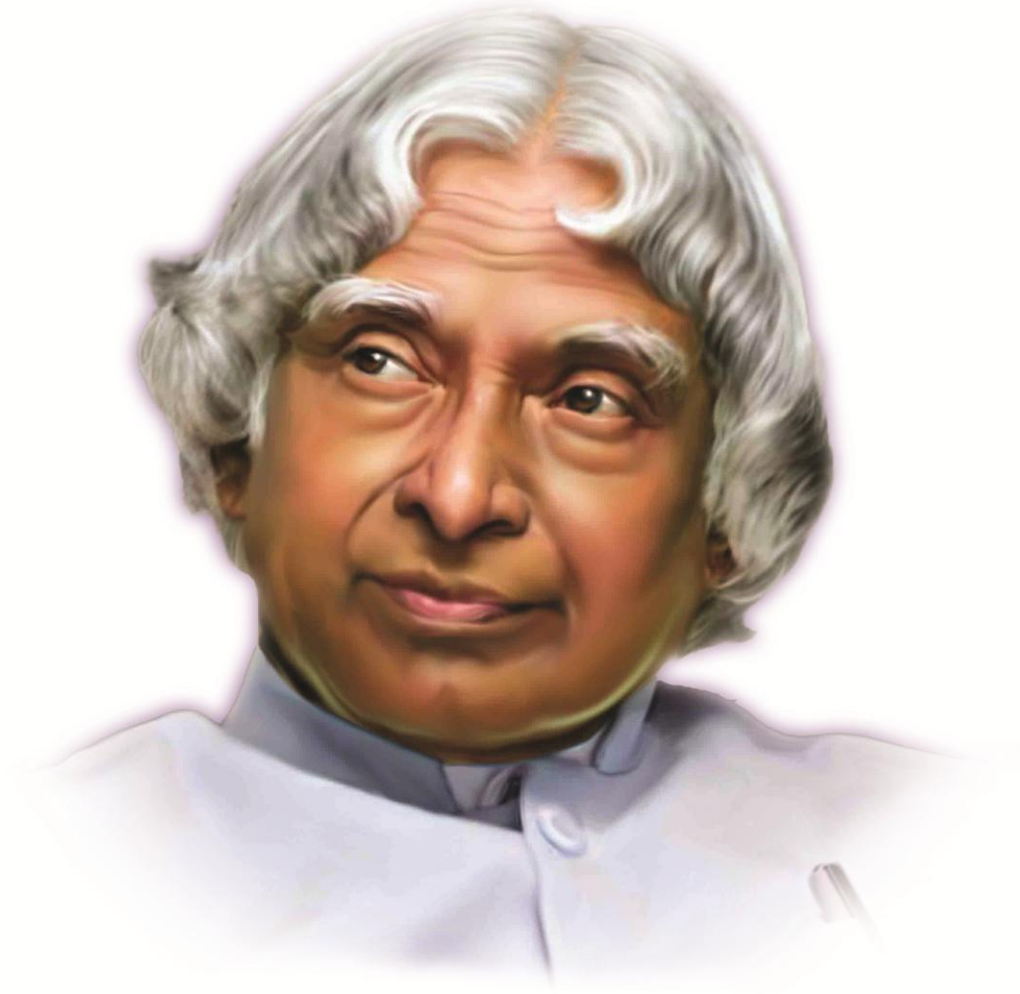
ANNUAL REPORT 2014-2015

Annual Report
2014-2015

Indian Institute of Space Science and Technology

(Declared as Deemed to be University under Section 3 of the UGC Act, 1956)
Valiamala P.O., Thiruvananthapuram 695 547, Kerala, India.

Our Guiding Spirit



Dr. (Late). A. P. J. Abdul Kalam

CONTENTS

INTRODUCTION 13

ACADEMIC PROGRAMMES 14

- B.Tech Programmes
- M.Tech Programmes
- Doctoral Programmes

CONVOCATION 19

ABSORPTION TO DOS/ISRO 20

IIST ALUMINI 21

ACADEMIC/INTERNSHIP PROGRAMMES ABROAD 24

RESEARCH & DEVELOPMENT 27

- Ph.D Awarded/ Completed
- Projects
- Centre of Excellence
- Student projects
- Patent Applied
- Publications

CONFERENCE / WORKSHOPS AT IIST 62

INVITED LECTURES 63

FACULTY & STAFF ACTIVITIES 64

- Awards/ Recognitions
- Conference/ Workshop attended by Faculty Members
- Invited Lectures Delivered by IIST Faculty

STUDENT ACTIVITIES 78

- Dhanak 2014
- Concientia 2015
- Fresher's Day at IIST
- Clubs at IIST
- Annual Sports Meet
- Induction (Orientation) programme
- Neuro- Linguistic programme

OTHER ACTIVITIES 85

- Cultural and National Festivals
- Onam Celebrations
- Outreach Activities

CAMPUS INFRASTRUCTURE 87

- Laboratory Facilities
- Library & Information Services
- Computer System Group
- Software Support Group

OTHER FACILITIES 98

PLACEMENT CELL 105

HINDI SECTION AND OFFICIAL LANGUAGE IMPLEMENTATION COMMITTEE 107

WOMEN CELL 108

AUDIT REPORT 111

VISION & MISSION

Vision

To be a world class educational and research institution

contributing significantly to the space endeavors

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.

DIRECTOR'S FOREWORD

I am happy to present the Annual Report of IIST for the academic year of 2014-2015. The report period marks the eighth year of the institute. During this term, the institute witnessed a wide spectrum of activities of both academic and cultural importance.

This report year saw 153 students joining our three undergraduate programs and 93 students joining our 14 post-graduate programs in various highly sought after specializations. The third convocation ceremony was held on February 22, 2015 in the presence of an august audience where undergraduate degrees were bestowed on 122 students who successfully completed their B. Tech degree in 2013. Nine doctoral degrees were also awarded in this Convocation proceedings to research scholars, who have since then moved on to join the space research organization or to prestigious post-doctoral positions within and outside India.

During 2014-15, the institute welcomed three new members with outstanding academic record and research credentials to its faculty pool. With this, the strength of faculty at IIST stands at 94. Our faculty continues to make valuable contributions towards teaching, along with advancing their areas of research. More than 120 referred research publications came out in the report period from our faculty and research scholars.

This year, 12 national level workshops and conferences were conducted at IIST in various emerging areas of space science and technology. Our students continue to remain actively involved in the Nano-satellite project under the guidance of an able team of IIST faculty members and ISRO scientists. The research atmosphere at the institute was enhanced by the visit of various delegations and researchers of international repute over the year. On the cultural side, we hosted the three day state level SPIC MACAY workshop in the month of February. The state festival of Onam was celebrated. The annual inter-collegiate cultural festival – *Dhanak*, the technical Fest – *Conscentia*, both organized by students, and the annual sports meet turned out to be grand successes.

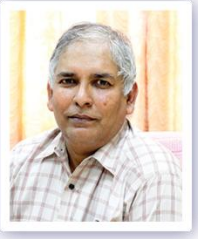
Our institute had to bear a great loss with the passing away of our chancellor Dr. A P J Abdul Kalam. As the institute mourned the demise of this noble soul, it was reassuring to see the depth of influence he has left in the hearts of our young minds. There is no doubt that the institute will continue to be guided by the beacon of his exceptional scientific and humanitarian spirit. It is in this spirit that we, as a team shall carry on to progress towards making the institute a world class centre for education and research, thereby contributing to the enrichment of the scientific heritage of our country.

Dr. K. S. Dasgupta
Director

KEY FUNCTIONARIES

Shri. A. S. Kiran Kumar
Chairman, ISRO and Board of Management, IIST
Secretary, Department of Space

Dr. K. S. Dasgupta
Director



Dr. A.Chandrasekar
Dean
Academics and
Registrar

Dr. Raju K.George
Dean
Research & Development
and Student Welfare

Dr. Kurien Issac
Dean
Intellectual Property Rights
and Continuing Education

Dr. Kuruvilla Joseph
Dean
Student Activities

BOARD OF MANAGEMENT

CHAIRMAN

Secretary, Department of Space, Government of India.

MEMBERS

Secretary, Department of Atomic Energy, Government of India.

Secretary, Department of Higher Education, Government of India.

Chief Secretary, Government of Kerala.

Prof. Roddam Narasimha, Member, Space Commission.

Director, Indian Institute of Technology, Mumbai.

Director, Indian Institute of Technology, Madras.

Director, Indian Institute of Science, Bangalore.

Director, Vikram Sarabhai Space Centre, Thiruvananthapuram.

Director, Space Applications Centre, Ahmedabad.

Additional Secretary, Department of Space, Government of India.

Scientific Secretary, ISRO Head Quarters, Antariksh Bhavan, Bangalore.

Nominee of UGC Chairman.

Director, IIST - Member Secretary.

The Indian Institute of Space Science and Technology (IIST) Thiruvananthapuram has completed eight years as an autonomous deemed to be University under Department of Space (DOS), Government of India. The institute offers undergraduate, post-graduate and doctoral programs in the diverse areas of space science and space technology.

In addition to the B.Tech programs in Aerospace Engineering, Avionics and Physical Sciences, the institute also offers 14 post-graduate programs in emerging and highly sought after specializations. The institute presently has approximately 560 undergraduate students, 150 post-graduate students enrolled in its various programs and has about 100 research scholars pursuing their doctoral education. Students admitted to IIST receive full financial assistance through funding from the Department of Space.

During 2014-15, doctoral degrees were awarded to 9 students and post-graduate degrees to 8 students.

IIST continues to reach out to other universities and research centres of international reputation through student exchange programs and collaborative research initiatives.

ACADEMIC PROGRAMMES

IIST offered three undergraduate and fourteen postgraduate programmes during 2014-15.

B.TECH. PROGRAMMES (4 YEARS)

- Aerospace Engineering
- Avionics
- Physical Sciences

The Aerospace engineering program offers a mechanical engineering perspective to space technology. The students learn topics in mechanical design, flight mechanis, aerodyamics, thermal and propulsion systems, and space dynamics. The Avionics discipline covers electronics related to space systems. The course is a hybrid of electical engineering, electronics and communication engineering and computer science. The Physical Sciences program is interdisciplinary in nature. The students in this program are taught the basics of engineering, with greater emphasis on the scientific prospects of space exploration. Courses taught in

physical science program cover the broad areas of astronomy, geoinformatics, remote sensing, atmospheric science and oceanography. In addition, students of all three streams are given an indepth exposure to topics in mathematics, physics and chemistry. Laboratory work forms a significant component of all these courses.

Admission for B.Tech. Programmes for the academic year 2014-15 was completed through direct counseling of students based on their performance in JEE (Main) conducted by CBSE as well as JEE (Advanced) Examination conducted by IITs.

153 students were admitted for the academic year 2014 - 2015 in the three branches

Admission 2014-15								
Branch	General	OBC	SC	ST	PD-Gen	PD-OBC	PD-SC	Total
Aerospace Engineering	30	16	8	5	1	-	1	61
Avionics	27	17	9	5	1	1	-	60
Physical Sciences	17	9	3	2	1	-	-	32
Total								153

M.TECH/MS PROGRAMME (2 YEARS)

The various departments of the institute offer post-graduate programmes in emerging and highly sought after specializations in their respective areas. These programmes are meant to provide an in-depth understanding of specialized topics. Applications for M.Tech/MS programmes are screened based on GATE score and the admission is through test and interview. The total number of seats in each programme is ten, out of which six seats are reserved for open merit candidates and the remaining four for DOS/ISRO employees.

IIST offers M.Tech./ M.S programmes in the following disciplines

Sl.No	DEPARTMENT	POST GRADUATE PROGRAMMES
1	Aerospace Engineering	1. M.Tech. Aerodynamics & Flight Mechanics 2. M.Tech. Thermal & Propulsion 3. M.Tech. Structures & Design
2	Avionics	1. M.Tech. RF & Microwave Engineering 2. M.Tech. Digital Signal Processing 3. M.Tech. Control System 4. M.Tech. VLSI & Microsystems
3	Chemistry	1. M.Tech. Materials Science and Technology
4	Earth & Space Sciences	1. M.Tech. Earth System Science 2. M.Tech. Geoinformatics 3. M.S Astronomy and Astrophysics
5	Mathematics	1. M.Tech. Machine Learning & Computing
6	Physics	1. M.Tech. Optical Engineering 2. M.Tech. Solid State Technology

Category-wise details of students admitted during the report period across various M.Tech / MS Programmes of IIST are as follows:

Admission 2014-2015							
Sl.No.	Name of the M.Tech. / MS Programmes	Candidates admitted against open advertisement				DOS/ISRO candidates	Total
		Gen	OBC	SC	ST		
1	Aerodynamics and Flight Mechanics	4	1	1	0	1	7
2	Structures and Design	4	1	1	0	2	8
3	Thermal and Propulsion	2	2	1	1	3	9
4	Control Systems	3	1	1	0	2	7
5	Digital Signal Processing	3	1	1	0	3	8
6	RF and Microwave Engineering	2	1	1	0	3	7
7	VLSI and Microsystems	2	2	1	1	1	7
8	Materials Science and Technology	3	2	0	0	2	7
9	Astronomy and Astrophysics	3	1	0	0	0	4
10	Earth System Science	3	2	1	0	0	6
11	Geoinformatics	3	2	0	0	0	5
12	Machine Learning and Computing	3	2	1	0	0	6
13.	Optical Engineering	4	1	1	0	0	6
14.	Solid State Technology	3	2	1	0	0	6
	Total	42	21	11	2	17	93

DOCTORAL PROGRAMMES

Admission was based on test and interview and is restricted to those candidates who qualified JRF-NET/GATE or equivalent exams. During this period, 31 students registered for Ph.D.

Department	Full Time	Part Time	Total
Aerospace Engineering	6	3	9
Avionics	3	1	4
Physics	4	1	5
Earth and Space Sciences	3	0	3
Chemistry	5	0	5
Humanities	3	2	5
Total	**24**	**7**	**31**

CONVOCATION

The third Convocation of IIST was held on February 22nd, 2015. Prof Ashutosh Sharma, Secretary, Department of Science and Technology, Government of India was the Chief Guest of the programme which was presided over by Dr. A. P. J. Abdul Kalam, Honourable Chancellor, IIST.

Sri. A. S. Kiran Kumar, Chairman, Board of Management, IIST and Secretary, DOS was present. Sri M C Dathan, Director, VSSC was the Guest of Honour. The function was held at Dr. Srinivasan Auditorium, VSSC in the presence of Members of Board of Management, IIST Council, other distinguished guests, students, parents, faculty members and staff.

From among the 151 students who joined in 2009, degrees were awarded to 122 meritorious students in Aerospace Engineering (40), Avionics (53) and Physical Sciences (29) who had successfully completed their B.Tech course in June 2013.

ABSORPTION TO DOS/ISRO

B.TECH

Students of 2010 batch who completed the B.Tech. course with the required CGPA were placed at various ISRO centers as Scientist/Engineer 'SC'.

ADRIN	01	NRSC, Hyderabad	06
ISAC, Bangalore	15	PRL, Ahmedabad	01
ISTRAC, Bangalore	03	SAC, Ahmedabad	18
LPSC (Valiamala)	05	SCL, Chandigarh	10
LPSC (Bangalore)	04	SDSC, Sriharikota	10
MCF, Hassan	05	VSSC, Thiruvananthapuram	17
NARL, Gadanki	02		
IPRC, Mahendragiri	07	**Total**	**104**

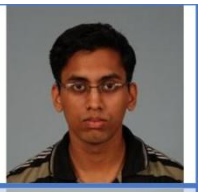
Ph.D

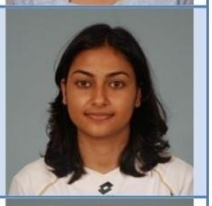
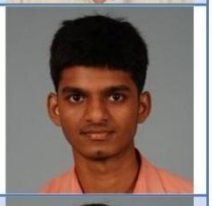
Having completed their research work and awarded Ph.D, four research scholars have been absorbed as Scientist /Engineer 'SD' in various ISRO Centres.

Sanid C	SAC, Ahmedabad
Bhaskar Dubey	SAC, Ahmedabad
Remyamol T	SCL, Chandigarh
J Raja	SCL, Chandigarh

IIST ALUMNI

The following is a list of students who graduated from IIST and are currently pursuing higher studies in India and abroad.

1.	Abhinav Goel	B.Tech. Aerospace Engineering	Post Graduate Studies at IIM Ahmedabad and Olin Business School, USA	
2.	Shashank Adimulam	B.Tech. Avionics	Post Graduate Studies at Cornell University, USA	
3.	Ritwick Sahil Pradeep Rane	B.Tech. Aerospace Engineering	Post Graduate Studies at XLRI, Jamshedpur	
4.	Kanav Sethia	B.Tech. Aerospace Engineering	Ph.D at Dartmouth College, USA	
5.	Pulkit Kanwar	B.Tech. Avionics	Post Graduate Studies at International Space University, France	
6.	Saurabh Bhansal	B.Tech. Physical Science	Ph.D at University of Notre Dame, USA	
7.	Kuldeep Sharma	B.Tech. Aerospace Engineering	Ph.D at University of Leiden, Netherlands	
8.	Dheeraj Agarwal	B.Tech. Aerospace Engineering	Ph.D at Marie Curie Early Stage Researcher, Queen University, UK	
9.	Yashwant Kumar Nakka	B.Tech. Aerospace Engineering	Post Graduate Studies at University of Illinois, USA	

10.	Ankit Mittal	B.Tech. Aerospace Engineering	Post Graduate Studies at Technical University of Berlin, Berlin, Germany	
11.	Soumya Kamath	B.Tech. Physical Science	Ph.D at Stanford University, USA	
12.	Tejaswita Sharma	B.Tech. Physical Science	Ph.D at University of New Hampshire, USA	
13.	Prateep Basu	B.Tech. Aerospace Engineering	Post Graduate Studies at International Space University, France	
14.	Praveen Kumar B	B.Tech. Aerospace Engineering	Ph.D IIT Madras	
15.	Sandeep Deverapalli	B.Tech. Aerospace Engineering	Post Graduate Studies at IIM Kolkata	
16.	Tanveer Ali	B.Tech. Aerospace Engineering	Post Graduate Studies at XLRI, Jamshedpur	
17.	Pritesh Kumar Sinha	B.Tech. Avionics	Post Graduate Studies at IIM Ahmedabad	
18.	Etika Agarwal	B.Tech. Avionics	Post Graduate Studies at University of Notre dame, USA	

20.	Garima Garsa	B.Tech. Avionics	Post Graduate Studies at IIM, Ahmedabad	
21	Prem Anand	2008B.Tech. Aerospace Engineering	Post Graduate Studies at Carleton University, Canada	
22.	Abhimanyu.S	B.Tech. Physical Science	Ph.D at TIFR, Mumbai	
23.	Ramiz Ahmad Qudsi	B.Tech. Physical Science	Ph.D at University of Delaware, USA	
24.	Prachi Agarwal	B.Tech. Aerospace Engineering	Post Graduate Studies at IIM, Shillong	
25.	Naga Vineeth P.	B.Tech. Physical Science	Post Graduate Studies at University of Southern California, USA	

ACADEMIC/INTERNSHIP PROGRAMMES ABROAD

The students of IIST have ample opportunity to study and carry out research in foreign universities and establishments. IIST has entered into several international collaborations viz.

California Institute of Technology (CALTECH), USA

CALTECH is a world-renowned university located in Pasadena, California,USA. Every year one student of B.Tech. Aerospace Engineering is admitted for a Master of Science degree in Space Engineering at the Graduate Aerospace Laboratories of CALTECH (GALCIT). Support for study will be funded by SatishDhawan Fellowship. This award will cover full tuition and mandatory fees. Travel expenses and visa fees are met by IIST.

The following three students of IIST have been selected under this programme

Aaditya Nitin Chaphalkar, topper in B.Tech Aerospace Engineering in the academic year 2013 completed his M.S in Space Engineering (18.09.2013-30.06.2014) from CALTECH under the above programme. He also received "The Abdul Kalam Prize" for his exemplary academic performance.

Pranav Nath, topper in B.Tech. Aerospace Engineering for the academic year 2014 is now pursuing his M.S degree in CALTECH.

Anand Kumar, topper in B.Tech. Aerospace Engineering in 2015 is likely to join for M.S degree in CALTECH for the 2015-16 session.

Universities Space Research Association (USRA), USA

USRA is an independent, nonprofit research corporation where the combined efforts of in-house talent and university-based expertise merge to advance space science and technology. USRA works across disciplines including biomedicine, planetary science, astrophysics and engineering integrating those competencies into applications ranging from fundamental research to facility management and operations.

USRA and IIST have jointly established an undergraduate student Summer Research programme (under Exchange Visitor Programme) which provides research opportunities at USRA Institutes and other Universities to outstanding students at IIST. USRA will provide for the housing expenses and per diem. Travel expenses and visa fees will be paid by IIST.

Jet Propulsion Laboratory (JPL), USA

The Jet Propulsion Laboratory is a federally funded research and development center and NASA field center located in La Canada Flintridge, California, United States. JPL is managed by the nearby California Institute of Technology (CALTECH) for NASA.

JPL has offered an 8 week internship programme for three students of B.Tech. in each branch viz, Aerospace Engineering, Avionics and Physical Sciences/Engineering Physics who are in their third year. Students will receive a generous stipend to cover their entire expenses. The expenditure towards airfare, medical insurance coverage, VISA fees and SEVIS fees will be met by IIST.

The students who have been selected for this programme for the period from 01.06.2015-30.07.2015. are

Divesh Soni
(Aerospace Engineering)

Suraj Kumar
(Avionics)

Harshavardhan Singh
(Physical Sciences)

Lockheed Martin's Undergraduate Student Visitation Program

Lockheed Martin, the American global aerospace, defense, security and advanced technology company with worldwide interests has an Undergraduate Student Visitation Program at the LM Advanced Technology Centre (LM ATC) located at Palo Alto, California.

This program is administered by the binational Indo US Science and Technology Forum (IUSSTF), New Delhi. The goal of this programme is to create, nurture and support techno-

entrepreneurial ecosystems. The duration for the programme will be for eight weeks during summer. The visitation program will cover accommodation, local transportation, international air travel support. The students (B Tech. Avionics) of IIST who had the opportunity to be selected for this program. (03.03.2015- 08.04.2015).

Gulshan Gupta

Sourajit Debnath

Mitacs Globalink Reseach Foundation, Canada

The Mitacs Globalink Research Internship is a competitive initiative for international undergraduates from Brazil, China, France, India, Mexico, Saudi Arabia, Tunisia and Vietnam. From May to September of each year, top-ranked applicants participate in a 12-week research internship under the supervision of Canadian university faculty members in a variety of academic disciplines, from science, engineering and mathematics to the humanities and social sciences. Over 45 universities across Canada are hosting Mitacs Globalink Research interns in the summer of 2015. The entire expenditure towards air fare, accommodation, living stipend, medical insurance, student registration fees is met by Mitacs Globalink Reseach Foundation. This year Shashank Nitundil, 3rd year B Tech Aerospace Engineering student is selected for summer internship at University of Alberta, Edmonton, Canada from 11.05.2015 to 04.08.2015.

In addition to the above collaborations, students are encouraged to register themselves for international internships on their own during their vacation period.

Yogesh Parth, 3rd year B.Tech. Avionics student was selected for Bachelor Summer Programme at Joseph Fourier Universite – Grenoble France from 02.06.2014-11.07.2014.

RESEARCH AND DEVELOPMENT

Scientific and technological research is integral to IIST's vision. Research programmes in IIST focus on various areas of Science, Engineering and Humanities. The institute currently has 74 full time and 26 part time research scholars.

The institute actively supports its faculty to further their research careers. The state-of-the-art laboratories and dedicated centers of excellence provide students with opportunities to gather a wide variety of project experiences. The post-graduate programs of the institute are all research intensive. Students work in close partnership with faculty on research projects of short and long term duration. The institute also maintains interdisciplinary and collaborative work with international academic and research centers as well as various centers of ISRO. The doctoral students of the institute are encouraged and financially supported to attend workshops and conferences at institutes within India and abroad, where they also get to showcase their research work.

Department	Full Time	Part Time	Total
Aerospace Engineering	10	10	20
Avionics	10	9	19
Physics	10	1	11
Earth and Space Sciences	14	1	15
Chemistry	19	1	20
Humanities	7	3	10
Mathematics	4	1	5
Total	**74**	**26**	**100**

Ph.D AWARDED/ COMPLETED

V.S.Sooraj	Aerospace Engineering	Investigations on fine finishing of surfaces using elastic abrasives
Ameya Anil Kesarkar	Avionics	Investigating Limit Cycle Performance and Asymptotic Bode Behavior of Fractional-Ordered Controllers
Remyamol T.	Chemistry	Synthesis of Polyaniline hybrids of graphene/MWNT for photocurrent generation and optical limiting applications
Bharath Bhushan	Earth and Space Sciences	Multiple classifiers and dimensionality reduction methods for hyperspectral image classification
Bhaskar Dubey	Mathematics	A qualitative study of controllability of a certain class of fuzzy systems and nonlinear matrix lyapunov systems
Raja J.	Mathematics	Lower dimensional approximation of thin elastic and piezoelectric shell
Senthil Kumar M.	Physics	Investigations on the techniques for development of high resolution optical systems for earth observations
Sanid C.	Physics	Spin-polarised current driven magnetization dynamics and applications in spin valve pillars
Preeti Manjari Mishra	Physics	Role of collective excitation in high energy radiation interaction with poly cyclic aromatic hydrocarbons

PROJECTS

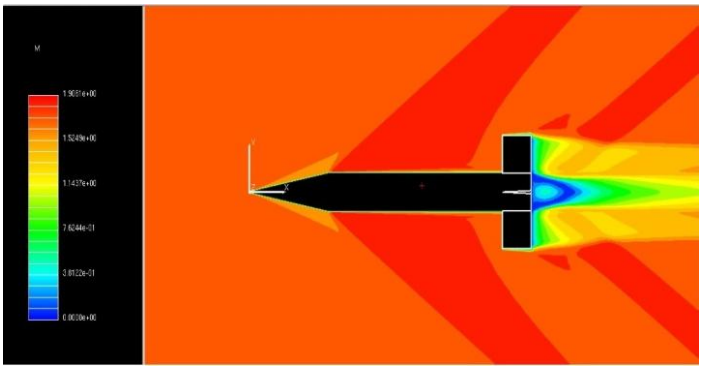
Sl. No.	Name of the Programmes/ Activities/ Schemes/ Projects	Principal Investigator / Co-Investigator	Project Estimate
1	IIST Mesh Net- a hybrid wireless mesh network test bed	Dr. B. S. Manoj, Avionics	6L
2	Design and implementation of Helmet Antenna.	Dr. Basudeb Ghosh, Avionics	10L
3	Pervasive computing for disaster response	Dr. B. S. Manoj, Avionics	32L
4	Mobile Infrastructure for Coastal Region offshore Communications and networks (MICRONet)	Dr. B. S. Manoj, Avionics	Collaborative project with no funding
5	Research and Development of an Integrated Enterprise Network Security System.	Dr. B. S. Manoj, Avionics	16L
6	Fabrication and Characterization of Graphene Based RF Transistor	Dr. Palash Kumar Basu, Avionics	5L
7	Design and Development of Brushless DC Motor	Dr. N. Selvaganesan, Avionics	3.6L
8	Decoder for CCSDS Recommended Turbo Codes.	Dr. R. Lakshminarayanan, Avionics	3L
9	Design and Implementation of a compact wideband microstrip patch antenna	Dr. Basudeb Ghosh, Avionics	4 L
10	Development of Tactile Sensor for Under Actuated Robotic Hand	Dr. Priyadarshanam, Avionics	5.3L
11	Study of Switching Topologies and Control Schemes for isolated DC-DC Power.	Dr. Anindya Dasgupta, Avionics	42L
12	Developing VR model for disaster simulation.	Dr. Deepak Mishra, Avionics Dr. Gorthi RKSS Manyam, Earth and Space Science	17.5 L
13	Design and Development of High Performance Hydrogen Sensor for IPRC, Mahendragiri.	Dr. Palash Kumar Basu, Avionics	60L
14	Black carbon, Aerosol, Meteorological and Ozone Profiling Study (BAMPS).	Dr. M. V. Ramana, Earth and Space Science	7 L

15	Aerosol-Cloud Interaction under varying meteorological conditions	Dr. M. V. Ramana, Earth and Space Science	83.5 L
16	Improving the Operational Weather Forecast of NARL Using a Hybrid Ensemble-Variational Method for WRF Model	Dr. Govindan Kutty, Earth and Space Science	8.28 L
17	Object based high resolution image analysis for land slide and land use land cover classification	Dr. Gorthi RKSS Manyam Earth and Space Science	16.5 L
18	Study of select issues of new product development in R&D organizations	Dr. Ravi V Humanities	5 L
19	RCI Edusat Feedback Study.	Dr. Lekshmi V Nair, Dr. C S Shaijumon, Humanities	1.52 L
20	Space Technology and its mediation into Socio- Economic Space of Households of India – I phase South India	Dr. Lekshmi V Nair, Dr. C S Shaijumon, Humanities	23 L
21	Controlled synthesis of coherence polarization of light and its application in optical imaging.	Dr. Rakesh Kumar Singh, Physics	10 L
22	Electronic manipulation of surface plasmon polaritons in graphene	Dr. K.B. Jinesh Physics	11 L
23	Comprehensive stationary plasma thruster diagnostics instrumentation.	Dr. Umesh R. Kadhane, Physics	30 L
24	Plasma modification of CNT and polymer nanocomposites thereof for space application.	Dr. N. Gomathi, Chemistry	7.2 L
25	N-containing heterocycles as aurora kinase inhibitors - computational design and library synthesis.	Dr. K. G. Sreejalekshmi, Chemistry	4 L
26	Molecular Dynamics Studies on Fracture of Bio-Composites.	Dr. Anup S, Aerospace Engineering	-
27	High- Speed unsteady flow past spiked blunt bodies.	Dr. Manoj T. Nair, Aerospace Engineering.	4.8 L

STUDENTS PROJECTS

Students and Faculty at IIST get-together and work closely with ISRO scientists currently on two major areas:

- Vyom Mk II- Sounding Rocket Project

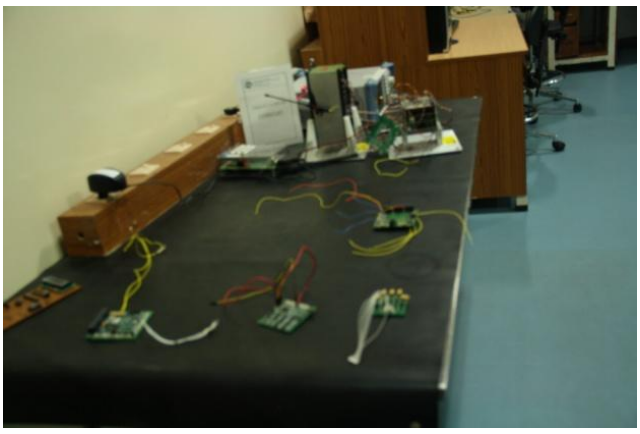


IIST has taken up the design of Vyom Mk II sounding rocket after successful launch of the Vyom-I rocket on May 11, 2012. Vyom-II aims at doubling the payload capability to 20 kg and increasing the peak altitude from 14 km to 70 km. The main challenge is to do this while maintaining the simplicity and reliability of a single stage rocket.

A novel aspect of the current effort is to design this rocket using MDO (Multi-Disciplinary Design Optimization), where the disciplines of Aerodynamics, Solid Motor Propulsion, Structural Analysis and Flight Mechanics are optimized together to get an optimal vehicle design.

This work involves lot of interaction with practicing Scientists and Engineers of ISRO who act as guides in specific disciplines. In addition to getting wide experience in the disciplines involved in rocket design, the students and faculty of IIST carry out research in specific disciplines and the system design leading to publications in reputed journals. They also present this work in leading national and international conferences.

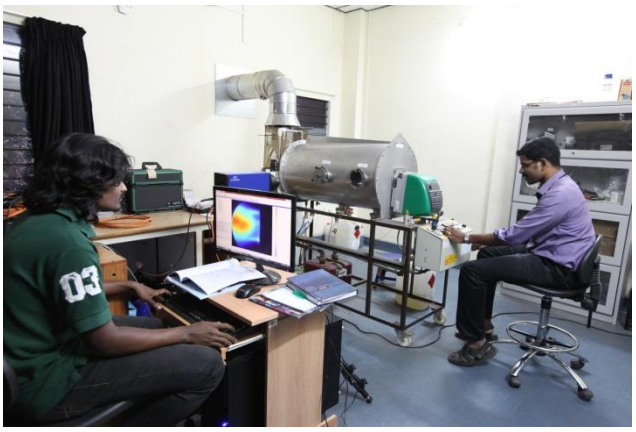
- Nano-Satellite Project



IIST nano-satellite mission is an interdisciplinary project taken up by a team of IIST students with mentor-ship provided by ISRO scientists and IIST Faculties. The mission's objective is to set a small-satellite standard for the Indian education institutes and for the students to have a hands-on experience on the design, fabrication and realization of small satellites at reasonable cost. The IIST nano-satellite mission began in the year 2008 and is in an advanced stage of development now. During this period it has helped our students in complementing their domain knowledge acquired from the curriculum in various disciplines like computer science, power systems, control theory, communication, PCB design etc.

1. Advanced Propulsion and Laser Diagnostics (APLD) Lab

(Department of Aerospace Engineering)



In IIST, the Advanced Propulsion and Laser Diagnostics (APLD) Lab is currently setup with an objective to perform propulsion research studies through laser diagnostic techniques. The laboratory currently have the capability to perform PIV and PLIF measurements, and is equipped with: (i) Double Pulsed Nd-YAG PIV Laser , (ii) Precision Dye Laser, (iii) Intensified CCD Camera, (iv) PIV CCD Camera (v) High Resolution Wavemeter, (vi) Optical Tables, (vii) Optical Components and (viii) High Speed DAQ System. The lab would shortly be upgraded with a second dye laser for two line LIF thermometry measurements and particle size analyser for droplet size measurements.

2. Virtual Reality Lab

(Department of Avionics)

The primary objective of this lab is to supplement a higher level course on image processing and enable students to understand the subject better. The lab consists of a diverse set of experiments with objective, theory, assessment, references and interactive examples which are designed to improve the clarity in understanding of the basic and advanced concepts. The lab is intended to help in clarifying concepts in virtual reality, computer vision and image processing. To carry various experiments in computer vision, image processing etc we have gigE vision camera, thermal imaging camera and stereo vision camera for image acquisition. We have five workstations with 3D display and a pair of 5DT data gloves for interaction via computer.

3. Center of Advanced Research in Nanoscience and Technology

(Department of Chemistry)

To spearhead the activities in Nanoscience and Technology and to address challenges in Space Science and Technology and related areas the department has established a Centre of

Advanced Research in Nanoscience and Technology. The Department is in the process of bringing all the facilities required to conduct advanced research in Nanoscience and Technology and allied fields. Currently facilities such as Atomic Force Microscope, Particle Size Analyzer, Glove Box, electrospinning machine, contact angle goniometer, HPLC, planetary ball mill and surface area analyser are available in the centre. Departments plans to add X-ray Diffractometerand Plasma Reactor to the research centre shortly.

4. Climate Observatory at Ponmudi

(Department of Eearth and Space Science)

A climate observatory was established, as part of IIST's research facility, over Ponmudi hills (1081meter asl; 8 45'26"N, 77 6'50"E) for intensive measurements of aerosol-cloud-turbulence-solar radiation parameters. The purpose was to obtain representative statistics of cloud properties which were needed to understand cloud microphysical studies of processes. Ponmudi hills are in the southern tip of Western Ghats close to Thiruvananthapuram and this location is known for the highest occurrence of clouds throughout the year. The research consists of: creating an integrated observational data set of aerosol-cloud-turbulence-solar radiation to quantifying the cloud radiative forcing, and quantitative understanding of aerosol-cloud interaction under varying meteorological conditions and their role in the Earth's climate system.

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- Vinitha Ramdas, **Deepak Mishra**, **Sai Subrahmanyam Gorthi**, "Efficient Speech Coding Using a Hybrid Dictionary in a Quantized CS Framework", Eighth International Conference on Image and Signal Processing (ICISP), Bangalore, India, July 2014.

- Anandakumar, **M Ramiya**, **Rama Rao Nidamanuri**, Ramakrishnan Krishnan (2014) "Semantic Labelling of urban point cloud data" The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, Volume XL-8, ISPRS Technical Commission VIII Symposium, Hyderabad, India, December 9 – 12, 2014.

- **Resmi L**, "Plotting with Matplotlib", in Phython Workshop at IIST, July 26, 2014.

- **Resmi, L.,** International Conference on Women in Physics (ICWIP), August 5-8, 2014.

- **Resmi, L.**, "Progenitors of Short Duration Gamma Ray Bursts", IRC conference on research in astronomy, Nirmala college Muvattupuzha, December 9, 2014

- **Resmi, L.,** "Physics of Astrophysics". National Seminar on Modern Trends in Physics, Univ. College, Trivandrum, January 23, 2015.

- **Resmi, L.**, "Gamma Ray Bursts: Progress & Prospects". Workshop on Transients, NCRA, Pune. February 16, 2015.

- **Resmi, L.**, "Women in Science: Worldwide initiatives". Gender Issues in Astronomy, Special session in 33rd ASI meeting, NCRA, Pune, February 19, 2015.

- **Resmi, L.**, "Implications of Gravitational Wave Observations for short GRBs". Astronomy, Cosmology & Fundamental Physics with Gravitational Waves, CMI, Chennai, March 2, 2015.

- **Resmi, L.**, "Wonders of Cosmos", Public talk at Cafe Sceintifique, Alliance Francaise, Trivandrum, March 12, 2015.

- **Arun Prasad** and **L. Gnanappazham**. (2014). Discrimination of mangrove species of *Rhizophoraceae* using laboratory spectral signatures, IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2014) Quebec, Canada.

- **Naga Vineet. P.** and **L. Gnanappazham**. (2014). Web Based Facility Management System using Open Source GIS. 16th Annual Conference of the International Association for Mathematical Geosciences. October 2014, Jawaharlal Nehru University, New Delhi.

- **Arun Prasad** and **Gnanappazham, L.** Derivative spectra for mangrove species discrimination - International Society of Photogrammetry and Remote Sensing, ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences, Volume II-8, 2014 ISPRS Technical Commission VIII Symposium, December 9 – 12, 2014.

- Aarthy Aishwarya and **Gnanappazham, L.** A review on accuracy and uncertainty of spatial data and analyses with special reference to urban and hydrological modelling, ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences, Volume II-8, 2014 ISPRS Technical Commission VIII Symposium, December 9 – 12, 2014.

- **Samir Mandal**, *Hard X-ray Astronomy: ASTROSAT and beyond*, 2014 TIFR, Goa. September 24-26, 2014.

Department of Humanities

- **Lekshmi V Nair.** "Technology Assisted Ageing", *In the ICSSR sponsored National Seminar on Ageing Gracefully*, School of Gandhian Thought and Developmental Studies, MG University, November 24, 2014.

- **Shaijumon C S.** "National Budget 2014-15: A Pro Growth Budget", in the *National Seminar on Union Budget 2014-15*, Department of Economics, Fatima Matha National College, Kollam, June 22,2014.

- **Shaijumon C S.** "Space Technology Institution for Technology Diffusion and Development in Agriculture: A Case Study", *International Conference on Leveraging Institutional Innovations for Agricultural Development* Agricultural Economics Research Association of India (AERA), Raichur, Karnataka, November 18-20, 2014.

- **Shaijumon C S.** "Space Technology and Knowledge Management in Agriculture", *National Seminar on Information Technology and Good Governance,* , Department of Political Science, NSS College, Pandalam, January 29, 2015.

- **Shaijumon C S.** "Revamping Undergraduate and Graduate Curriculum in Economics", *Board of Studies Meeting,* Department of Economics, Fatima Mata National College, Kollam, February 21, 2015.

- **Shaijumon C S.** "Economic Growth and Development of India: The Neo-Liberal Perspective", *UGC National Seminar on "Living with Neo-Liberalism: India's Tryst with Market and the Marginalized"*, Department of Political Science, VTM NSS College, March 16, 2015.

Department of Mathematics

- **C.V. Anilkumar**. "Coordinator for the second level of two weeks national level Young Talent Nurture program conducted on Vector calculus, Algebra and Linear Algebra" in *IIST* May 13- 25, 2014.

- **Harsha K V**, **Subrahamanian Moosath K S**, "Geometry of F-likelihood estimators and F-max-ent theorem". *AIP Conference Proceedings, 1641:pp. 263-270,* 2014.

- **Harsha K V**, **Subrahamanian Moosath K S**, "A dually flat geometry of the manifold of F-escort probability distributions". *IMSCT-2014.*

- Ruchi Sandilya and **Sarvesh Kumar.** "Discontinuous finite volume element methods for elliptic optimal control problem", appeared in the proceedings *of ICCM 2014*, held at *Cambridge,* England, July 28-30, 2014.

- **Prosenjit Das**. CAAG-2015, IIT Guwahati, February 5-9, 2015.

- Manu Subramanian S, Jishy Samuel and **Sumitra S**. "Comparative study of similarity measures for launch vehicle telemetry data", Proc. of IEEE *International Conference on Information, Communication and Embedded Systems (ICICES)* , Chennai , 2014 , pp 253-258.

- **Haripadmam P.C.**, **Honey John** and **Pramod Gopinath**. "Fifth order nonlinear optical absorption in PMMA-ZnO/MWNT composite film", *International Conference on Photonics and Solar water splitting*, Cochin, March 12-13, 2015.

- **Haripadmam P.C.**, **Honey John** and **Pramod Gopinath**. "Saturable and reverse saturable absorption exhibited by polymer-ZnO nanotop composite films", *20th National Conference on Atomic and Molecular Physics, IIST*, Thiruvananthapuram, December 9-12, 2014.

- **M S Raju**, R K Singh, Ajai Kumar and **Pramod Gopinath**. "Dynamic of laser produced tungsten plasma expanding in a transverse magnetic field", *20th National Conference on Atomic and Molecular Physics, IIST*, Thiruvananthapuram, December 9-12, 2014.

- **M S Raju**, **R K Singh**, Ajai Kumar and **Pramod Gopinath**. "Spectral behavior of neutral species in laser produced barium plasma in Ar ambient and external magnetic field", *DAE-BRNS National Laser Symposium, SVU*, Tirupati, December 3-6, 2014.

- **M S Raju**, **R K Singh**, Ajai Kumar and **Pramod Gopinath**. "Intensity dependent confinement of laser produced barium plasma in a transverse magnetic field", *International Conference on Ultrahigh Intensity Lasers (ICUIL2014)*, Goa, October 12-17, 2014.

- **Kavitha M. K.**, **Pramod Gopinath**, and **Honey John**. "Visible light photoconductivity in ZnO and ZnO-graphene hybrids", *National Conference on Material Science and Technology, NCMST 2014, IIST*, Thiruvanthapuram, July 28-30, 2014.

- **M. Rohith** and **C. Sudheesh**. "Optical tomography of entangled coherent states", *International Conference on Optics and Photonics (ICOP-2015), University of Calcutta*, Kolkata, India, February 20-22, 2015. (poster)

- **M. Rohith** and **C. Sudheesh**. "Optical tomography of superposed photon-added coherent states", *1st International Conference on Opto-Electronics and Photonic Materials (ICOPMA-2015), Sastra University, Thanjavur, Tamilnadu, India*, February 27-28, 2015.

- **M. Rohith** and **C. Sudheesh**. "Entanglement dynamics of m-photon-added coherent states in a beam splitter", *Recent Trends in Information Optics & Quantum Optics (IOQO-2014), IIT-Patna*, Patna, November 7-8, 2014.

- **M. Rohith** and **C. Sudheesh**. "Decoherence of superposed photon-added coherent states", *20th National Conference on Atomic and Molecular Physics (NCAMP-2014), IIST,* Thiruvananthapuram, India, December 9-12, 2014.

- **Rakesh Kumar Singh**. "Influence of polarized source in the second order intensity correlation imaging" *International Conference on Optics and Photonics (ICOP)* Kolkata University, India, February 20-22, 2015, pp. 1-4.

- **Vinu R. V.**, and **Rakesh Kumar Singh**. "A new method to measure coherence-polarization of light using fourth order correlation", *International Conference on Optics and Photonics (ICOP)* Kolkata University, India, February 20-22, 2015, pp. 1-4.

- Niraj Kumar Soni, Atul Suresh Somakuwar, and **Rakesh Kumar Singh**. "Jones Matrix imaging for transparent and anisotropic sample". *International Conference on Optics and Photonics (ICOP)* Kolkata University, India, February 20-22, 2015, pp. 1-4.

- Vinu R. V., Manoj K. Sharma, **Rakesh Kumar Singh**, and P. Senthilkumaran. "Synthesis of 2-D spatial coherence array. "Photonics 2014: International Conference on Fiber Optics and Photonics (OSA), IIT Kharagpur, India. December 13-16, 2014.

- **Rakesh Kumar Singh**. "Generation of doughnut structure in a two point correlation function". *Photonics 2014: International Conference on Fiber Optics and Photonics (OSA),* IIT Kharagpur, India. December 13-16, 2014.

- Maruthi M. Brundavanam, Sunil Vyas, **Rakesh Kumar Singh**, and Yoko Miyamoto. "Birefringence interferometer for observing the unfolding point of optical vortex in uniaxial crystal", *Optics Photonics Japan, Tokyo, Japan*, November, 2014.

- **Vinu R. V**, and **Rakesh Kumar Singh**, "Experimental detection of coherence-polarization matrix", *Conference on Recent trends in Information Optics & Quantum Optics (IOQO),* IIT Patna, India, November 7-8, 2014.

- **U. Kadhane**, **P. M. Mishra** "Modeling ion-molecule collision using Monte Carlo simulation", *Journal of Physics: Conference Series Vol. 583 (1): pp. 12017-12020.* 2015.

- **P. M. Mishra**, L. Avaldi, P. Bolognesi, K.C. Prince, R. Richter, **U. Kadhane** "Plasmon excitation in valence shell photoelectron spectroscopy for PAHs", *Journal of Physics: Conference Series 583 (1), 012004.* (2015).

- **Richa Sharma** and **C.S. Narayanamurthy** (2015). "Influence of Pseudo-Random-Phase-Plates' sequence in phase analysis with single and double passage interferometers", *International conference on Optics and Photonics (ICOP)*, Kolkata, India, 2015. (poster)

Library

- **Nikhil Eyeroor** & Prof. Uma Kanjilal. "Impact of Internet on Information Behaviour: Suggested Short term ODL training programme for LIS professionals". National Seminar on LIS Education in India with Special Reference to ODL: Prospect and Retrospect", Dr.B.R.Ambedkar Open University, Hyderabad, Andhra Pradesh, India. May 29-30, 2014.

III) BOOKS / BOOK CHAPTERS

- **V. Seena**, P. Ray, K. Prashanthi, M. Kandpal, V. Ramgopal Rao. (2014). "Polymer MEMS sensors", *Advanced Biomaterials and Biodevices, Edition: Advanced Materials Book Series*, Publisher: **WILEY-Scrivener Publishing, USA.**

- M. S. Vinchurkar, **V. Seena**, D. Agarwal, NehulGullaiya, S. Mukherji, and V. Ramgopal Rao.(2014). "Development of Micro/Nano Electro Mechanical System based Sensors for Societal Applications", Special issue on "Nano-science and Technology for Mankind" by *The National Academy of Sciences India (NASI)*.

- "Advances in Polymer Composites: Biocomposites – State of the Art, New challenges and Opportunities." in book ***Polymer Composites, Volume 3 : Biocomposites***. Edited by Sabu Thomas,**Kuruvilla Joseph**, S.K Malhotra, Koichi Goda,M.S Sreekala, Published by WILEY-VCH on 2014

- "State of Art - Nanomechanics" in book ***Polymer Composites, Volume 2: Nanocomposites.*** Edited by and Sabu Thomas, **Kuruvilla Joseph,** S.K.Malhotra. K. Goda., M.S.Sreekala, A.Saritha, Published by WILEY-VCH on 2014

- **Justin, Babitha.** *(2015). "Humour: Texts", Contexts* (edited) by *Creative Books*, New Delhi.

- **Shaijumon C S**. (2014). Indo-US Trade Relations, *South Asia in the Globalised World* (C Vinodan ed. pp 118-132), New Century Publications, New Delhi.

- **Shaijumon C. S.** (2014). "*Space based services for educational outreach: A case of ISRO Village Resource Centres* in 'Higher Education in India – New Perspectives", *Jacob Chacko (Ed.), Manak Publications*, Delhi, ISBN 978-93-7831-347-9.

- **Shaijumon C S.** (2014). "Role of Village Resource Centers in Technology Diffusion and Development, *Technologies for Sustainable Development: A way to reduce poverty?*",

(Jean-Claude Bolay et. al ed. pp 287-297), *Springer International Publishing, Switzerland.*

- **Shaijumon C. S.** (2014). "Technology and Indian Agriculture, *Mathrubhumi Year Book Plus 2015* (Chandran P V ed. pp. 525-536)", *Mathrubhumi Printing and Publication, Kozhikode.*

CONFERENCES / WORKSHOPS AT IIST

IIST hosted number of conferences/workshops and special lectures top promote interaction with the research community in India and abroad.

Department of Aerospace Engineering

- Workshop on "Collaborative Research in materials and manufacturing". April 29, 2014.
- *A summer course on 'Introduction to Space Technology'* for the officers of Corps of Electronics and Mechanical Engineers from June 30, 2014 to July 09, 2014.

Department of Avionics

- Short Term Course On Classical And Digital Control Design with Matlab/ Simulink, June 17-20, 2014.
- "A course on Control System Design for Post Graduates, Faculties, and Scientists/Engineers", December 16-20, 2014.

Department of Chemistry

- National Conference on Materials Science and Technology-2014 (NCMST-14), July 28-30, 2014.

Department of Earth and Space Sciences

- Workshop on "**Machine Learning and its Applications (WMLA14)**, June 30 - July 2, 2014
- Workshop on **"Sparse Signal Processing"**, August 2, 2014.
- Python Workshop, July 24- 26, 2014
- Workshop on OpenSource WebGIS and BHUVAN, , organised in collaboration with scientists from National Remote Sensing Centre, Hyderabad, November 7 -8, 2014.
- Workshop on "Ensemble Kalmen filtering and its applications", July 7, 2014.
- Astronomy & Astrophysics School, December 10 - 19, 2014.

Department of Mathematics

- Lectures on "**Cancellation problem and A^2fibration problem",** January 21-30, 2015.
- Lecture on "**Basics of Lebesgue spaces**" on November 28, 2014.

- Second level of "**YOUNG TALENT NURTURE (YTN)**" program from May13 - 25, 2014.

INVITED LECTURES

During the period, IIST organized lectures by various academicians from India and abroad.

- **Prof. ThirupathiGudi**, IISC Bangalore, delivered a lecture on "Adaptive nite element methods for obstacle problem", June 9, 2014.

- **Prof.Suresh C. Pillai, PhD, MBA, FRMS, FIMMM**, Centre for Precision Engineering, Materials and Manufacturing Research & Department of Environmental Sciences Institute of Technology Sligo, Ireland "Band Gap Engineering for Making TiO2 Visible Light Active" July 22, 2014.

- **Dr. P G Diwakar,** Deputy Director – Remote sensing Applications, National Remote Sensing Centre, Hyderabad delivered a special Lecture on Potential applications of Remote sensing and Bhuvan, August 15, 2014.

- **Shri. Gopinath Pai**, VSSC., "Materials for Space", August 20, 2014.

- **Dr. Tapas Ranjan Martha**, Scientist, NRSC Hyderabad delivered lecture on Object Based Image Analysis applications to Remote Sensing, September 3, 2014

- **Mr. P Shashidhar Reddy**, Scientist, NRSC Hyderabad delivered a lecture on Virtual Reality applications to Remote Sensing, September 3, 2014.

- **Dr.Maarten B. J. Roeffaers, K U Leuven, Heverlee, Belgium** "Fluorescence and stimulated Raman microscopy study of dealuminatedacid mordenite zeolites" November 11, 2014.

- **Dr. Swagata Sarkar**., Indian Statistical Institute, Kolkata, India "Degree of maps between certain homogeneous spaces." November 13, 2014

- **Dr. K. N. Ninan**, Visiting Professor IIST, "The Indian Voyage to Mars" November 15, 2014.

- **Dr. ShantaLaishram**, ISI Delhi, delivered a lecture on "Cryptography inspired by Number theory", November 21, 2014.

- **Dr. C. Subramaniam**, Department of Chemistry, Indian Institute of Technology Bombay "From science toapplications of single wall carbon nanotubes" December 18, 2014.

- **Prof. Sergio Pellegrino**, CalTech JPL delivered lecture, on "Assembling Telescopes in Space", March 2, 2015.

FACULTY AND STAFF ACTIVITIES

During 2014-2015, 3 faculty members joined and at present, institute is having 94 faculty members.

IIST faculty members made significant contributions in the areas of teaching and research. They won several awards and honours.

AWARDS/RECOGNITIONS

B. S. Manoj	Avionics	**IEEE ICNC 2015 Outstanding Leadership Award and IEI Young Engineer Award 2014-2015** by Institution of Engineers (India)
Seena.V	Avionics	**IEI Young Engineers Award 2014-2015** in Electronics and Communication Engineering discipline during the 30th Annual Convention of Electronics and Communication Engineers, Institution of Engineers (India)

P. R Sarika., Nirmala Rachel James.	Chemistry	**Best Poster Award**, 2"Galactosylated pullulan-curcumin conjugate for site specific anticancer activity to hepatocarcinoma cells", 7th Kerala Science Congress, Alappuzha, Trivandrum, India January 27-29, 2015.
K S S Moosath Harsha. K. V	Mathematics	**Second Best Paper Award** and **Prof. R S Varma Memorial award** - "A dually flat geometry of the manifold of F-escort probability distributions"- 23rd International Conference of Forum for Interdisciplinary Mathematics, NIT Karnataka in December 2014.
M. Rohith C. Sudheesh	Physics	**Best Poster Award** - "Optical tomography of superposed photon-added coherent states", 1st International Conference on Opto-Electronics and Photonic Materials (ICOPMA-2015), Sastra University, Thanjavur, Tamilnadu, India, February 27-28, 2015. **Best Poster Award** - "Entanglement dynamics of m-photon-added coherent states in a beam splitter", Recent Trends in Information Optics & Quantum Optics (IOQO-2014), IIT-Patna, Patna, November 07-08, 2014.
Haripadmam P.C.	Physics	**Best Paper Award** - International conference on Photonics and Solar water splitting, Cochin, March 12-13, 2015.
R. Waghmare, D. Mishra, G.R.K.S. Subrahmanyam S.S. Gorthi	Avionics Earth and Space Science	**Best Paper Award** - "Extended Kalman Filter based Phase Estimation in Digital Holographic Interferometry", Eighth International Conference on Image and Signal Processing (ICISP), Bangalore, India, July 2014.

CONFERENCE / WORKSHOP ATTENDED BY FACULTY MEMBERS

- **V.S. Sooraj**, 5th International & 26th All India Manufacturing Technology, Design and Research Conference (AIMTDR 2014), IIT Guwahathi, December 12-14, 2014.
- **V. Aravind**, 5th International and 41st National Conference on Fluid Mechanics and Fluid Power, IIT Kanpur, December 12-14, 2014.

- **M. Deepu**, 5th International and 41st National Conference on Fluid Mechanics and Fluid Power, IIT Kanpur, December 12-14, 2014.

- **S.R. Shine**, 5th International and 41st National Conference on Fluid Mechanics and Fluid Power, IIT Kanpur, December 12-14, 2014.

- **Priyadarshan H** , GNSS/GPSS Simulator, Spectracom, July 11, 2014.

- **Priyadarshan H** ,GNSS Technology and Applications: Current Trends and Future Directions, GNSS LABS, September 1-5, 2014.

- **Priyadarshan H** , IRNSS Receiver training, SAC, Ahmadabad, November 12, 2014.

- **J. Mary Gladis.,** *Prof. DoronAurbach's school on Advances in batteries and supercapacitors organized by The Electrochemical Society(USA) – India section in association with* CSIR-CECRI, Karaikudi ,Kodaikanal. May13-15, 2014.

- **K. Y. Sandhya.,** *An International Summer School on Batteries and Super capacitors organised by ECS India section*, Kodaikana, Tamil Nadu, May 13-15, 2014.

- **Mahesh S.**, *"Photoresponsive Soft Materials", National Institute for Interdisciplinary Science and Technology (NIIST),* Trivandrum, February 3, 2015.

- **Rakesh Kumar Singh**, 'Nanomaterial characterization using advanced Electron optical instrumentation', Delhi University, July 7-8, 2014 .

- **Rakesh Kumar Singh**, *Recent trends in information optics & Quantum optics'* at IIT Patna, November 7 – 8, 2014.

- **Rakesh Kumar Singh**, Photonics conference; IIT Kharagpur on December 13-16, 2014.

- M S Raju., R K Singh., Ajay Kumar.,and **Pramod Gopinath.**, "Intensity dependent confinement of Laser produced Barium Plasma in a transverse magnetic field", International Conference on Ultrahigh Intensity Lasers, Hotel Cidade de Goa, October 12-17, 2014.

- **Pramod Gopinath** - National Seminar on Nanophotonics, School of Pure and Applied Physics, Mahatma Gandhi University, Kottayam, June 26, 2014.

- **C. Sudheesh.**, "International Conference on Optics and Photonics" (ICOP-2015), University of Calcutta, Kolkata, India, February 20-22, 2015.

- **Raju K George**. "International Conference on Mathematical Modelling and computer Simulation" at IIT Madras, December 9, 2014.

- **Raju K George**. "National Conference on Mathematical Modelling & Soft computing" at Vadakara, Kerala, September 25 -26, 2014.

- **Raju K George**. "International Conference on Modelling week and Study Group Meeting on "**Industrial Problems"** at M.S. University of Baroda, Vadodara, March 24-27, 2015.

- **K. S. S. Moosath.** "National Workshop on Multivariable Calculus and Applications during, Department of Mathematics, Govt. College, Kasaragod. December 2-5, 2014.

- **Kaushik Mukherjee.,** "Advanced Level Training Programme on Differential Equations" held in the Department of Mathematics at IISER Thiruvananthapuram during May 26 – June 14, 2014.

- **Natarajan.,** "Advanced Level Training Programme on Differential Equations" held in the Department of Mathematics at IISER Thiruvananthapuram during May 26 – June 14, 2014.

- **Prosenjit Das.,"** Epimorphism problem and related topics by A. Sathaye, University of Kentucky at Indian Statistical Institute, Kolkata, June 1-22, 2014.

- **K. Sakthivel.,** International Congress of Mathematicians (ICM-2014), Seoul, South Korea, August. 13-21, 2014.

- **Jagadheep D**. Pandian, Star and Planet formation workshop, IUCAA, Pune, February 16, 2015.

- **Jagadheep D**. Pandian, 33rd Meeting of the Astronomical Society of India, NCRA Pune, February 17-20, 2015.

- Anandakumar., **M Ramiya**. ISPRS Technical Commission VIII Symposium, Hyderabad, India, December 9- 12, 2014.

- **Subrahmanyam, G.R.K.S.,** Machine learning at Satya Sai Institue of Higher education, Puttaparthi, December 2014.

INVITED LECTURES DELIVERED BY IIST FACULTY

- **R V Ramanan.**, 'Interplanetary Mission Design and Optimization', Training Programme on 'Flight Dynamics and Optimization', (Two Lectures for Three hours), VSSC, Thiruvananthapuram, July 15, 2014.

- **R V Ramanan.,** 'Mars Orbiter Mission: Mission Design Challenges', Aero Club IIST, Thiruvananthapuram, September 17, 2014.

- **Dr. Pradeep Kumar**.," Introduction to two-phase flows and Possible Research Options" G.E.C Trichur, December 15, 2014.

- **Dr. Chakravarthy.,** 'Space environment and potential hazards for space craft' in the national workshop on advances in materials and processing at JNTU Kakinada, April 5, 2014

- **Dr. Chakravarthy.,** 'Materials for space applications' in the TEQIP-II sponsored one week faculty development programme on Advances in materials science and applications, Basaveshwara Engineering College, Bagalkot, June 24, 2014.

- **Dr. Chakravarthy.,** "Materials for rocketry and satellites" in the workshop "Introduction to space Technology for EME officers", at IIST, July 3, 2014.

- **Dr. Chakravarthy**., "Welding of Maraging steels" in National conference on Materials Science and Technology, IIST, July 30, 2014.

- **Dr. Chakravarthy**., "ISRO associated B. Tech Projects completed at IIST" in the workshop on " Collaborative Research in Materials and Manufacturing: An IIST –ISRO Perspective" April 29, 2014.

- **Dr. Chakravarthy**, 'National conference on Innovations in Science, Engineering & Technology' (ISET – 2015), Podhigai college of Engineering, March 27, 2015.

- **Shine S R**, 'The art of innovative teaching and research' for Engineering College teachers at College of Engineering, Thiruvananthapuram, March 12, 2015.

- **A Salih**, '*Hyperbolic Conservation Laws*: Invited lecture delivered in the Directorate of Technical Education (Kerala) sponsored Short Term Programme on "Introduction to CFD and Its Applications" at the College of Engineering , Thiruvananthapuram, December 11, 2014.

- **I R Praveen Krishna**. "Structural Dynamics Concepts" at STTP on Dyanmic analysis of elevated water tanks at Govt. College of Engg. Bartonhill, TVM, August 2014.

- **I R Praveen Krishna**." Introduction to Fluid Structure interactions" at Introduction of CFD and its Applications at College of Engg TVM, December 2014.

- **I R Praveen Krishna**. "Practical applications of Spectral theory" at National Seminar on Spectral Theory at Govt. College, Chavara, Kollam, January 2015.

- **I R Praveen Krishna**. "Computational Techniques in Structural Mechanics: (Linear and Nonlinear) at STTP on Computational Techniques for Engineering Analysis at RIT Kottayam, January 2015.

- **V S Sooraj**, 'Elasto-abrasive fine finishing of surfaces' in the workshop on 'Collaborative Research in Materials and Manufacturing: An IIST -ISRO Perspective', April 29, 2014.

- **B. S. Manoj**, "Internet of Things" at Mohandas College of Engineering, July 18, 2014.

- **B. S. Manoj**, "Cognitive Networking" at Barton Hill Government College of Engineering, Trivandrum, August 4, 2014.

- **B. S. Manoj**, "Distributed Wireless Networks," at Barton Hill Government College of Engineering, Trivandrum, August 4, 2014.

- **B. S. Manoj**, "Internet of Things" at KITES'2014 at Rajiv Gandhi Institute of Technology, Kottayam, August 17, 2014.

- **B. S. Manoj**, "SankatEdge: A Distributed Network Edge Infrastructure Framework for Disaster Recovery" at the third IEEE Global Humanitarian Technology Conference South Asia Satellite 2014 (IEEE GHTC-SAS 2014), Trivandrum, India, September 26-27, 2014.

- **B. S. Manoj**, "Hybrid Wireless Mesh Networks," Amrita University, Amritapuri, November 1, 2014.

- **B. S. Manoj**, "Distributed Wireless Networks," Government College of Engineering, Sreekrishnapuram, Kerala, December 17, 2014.

- **V.Seena**, "Nanomechanical Sensors": A Novel Sensor Platform in Environmental Sensing", National Workshop on Application of Wireless Sensor Networks and Robotics in Agriculture and Rural Development, Kerala State Planning Board, March 17-18,2015.

- **Sheeba Rani J.**, "Trends in VLSI Design" at PSR Engineering College, Sivakasi, Tamil Nadu on in the National Conference on Emerging communication Trends NCECT'15, March 28, 2015.

- **Priyadarshan H.**, "Classical and Digital Control with Matlab, IIST Computing Control Inputs for State Transfer, June 18, 2014.

- **Priyadarshan H.**, "State Transfer problem in Linear Dynamical System, Control System Design 2014, IIST, December 18, 2014.

- **Priyadarshan H.**, "Tech Fare –Satellite Subsystems, Sandur Polytechnic, Sandur, September 20, 2014.

- **Priyadarshan H.**, "Perspectives on Research and its Methodology, Mtech Orientation Program, Mohandas Engineering College, August 25, 2014.

- **Priyadarshan H.**, "Introduction to Space Technology, A summer course for Military, IIST, July 5, 2014.

- **Priyadarshan H.**, "Advanced C programming concepts, A Refersher course for C-programming, IIST, May 10, 2014.

- **Priyadarshan H.,** "Coordinate Transformation, Nano-satellite Workshop, IIST, July 10, 2014.

- **N. Selvaganesan**, "Ensuring Model Matching Using Sinusoidal Sweep Command' IEEE-ICACCT", Ramanathapuram. May 10, 2014.

- **N. Selvaganesan**., "Sweep Command For Nonlinear System Identification", IEEE-ICCICCT, NI University, July 11, 2014.

- **N. Selvaganesan .,** "Industrial Automation- Overview", IPRC, Mahendragiri , July 21, 2014.

- **N Selvaganesan**.,"System identification conventional to intelligent", ISTE – Advance control theory for electrical engineering, CIT, Coimbatore, October 17, 2014.

- **N. Selvaganesan**, " Controller design using frequency domain technique", Control System Design for Post Graduates, Faculties, and Scientists/Engineers, IIST, 2014

- **N. Selvaganesan.**, "Frequency response analysis", Indian Naval Academy February 7, 2015.

- **K.Joseph.,** "New materials in chemistry" sponsored by Department of CollegiateE, Govt.of Kerala, Govt.College, Kattappana, Idukki, November 28, 2014.

- **K.Joseph,** National seminar on Perspectives in Material Science -2014 sponsored by KSCSTE, Marthoma College of science & Technology Chadayamangalam, November 6, 2014.

- **K.Joseph,** National Seminar on Nano chemistry & Nano Biotechnology sponsored by UGC, St.Thomas College, Pala, October 9, 2014.

- **K.Joseph,** "Emerging trends in Material Science -2014" (UGC Sponsored), Sree Narayana College for Women, Kollam, September 30, 2014.

- **K.Joseph,** "Seminar on Environmental Management", BCM College for Women, Kottayam, July 24, 2014.

- **K.Joseph,** "Emerging Materials: Characterization Application -2014" organized by NIT, Durgapur, CSIR-CGCRI, Kolkata, December 4, 2014.

- **GomathiN.,** "Cold Plasma for Surface Modification", in Department of Chemical and Biomedical Engineering, FAMU-FSU, College of Engineering, Tallahassee, Florida, June 4, 2014.

- **Gomathi N.,** "National seminar on Advanced Polymers" organized by Mahatma Gandhi University College of Engineering, Thodupuzha, on October 28, 2014.

- **Honey John., "**Polymer Nanocomposites for Space Applications" in a 'National Seminar on New Materials & Nanotechnology' [NSNMN-2015] organized by Heera College of Engineering and Technology, Thiruvananthapuram, January 17, 2015.

- **Honey John.,"**Polymer Nanocomposites" in a Refresher Course conducted by 'UGC-Academic Staff College', University of Kerala, November17, 2014.

- **Jobin Cyriac.,**"Introduction to Mass Spectrometry" XXVII Refresher Course in Chemistry, Academic Staff College, University of Kerala, Kariavattom, March 9, 2015.

- **K. Prabhakaran.,** "Novel Approaches in Processing of Foam Materials for Aerospace Applications" in National conference on redefining the horizons of Metallurgy/ Materials: Focus on Automotive, Aerospace; Defense and Energy organized by Indian Institute of Metals in connection with 52nd at College of Engineering, Pune, November 12-15, 2014.

- **J. Mary Gladis.,** "Prospective materials for energy storage systems" in the National conference on Advances in Materials (AIM-2014) organized by University College of Engineering, Nagercoil, Tamil Nadu, October 7, 2014.

- **K.G. Sreejalekshmi.,** "Combinatorial Chemistry" during XXVII Refresher Course in Chemistry, Academic Staff College, University of Kerala, Kariavattom, March 4, 2015.

- **K.G. Sreejalekshmi,** "Dynamic combinatorial libraries and drug design" during UGC sponsored National Seminar (REACS-2015) at All Saint's College, Thiruvananthapuram, January 9, 2015.

- **K.G. Sreejalekshmi.,** "Dendrimers in targeted drug delivery applications" during DBT sponsored lecture series organized by Department of Chemistry, St. Alberts College, Ernakulam, November 27, 2014.

- **K.G. Sreejalekshmi.,** "Dendrimers as tunable nanostructures for regenerative medicine and targeted drug delivery" during SPSI-KU sponsored two-day National Seminar on Frontiers in Polymers and Advanced Materials organized by Department of Chemistry, University of Kerala, Kariavattom, November 5, 2014.

- **K.G. Sreejalekshmi.,**"Combinatorial Chemistry an introduction" during KSCSTE sponsored two-day National Seminar on "Green Practices in Chemistry" organised by Mar Ivanios College, Thiruvananthapuram, October 9-10, 2014.

- **Mahesh S.**,"Functional Nanostructures: Unravelling the Nano world through STM and AFM", **SPSI**, Trivandrum Chapter, June 27,2014.

- **Jagadheep D. Pandian**, "High-mass star formation: the early phases", Research in Astronomy: Opportunities in Astronomy: Opportunities and Challenges at Nirmala College, Muvvattupuzha, December 9, 2014.

- **Resmi L.,** Plotting with matplotlib", in Python Workshop, IIST, July 26, 2014.

- **L Resmi,** B. Zhang, "Reverse shock emission in gamma ray bursts" International conference on women in physics, Waterloo, Canada, August 2014.

- **Resmi, L.**, "Progenitors of Short Duration Gamma Ray Bursts", IRC conference on research in astronomy, Nirmala college Muvattupuzha, December 9, 2014.

- **Resmi, L.,** "Physics of Astrophysics". National Seminar on Modern Trends in Physics, Univ. college, Trivandrum, January 23, 2015.

- **Resmi, L.**, "Gamma Ray Bursts: Progress & Prospects". Workshop on Transients, NCRA, Pune. February 16, 2015.

- **Resmi, L.**, "Women in Science: Worldwide initiatives". Gender Issues in Astronomy, Special session in 33rd ASI meeting, NCRA, Pune, February 19, 2015.

- **Resmi, L.**, "Implications of Gravitational Wave Observations for short GRBs". Astronomy, Cosmology & Fundamental Physics with Gravitational Waves, CMI, Chennai, March 2, 2015.

- **Resmi, L.**, "Wonders of Cosmos", Public talk at Cafe Sceintifique, Alliance Francaise, Trivandrum, March 12, 2015.

- **Subrahmanyam, G.R.K.S.,** Introduction to Artificial Neural Networks" at Faculty development program on soft computing techniques at TKM Institute of Technology, Kollam, Kerala, June 16, 2014.

- **Samir Mandal.**, Radiative Properties of Accretion Disc around Black Holes at IIT Guwahati, May 19, 2014.

- **Anand Narayanan.**, "Physical Conditions of Baryons at Low Redshift", Research in Astronomy: Opportunities in Astronomy: Opportunities and Challenges at Nirmala College, Muvvattupuzha, December 9, 2014.

- **Anand Narayanan**., "Super-Massive Black Hole at the Galactic Center", invited talk at the National seminar on Recent Trends in Black Hole Physics held at St. Peter's College, Kolenchery, August 13, 2014.

- **Babitha Justin**, Inaugurated the English Department union activities and delivered Invited lecture in the Dept of English and Research Centre, St Teresa's College. Ernakulam, Symposium on *Glimpses Into Travel Narrative,* July 31, 2014.

- **Babitha Justin.**, Invited lecture on Travel Narratives: Exploring New Frontiers. Maharajas's College, Ernakulam, December 3, 2014.

- **Babitha Justin.**, Invited lecture on Women and nation Building, MTT training college two day UGC sponsored National Education Meet" Mapping New Terrains for 21st century women", December 11, 2014.

- **Babitha Justin.**, Invited Lecture on Women and Travel Literature., St Joseph's College Alleppey. March 6, 2015.

- **Babitha Justin.**, Invited lecture on Feminism On National Conference on Theory. 19th and 20th March in Madurai College, Madurai, March 19-20, 2015.

- **Lekshmi V Nair.,** Organizing committee chairperson and lead talk for the National Seminar on "Culture, Media and Society" at Carmel College, Mala, December 12-14, 2014.

- **Lekshmi V Nair.**, Resource person for the Two Week "Capacity Building Programme", Department of Management, Periyar University, Salem, April 17- 30, 2014.

- **Lekshmi V Nair**., Chief resource person for the training on "PLA – Tools and Applications at Loyola College", Loyola College, Chennai, March 23, 2015.

- **Lekshmi V Nair.,** Chaired a Session on National Seminar on "Migration, Change and Development". Department of Sociology, University of Kerala, March 23, 2015,

- **Ravi, V.**,"Talk on Quantitative Techniques, DC School of Management, Kazhakuttam, Trivandrum, February 13, 2015.

- **Shaijumon C S.,** "National Budget Analysis", Invited Special Lecture, Department of Economics, VTM NSS College, Dhanuvachapuram, March 11, 2015.

- **Shaijumon C S.**, *"National Budget: A Macroeconomic Analysis",* Invited Lecture, Department of Economics, MG College, Trivandrum, March 17, 2015.

- **Raju K George.,** Modelling week and Study Group Meeting on "Industrial Problems" at M.S. University of Baroda, Vadodara, March 24-27, 2015.

- **Raju K George.,** in the Advanced Level Workshop on "Computational Methods for Control on Problems" at Mar Ivanios College Trivandrum, March 16-21, 2015.

- **Raju K George.,** in the International Conference on "Mathematical Modeling and computer Simulation" at IIT Madras, December 9, 2014.

- **Raju K George.,** in the National Conference on "Mathematical Modeling & Soft computing" at Vadakara, Kerala, September 25-26, 2014.

- **Raju K George.,** in the Analysis seminar at CUSAT Cochin, April 22, 2014.

- **Raju K George.,** in the Analysis Seminar on "Controllability of Linear and Nonlinear systems "at IISER Pune, April 21, 2014.

- **Raju K George.,** "YOUNG TALENT NURTURE – 2014" programme held in the Department of Mathematics at IIST, Thiruvananthapuram, May 13-25, 2014.

- **C. V. Anilkumar.,** invited lecture entitled, "The Banach fixed point theorem and its application'' in a 3 day National Conference on Recent Trends in Pure and Applied Mathematics at Mar Ivanios College (Autonomous), Thiruvananthapuram, Kerala; sponsored by UGC; August 21-23, 2014.

- **C. V. Anilkumar.,** Resource person in Refresher course on Mathematics organized by UGC- Academic staff College conducted from September 17 to October 7, 2014 and delivered 4 lectures on "Linear and Nonlinear Dynamical Systems", September 29 - October 1, 2014.

- **N. Sabu.,** Series of lectures on "Weak formulation of partial differential equations" at IISER Trivandrum , June 2014

- **N. Sabu.,** A course on Optimization at IISER Trivandrum from August-December, 2014

- **N. Sabu.,** Invited as an expert in the KVPY interview held in IISER Trivandrum in February, 2015

- **K. S. S. Moosath**, "Affine Spaces and Exponential Family ", National Conference on Recent Trends in Applicable Mathematics, , Department of Mathematics, Bharata Mata College, Kochi, September 18- 20, 2014.

- **K. S. S. Moosath**, "Geometry of Curves and Surfaces", National seminar on Analysis and PDE, Department of Mathematics, PTM Govt. College, Perinthalmanna, September 29-30, 2014.

- **K. S. S. Moosath**, "On Hyperbolic Geometry", National seminar on Analysis and Geometry, Department of Mathematics, Govt. Brennen College, Thalassery, October 31,2014.

- **K. S. S. Moosath**, "Variational Methods – A Part of Geometric Analysis ", National seminar on Geometric Analysis, Department of Mathematics, N S S College, Nemmara, December 2-3, 2014.

- **K. S. S. Moosath**, "Geometry of Level sets ", National Workshop on Multivariable Calculus and Applications during, Department of Mathematics, Govt. College, Kasaragod, December 2-5, 2014.

- **K. S. S. Moosath**, "On Distance", DST Inspire Internship during, S N College Kannur, December 23-28, 2014.

- **K. S. S. Moosath**, "Metric Spaces ", YTN Programme 2014, Dept. of Mathematics, IIST.

- **Sarvesh Kumar.,** On discontinuous finite volume element methods and its application in oil reservoir Studies, University the Concepcion, Chile, June 17, 2014.

- **Sarvesh Kumar., T**wo lectures on finite element methods for control problems in the workshop on "Computational methods for control problems, held at Mar Ivanios College Trivandrum, during March 16-21, 2015

- **Kaushik Mukherjee., T**alks in "YOUNG TALENT NURTURE – 2014" programme held in the Department of Mathematics at IIST, Thiruvananthapuram during May 13-25, 2014.

- **Natarajan.,** Talks in the National Workshop on Scientific Computing- Today's Challenges, at SIET College, Chennai, February 7, 2015.

- **Prosenjit Das**,, "On a Cancellation problem and A^2 fibration problem". IIST, Trivandrum, January 23 - 30, 2015.

- **Prosenjit Das**, CAAG-2015,, "On cancellation of variables of the form bT^n-a over affine normal domains"., IIT Guwahati, February 5-9, 2015

- **Prosenjit Das**,, Talk "On a Cancellation Problem". Indian Statistical Institute, Kolkata, February 10, 2015

- **K Sakthivel.,** Optimal Control Theory: Maximum Principle and Dynamic Programming, National Conference on PDEs and Applications, Bharathiar University, Coimbatore, March 26-27, 2015.

- **K Sakthivel.,** Three Lectures on Integral Theorems on Vector Calculus, Young Talent Nurture Program (YTN-2014), Indian Institute of Space Science and Technology (IIST), Trivandrum, May 13-25, 2014.

- **Sumitra S Nair.,** Applications of Machine Learning in the field of Biomedical Engineering, National Seminar on Transforms and Medical Data Interpretation, Organized by Department of Biomedical Engineering, Sri Ramakrishna Engineering College, Coimbatore, February 18, 2015.

- **Sumitra S Nair.,** Applications of Machine Learning in the field of Image Processing, Short term training programme on Digital Image Processing, Organized by Department of Computer Science and Engineering, Rajiv Gandhi Institute of Technology, Kottayam, January 5 – 9, 2015.

- **S. Murugesh**, Set of six lectures at the Special Summer School in Quantum Mechanics for College/University teachers, Academic Staff College, Kannur University, Kannur, April 28- May 17, 2014.

- **C. S. Narayanamurthy**, "Wave propagation analysis through Pseudo Random Phase Plate(PRPP) using classical Interferometry", International Conference on Opto-electronics and Applied Optics, IEM OPTRONIX 2014, Salt Lake, Kolkata, December 17-18, 2014.

- **C. S. Narayanamurthy**, "Pockel's effect measurement using geometric phase interferometers", XXXIX Optical Society Of India's International Conference on Optics and Photonics (ICOP-2015), Department of Applied Optics and Photonics, University of Kolkata, Kolkata, February 20-22, 2015.

- **C. S. Narayanamurthy**, "Laser Holography", Workshop on Lasers and Applications, PSGR Krishnammal College for Women, Coimbatore, January 12-13, 2015.

- **C. Sudheesh**, Set of six lectures at the Special Summer School in Quantum Mechanics for College/University teachers, Academic Staff College, Kannur University, Kannur, April 28- May 17, 2014.

- **Jayanthi Sundaresan**, "Dynamic Deuterium Magic Angle Spinning NMR to study the local mobility of molecules at the inner surface of mesoporous materials", National Chemical Laboratory, Pune, October 17, 2014.

- **Naveen Surendran**, Set of six lectures at the Special Summer School in Quantum Mechanics for College/University teachers, Academic Staff College, Kannur University, Kannur, April 28- May 17, 2014.

CONTENT PRODUCTION FOR E- PAATSHALA

- **Babitha Justin.**, 'Cell Phone Culture': For 'Instructional Material for Educational Purposes. Epathsala (2014)

- **Babitha Justin.**, Documentary on Body language (2014)

- **Babitha Justin.**, Documentary " Homing Pigeon: A Student's Life in IIST (2015)

- **Babitha Justin.**, Documentary: Interview Skills (2015)

RECENT POPULAR PUBLICATIONS

- **Shaijumon C S.** Expectations of the National Budget, GK&Current Affairs, Mathruhumi Publishers, July 2014.

- **Shaijumon C S.** Budget 2014-15: Minimum Government and Maximum Governance, GK&Current Affairs, Mathruhumi Publishers, August 2014, p 16-24.

- **Shaijumon C S.** BRICS New Development Bank: Historical Forteleza Declaration, Mathrubhumi GK&Current Affairs, Mathruhumi Publishers, September 2014, p 4-7.

- **Shaijumon C S.** 125 days of NDA Government, Mathrubhumi GK&Current Affairs, Mathruhumi Publishers, October 2014, p 20-25.

- **Shaijumon C S.** Public Sector Disinvestment, Mathrubhumi GK & Current Affairs, Mathruhumi Publishers, November 2014.

STUDENT ACTIVITIES

DHANAK 2014

The seventh edition of Dhanak was organized in a grand way from October 17-20, 2014 *and* was inaugurated by Dr Bina Paul. Dhanak has come a long way from an intra collegiate cultural event to a nationwide fest. The festival displayed the artistic flair and creative aptitude of students in 33 different cultural activities. Dhanak 2014 brought together 431 students from 32 leading institutes like IITs, NITs, ICSERs and other universities and colleges to IIST to celebrate the arts- music, theatre, dance, poetry, film, painting, sculpture and more. Rs. 1,76,900 were given as prize money in these three days of fun, excitement and camaraderie of Dhanak.

CONSCIENTIA 2015

The seventh edition of Conscientia, the annual technical festival, was organized in IIST from March 19 - 22, 2015. An activity entirely planned and managed by students of IIST with technical guidance from the Technical Committee. Conscientia offers a platform for the students to demonstrate their scientific and technical ability to their contemporaries. It motivates them to pursue the path of science and technology with newer vigour and enthusiasm.

In the 2015 edition, the event hosted students from more than 40 colleges across the country with about 572 outside participants. Conscientia 2015 was inaugurated by Chief Guest, Shri. A. S. Kiran Kumar, Chairman, ISRO and Secretary, Department of Space. Dr. Mohanlal, Director, IISU was the Guest of Honour at the event. Several events from Robotics, Astronomy, Mechanical Engineering, Electrical Engineering, Computer Science and many online events were organised by the students. For the first time a special event was organized for the students from schools as well. Prizes worth more than Rs.3,00,000 were given away to performing students. Cansat Satellite Design workshop by Xovian, Tricopter Design by Aerotrix and Raspberry Pi 2 and IoT workshop by Inventrom Electronics galvanised the fest with large enthusiastic participation.

QC FIXION

The 2015 edition of IIST's Annual Quizzing Contest, QC-FIXION was held on 1st March at Mascot Hotel, Trivandrum. The event was a grand success and with around 30 teams participating from all around Trivandram, Kochi and some all the way from IIT-M. Prof. P. Vijay Kumar was the Quizmaster for the event. KTDC and Mascot Hotel warmly hosted the quiz as our Hospitality Partners. The Prelims was a written round consisting of 20 questions which had to be answered in 30 minutes. Six teams made it to the final which was an extravaganza of questions from all fields, including audio-visuals. We also witnessed an enthusiastic audience, answering nearly all questions thrown at them. The winners were Prabodh Katti and Sourajit Debnath from IIST. Haris A and Vaisak Viswanath, from University of Kerala and Maharajas College respectively, were the runners-up. The team of Roshan Zain and Surya Girish from University College Trivandram and Government Engineering College respectively, were the second runners-up.

FRESHER'S DAY AT IIST

The second year IISTians organized a Fresher's Day to welcome the first year students to the campus. An orientation about the various clubs and an ice-breaking session followed.

SPIC MACAY STATE CONVENTION 2015

The state convention of SPIC MACAY was hosted in IIST from Feb 6-8, 2015. The program was inaugurated by the renowned director, Sri Adoor Goplakrishnan. The other eminent personalities who addressed the gathering were Dr KS Dasgupta, Director, IIST and Dr. Kiran Seth. President, SPIC MACAY. The three days saw the transfixing music in the violin by

Sri. T N Krishnan. pure, ancient and deeply spiritual art form such as Theyyam, Ottamthullal, Bharathanatyam performance by Malavika Sarukai and enthralling musical night by Padma Vibhushan Pt Hariprasad Chaurasia on the flute. Around 100 students from different schools and colleges of Kerala participated in the 3 day workshops on Hindustani Vocal by Abradita Banerjee, Martial Arts by Sri N Rajasekharan, Bharatanatyam by Smt Rajasree Warrier, Carnatic Vocal by Ajith Namboothiri, Kathakali by Shri Nelliyodu Vasudevan Namboothiri, Warli Paintings by Shri Rajesh Chaitya Wangad, Cheriyal Paintings by Nakashi Family and Sawdust making by Smt P Padma.








CLUBS AT IIST

The major clubs functioning at IIST are

- Film and Music club
- Dance club
- Quiz club
- Photography club
- Performance and digital arts club
- Food for Thought Forum
- Panacea – Club for Outreach Activities
- Aero Club
- Robotic club
- Eco club
- Astronomy Club

Programmes / Workshops are organized regularly for the students under the auspice of these clubs.

ANNUAL SPORTS MEET

Sports council, IIST has regular programs for training students in various sports activities. Various sports events are organized regularly. Apart from this our students participate in various national level tournaments in India.

Students participated in the following national events during the previous year.

1. South zone inter-university cricket tournament, held at Anna University, Tamil Nadu in November 2014.
2. Zest championship, College of Engineering Pune, Maharastra in December 2014. Our students participated in football, table-tennis, badminton and basketball events.
3. Rovers cup championship (Cricket), Manipal University, Goa, January, 2015.

Apart from these, IIST annual sporting event and various inter-hostel competitions were also held.

1. 8th Annual Sport Day of IIST was held on 28th February, 2015 at L.N.C.P.E. Karyavattom. Students, staff and faculty participated in this athletic competition
2. Inter-house tournaments: Students are divided equally into 5 houses, Akashganga, Devyani, Sharmista, Krithika and Saptarishi. Inter-house tournaments were held in football, cricket, basketball, badminton, chess, table-tennis, caroms and volleyball.
3. Faculty student cricket tournament.

4. Staff-faculty cricket tournament was held in January 2015. 8 teams from different departments have participated.
5. Badminton tournament for staff and faculty was held on June 2015.

Other activities such as Training for Cricket for students, yoga coaching, swimming and martial arts coaching for the students is organized for students and staff.

The sports council is also committed to improving sports facilities at the Institute. During the last year new courts for badminton (1 nos) and volleyball (2 nos) were established.

INDUCTION (ORIENTATION) PROGRAMME

Department of Humanities offers a six day intensive programme for the first semester students. The objective of this workshop was to foster dynamic thinking essential in the current global scenario. Some of the topics covered include *Self Esteem and Motivation*, *Positive Attitude, Goal Setting,* and *Creativity*. The program had classroom sessions and outdoor training activities.

NEURO-LINGUISTIC PROGRAMME (NLP)

An NLP programme is organized by Department of Humaities for the first semester students. A three day orientation programme for individual groups of students was handled by the "Mind Masters" fame Dr. Abraham Abraham. This programme is structured in such a way as to guide them properly through proper mind mapping, to identify their talents and hidden potentials, to understand their positives and negatives, and to improve their mental abilities and skills

OTHER ACTIVITIES

CULTURAL AND NATIONAL FESTIVALS

All national and cultural festivals such as Independence Day, Republic Day, Onam, Holi, Dusshera, Raksha Bandan, Ganeshotsav, Christmas, Id and Diwali were celebrated with all its zeal in IIST.

ONAM CELEBRATIONS

Onam the national festival of Kerala was celebrated with all its zeal in IIST on September 12th 2014. It saw a get together of 700 students, 100 faculty members and more than 200 staff of IIST as a family and tried to inculcate a Spirit of harmony and brotherhood. The program took off with the competition of intricately decorated athapookalm from 7.30am, followed by onam procession, onam message, exotic and traditional cultural programs, sumptuous onam feast and onam games. Shri Rishi Raj Singh, one of Kerala's most celebrated IPS officer delivered the Onam message.

OUTREACH ACTIVITIES

'Panacea' is the official committee for social outreach activities at IIST. Remedial coaching was given on a continuous basis to the tribal students of Njaruneeli Tribal Residential School. The students of IIST have also been regularly visiting orphanages and helping the students out there in their studies. The students from these orphanages were also brought to IIST during the tech fest. Arranging blood donation campaign, visiting old age homes, donating clothes and food for the needy and poor in the society are also part of their activity. All festivals are being celebrated with the orphans and the elderly who are left alone in the old age homes. The students of IIST have been donating generously for these social cause and have also been arranging dresses, toys, bags and books for the kids in the orphanages and for the elderly in the different old age homes.

CAMPUS INFRASTRUCTURE

LABORATORY FACILITIES

IIST maintains the following laboratory facilities for teaching and research purposes.

Department of Aerospace Engineering

Major laboratory facilities eatablished under department of Aersoapce Engineering include;

- Engineering Workshop
- Strength of Materials Lab
- Engineering Drawing Lab
- Thermal and Propulsion Lab
- Computer Aided Design and Analysis Lab
- Manufacturing Processes Lab
- Heat Transfer Lab
- Flight Mechanics Lab
- Material Characterization Lab
- Aerospace Structures Lab
- Aerodynamics Lab
- Fluid Mechanics Lab
- Metrology and Computer Aided Inspection Lab
- Advanced Propulsion and Laser Diagnostics Lab (Centre of Excellence)
- Cryogenics lab

There are a number of experiemental test rigs/setups developed as a part of the research/projects, associated with these labs, during the period 2014-15. In addition, facilities like micro Raman spectrometer and 120 litre/Day capacity fully automatic liquid nitrogen plant, etc. were also installed successfully.

Department of Avionics

- Analog Electronics Lab
- E-Cad Lab
- Digital Electronics Lab
- RF and Microwave Lab
- Image processing and Computer Vision Lab
- Microprocessors and Microcontrollers Lab
- Control System Lab
- Power Electronics Lab
- Measurement and Instrumentation Lab
- Nano-Satellite Lab
- Virtual Reality Lab (Centre of Excellence)
- VLSI and Microsystem Lab & Micro/Nanosystem Characterization Lab

RF and Microwave Lab is equipped with PCB prototyping machine which can provide printed copper lines up to 50 micron. This facility can be used to design microwave circuits and antennas. VLSI and Microsystem Lab & Micro/Nanosystem Characterization Lab was upgraded with new equipments such as Cascade EPX 150 Triax / PM8 Probe stations, B1500 Semiconductor Parametric Analyzer, SMUs, Olympus Semiconductor Microscope, Polytec MSA-500 MEMS Microsystem Analyzer and Nanoindenter have been installed and are being used by PG students. These labs also have workstations for 3D device and process simulation tools (Coventor Ware, MEMS+, Synopsis Sentaures TCAD 3D, Silvaco ATLAS and ATHENA, and COMSOL Multiphysics) for MEMS and Nanoelectronic devices.The VR lab facility is augmented by including Microsoft Kinnect device for 3 D rendering and point cloud data analysis.

Department of Chemistry

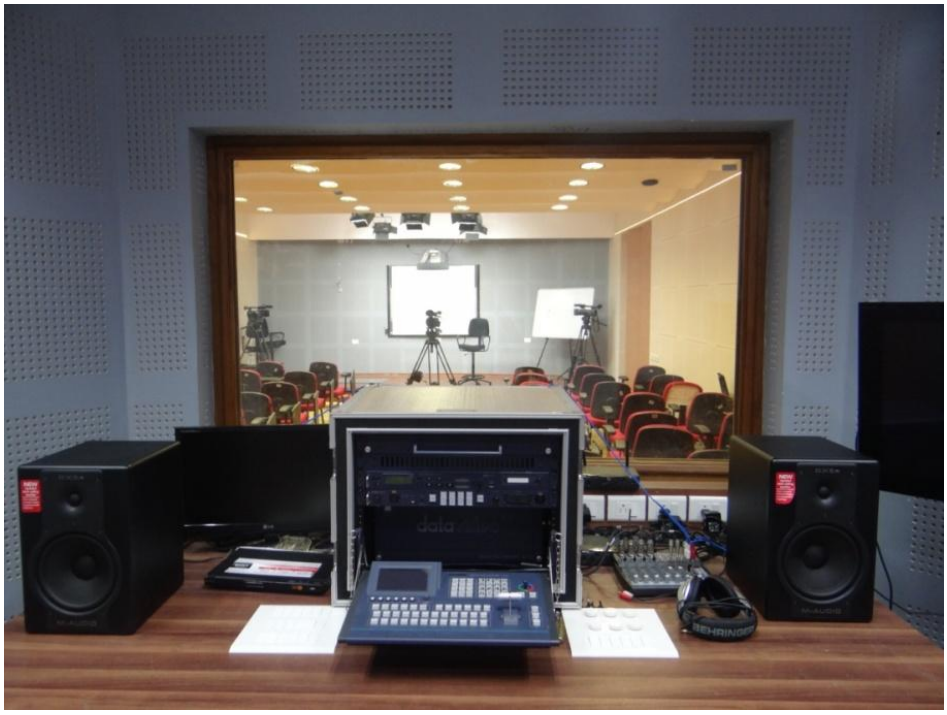
- General Chemistry
- Organic Chemistry
- Polymer Technology
- Chemical Engineering
- Polymer Processing
- Inorganic Chemistry
- Material Characterization
- Centre for Advanced Reaserch in Nanoscince & Technology (Centre of Excellence)

Department of Earth and Space Sciences

- IIST Astronomical Observatory
- Atmospheric Science Lab
- Geology Lab
- Remote Sensing Lab

Department of Humanities

- Communication Lab
- Audio Visual Lab

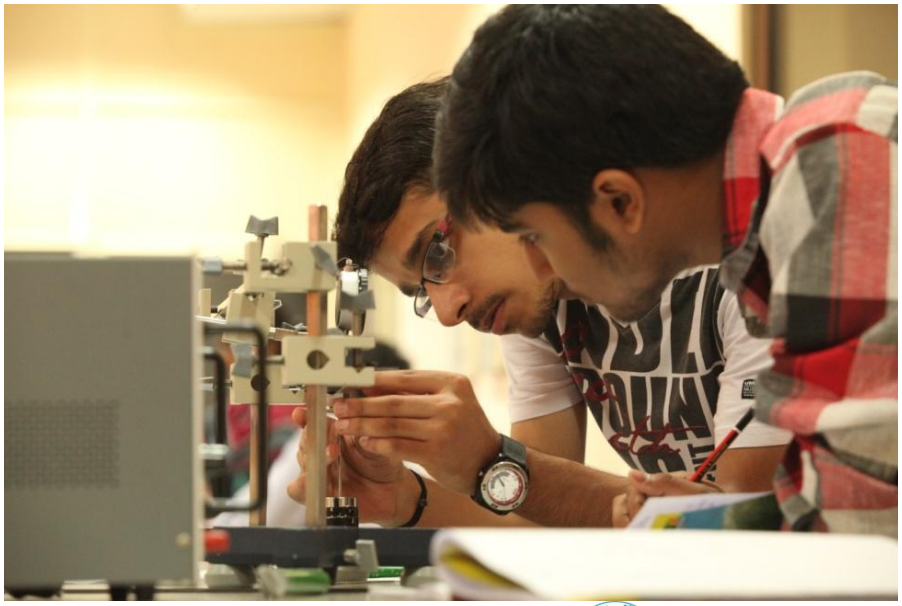


Department of Mathematics

- Programming Lab
- Data Centre and High Performance Computing Lab

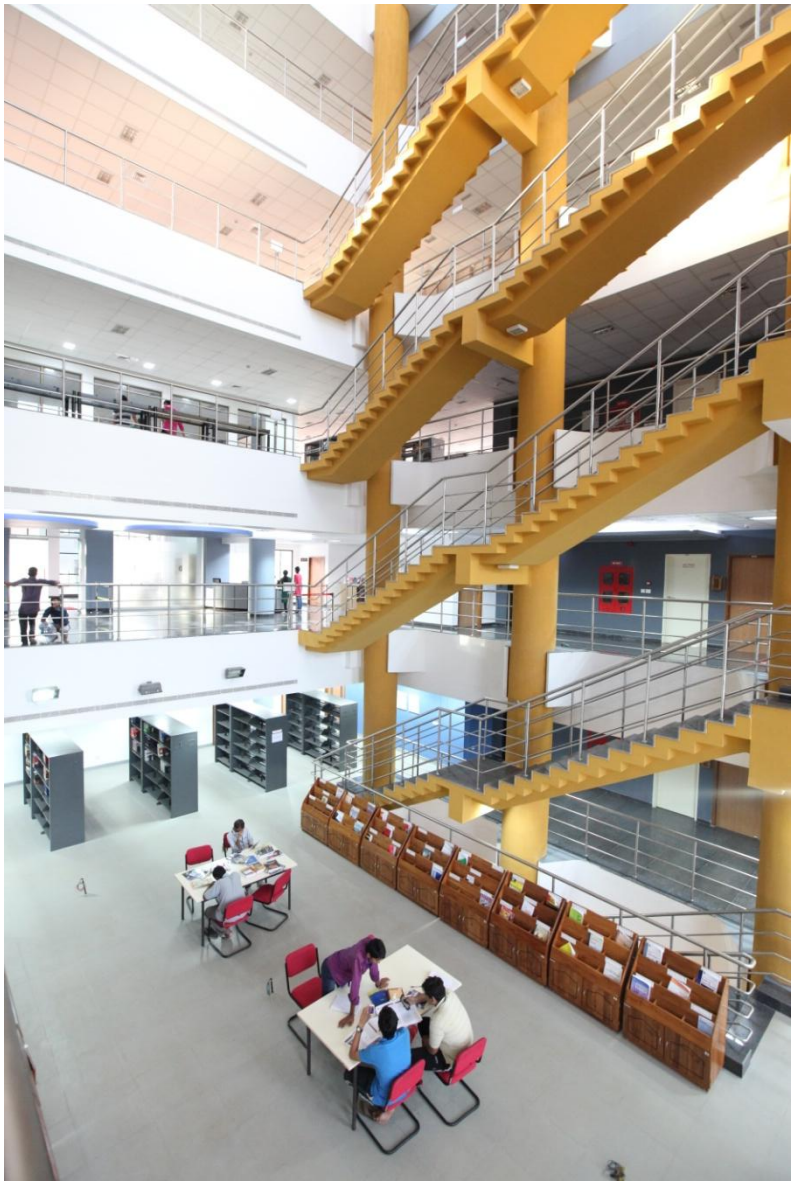
Department of Physics

- Applied and Adaptive Optics
- Atomic and Molecular Physics
- Computational Physics
- General Physics
- Lasers and Photonics
- Modern Physics
- Optics
- Solid State Physics



LIBRARY & INFORMATION SERVICES

The IIST Library provides an enjoyable learning experience with optimum ambience for reference, study, learning and research during and after normal working hours and on holidays. The IIST Library provides i. information resources through a carefully developed and balanced collection of books, journals and non-conventional resources, and ii. Seamless access to journals, data bases and documents.



During the report year (2014 – 15) library operations and facilities were getting stabilized in the permanent building. Remarkable progress has been made in facilities and services.

Based on usage and recommendations of academic community the number of online resources has been normalised in 2015. Now connectivity to 14 e-resources, 13 full text and one bibliographic database is made available in the campus network. These resources included ACM Digital Library, AIAA, AIP, American Meteorological Society, APS, ASME, Cambridge Online, IEEEXplore Digital Library, JSTOR, MathSciNet, Optic Infobase, Oxford Journals, Royal Society of Chemistry, and Science Direct. The usage of online resources is shown in figure 2.

In addition to the regular Library and Information services, Book Bank service was also being provided to ensure basic study materials to students on long term loan basis. The book bank system has completed another year successfully. Students borrowed 7962 volumes from Book Bank during the year.

The library operations are fully computerised and the Online Public Access Catalogue (OPAC) and e-resources were accessible from anywhere in the campus 24 hours a day and 7 days a week. The library portal provided easy access to e-resources.

All the 85 print journals were renewed. The resource position of the Library is given in table below.

Table 1: Library Resources at a Glance

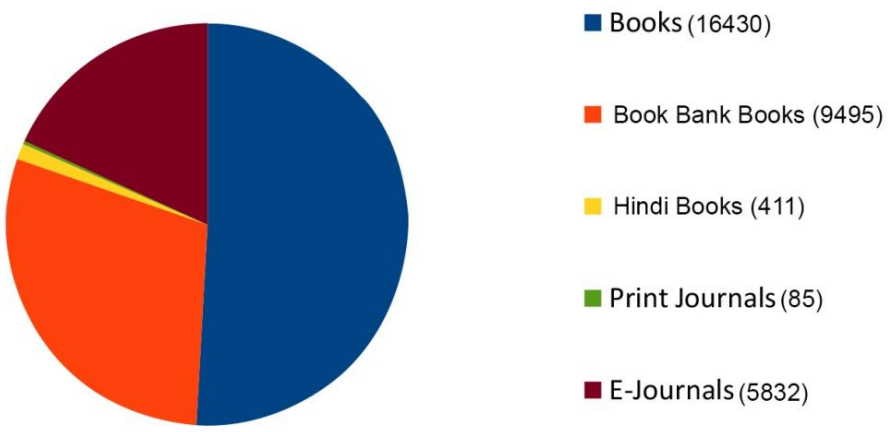


Fig 1: Library Resources at a Glance

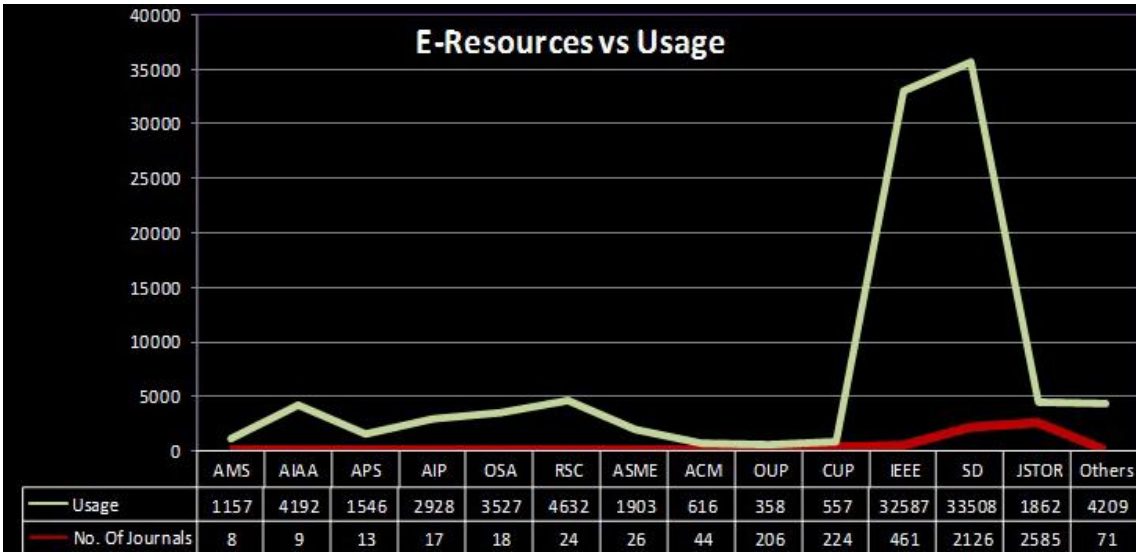
The reprographic Facility, equipped with heavy duty high speed digital printers could meet almost all the printing requirements of the institute in house. The reprography was augmented with a graphic design facility equipped with software tools. The major printing works carried out during the year include Surabhi Magazine, Sounding Rocket: Students' Newspaper, Drishti Kone, Annual report, placements brochure, workshop brochures, course materials for workshops / conferences, project reports, Ph.D theses, poster, invitation cards etc. Two lecture notes were also published for the benefit of students. More than 8.5 lakh copies were taken in the report year.

Binding facility is another heavily used facility in IIST where 7300 volumes were bound in the report year. This facility was augmented with a semi-automatic paper cutting machine. The Reprographic Facility and the Binding Facility together with the newly set up Graphic Design Facility powered by suitable software packages continued to cater to the publishing needs of the Institute.

The Library Committee, the policy making body, met 4 times to review progress. The third revision of the procedure manual of the Library was approved by the Committee.

During the report year a workshop on LaTex attended by students, faculty members and staff was successfully organised. A training programme was arranged for Library Professionals. The stock verification was organised in January 2014 confirmed that loss of books well within permitted bounds.

In order to promote the use of online resources a series of (Resource Awareness Programmes (REAP) were organised in the Institute.



	AMS	AIAA	APS	AIP	OSA	RSC	ASME	ACM	OUP	CUP	IEEE	SD	JSTOR	Others
Usage	1157	4192	1546	2928	3527	4632	1903	616	358	557	32587	33508	1862	4209
No. Of Journals	8	9	13	17	18	24	26	44	206	224	461	2126	2585	71

Fig 2: Usage of E-resources

AMS: American Meteorological Society, **AIAA: American Institute of Aeronautics and Astronautics, APS:** *American Physical Society,* **AIP:** American Institute of Physics, **OSA:** The Optical Society, **RSC:** Royal Society of Chemistry, **ASME:** *American Society of Mechanical Engineers, ACM: Association for Computing Machinery,* **OUP:** Oxford University Press, **CUP:** Cambridge University Press, **IEEE:** Institute of Electrical and Electronics Engineers, **SD:** Science Direct

Computer Systems Group has set-up infrastructure for computing, networking, tele-communication, multi-media services and security-surveillance in IIST. In-house capabilities have been developed to undertake uninterrupted op eration and routine maintenance of these to ensure 24x7availability of various information systems and network services in the campus. It caters to the routine needs of more than 1500 students and staff-members having 1800 personal computers and mobile devices distributed amongst 20 buildings across the campus. About 1100 'Bring-Your-Own-Devices' (BYOD), like laptop, tablet and smart-phone computers, owned mostly by the students, are facilitated roaming wireless internet services in all hostels and academic blocks on round-the-clock basis.

About 100 workstations installed with various scientific and engineering softwares are maintained in the laboratories and academic blocks.

CSG also maintains a 24-seat Internet Laboratory as a common-facility for use by students in the Academic blocks, a 4-seat internet facility in the 1st year Undergraduates Hostel and 2-seat facility in the 1st year Lady Undergraduates Hostel.

High Performance Computing (HPC) Cluster Infrastructure in the institute consists of a 3TFLOPS Intel cluster, also maintained by CSG as a common facility, made available to students through the campus network. A 10-seat HPC Workstation Laboratory is being maintained by CSG as a common-facility, and is being made available round-the-clock for use by students. Resident scholars have been facilitated round-the-clock physical-access to the work-stations in the HPC facility controlled through biometric access systems.

Networking Infrastructure of the campus rests on an OFC backbone interlinking core-switches and distribution switches of various buildings and blocks. Network services are made available to all academic and administrative offices and facilities through more than 280 network equipments monitored and maintained round-the-clock. OFC-based gigabit network connectivity and roaming WiFi services have been extended in the year 2014-15 to the newly built Library and Administrative blocks and to Security and Canteen buildings, thus making the campus fully networked with wired and wireless connectivity. Wireless Network services are made available on a roaming basis, and students are permitted use of BYOD in all academic and hostel buildings inside the campus to access these services.

Internet Services using 1000Mbps link from National Knowledge Network (NKN) of the MHRD, Government of India, have been made available round-the-clock at all offices and academic and residential locations in the campus. Additional 10 Mbps Internet link from BSNL facilitates web-hosting and also backs-up the 1000Mbps link in case of network-outages. 'Roaming' wireless internet services have been introduced within the campus for about 1200 students and faculty. A six proxy-server bank has been implemented to manage daily internet data usage that peaks upto 126 Mbps.

Server Infrastructure of CSG consists of about 60 multi-processor hardware servers.

Multimedia, Audiovisual and Satellite Communication Facilities are maintained to support conduct of lectures, presentations and conferences in classrooms, seminar halls and meeting rooms.

Spacenet-based Video Conferencing was installed and commissioned in the year 2014-15 with the support of ISTRAC, Bangalore, after retrieving the satellite equipment that were installed earlier in VSSC-ATF campus of IIST.

In addition, IP-based Internet Video Conferencing has also been facilitated in the facility set-up in the Administrative block, making use of existing NKN connectivity.This has enabled virtual conferences with various ISRO centres and other universities and research institutions in India and abroad.

Smart-Card based Biometric Access Control Systems have been implemented in line with guidelines given by ISRO HQ to facilitate self-authentication based entry into the institute through its main entry gate.

BACS has also been installed at exit-points in various other buildings to record the time of return after work.Smart Card Personalization and Photo ID Card Printing facilities have been set-up and are being operated and maintained in-house by CSG personnel.

Official Web Site "www.iist.ac.in" has been redesigned and redeveloped using advanced CMS platform.

Multi-centre online-counseling for BTech 2014 Admissions was facilitated by CSG, by setting up ad-hoc computer-networks at Ahmedabad, Bengaluru, Kolkata and Delhi, and linking each of these to IIST's server-facility in Thiruvananthapuram.

Public Address Audio Systems have been installed in the new classrooms in D2 Academic building.

Network Surveillance Camera systems have been extended to all hostel buildings in IIST for improving security. Procurement of 70 additional cameras for installing surveillance systems in the newly constructed Library block is in progress.

SOFTWARE SYSTEM GROUP (SSG)

Software Support Group (SSG), consists of team of experienced expert IT professionals provides various software services and technical assistance in smooth functioning of various academic and non-academic activities of Indian Institute of Space Science and Technology Trivandrum (IIST).

SSG develops indigenous software services for the various departments such as Academics, Administration, Canteen, Purchase, Stores, and Accounts in the Institute using latest software technologies and platform. Currently an exhaustive project has been developed viz. "*i*-Campus", that automates almost all the academic activities in IIST. Software tools developed for various activities in the Institute include analysis, design, coding, implementation, maintenance and enhancement of the following software

- IIST Admission Software (Ph.D., M.Tech. and Undergraduate Programmes)
- IIST Muti-center Counselling Software
- *i*-campus
- Grading System
- Result Publishing System
- Student Profile Management
- ISRO Absorption Counselling Software
- Gate pass management system
- Card Generation System(ID and Canteen Cards)
- Convocation Portal
- Payment Information System
- Student/Staff Directory
- Student Payment Information System

and Customized Applications such as

- COWAA IIST MIS
- Canteen Management System
- TOMD for Transport
- Diarising System
- Personal Information System
- Cheque Printing
- Online Registration for conferences like YTN, NCMST etc.

OTHER FACILITIES

HOSTEL SERVICES

IIST has currently 11 hostels functioning in the campus, built based on contemporary architecture. The hostels are named after the mythological constellations 'nakshatras'.

Dhruva *Dhanista* *Chitra* *Revathi* *Rohini* *Ashwini*
* Ardra* *Phalguni* *Anuradha* *Arundathi* *Vishaka*

Each of these hostel-blocks has well-ventilated rooms designed to accommodate students on single and shared occupancy basis. There are separate hostels for B.Tech, M.Tech and Research Scholars and around 800+ students reside in the campus B.Tech and M.Tech programs being fully residential. Hostels are located in the peaceful part of the campus with proximity to mess and cafeteria and a medical centre which functions round the clock. Each hostel has provision for safe drinking water with hot and cold water dispensers, 24 Hr uninterrupted power supply with generator backup, housekeeping services, reading room with national and vernacular newspapers, indoor games facility, LCD television with satellite connection etc. and centralized gym facility with modern fitness equipments. All hostels are WiFi enabled with High-Speed Access to the Internet, Digital Library and other Digital Learning Resources. A laundry service provider, a nationalised Bank with ATM facility and a book stall is available in the campus in the close vicinity to the hostels to meet the needs of resident students.

The hostel rooms are furnished with cots, study-tables, chairs, cupboards and bookshelves, enabling comfortable stay and to ensure a learning conducive environment.

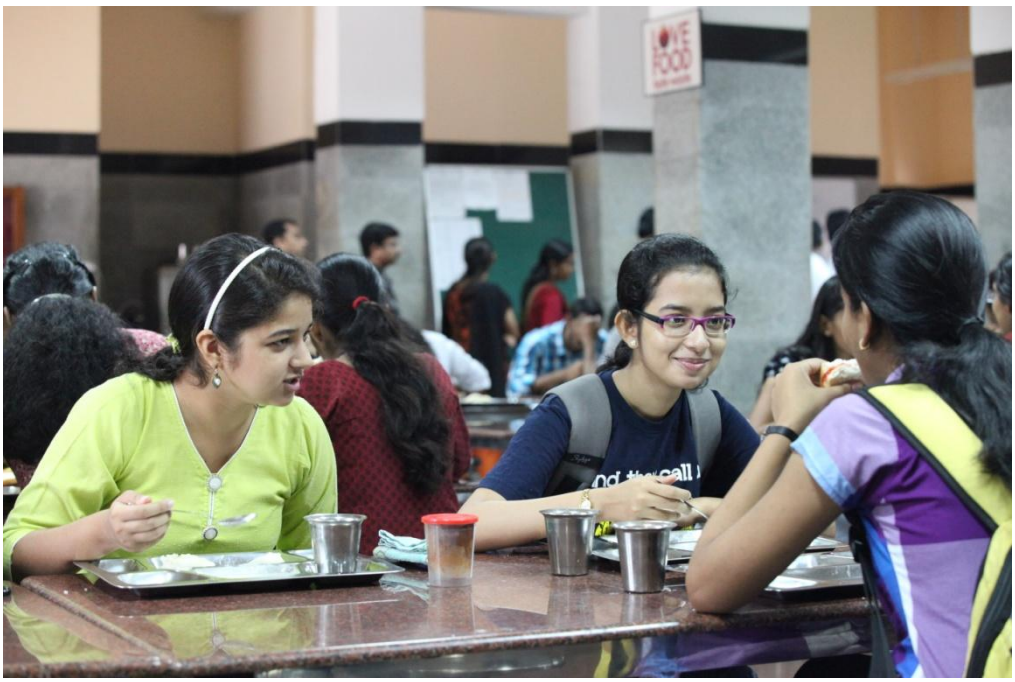
Each floor has common washrooms with modern sanitation facilities. Hygiene and cleanliness of the rooms, floors and surroundings are taken care of by routine house-keeping services. Generator-backed power and ample supply of drinking-water are ensured on a 24-hour basis. Daily affairs of the hostels are run by the Sr. Manager [Hostel Services] while resident-wardens and security-personnel are available for round-the-clock support in the hostels.

CANTEEN SERVICES

IIST being a residential Institute housing more than 700 inmates in hostels, Canteen Services works 24 hours to cater to not only the residential population but also the regular functionary population of more than 300 people which includes Faculty members, Officer, staff.

Food production is managed through two well equipped kitchens.

Dining Halls viz. 'Aditi' and 'Akshaya' having a capacity of 150 each caters to the students and auxiliary staff.



In addition to this, 'Tripthi' is the faculty canteen and 'Subhiksha' is for VIP services.

Menu is finalized by the Canteen and Hostel Committee which includes student representatives.

In addition to this, Canteen Management Committee, Canteen Procurement Committee and Canteen Accounting Committee are constituted to assist the smooth functioning of the Canteen Services.

MEDICAL SERVICES

A twenty four hour Medical Centre is functional within the campus with doctors and para medical staff on round the clock duty. Necessary medicines are kept available in stock.

Severe cases are referred to Sri Uthradom Thirunal Institute of Medical Sciences, Vattapara, Thiruvananthapuram located 13 kms from the Institute. A fully equipped ambulance is available in the campus.

An accident insurance coverage is also available to all the students through this hospital.

SECURITY SERVICES

The entire campus is vigilantly guarded by security staff on round the clock duty. Access control system also functions in the campus.

TRANSPORT SERVICES

A fully functional transport division caters to the transport needs of Faculty members, students and staff.

BANKING SERVICES

A branch of Union Bank of India along with ATM services is available in the campus.

CAFETERIA AND STATIONERY SHOP

A private run cafeteria operates in the campus till mid night providing vegetarian as well non vegetarian food. A juice outlet is also available. All necessary requirements of stationery and other toiletries are met by the stationery counter operational along with the cafeteria. Academic blocks are also provided with snack bars.

BOOK SHOP

A private run book shop caters to the needs of books for the students. Books under book grant of B. Tech students are also provided by the book shop.

PLACEMENT CELL

With a bright set of students who have undergone a rigorous curriculum at IIST and capable of working at cutting edge technologies, Placement Cell has a key role in ensuring that our students are appropriately placed and continuously contributing to the growth of our nation. IIST values feedback from various industries and research organizations top arrange interactive sessions to receive feedback on academic programmes, programmes to hone specific skill sets, etc.

List of M.Tech. students who are placed in the year 2015:

Sl No:	Name	Branch	Course	Company
1	Dig Vijay Pandey	Avionics	B.Tech	VizExperts LLC, Gurgaon
2	Mohan Kashyap	Mathematics	Machine Learning and Computing	Nonferrous Materials Technology Development Centre, Hyderabad
3	Prasanna Kumar	Avionics	B.Tech	Kottackal Business Solutions Pvt. Ltd., Trivandrum
4	Praveen Vijayan	Mathematics	Machine Learning and Computing	Oxyent Technologies, New Delhi
6	Ravi Teja	Avionics	RF & Microwave	Astra Microwave, Hyderabad
7	Rinku Wilson	Avionics	DSP	Team Indus, Bangalore
8	Sailesh Ganesan	Mathematics	Machine Learning and Computing	Oxyent Technologies, New Delhi
9	Sundara Bharati	ESS	Geoinformatics	Oxyent Technologies, New Delhi
10	Unni V.S.	Avionics	DSP	Nonferrous Materials Technology Development Centre, Hyderabad

Internship for M.Tech. Project

Sl No:	Name	Branch	Course	Internship
1	Abhilash	Avionics	VLSI & Microsystems	INTEL, Bangalore
2	Merin Mary Meyn	Avionics	VLSI & Microsystems	INTEL, Bangalore
3	Satish Verma	Avionics	VLSI & Microsystems	Analog Devices, Bangalore
4	Vandana Rajan	Avionics	DSP	INTEL and Analog Devices
5	Gayathri	Avionics	DSP	Analog Devices, Bangalore
6	Shreeja	Avionics	DSP	Analog Devices, Bangalore
7	Blessey	Avionics	DSP	Analog Devices, Bangalore
8	Vaisakh S	Mathematics	Machine Learning and Computing	INTEL, Bangalore
9	Shiyas Azeez	Mathematics	Machine Learning and Computing	INTEL, Bangalore
10	Nithin	Chemistry	Material Science and Technology	Nonferrous Materials Technology Development Centre, Hyderabad

List of Companies Visited for Placement

Analog Devices	**COM DEV International Ltd.**
Gauge Data Solutions Pvt. Ltd.	**Kottackal Business Solutions Pvt. Ltd.**
KPIT Technologies Ltd.	**Nonferrous Materials Technology Development Centre**
Philips Innovation Campus	**QuEST Global Engineering Pvt. Ltd.**
Sorokosoft India Provate Limited	**Team Indus**
VizExperts LLC	Indian Navy

HINDI SECTION AND OFFICIAL LANGUAGE IMPLEMENTATION COMMITTEE

IIST has a full fledged Hindi Section which not only caters to the Constitutional and Statutory requirements regarding the Official Language, Hindi, but also creates a conducive environment for the officials of the Institute to learn Hindi and work in Hindi.

Major activities related to Policy Implementation

- Four Hindi Workshops

  June, 27, 2014 (for the Officers of the Administrative areas),

  September 15, 2014 (for the Employees of Administrative areas)

  December 22, 2014 (for the Employees of Technical areas)

  March 16, 2015 (for the Employees of Administrative areas).
- Four Quarterly meetings of the OLIC were conducted and four Quarterly Progress Reports regarding progressive use of Hindi in the Institute were sent to the Department of Official Language.
- Annual Report 2013-2014 was printed in Hindi.
- Hindi Fortnight was organized in the first half of September, 2014 with competitions for both Students and Staff of IIST. A special talk on 'Vedic Mathematics 'by Shri. P. Devaraj on September 09, 2014.
- Prize distribution function was organized to award merit certificates and cash awards to the winners of various Hindi Competitions. Certificates were also awarded in this function to the participants of the Hindi Workshops conducted during the year.
- Mark lists, provisional Certificates, Course Records, Lab Records, record of Degrees conferred, answer booklets, Degree Certificates and all other certificates such as certificate of participation/ certificate of merit, Forms to be filled up by new entrants at the time of joining etc. have been issued in bilingual format (both Hindi and English). Standard forms used in various Administrative and other Departments were bilingualised, visiting cards, name boards and rubberstamps were prepared in bilingual format.

- In order to ensure the compliance of Official Languages Act, 1963, Official Languages Rules, 1976 and relevant orders issued by the Dept. of Official Language time to time check Points were re- established.
- In order to encourage the progressive use of Hindi, **the incentive scheme for doing official work in Hindi** was continued.
- Participation in various programmes under the Town Official Language Implementation Committee of Thiruvananthapuram. Co - sponsored (with VSSC) the Official Language Workshop organized by Kerala Hindi Prachar Sabha, Thiruvananthapuram, during the Hindi Fortnight Celebrations – 2014.
- Faculty assistance for the conduct of OL workshops in various ISRO Units as well as other central government offices.

WOMEN CELL

Women cell in IIST has been constituted with faculty members. staff members and students

- To discuss and suggest methods to promote gender amity amongst all IISTemployees and students, To address the gender discrimination and sexual harassment cases whenever reported and recommend appropriate necessary action
- To suggest awareness lectures/workshop for IIST members on different aspects of women welfare
- To consider any other matter on women issues referred to the committee.

Audit Report
2014-2015

INDEPENDENT AUDITOR'S REPORT

We have audited the accompaning financial statements of M/S INDIAN INSTITUTE OF SPACE SCIENCE AND TECHNOLOGY (Society), Valiamala PO, Trivandrum-695547 which comprise the Balance Sheet as at 31 March 2015, & the Income and Expenditure Statement for the year then ended, and a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation of these financial statements that give a true and fair view of the financial position & financial performance of the Institute in accordance with the Accounting Standards issued by The ICAI. This responsibility includes the design, implementation and maintenance of internal control relevant to the preparation and presentation of the financial statements that give a true and fair view and are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with the Standards on Auditing issued by the Institute of Chartered Accountants of India. Those Standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Institute's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of the accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Basis of Qualified Opinion:

1. The balances in personal accounts are subject to confirmation by respective parties.

2. No provision for gratuity, pension and leave encashment has been provided in the accounts as specified in 4.d of Notes forming part of accounts.

Qualified Opinion

In our opinion and to the best of our information and according to the explanations given to us, subject to the above mentioned opinion, the financial statements give the information required by the Act in the manner so required and give a true and fair view in conformity with the accounting principles generally accepted in India:

i. in the case of the balance sheet, of the state of affairs of the Institute as at 31st March 2015;

ii. in the case of the Income and Expenditure statement, of the deficit for the year ended on that date;

For SUBRAMONI & MADUKUMAR
Chartered Accountants

C. A. SUBRAMONI. Bsc.FCA
M. No. 204157(Mg. Partner)
FRN.0085705

Place: Thiruvananthapuram
Date: 30th September, 2015

INDIAN INSTITUTE OF SPACE SCIENCE AND TECHNOLOGY

THIRUVANANTHAPURAM

BALANCE SHEET AS AT 31ST MARCH, 2015

(Amount in Rs.)

	Schedule	As at 31.03.2015	As at 31.03.2014
CORPUS/CAPITAL FUND AND LIABILITIES			
Corpus / Capital Fund	1	2,494,566,190	2,322,181,547
Reserves and Surplus	2	2	2
Earmarked Funds / Endowment Funds	3	5,772,464	5,941,114
Long Term Liabilities and Provisions	4	33,099,215	25,815,086
Current Liabilities and Provisions	5	61,621,461	75,766,153
TOTAL		**2,595,059,332**	**2,429,703,902**
ASSETS			
Fixed Assets	6	2,105,385,917	2,076,607,597
Long Term Assets, Loans, Advances etc	7	59,871,919	93,363,171
Current Assets, Loans, Advances etc	8	429,801,496	259,733,134
TOTAL		**2,595,059,332**	**2,429,703,902**

Significant Accounting Policies & Notes on Accounts 19

As per our report of even date attached.

For Subramoni & Madhukumar

Chartered Accountants
FRN : 008570S

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

C.A. Subramoni J.
(Partner, Mem No. 204157)

Dr. K. S. Dasgupta
Director

R. Hari Prasad
Finance Officer

Place : Thiruvananthapuram
Date : 30th September, 2015

INDIAN INSTITUTE OF SPACE SCIENCE AND TECHNOLOGY

THIRUVANANTHAPURAM

INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31ST MARCH, 2015

(Amount in Rs.)

	Schedule	2014-15	2013-14
INCOME			
Grants / Subsidies	9	430,000,000	260,000,000
Fees / Subscriptions	10	48,058,629	31,266,779
Interest Earned	11	9,914,490	11,921,605
Other Income	12	2,364,499	1,934,029
Surplus/Deficit of Canteen Accounting Committee	17	1,936,171	(2,071,547)
Surplus/Deficit of Student Activities Account	18	83,132	(3,301)
TOTAL (A)		**492,356,921**	**303,047,565**
EXPENDITURE			
Establishment Expenses - Regular	13	150,232,609	116,561,284
Establishment Expenses - Support Services	14	90,758,569	99,483,456
Academic & Other Student Expenses	15	136,604,766	112,513,623
Other Administrative Expenses	16	92,627,225	86,903,214
Depreciation	6	204,924,916	212,809,726
TOTAL (B)		**675,148,085**	**628,271,303**
Excess of Income over Expenditure (A-B)		(182,791,164)	(325,223,739)
Less : Prior Period Items		14,824,193	555,494
Extraordinary Item		0	3,707,727
Balance being Surplus/(Deficit) carried over to Corpus/Capital Fund		**(197,615,357)**	**(329,486,960)**
Significant Accounting Policies & Notes on Accounts	19		

As per our report of even date attached.

For Subramoni & Madhukumar

Chartered Accountants
FRN : 008570S

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

C.A. Subramoni J.
(Partner, Mem No. 204157)

Dr. K. S. Dasgupta
Director

R. Hari Prasad
Finance Officer

Place : Thiruvananthapuram
Date : 30th September, 2015

INDIAN INSTITUTE OF SPACE SCIENCE AND TECHNOLOGY

THIRUVANANTHAPURAM

SCHEDULES TO BALANCE SHEET AS AT 31ST MARCH, 2015

(Amount in Rs.)

	As at 31.03.2015	As at 31.03.2014
Schedule 1 :: CORPUS / CAPITAL FUND		
Total Grant Received - Capital and Revenue (A)		
Opening Balance of Total Grant Received	4,347,724,987	3,597,724,987
Add : Grant received during the year	800,000,000	750,000,000
	5,147,724,987	4,347,724,987
Total transfer to Revenue Grant (B)		
Opening Balance of amount transferred to Revenue Grant	844,672,442	584,672,442
Add : Transfer to Revenue Grant during the year	430,000,000	260,000,000
	1,274,672,442	844,672,442
Surplus / Deficit transferred from Income & Expenditure Account (C)		
Opening Balance of net income / (expenditure)	(1,180,870,998)	(851,384,038)
Add/Deduct : - Current Year Surplus / (Deficit)	(197,615,357)	(329,486,960)
	(1,378,486,355)	(1,180,870,998)
Balance at the year end (A - B + C)	2,494,566,190	2,322,181,547

Schedule 2 :: RESERVES AND SURPLUS		
Opening Balance	2	0
Additions during the year		
a) Land at Ponmudi - 20 acres	0	1
(nominal value assigned to land transferred by Government of Kerala free of cost)		
b) Land at Valiamala - 44.18928 acres	0	1
(nominal value assigned to land transferred by Government of Kerala free of cost)		
TOTAL	2	2

INDIAN INSTITUTE OF SPACE SCIENCE AND TECHNOLOGY

THIRUVANANTHAPURAM

SCHEDULES TO BALANCE SHEET AS AT 31ST MARCH, 2015

(Amount in Rs.)

	As at 31.03.2015	As at 31.03.2014
Schedule 4 :: LONG TERM LIABILITIES AND PROVISIONS		
a) Employee Provident Funds and Retirement Benefits		
- General Provident Fund	19,527,012	14,516,238
- Contributory Provident Fund	767,533	925,241
- Other Retirement Benefits	8,092,670	7,595,607
Sub Total (a)	**28,387,215**	**23,037,086**
b) Caution Deposit		
- Caution Deposit from Students	4,712,000	2,778,000
Sub Total (b)	**4,712,000**	**2,778,000**
TOTAL	**33,099,215**	**25,815,086**
Schedule 5 :: CURRENT LIABILITIES AND PROVISIONS		
a) Current Liabilities		
1. Sundry Creditors		
- For Goods		
Capital Goods	13,428,376	28,486,286
Revenue Expenditure	0	58,297
- For Services	19,323,546	15,954,070
2. Statutory Liabilities		
- Overdue	0	0
- Others	375,346	436,528
3. Other Current Liabilities		
- Interest refundable to DOS (received)	18,278,355	22,149,749
- Interest refundable to DOS (accrued)	3,639,289	1,545,544
- Others	6,576,549	7,135,679
Sub Total (a)	**61,621,461**	**75,766,153**
TOTAL	**61,621,461**	**75,766,153**
Schedule 7 :: LONG TERM ASSETS, LOANS, ADVANCES ETC		
a) Loans		
- Staff	1,713,321	1,830,342
b) Advances and other amounts on capital account recoverable in cash or in kind or for value to be received		
- Mobilisation Advance to SPCL	0	35,014,537
- Interim Advance to SPCL	54,300,000	54,300,000
c) Security Deposits	3,858,598	2,218,292
TOTAL	**59,871,919**	**93,363,171**

INDIAN INSTITUTE OF SPACE SCIENCE AND TECHNOLOGY

THIRUVANANTHAPURAM

SCHEDULES TO BALANCE SHEET AS AT 31ST MARCH, 2015

(Amount in Rs.)

	As at 31.03.2015	As at 31.03.2014
Schedule 8 :: CURRENT ASSETS, LOANS, ADVANCES ETC		
a) Current Assets		
1. Inventories		
- Canteen inventories	368,225	635,636
2. Sundry Debtors		
- Debtors outstanding for a period exceeding six months	0	0
- Others	0	0
3. Cash Balances in hand (including cheques/drafts and imprest)	20,942	21,492
4. Bank Balances		
a) With Scheduled Banks		
- On Current Accounts	26,004,661	(5,186,822)
- On Deposit Accounts	359,000,792	213,046,043
- On Earmarked & Retirement Benefits Accounts	20,526,607	29,257,012
Sub Total (a)	**405,921,227**	**237,773,361**
b) Loans, Advances and Other Assets		
1. Advances and other amounts recoverable in cash or in kind or for value to be received		
- On Capital Account	21,030	377,889
- Prepayments	9,446,025	11,098,111
- Others	7,496,812	6,181,014
2. Income Accrued		
- On Bank Deposits	6,763,525	4,212,724
- On Other Deposits	152,877	90,035
Sub Total (b)	**23,880,269**	**21,959,773**
TOTAL (a+b)	**429,801,496**	**259,733,134**

INDIAN INSTITUTE OF SPACE SCIENCE AND TECHNOLOGY

THIRUVANANTHAPURAM

SCHEDULES TO BALANCE SHEET AS AT 31ST MARCH, 2015

Schedule 3 :: EARMARKED/ENDOWMENT FUNDS	1 Ministry of Earth & Space Science	2 ISRO-GBP - ABLN & C Project	3 DST Inspire - Dr. Sakthivel	4 DST Inspire - Dr. Mahesh	5 KSCSTE - Prathibha 2013	6 NCM - 2014	7 TIFR - 2014	8 DBT - Robotics in Medicine	9 AICTE - INAE - PhD - R S Mohankumar
a) Opening balance of the funds	(174,180)	4,500,000	24,451	1,372,349	(54,069)	9,780	34,534	0	0
b) Additions to the Fund									
i) Donation/Grants	302,500	0	1,691,680	0	54,069	0	0	950,000	75,000
ii) Income from Investment made on account of Funds	0	0	0	0	0	0	0	0	0
iii) Other additions (Specify Nature)	2,262	0	0	0	0	0	0	0	0
Total (a + b)	130,582	4,500,000	1,716,131	1,372,349	0	9,780	34,534	950,000	75,000
c) Utilisation/Expenditure towards objective of funds									
i) Capital Expenditure									
- Fixed Assets	0	216,808	0	58,325	0	0	0	0	0
- Others		0	0	0	0	0	0	0	0
Sub Total	0	216,808	0	58,325	0	0	0	0	0
ii) Revenue Expenditure									
- Salaries, Wages & Allowance	0	0	1,012,815	1,149,190	0	0	0	0	75,000
- Rent/Consumables	0	0	61,819	67,591	0	0	0	5,040	0
- Other Administrative Expenses	0	0	35,000	63,255	0	7,418	5,618	829,367	0
Sub Total	0	0	1,109,634	1,280,036	0	7,418	5,618	834,407	75,000
iii) Fund Returned to the Funding Agency	0	0	0	0	0	2,362	28,916	0	0
Total (c)	0	216,808	1,109,634	1,338,361	0	9,780	34,534	834,407	75,000
Net Balance payable as at the year-end (a+b-c)	**130,582**	**4,283,192**	**606,497**	**33,988**	**0**	**0**	**0**	**115,593**	**0**
Net Balance receivable as at the year-end (c-a-b) *Note : Classified under Current Assets under Sch 8*	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Schedule 3 :: EARMARKED/ENDOWMENT FUNDS (contd.)	10 DST - SERB - Dr. Sanjeev Kumar Mishra	11 ICM - Dr. Gnanvel	12 ICM - Dr. Sakthivel	13 SERB - Dr. Seena V	14 SERB - Harsha K V	15 SERB - Preeti Manjari Mishra	TOTAL 2014-15	TOTAL 2013-14
a) Opening balance of the funds	0	0	0	0	0	0	5,712,865	6,542,049
b) Additions to the Fund								
i) Donation/Grants	100,853	180,000	180,000	600,000	92,631	235,241	4,461,974	2,599,680
ii) Income from Investment made on account of Funds	0	0	0	0	0	0	0	249,138
iii) Other additions (Specify Nature)	0	0	0	0	0	0	2,262	0
Total (a + b)	100,853	180,000	180,000	600,000	92,631	235,241	10,177,101	9,390,867
c) Utilisation/Expenditure towards objective of funds								
i) Capital Expenditure								
- Fixed Assets	0	0	0	0	0	0	275,133	288,738
- Others	0	0	0	0	0	0	0	0
Sub Total	0	0	0	0	0	0	275,133	288,738
ii) Revenue Expenditure								
- Salaries, Wages & Allowance	0	0	0	0	0	0	2,237,005	2,090,119
- Rent/Consumables	0	0	0	0	0	0	134,450	194,238
- Other Administrative Expenses	100,853	0	180,000	0	92,631	232,629	1,546,771	1,104,907
Sub Total	100,853	0	180,000	0	92,631	232,629	3,918,226	3,389,264
iii) Fund Returned to the Funding Agency	0	180,000	0	0	0	0	211,278	0
Total (c)	100,853	180,000	180,000	0	92,631	232,629	4,404,637	3,678,002
Net Balance payable as at the year-end (a+b-c)	**0**	**0**	**0**	**600,000**	**0**	**2,612**	**5,772,464**	**5,941,114**
Net Balance receivable as at the year-end (c-a-b) *Note : Classified under Current Assets under Sch 8*	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**228,249**

INDIAN INSTITUTE OF SPACE SCIENCE AND TECHNOLOGY

THIRUVANANTHAPURAM

SCHEDULES TO BALANCE SHEET AS AT 31ST MARCH, 2015

(Amount in Rs.)

Schedule 6 :: FIXED ASSETS

Particulars	Gross Block (at cost) as at 01.4.2014	Additions		Transfer to Installed from Uninstalled	Deletions	Gross Block (at cost) as at 31.03.2015	Rate of Depreciation	Depreciation				Net Block as at 31.3.2015	Net Block as at 31.3.2014
		Installed	Under Installation					As at 01.04.2014	For the year	Prior Period	Deletions	As at 31.3.2015	
Land	33,252,002	0	0	0	0	33,252,002	0.00%	0	0	0	0	0	33,252,002	33,252,002
Building	1,234,310,455	29,540,029	0	0	0	1,263,850,484	10.00%	285,053,494	97,686,508	8,731,853	0	391,471,855	872,378,629	949,256,961
Plant & Machinery	532,276,759	158,176,908	0	0	1,554,242	688,899,425	15.00%	181,582,369	74,869,562	1,931,907	545,206	257,838,632	431,060,793	350,694,390
Furniture & Fittings	144,991,790	3,775,495	0	0	0	148,767,285	10.00%	46,419,705	10,234,759	0	0	56,654,464	92,112,821	98,572,085
Ambulance	880,644	0	0	0	0	880,644	15.00%	244,379	95,440	0	0	339,819	540,825	636,265
Motor Cars & Bikes	11,262,430	0	0	0	0	11,262,430	15.00%	5,943,802	797,794	0	0	6,741,596	4,520,834	5,318,628
Motor Buses & Truck	6,129,906	0	0	0	0	6,129,906	15.00%	3,010,047	467,979	0	0	3,478,026	2,651,880	3,119,859
Computers	78,189,451	1,143,568	0	0	0	79,333,019	60.00%	75,046,933	2,571,652	0	0	77,618,585	1,714,434	3,142,518
Software	46,307,941	7,817,323	0	0	0	54,125,264	60.00%	38,359,886	7,657,641	0	0	46,017,527	8,107,737	7,948,055
Library Books	46,052,330	2,038,795	0	0	0	48,091,125	60.00%	38,549,512	5,724,968	0	0	44,274,480	3,816,645	7,502,818
Campus networking	26,226,136	3,530,380	0	0	0	29,756,516	60.00%	23,923,460	3,499,834	0	0	27,423,294	2,333,222	2,302,676
Canteen Equipments	16,098,047	0	0	0	0	16,098,047	15.00%	7,306,186	1,318,779	0	0	8,624,965	7,473,082	8,791,861
Soft Furnishing	1,043,023	0	0	0	0	1,043,023	100.00%	1,043,023	0	0	0	1,043,023	0	0
Uninstalled Assets														
Plant & Machinery	18,275,874	0	55,969,641	17,050,782	0	57,194,733	0.00%	0	0	0	0	0	57,194,733	18,275,874
TOTAL	**2,195,296,788**	**206,022,498**	**55,969,641**	**17,050,782**	**1,554,242**	**2,438,683,903**		**706,482,796**	**204,924,916**	**10,663,760**	**545,206**	**921,526,266**	**1,517,157,637**	**1,488,813,992**
Previous Year	**1,738,254,303**	**465,795,283**	**13,577,635**	**0**	**2,217,627,221**			**494,222,386**	**212,809,726**	**0**	**549,316**	**706,482,796**	**1,488,813,992**	**1,244,031,917**
Capital Work in progress	**587,793,605**	**0**	**56,984,832**	**56,550,157**	**0**	**588,228,280**		**0**	**0**	**0**	**0**	**0**	**588,228,280**	**587,793,605**
TOTAL													**2,105,385,917**	**2,076,607,597**

INDIAN INSTITUTE OF SPACE SCIENCE AND TECHNOLOGY

THIRUVANANTHAPURAM

SCHEDULES FORMING PART OF INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31ST MARCH, 2015

	(Amount in Rs.)	(Amount in Rs.)
	2014-15	**2013-14**
Schedule 9 :: GRANTS / SUBSIDIES		
(irrevocable Grants & Subsidies Recovered)		
1. Central Government	430,000,000	260,000,000
TOTAL	**430,000,000**	**260,000,000**
Schedule 10 :: FEES / SUBSCRIPTIONS		
1. Entrance Fees	5,493,825	6,942,392
2. Annual Fees/Subscriptions	42,564,804	24,324,387
TOTAL	**48,058,629**	**31,266,779**
Schedule 11 :: INTEREST EARNED		
1. On Term Deposit		
a) With Scheduled Banks	9,866,299	11,831,570
b) Others	0	90,035
2. On Loans / Advances		
a) Employee/Staff	48,191	0
TOTAL	**9,914,490**	**11,921,605**
Schedule 12 :: OTHER INCOME		
1. Rent Receipts	694,416	546,937
2. Sale of Tender Forms	129,958	139,013
3. Sale of Trees	153,023	0
4. Miscellaneous Income	1,387,102	1,248,079
TOTAL	**2,364,499**	**1,934,029**
Schedule 13 :: ESTABLISHMENT EXPENSES - REGULAR		
1. Salaries & Allowances	136,013,934	106,070,031
2. Contribution to NPS	7,708,136	5,896,929
3. Contribution to CPF	90,052	87,424
4. Medical Expense- Staff	3,672,564	2,572,275
5. Expense on Employees Retirement & Terminal Benefits	1,273,508	706,400
6. Interest on PF Contribution	1,423,507	1,198,355
7. Staff Training Expense	50,908	29,870
TOTAL	**150,232,609**	**116,561,284**

INDIAN INSTITUTE OF SPACE SCIENCE AND TECHNOLOGY

THIRUVANANTHAPURAM

SCHEDULES FORMING PART OF INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31ST MARCH, 2015

	(Amount in Rs.)	(Amount in Rs.)
	2014-15	**2013-14**
Schedule 14 :: ESTABLISHMENT EXPENSES - SUPPORT SERVICES		
1. Consultancy & Manpower Charges	69,934,831	73,757,637
2. Remuneration to Contract Employees	20,823,738	25,725,819
TOTAL	**90,758,569**	**99,483,456**
Schedule 15 :: ACADEMIC & OTHER STUDENT EXPENSES		
1. Admission Expense	12,271,055	15,997,560
2. Assistanceship to Students	44,903,269	31,199,991
3. Library Services	30,471,924	24,850,070
4. Academic Expense	39,139,765	29,960,150
5. Supplies & Materials	8,428,162	9,156,916
6. Student Activities Expense	1,390,591	1,348,936
TOTAL	**136,604,766**	**112,513,623**
Schedule 16 :: OTHER ADMINISTRATIVE EXPENSES		
1. Maintenance & Upkeep		
Repairs & Maintenance - CMD	16,968,354	16,049,212
Repairs & Maintenance	4,902,454	3,082,449
House Keeping Expense	1,016,089	899,083
Sub Total (a)	**22,886,897**	**20,030,744**
2. Professional Charges		
Audit Fees	84,270	183,146
Legal Expense	652,812	107,219
Sub Total (b)	**737,082**	**290,365**
3. Administrative Expenses - Others		
Vehicle Operating Expense	20,618,723	22,436,023
Electricity & Water Charges	23,120,762	17,744,087
Travelling Expense	4,895,361	5,647,437
Research & Development Expense	2,928,993	2,942,422
Printing & Stationery	4,947,739	3,873,354
Advertisement & Publicity	886,680	1,074,197
Hospitality Expense	4,431,839	4,754,131
Telephone & Internet Expense	2,882,471	2,899,985
Office Expense	2,784,565	2,880,007
Recruitment Expense	1,449,404	2,301,627
Security Expense - Others	46,222	13,711
Bank Charges	10,487	15,124
Sub Total (c)	**69,003,246**	**66,582,105**
TOTAL	**92,627,225**	**86,903,214**

INDIAN INSTITUTE OF SPACE SCIENCE AND TECHNOLOGY

THIRUVANANTHAPURAM

SCHEDULES FORMING PART OF INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31ST MARCH, 2015

Schedule 17 :: Income and Expenditure Account of the Canteen Accounting Committee

(Amount in Rs.)

	2014-15	2013-14
INCOME		
Students Assistanceship (BTech)	12,927,040	10,037,145
Canteen Mess Collection (Contract)	1,982,700	1,765,175
Canteen Mess Collection (Misc)	3,802,572	3,635,088
Canteen Mess Collection (MTech Students)	6,160	1,267,200
Canteen Mess collection (Staff)	576,930	629,355
Canteen Mess Collection (Students)	2,328,450	881,740
Interest on Deposit	62,795	45,873
Increase in Closing Stock	0	61,348
TOTAL (A)	**21,686,647**	**18,322,924**
EXPENDITURE		
Canteen Expenses-Material	19,483,065	20,394,471
Decrease in Closing Stock	267,411	0
TOTAL (B)	**19,750,476**	**20,394,471**
Excess of Income over Expenditure (A-B)	1,936,171	(2,071,547)
Less : Prior period items	0	0
Balance being Surplus/(Deficit) carried over to Income and Expenditure Account	**1,936,171**	**-2,071,547**

INDIAN INSTITUTE OF SPACE SCIENCE AND TECHNOLOGY

THIRUVANANTHAPURAM

SCHEDULES FORMING PART OF INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31ST MARCH, 2015

Schedule 18 :: Income and Expenditure Account of Student Activities Account

(Amount in Rs.)

	2014-15	2013-14
INCOME		
Workshop Income	308,650	504,700
Sponsorship Received	961,950	679,620
Accomodation Fees	76,900	152,600
Sale of Tshirts	113,700	77,000
Registration Fees	27,800	0
Miscellaneous Income	21,100	11,000
TOTAL (A)	**1,510,100**	**1,424,920**
EXPENDITURE		
Logistics and Other Expenses	859,303	558,070
Workshop Payments	29,670	399,999
Prize Money	493,900	302,000
Publicity	0	111,608
Travel Expenses	43,342	56,544
Bank Charges	754	0
TOTAL (B)	**1,426,969**	**1,428,221**
Excess of Income over Expenditure (A-B)	83,132	(3,301)
Less : Prior period items	0	0
Balance being Surplus/(Deficit) carried over to Income and Expenditure Account	**83,132**	**-3,301**

INDIAN INSTITUTE OF SPACE SCIENCE AND TECHNOLOGY

THIRUVANANTHAPURAM

RECEIPTS AND PAYMENTS FOR THE YEAR ENDED 31ST MARCH, 2015

Receipts	2014-15	2013-14	Payments	2014-15	2013-14
I. Opening Balance	-		**I. Expenses**	-	
			a.Establishment Expenses - Regular		
a.Cash and DD's in hand	21,492	6,871	Salaries & Allowances (admin & faculty)	131,432,899	104,111,284
b.Bank Balances			Contribution to NPS	7,708,136	5,896,929
In current accounts	(5,186,822)	(35,588,728)	Contribution to CPF	90,052	87,424
In deposit accounts	213,046,043	294,916,060			
In earmarked/retirement benefits accounts	29,257,012	25,884,722	Medical Expense- Staff	3,841,199	2,285,099
			Employees Retirement Benefits	1,273,508	706,400
II.Grants Received			Interest on PF Contribution	147,275	124,338
a.From Government of India	800,000,000	750,000,000	Staff Welfare Expense	0	0
			Staff Training Expenses	50,908	19,970
III. Interest Received					
			b.Establishment Expenses - Support Services		
a.On Bank Deposits	9,584,351	9,164,390			
b.On Other Deposits	0	0	Consultancy & Manpower Charges	68,796,267	69,243,357
c.Loans, Advances etc.	48,191	0	Remuneration to Contract Employees	20,823,738	25,729,326
			c. Academic & Other Student Expenses		
IV. Other Income					
a.Entrance Fees	5,487,850	6,942,392	Admission Expense	12,284,906	16,023,214
b.Annual Fees/Subscriptions	44,026,406	24,879,712	Assistanceship to Students	45,544,852	29,955,042
c.Other Income	2,387,522	1,822,610	Library Services	34,123,874	25,096,599
			Academic Expense	38,618,899	29,411,298
V. Any other receipts			Supplies & Materials	8,443,208	8,721,392
a. Refund from Branches	180,272	0	Student Activities Expense	1,390,591	1,377,736
b.Security Deposits received	1,093,127	1,561,099			
c.Earnest Money Deposits received	1,600,596	1,313,766	**d. Other Administrative Expenses**		
d.Performance Guarantee	1,302,864	2,089,537	Repairs & Maintenance	4,637,567	2,990,591
e.Advance for Research & Seminars	4,464,236	2,599,680	Repairs & Maintenance - CMD	17,049,513	15,779,586
f. Interest (CTCZ funds)	0	249,138	House Keeping Expense	1,030,506	916,684
g.Caution Deposit from Students	1,934,000	1,974,000	Audit Fees	84,270	183,146
h.Security Deposit (Asset)	0	7,898	Legal Expense	645,310	117,219
i.Stale cheques	294,611	197,088	Vehicle Operating Expense	22,619,830	19,792,961
j. Bond Amount - Payable to DOS	0	1,000,000	Electricity & Water Charges	21,736,546	18,189,265
j.Canteen Accounting Committee	20,660,455	18,103,176	Travelling Expense	4,832,498	5,055,688
			Research & Development Expense	2,708,130	2,830,826
k.Vaccine Recovery	0	1,245			
l.Interest received and payable to DOS	18,278,355	22,149,749	Printing & Stationery	4,600,277	3,805,981
m.Contingency advance	0	65,801	Advertisement & Publicity	890,825	1,210,316
n.Mediclaim recovery	0	241,200	Hospitality Expense	4,375,459	4,651,721
			Telephone & Internet Expense	2,770,478	2,994,886
o.Student Activities Account	1,436,420	1,286,100			
p.Recovery of loans to staff	306,190	0	Office Expense	2,546,957	2,646,136
q. Miscellaneous receipts	270,587	0	Recruitment Expense	1,447,732	2,311,941
r. Receipts from debtors	189,146	0	Security Expense - Others	46,222	13,711
			Bank Charges	10,487	15,124
			II. Payments made against funds for various projects		
			Ministry of Earth & Space Science (CTCZ)	0	8,968
			DST Inspire - Dr. Sakthivel	1,109,634	1,120,426
			DST Inspire - Dr. Mahesh	1,338,361	1,632,638
			KSCSTE - Prathibha 2013	0	338,694
			NCM - 2014	9,780	363,595
			TIFR - 2014	34,534	215,466
			ISRO-GBP - ABLN & C Project	216,808	0
			DBT - Robotics in Medicine	834,407	0

			AICTE - INAE - PhD - R S Mohankumar	75,000	0
			DST - SERB - Dr. Sanjeev Kumar Mishra	100,853	0
			ICM - Dr. Gnanvel	180,000	0
			ICM - Dr. Sakthivel	180,000	0
			SERB - Harsha K V	92,631	0
			SERB - Preeti Manjari Mishra	232,629	0
			III. Expenditure on Fixed Assets & Capital Work-in-Progress		
			a.Purchase of Fixed Assets	199,056,885	143,132,208
			b.Expenditure on Capital Work-in-progress	25,249,944	257,587,043
			IV. Other Payments		
			Scholarship paid to students	0	2,000
			Security Deposits (Asset) paid	1,640,306	966,070
			Security Deposits repaid to Contractors	1,838,967	1,221,549
			Earnest Money Deposits repaid	1,275,615	1,197,611
			Performance Guarantee	2,146,836	1,143,794
			Decrease in TDS & VAT Payable	61,182	3,500
			Contingency Advance to Staff	148,542	0
			Advances - Branches	0	296,342
			Loans to staff	189,169	51,196
			Canteen Accounting Committee	18,996,735	20,946,869
			Sundry debtors	12,688	160,046
			Interest repayment to DOS	22,149,749	59,772,556
			Stale Cheques - paid	25,055	5,000
			Student Activities Account	1,330,674	1,269,020
			V. Closing Balances		
			a.Cash in hand	20,942	21,492
			b.Bank Balances		
			In current accounts	26,004,661	(5,186,822)
			In deposit accounts	359,000,792	213,046,043
			In earmarked/retirement benefits accounts	20,526,607	29,257,012
Total	**1,150,682,904**	**1,130,867,506**	**Total**	**1,150,682,904**	**1,130,867,506**

Significant Accounting Policies & Notes on Accounts 19

As per our report of even date attached.

For Subramoni & Madhukumar
Chartered Accountants
FRN : 008570S

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

C.A. Subramoni J.
(Partner, Mem No. 204157)
Place : Thiruvananthapuram
Date : 30th September, 2015

Dr. K. S. Dasgupta
Director

R. Hari Prasad
Finance Officer

INDIAN INSTITUTE OF SPACE SCIENCE AND TECHNOLOGY

THIRUVANANTHAPURAM

Schedule 19 :: SIGNIFICANT ACCOUNTING POLICIES AND NOTES TO THE ACCOUNTS FOR THE YEAR ENDED 31ST MARCH, 2015

A. Significant Accounting Policies

1. Basis of Accounting

The financial statements have been prepared in accordance with the Generally Accepted Accounting Principles in India (Indian GAAP) and are prepared on accrual basis under the historical cost convention except those referred to in point no. 5b of accounting policies. The accounting policies adopted in the preparation of the financial statements are consistent with those followed in the previous year.

2. Use of estimates

The preparation of the financial statements in conformity with Indian GAAP requires the Management to make estimates and assumptions considered in the reported amounts of assets and liabilities (including contingent liabilities) and the reported income and expenses during the year. The Management believes that the estimates used in preparation of the financial statements are prudent and reasonable. Future results could differ due to these estimates and the differences between the actual results and the estimates are recognized in the periods in which the results are known / materialize.

3. Inventories

The inventories represents canteen inventories and is valued at lower of cost or net realizable value as certified by the Canteen Manager.

4. Depreciation

a. Depreciation has been provided on the written down value method as per the rates prescribed in the Income Tax Act, 1961.
b. Depreciation on assets acquired in a particular year is provided for the whole year irrespective of date of addition.
c. Depreciation has not been charged on capital work in progress and on those assets under installation as on 31.03.2015.
d. Software not having perpetual licenses are written off over the license period.

5. Revenue Recognition

a. Grant in aid received from the Department of Space, is accounted on accrual basis. Out of the total grant received, the amount received towards revenue expenditure is treated as Revenue Grant / income over the period necessary to match them with the costs for which they are intended to compensate, on a systematic basis. The remaining grant forms part of the Corpus Fund along with other grant received.
b. Tuition fees, fines and other recoveries from underperforming students (as per the policy of the institute) are accounted on cash basis.
c. Interest income is accounted on accrual basis. Interest on deposits created out of grant received is not recognized as income and is shown as a liability payable to Department to Space.

6. Fixed Assets

a. Land - Land at Ponmudi has been valued at cost of acquisition. The present activity of the Institute is in the Valiamala campus which has been handed over by LPSC vide letter no. VSSC/CMG/2010 dated 05.08.2010, and has been measured at 53.43 acres. No value has been provided in the books. Land received free of cost from Government of Kerala has been shown at a nominal value of Re. 1/- (*for each property*) in the books.

a. Building – Construction of buildings is still in progress. Buildings, the construction of which are more than 90% complete, certified by the Construction and Maintenance Division and which have been put into use have been transferred from Capital Work-in-Progress to Buildings based on actual payments made.
b. Plant and Machinery – It mainly constitutes Laboratory Equipment, Office Equipment, Electricals & Electronics and other Machinery.
c. Buildings and other Fixed Assets are carried at cost less accumulated 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. Exchange differences arising on restatement / settlement of foreign currency payables relating to acquisition of depreciable fixed assets are adjusted to the cost of the respective assets and depreciated over the remaining useful life of such assets.
d. Capital Work-in-Progress pertains to construction in progress at Valiamala.
e. Assets that have been delivered to IIST up to 31.03.2015 have been recognized as assets but depreciation has not been charged on Assets under installation.

7. Foreign currency transactions

Foreign currency monetary items outstanding at the Balance Sheet date are restated at the year-end rates. Non-monetary items are carried at historical cost. The exchange differences arising on restatement / settlement of long-term foreign currency monetary items are capitalised as part of the depreciable fixed assets to which the monetary item relates and depreciated over the remaining useful life of such assets.

8. Earmarked / Endowment Funds

Earmarked / Endowment Funds mainly include external agency funding received for research & development purpose and conduct of seminars & workshops. Value of assets procured out of such funds for the purpose specified have gone to reduce the value of Fund in hand and have not been treated as an asset of the Institute as the ownership of the same vests with the funding agency. Earmarked / Endowment Funds are held in a separate Current Account linked to Term Deposits. The interest received in the account has been taken as the Institutes Income. Interest claims in the future, if any, from the disbursing parties of such Earmarked / Endowment Funds will be met at the time of the claim based on the deposit rates prevailing during the period of holding of the particular Fund.

9. Employee Benefits

Employee benefits include General Provident Fund (GPF), Contributory Provident Fund (CPF), New Pension Scheme (NPS), and Group Insurance Scheme (GIS). The Institute's contribution to CPF and NPS are considered as defined contribution plans and are charged as an expense as they fall due based on the amount of contribution required to be made.

GPF and CPF funds are maintained separately by the Institute in Savings Bank Account and Flexi deposits. Retirement Benefits consisting of pension fund, gratuity and leave encashment received from previous employers of employees joining from other Government organizations have been maintained separately in a Current Account and linked Term Deposits.

10. Taxes on income

Being a non-profit institution existing solely for education purposes and being wholly financed by the Government of India, the income of the Institute is exempt under section 10[(23C)][iiiab] of the Income Tax Act, 1961.

INDIAN INSTITUTE OF SPACE SCIENCE AND TECHNOLOGY

THIRUVANANTHAPURAM

Schedule 19 :: SIGNIFICANT ACCOUNTING POLICIES AND NOTES TO THE ACCOUNTS FOR THE YEAR ENDED 31ST MARCH, 2015 (contd)

11. Research and Development Expenses

Revenue expenditure pertaining to research is charged to the Income and Expenditure Account. Fixed assets utilized for research and development are capitalized and depreciated in accordance with the policies stated for Fixed Assets.

12. Provisions and Contingencies

A provision is recognised when the Institute has a present obligation as a result of past events and it is probable that an outflow of resources will be required to settle the obligation in respect of which a reliable estimate can be made. Provisions (excluding retirement benefits) are not discounted to their present value and are determined based on the best estimate required to settle the obligation at the Balance Sheet date. These are reviewed at each Balance Sheet date and adjusted to reflect the current best estimates.

13. Impairment of Assets

The carrying values of assets / cash generating units at each Balance Sheet date are reviewed for impairment. If any indication of impairment exists, the recoverable amount of such assets is estimated and impairment is recognised, if the carrying amount of these assets exceeds their recoverable amount. The recoverable amount is the greater of the net selling price and their value in use. Value in use is arrived at by discounting the future cash flows to their present value based on an appropriate discount factor. When there is indication that an impairment loss recognised for an asset in earlier accounting periods no longer exists or may have decreased, such reversal of impairment loss is recognised in the Statement of Income and Expenditure, except in case of revalued assets.

B. Notes to the Accounts

1. Depreciation

Assets are depreciated at written down value method as per rates prescribed in the Income Tax Act, 1961 as recommended by the Office of the Principal Director of Audit, Scientific Departments, Bangalore. Software not having perpetual licenses are written off over the license period

2. Revenue

a. Out of Grant of Rs. 80,00,00,000/- received during 2014-15, Rs. 43,00,00,000/- received specifically towards revenue expenditure has been transferred to Revenue Grant.
b. Interest earned (actually received) on funds from grant-in-aid maintained in deposits is refundable to DOS. Interest of Rs. 1,82,78,355/- (excluding the interest received on the Provident Fund Accounts and Earmarked Funds) has been actually received during 2014-15 and the same has been shown as refundable to DOS.
c. Canteen Accounting Committee accounts is maintained separately and the deficit / surplus is recognised in the Income and Expenditure Account.
d. Student Activities Account is maintained separately and the deficit / surplus is recognised in the Income and Expenditure Account.

INDIAN INSTITUTE OF SPACE SCIENCE AND TECHNOLOGY

THIRUVANANTHAPURAM

Schedule 19 :: SIGNIFICANT ACCOUNTING POLICIES AND NOTES TO THE ACCOUNTS FOR THE YEAR ENDED 31ST MARCH, 2015 (contd)

3. Fixed Assets

a. Land – There is a stay by the Honorable High Court of Kerala on carrying out construction activities on a part of land (approximately 80 acres) purchased at Ponmudi in Trivandrum District for setting up the Institute. Over and above this 80 acres, approximately 20 acres of land at Ponmudi and 44.18928 acres at Valiamala has been transferred by the Government of Kerala free of cost in December 2007 and April 2009 respectively. These two properties have been brought into the books of accounts in 2013-14 by assigning a nominal value of Re. 1/- each. The present activity of the Institute is in the Valiamala campus which has been handed over by LPSC vide letter no. VSSC/CMG/2010 dated 05.08.2010, and has been measured at 53.43 acres. No separate lease agreement / transfer of ownership of land was obtained by IIST.

b. Capital Work-in-Progress includes a sum of Rs. 2,92,10,277/- towards project management and consultancy charges and service tax of Rs. 6,02,47,147/-, both pending for appropriation to fixed assets on final completion of all buildings..

c. An amount of Rs. 5,71,94,733/- pertaining to assets that have been delivered to IIST before 31.03.2015 but under installation as on 31.03.2015 have been accounted as fixed assets & depreciation has not been charged on the same.

d. Assets that were put into use in earlier years but were not transferred from Work in Progress to Installed Assets have been capitalised during 2014-15. Prior period depreciation amounting to Rs. 1,06,63,760/- pertaining to these assets has been accounted during 2014-15.

4. Employee Benefits

a. Employer and Employee contribution to New Pension Scheme is being transferred to NSDL. Interest earned till date of transfer has also been deposited to the respective employee NPS accounts.

b. The Institute has entered into a Group Insurance Scheme (GIS) agreement with Life Insurance Corporation of India from 2011-12 onwards.

c. Provision for interest on PF Contribution at the rates prescribed have been made. Interest earned on GPF and CPF funds parked in Savings Accounts (linked to flexi deposits) have been accounted as income. An amount of Rs. 21,903/- being interest received over and above the interest liability on CPF accounts and Rs. 50,194/- towards interest liability on GPF accounts is being retained in the respective PF accounts.

d. Provision for liability in respect of gratuity, pension and leave encashment has not been made. Permission from DOS for creation & maintenance of a separate pension fund has been received during 2013-14. The actuarial valuation amount will be brought into the books of accounts on obtaining necessary approval for the same from the Board of Management. In addition, the retirement benefits from the previous employers for the members governed under the GPF has not been received in all cases.

INDIAN INSTITUTE OF SPACE SCIENCE AND TECHNOLOGY

THIRUVANANTHAPURAM

Schedule 19 :: SIGNIFICANT ACCOUNTING POLICIES AND NOTES TO THE ACCOUNTS FOR THE YEAR ENDED 31ST MARCH, 2015 (contd)

5. Prior Period Item

Details of prior period items are as given below :-

Details	**Prior period expenses**
EJournals	46,61,980.00
Admission Expenses	13,851.00
Travelling Expense – Foreign	1,20,275.00
Interest on Deposit	90,035.00
Depreciation	1,06,63,760.00
Honorarium	2,500.00
Total (A)	**1,55,52,401.00**

Schedule 19 :: SIGNIFICANT ACCOUNTING POLICIES AND NOTES TO THE ACCOUNTS FOR THE YEAR ENDED 31ST MARCH, 2015 (contd)

Details	Prior period income
Telephone Charges	79,977.00
Depreciation	1,65,354.00
LTC	4,69,768.00
Interest on GPF	13,109.00
Total (B)	**7,28,208.00**

Net prior period expenses (A-B) = Rs. 1,48,24,193.00

6. Academic Expenses

Academic Expenses mainly include expenses towards Lectures for students, Project & Internship expenses, stipend paid to PhD students and expenses incurred on Seminars, Symposiums and Conferences.

7. Admission Expenses

Admission expenses include expenses incurred towards B.Tech, M.Tech and PhD admissions

8. Assistanceship to Students

As per the approval of The Chairman, Board of Management-IIST / Secretary, DOS vide Letter No. PP & PM : IIST : 09-10 dated July 17th, 2009, the B. Tech students of the Institute are entitled for an assistanceship of Rs. 49,000/- [increased to Rs. 51,400/- from Even semester 2014-15] for each semester towards Statutory Semester Fee, Student Amenity Fee, Hostel & Dining, Establishment charges and Medical cover. The assistanceship amount of Rs. 46,000/- (exclusive of book grant and increased to Rs. 48,400/- from the Even semester 2014-15) for one semester has been disbursed to eligible students based on the performance of the previous semester. The assistanceship amount disbursed has been remitted back by the students to the Institute and expenditure corresponding to the assistanceship so received (under Hostel, Dining & Medical cover) has been set off against the assistanceship amount. During 2014-15, an amount of Rs. 4,49,03,269/- was disbursed as assistanceship.

INDIAN INSTITUTE OF SPACE SCIENCE AND TECHNOLOGY

THIRUVANANTHAPURAM

Schedule 19 :: SIGNIFICANT ACCOUNTING POLICIES AND NOTES TO THE ACCOUNTS FOR THE YEAR ENDED 31ST MARCH, 2015 (contd)

9. Supplies and Materials

Supplies and Materials mostly consist of lab consumables.

10. Bank balances

The negative balance in the SBI and UBI Current Accounts represents the cheques issued on the closing date of the financial year which are not presented for payment. The Institute has sufficient balance to cover these cheques issued in the linked deposit accounts maintained with SBI and the flexi deposits maintained with UBI. Hence, the negative balance does not represent any Overdraft

11. Format of accounts

The accounts of the Institute are prepared as per proforma suggested by the Office of the Principal Director of Audit, Scientific Departments, Bangalore.

12. Insurance

The Institute being an autonomous body under the Department of Space (DOS), it is governed by the rules and regulations as applicable to DOS. As per the "Book of Financial Powers" prescribed by DOS "No Government property whether movable or immovable shall be insured. No liability shall be incurred in connection with the insurance of such property without the prior approval of the Department of Space in consultation with the Member for Finance." The matter was taken up for consultation with the Department of Space during 2012-13 and it was decided in the Seventh Finance Committee meeting of IIST dated 3rd June, 2014 not to insure the assets of the institute.

13. Balances in personal accounts

Balances in personal accounts are subject to confirmation from respective parties.

14. Contingent Liabilities

a. The unexecuted portion of the contracts entered into by the Institute will form part of the current liability of the Institute. However, the same could not be quantified.
b. Interest earned on Earmarked / Endowment Funds held in a separate Current Account linked to Term Deposits has been taken as the Institutes Income. Interest claims in the future, if any, from the disbursing parties of such Earmarked / Endowment Funds will be met at the time of the claim based on the deposit rates prevailing during the period of holding of the particular Fund.
c. In the case of buildings / structures completed by SPCL, only 90% has been billed by SPCL and subsequently paid by IIST. The balance 10% (approximately Rs. 12.56 crores) has not been billed and the same will be paid only on completion of the project. In case of all other works completed by SPCL and not billed as on 31.03.2015, provision has not been made in the books of accounts since the same is not quantifiable.

INDIAN INSTITUTE OF SPACE SCIENCE AND TECHNOLOGY

THIRUVANANTHAPURAM

Schedule 19 :: SIGNIFICANT ACCOUNTING POLICIES AND NOTES TO THE ACCOUNTS FOR THE YEAR ENDED 31ST MARCH, 2015 (contd)

15. Building Construction:

The institute entered into a contract with SPCL, Mumbai on 27.08.2008 for Rs. 278.60 crores with a completion period of 18 months for setting up building and infrastructure at its campus in Valiamala on turnkey basis. As per the note provided by the CMD office the project was delayed due to various unforeseen reasons and the extension of the contract was given up to 01.08.2015 without prejudice to the right of the institute to impose the levy of compensation for the delay. As per clause 2 of the agreement the institute can levy penalty on the works which will have an impact on the accounts. The same could not be quantified due to want of details. As on 31.03.2015, advance amount paid to SPCL towards interim advance amounts to Rs. 5.43 crores. The Institute currently holds the following instruments as security with respect to the contract with SPCL.

Nature of security	**Amount (in crores)**
Security Deposit – Bank guarantee	13.93
Performance Bank guarantee	13.93
Bank guarantee against Interim Advance	5.43

16. Figures for the previous year

Figures for the previous year have been regrouped and/or reclassified wherever considered necessary.

As per our report of even date attached.

For Subramoni & Madhukumar
Chartered Accountants
FRN : 008570S

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

C.A. Subramoni J.
(Partner, Mem No. 204157)

Dr. K. S. Dasgupta
Director

R. Hari Prasad
Finance Officer

Place : Thiruvananthapuram

Date : 30th September, 2015

Indian Institute of Space Science and Technology

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

Department of Space, Government of India

Valiamala P O, Thiruvananthapuram, Kerala-695 547