

ANNUAL REPORT 2012-13



**INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH
THIRUVANANTHAPURAM
CET CAMPUS, THIRUVANANTHAPURAM - 695 016**

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Printed at St. Joseph's Press, Tvm-14

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PREFACE

The institute, in its nascent phase sustained its development on all fronts during the year 2012-13 keeping in focus the mandate of fostering excellence in higher education and research in science. Highlights are presented in the annual report for 2012-13 which covered major part of the fifth year of establishment.

Institute's teaching and research capabilities were augmented with increase in faculty strength to 37 with 9 new appointments. The intake of students in BS-MS programme was enhanced with 114 new admissions. In addition to the ongoing Ph.D. programme, a new academic programme - Integrated Ph.D. for Bachelors' degree holders was commenced. The total student strength reached 400 and the campus life became more vibrant with academic as well as extra-curricular activities. A summer fellowship programme for external students was commenced as our outreach endeavours.

Having 17 on-going externally funded research projects and fellowship grants, the faculty continued to obtain external funding for research projects with 3 new projects and 3 fellowship grants awarded during the year. With four honours awarded to faculty and 49 research publications during this period, the tempo of accomplishments was kept apace.

Our graduate and undergraduate students have also made significant mark at the national and international level by participating in Lindau Nobel Laureates' Meet, Asian Science Camp and DAAD-WISE internship in Germany.

The administrative and technical manpower of the institute has been gradually strengthened. With this the administrative organization and framework has been augmented with delegation of functions and assignments to the faculty and non-faculty personnel keeping in view the growth of the institute functions and activities. It is to be appreciated that despite the constraints of transit campus and other challenging factors that are inherent with a new institute, our faculty members as well as non-faculty personnel have been making their valuable contributions in the development of this institute.

The institute was incorporated in the National Institute of Technology (Amendment) Act 2012 in June 2012 and subsequently a new Board of Governors and a Senate have been constituted. We are grateful to the past and present members of Board of Governors and the Senate for their inspiring guidance in the development and functioning of the Institute. We are also grateful to the sustained cooperation and support of the Ministry of Human Resources development and other wings of the Central Government, the Government of Kerala and the College of Engineering in our functioning and the development endeavours. It is also to acknowledge with gratitude the singular contribution of Prof. E. D. Jemmis, the founding Director of the institute who repatriated to his parent institute in June 2013 at the end of his tenure. He has placed the institute on the track of firm and excellent progress.

At the end, the students and faculty who are pursuing their passion for science in the institute are congratulated for their efforts and achievements.

01 November 2013

(K George Thomas)
Director (Additional Charge)

1. Preamble

Introduction

The Indian Institutes of Science Education & Research were established by Government of India between 2006 and 2008 at Kolkata, Pune, Mohali, Bhopal and Thiruvananthapuram. The objectives of these institutes include capacity enhancement for producing high calibre scientific manpower and the necessary reforms in the institutional framework in the field of higher education and research in basic sciences.

The creation of Indian Institute of Science Education and Research Thiruvananthapuram (IISER-TVM) was notified by Government of India vide no. 22-6/2007-TS.I dated 28th February, 2008 of Department of Higher Education, Ministry of Human Resource Development as an autonomous organization.

The institute came into being on 20th February, 2008 when it was registered as a society under the Travancore - Cochin Literary Scientific and Charitable Society Registration Act (12 of 1955) vide no. T.342/08 dated 20th February, 2008. With the enactment of National Institute of Technology (Amendment) Act 2012 (28 of 2012), vide notification no. 30 dated 8th June 2012 in Gazette of India, the institute is incorporated and governed under the said Act.

The institute's own campus is under construction in 200 acres of land in Vithura Panchayat in Thiruvananthapuram district provided by Government of Kerala. Currently the institute is functioning since June 2008 at transit campus in the premises of the College of Engineering Trivandrum.

IISER-Thiruvananthapuram Society

Chairman

Dr. V. M. Katoch, Secretary to the Government of India, Department of Health Research, Ministry of Health & Family Welfare and Director General, ICMR

Members

Prof. Sudhir K Sopory, Vice Chancellor, Jawahar Lal Nehru University (Ex-officio)

Prof. A. Jayakrishnan, Vice-Chancellor, Kerala University, Thiruvananthapuram (Ex-officio)

Prof. C.S. Paulose, Department of Bio-Technology, Cochin Univ. of Science & Technology, Cochin

Dr. Suresh Das, Director, NIIST (CSIR), Thiruvananthapuram

Prof. M .S. Gopinathan, IISER-TVM, Thiruvananthapuram

Prof. K. George Thomas, IISER-TVM, Thiruvananthapuram

Secretary, Department of Higher Education, MHRD, Govt. of India (Ex-officio)

Secretary, Department of Science and Technology, Govt. of India (Ex-officio)

Director, Indian Institute of Technology Madras, Chennai (Ex-officio)

Chairman, University Grant Commission, New Delhi (Ex-officio)

Secretary, Dept. of Expenditure, Ministry of Finance, Govt. of India (Ex-officio)

Secretary, Department of Biotechnology, Govt of India, New Delhi (Ex-officio)

Secretary (DAE) & Chairman (AEC), DAE, Govt of India (Ex-officio)

Chairman, Defense Research & Development Orgn., Govt of India, New Delhi (Ex-officio)

Secretary, Department of Space, Govt. of India, Bangalore (Ex-officio)

Director General, CSIR, Govt. of India (Ex-officio)

Director, Indian Institute of Science, Bangalore (Ex-officio)

Director, Indian Institute of Science Education & Research, Pune (Ex-officio)

Director, IISER-TVM, Thiruvananthapuram (Ex-officio)

Chief Secretary, Government of Kerala, Govt of India (Ex-officio)

Secretary : Registrar, IISER-TVM (Ex-officio)

Board of Governors

Chairman

Dr. V. M. Katoch, Secretary to the Government of India, Department of Health Research, Ministry of Health & Family Welfare and Director General, ICMR, New Delhi

Members

Prof. V. Kannan, Dept. of Mathematics & Statistics, University of Hyderabad (up to 25.11.2012)

Dr. V. R. Muthukaruppan, Director-Research, Arvind Medical Research Foundation, Madurai (up to 25.11.2012)

Prof. S. M. Chitre, Distinguished Faculty Member, UM-DAE Centre for Excellence in Basic Sciences, University of Mumbai (up to 25.11.2012)

Dr. Gangan Pratap, Director, National Institute of Science Communication and Information Resources (NISCAIR), New Delhi (up to 25.11.2012)

Prof. M. S. Gopinathan, IISER-TVM, Thiruvananthapuram

Prof. K. George Thomas, IISER-TVM, Thiruvananthapuram

Secretary, Deptt. of Higher Education, MHRD, Govt. of India, New Delhi (Ex-officio)

Director, IISER-TVM, Thiruvananthapuram (Ex-officio)

Director, Indian Institute of Science, Bangalore (Ex-officio)

Secretary, Department of Science & Technology, Govt. of India (Ex-officio)

Secretary, Department of Biotechnology, Govt. of India, New Delhi (Ex-officio) (up to 25.11.2012)

Chairman, ISRO and Secretary, Department of Space (Ex-officio)

Director, Indian Institute of Technology Madras, Chennai (Ex-officio)

Director, Indian Institute of Science Education & Research, Pune (Ex-officio) (up to 25.11.2012)

Chief Secretary, Government of Kerala (up to 25.11.2012)

Joint Secretary & Financial Advisor, MHRD, Govt. of India (up to 25.11.2012)

Secretary : Registrar, IISER-TVM

The Board met on 19.5.2012, 22.6.2012 and 25.3.2013 during the year 2012-13.

Finance Committee

Chairman

Chairman, Board of Governors, IISER -TVM (Ex-officio)

Members

Director, IISER-TVM, Thiruvananthapuram (Ex-officio)

Additional Secretary, Department of Higher Education, MHRD, Govt. of India (Ex-officio)

Joint Secretary & Financial Advisor, MHRD, Govt. of India (Ex-officio)

Prof. Radhakrishna Pillai, Director, Rajiv Gandhi Centre for Biotechnology (RGCB), Thiruvananthapuram

Prof. K. George Thomas, IISER-TVM, Thiruvananthapuram

Secretary : Registrar, IISER-TVM

The Finance Committee met on 19.5.2012, 22.6.2012 and 25.3.2013 during 2012-13.

Building and Works Committee

Chairman

Director, IISER-TVM (ex-officio)

Members

Prof. Ravindra Gettu, Department of Civil Engineering, IIT Madras

Shri. V. R. Rengaswamy, Head, E M & C, NCBS-TIFR, DAE, Bangalore

Shri. P. A. Prabhakaran, Chief Consultant (Constructions), IISER-TVM (Former Chief Engineer, ISRO)

Prof. K. George Thomas, IISER-TVM

Registrar, IISER-TVM (Ex-officio)

Secretary

Shri. J. Anil, Project Engineer cum Estate Officer

The Building & Works Committee met on 18.5.2012, 27.8.2012, 17.12.2012 and 1.3.2013 during 2012-13.

Senate & Academic Advisory Committee

Academic Advisory Committee had been functioning up to January 2013 in lieu of Senate. The Senate of the institute was constituted under the provisions of section 14 of National Institute of Technology (Amendment) Act 2012 and it replaced the Academic Advisory Committee in January, 2013. The details of members of Academic Advisory Committee and Senate are as follows:

Academic Advisory Committee up to December 2012

Prof. E. D. Jemmis, Director, IISER-TVM - Chairman

Prof. Umesh Varshney, IPC, Indian Institute of Science, Bangalore

Prof. S. Ramakrishnan, MCB, Indian Institute of Science, Bangalore

Prof. V. Balakrishnan, Department of Physics, Indian Institute of Technology Madras, Chennai

Prof. R. Balasubramanian, Director, Institute of Mathematical Sciences, Chennai.

Prof. M. Radhakrishna Pillai, Director, RGCB, Thiruvananthapuram

Prof. M. S. Gopinathan, School of Chemistry, IISER-TVM

Prof. K. George Thomas, School of Chemistry, IISER-TVM

Registrar, IISERTVM- Secretary (Ex-officio)

Senate w.e.f January 2013

Prof. E. D. Jemmis, Director, IISER-TVM - Chairman

Deputy Director, IISER-TVM (Ex-officio; to be appointed)

Prof. Vijayalakshmi Ravindranath, Chairperson, Centre for Neurosciences, IISc, Bangalore

Prof. M. L. Munjal, Professor, Mechanical Engineering Dept., IISc, Bangalore

Prof. Amitabha Das Gupta, Dean, School of Humanities, University of Hyderabad

Prof. R. Balasubramanian, Director, Institute of Mathematical Sciences, Chennai

Prof. Umesh Varshney, Department of Molecular & Cell Biology, IISc, Bangalore

Prof. V. Balakrishnan, Dept. of Physics, IIT-M, Chennai

Prof. K. George Thomas, School of Chemistry, IISER-TVM

Prof. M. S. Gopinathan, Visiting Professor, IISER-TVM

Prof. Subodh Shenoy, Visiting Professor, IISER-TVM

Prof. Unnikrishnan Nayar, Visiting Professor, IISER-TVM

Registrar, IISER-TVM- Secretary (Ex-officio)

Academic Advisory Committee had its meeting on 15th April 2012 and a common meeting of Academic Advisory Committee (5th & Last Meeting) and Senate (1st Meeting) was convened on 25th January 2013 during the year 2012-13.

2. Human Resource

Human resources of the institute in 2012-13 comprised the following :

Faculty	Regular Faculty		37
	Visiting Faculty		14
Technical and Non-Teaching Personnel	Officers	Regular	10
		Consultants & Others	10
	Subordinate	Regular	20
		Temporary & Contract	38
Students	BS-MS		310
	Ph.D		75
	Int. Ph.D		11

Faculty

School wise lists of faculties and their names and research areas are given below.

Nine new faculty members joined the institute during the year and one faculty member moved to other institute.

Assistant Professor	School of Biology	9
	School of Chemistry	8
	School of Physics	11
	School of Mathematics	5
Associate Professor	School of Mathematics	1
	School of Biology	1
Professor	School of Chemistry	2

School of Biology

Sl No	Name	Position	Area of Research
1	Dr. Srinivasa Murty Srinivasula	Associate Professor	Apoptosis, Autophagy, NF-kB activation Genome stability.
2	Dr. Hema Somanathan	Assistant Professor	Sensory ecology and Plant-animal interactions
3	Dr. Jishy Varghese	Assistant Professor	Nutrient and Energy Homeostasis.
4	Dr. Kalika Prasad	Assistant Professor	Evolution of regulatory logic controlling organ positioning in plants.
5	Dr. K. T. Nishant	Assistant Professor	Mechanisms for maintenance of genome stability in <i>Saccharomyces cerevisiae</i> .
6	Dr. Ramanathan Natesh	Assistant Professor	Molecular Structural Biology, Crystallography and CryoEM structural studies of complexes of signal cardiovascular disease, Proteins involved in <i>Mycobacterium Tuberculosis</i> .
7	Dr. Ravi Maruthachalam	Assistant Professor	Centromere biology, Haploid genetics, Minichromosomes.
8	Dr. Sunish Radhakrishnan	Assistant Professor	Cellular asymmetry and cell division in bacteria.
9	Dr. Tapas Manna	Assistant Professor	Cell cycle regulation in eukaryotic cells: structure-function of microtubule, Centrosome and kinetochore proteins.
10	Dr. Ullasa Kodandaramaiah	Assistant Professor	Butterfly host-plant co-evolution, Butterfly phylogenetics, Biogeography, Phylogeography, wing-pattern evolution in butterflies.

School of Chemistry

Sl No	Name	Position	Area of Research
1	Prof. E. D. Jemmis	Professor	Theoretical and computational chemistry.
2	Prof. K. George Thomas	Professor	Photosciences, nanomaterials and surface properties.
3	Dr. Ajay Venugopal	Assistant Professor	Inorganic and Organometallic Chemistry.
4	Dr. Mahesh Hariharan	Assistant Professor	Biophysical Chemistry, Photophysics of Biomolecules (Effect of Light on DNA and Proteins).
5	Dr. Reji Varghese	Assistant Professor	Supramolecular Chemistry with DNA, DNA Nanotechnology, Functional Nanomaterials.
6	Dr. Sukhendu Mandal	Assistant Professor	Cluster-Assembled materials, Surface Plasmon of Nanoclusters, Hydrocarbon Cracking and Alkane metathesis.
7	Dr. K. M. Sureshan	Assistant Professor	Organic synthesis, Medicinal Chemistry, Supramolecular Chemistry.
8	Dr. R. S. Swathi	Assistant Professor	Theoretical Spectroscopy and Quantum Chemistry.
9	Dr. A. Thirumurugan	Assistant Professor	Hybroid organic-inorganic Framework materials, Photoluminescence, Gas storage -seperation and conducting materials.
10	Dr. Vinesh Vinayan	Assistant Professor	NMR Investigation of structure and dynamics of bio-molecules.

School of Mathematics

SI No	Name	Position	Area of Research
1	Dr. M. P. Rajan	Associate Professor	Numerical Functional Analysis/ Functional Analysis, Financial Engineering/Mathematical Finance.
2	Dr. Arun K. R.	Assistant Professor	Hyperbolic Systems of Conservation Laws, Finite Volume Schemes, Asymptotic Preserving Schemes, Nonlinear Waves.
3	Dr. Sachindranath Jayaraman	Assistant Professor	Linear Algebra -Non negative Matrices, Generalized Inverses and Applications.
4	Dr. Sheetal Dharmatti	Assistant Professor	Differential equations, control and game theory, Navier Stokes' equations and image processing.
5	Dr. Sujith Vijay	Assistant Professor	Ramsey Theory on the Integers.
6	Dr. Utpal Manna	Assistant Professor	Stochastic Partial Differential Equations, Stochastic Processes, Stochastic and Harmonic Analytic Approaches to Fluid Dynamics Models.

School of Physics

SI No	Name	Position	Area of Research
1	Dr. Anil Shaji	Assistant Professor	Quantum Information and quantum limited measurements.
2	Dr. Archana Pai	Assistant Professor	Gravitational Wave Physics, Statistical Signal Processing.
3	Dr. Deepshikha Jaiswal Nagar	Assistant Professor	Quantum criticality, magnetocaloric effect in quantum spin chains, Vortex state of superconductors and Multiferroics.
4	Dr. Joy Mitra	Assistant Professor	STM Tunnelling induced light emission and Plasmonics.
5	Dr. Madhu Thalakulam	Assistant Professor	Low temperature transport in nanoscale devices, Quantum measurement, of superconductors and Multiferroics.
6	Dr. Manoj A. G. Namboothiry	Assistant Professor	Optoelectronics Laboratory.
7	Dr. Rajeev N Kini	Assistant Professor	Ultrafast and Tetrahertz spectroscopy of semiconductors.

8	Dr. Ramesh Chandra Nath	Assistant Professor	Quantum Phase Transition in Frustrated Low-dimensional Spin Systems and Unconventional Superconductivity.
9	Dr. M. M. Shaijumon	Assistant Professor	Multifunctional Nanostructured Materials and Energy Storage.
10	Dr. S. Shankaranarayanan	Assistant Professor	Black-holes, Cosmology and Quantum Gravity
11	Dr. Sreedhar.B.Dutta	Assistant Professor	Statistical Physics and Quantum Field Theory

Visiting Faculty

The following visiting faculty in addition to guest faculty for special topics rendered their services to meet the requirements of academic works.

Sl No	Name	Discipline
1.	Prof. Mathew, NCBS, Bangalore	Biology
2.	Dr. T. Ganga Devi, Ex-Principal, Government College for Women, Thiruvananthapuram.	Lab Coordinator, Biology
3.	Prof. M. S. Gopinathan, Ph.D (IIT Kanpur) FASc, FNA, Ex-Professor, IIT-M, Chennai	Chemistry
4.	Prof. M. Padmanabhan, Ph.D (IIT Madras), Ex-Professor, MG University, Kottayam	Chemistry
5.	Shri. O. Thomas, Ex-Lecturer, Government College for Women, Thiruvananthapuram.	Lab Coordinator, Chemistry
6.	Dr. Ms. Shailaja.C , St. Thomas Central School	Communicative English
7.	Dr. Mohan. T. Mathew, Associate Director & Leader, Centre for Business Knowledge, Ernest & Young, Technopark	Economics
8.	Prof. P. Jyothilingam Ph.D (TIFR) Commutative Algebra. Retd. Professor- Pondicherry University	Mathematics
9.	Prof. Tara Nanda Ph.D (Courant Institute of Mathematical Sciences, NYU) Applied Mathematics	Mathematics
10.	Dr. Nicholas Sabu, Associate Professor, IIST, Valiamala	Mathematics
11.	Dr. K. S. S. Moosath, Associate Professor, IIST Valiamala	Mathematics
12.	Prof. V. Unnikrishnan Nayar, Ph.D(Kerala University) Ex-Dean, Cochin University of Science & Technology	Physics
13.	Prof. Subodh Shenoy, PhD (Yale) FASc, FNA, SS Bhatnagar Award, Ex-Professor, TWAS Trieste & University of Hyderabad.	Physics
14.	Dr. Christopher Chatelain, Sabbatical from Universite Henri Poincare, Nancy France	Physics

Administrative and Support Personnel

The institute has been operating with 30 regular staff, 8 Consultants and contractual experienced professionals. Recruitment of 14 personnel was done during the year and regular strength in position became 30 against a sanctioned strength of 66. The administrative personnel are enlisted as under

Administration

1. Shri. Bharat Jyoti, IFS, Registrar
2. Shri. N. K. Sukumaran, Deputy Registrar (Administration & Academics)
3. Shri. G. R. Giridharan, Deputy Registrar (Finance & Accounts)
4. Shri. Anil .J., Project Engineer cum Estate Officer
5. Shri. B. V. Ramesh, Assistant Registrar (Finance & Accounts)
6. Shri. S. Hariharakrishnan, Assistant Registrar (Administration & Academics)
7. Dr. Sainul Abideen P., Assistant Librarian
8. Shri. P. Y. Sreekumar, Scientific Officer
9. Shri. Laiju I. P., Assistant Executive Engineer (Electrical)
10. Shri. Priji E Moses, Assistant Executive Engineer (Civil)
11. Smt. Darli K. G., Private Secretary to Director
12. Shri. Krishnakumar .A., Junior Engineer
13. Smt. Navya Paul, Technical Assistant
14. Smt. Divya V.J., Technical Assistant
15. Smt. Nimi Joseph Chaly, Accountant
16. Smt. Nafeesa C. K., Library Information Assistant
17. Shri. Jayaraj J. R., Library Information Assistant
18. Smt. Reshmi V. K., Technical Assistant
19. Shri. Vijesh K., Technical Assistant
20. Shri. Alex Andrews P., Technical Assistant
21. Shri. Ajith Prabha, Office Assistant (Multi- Skill)
22. Shri. Manoj M. T., Office Assistant (Multi- Skill)
23. Shri. Rajesh A. P., Office Assistant (Multi- Skill)
24. Shri. Muruganandam A, Office Assistant (Multi- Skill)
25. Smt. Suja V. R., Office Assistant (Multi- Skill)
26. Smt. Beena N. K., Office Assistant (Multi- Skill)
27. Smt. Archana P. R., Office Assistant (Multi- Skill)
28. Smt. Vidya Senan .I, Office Assistant (Multi- Skill)
29. Smt. Sreeja M, Office Assistant (Multi- Skill)
30. Shri. Satheesh .R., Office Assistant (Multi- Skill)

Consultants and Contractual Officers

1. Shri. S. B. Jayaram, Consultant (Purchase & Stores)
2. Shri. P. N. Mohanan, Consultant (Finance & Accounts)
3. Shri. V. P. Nair, Consultant (Human Resources)
4. Shri. P. A. Prabhakaran, Chief Consultant (Constructions)
5. Shri. P. R. Balakrishna Pillai, Consultant (Civil)
6. Shri. K. Muraleedharan Nair, Consultant (Civil)
7. Shri. R. Vasudevan Nair, Consultant (Electrical)
8. Shri. C. M. Abraham (Officer on Special Duty)

3. Academic Programmes & Students

BS-MS Dual Degree Programme

114 students joined the fifth batch of Five Year BS-MS Dual Degree Programme in August 2012 at the Transit Campus in the College of Engineering Trivandrum, who were selected through three channels respectively KVPY, IIT-JEE merit list and the Aptitude Test for the top 1% students of class X and XII exams of all the State Boards, CBSE and ICSE.

The category distribution is as follows

SC	ST	OBC	GEN	TOTAL	MALE	FEMALE	Admission Source		
							KVPY	IIT-JEE	DIRECT
18	02	36	58	114	60	54	03	12	99

Ph.D. Programme

12 students were admitted for Ph.D. Programme during the academic year 2012-13. Students admitted to the doctoral program are those qualified in one of the National Eligibility Tests such as GATE/CSIR-UGC JRF/ JEST.

Int. Ph.D. Programme

The institute has started the Integrated PhD programme in 2012- 13 academic year. 11 students were admitted to the programme during this academic year through written exam/ JEST and interview.

Total student strength in 2012-13 is given below.

Programme	2008-09 admissions	2009-10 admissions	2010-11 admissions	2011-12 admissions	2012-13 admission	Total
5Yr Integrated BS-MS	14	48	58	76	114	310
Ph. D	--	16	17	30	12	75
Int. Ph.D.	-	-	-	-	11	11
Total	14	64	75	106	137	396

Scholarship / Fellowship

All the students admitted to the BS-MS Programme through IIT/JEE, KVPY/ SCB (direct admission) are awarded with Fellowships of Rs 5000/- per month under KVPY or INSPIRE Programme of Department of Science & Technology, Government of India.

The Ph.D scholars who are JRFs/SRFs of CSIR/UGC/ICMR/DBT etc. draw fellowships and contingency according to the granting organizations. The other qualified students with GATE/JEST admitted to Ph.D Programme have been given scholarship of Rs 16000/- p. m. by the institute. The students of Integrated Ph.D programme draw fellowship of Rs.10, 000/- per month from the institute.

4. Research and Development Activities

The institute has been active in frontier areas of research. The faculty members have set up research and computing laboratories in the temporary campus. Several scientific collaborations with researchers in premier institutions in India and abroad are in progress. In addition to 17 ongoing sponsored projects from various funding agencies, the faculty members have started 4 new projects funded by government as well as industries and also completed one project during 2012-13. Many post-doctoral fellows have joined under in various projects during this period. The institute has also organized a special session on “Basics of Intellectual Property Rights and its protection” by Ms. Brinda Varma, IISc Bangalore for the faculty and staff members.

New Sponsored Projects

4 new sponsored projects as under have been initiated:

SI No	Name of the Project Investigator	Principal Investigator	Co-Investigator	Sponsoring Agency	Amount sanctioned	Duration
1	Development of Enhanced CPL-active Materials for Potential Application in Future Security Technology	Prof. K. George Thomas		DST	6.16 Lakhs	2012-14
2	Nano architecture TiO ₂ -based hybrid structures for Li-ion battery applications	M. M. Shaijumon		BRNS - DAE,	14.8 Lakhs	2012-15
3	Design , Synthesis and characterization of self-assembled molecular materials: Applications in Drug delivery and Nanoscale energy storage devices	M.M. Shaijumon	Dr. Vibin Ramakrishnan (IIT Guwahati)	DBT	104.44 Lakhs	2013-16
4	Development of Silicon-graphene hybrid anodes for Li-ion battery	M. M. Shaijumon		Renault - Nissan,	25 Lakhs	2013-14

Ongoing Sponsored Projects

17 research projects enlisted below commenced from 2009 are under execution.

SI No	Name of the Project	Principal Investigator	Co-Investigator	Sponsoring Agency	Amount Sanctioned (Rs. in Lakh)	Duration
1.	Enhanced quantum measurements using Bose Einstein Condensates	Dr. Anil Shaji	None	DST (Fastrack)	12.84 Lakhs	2010-13
2.	Max Planck Partner group of Albert Einstein Institut Germany	Dr. Archana Pai	German PI-- Prof. Bernard Schutz, Director, Albert Einstein Institut	DST India and Max Plank Society Germany (2011-14)	60.00 Lakh	2011-14
3.	Coherent multi-detector gravitational wave search using LCGT and advanced interferometers	Dr. Archana Pai	Japanese PI-- Prof. project for (2011-2013), DST, India and JSPS, Japan H. Tagoshi, Osaka University, Indian Co-PI Dr Anand S Sengupta University of Delhi	Indo-Japan DST-JSPS joint research project for (2011-2013), DST, India and JSPS, Japan	5.46 Lakhs	2011-13
4.	Gravitational Waves: Emerging window of the Universe	Dr. Archana Pai	None	SERC Fast Track Scheme for Young Scientist	12.24 Lakhs	2011-14
5.	Organic and Organic-Inorganic Hybrid Solar Cells	Prof. K. George Thomas	None	DST under the framework of India-European Union Science and Technology Cooperation Agreement	56 Lakhs	2011-14
6.	Ecology and Behaviour of group-living spiders	Dr. Hema Somanathan	None	CSIR	17.34 Lakhs	2011-14
7.	Genetic analysis of crossover assurance mechanisms facilitating meiotic chromosome segregation	Dr. Nishant K.T	None	Wellcome Trust-DBT India Alliance	330.3 Lakhs	2012-17

8.	Structural analysis of proteins and its interacting partners	Dr. Ramanathan Natesh	None	DBT (Ramalingaswami Fellowship)	70 Lakhs	5 Years
9.	Synthesis and physical properties of frustrated $S=1/2$ square lattice compounds.	Dr. Ramesh Chandra Nath	None	DST	52.84 Lakhs	2012-15
10.	Generation and characterization of mini chromosomes and neo centromere formation in plants	Dr. Ravi Maruthachalam	None	Department of Biotechnology (DBT)	32.5 Lakhs	2010-14
11.	Design and development of 3-dimensional Li-ion microbatteries	Dr. M.M Shaijumon	None	DST	18 Lakhs	3 yrs
12.	Ramanujan Fellowship	Dr. S. Shankara narayanan	None	DST, India	73 Lakhs	2010-14
13.	DST-Max Planck Partner group	Dr. S. Shankara narayanan	None	DST India and Max Planck Society, Germany	120 Lakhs	2011-15
14.	A multilayered approach to decipher uncharted mechanisms of asymmetric cell division	Dr. Sunish Kumar Radhakrishnan	None	Wellcome Trust/DBT India Alliance	267.62 Lakhs	2011-16
15.	Probing Adeniphostin Mediated IP3R Activation using Click Chemistry Approach	Dr. K.M Sureshan	None	DST	19.32 Lakhs	2009-12
16.	Determining the structure- function aspects of microtubule end binding EB family proteins	Dr. Tapas K Manna	None	CSIR, Govt of India	19 Lakhs	2011-14
17.	To determine the molecular mechanisms involved in centrosomal transforming acidic coiled coil3 (TACC3) mediated cell progression	Dr. Tapas K. Manna	None	DST, Govt. of India	27.13 Lakhs	2012-15

Completed Sponsored Project

Sl No	Principal Investigator	Name of the Project	Sponsoring Agency	Amount Sanctioned (Rs. In Lakh)	Co-Investigator	Duration
1	Dr. Hema Somanathan	A comparative approach to understand innate colour preferences in bees	Royal Society, UK	73 Lakh	Natalie Hempel de Ibarra, Univ. Exeter, UK	Jan 2011-Dec 2012

The main highlights of this completed project are as follows: We determined the innate colour preferences in *Apis cerana*, a sister species of the European honeybee, and in a stingless bee, *Trigona iridipennis*, that represents the *Meliponini*, a sister clade of the *Apini* (honeybees) and *Bombini* (bumblebees). Their preferences were compared with those of European bees testing the hypothesis of sensory bias in flower-foraging insects vs innate preferences adapted to the local flora. In behavioural experiments bees learned to forage in a choice setup covered with black paper with grey discs and are exposed to a set of colours in an unrewarded choice test. Keeping bees in flight nets enabled us to estimate and control their previous and current visual experience with natural flowers. We investigated the adaptive value of innate colour preference, we also measured and analysed colour spectra of the locally available native flora. We collected nectar in probes to measure reward quality of flowers of different species, relating it to their colouration. We also collected information on the type of reward (nectar or pollen) from published literature or direct observations to understand how innate colour preferences may benefit pollen- and nectar-foraging bees.

5. Research Publications

Journal Articles

1. Rijo T. Cheriya, Jimmy Joy, Alex P. Andrews, **Anil Shaji** and **Mahesh Hariharan**, Energy Transfer in Near Orthogonally Arranged Chromophores Separated through a Single Bond, *J. Phys. Chem C* 116, 12489-12498, 2012.
2. Thejasvi Beleyur, ValiyaKadavu Abdul Kareem, **Anil Shaji** and **Kalika Prasad**, A mathematical basis for plant patterning derived from physico-chemical phenomena, *BioEssays* 35, 366, 2013.
3. Salini Jose, Noufal Jaseem and **Anil Shaji** Probe readout and quantum-limited measurements, *Phys. Rev. A* 87, 022330, 2013.
4. **Archana Pai** and K. G. Arun, Singular value decomposition in parametrised tests of post-Newtonian theory *Class. Quant. Grav.* 30, 025011, 2013.
5. K. G. Arun and **Archana Pai**, Tests of General Relativity and Alternative theories of gravity using Gravitational Wave observations, (Invited Review) *I. J. Mod.Phys.D*, Vol. 22, 1341012 2013.
6. **Arun K. R**, Lukáčová-Medvid'ová, M.; Prasad, Phoolan; Raghurama Rao, S. V.A second order accurate kinetic relaxation scheme for inviscid compressible flows.Recent developments in the numerics of nonlinear hyperbolic conservation laws, 1-24, *Notes Numer.Fluid Mech. Multidiscip.Des.*, 120, Springer, Heidelberg, 2013.
7. **Arun K. R**, Lukáčová-Medvid'ová, M.A Characteristics based genuinely multidimensional discrete kinetic scheme for the Euler equations. *J. Sci. Comput.* 55 no. 1, 40-64, 2013.
8. **Arun K. R**, A numerical scheme for three-dimensional front propagation and control of Jordan mode. *SIAM J. Sci. Comput.* 34 no. 2, B148-B178, 2012.

9. Subhendu Roy, **Eluvathingal D. Jemmis**, Axel Schulz, Torsten Beweries, and Uwe Rosenthal, Stabilization of an Unusual Four-Membered Metallacycloallene by a Transition Metal Fragment: A Novel Metal-Carbon Bond, *Angew. Chemie*, 51, 4347-4350, 2012.
10. David A. Addy, Nicholas Philips, Glesni A. Pierce, Dragoslav Vidovic, Tobias Kraemer, Dibyendu Mallick, **Eluvathingal D. Jemmis**, Gill Reid and Simon Aldridge, (Dimethylamino)borylene and Related Complexes of Electron-Rich Metal Fragments: Generation of Nucleophile-Resistant Cations by Spontaneous Halide Ejection, *Organometallics*, 31, 1092-1102, 2012.
11. M. Shanthil, Reshmi Thomas, **R. S. Swathi**, and **K. George Thomas**, Ag@SiO₂ core-shell nanostructures: Distance-dependent plasmon coupling and SERS investigation, *J. Phys. Chem. Lett.*, 3(11), pp1459-1464, 2012.
12. PratapZalake and **K. George Thomas**, Role of Hydrogen Bonding on the Self-Organization of Phenyleneethynylenes on Surfaces, *Langmuir*, 29 (7), pp2242-2249, 2013.
13. P. K. Santra, P. V. Nair, **K. George Thomas** and P. V. Kamat, CuInS₂-sensitized quantum dot solar cell. Electrophoretic deposition, excited-state dynamics, and photovoltaic performance, *J. Phys. Chem. Lett.*, 4(5), pp 722-729, 2013.
14. **Kodandaramaiah U**, Weingartner E, Janz N, Leski M, Slove J, Warren A, Nylin S . Investigating concordance among genetic data, subspecies circumscriptions and hostplant use in the nymphalid butterfly *Polygoniafaunus*. *PLoS ONE* 7(7): e41058, 2012.
15. **S. Mandal**, A. C. Reber, M. Qian, P. S. Weiss, S. N. Khanna, and A. Sen 'Controlling the Band Gap Energy of Cluster-Assembled Materials' *Acc. Chem. Res.*, Articles ASAP, DOI: 10.1021/ar3002975.
16. KK Gireesh, Rashid A, Chakraborty S, Panda D, **Manna T**. CIL-102 binds to tubulin at colchicine binding site and triggers apoptosis in MCF-7 cells by inducing monopolar and multinucleated cells. *Biochemical Pharmacology*, 84(Sept), 633-645, 2012.
17. SesaVempati, **J. Mitra**, and P. Dawson One-step synthesis of ZnO nanosheets: a blue-white fluorophore. *Nanoscale Research Letters*, 7, 740, 2012.
18. SesaVempati, Saraswathi C., **J. Mitra**, K. K. Nanda, P. Dawson and S. B. Krupanidhi Unusual photoresponse of indium doped ZnO/organic thin film heterojunction. *Applied Physics Letters*, 100, 162104, 2012.
19. Nowaczyk, **R. C. Nath**, H. Zimmermann, and R. Böhmer Deuteron Magnetic Resonance Studies of Anhydrous Caffeine, *Zeitschrift Fur Physikalische Chemie-International Journal of Research in Physical Chemistry & Chemical Physics*, 226 (11-12), p. 1115-1124, 2012.
20. E. Mathews, K. M. Ranjith, M. Baenitz, and **R.C. Nath** Field induced magnetic transition in low-dimensional magnets Bi(Ni,Co)PO₅, *Solid State Communications*, 154 p. 56-59 , 2013.
21. **R.C. Nath**, A. A. Tsirlin, P. Khuntia, O. Janson, T. Forster, M. Padmanabhan, Y. Skourski, M. Baenitz, H. Rosner, and I. Rousochatzakis "Magnetization and spin dynamics of the spin S=1/2 hourglass nanomagnet Cu₅(OH)₂(NIPA)₄·10H₂O" *PHYSICAL REVIEW B*, 87(21), p. 214417, 2013.
22. Brown, M.S., Lim, E., Chen, **Nishant K.T.** and Alani, E. Genetic Analysis of mlh3 Mutations Reveals Interactions Between Crossover Promoting Factors During Meiosis in Baker's Yeast. *G3 (Bethesda)* 3: 9-22, 2013.
23. Pinon V, **Prasad K**, Grigg SP, Sanchez-Perez GF, Scheres B Local auxin biosynthesis regulation by PLETHORA transcription factors controls phyllotaxis in Arabidopsis. *Proc Natl Acad Sci USA* 110: 1107- 1112, 2013.
24. Dhonukshe P., Weits D, Cruz-Ramírez A, Deinum E, Tindemans S., Kakar, **K., Prasad. K**, PekkaMähönen A., Ambrose C., Sasabe M., Wachsman G., Luijten M., Bennett T., Machida Y., Heidstra R., Wasteneys G., Mulder B., and Scheres B. A PLETHORA-Auxin Transcription Module Controls Cell Division Plane Rotation through MAP65 and CLASP. *Cell* 149:383-396. (Featured in Faculty F1000.), 2012.
25. **M.P. Rajan** and Jimson Mathew, Kalman Filter and Financial Time Series Analysis, *Communications in Computer and Information Science*, 305, 339-351, 2012.

26. Rakesh Tibrewala, Spherically symmetric Einstein-Maxwell theory and loop quantum gravity corrections, *International Journal Class. Quantum Grav.* 29 , 235012, 2012.
27. **Sachindranath Jayaraman**, EP matrices in indefinite inner product spaces, *Functional Analysis, Approximation and Computation*, 4(2), 23-31, 2012.
28. **Sachindranath Jayaraman**, Nonnegative generalized inverses in indefinite inner product spaces, *Filomat*, 27(4), 659-670, 2013.
29. P. M. Sudeep, T.N. Narayanan, Aswathi G, **M. M. Shaijumon**, P. M. Ajayan et al., 'Covalently interconnected 3-D Graphene Oxide solids', *ACS Nano*, DOI: 10.1021/nn402272u, 2013.
30. Dijo Damien, Binson Babu, T. N. Narayanan, A.L.M.Reddy, P. M. Ajayan and **M. M. Shaijumon**, Eco-efficient synthesis of graphene nanoribbons and their application in supercapacitors *Graphene*, 1, pp 37-44, 2013.
31. Suman Ghosh, **S. Shankaranarayanan**, Entanglement signatures of Quantum Phase transition in Higher derivative Theories, *International Journal Phys. Rev. D.* 86, 125011, 2012.
32. Suman Ghosh, **S. Shankaranarayanan**, Linear Higher derivative field theories, entanglement entropy and Quantum Phase transition, *International Journal J. Phys. Conf. Series.* 405, 012016 ,2012.
33. **Somanathan H**, Balamurali G.S., Nicholls E.K., N. Hempel de Ibarra. Spontaneous colour preferences in the Western honeybee, *Apis cerana*. *Front. Behav. Neurosci.* doi: 10.3389/conf.fnbeh.27.00314
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37. **K. M. Sureshan** and R. G. Gonnade. Weak becomes strong: Remarkable strength of CH...Pi hydrogen bond in the presence of OH...O hydrogen bonds in the crystal stabilization. *CrystEngComm* 15, 1676-1679, 2013.
38. Pathigoolla, R. P. Pola and **K. M. Sureshan**. A Versatile Solvent-Free Azide-Alkyne Click Reaction Catalyzed by in situ Generated Copper Nanoparticles. *Appl. Catal. A: General* 453, 151-158, 2013.
39. P. Krishnan, S. Ramakrishnan and **K. M. Sureshan**, Supramolecular design of a bicomponent topochemical reaction between two non-identical molecules. *Chem. Commun.* 49, 1494-1496, 2013.
40. Reshmi Thomas and **R. S. Swathi**, 'Organization of Metal Nanoparticles for Surface-Enhanced Spectroscopy: A Difference in Size Matters', *Journal of Physical Chemistry C*, 116 (41), pp 21982-21991, 2012.
41. S. Chandra Shekar and **R. S. Swathi**, 'Rattling Motion of Alkali Metal Ions through the Cavities of Model Compounds of Graphyne and Graphdiyne', *Journal of Physical Chemistry A*, Article ASAP, 2013.
42. Rohini K and **R. S. Swathi**, 'Host-Guest Interactions in the Confined Geometries Formed from Molecular Aggregates of Push-Pull Molecules', *Journal of Physical Chemistry A*, 117 (28), pp 5794-5801, 2013.
43. W. Pan, J. F. Klem, J. K. Kim, **M. Thalakulam**, M. J. Cich, and S. K. Lyo, Chaotic quantum transport near the charge neutrality point in inverted type-II InAs/GaSb field-effect transistors, *Appl. Phys. Lett.* 102, 033504 , 2013.
44. Wei Li, M. S. R. N. Kiran, Jamie L. Manson, John A. Schlueter, **A. Thirumurugan**, U. Ramamurty, and Anthony K. Cheetham, Mechanical properties of a metal-organic framework containing hydrogen-bonded bifluoride linkers, *Chem. Commun.*, 49, 4471, 2013.

45. **Utpal Manna** and Manil T Mohan, Large deviations for the Shell model of turbulence perturbed by Levy noise, *Communications on Stochastic Analysis*, Vol 7, No. 1, pp 39-63, 2013.
46. **Utpal Manna** and Manil T Mohan, Two-dimensional Magneto-Hydrodynamic system with jump processes: well posedness and invariant measures', *Communications on Stochastic Analysis*, Vol 7, No. 1, ,pp 153-178, 2013.
47. G. Lv, H.K. Fasshuber, A. Loquet, J.P. Demers, **V. Vijayan**, K. Giller, S. Becker, A. Lange 'A straightforward method for stereospecific assignment of val and leuprochiral methyl groups by solid-state NMR: Scrambling in the [2-13C] Glucose labeling scheme', *Journal of magnetic resonance*, 228, pp 45-49, 2013.
48. V. Daebel, S. Chinnathambi, J. Biernat, M. Schwalbe, B. Habenstein, A. Loquet, E. Akoury, K. Tepper, H. Müller, M. Baldus, C. Griesinger, M. Zweckstetter, E. Mandelkow, A. Lange, **V. Vijayan**, 'β-Sheet core of tau paired helical filaments revealed by solid-state NMR', *Journal of American chemical society*, 134 (34), pp 13982-13989, 2012.
49. S. Sezi, **R. Varghese**, T. Vilaivan, H.-A. Wagenknecht 'Conformational Control of Dual Emission by Pyrrolidinyl PNA-DNA Hybrids' *ChemistryOpen* 1, pp 173-176, 2012.

Conference Articles

1. **J. Mitra**, Michael G. Boyle and Paul Dawson Re-scaling the plasmon energy for metal particles in tunneling proximity - evidence from STM, *Gordon Research Conferences, Plasmonics: Light-Matter Interaction at the Nanoscale*, Waterville, ME, USA, June 2012.
2. SesaVempati, Saraswathi C, **J. Mitra**, K. K. Nanda, P. Dawson and S. B. Krupanidhi Visible range photoresponse from Indium doped ZnO/organic thin film heterojunctions. (European MRS Spring Meeting, Strasbourg, France, May 2012.
3. SesaVempati, **J. Mitra** and P. Dawson Negative photoresponse of a ZnO-organic polymer nanocomposite. SesaVempati, J. Mitra and P. Dawson (European MRS Spring Meeting, Strasbourg, France, May 2012.
4. **R. Natesh**, D.K. Clare, A.L. Horwich and H.R. Saibil 'Visualising Chaperonin non-native protein interactions by single particle cryo EM', *Seminar Workshop on Microbial Biology, CDFD, Hyderabad*, 11-14 December 2012.
5. **Somanathan H**, Balamurali G.S., Nicholls E.K., N. Hempel de Ibarra. Spontaneous colour preferences in the Western honeybee, *Apis cerana*. *Front. Behav. Neurosci*, doi: 10.3389/conf.fnbeh. 2012.27.00314.
6. **Tapas Manna**, Role of microtubule end binding proteins in mitosis. in the International Conference on Chromosome Stability at Thiruvananthapuram in December 2012 (as speaker).
7. Geethu E. Thomas, **Manna T**, Microtubule end binding protein EB compromises paclitaxel sensitivity in Breast cancer. 3rd International conference on Stem Cells and cancer: Proliferation, differentiation and apoptosis at New Delhi in October, 2012.
8. Puja Singh, **Tapas Manna**, Centrosome protein transforming acidic coiled-coil 3 (TACC3) nucleated microtubules through its conserved coiled-coil domain" in 25th Kerala Science Congress Meeting, 2013 (oral presentation).
9. JS Sreeja, **Tapas Manna**, "Mechanisms underlying the recognition of tubulin subunits by microtubule TIP binding protein EB1" in 25th Kerala Science Congress Meeting, 2013 (poser presentation).

Book Chapter

Prasad K, Dhonukshe P Polar auxin transport: Cell polarity to patterning. *Polar Auxin Transport, Signaling and Communication in Plants* 17, DOI 10.1007/978-3-642-35299-7_2, Springer-Verlag Berlin Heidelberg, 2013.

6. Awards and Honours

SI No	Faculty	Honours/ Awards
1.	Dr. Ajay Venugopal School of Chemistry	INSPIRE Faculty Fellowship Award, DST, Government of India.
2.	Dr. Kalika Prasad School of Biology	Young Biotechnologist Award from Society of Applied Biotechnology, India.
3.	Dr. Ramanathan Natesh School of Biology	Chaired a technical Session on Monday, the 2nd during 3.45 to 4.30 PM at XXXIII Annual Meeting of the Electron Microscopy Society of India, organized during July2-4, 2012 in J.N. Tata auditorium at IISc Bangalore Campus.

7. Other Academic Activities

The faculties of the institute have participated in various national and international conferences as listed below.

Conferences and Workshops Attended

SI No	Faculty	Conference/Workshop	Venue	Date	International/ National
1.	Dr. Anil Shaji	International Conference on Quantum Information and Quantum Computation 2012	IISc Bangalore	7-12 Jan2013	International
2.	Dr. Archana Pai	LIGO-VIRGO Collaboration Meeting Poster Title: Singular Value Decomposition in post-Newtonian gravitational waveform: Analytic expressions for the new phasing coefficients	La Sapienza Rome	10-14 Sept 2012	International
		30th Astronomical Society of India Meeting Plenary Talk Title: Gravitational Wave Search with a Multi-Detector Antenna: Aperture Synthesis	Residency Towers, Trivandrum	20-22 Feb 2013	National
3.	Prof. K. George Thomas	Invited lecture in ICTS Discussion Meeting on Emerging Themes in Plasmonics	TIFR Hyderabad	July 1-3, 2012	International

		Invited lecture in the 8th JNC meeting on Chemistry of Materials	Trivandrum	September 30-October 02, 2012	National
		7th Asian Photochemistry Conference (one of the two councilors representing India and gave presentation)	Osaka, Japan	November 12-15, 2012	International
		Invited lecture in the International Symposium on Green Photonics for Efficient Photon-Harvesting Materials and Reactions	Nara Institute of Science and Technology, Nara, Japan	November 16, 2012	International
		Invited lecture in "Current Research in Chemical Sciences"	Shivaji University, Kolhapur	January 22-23, 2013	National
		Invited lecture in Indo-Israel meeting on Material Sciences and Nanosciences	Mahatma Gandhi University, Kottayam	January 31-February 01, 2013	International
		Plenary lecture in the 5th Kerala Science Congress	Trivandrum	January 29- February 01, 2013	National
		Plenary lecture in NanoIndia supported by supported by the Nano Mission of the Department of Science and Technology, Government of India	CSIR-National Institute for Interdisciplinary Science and Technology, Trivandrum	Feb. 19-20, 2013	National
4.	Haris M. K. & Nairwita Mazumder	GWave search IUCAA- Indigo Workshop On GW Data ANALYSIS	IIUCAA Pune	1-21 July 2012	National
5.	Haris M. K.	27th Meeting of the Indian Association for General Relativity and Gravitation (IAGRG-27)	Srinagar (Garhwal)	7 - 9 Mar 2013	National
6.	Dr. Hema Somanathan	Biology of tropical pollination: from individuals to networks	Kerala, India	19-21 Feb 2013	International
7.	Prof E.D. Jemmis	Academy of the Developing World	Tianjin, China	18-21 Sep 2012	International
8.	Dr. Joy Mitra	European MRS Spring Meeting 2012	Strasbourg, France	14-18 May 2012	International
		Metain, ICTS Discussion Meeting on Emerging Themes in Plasmonics.	Hyderabad, India	1-3 July-12	National

9.	Dr. S. Murty Srinivasula	Erudite conclave	Medical College Trivandrum	3 Nov 2012	National
		International seminar on recent biochemical approaches in therapeutics	University of Kerala	9-11 Jan 2013	International
		National Workshop on Integrative Biology	University of Kerala	26-27 Mar 2013	National
		Young Investigators Meetings (YIM)	MIT, Boston, USA	6-8 Oct 2012	International
		Young Investigators Meetings (YIM)	Jodhpur	9-14 Feb 2013	National
10.	Dr. R. Natesh	51th Annual Meeting of Electron Microscopy Society of India (EMSI)	IISc, Bangalore	2 - 4 July 2012	International
		Seminar Workshop on Microbial Biology	CDFD, Hyderabad	11 -14 Dec 2012	National
		International Conference on Biomolecular Forms and Functions	IISc Bangalore	8 -12 Jan 2013	International
		National Seminar on Structural Bioinformatics	Tirunelveli	15 Mar 2013	National
11.	Dr. Nishant K.T.	All India Cell Biology Conference	BARC, Mumbai	17-19 Oct 2012	International
12.	Dr. Ravi Maruthachalam	Biosummit 2013 - Synergistic effect of Beneficial microflora with multidisciplinary approaches	Hindustan College of Arts and Science, Coimbatore Tamil Nadu	31-Jan-13	National
13.	Dr. Sainul Abideen P.	Trends in Knowledge and Information Dynamics (ICTK-2012)	ISI, Bangalore	9-13 July 2012	National
		9th Annual meet & Workshop of the INDEST Consortium	IIM Ahmadabad	18-19 Jan 2013	National
14.	Dr. Sanil Unnikrishnan	5th KIAS workshop on cosmology and structure formation	Seoul, South Korea	29 Oct-4 Nov 2012	International
		Particle Physics and Cosmology (PPC 2012)	Seoul, South Korea	5 -9 Nov, 2012	International
		Mini workshop on cosmology at Asian Pacific Centre for theoretical physics (APCTP)	Pohang, South Korea	10-11 November 2012	International

15.	Dr. Sukhendu Mandal	30th Astronomical Society of India Meeting	Trivandrum	20-22 February 2013	National
		NANO INDIA-2013	Trivandrum	19-20 Feb 2013	National
16.	Dr. Suman Ghosh	27th Meeting of the Indian Association for General Relativity and Gravitation (IAGRG-27)	Srinagar (Garhwal)	7 - 9 Mar 2013	National
17.	Dr. Sunish K. Radhakrishnan	ESF-EMBO Symposium - Bacterial Networks (BACNET 13)	Pultusk, Poland	16-21 Mar 2013	International
		4th ASM Conference on Prokaryotic Cell Biology and Development	Montreal, Canada	6- 10 May 2012	International
18.	Dr. R. S. Swathi	Advances in Computational Physics (ACP-2013)	Central University of Tamil Nadu, Thiruvavur	14-16 Feb 2013	National
		ICTS Discussion Meeting on Emerging Themes in Plasmonics	Tata Institute of Fundamental Research and University of Hyderabad	24 June - 3 July 2012	International
		Theoretical Chemistry Symposium 2012	IIT Guwahati	19 - 22 Dec 2012	International
		Electronic Structure and Dynamics of Molecules and Clusters (ESDMC-2013)	IACS, Kolkata	17 - 20 Feb 2013	International
		National Workshop on Computational Chemistry	IIST, Trivandrum	3-4 Dec 2012	National
		National Seminar on Computational Chemistry	Sacred Heart College, Thevara, Cochin	5 - 6 Dec 2012	National
		Workshop on Computational Chemistry	SNM College, Maliankara, Cochin	5-6 Mar 2013	National
		Advances in Computational Physics (ACP-2013)	Central University of Tamil Nadu, Thiruvavur	14-16 Feb 2013	National
19.	Dr. Tapas Manna	Stem Cells and cancer: Proliferation, Differentiation and apoptosis	New Delhi	27-30 Oct 2012	International

20.	Dr. A. Thirumurugan	Chromosome Stability	Trivandrum	17-19 Dec 2012	International
		NANO INDIA-2013	Trivandrum	19-20 Feb 2013	National
21.	Dr. Ullasa Kodandaramaiah	DST-Royal Society meeting on the Biology of Pollination: From individuals to Networks	Varkala	19-21 Feb 2013	International
22.	Dr. Vinesh Vijayan	NMRS	IIT Bombay	3-6 Feb 2013	International

Invited Lectures and Seminars Delivered

SI No	Faculty	Title Of Lecture	Venue
1.	Prof E.D Jemmis	A Structural Chemistry for Boron	International Congress for Quantum Chemistry, Colorado USA
2.	Dr. Anil Shaji	Quantum limited Measurements	Indian Institute of Space Science and Technology, Thiruvananthapuram
3.	Dr. Ajay Venugopal	Hydrogen Storage in Rare-Earth Metal Hydrides A Molecular Approach	Rare Earth Association of India
4.	Prof. K. George Thomas	Plasmonic Assemblies: SERS and Single Particle Spectroscopy	Tokyo Metropolitan University
		Coupled and Chiral Surface Plasmons in Metal Nanostructures	Ecole Polytechnique Fédérale de, Lausanne
5.	Dr. Hema Somanathan	The buzz about bees	Stella Maris College, Chennai
6.	Dr. Joy Mitra	Tunnel Current Fluctuations: What information do they reveal.	Indian Institute of Science Education and Research Kolkata
7.	Dr. Kalika Prasad	Patterning and Polarity in plants	National University of Singapore
		Control of Organ positioning in plants	Department of Microbiology and cell biology, Indian Institute of Science, Bangalore
8.	Dr. Madhu Thalakulam	Quantum dot qubits	Kerala University
9.	Prof. S. Murty Srinivasula	Cellular Targets for Therapeutic Intervention	Medical College, Trivandrum

		Autophagy in Host immunity	University of Kerala, Trivandrum
		Integrative Biology-Immunity	University of Kerala, Trivandrum
10.	Dr. R. Natesh	Protiens: The Wonders of Molecular Nano Machines	KVPY Summer Program, Organised by IISER-TVM,
		Visualising the non-native proteins - a Single particle CryoEM approach.	51st AMEMSI IISc, Bangalore
		From the atomic resolution Protein Crystallography maps to Single Particle cryoEM	National colloquium on 100 years of crystallography, Organized by SRIBS,
		PX, CryoEM and Bioinformatics in Structural Biology	Bioinformatics Centre, Department of Physics, MSU, Tirunelveli -12
11.	Dr. Nishant K.T.	Analysis of crossover assurance mechanisms in <i>S. cerevisiae</i> using high throughput genomics	NIIST, Trivandrum
		Next Generation Sequencing and its applications in analysis of Genome Variation	Kerala University, Trivandrum
12.	Dr. M.P. Rajan	Interest Rate Options	Indian Institute of Quanatitave Finance, Mumbai
13.	Dr. Ravi Maruthachalam	Centromere mediated genome elimination	Hindustan College of Arts and Science, Coimbatore, Tamil Nadu
14.	Dr. Reji Varghese	Molecular Recognition	Payyanur College Kerala
15.	Dr. Sainul Abideen P.	Digital Information Resource Management Subscription, Access, and Licensing'	CET, Thiruvananthapuram
		Design and Organization ; Architecture, Inter-operability, Protocols & Standards	CET, Thiruvananthapuram
		Digitisation of Library: Major Concepts	Regional Training Institute, Thiruvananthapuram
		Short term training programme on 'Internet awareness, Office Automation and Web security	Govt, Engineering College Barton Hill, Thiruvananthapuram

		Developing Digital Libraries using GenISISWeb	International Training Programme on Digital Library Practices & Information Technology Application for Knowledge Management organized by Fluid Control Research Institute (FCRI), Palakkad
		Marketing of information Services Using Technology	
		Digital Libraries	CET, Thiruvananthapuram
		Electronic Resources Management	Academic Staff College, University of Kerala
16.	Dr. M. M. Shaijumon	Physics at the Nanoscale	Sir Syed College, Taliparamba, Kerala
		Nanomaterials for Energy Applications	Victoria College, Palakkad, Kerala
		Nanotechnology for Clean Energy & Environment	WIRAS, Payyanur, Kerala
		Electrochemical techniques for the synthesis & characterization of Advanced Materials	Kerala University
		3-D Li-ion microbatteries	Center for Fuel Cell Technology, Chennai
17.	Dr. S. Shankaranarayanan	Alternative to scalar field driven inflation	Albert Einstein Institute, Germany
18.	Dr. Sujith Vijay	Monochromatic Progressions in Random Colorings	VVV College, Virudhunagar
19.	Dr. Sunish Kumar Radhakrishnan	Prokaryotic cell fate and division control: A tale of two unorthodox regulators	Institut de Recherche Interdisciplinaire, CNRS, Lille, France
20.	Dr. K. M. Sureshan	Regioselectivity among six secondary hydroxyl groups: Selective acylation of the least reactive hydroxyl groups of inositol	26th International Carbohydrate Symposium, Madrid, Spain
		The Impact of 'Click Chemistry' in Modern Science	FCBS
		Chemistry & Supramolecular Chemistry of Sugar and Sugar Mimics.	Indo-German Conference on Complex Chemical Systems, IISER Bhopal
		Topochemical Huisgen Reaction: Serendipity to Design.	New Directions in Chemical Sciences (NDCS) IIT Delhi

		The Exciting World of Chemistry	Govt. Brennen College Thalassery
		Topochemical Huisgen Reaction: Serendipity to Design	Carbo-27, 27th Carbohydrate conference, CFTRI Mysore
		Drug Discovery: A Chemist's Role	National seminar on recent advances in Chemistry, Payyanur College
		Design of Topochemical reactions	Current Trends in Chemistry, CUSAT
		Design of Topochemical Huisgen reactions	Mid -CRSI meeting, Surathkal
21.	Dr. R. S. Swathi	Organization of metal nanostructures for Surface-Enhanced Spectroscopy: A Computational Investigation	Central University of Tamil Nadu, Thiruvarur
		Ab-initio approaches for molecular structure determination	IIST, Trivandrum
		Fundamentals of molecular spectroscopy	Sacred Heart College, Thevara
		The fascinating world of theoretical chemistry	SNM College, Maliankara
22.	Dr. Vinesh Vijayan	Solid State NMR Spectroscopy	Kannur university
		Beta sheet core of tau PHF revealed by solid-state NMR	Newman college, Thodupuzha

Foundation Day Lecture

The institute celebrated its fourth foundation day on September 28, 2012. Emeritus Professor J. V. Narlikar, Inter-University Centre for Astronomy and Astrophysics (IUCAA), Pune delivered the lecture on “ How well do we know our universe? “

Colloquia

Sl No	Speaker	Institute	Title	Date
1.	Prof. S.C. Lakhotia	Cytogenetics Laboratory, Department of Zoology, Banaras Hindu University, Varanasi	Understanding the non-coding component is essential for comprehending the complexity of eukaryotic genomes	22.3.2013
2.	Prof. Govind Swarup	Former Director, National Centre for Astrophysics, TIFR	Radio Universe and the GMRT Exploration of the Moon	22.2.2013
3.	Prof. Ada E. Yonath	Recipient of the 2009 Nobel Prize in Chemistry	The Fruit of Curiosity	07.02.2013
4.	Dr. A. Ajayaghosh	CSIR Outstanding Scientist, IIIST Thiruvananthapuram	Bioinspired Chemistry : Chemist's Way of Mimicking Nature's Creativity	11.01.2013
5.	Prof. T.K Chandrashekar	Director, NISER Bhubaneswar	Expanded Porphyrins: Versatile Molecules for Diverse Applications	04.01.2013
6.	Prof. P.N Rangarajan	IISc Bangalore	Transcriptional Interference in the methylotrophic yeast, <i>Pichia pastoris</i>	12.10.2012
7.	Dr. Mangala Narlikar	Visiting faculty Bhaskaracharya Pratishthan	A Special Lecture on Map Colouring Problem	1.10.2012
8.	Prof. J.V Narlikar	Emeritus Professor Inter- University Centre for Astronomy and Astrophysics Pune	Some Cosmological Puzzles	26.9.2012
			How well do we know our universe?	28.09.2012
9.	Prof. K.P Gopinathan	IISc Bangalore	All About Silk: Biodesigning of a silk production unit	21.09.2012

Seminars

Sl No	Speaker	Institute	Title	Date
1.	Prof. R Shankar	Institute of Mathematical Sciences, Chennai	Accelerated Climate Change and the response of Himalayan Glaciers	27.3.2013
2.	Dr. Bala Krishnamoorthy	Washington State University	Finding Bottlenecks in Tunnels using Toplogy and Optimization	21.3.2013
3.	Dr Ramesh Pillai	EMBL France	Genome defense by small RNAs	20.3.2013
4.	Prof. Maria Lukacova-Medvidova	Institute for Mathematics, Johannes Gutenberg University Mainz, Germany.	Mathematical modelling and numerical simulation of complex flows	14.3.2013
5.	Dr. Prantik Maity	University of Delaware	From peptidomimetics to transition metal catalysis	13.3.2013
6.	Dr. Pierre Golstein	Centre d'Immunologie de Marseille-Luminy, France	Cell death in Dictyostelium	11.3.2013
7.	Dr. Amitabha Majumdar	Stowers Institute for Medical Research, Kansas City, Missouri	The role of a self-sustaining Amyloidogenic protein in persistence of memory	8.3.2013
8.	Dr. Tania Bose	Stowers Institute for Medical Research, Kansas City, Missouri	Cohesin promotes rDNA transcription and protein translation	7.3.2013
9.	Dr. Appakkudal R Anand	Department of Pathology, Ohio State University Wexner Medical Center, Colombus, OH, USA	Molecular pathogenesis of viral/bacterial infection and inflammatory disorders	6.3.2013
10.	Dr. Dinkar Sahal	ICGEB, New Delhi.	Need for action amidst increasing virulence of bugs & decreasing efficacy of drugs	5.3.2013
11.	Dr. Natalie Hempel de Ibarra	University of Exeter, UK	Sensing and learning in insects	26.2.2013
12.	Dr. Geraldine Wright	University of Newcastle, UK	Mechanisms of food reward learning in the honeybee	26.2.2013
13.	Ms. Brinda Varma	IISc Bangalore	Basics of Intellectual Property Rights and its protection	22.2.2013

14.	Dr. K. Sandeep	TIFR CAM Bangalore	Moser-Trudinger type inequalities	21.2.2013
15.	Dr. Mahavir Singh Angeles	Department of Biochemistry, University of California, Los Angeles	Biogenesis and assembly of telomerase holoenzyme: role of La family protein p65 in telomerase RNA recognition and RNP assembly	20.2.2013
16.	Dr. Tina Mukherjee	Dept.of Molecular, Cell and Developmental biology, University of California, Los Angeles	Systemic regulation of blood progenitor maintenance in Drosophila	20.2.2013
17.	Dr. Priyotosh Bandyopadhyay	University of Helsinki, Adj. Scientist, Helsinki Institute of Physics	Perspective of Higgs searches at the LHC	19.2.2013
18.	Dr Rajesh V. Nair	Physics Group, Bhabha Atomic Research Centre Mumbai, India 400 085	Molding the light emission and propagation using photonic band gap structures	18.2.2013
19.	Dr. Heather Whitney	University of Bristol, UK	Structural colours and iridescence in plan	18.2.2013
20.	Dr. Ramanujam Srinivasan	Cell Division Lab, Temasek Life Sciences Laboratory 1 Research Link, National University of Singapore Singapore - 117604	Cytoskeleton in "Prokaryotes": Assembly, Dynamics & Diversity	13.2.2013
21.	Dr. Ravi Pant	CUDOS ARC Centre of Excellence Institute of Photonics and Optical Science A28 School of Physics, University of Sydney NSW 2006 Australia	Light-Sound interaction in micro- and nano-structures: novel physics and applications	11.2.2013
22.	Dr. Rajendra Prasad	Professor School of Life Sciences, Jawaharlal Nehru University, New Delhi, India	Efflux Pumps In Clinical Drug Resistance	1.2.2013
23.	Prof. Jean Cadet	Scientific Adviser at the French Atomic Energy Commission at CEA ? Grenoble, France	Effects of solar UV radiation on cellular DNA: direct and photosensitized reactions	28.1.2013
24.	Prof. Mohamed Henini	University of Nottingham, UK	III-V semiconductor Nanostructures: Fabrication and Applications	28.1.2013

25.	D. Yogeshwaran	Technion-Israel Institute of Technology	On the topology of some random complexes	28.1.2013
26.	Dr. Sourav Banerjee	National Brain Research Center (NBRC), Manesar	Micromanaging neuronal network: Regulatory control of neuronal wiring and plasticity by microRNAs.	24.1.2013
27.	Prof. Ross McKenzie	University of Queensland	A quantum physicist's view of hydrogen bonding	24.1.2013
28.	Dr. Y Sajeed	BARC , Mumbai	Chemistry of Electronic Resonance States	23.1.2013
29.	Dr. Suhas Jaykumar Pandit	ICTP, Trieste, Italy	The complex of HNN-extensions for the free group of rank n	21.1.2013
30.	Prof. Partha Majumder	National Institute of Biomedical Genomics, Kalyani, West Bengal	Genes that Make a Vaccine Tick	18.1.2013
31.	Dr. Kumaran Baskaran	Institute of Complex Systems (ICS-6) Forschungszentrum Juelich Germany	Feedback Molecular Dynamics Simulations in Proteins	1.1.2013
32.	Dr. Rajakumara Eerappa	FIRC Institute for Molecular Oncology Foundation (IFOM), Milan, Italy	Mechanistic insights into the histone code and cytosine methylated DNA read-out and interpretation by chromatin associated modules	16.1.2013
33.	Dr. R. Rajesh	Institute of Mathematical Sciences, Chennai	Isotropic-Nematic-Disorder Transitions in a System of Long Rods on a Lattice	11.1.2013
34.	Dr. K.J. Thomas	London Center for Nanotechnology, University College, London	Transport properties of ballistic One-dimensional electron gases	11.1.2013
35.	Dr. Rachel AJ	Project leader, CCMB-Hyderabad	Alternative splicing unparalleled - mouse Y heterochromatin	10.1.2013
36.	Dr. Parameswaran Nair	City College of the CUNY	The Higgs Boson: Theory and Experiment	10.1.2013
37.	Dr. Ravi Sundaresan	University of Chicago	Sirtuins are key regulators of nutrient sensitive IGF-Akt signaling in heart	3.1.2013
38.	Dr. Bindusar Sahoo	Nikhef Theory Group Amsterdam Netherlands	Topologically massive higher-spin gravity	27.12.2012
39.	Dr. M C Valsakumar	Material Physics Division, IGCAR Kalpakkam	Computational Material Science - The Grand Challenges and Present Status	21.12.2012

40.	Dr. Siddhartha Lal	Department of Physical Sciences, IISER - Kolkata	Transport through Andreev Bound States in a Graphene Quantum Dot	18.12.2012
41.	Dr. Axel Brockmann	NCBS, Bangalore	Honey bee dance language - a neurobiological perspective	04.12.2012
42.	Dr. Dipayan Rudra	Research Fellow, Rudensky Laboratory Howard Hughes Medical Institute Immunology Program Memorial Sloan-Kettering Cancer Center	A Complex Regulatory Network Transcription Factor Foxp3 and its partners	03.12.2012
43.	Prof. Raman Sukumar	Centre for Ecological Sciences Indian Institute of Science Bangalore	Drought, elephants and fire: the resilience of a tropical dry forest	14.11.2012
44.	Dr. Sanjeev Galande	IISER-Pune	Signaling to chromatin: Tale of a genome organizer	08.11.2012
45.	Prof. Sanjay Puri	School of Physical Sciences JNU, New Delhi	Pattern Formation in the Kinetics of Phase Transitions	08.11.2012
46.	Prof. P. K. Das	Department of Inorganic and Physical Chemistry Indian Institute of Science Bangalore 560 012	Dynamics of C-X bond dissociation in alkyl iodides by pump-probe experiments	06.11.2012
47.	Dr. Sabyasachi Rakshit	Department of Physics and Astronomy, Iowa State University Ames, IA 5001	Resolving Cadherin Mediated Intercellular Interactions at the Single Molecule Level	05.11.2012
48.	Dr. Medini Padmanabhan	IISc Bangalore	Graphene-based devices for applications in light-sensing and light-energy harvesting	30.10.2012
		IISc Bangalore	Composite fermions with a valley degree of freedom	29.10.2012
49.	Dr. Subinoy Das	RWTH-Aachen	Mysteries of dark matter, dark energy and their possible connection to neutrino	25.10.2012
50.	Dr. Ghosh Roy	University of California, San Diego	Maintenance and Repair of neural circuit	23.10.2012
51.	Dr. Vijay M. Patankar	ISI Chennai	The Congruent Number Problem	17.10.2012
52.	Prof. J V Narlikar	Emeritus Professor Inter-University Centre for Astronomy and Astrophysics Pune	Analytical Thinking	29.09.2012

53.	Dr. Rudresh Acharya	William F. DeGrado Group, Department of Biochemistry and Biophysics, School of Medicine, University of Pennsylvania, Philadelphia PA 19104	Structural basis for the function and inhibition of an influenza A virus M2 proton channel (AM2)	27.09.2012
54.	Dr. Mangala Naralika	Bhaskaracharya Pratishthan, Pune	Coding Theory using Number Theory	26.09.2012
55.	Dr. Karuna Kar Nanda	Materials Research Centre Indian Institute of Science Bangalore	White-light-emitting-diodes and the role of nanostructured materials	12.09.2012
56.	Dr. Ravi Maruthachalam	Dept. of Plant Biology, University of California, Davis	Centromeres and parental genome conflict	06.09.2012
57.	Dr. Lekshmi Kailas	Indira Gandhi Centre for Atomic Research, Kalpakkam	Investigating the surface and the interface - Experimental studies in soft matter and biological systems	30.08.2012
58.	Dr. Prakash Arumugam	School of Life Sciences, University of Warwick	Insights into the meiotic cell cycle and chromosome segregation in budding yeast	21.08.2012
59.	Dr. Pintu Das	Institute of Physics, J. W. Goethe University of Frankfurt	Magnetically driven electronic phase separation in rare-earth hexaboride	21.08.2012
60.	Dr. Guha Dharmarajan	NIAID, NIH.	Are mosquitoes in disease "hot-spots" more efficient vectors? Insights on spatial variation in disease resistance and tolerance in a natural vector-parasite system.	21.08.2012
61.	Prof. T. V. Rajan Babu	Department of Chemistry and Biochemistry, The Ohio State University, USA	Asymmetric Catalysis of Carbon-Carbon and Carbon-Nitrogen Bond-Forming Reactions	16.08.2012
62.	Prof. Manabu Abe	Department of Chemistry, Hiroshima University, Japan	Generation of Long-lived singlet diradicals with pi-single bonded character	09.08.2012
63.	Prof. John Kuriyan	University of California, Berkeley, USA	The molecular language of communication between animal cells	04.08.2012
64.	Dr. Viji Z. Thomas	TIFR, Bombay	Bazzoni-Glaz Conjecture	03.08.2012
65.	Dr. S.R. C.Vivekchand	Northwestern University, USA	Newdirections in Nanomaterials and Surface Plasmons	25.07.2012

66.	Dr. Sumod A. Pullarkat	Division of Chemistry & Biological Chemistry, Nanyang Technological University, Singapore	Development of Chiral Metallacycles for the Catalytic Synthesis of Tertiary Phosphines and other Synthetic Protocols	24.07.2012
67.	Dr. Manabendra Chandra	Florida State University, and National High Magnetic Field Laboratory, Tallahassee, Florida, USA	Nanoscale structure-specific plasmonics	23.07.2012
68.	Dr. Sajal Kumar Ghosh	Department of Physics, University of California-San Diego, California, USA	Amphiphiles for soft matter and biophysics	20.07.2012
69.	Prof. Aparna Dutta Gupta	Department of Animal Sciences School of Life Sciences University of Hyderabad Hyderabad - 500 046, India	Insect pest management: eco friendly approach	20.07.2012
70.	Dr. Vikram Kamat	Indian Institute of Science Bangalore	Extremal Problems on Set Systems and Hypergraphs	19.07.2012
71.	Dr. G. V. Ravindra	Department of Mathematics, University of Missouri - St. Louis, USA	An invitation to algebraic geometry	12.07.2012
72.	Dr. N. Narayanan	Laboratoire de Recherche Informatique, Universite Paris-Sud 11.	Colouring, Decomposition and Domination	09.07.2012
73.	Dr. Ajay Gopinathan	University of California, Merced	Polymers in Biology: From Physics to Function	09.07.2012
74.	Dr. Sayantani Ghosh	Department of Physics, University of California, Merced	More is different: study of the collective properties of nanostructures for opto-electronic and photovoltaic applications	09.07.2012
75.	Dr. Samir Kumar Sinha	Ph.D., Manager, Wildlife Trust of India	The Science behind "1411": Method of tiger monitoring in India	02.07.2012
76.	Prof. Tsuyoshi Kawai	Laboratory for Photonic Molecular Science Graduate School of Materials Science Nara Institute of Science and Technology 8916-5 Takayama, Ikoma, Nara 630-0192, Japan	Circularly polarized luminescence of aggregated molecular materials determined with Molecular chirality microscope	25.06.2012
77.	Dr. Sajan Joseph	Senior Research Advisor, Eli Lilly & Co. Indianapolis, Indiana 46285 USA.	Open Innovation drug discovery	18.06.2012

78.	Dr. Jeevan Hirale	Universität Göttingen, Germany	Novel phases at magnetic instability and multipolar ordering	11.06.2012
79.	Dr. Jishy Varghese	Institute of Molecular and Cell Biology, Singapore	Neural and endocrine regulation of energy homeostasis	16.05.2012
80.	Dr. Amit Ghosh	Post Doctoral Fellow, Fuel Synthesis Division Joint BioEnergy Institute Lawrence Berkeley National Laboratory, Berkeley, California, USA	Systems Biology of Metabolism: Uncovering Regulatory & Protein Structure Networks	10.5.2012
81.	Dr. Palani Murugan Rangasamy	Institute for Genetics University of Cologne Germany	Sensing, Shifting and Degradation: Regulation of polyamine biosynthesis by novel mechanisms	09.05.2012
82.	Dr. Varsha Singh	Ph.D. Department of Molecular Genetics & Microbiology Duke University Medical Center	Innate immune responses to bacterial pathogens: Control by stress response pathways and the nervous system	16.04.2012
83.	Prof. B B Chattoo	Dept. of Microbiology and Biotechnology Centre Faculty of Science M.S. University of Baroda Baroda, 390002, India.	Engineering Disease Resistance in Plants	12.04.2012
84.	Dr. Abhishek Chaudhuri	Oxford University, UK	Active clustering, signalling and cellular uptake in living cells	09.04.2012
85.	Dr. Ramakrishnan Kannan	National Institute of Neurological Disorders and Stroke, NIH, USA.	Abl tyrosine kinase signaling regulates the secretory apparatus during axon guidance in <i>Drosophila melanogaster</i>	09.04.2012

Short Term Course Organised

1. Single Crystal X-Ray Diffraction Methods, 17-21, December 2012 (Dr. Ajay Venugopal)

Seminars /Workshops/Conferences Organised

Sl No	Name of Faculty	Name of Sem./Wor./ Con.	Funded By	Date	International/ National
1.	Hema Somanathan	Biology of tropical pollination: from individuals to networks	DST-Royal Society Seminar Grants	19-21 Feb 2013	International
2.	Nishant K.T	Chromosome Stability	IUSSTF	17-19 Dec, 2012	International
3.	M.P. Rajan	International Workshop on Mathematical Modelling and Scientific Computing	International Conference on Eco-friendly Computing and Communication System	9-11 Aug 2012	International
4.	S. Shankaranarayanan & Archana Pai	30th Meeting of Astronomical Society of India	ASI,IUCAA,PRL,RRI, ARIES,IIA,TIFR,ISRO, IIST,IISER-TVM	20-22 Feb 2013	National
5.	S. Shankaranarayanan	Algebraic Methods in quantum Field theory	Max Planck Partner Group	10-11 March 2013	National
6.	S. Murty Srinivasula	IISER-NISER meeting on Immunology	DBT	25-27, Jan 2013	National
7.	Tapas Kumar Manna	International conference on Stem Cells and cancer: Proliferation, differentiation and apoptosis	Microtubule end binding protein EB1 compromises paclitaxel sensitivity in Breast cancer	28 Oct 2012	International
8.	Tapas Kumar Manna	International Conference on Chromosome Stability	Role of microtubule end binding proteins in mitosis.	19 Dec 2012	International
9.	Utpal Manna; Sheetal Dharmatti; M.P. Rajan	ICTS Winter School on Stochastic Analysis and Fluid Flows	International Centre for Theoretical Sciences	3-20 Dec, 2012	International

Students Achievements

Students of the institute have excelled in academic activities during this period. Many students achieved honours at international level as listed below.

International Visits of Students

Sl No	Name	Achievements	Date
1	Reshmi Thomas	Malhotra Weikfield Foundation Award	6th December-2012
2	Vishnu. S	Participant of 6th ASC Jerusalem, Israel 2012	26th-30th Aug 2012
3	Linta Joseph	Participant of 6th ASC Jerusalem, Israel 2012	26th-30th Aug 2012
4	Brinda K	Participant of 6th ASC Jerusalem, Israel 2012	26th-30th Aug 2012
5	Subila K. B	Best Poster Prize Award at Material Research Society of India	26th Nov 2012

Anoop Thomas was selected for the Indo-Swiss Joint Research Programme-Research Fellowship (ISJRP-RF), a joint programme managed by Indian Department of Science and Technology (DST) and the Swiss State Secretariat of Education and Research (SER). He worked at Supramolecular Nanomaterials and Interfaces Laboratory, (SUNMIL), École Polytechnique Fédérale De Lausanne (EPFL), Switzerland from 20th March 2012 to 20th October, 2012.

Subila K. B. visited University of Bayreuth, Germany for two months (June 01- July 31, 2012), under Indo-EU (Funded by DST, India and European Commission) Project entitled as "Organic and Organic-Inorganic Hybrid Solar Cells: Optimization of Materials Properties, Bulk Hetrojunction Morphology and Device Efficiencies" (OISC/ LARGECELLS).

Summer Programme

The Institute regularly conduct summer fellowship programme for students of various academic institutions. Apart from supporting the summer programme of Indian Academy of Sciences, the institute has taken steps to offer two months summer fellowship for 20 students with a monthly scholarship of Rs. 5000. The programme has been successful in attracting and motivating many external students to scientific research programme.

8. Facilities

Laboratory

A number of high-end instruments and advanced technological platforms were added to the institute's state of the art laboratories which deals with inorganic, synthetic, physical, organic and supramolecular chemistry, DNA nanotechnology, photophysics and photochemistry of nanomaterials, NMR spectroscopy, optoelectronic materials and photovoltaics, nanoscale devices, quantum phase transitions and superconductivity, ultrafast spectroscopy, scanning tunneling microscopy, superconducting and magnetic materials, high resolution imaging platforms, cell and animal culture facilities, molecular biology, biochemistry and biophysics techniques, behavioral, evolutionary and ecological studies. During the year, 4 high value equipment costing Rs 9.73 cr were procured and purchase for another 6 high-value equipment costing Rs 38 cr was finalized.

Library

Institute library is growing fast to meet academic and research needs of the institute community. Library adopts state of the art technologies to facilitate access to online and print resources to its users. Major international

journals and online resources in Science and interdisciplinary areas have been subscribed. Library possesses more than 5,800 books, 10,000 e-Books, over 4,200 e-journals, 1700 standards, 15,700 conference proceedings.

The library's extensive online collection includes full-text e-journal databases, journal archives, Video Journal, e-books, bibliographic and review databases, standards etc., which are useful for academic and research activities of the IISER community. Full-text e-journals, bibliographic databases, archives, and e-books that include the publications of more than 40 international societies, institutes and scientific publishers. RSC Gold package of Royal Society of Chemistry, and Web of Science was added during this year.

Library has memberships/affiliations in national bodies like Indian National Digital Library in Engineering, Science and Technology (INDEST) Consortium established by the Ministry of HRD, & INFONET Consortium established by the University Grants Commission (UGC). Institute Library is also part of the IISER Library Consortium, constituted jointly by all IISERs.

Through IISER Consortium initiatives, institute is subscribing e-resources from publishers like American Chemical Society, Royal Society of Chemistry, Springer, Annual Reviews, Oxford University Press, Nature, Cell Press, Royal Society, Project Euclid, World Scientific, Thieme, Faculty 1000, Jove etc. at a much reduced pricing and with better terms and conditions.

Interlibrary loan facility was strengthened during this period and 935 interlibrary loan transactions were undertaken during this period. Library received 59 books as complementary copies mainly from National Board for Higher Mathematics (NBHM). As part of Hindi implementation, major library forms were converted to Hindi and many Hindi books were added to the library collection.

181 New users were taken library membership in 2012-13. Library conducted several user training programmes to increase the usage of e-resources. The Library orientation programme conducted during August 2012 was attended by the 133 students and research Scholars. MLISc Students and faculty members of the Dept. of Library and Information Science, Kannur University visited the library on 20th November 2012.

Asst. Librarian represented the institute in IISER Library Consortium meetings held at IISER Mohali and IISER Bhopal and the INDEST consortium meeting held at IIM Ahmedabad. Assistant Librarian was awarded PhD by the University of Pune during June 2012.

Major enhancement of library automation was carried out during this period. The Evergreen library software was updated to its 2.3.7 version. Automatic book reservation alert facility and new search interface for Library Information Systems was also implemented during 2012-13.

Computing and Networking Facility

The institute has a gigabit fiber and ethernet based data network in the transit campus. Internet connectivity is through a 100 Mbps line provided as part of the National Knowledge Network (NKN). This will be upgraded to 1 Gbps soon. Additional bandwidth of 10Mbps through a BSNL leased line is also available. 2 Mbps leased line connectivity is available at the permanent campus site which will be upgraded to 10Mbps soon. The different office buildings are provided with Internet connectivity through WiMAX from BSNL or through cable network.

The institute has a computer lab with 50 workstations, three computational clusters and several servers providing instructional and research support including Moodle course management suite, DNS, DHCP, NFS and other services. The IT personnel of the institute provide both hardware and software support to the faculty, students and staff in addition to making computational software like GAUSSIAN, MATLAB, QCHEM, Mathematica etc. available for use. The LAN of the institute has over 250 PCs. Licences are available for the software like Windows, Office, End note, Adobe Acrobat Pro, Origin and Kaspersky Antivirus.

Since August 2011, the institute has a fully functional virtual classroom funded by the NKN project. The classroom has been in use for over four semesters facilitating the exchange of at least two courses each semester between IISER Thiruvananthapuram, IISER Pune, IISER Bhopal, NCBS Bengaluru and TIFR Centre for Applicable Mathematics in Bengaluru as well as allowing for the streaming of research talks and colloquia from the premier institutes in the country. The virtual classroom facility also allows for the recording and storage of lectures and seminars organized by the institute.

Hostels

In the fifth year of the establishment of the Institute, one additional building (Hall of Residence No.IX) in the vicinity of the present campus and VSSC Guesthouse facility (Hall of Residence No.X) were taken on rent for housing the increased number of students of the 5 year integrated BS-MS dual degree, integrated Ph.D and Ph.D. Programme. Including the above, 10 buildings hired on rent are being used as Hostels.

9. Sports and Cultural Activities

Sports

The institute's Annual Sports Fest, ITSAV was held on 21-23 September, 2012. With each year, ITSAV is evolving into prominent student's event in the Annual Calendar of IISER-Trivandrum with more participation and more intense competition as a natural result. Events included athletics, badminton, cricket, football, table tennis, throw ball, badminton and volleyball. The events were held in the transit campus using the facilities of the College of Engineering (CET). Apart from the Sports day activities, IISER-TVM students regularly play practice matches (Football, Cricket, Volleyball etc.) with IIST-Trivandrum, CET Trivandrum and other local colleges.

Inter-IISER Sports Meet-2012

Inter IISER Sports Meet (IISM) was held between 12th and 16th December 2012 in the Mohanpur campus of IISER-Kolkata. It had participation from all the five IISERs and also NISER-Bhubaneswar. IISER-TVM students availed of the sports facilities present in the CET Trivandrum to prepare for the event. 35 students made up the IISER-TVM contingent and left for Kolkata on 9th December. Our students participated in Cricket, Football, Badminton, Basketball, Table Tennis, Volleyball and Athletics. Despite being the smallest contingent amongst all the institutions, our students put in a stupendous performance in all the events, notably in the Athletics, Sagil G.Satyan secured 5 Gold medals (in 100m, 200m, 400m, 4x100 relay and 4x400 relay). Louis Jose bagged 3 Golds (in 4x100m relay, 4x400m relay and Long Jump) and 3 Silver medals (in 100m, 200m and 400m events). Alex Johny landed 3 Gold medals (in 800m, 3000m as well as in 4x400m relay). Akhil Suresh won a Gold medal in the 1500m and a Bronze in the 800m. Utkarsh Bajpai won 2 Gold medals in 4x100m relay and 4x400m relay in addition to a Bronze in Long Jump. Our students gave a good standing of themselves in both Football and Badminton where they secured the Silver medals. In total, there were two trophies, one for Athletics and other one for the Overall Championship. IISER-TVM won the Athletics trophy (winning total 8 Gold medals out of 12, 5 Silver and 2 Bronze medals) and became Runner-up in Overall Championship. The Overall Championship was narrowly missed by the IISER-TVM contingent.

Cultural Activities

The cultural club of the institute organized various events throughout the academic year. Independence Day and Republic Day were celebrated with hoisting the national flag and the students singing patriotic songs both in the transit campus at Trivandrum and in the permanent campus at Vithura.

Onam, the state festival of Kerala was celebrated on the 26th of August 2012. Various dance and music events and competitions, Pookkalam (floral carpet) competition and the traditional Onam lunch, Sadya, were made this event a great success.

Diwali was celebrated on 20th November 2012 with various cultural programs, Rangoli competition and fireworks.

The students' science club organised Science festival, Anvesha 2013 on 23rd 24th February 2013. The science club also organized quiz and crossword competition for external college students.

Holi was celebrated on 27th March 2013. Institute's cultural festival, Ishya was held on the 26th, 27th and 28th of March 2013. Various events including literary and creative writing, debate, quiz, drawing, painting and photography were conducted with full participation from the student body and the institute faculties. Ishya 2013 culminated on the 28th evening with on-stage performances, songs, dances and plays, by students and faculties

10. Permanent Campus

The institute's residential permanent campus is under construction is 200 acres of land made available by Government of Kerala at Vithura Panchayat in Nedumangad Taluk about 40 Km from Thiruvananthapuram. The campus is located on the Southern slope of the 'Kottamala' hill in verdant forest ambience. The terrain is highly uneven dotted with smaller and larger hills and borders the reserve forest and private plantations. The master plan has been prepared following the contours of the land, taking maximum advantage of the hilly terrain and maintains maximum topographical features like the existing streams and rivers. Buildings are clustered into groups - for academics, student housing, faculty housing that fit into sloping hill sides and with suitable provision for future expansion. The clustered site design reduced the foot print to the minimum and allowed a large portion of the campus to be left undisturbed. The campus is being developed taking into account the 'Green building' concepts to achieve four star rating as per GRIHA (Green Rating for Integrated Habitat Assessment) norms. Design of buildings has been carried out by incorporating suitable provisions for energy conservation, rain water harvesting, waste water recycling, onsite energy generation through renewable energy utilization (solar power system) with a view to minimise the demand on non-renewable resources and maximize the utilisation efficiency of these resources.

The total built up area of the campus master plan is 1,17,000 sq m. The major facilities provided in the master plan include academic complex, hostel blocks, residential blocks shopping centre, hospital, recreations, utilities and engineering services.

The construction of the campus has been undertaken in two phases. Construction of the first phase for a built up area of about 69,000 sq m which commenced in March 2011 is under progress. During the year works progressed with financial achievement amounting to Rs 62 cr and physical progress of about 40 percent.

Planning activities under Phase II for another Hostel Block with Central Dining Hall for 1000 students was also undertaken.

11. Statement of Accounts

The Annual Statement of Accounts of IISER Thiruvananthapuram for the year 2012-13 consists of

Balance Sheet with Schedule forming part of Balance Sheet;
Income and Expenditure Account with supporting Schedules; and
Receipts and Payments Account

I. Grants & Receipts

A. Grants

- The unspent balance as on 01.04.2012: Rs. 55.72 crore
- The grants received from MHRD during the year: Rs.101.50 crore
 - Capital Grant: Rs.79.23 cr
 - Revenue Grant: Rs. 22.27 cr
- Total fund available for the year 2012-13: Rs.157.22 crore

B. Revenue Receipts

The revenue of the institute from Annual Fees & Others for the year is Rs.0.72 crore as against Rs.0.43 crore of the previous year.

II. Expenditure

- The amount utilised for acquiring Capital Assets during the year: Rs.78.60 crore.
 - Construction & other capital assets: Rs. 65.80 crore
 - Lab Equipment: Rs.12.80 crore
- The establishment expenses: Rs.19.51 crore
 - Expenditure on Salaries: Rs.4.84 crore
 - Other Non-salary Expenditure: Rs. 7.67 crore
- Other Administrative expenses: Rs.7.00 crore

III. External Projects & Fellowships

- o Total grant available during the year: Rs.5.78 crore
- o Utilisation: Rs.3.68 crore
- o Unutilised balance: Rs.2.10 crore

**Separate Audit Report of the Controller & Audit General of India on
the accounts of the Indian Institute of Science Education And Research,
Thiruvananthapuram for the year ended 31 March 2013**

Lr.No./OA/AB/7-37/IISER/13-14/316 dt.28.10.2013

We have audited the attached Balance sheet of Indian Institute of Science Education And Research, Thiruvananthapuram as at 31 March 2013, the Income & Expenditure Account and Receipts & Payment Account for the year ended on that date under Section 19(2) of the Comptroller and Auditor General's (Duties Powers and Conditions of Services) Act, 1971 read with Section 22 of the NIT Act. These financial statements are the responsibility of the institute's management. Our responsibility is to express an opinion on these statements based on our audit.

2. This Separate Audit Report contains the comments of the Comptroller and Auditor General of India (CAG) on the accounting treatment only with regard to classification, conformity with the best accounting practices, accounting standards and disclosure norms, etc., Audit observation on financial transactions with regard to compliance with the Law, Rules & Regulations (Propriety and Regularity) and efficiency - cum- performance aspects, etc., if any, are reported through Inspection reports/ CAG's Audit Reports Separately.
3. We have conducted our audit in accordance with auditing standards generally accepted in India. These standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from the material misstatements. An audit includes examining, on a test basis, evidences supporting the amounts and disclosure in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of financial statement. We believe that our audit provides a reasonable basis for our opinion.
4. Based on our audit, report that:
 - i We have obtained all the information and explanation, which to the best of our knowledge and belief were necessary for the purpose of our audit:
 - ii The balance Sheet, Income & Expenditure Account and Receipt and Payment Account dealt with by this report have been drawn up in the format approved by the Ministry of Finance, Government of India.
 - iii In our opinion, proper books of accounts and other relevant records have been maintained by the Indian Institute of Science Education And Research, Thiruvananthapuram
as required under Regulations 16.1 forming part of Memorandum of Association of the institute in so far as it appears from our examination of such books.
 - iv We further report that :

A. Balance sheet.

A.1 Assets

A.1.1 Fixed Assets: 126.61 crore.

This was overstated by 85.13 lakh (excluding depreciation amounting to 36.49 lakh) due to the wrong account of advance payment of subscription amounting to 121.62 lakh for online journal for the 2013-14 with understatement of Current Assets, Loans and Advances by 121.62 lakh. Expenditure for the year has been overstated by 36.49 lakh due to inclusion of depreciation on Fixed assets with corresponding overstatement of Excess of Expenditure over Income

A.2. Liabilities

A.2.1 Current Liabilities and Provisions- 7.14 Crore.

This was understated by 6.29 lakh due to non account of subscription for online journal for the period pertaining to 2012-13 for which payment was made in April and May 2013 with understatement of Fixed Assets by 4.40 lakh

(excluding depreciation amounting to 1.89 lakh). Expenditure for the year has been understated by 1.89 lakh due to non-inclusion of depreciation on Fixed assets with corresponding understatement of Excess of Expenditure over Income.

A.2.2. Current Liabilities and Provisions- 7.14 Crore.

This was understated by 3 lakh due to non-provision for the liability of soil investigation expenses in 2012-13 for which payment was made in May 2013 with corresponding understatement of Capital Work in Progress to the same extent.

B. Grants in aid

Out of the grants in aid 159.42 crore (including 55.79 crore brought forward from previous year), the organisation could utilize a sum of 98.11 crore leaving a balance of 61.31 crore as unutilized grant as on 31 March 2013.

C. Management letter:

Deficiencies which have not been included in the Audit Report have been brought to the notice of the Director, Indian Institute of Science Education And Research, Thiruvananthapuram through a management letter issued separately for remedial / corrective action

- v. Subject to our observations in the preceding paragraphs, we report that the Balancesheet, Income & Expenditure Account and Receipt & Payment Account dealt with by this report are in agreement with the books of accounts.
- vi. In our opinion and to the best of our information and according to the explanations given to us, the said financial statements read together with the Accounting Policies and Notes on account, and subject to the significant matters stated above and other matters mentioned in Annexure to this Audit Report give true and fair view in conformity with accounting principles generally accepted in India.
 - a. In so far as it relates to the Balance sheet, of the state of affairs of the Indian Institute of Science, Education and Research, Thiruvananthapuram as at 31 March 2013; and
 - b. In so far as it relates to Income & Expenditure Account of the deficit for the year ended on that date.

For and on behalf of the C& AG of India

Director General of Audit (Central), Chennai

Place: Chennai

Date: 28 October 2013

Annexure

1. Adequacy of Internal Audit System.:

The Internal Audit System is adequate and commensurate with the size and nature of transactions of the Institute.

2. Adequacy of Internal Control System:

The Institute has not prepared Accounting Manual so far.

3. System of Physical Verification of assets:

Annual Physical Verification of assets has not been completed for this year.

4. System of Physical Verification of inventory:

No Physical Verification of inventory was conducted during the year 2012-13.

5. Regularity in payment of statutory dues:

The Institute is regular in payment of statutory dues.

Deputy Director (DT) II

Action taken notes to the Separate Audit Report of the Comptroller & Auditor General of India on the Accounts of the Indian Institute of Science and Education Research, Thiruvananthapuram for the year ended 31st March 2013

Para 1 to 3 Introductory	-	No comments
Para 4 I to iii	-	No comments
Para 4 iv A	-	Balance Sheet

A.1 Fixed Assets

Necessary rectification entry made in the books of accounts during the year 2013-14

A.2 Liabilities - Current Assets, Loans and Provisions

Necessary rectification entry made in the books of accounts during the year 2013-14

Para 4 iv B Grants in aid

The facts and figures are confirmed

Para 4 iv C Management Letter

Remedial / corrective actions have been taken for the deficiencies pointed out by the Audit.

Para 4 v& vi - No comments

Annexure

1. Adequacy of Internal Audit System
Noted
2. Adequacy of Internal Control System
Accounts Manual is being prepared.
3. System of Physical Verification of Assets
Noted for compliance. Appropriate action is being taken during the year 2013-14.
4. System of Physical Verification of Inventory
Noted
5. Regularity in payment of statutory dues
No Comments

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH, THIRUVANANTHAPURAM
BALANCE SHEET AS AT 31ST MARCH 2013

		Amount in Rs.	
CORPUS/ CAPITAL FUND AND LIABILITIES	Schedule	Current Year 2012-13	Previous Year 2011-12
CORPUS/CAPITAL FUND	1	1,41,90,09,655	69,67,73,916
CURRENT LIABILITIES AND PROVISIONS	7	7,14,30,269	4,13,61,235
UNSPENT BALANCE OF GRANT	26	61,31,39,261	55,79,05,700
UNSPENT BALANCE OF EXTERNAL PROJECTS	27	2,10,23,828	2,18,36,507
TOTAL		2,12,46,03,013	1,31,78,77,358
ASSETS			
FIXED ASSETS	8	1,26,61,19,471	59,83,24,928
INVESTMENTS-FROM EARMARKED/ ENDOWMENT FUNDS			
INVESTMENTS-OTHERS			
CURRENT ASSETS, LOANS, ADVANCES ETC.	11	85,84,83,542	71,95,52,430
MISCELLANEOUS EXPENDITURE			
(to the extent not written off or adjusted)			
TOTAL		2,12,46,03,013	1,31,78,77,358
SIGNIFICANT ACCOUNTING POLICIES	24		
CONTINGENT LIABILITIES AND NOTES ON ACCOUNTS	25		

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH THIRUVANANTHAPURAM			
INCOME AND EXPENDITURE ACCOUNT FOR THE PERIOD/YEAR ENDED 31.03.2013			
		(Amount in Rs.)	
	Schedule	Current Year	Previous Year
INCOME			
Income from Sales / Services			
Grants/Subsidies	13	19,51,36,319	12,94,48,273
Fees/Subscriptions	14	71,75,440	43,03,100
Income form Investments (Income on Invest. from earmarked/endowment funds transferred to Funds)			
Income from Royalty, Publication etc.	16	90,160	
Interest Earned	17	2,41,93,215	3,78,19,248
Other Income	18	2,29,76,381	51,17,510
Depreciation Written Back			
Prior Period income		6,000	3,82,60,127
Increase/(decrease) in stock of Finished goods an works-in-progress			
TOTAL (A)		24,95,77,515	21,49,48,258
EXPENDITURE			
Establishment Expenses	20	10,97,23,535	7,81,54,850
Other Administrative Expenses etc.	21	8,54,12,784	5,12,93,423
Expenditure on Grants, Subsidies etc.			
Interest			
Project Expenses			
Depreciation (Net Total at the year-end-corresponding to Schedule8)		11,81,76,833	92,382,138
TOTAL (B)		31,33,13,152	22,18,30,411
Balance being excess of Income over Expenditure (A-B)		(6,37,35,637)	(68,82,153)
Transfer to Special Reserve (Specify each)			
Transfer to/ from General Reserve			
BALANCE BEING SURPLUS/(DEFICIT) CARRIED TO CORPUS / CAPITAL FUND			
		(6,37,35,637)	(68,82,153)
SIGNIFICANT ACCOUNTING POLICIES	24		

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH THIRUVANANTHAPURAM

RECEIPTS AND PAYMENTS FOR THE PERIOD/YEAR ENDED 31.03.2013

Amount in Rupees					
RECEIPTS	CURRENT YEAR	PREVIOUS YEAR	PAYMENTS	CURRENT YEAR	PREVIOUS YEAR
I. Opening Balance			I. Expenses		
a) Cash in hand		66,212	a) Establishment Expenses	10,34,06,944	7,86,74,163
b) Bank Balances			b) Administrative Expenses	8,10,41,433	5,43,40,397
i) In current accounts					
Canara Bank	1,54,06,118	19,87,259			
ii) In deposit accounts / Savings accounts					
a) State Bank of Travancore	51,96,528	81,31,614			
b) Canara Bank	14,12,40,598	59,14,82,402			
b) Canara Bank Project A/c	2,00,69,783	73,95,171			
II. Grants Received			II. Payments made against funds for various projects	3,68,06,491	1,81,84,847
a) From Government of India	1,26,14,00,000	11,54,00,000			
b) From State Government					
c) From other sources (details)					
DST	1,65,59,236	1,08,00,000			
CSIR	5,01,407	28,76,102			
KVPY	13,41,000	15,21,000			
UGC	29,39,613	2,07,000			
External Projects incldg. Interest	3,59,93,812	3,31,75,612			
III. Income on Investments from			III. Investments and deposits made		
a) Earmarked/Endow. Funds			a) Out of Earmarked/Endowment funds		
b) Own Funds (Jth. Investment)			b) Out of Own Funds (Investments-Others)		
IV. Interest Received			IV. Expenditure on Fixed Assets & Capital		
a) On Bank deposits	2,86,90,200	2,20,11,361	Work-in-Progress		
b) Loans. Advances etc.			a) Purchase of Fixed Assets and		
V. Other Income (Specify)	2,86,87,981	99,34,793	Expenditure on Capital Work-in-progress	76,87,03,318	33,95,90,868
VI. Amount Borrowed			V. Refund of surplus money/Loans		
			a) To the Government of India		
			b) To the State Government		
			c) To other providers of funds		
VII. Any other receipts (give details)	58,94,347	11,02,926	VI. Finance Charges (Interest)		
			VII. Other Payments (Specify)	4,82,92,193	13,33,88,150
			VIII. Closing Balances		
			a) Cash in hand		
			b) Bank Balances		
			i) In current accounts		
			Canara Bank Account	6,48,43,965	1,54,06,118
			ii) Deposit / Saving Accounts		
			a) With SBT	1,27,02,355	51,96,528
			b) With Canara Bank	42,10,73,726	14,12,40,598
			c) Canara Bank Project Account	1,54,40,483	2,00,69,783
			d) State Bank of India	1,16,09,715	
	1,56,39,20,623	80,60,91,452		1,56,39,20,623	80,60,91,452

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH THIRUVANANTHAPURAM				
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31.03.2013				
SCHEDULE 1- CORPUS/CAPITAL FUND:		(Amount-Rs.)		
	Current Year		Previous Year	
Balance as at the beginning of the year		69,67,73,916		34,41,06,025
(+) Add: Contributions towards Corpus/Capital Fund				
Amount utilised for acquiring capital asset	78,59,71,376	78,59,71,376		35,95,50,044
Amount Committed for Lab Equipment and Library Books				
(-) Less: Depreciation provided for the above mentioned item written back				
(-) Less: WDV of Fixed Assets acquired out of Project Grants in the previous year				
(-) Less: Interest acquired from Project grant in the previous year				
(-) Amount Committed for Lab Equipment & Library Books in the Previous Year				
Add/(Deduct): Balance of Net income/(expenditure)		(6,37,35,637)		(68,82,153)
Transferred from the Income and Expenditure Account				
BALANCE AT THE YEAR-END		1,41,90,09,655		69,67,73,916

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH THIRUVANANTHAPURAM
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31.03.2013

SCHEDULE 7- CURRENT LIABILITIES AND PROVISIONS				
	Current Year		Previous Year	
A. CURRENT LIABILITIES				
1. Acceptances				
2. Sundry Creditors:				
a) For Goods				
b) Others		3,08,50,117		1,74,97,498
3. Advances Received				
4. Interest accrued but not due on:				
a) Secured Loans/borrowings				
b) Unsecured Loans/borrowings				
5. Statutory Liabilities:				
a) Overdue				
		29,33,347		46,10,811
b) Others				
6. Other current Liabilities		3,76,46,805		1,92,52,926
Total (A)		7,14,30,269		4,13,61,235
B. PROVISIONS				
1. For Taxation				
2. Gratuity				
3. Superannuation/Pension				
4. Accumulated Leave Encashment				
5. Trade Warranties/Claims				
6. Others (Specify)				
Total (B)				
Total (A+B)		7,14,30,269		4,13,61,235

SCHEDULE 8- FIXED ASSETS of MAIN ACCOUNT

Date to be given as to cost of assets on hire purchase basis included above

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH, THIRUVANANTHAPURAM		
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31.03.2013		
SCHEDULE 11- CURRENT ASSETS, LOANS, ADVANCES ETC		
	(Amount-Rs.)	
	Current Year	Previous Year
A. CURRENT ASSETS:		
1. Inventories:		
a) Stores and Spares		
b) Loose Tools		
c) Stock-in-trade		
Finished Goods		
Work-in-progress		
Raw Materials		
2. Sundry Debtors:		
a) Debts Outstanding for a period exceeding six months		
b) Others		
3. Cash balances in hand (including cheques/drafts and imprest)	--	--
4. Bank Balances:		
Main A/c		
a) With Scheduled Banks:		
-On Current Accounts	6,48,43,965	1,54,06,118
-On Deposit Accounts (includes margin money)& SB Account	44,53,85,795	14,64,37,126
b) With non-Scheduled Banks:		
-On Current Accounts		
-On Deposit Accounts		
-On Savings Accounts		
Project A/c		
a) With Scheduled Banks:		
-On Current Accounts		
-On Deposit Accounts (includes margin money)		
-On Savings Accounts	1,54,40,483	2,00,69,783
b) With non-Scheduled Banks:		
-On Current Accounts		
-On Deposit Accounts		
-On Savings Accounts		
5. Post Office- Savings Accounts		
	52,56,70,243	18,19,13,027
B. LOANS, ADVANCES AND OTHER ASSETS		
1. Loans:		
a) Staff (Motor Car Advance)	2,77,300	2,46,436
b) Other Entities engaged in activities/objectives similar to that of the Entity		
c) Other (specify)		
2. Advances and other amounts recoverable in cash or in kind or for value to be received		
a) On Capital Account		
b) Prepayments	9,78,10,029	9,83,83,072
c) Others	13,00,21,985	10,80,57,180
3. Income Accrued:		
a) On Investments from Earmarked/Endowment Funds		
b) On Investments-Others		
c) On Loans and Advances		
d) Others	1,40,92,836	1,85,89,821
(includes income due unrealized-Rs.....)		
4. Claims Receivable	9,06,11,149	31,23,62,894
TOTAL (B)	33,28,13,299	53,76,39,403
TOTAL (A+B)	85,84,83,542	71,95,52,430

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH, THIRUVANANTHAPURAM					
SCHEDULES FORMING PART OF INCOME AND EXPENDITURE ACCOUNT					
FOR THE PERIOD/YEAR ENDED 31.03.2013					
SCHEDULE 13 – GRANTS / SUBSIDIES					
(Irrevocable Grants & Subsidies Received)					
		Current Year		Previous Year	
1) Central Government					
Revenue Grant					
Main A/c					
Opening Unspent Grant		55,79,05,700	55,79,05,700	63,14,99,915	
Add: Grant Received during the year					
MHRD		1,01,50,00,000	1,01,50,00,000	40,00,00,000	
(Rupees in Crore)					
Gen SC ST Total					
Revenue 17.26 3.34 1.67 22.27					
Capital 61.40 11.89 5.94 79.23					
78.6615.237.61101.50					
DST			1,65,59,236	1,08,00,000	
CSIR			5,01,407	28,76,102	
KVPY			13,41,000	15,21,000	
UGC			29,39,613	2,07,000	
			1,59,42,46,956	1,04,69,04,017	
Less: Capital Expenses Incurred during the year- MHRD		78,59,71,376		35,95,50,044	
			80,82,75,580	68,13,53,535	
Less: Closing Unspent balance of grant		61,31,39,261	61,31,39,261	55,79,05,700	
			19,51,36,319		12,94,48,273
PROJECT ACCOUNT					
Grant Received during the year					
Less: Capital Expenses Incurred during the year					
Less: Closing Unspent balance of grant					
2) State Government(s)					
3) Government Agencies					
4) Institutions/Welfare Bodies					
5) International Organisations					
6) Others (Specify)					
TOTAL			19,51,36,319		12,94,48,273

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH THIRUVANANTHAPURAM			
SCHEDULES FORMING PART OF INCOME AND EXPENDITURE ACCOUNT FOR THE PERIOD/YEAR ENDED 31.03.2013			
SCHEDULE 14- FEES/SUBSCRIPTIONS		(Amount-Rs.)	
		Current Year	Previous Year
1) Onetime Fees		30,700	84,000
2) Annual Fees/Subscriptions		71,44,740	42,19,100
3) Seminar/Program Fees			
4) Consultancy Fees			
5) Others (Specify)			
TOTAL		71,75,440	43,03,100

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH THIRUVANANTHAPURAM		
SCHEDULES FORMING PART OF INCOME AND EXPENDITURE ACCOUNT FOR THE PERIOD/YEAR ENDED 31.03.2013		
SCHEDULE 16- INCOME FROM ROYALTY, PUBLICATION ETC.		
	Current Year	Amount in Rupees Previous Year
1) Income from Royalty- Royalty for River Sand	90,160	--
2) Income from Publications		
3) Others (specify)		
TOTAL	90,160	--

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH THIRUVANANTHAPURAM		
SCHEDULES FORMING PART OF INCOME AND EXPENDITURE ACCOUNT FOR THE PERIOD/YEAR ENDED 31.03.2013		
SCHEDULE – 17 INTEREST EARNED		
	Current Year	Previous Year
Main A/c		
1) On Term Deposits:		
a) With Scheduled Banks	2,32,50,960	3,67,78,932
b) With Non-Scheduled Banks		
c) With Institutions		
d) Others		
2) On Savings Accounts:		
a) With Scheduled Banks	9,42,255	10,40,316
b) With Non-Scheduled Banks		
c) With Institutions		
d) Others		
3) On Loans:		
a) Employees/Staff		
b) Others		
4) Interest on Debtors and Other Receivables		
Project A/c		
1) On Term Deposits:		
a) With Scheduled Banks		
b) With Non-Scheduled Banks		
c) With Institutions		
d) Others		
2) On Savings Accounts:		
a) With Scheduled Banks		
b) With Non-Scheduled Banks		
c) With Institutions		
d) Others		
3) On Loans:		
a) Employees/Staff		
b) Others		
4) Interest on Debtors and Other Receivables		
TOTAL	2,41,93,215	3,78,19,248

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH THIRUVANANTHAPURAM		
SCHEDULES FORMING PART OF INCOME AND EXPENDITURE ACCOUNT FOR THE PERIOD/YEAR ENDED 31.03.2013		
SCHEDULE 18- OTHER INCOME		
	(Amount-Rs.)	
	Current Year	Previous Year
1) Profit on Sale/disposal of Assets:		
a) Owned assets		
b) Assets acquired out of grants, or received free of cost		
2) Export Incentives realized		
3) Fees for Miscellaneous Services		
4) Miscellaneous Income	2,29,76,381	51,17,510
TOTAL	2,29,76,381	51,17,510
SCHEDULE 20 ESTABLISHMENT EXPENSES		
	Current Year	Previous Year
a) Salaries and Wages	10,97,23,535	7,81,54,850
b) Allowances and Bonus		
c) Contribution to Provident Fund		
d) Contribution to Other Fund (specify)		
e) Staff Welfare Expenses		
f) Expenses on Employees Retirement and Terminal Benefits		
g) Others (specify)		
TOTAL	10,97,23,535	7,81,54,850

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH THIRUVANANTHAPURAM		
SCHEDULES FORMING PART OF INCOME AND EXPENDITURE ACCOUNT FOR THE PERIOD/YEAR ENDED 31.03.2013		
SCHEDULE 21- OTHER ADMINISTRATIVE EXPENSES ETC.		
	(Amount-Rs.)	
	Current Year	Previous Year
a) Purchases	-	-
b) Labour and processing expenses	-	-
c) Cartage and Carriage Inwards	-	-
d) Electricity and power	16,97,266	14,73,287
e) Water charges	2,23,126	3,03,402
f) Insurance		
g) Repairs and maintenance	33,62,530	18,07,305
h) Excise Duty		
i) Rent, Rates and Taxes	1,54,05,220	95,55,982
j) Vehicles Running and Maintenance	1,39,852	2,25,908
k) Postage, Telephone and Communication Charges	19,51,618	17,23,740
l) Printing and Stationary	15,30,909	10,03,520
m) Travelling and Conveyance Expenses	29,63,556	9,24,059
n) Expenses on Seminar/Workshops	29,55,673	31,69,766
o) Subscription Expenses		
p) Expenses on Fees- Library Journals		
q) Auditors Remuneration	51,490	51,490
r) Hospitality Expenses		
s) Professional Charges		
t) Provision for Bad and Doubtful Debts/Advances		
u) Irrecoverable Balances Written-off		
v) Packing Charges		
w) Freight and Forwarding Expenses		
x) Distribution Expenses		
y) Advertisement and Publicity	31,96,592	24,95,882
z) Others (specify)	5,19,34,952	2,85,59,082
TOTAL	8,54,12,784	5,12,93,423

SCHEDULE 24 - SIGNIFICANT ACCOUNTING POLICIES

Accounting convention:

The accompanying financial statements are prepared on Historical Cost Convention.

Fixed Assets:

Cost of Assets acquired out of Grant from Government of India is credited to General Fund.

Closing Stock:

Items issued to labs are treated as consumed and hence Closing Stock of Lab Consumables/Chemicals is taken as NIL.

Depreciation:

Depreciation on Fixed Assets has been charged under Written Down Value Method at rates specified as per the Income Tax rates. Assets put to use for more than 180 days has been depreciated at full rate and assets put to use for less than 180 days has been depreciated @ 50% of said rates.

Grant in aid:

Grant-in-aid received and receivable from Government of India, amounting Rs.101,50,00,000/- during the year 2012-13 has been credited to the General Fund to the extent of amount spent for Capital expenditure and credited to the Income & Expenditure Account to the extent of amount utilised for Revenue expenditure.

Grant-in-aid received from DST amounting to Rs. 1,65,59,236/- has been credited to Income & Expenditure account to the extent of amount utilised for Revenue expenditure.

Grant-in-aid received from CSIR amounting to Rs. 5,01,407/- has been credited to Income & Expenditure account to the extent of amount utilised for Revenue expenditure.

Grant-in-aid received from KVPY amounting to Rs. 13,41,000/- has been credited to Income & Expenditure account to the extent of amount utilised for Revenue expenditure.

Grant-in-aid received from UGC amounting to Rs. 29,39,613/- has been credited to Income & Expenditure account to the extent of amount utilised for Revenue expenditure.

Interest on Flexi / Fixed Deposits & Term deposits:

Interest on flexi / fixed deposits has been credited in the accounts on Accrual basis.

SCHEDULE 25 - NOTES ON ACCOUNTS

1. The land (approx 200 acres in Jersey Farm, Vithura, Karipur Village, Nedumangad Taluk, Thiruvananthapuram District) has been given by Government of Kerala at free of cost and hence recorded at nominal value in the accounts as per Accounting Standard: 12 - Accounting for Government Grants.
2. The construction works done at CET Campus which were completed are capitalized. Permanent infrastructure assets created in the temporary premises located in CET Campus will be handed over to CET on shifting of the location of the Institute permanently to Vithura.
3. During the year Income & Expenditure Account shows excess of expenditure over income of Rs.6,37,35,636/-
4. The Commitment for Purchases outstanding as on 31.03.2013 amounts to Rs.3,16,44,562/- out of which provision has been created for an amount of Rs. 58,00,817/- pertaining to purchase of consumable against which payments have been made after 01.04.2013. The balance commitment is Rs. 2,58,43,745/-
5. Library Journals are reference material and used like Library books hence it is capitalized.
6. The fund actually utilised for payment is Rs. 118,67,25,706/- which is inclusive of Mobilisation, Plant & Machinery advances of Rs.10,65,61,181/-, payment of Rs.9,70,61,000/- to Kerala State Electricity Board for providing dedicated power supply arrangement for IISER - TVM campus at Vithura and Rs.2,42,09,833/- paid as other advances and accounted as current assets in the Balance sheet of the institute. This leaves the actual unspent balance at Rs.38,55,63,712/-
7. Change in Accounting Policies:

Depreciation has not been written back in the current financial year. As a result the Income & Expenditure account of the Institute for the current financial year shows excess of expenditure over income. The depreciation for the year equals to 11,81,76,833/-.

The treatment of Project Grant & its utilisation is on cash basis. The accounting of Assets acquired out of project grant & revenue expenditures met from such grant are not accounted in the institutes Final Accounts, only the unspent balance of Project Grant & interest is shown under the Current Liabilities of the Institute's Balance Sheet.

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH THIRUVANANTHAPURAM SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31.03.2013			
SCHEDULE 26- UNSPENT BALANCE OF GRANT			
	Current Year		Previous Year
a) Opening balance of the funds		55,79,05,700	63,14,99,915
b) Additions to the Funds:			
i. Donation/grants			
MHRD	101,50,00,000		
DST	1,65,59,236		
CSIR	5,01,407		
KVPY	13,41,000		
UGC	29,39,613	1,03,63,41,256	41,54,04,102
ii. Income from investments made on account of funds			
iii. Other additions (specify nature)			
TOTAL (a+b)		1,59,42,46,956	1,04,69,04,017
c) Utilisation/Expenditure towards objectives of funds			
i. Capital Expenditure			
-Fixed Assets - MHRD		78,59,71,376	35,95,50,044
-Others			
Total		78,59,71,376	35,95,50,044
ii. Revenue Expenditure			
-Salaries, Wages and allowances etc.		10,97,23,535	7,81,54,850
-Rent		1,54,05,220	95,55,982
-Other Administrative expenses		7,00,07,564	4,17,37,441
Total		19,51,36,319	12,94,48,273
TOTAL (c)		98,11,07,695	48,89,98,317
NET BALANCE AS AT THE YEAR-END (a+b-c)		61,31,39,261	55,79,05,700

**INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH
THIRUVANANTHAPURAM**

SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31.03.2013

SCHEDULE 27- UNSPENT BALANCE OF EXTERNAL PROJECTS

Sl No.	Name of Project	Opening Balance	Opening Balance Adjustment	Grant Received	Interest Received	Net Amount Received	Amount Utilised		Total Expenditure	Closing Balance
							Fixed Assets	Revenue Expenditure		
1	DST FT - DR K M SURESHAN	-1,97,284				-1,97,284		8,72,057	8,72,057	-10,69,341
2	DST SERC FT - DR AYAN DATTA	1,36,490				1,36,490			0	1,36,490
3	J C BOSE - PROF E.D.JEMMIS	8,13,983				8,13,983		9,42,540	9,42,540	-1,28,557
4	CSIR - DR. AYAN DATTA	40,785				40,785	39,500	1,06,222	1,45,722	-1,04,937
5	CSIR - DR. KM.SURESHAN	1,52,543				1,52,543		4,27,677	4,27,677	-2,75,134
6	CSIR - DR. TAPAS K MANNA	-2,78,117				-2,78,117		4,51,498	4,51,498	-7,29,615
7	DST - DR. ANIL SHAJI	2,37,898				2,37,898		2,01,293	2,01,293	36,605
8	RAWALINGA SWAMY FELLOWSHIP - DR. RAMANATHAN NATESH	10,78,978	4,952	14,90,000		25,73,930		20,70,685	20,70,685	5,03,245
9	RAMALINGA SWAMY FELLOWSHIP - DR. RAVI MARUTHACHALAM			14,90,000		14,90,000			0	14,90,000
10	RAMANUJAN FELLOWSHIP - DR ANIL SHAJI	-3,75,487		14,60,000		10,84,513		10,08,392	10,08,392	76,121
11	RAMANUJAN FELLOWSHIP - DR. KM SURESHAN	-4,61,104		14,60,000		9,98,896		13,12,850	13,12,850	-3,13,954
12	RAMANUJAN FELLOWSHIP - DR. SHANKARA NARAYANAN	-7,93,212		14,60,000		6,66,788		10,26,479	10,26,479	-3,59,691
13	SSB AWARD - PROF. ED. JEMMIS	-15,000	15,000			0		1,80,000	1,80,000	-1,80,000
14	SSB AWARD - PROF.K. GEORGE THOMAS	0				0		1,80,000	1,80,000	-1,80,000
15	CSIR PROJECT - DR.HEMA SOMANATHAN	8,36,390				8,36,390	5,98,984	4,96,567	10,95,551	-2,59,161
16	DST-FT - DR.ARCHANA PAI	4,02,626				4,02,626	1,50,000	1,56,046	3,06,046	96,580
17	DST-JSPS - DR.ARCHANA PAI	78,702		1,50,000		2,28,702		1,87,098	1,87,098	41,604
18	DST-MPG - DR.RAMESH CHANDRANATH	375		1,20,590		1,20,965		58,965	58,965	62,000
19	DST INDO EURO -DR.K.GEORGE THOMAS	16,41,714				16,41,714		16,09,733	16,09,733	31,981
20	DST - DR.M.M. SHAIJUMON	5,03,748				5,03,748		6,08,433	6,08,433	-1,04,685
21	DST - ANOOP THOMAS	60,000				60,000		60,000	60,000	0

22	DST SERB - DR.RAMESH CHANDRANATH	38,33,333					38,33,333		4,32,284	4,32,284	34,01,049
23	DST MPG - DR.ARCHANA PAI	11,29,600					11,29,600	1,21,872	7,78,015	8,99,887	2,29,713
24	DST MPG - DR.SHANKARA NARAYANAN	10,61,900					10,61,900	1,20,000	9,66,131	10,86,131	-24,231
25	MAX PLANCK GROUP - DR.ARCHANA PAI	18,69,275					18,69,275	86,525	2,74,778	3,61,303	15,07,972
26	NKN PROJECT - DR ANILSHAJI	3,306					3,306		3,306	3,306	0
27	MAX PLANCK GROUP- DR.SHANKARA NARAYANAN	16,88,464					16,88,464	64,071	5,48,299	6,12,370	10,76,094
28	RAMANUJAN FELLOWSHIP OF DR.REJI VARGHESE	7,88,600			7,00,000		14,88,600		13,62,893	13,62,893	1,25,707
29	WELCOME TRUST DBT - DR.SUNISH RADHAKRISHNAN	68,61,317			35,39,350		1,04,00,667	48,43,587	54,76,329	1,03,19,916	80,751
30	DAE - DR.M.M.SHAJJUMON				7,72,000		7,72,000	1,74,387	2,71,998	4,46,385	3,25,615
31	DBT - DR.MAHESH HARIHARAN				13,55,598		13,55,598		1,00,000	1,00,000	12,55,598
32	DBT - DR.M.M.SHAJJUMON				32,66,000		32,66,000		1,05,080	1,05,080	31,60,920
33	DST - DFG RESEARCH INTERNSHIP M. GOPIKRISHNAN				60,000		60,000		51,000	51,000	9,000
34	DST SERB - DR.MAHESH HARIHARAN				8,55,000		8,55,000		5,78,388	5,78,388	2,76,612
35	DST SERI DR.MANOJ NAMBOOTHIRY				20,00,000		20,00,000	9,01,198	10,61,945	19,63,143	36,857
36	DST - DR.TAPAS KUMAR MANNA				9,90,000		9,90,000	23,520	15,14,216	15,37,736	-5,47,736
37	WELCOME TRUST DBT - DR.NISHANT KT				1,36,75,438		1,36,75,438		36,26,548	36,26,548	1,00,48,890
38	DST SERB - DR.RAJEEV N KINI						0	1,97,901		1,97,901	-1,97,901
39	NISSEN - DR.M.M.SHAJJUMON						0		3,77,201	3,77,201	-3,77,201
	INTEREST ON SB ACCOUNT	7,36,684				11,29,884	18,66,568			0	18,66,568
		2,18,36,507	19,952	3,48,43,976		11,29,884	5,78,30,319	73,21,545	2,94,84,946	3,68,06,491	2,10,23,828