

Annual Report 2009 -10



**INDIAN INSTITUTE OF SCIENCE EDUCATION & RESEARCH THIRUVANANTHAPURAM
CET CAMPUS, THIRUVANANTHAPURAM – 695 016**

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PREFACE

Our march to be a developed Nation, a leader in all spheres of human activity, has to be based on advances in science and technology across the country. Recognizing this imperative several new initiatives are taken by the Government of India. Establishment of the Indian Institute of Science Education and Research (IISER-TVM) is an important step in this direction. The IISER Thiruvananthapuram started in June 2008 in the transit campus at the College of Engineering Trivandrum.

During the year 2009-10, a second batch of students came to the campus selected through KVPY and IIT JEE, increasing the number of students fivefold. We have developed our transit campus in the College of Engineering, Trivandrum further to a well equipped teaching and research establishment with several modern equipment. Outstanding members of the faculty joined from across the world. Three of them have been selected for the Ramanujan Fellowship of the Department of Science and Technology Technology. Our emphasis on providing an interdisciplinary education in the basic sciences, with opportunities to interact with the teachers and students is bearing fruits. Seminars, Colloquia, assignments, discussion groups, science club, nature walk and a multitude of other activities enrich the learning experience. There were many distinguished visitors from India and abroad during this year contributing to this process.

The progress we have made so far is due to the untiring efforts of our enthusiastic and dedicated teachers and staff as well as highly motivated students. We also have the unstinting support from the Ministry of Human Resource Development, Government of India and various Departments of the Government of Kerala. I thank them and the Chairman and members of the Board of Governors for their valuable support for the development of the Institute. Our second Annual Report (2009-10) which describes briefly the progress of the Institute is presented here, with a promise to work even harder for the many plans to be realized in the coming years.

E.D. Jemmis

01.11.2010
Director

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1. Preamble

1.1 Vision and Mission

Indian Institutes of Science Education and Research Thiruvananthapuram (IISER-TVM) was established by the Ministry of Human Resource Development (MHRD), Government of India vide Notification No.22-6/2007-TS-I dated 28-02-2008 with the mission of providing undergraduate and postgraduate education in basic sciences to highly motivated and talented students in an atmosphere of interdisciplinary research. The Institute has been registered as a Society under the Travancore-Cochin Literary Scientific and Charitable Societies Registration Act, 1955 on 20.02.2008 at No.T.342/08. The vision of the Institute is to become a world class institution that conducts innovative research and imparts high quality education. The teaching-learning process in the Institute aims to be fully integrated with research. We hope to achieve our mission of contributing to the national endeavor in scientific research in the coming year. We have already established working laboratory and library facilities in the temporary campus towards this end. The research contributions from our faculty have begun to appear in international refereed journals.

Indian Institute of Science Education and Research Thiruvananthapuram started functioning at the transit campus, College of Engineering Thiruvananthapuram, from August 2008. The permanent campus of this fully residential scientific institute is coming up in an area of 200 acres at Vithura in the valley of the scenic Ponmudi hills. Vithura is about 40 Km from the city and is accessible by road. The site for the campus is blessed with rich greenery, streams, a river and a spectacular mountain backdrop. The planned campus in the God's own land will be in harmony with its unique setting and natural beauty, and is expected to attract talents in the scientific fields. The foundation stone of the institute was laid by Shri. Vayalar Ravi, Hon. Minister for Overseas Indian Affairs, Government of India on February 22, 2009.

1.2 Board of Governors

The Board of Governors is the highest decision making body of the Institute. The Board consists of Chairperson and members drawn from academia, scientific laboratories, Government agencies such as Space, Defense Research, Atomic Energy, Environmental Science, Information Science and representatives from Central and State Government. The Director of the Institute is an ex-officio Member of the Board. The following are members of the Board:

- **Prof. M.R.S. Rao (Chairman)**
President
Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore
- **Smt. Vibha Puri Das (Member)**
Secretary (*Ex-Officio*)
Department of Higher Education
Ministry of Human Resource Development, Govt. of India, New Delhi
- **Prof. E.D. Jemmis (Member)**
Director (*Ex-officio*)
Indian Institute of Science Education & Research, Thiruvananthapuram

- **Prof. P. Balaram**, (Member)
Director (*Ex-Officio*)
Indian Institute of Science, Bangalore
- **Prof. K.N. Ganesh**, (Member)
Director (*Ex-Officio*)
Indian Institute of Science Education & Research, Pune
- **Prof. M.S. Ananth**, (Member)
Director
Indian Institute of Technology Madras, Chennai
- **Dr. T. Ramasami**, (Member)
Secretary
Department of Science & Technology, Govt. of India, New Delhi
- **Dr. M.K. Bhan**, (Member)
Secretary
Department of Biotechnology, Govt. of India, New Delhi
- **Dr. Srikumar Banerjee** (Member)
Secretary
Department of Atomic Energy, Govt. of India, Mumbai
- **Ms. Neela Gangadharan**, (Member)
Chief Secretary (*Ex-officio*)
Government of Kerala, Thiruvananthapuram
- **Prof. V. Krishnan** (Member)
Former President
Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore
- **Dr. J. Gowrishankar** (Member)
Director
Centre for DNA Fingerprinting & Diagnostics, Hyderabad
- **Prof. M.V. George** (Member)
Honorary Professor, JNCASR
National Institute for Interdisciplinary Science & Technology
Thiruvananthapuram
- **Prof. S.G. Dani** (Member)
School of Mathematics
Tata Institute of Fundamental Research, Mumbai
- **Shri. B. K. Subburaman** (Secretary)
Special Officer
Indian Institute of Science Education & Research, Thiruvananthapuram

The Board met twice (on 25.04.2009 and 02.11.2009) during the year 2009-10.

1.3 Finance Committee

The following are members of the Finance Committee:

- **Prof. M.R.S. Rao (Chairman)**
President
Jawaharlal Nehru Centre for Advanced Scientific Research,
Bangalore - 560064
- **Shri Ashok Thakur, (Member)**
Additional Secretary
Department of Higher Education
Ministry of Human Resource Development, Govt. of India
New Delhi - 110001
- **Shri S.K. Ray, (Member)**
Addl. Secretary & Financial Advisor
Department of Higher Education
Ministry of Human Resource Development, Govt. of India
New Delhi - 110001
- **Dr. J. Gowrishankar, (Member)**
Director
Centre for DNA Fingerprinting & Diagnostics
Hyderabad - 500 076
- **Prof. M.S. Gopinathan, (Member)**
IISER-TVM, Thiruvananthapuram - 695016
- **Prof. E.D. Jemmis, (Member)**
Director, IISER-TVM, Thiruvananthapuram - 695 016

The Finance Committee met twice (on 24.04.2009 and 02.11.2009) during the year 2009-10.

1.4 IISER-Thiruvananthapuram Society

Members of IISER-TVM Society are:

- **Prof. M.R.S. Rao (Chairman)**
Chairman, BOG, IISER-TVM & President, JNCASR, Bangalore
- **Smt. Neela Gangadharan**
Chief Secretary (Ex-officio)
Government of Kerala, Thiruvananthapuram
- **Smt. Vibha Puri Das**
Secretary (HE), Department of Higher Education (Ex-officio)
Ministry of Human Resource Development, Govt. of India, New Delhi
- **Dr. T. Ramasami**
Secretary, Department of Science and Technology, Govt. of India, New Delhi

- **Prof. M.S. Ananth**
Director, Indian Institute of Technology Madras, Chennai, Tamil Nadu
- **Prof. Sukhdeo Thorat**
Chairman, University Grant Commission, New Delhi
- **Prof. V. Krishnan**
Former President, Jawaharlal Nehru Centre for Advanced Scientific Research Bangalore
- **Dr. J. Gowrishankar**
Director, Centre for DNA Fingerprinting and Diagnostics, Hyderabad
- **Smt. Sushama Nath**
Secretary, Dept. of Expenditure, Ministry of Finance, Govt. of India, New Delhi
- **Dr. M. K. Bhan**
Secretary, Department of Biotechnology, Govt. of India, New Delhi
- **Dr. Srikumar Banerjee**
Secretary (DAE) & Chairman (AEC), Dept. of Atomic Energy, Govt. of India
Mumbai
- **Dr. V. K. Saraswat**
Director General, DRDO, New Delhi
- **Dr. K. Radhakrishnan**
Secretary, Department of Space, Govt. of India, Bangalore
- **Prof. Samir K. Brahmachari**
Director General, Council of Scientific & Industrial Research, New Delhi
- **Prof. E.D. Jemmis**
Director, IISER-TVM, Thiruvananthapuram
- **Prof. Seyed Hasnain**
Vice Chancellor, University of Hyderabad, Andhra Pradesh
- **Prof. A. Jayakrishnan**
Vice-Chancellor, Kerala University, Thiruvananthapuram
- **Prof. P. Balaram,**
Director, Indian Institute of Science, Bangalore
- **Prof. K. N. Ganesh**
Director, Indian Institute of Science Education & Research, Pune
- **Shri. B. K. Subburaman**
Special Officer, IISER-TVM, Thiruvananthapuram (*Secretary*)

1.5 Academic Advisory Committee

IISER TVM has constituted an academic advisory committee to advise the institute in designing the academic curriculum. The first meeting of Academic Advisory Committee held on 21.10.2009. The committee consists of the following members:

1. Prof. E.D. Jemmis, Director, IISER-TVM (Chairman)
2. Prof. M.S. Gopinathan, Professor-in-Charge(Academics), IISER-TVM
3. Dr. M. Radhakrishna Pillai, Director, RGCB, TVM
4. Prof. Umesh Varshney, IISc., Bangalore
5. Prof S. Ramakrishnan, IISc., Bangalore
6. Prof. V. Balakrishnan, IIT Madras
7. Prof. R. Balasubramanian, Director, IMSc., Chennai
8. Shri. B. K. Subburaman, Special Officer, IISER-TVM (Secretary)

2. Human Resources

The human resources are the pillars of any institution. IISER TVM is supported by the following categories of people in its day to day activities.

Human Resources			
Academic Staff	Regular Faculty		14
	Visiting Faculty		6
Non-Teaching Staff	Officers	Administration	3
		Consultants	10
	Visiting Staff		1
	Others		13
Students	BS-MS		66
	Ph.D.		18
Total			131

2.1 Academic Staff

In the second year of establishment, we have attracted many bright young faculties at the level of Assistant Professor. So far 12 faculty members have joined during the year. Faculty recruitment is a continuing process and is progressing well.

2.1.1 Faculty

1. Prof. E. D. Jemmis, Ph.D. (Princeton) FASc, FNA, FTWAS
Professor, School of Chemistry
2. Prof. M. S. Gopinathan, Ph.D. (IIT Kanpur) FASc, FNA
Professor, School of Chemistry
3. Dr. Ayan Datta, Ph.D. (JNCASR Bangalore)

Assistant Professor, School of Chemistry

4. Dr. Kana M. Sureshan, Ph.D. (NCL, Pune)
Assistant Professor, School of Chemistry
5. Dr. Utpal Manna, Ph.D. (Wyoming)
Assistant Professor, School of Mathematics
6. Dr. Tapas Manna, Ph.D. (Bose Institute, Kolkata)
Assistant Professor, School of Biology
7. Dr. Anil Shaji, Ph.D. (Texas, Austin)
Assistant Professor, School of Physics
8. Dr. Mahesh Hariharan, Ph.D. (NIIST, Thiruvananthapuram)
Assistant Professor, School of Chemistry
9. Dr. Subramaniam Shankaranarayanan, Ph.D. (IUCAA, Pune)
Assistant Professor, School of Physics
10. Dr. Archana Pai, Ph.D. (IUCAA, Pune)
Assistant Professor, School of Physics
11. Dr. Hema Somanathan, Ph.D. (University of Bombay)
Assistant Professor, School of Biology
12. Dr. Ramesh Chandra Nath Ph.D. (IIT, Bombay)
Assistant Professor, School of Physics
13. Dr. Prakash Rajendran Ph.D. (University of Madras)
Assistant Professor, School of Mathematics
14. Dr. Sreedhar B. Dutta, Ph.D. (IMSc., Chennai)
Assistant Professor, School of Physics

2.1.2 Visiting Faculty

1. Prof. V. Unnikrishnan Nayar, Kerala University, Thiruvananthapuram
2. Prof. V. M. Nandakumaran, CUSAT, Kochi
3. Dr. K. George Thomas, NIIST, Thiruvananthapuram
4. Dr. K. S. S. Moosath, IIST, Thiruvananthapuram
5. Smt. Shanti Krishnan, Communication Specialist
6. Dr. Kamala Gopinathan, Biochemistry

2.2 Non-Teaching Staff

A few retired officers from Government are taking care of administration and other activities.

2.2.1 Administration

1. Shri. B. K. Subburaman, Special Officer/Registrar
2. Shri. Gujjru Muni Bhaskar, Project Engineer-cum-Estate Officer

3. Shri. Ajith Prabha, Office Assistant(Multi- Skill)

2.2.2 Consultants

1. Shri. S. B. Jayaram, Consultant (Purchase & Stores)
2. Shri. P. N. Mohanan, Consultant (Planning & Infrastructure)
3. Shri. V. P. Nair, Consultant (Administration)
4. Shri. K. V. Sasidharan Nair, Private Secretary to Director
5. Shri. P. A. Prabhakaran, Chief Consultant (Constructions)
6. Shri. P. R. Balakrishna Pillai, Consultant (Civil)
7. Shri. K. Muraleedharan Nair, Consultant (Civil)
8. Shri. Velappan Nair, Technical Assistant (Civil)
9. Shri. R. Vasudevan Nair, Consultant (Electrical)
10. Shri. K. S .G. Kurup, Manager (Administration)

2.3 Technical Staff -Visiting

1. Shri. O. Thomas, Govt. Women's College, Thiruvananthapuram

2.4 Students

IISER-TVM has admitted 62 MS students and 18 Ph.D. students during the reporting period. The details are given below.

2.4.1 BS-MS Dual Degree Programme

62 students joined the second batch of Five Year BS-MS Dual Degree Programme in August 2009 at the Transit Campus at CET. The category distribution is as follows:

SC	ST	OBC	GEN	TOTAL	MALE	FEMALE	KVPY Y	IIT-JEE
14	6	20	22	62	51	11	12	50

The list of students is given below.

Sl. No.	Name	Qualifying Examination
1.	Mr. Shouri Akkineni	KVPY
2.	Ms. Chithra H. Sharma	KVPY
3.	Mr. Sivaramakrishnan S.	KVPY
4.	Mr. Krishnand Mallayya M.	KVPY
5.	Mr. Ajai J. Pulianmackal	KVPY
6.	Ms. Salini K.	KVPY
7.	Ms. Vrinda V.	KVPY

8.	Mr. Jishnu N. Nampoothiri	KVPY
9.	Mr. Vigneshwar N.	KVPY
10.	Mr. M. Arunkumar	KVPY
11.	Ms. Samada M.	KVPY
12.	Mr. Harish Lingam	KVPY
13.	Mr. Nagarjuna Amarnath	IIT/JEE
14.	Ms. Preeti	IIT/JEE
15.	Mr. Soma Naren Thejaswi	IIT/JEE
16.	Ms. Soma Chaudhary	IIT/JEE
17.	Mr. Amandeep Singh Buppal	IIT/JEE
18.	Mr. Andhavarapu Siva	IIT/JEE
19.	Mr. Ajit Kumar Mehta	IIT/JEE
20.	Mr. Jimmy Joy	IIT/JEE
21.	Mr. Ch. Rajasekhar	IIT/JEE
22.	Ms. Ritwika Mukherjee	IIT/JEE
23.	Mr. Paluri Maneesh Kumar	IIT/JEE
24.	Ms. Variganji Divya	IIT/JEE
25.	Mr. Raja Ghosh	IIT/JEE
26.	Mr. S. Arul Gnana Selvan	IIT/JEE
27.	Mr. B. Sree Ganesh	IIT/JEE
28.	Mr. Sujeesh K.S.	IIT/JEE
29.	Mr. Prateek Bhatnagar	IIT/JEE
30.	Mr. Som Sarang	IIT/JEE
31.	Mr. Debraj Sarkar	IIT/JEE
32.	Mr. Neeraj Kumar	IIT/JEE
33.	Mr. Yamijala Santosh Bhargav	IIT/JEE
34.	Mr. Parapaka Deepak	IIT/JEE
35.	Mr. Mani Ratnam Rai	IIT/JEE
36.	Mr. Mano Vikash J.	IIT/JEE
37.	Mr. Neeraj Kumar Rajak	IIT/JEE
38.	Mr. Neeruganti Manjunath	IIT/JEE
39.	Mr. Chiruguri Bhandhav	IIT/JEE
40.	Mr. Zupudi Jaya Sheel	IIT/JEE
41.	Mr. Ajeesh M.O.	IIT/JEE
42.	Mr. Choda Praneeth	IIT/JEE
43.	Mr. Ashish Kumar Chalana	IIT/JEE
44.	Mr. Harish Kumar Choudhary	IIT/JEE
45.	Mr. Puneet Prabhakar Singh	IIT/JEE
46.	Mr. Sanjay Kumar Meena	IIT/JEE
47.	Mr. Mukala Maneendra	IIT/JEE
48.	Mr. Vijay Pathak	IIT/JEE
49.	Mr. Meesala Bhanu Teja	IIT/JEE
50.	Mr. M.S. Deena Dayalan	IIT/JEE
51.	Mr. Srivastav	IIT/JEE
52.	Mr. P. Sunny Sunandan	IIT/JEE
53.	Mr. Atul Mohan	IIT/JEE
54.	Ms. Pooja Agarwal	IIT/JEE
55.	Mr. Katarpalli Ravikumar	IIT/JEE
56.	Mr. Surasura Karthik	IIT/JEE

57.	Mr. Lolakapuri Phani Raj	IIT/JEE
58.	Ms. Palaparathi Lakshmi Lavanya	IIT/JEE
59.	Mr. Mohit Khare	IIT/JEE
60.	Mr. Kethavath Pura Chandu	IIT/JEE
61.	Mr. Dibya Prakash Tarai	IIT/JEE
62.	Ms. Animakshi N. Bhushan	IIT/JEE

2.4.2 Ph.D. Programme

The First batch of students joined the Ph. D. Programme of IISER-TVM in August 2009. 18 students got admitted for Ph.D. Programme during the academic year 2009-10. Students admitted to the doctoral program are those qualified in one of the National Eligibility Tests such as GATE/CSIR-UGC JRF/ICAR. The details are given below.

List of students admitted for Ph.D. Programme

S.No	Name	Eligibility Test
1.	Mr. Gireesh K.K.	UGC
2.	Mr. Rijo T.C.	GATE
3.	Mr. Atchutarao	CSIR
4.	Ms. Sharon Achamma Abraham	CSIR
5.	Ms. Deepthi Jose	CSIR
6.	Ms. Saritha S.	GATE
7.	Ms. Vidya K.	UGC
8.	Ms. Subila K.B.	UGC
9.	Mr. Zalake Pratap Mohan	GATE
10.	Mr. Vidyasagar A.	GATE
11.	Ms. Salini Jose	GATE
12.	Mr. Manil T. Mohan	CSIR
13.	Ms. Priyakumari C.P.	CSIR
14.	Ms. Sreerekha S.	CSIR
15.	Mr. Vinayak Jagadish	CSIR
16.	Ms. Meera M.J.	ICAR
17.	Ms. Jissy A.K.	UGC
18.	Mr. Anoop Thomas	CSIR

3. Academic Programme

The mission of the Institute is to offer Undergraduate and Post Graduate level teaching of the highest international standards to highly motivated school leaving (+2) students and also to conduct frontline research leading to Ph.D. Degree, in basic sciences such as Biology, Chemistry, Physics, Mathematics and other Interdisciplinary Science subjects. IISER TVM offers both BS-MS dual degree programme and Ph.D. programme in basic sciences. The first 2 years of the BS-MS Dual Degree Programme consist of core courses common to all students, third and fourth year will be specialized in one major (Biology, Chemistry, Physics or Mathematics) and one or more minors, and final year devoted to a research project. The Institute is at present focusing on developing four schools in the above disciplines, namely,

- School of Biology
- School of Chemistry
- School of Mathematics
- School of Physics

As the students admitted to the BS-MS Programme are drawn from KVPY and IIT/JEE merit list, they are awarded Fellowships of Rs.5000/- per month under KVPY/INSPIRE Programme of DST. JRFs of CSIR/UGC/ICMR/DBT etc. draw fellowship and contingency according to the granting Institutions. Other qualified students for Ph.D. Program draw scholarship of Rs.12000/-p.m. from IISER-TVM.

The course Structure for the first two years of BS- MS Programme is given below.

COURSES/ SEMESTER	BIOLOGY	CHEMISTRY	MATHEMATICS	PHYSICS	INTER- DISCIPLINAR Y	HUMANITIES/ COMP. SCI.	PRACTICALS
SEMESTER I	BIO 111 (3103) CELL BIOLOGY	CHY 111 (3103) PRINCIPLES OF CHEMISTRY	MAT 111 (3103) CALCULUS AND LINEAR ALGEBRA	PHY111 (3103) MECHANICS	IDC 111(2203) SCIENTIFIC COMPUTING	HUM 111 (0101) READING, LISTENING AND WRITING SKILLS	CHY 112 (0031) PHY 112 (0031) BIO 112 (0031)
SEMESTER II	BIO 121 (3103) BIO-CHEMISTRY	CHY 121 (3103) KINETICS AND MECHANISMS	MATH 121 (3103) MULTIVARIABLE CALCULUS	PHY 121 (3103) ELECTRO- MAGNETISM AND OPTICS	IDC 121 (3103) THERMODYNA MICS	HUM 121 (0101) HISTORY AND PHIL. OF SCIENCE	CHY 122 (0031) PHY 122 (0031) BIO 122 (0031)
SEMESTER III	BIO 211 (3103) ECOLOGY AND EVOLUTIONARY BIOLOGY	CHY 211 (3103) REACTIVE INTERMEDIATES MACROMOLECU LES AND ELECTRO CHEMISTRY	MAT 211 (3103) COMPLEX FUNCTIONS	PHY 211 (3103) INTRODUCTI ON TO QUANTUM MECHANICS	IDC 211 (2023); ELECTRONICS	HUM 211 (2001); INTRODUCTOR Y PSYCHOLOGY	CHY 212 (0031) PHY 212 (0031) BIO 212 (0031)
SEMESTER IV	BIO 221 (3103) GENETICS AND MOL. BIOLOGY	CHY 221 (3103) QUANTUM CHEMISTRY AND PHOTO CHEMISTRY	MATH 221 (3103) PROBABILITY AND STATISTICS	PHY 221 (3103) STATISTICAL MECHANICS	IDC 221 (3103) SYMMETRY AND SPECTROSCOP Y	CSA 221 (3103) COMPUTER SCIENCE	CHY 222 (0031) PHY 222 (0031) BIO 222 (0031)

LTPC: L=Lecture, T=Tutorial. P=Practicals, C=Credit; IDC=Interdisciplinary Course; HUM= Humanities

4. Research Activities

The Institute is very active in frontier research apart from the regular teaching activities. The faculty members have already initiated research work in the laboratories constructed in the temporary campus and has also started collaborative research work with researchers in premier institutions in India and abroad. The faculties also undertook sponsored projects from various funding agencies. Two of our faculties (Dr. Ayan Datta and Dr. K.M. Sureshan) have received Extra Mural Funding for carrying out research projects during the year 2009-10 under DST Fast Track Scheme. Several proposals of the faculties are under consideration. Dr. Anil Shaji received the approval for the project and the amount is pending for the approval. The following are the sanctioned DST projects.

- 1 DST Fast Track Scheme “**Probing adenophostin mediated IP3R activation using click chemistry approach**”, September, 2009-12, **Rs.19.32 lakhs** – Dr.K.M. Sureshan, Asst. Professor, School of Chemistry.
- 2 DST Fast Track Scheme “ **Modeling and predicting novel molecular materials for Hydrogen Storage: The inorganic route**”, April, 2009-12, Rs.19.90 lakhs – Dr. Ayan Dutta, Asst. Professor, School of Chemistry.
- 3 DST Fast Track Scheme “**Enhance Quantum Measurements using Bose-Einstein condensates**”, (Funding approval is pending)- Dr. Anil Shaji, Asst. Professor, School of Physics.

5. Facilities

The Institute aims to provide the state-of-the-art facilities to carry out research and supporting teaching-learning process.

5.1 Laboratories

The Institute has created modern laboratory facilities and equipped with sophisticated instruments and equipment to facilitate high quality teaching and research. Additional space in the transit campus will be made available for IISER to create NMR and XRD facilities this summer. We have already installed the following equipment:



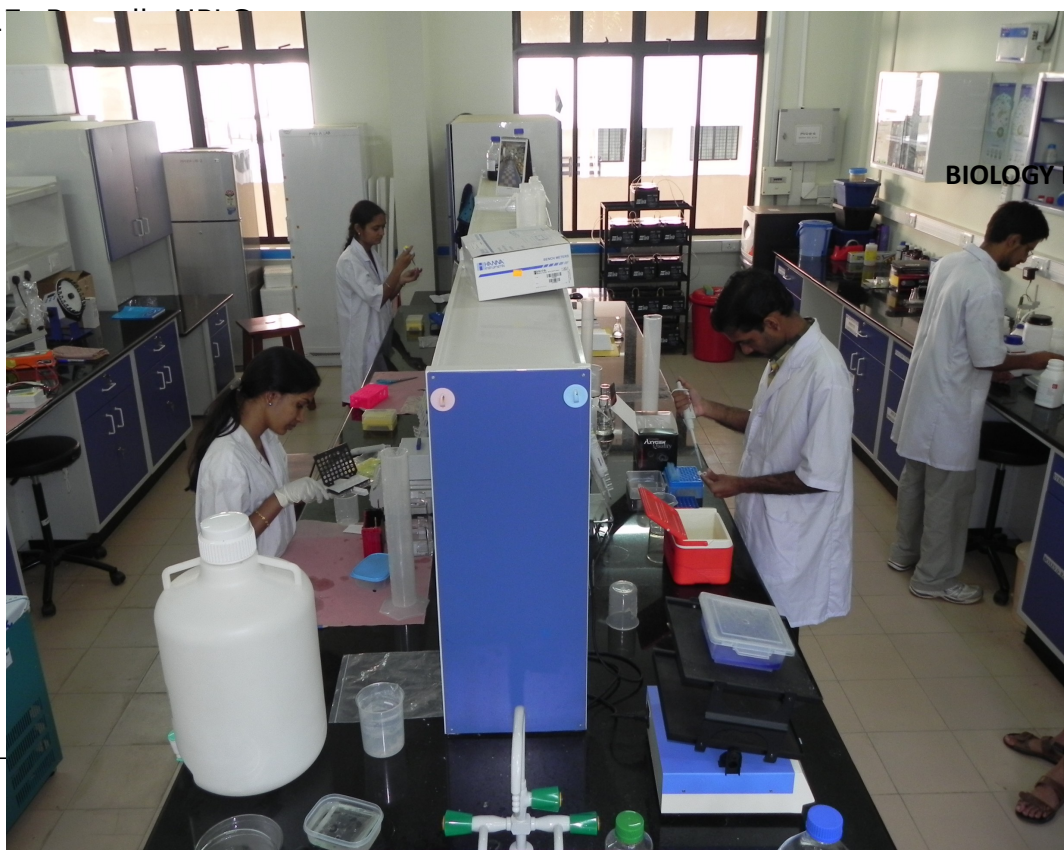
List of equipment installed/functioning:

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8



List of equipment to be installed:

1. Circular Dichroism Spectrometer
2. Isothermal Titration Calorimeter
3. Infrared Spectrometer
4. Gas Chromatograph coupled Mass Spectrometer
5. Nanosecond Laser Flash Photolysis Spectrometer
6. DNA Synthesiser
7. Peptide Synthesiser
8. Glove Box
9. CHNS Analyser
10. Cyclic Voltammeter with Spectroelectrochemical workstation
11. Irradiation Chambers
12. High Purity Nitrogen Generator
13. Hydrogenation Apparatus
14. Parallel Reactor
15. Deep Freezer (-80 0C)
16. Flash Column



5.2 Library

The library of IISER Thiruvananthapuram is growing fast to meet the academic and the research needs of IISER-TVM community. It undertakes collection, development, processing and dissemination of information to meet the requirements of the faculty, staff, research scholars, students etc. The library adopts state of the art technologies to facilitate access to online and print resources to its users. It remains open from 9 AM to 5.30 PM from Monday to Saturday. The hours are extended to 10 PM during the exam period.

❖ Collection

Library collection consists of print and online resources, including books, periodicals, CD/DVD, reports, manuals, reference works etc. The print collection of Library comprises of over 3500 books, monographs and conference proceedings, journals, etc. in Physics, Chemistry, Mathematics, Biology, Computer Science, Humanities, and interdisciplinary areas. Reference resources such as Encyclopedias, Dictionaries, and Handbooks etc are also available in the collection.

The Library's extensive electronic resources include full text e-journal databases, journal archives, e-books, bibliographic databases, etc which are useful for the academic and research activities of the IISER community.



❖ Full-text e-Journal Databases

- American Chemical Society (Web Edition) (36 Journals)
- American Institute of Physics (7 Journals)
- American Mathematical Society (AMS) (6 Journals)
- American Physical Society (9 Journals)
- Cell Press (6 Journals)
- Elsevier – Science Direct (542 Journals)
- Institute of Physics (IOP) (26 Journals)
- Institute of Mathematical Statistics (5 Journals)
- JStor
- Nature Publishing Group (33 Journals)
- Project Muse
- Royal Society Chemistry (RSC) (23 Journals)
- Springer Verlag & Kluwer (1677 Journals)
- Taylor & Francis (30 Journals)
- Wiley Online Library (38 Journals)
- Annual Reviews (37 Journals)
- Other Society Journals (18 Journals)

❖ Full-text e-Journals Archives

- [American Physical Society](#)
 - [PROLA \(1893-2003\)](#)
- [Elsevier \(Science Direct\)](#) (Vol. 1 onwards)
 - [Inorganic Chemistry](#)
 - [Organic Chemistry](#)
 - [Physical and Analytical Chemistry](#)
 - [Mathematics](#)
 - [Physics](#)
- [Nature](#) (1950-2008)
- [Royal Society Chemistry Journals](#) (1841-2004)
- [Science Classic \(AAAS\)](#) (1880-1996)

❖ Bibliographic Resources

- [J-Gate Custom Content for Consortia \(JCCC\)](#)
- [MathScinet](#)
- [Scifinder Scholar](#)
- [SCOPUS](#)

❖ E-Books

E-books collection consists of more than 9500 e-Books on core subjects as listed below

➤ Springer Lecture Notes

- [Lecture Notes in Mathematics \(Vol. 1-2004\) \(1964-2010\)](#)

- [Lecture Notes in Physics \(Vol. 1 - 809\) \(1969-2010\)](#)
- **Springer E-Books**
 - [Biomedical and Life Sciences](#) (1913 e-Books)
 - [Chemistry and Material Sciences](#) (1594 e-Books)
 - [Earth and Environmental Science](#) (207 e-Books)
 - [Mathematics and Statics](#) (1562 e-Books)
 - [Physics and Astronomy](#) (1499 e-Books)

❖ **Online Public Access Catalogue (OPAC)**

Library catalogue is made available through Online Public Access Catalogue (OPAC) of Library to check availability of the books, its status, etc.

❖ **Inter-Library Loan Facility**

Library has institutional membership in Kerala University Library. IISER Library members are provided with borrowing facility at Kerala University Library.

❖ **Affiliation in National Bodies**

Library has membership in the following National bodies for facilitating the scholarly resources for the Institute.

- Indian National Digital Library in Engineering, Science and Technology (INDEST) Consortium, established by the MHRD, Govt. of India.
- UGC-INFONET established by the Information and Library Network (INFLIBNET)

Access to different resources like Annual Reviews, MathScinet, JCCC, American Institute of Physics Journals, American Physical Society Journals, Nature, Project Muse etc are provided through INDEST Consortium established by the Ministry of HRD, Govt. of India.

5.3 Computing Facility



5.4 Hostel

The Institute provides hostel facilities to the students. In the second year of the establishment of the Institute, three different buildings in the vicinity of the present campus were taken on rent for housing all the boys students of the 5 year integrated BS-MS dual degree and Ph.D. Programme. For girl students, another building near to the transit campus was taken on rent. The food was prepared in one of the hostels and brought to the Institute for boarding.



5.5 Sports

The institute provides basic sports facilities to the students. A badminton court was constructed in the transit campus. Apart from this, the Institute makes use of the facilities of College of Engineering for conducting sports events.

6. Research Publications

The faculties of the institute publish their research output in well-reputed international journals and conference proceedings. The average per capita faculty output is 2.85 for journals and 0.28 for conference proceedings.

6.1 Journal Publications

Faculties of IISER-TVM have published **40** research papers in refereed journals of high impact in the last one year. The list is given below (*Author, Title, Journal, Issue respectively*).

- O. Shameema and **E. D. Jemmis**, *Relative Stability of closo-closo, closo-nido, and nido-nidoMacropolyhedralBoranes: The Role of Orbital Compatibility*, Chemistry An Asian Journal, 4, 1346-1353, 2009.
- D. Usharani, A. Poduska, J. F. Nixon and **E.D. Jemmis**, *Electronic Structure and Bonding in Neutral and Dianionic Boradiphospholes: $R'BC_2P_2R_2$ ($R=H, tBu, R'=H, Ph$)*, Chem. Eur. J, 15, 8429-8442, 2009.
- A. Basak, S. Das, D. Mallick and **E.D. Jemmis**, [Which One Is Preferred: Myers–Saito Cyclization of Ene-Yne-Allene or Garratt–BravermanCyclization of Conjugated BisallenicSulfone? A Theoretical and Experimental Study](#), J. Am. Chem. Soc, 131 (43), pp 15695-15704, 2009.
- S. Sahoo, K. H. Reddy, R.S. Dhyal, S. M. Mobin, V. Ramkumar, **E.D. Jemmis** and S. G. Ghosh, *Chlorinated hypoelectronic dimetallaborane clusters: Synthesis, characterization and electronic structures of $(C_5Me_5W)_2B_5H_nCl_m$, ($n=7, m=2$)*, Inorg. Chem, 48 (14), 6509-6516, 2009.
- O. Shameema and **E. D. Jemmis**, [Closo versus HyperclosoMetallaboranes: A DFT Study](#), Inorg. Chem, 48 (16), pp 7818-7827, 2009.
- S. De, G. A. Pierce, D. Vidovic, D. L. Kays, N. D. Coombs, **E. D. Jemmis** and S. Aldridge, [Reactivity of Cationic Borylene Complexes: Novel Mechanisms for Insertion and Metathesis Chemistry Involving Strongly Lewis Acidic Ligand Systems](#), Organometallics, 28 (10), pp 2961-2975, 2009.
- G. A. Pierce, D. Vidovic, D. L. Kays, N. D. Coombs, A. L. Thompson, **E. D. Jemmis**, S. De and S. Aldridge, [Half-Sandwich Group 8 Borylene Complexes: Synthetic and Structural Studies and Oxygen Atom Abstraction Chemistry](#), Organometallics, 28 (10), pp 2947-2960, 2009.
- J. Joseph, T. V. RajanBabu and **E. D. Jemmis**, [A Theoretical Investigation of the Ni\(II\)-Catalyzed Hydrovinylation of Styrene](#), Organometallics, 28 (12), pp 3552-3566, 2009.

9. **E. D. Jemmis**, S. Roy, V. V. Burlakov, H. Jiao, M. Klahn, S. Hansen and U. Rosenthal, [Are Metallocene–Acetylene \(\$M = Ti, Zr, Hf\$ \) Complexes Aromatic Metallacyclopropenes?](#) *Organometallics*, 29 (1), pp 76–81, 2010.
10. R. S. Dhayal, S. Sahoo, K. H. Krishna Reddy, S. M. Mobin, **E. D. Jemmis** and S. Ghosh, [Vertex-Fused Metallaborane Clusters: Synthesis, Characterization and Electronic Structure of \$\[\(\eta^5-C_5Me_5Mo\)3MoB_9H_{18}\]\$](#) , *Inorg. Chem*, 49 (3), pp 900–904, 2010.
11. D. A. Addy, G. A. Pierce, D. Vidovic, D. Mallick, **E. D. Jemmis**, J. M. Goicoechea and S. Aldridge, *Generation of Cationic Two-Coordinate Group-13 Ligand Systems by Spontaneous Halide Ejection: Remarkably Nucleophile-Resistant (Dimethylamino)borylene Complexes*, *J. Am. Chem. Soc.*, 132, 4586–4588, 2010.
12. M. P John, P.U. Jijo, and **V.M. Nandakumaran**, *Effect of a fluctuating parameter mismatch and the associated time-scales on coupled Rossler oscillators*, *Pramana Journal of Physics*, Vol. 72, No.3, 495-503, Mar. 2009.
13. V. Mohan and **A. Datta**, *Structures and Electronic Properties of Si – Substituted Benzenes and their Transition – Metal Complexes*, *J. Phys. Chem. Lett*, 48, 11647, 2009.
14. P. Ramaswamy, N. N. Hedge, P. Ramnath, V. M. Vidya, **A. Datta**, and S. Natarajan, *Synthesis, Structure, and Transformation Studies in a Family of Inorganic-Organic Hybrid Framework Structures Based on Indium*, *Inorg. Chem*, 48, 11647, 2009.
15. **A. Datta**, *Modelling doped (Ni, Pd, Pt) sulfur-nitrolic systems as new motifs for storage of hydrogen*, *Phys. Chem. Chem. Phys*, 11,11054, 2009.
16. X. Zhang, **A. Datta**, D. A. Hrovat and W. T. Borden, *Calculations Predict a Large Inverse H/D Kinetic Isotope Effect on the Rate of Tunneling in Ring Opening of Cyclopropylcarbinyl Radical*, *J. Am. Chem. Soc.* (communication), 131, 16002, 2009.
17. **A. Datta**, *Role of Metal Ions ($M = Li^+, Na^+, and K^+$) and Pore Sizes (Crown-4, Crown-5, and Crown-6) on Linear and Nonlinear Optical Properties: New Materials for Optical Birefringence*, *J. Phys. Chem. C*, 113, 3339, 2009.
18. T. K. Mandal, S. K. Pati and **A. Datta**, *Degenerate Intermolecular and Intramolecular Proton-Transfer Reactions: Electronic Structure of the Transition States*, *J. Phys. Chem. A (Letter)*, 113, 8147, 2009.
19. A. Wu, E. A. Mader, **A. Datta**, D. A. Hrovat, W. T. Borden and J. M. Mayer, *Nitroxyl Radical Plus Hydroxylamine Pseudo Self-Exchange Reactions: Tunneling in Hydrogen Atom Transfer*, *J. Am. Chem. Soc.*, 131, 11985, 2009.

20. S. Dutta, T. K. Mandal , **A. Datta** and S. K. Pati, *Understanding Peierls distortion in one-dimensional infinite V-chain and V-Bz multi-decker complex*, Chemical Physics Letters, 479, 133, 2009.
21. D. Jose and **A. Datta**, Molecular Rotor Inside a Phosphonate Cavitand: Role of Supramolecular Interactions”, J. Phys. Chem. Lett., 1, 1363, 2010.
22. A. Nijamudheen and **A. Datta**, *Odd-even oscillations in structural and optical properties of gold cluster*, Journal of Mol. Structure (THEOCHEM), 945, 93, 2010.
23. **H. Somanathan**, E.J.,Warrant R.M.Borges, R. Wallen, and A. Kelber, Resolution and sensitivity of the eyes of Asian honey bees *Apis florea*, *Apis cerana* and *Apis dorsata*. Journal of Experimental Biology 212: 2448-2453, 2009.
24. **H. Somanathan**, R.M. Borges, A. Kelber and E.J. Warrant , Visual ecology of Indian carpenter bees II: Eye structure and visual adaptations. Journal of Comparative Physiology A 195: 571-583, 2009.
25. **S. Shankaranarayanan** , *What-if inflaton is a spinor condensate*, Int. J. Mod. Phys. D, 18, 2173 , 2009.
26. D. Gredat and **S. Shankaranarayanan**, *Modified scalar and tensor spectra in inflation based on a condensate of spinor fields*, JCAP 01, 008, 2010.
27. C. Appignani, R. Casadio and **S. Shankaranarayanan**, *Cosmological constant and Horava-Lifshitz gravity* , JCAP 04, 006 2010.
28. C. Appignani, R.Casadio and **S. Shankaranarayanan**, *A note on second-order perturbations of non-canonical scalar fields*, JCAP, 010, 1003, v: 0905.4184, 2010.
29. C. M. Caves and **A. Shaji**, *Quantum-circuit guide to optical and atomic interferometry*, Optics Communications, vol: 283, page: 695-712, March 1, 2010.
30. S. Boixo, A.Datta, M.J. Davis, **A. Shaji**, A. B. Tacla and C.M. Caves, Quantum limited metrology and Bose-Einstein condensates, Phys. Rev. A 80, 032103 , 2009.
31. T. F. Jordan and **A. Shaji**, Repeatable procedures and maps in open quantum dynamics, Phys. Lett. A 373, 4219 , 2009.
32. Parthasarathy and **R. Prakash**, *Malliavin's theorem for weak synthesis on nonabelian groups*, Bulletin des Sciences Mathematiques, Vol-134, 2010.
33. **R. Nath**, Y. Furukawa, F. Borsa, E. E. Kaul, M. Baenitz, C. Geibel, and D. C. Johnston, *Single-crystal ³¹P NMR studies of the frustrated square-lattice compound PB₂(VO)(PO₄)₂*, Phys. Rev. B, 80, 214430 , 2009.

34. [A. A. Tsirlin](#), [R. Nath](#), [A. M. Abakumov](#), [R. V. Shpanchenko](#), [C. Geibel](#) and [H. Rosner](#), *Frustrated square lattice with spatial anisotropy: crystal structure and magnetic properties of PbZnVO(PO₄)₂*, [arXiv:0910.2258](#), 2010.
35. **M. Hariharan**, D. Ramaiah,* I. Schulz, S. C. Karunakaran and B. Epe, Photoinduced DNA Damage Efficiency and Cytotoxicity of Novel Viologen Linked Pyrene Conjugates, *Chem. Comm.*, 46, 2064-2066, 2010.
36. **M. Hariharan**, E. Kuruvilla and D. Ramaiah, [Direct Evidence on the External Stimuli Induced Disassembly of DNA through Microscopic Techniques](#), *J. Phys. Chem. Lett.*, 1 (5), pp 834-838, 2010.
37. T. M. Wilson, T. A. Zeidan, **M. Hariharan**, F. D. Lewis, and M. R. Wasielewski, *Electron Hopping among Cofacially Stacked Perylenediimides Assembled Using DNA Hairpins*, *Angew. Chem. Int. Ed.*, 49, 2385-2388, 2010.
38. M. McCullagh, **M. Hariharan**, F. D. Lewis, D. Markovitsi, T. Douki and G. C. Schatz, *Conformational Control of TT-Dimerization in DNA Hairpins. A Molecular Dynamics Study*, *J. Phys. Chem. B*, 2010.
39. **M. Hariharan**, D. Ramaiah, I. Schulz, S. C. Karunakaran and B. Epe, *Photoinduced DNA Damage Efficiency and Cytotoxicity of Novel Viologen Linked Pyrene Conjugates*, *Chem. Comm.*, 46, 2064-2066, 2010.
40. **K. M. Sureshan**, T. Murakami and Y. Watanabe, *Total synthesis of cyclitol based natural products from myo -inositol: brahol and pinpollitol*, *Tetrahedron*, 65, 3998-4006, 2009.

6.2 Conference Proceedings

1. Quantum gravitational corrections to the propagator in spacetimes with constant curvature}, D. Kothawala, **S. Shankaranarayanan** and L. Sriramkumar, To appear in the proceedings of 12th Marcel Grossman meeting, arXiv: 1002.1132
2. C. Appignani, R. Casadio and **S. Shankaranarayanan**, *Ambiguities in second-order cosmological perturbations for non-canonical scalar fields*, To appear in the proceedings of 12th Marcel Grossman meeting, arXiv: 1002.1130
3. Ambiguities in second-order cosmological perturbations for non-canonical scalar fields, C. Appignani, R. Casadio and **S. Shankaranarayanan** , To appear in the proceedings of 12th Marcel Grossman meeting, arXiv: 1002.1130

4. Entanglement and corrections to Bekenstein-Hawking entropy, Saurya Das, **S. Shankaranarayanan** and Sourav Sur, To appear in the proceedings of 12th Marcel Grossman meeting, arXiv: 1002.1129
5. Dark spinor driven inflation, **S. Shankaranarayanan**, To appear in the proceedings of 12th Marcel Grossman meeting, arXiv: 1002.1128

6.3 Books/Chapters

1. **A. Dutta**, Computational Studies of Molecules with Unusual Aromaticity: What to Expect?" in *Aromaticity and Metal Clusters*, CRC Press, 2010.
2. **S. Shankaranarayanan**, Quantum corrections to Bekenstein-Hawking entropy, Quantum or not so quantum?(Invited Review), *Vignettes in gravitation and cosmology*, World Scientific, 2010.
3. S. De and **E.D. Jemmis**, Applications of Density Functional Theory in Organometallic Complexes: A case study of Cp_2M Fragment ($M = Ti, Zr$) in C-C coupling and decoupling reactions, *Chemical Reactivity Theory:- A Density Functional View*, P.K. Chattaraj, Ed. CRC Press, 2009.
4. B. Pathak, M. Umayal and **E.D. Jemmis**, π -Bond Prevents Short π -Bonds: A Detailed Theoretical Study on the Compounds of Main Group and Transition Metal Complexes, *Practical Aspects of Computational Chemistry*, J. Leszczynski and M.K. Shukla(Eds.), Springer Science, 2009.

7 Other Academic Activities

7.1 Foundation Day Lecture



7.2 Faculty Activities

The faculties of the Institute have been invited by many organizations and they have attended various symposiums during 2009-10. The Institute also offers summer internship to students in other institutes

7.2.1 Conference Attended

Faculty	Conference/Workshop	Place	Date	International/ National
Anil Shaji	International Programme on Quantum Information - 2010	Bhubaneswar	Jan 16, 2010	International
Archana Pai	Scipy9; an international Conference " <i>Scipy in action</i> " with respect to application and teaching with Python	Trivandrum	Dec. 12-14, 2009	International
Archana Pai	Australian International Gravitational Observatory (AIGO) Conference, Perth	Australia	Feb.22-Mar.2, 2010	International
K.M. Sureshan	Emerging Trends in Chemistry	Payyanur	Oct. 22, 2009	National
K.M. Sureshan	24 th Carbohydrate Conference	Jodhpur	Dec. 8, 2009	National
K.M. Sureshan	Recent Trends in Chemistry	Irinjalakkuda	Feb. 25, 2009	National
E.D. Jemmis	12 th International Symposium on Inorganic Ring System	Goa	Aug. 16-21, 2009	International
E.D. Jemmis	ATIP workshop on HPC in India: Indigenous Hardware, Software & Infrastructure Research in conjunction with supercomputing	Oregon, Portland	Nov. 20, 2009	International

7.2.2 Invited Lectures/Seminars

Faculty	Name of Lecture	Name of Institution	Place	Date
M.S. Gopinathan	It is a non-linear world	IISER Kolkata	Kolkata	Sept. 19, 2009
Anil Shaji	The Quantum Zeno	International School of	Cochin	Oct. 14,

	Effect	Photonics, CUSAT		2009
Anil Shaji	Quantum Cryptography	College of Engineering Perumon, Kerala	Perumon	Nov. 28, 2009
Anil Shaji	Quantum discord and other measures of non-classical correlations	Institute of Physics, Bhuvaneswar	Bhuvaneswar	Jan. 16, 2010
Anil Shaji	Quantum Information Theory: Theoretical Challenges	IIST, Thiruvananthapuram	Trivandrum	Feb. 5, 2010
Anil Shaji	Quantum Cryptography with Quantum Optics	International School of Photonics, CUSAT	Cochin	Feb. 28, 2010
Archana Pai	Gravitational Wave Astronomy	Department of Physics, Kerala University	Trivandrum	Oct. 20, 2009
Archana Pai	Scientific Computing with Matlab/Octave	College of Engineering, Trivandrum	Trivandrum	Jan. 22, 2010
Archana Pai	Sparse sky grid for coherent network analysis	Australian International Gravitational Observatory (AIGO), Perth	Perth, Australia	Feb. 22 – Mar. 2, 2010
Ayan Dutta	Introduction to Quantum Chemistry	Mar Athanasius College, Kothamangalam	Kothamangalam	July 15, 2009
Ayan Dutta	Tunneling Effects in Chemistry	Bishop Moore College, Mavelikara	Mavelikara	Oct. 14, 2009
Ayan Dutta	Molecular Materials	T. K. M. College of Arts and Science, Kollam	Kollam	Oct. 17, 2009
Ayan Dutta	Non-linear Optics	Academic Staff College, Kerala University	Kollam	Dec. 8, 2009
Hema Somanathan	Nocturnality in bees	JNCASR	Bangalore	Sep. 11-12, 2009
Mahesh Hariharan	Structure and Self-Assembly of DNA	NASCHEM-'09, Payyanur College	Payyanur	Oct. 23-24, 2009
Mahesh Hariharan	Effect of Light on DNA	NASCHEM-'09, Payyanur College	Payyanur	Oct. 23-24, 2009
Mahesh Hariharan	Structure and Reactivity of DNA	Sacred Heart College, Kochi	Kochi	Nov. 6, 2009
Mahesh Hariharan	Structure of DNA	NIST, Thiruvananthapuram	Trivandrum	Dec. 22-23, 2009
Mahesh Hariharan	Structure of DNA	Government Women' College, Trivandrum	Trivandrum	Jan., 2010
Mahesh Hariharan	Effect of Light on DNA	Christian College, Marthandam	Trivandrum	Mar. 18-19, 2010
Utpal Manna	Stochastic Process	College of Engineering Trivandrum	Trivandrum	Jan. 22, 2010

7.2.3 Internship Offered

Students from other Universities/Colleges carried out their Projects with faculties of IISER-TVM during the year 2009-10.

1. Mr. Nijamudheen A, CUSAT - *Dr. A. Datta (Chemistry)*
2. Ms. Nimi Muraleedharan, Indian Academy of Science - *Prof. E D Jemmis*
3. Ms. Megha Karki, Indian Academy of Science - *Prof. E D Jemmis*
4. Ms. Karabi Halder, Indian Academy of Science - *Prof. E D Jemmis*
5. Ms. Shameema O, IISc. Bangalore - *Prof. E D Jemmis*
6. Ms. Sany, Madras Christian College, Chennai - *Dr. Hema Somanathan*
7. Mr. Ganesh Shinde, Pune University - *Dr. K.M. Sureshan*
8. Mr. Soumen Ghosh, IIT Kanpur - *Dr. K.M. Sureshan*

9. Mr. Sibi Mathew, M.G. University – *Dr. K. M. Sureshan*
 10. Mr. Anton Joe, IIT Kharagpur – *Dr. Archana Pai*

7.3 Students Activities

This year's student activities began with the official inauguration of the science club under the name "Anvesha". Anvesha meets weekly with visiting and in-house speakers. The sports day was spread over three days, and had active participation from students and faculty with indoor and outdoor events including athletics. The cultural festival, held over three days had various competitions like creative writing, painting/drawing, glider-making and concluded with a cultural evening of song and dance. The first issue of the institute magazine, "Sopanam" was released by Prof. M.R.S. Rao, Chairman, Board of Governors, IISER-TVM, on the Foundation Day. The bird-watching club also started this year with its early morning weekly sessions.

8. Visitors from Other Institutes

A large number of well-known Scientists and Academics from abroad and within the country visited the Institute and they have given seminars/lectures.

- 1) **Prof. Challa Vijayakumar**
(Department of Chemistry, University of Connecticut, USA)
- 2) **Prof. V. Ramamurthy**
(Department of Organic Chemistry, University of Miami (USA)
- 3) **Prof. Enrico Dalcanale**
(University of Parma, Italy)
- 4) **Prof. Anna Painelli**
(Dipartimento di Chimica GIAF, Universita di Parma, and INSTM-UdR Parma, Parma, Italy)
- 5) **Professor John F. Nixon**
(FRS Sussex University, UK)
- 6) **Prof. Bruce R. King**
(Dept. of Chemistry, University of Georgia, Athens, GA (USA))
- 7) **Prof. Vidyand Nanjundiah**
(MRDG, Indian Institute of Science, Bangalore)
- 8) **Prof. G. Baskaran**
(The Institute of Mathematical Sciences, Chennai)
- 9) **Prof. K. L. Sebastian**
(Department of Inorganic and Physical Chemistry, Indian Institute of Science, Bangalore)
- 10) **Prof. Umesh Varshney**
(Department of Microbiology and Cell Biology, Indian Institute of Science, Bangalore, India)
- 11) **Prof. H. R. Krishnamurthy**
(Centre for Condensed matter Theory, Department of Physics, Indian Institute of Science, Bangalore)
- 12) **Prof. T. Padmanabhan**
(Inter-University Centre for Astronomy and Astrophysics, Pune)
- 13) **Prof. S. Ramakrishnan**

(Dept. of Inorganic and Physical Chemistry Indian Institute of Science, Bangalore)

- 14) **Prof. M. K. Mathew**
(National Centre for Biological Sciences, Bangalore)
- 15) **Prof. Rajesh Gopakumar**
(The Harish-Chandra Research Institute, Allahabad)
- 16) **Prof. S.G. Rajeev**
(University of Rochester, N Y)

9. Colloquia and Seminars

IISER-TVM regularly organizes colloquia and lectures by reputed scientists across the country and the following are the distinguished speakers:

9.1 Colloquia

Sl. No	Date	Name	Subject
1.	20.08.2009	Prof. K. L. Sebastian, Indian Institute of Science , Bangalore	An Invitation to Biophysical Chemistry
2.	21.10.2009	Prof. V. Balakrishnan Department of physics, IIT, Madras	Can you hear the shape of a Drum? A revisit.
3.	13.11.2009	Prof. R. Sukumar Centre for Ecological Sciences Indian Institute of Science Bangalore	Ecology and conversation of the Asian Elephant, <i>Elephas maximus</i>
4.	14.01.2010	Prof. Bruce R. King, Department of Chemistry, University of Georgia, Athens, GA (USA)	Bare Metal Clusters: Spherical Aromaticity and Flattened Deltahedra
5.	09.02.2010	Professor John F. Nixon, FRS Sussex University, UK	Rings and Cages from Phosphaalkynes
6.	25.02.2010	Prof. G. Bhaskaran, The Institute of Mathematical Sciences, Chennai	One Hundred Years of Superconductivity
7.	12.03.2010	Prof. Nanjundiah M R D G, Centre for Ecological Sciences Indian Institute of Science, Bangalore	Evolution and Social behaviour

9.2 Seminars



Seminar Talk

Sl. No	Date	Name	Subject
1	17.04.2009	Prof. R. Rajesh, Institute of Mathematical Sciences, Chennai	Climate Change: The Scientific Basis
2	20.04.2009	Prof. Anna Painelli, Dipartimento di Chimica GIAF, Universita di Parma, and INSTM-UdR Parma, Parma, Italy	Electron-Transfer in Molecular Functional Materials.
3	22.04.2009	Dr. Hema Somanathan, Animal Vision Group, Department of Cell and Organism Biology, Lund University, Sweden	An Overview to bees
4	08.08.2009	Prof. Enrico Dalcanale, University of Parma, Italy	Self-Assembly: Chemistry to Nanofabrication
5	24.08.2009	Dr. Anand NarA.an, Department of Astronomy, University of Wisconsin, Madison	Galaxies and the Intergalactic Medium: From the Early Universe to the Present
6	11.09.2009	Dr. Venugopal S Reddiar MD, MRCP Life Skills Consultant & Coach, N Y, USA	The 7 Life Skills for 7 star Performance
7	27.10.2009	Prof. JA.t Udgaonkar National Centre for Biological Sciences Bangalore	Introduction to Physical Biology
8	05.11.2009	Dr. Ramesh Bhat, Swinburne University of Technology, Australia	Pulsars and Gravitational waves
9	04.12.2009	Dr. H .N . Joshi Northwestern University, IL, USA	Advanced nanostructures for applications in therapeutics and photo-catalysis
10	10.12.2009	Dr. P. Ajith, California Institute of Technology, USA	Gravitational-wave astronomy: Opening a new window onto the Universe

11	14.12.2009	Dr. Atul S. Deshpande School of Dental Medicine University of Pittsburgh Pittsburgh, PA	Synthesis of nano-structured functional materials by templating techniques
12	17.12.2009	Dr. Utpal Chatterjee, Argonne National Laboratory, USA	Universal d wave gap shape in the entire doping range of the cuprate High Temperature Superconductors
13	21.12.2009	Prof. Aninda Jiban Bhattacharya, SSCU, Indian Institute of Science, Bangalore	Materials for Electrochemical Energy Generation and Storage
14	12.01.2010	Dr. B. Starling Emerald, Singapore Dr Institute for Clinical Sciences, Bernner Centre for Molecular Medicine, Singapore	Altered regulation of Growth Hormone-Releasing Hormone/ Growth hormone/ Insulin-Like Growth Factor-1 axis in mammary carcinoma
15	15.01.2010	Prof. V. Ramamurthy , Department of Organic Chemistry University of Miami (USA)	Controlling Photochemical Reactions through Confinement
16	22.01.2010	Dr. Bobby Ezhuthachan, Harish- Chandra Research Institute, Allahabad	Strings At Strong Coupling
17	25.01.2010	Prof. Challa Vijayakumar, Department of Chemistry, Univ. of Connecticut, USA.	Introduction to Bionanomaterials
18	27.01.2010	Prof. Subodh Shenoy University of Hydrebad, Hydrebad	Phase transitions and order parameters
19	28.01.2010	Dr. Pankaj K. Mandal, Rowland Institute at Harvard, Harvard University, Cambridge, MA 02142, USA	Tera(hertz)-Talk with Artificial and Real Atoms
20	29.01.2010	Dr. K. G. Arun, Washington University-St Louis, USA	Audible Universe
21	01.02.2010	Dr. Ramanathan Natesh, University of London, UK	ACE of hearts and chaperonin non-native protein complexes
22	16.02.2010	Prof. Somanath Chattopadhyay IISER-Kolkata	"Opportunities in Industry"
23	04.03.2010	Dr. Uma Shankara Gowda Dept. of Bio-chemistry and Molecular Biology, College of Medicine Drexel University, USA	Peptidomimetic HIV-1 entry inhibitors
24	09.03.2010	Shri. Suresh Koduru Harvard Medical School, Massachusetts (USA)	Raising the BAR on T cell trafficking and T cell driven immune responses
25	18.03.2010	Dr. Ranga Subramanian New college of Florida, Sarasota, Florida, USA	Gas Phase Spectrography
26	24.03.2010	Dr. Ravi Akundi Dept. of Anatomy and Neurobiology, University of Kentucky, USA	Mitochondrial Dynamics

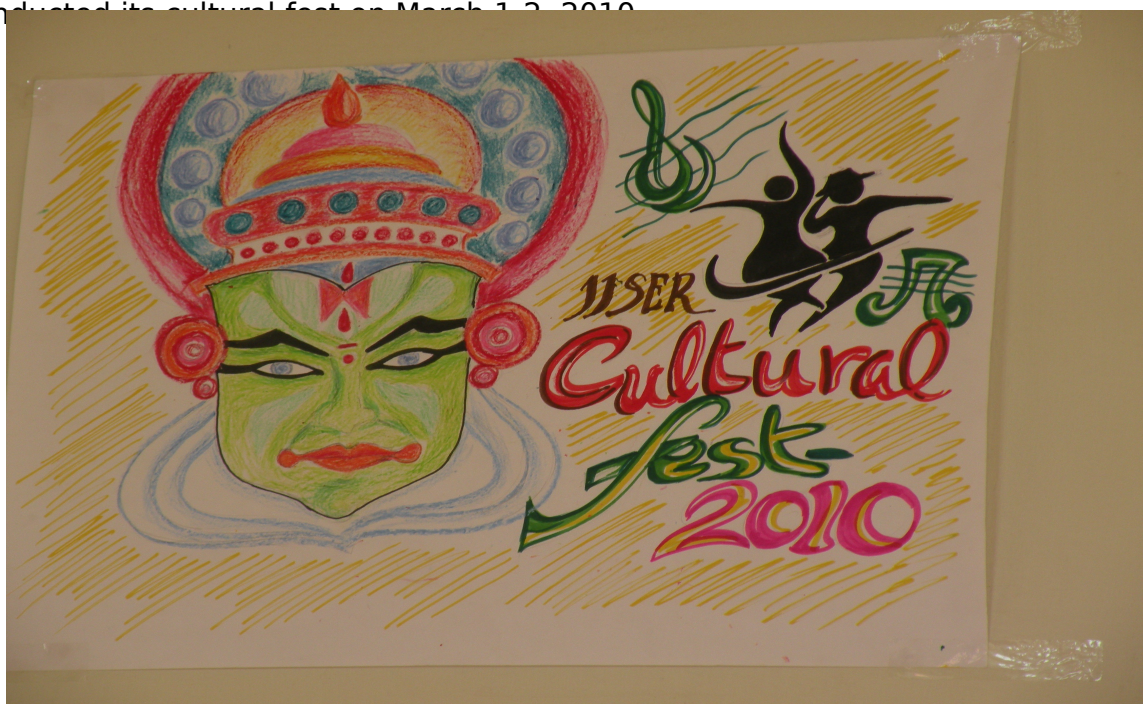
10. Awards and Honours

The following faculty of IISER-TVM has been selected for the award of Ramanujan Fellowship of Department of Science and Technology, Govt. of India.

1. Dr. K. M. Sureshan, Asst. Professor, School of Chemistry
2. Dr. Anil Shaji, Asst. Professor, School of Physics
3. Dr. S. Shankaranarayanan, Asst. Professor, School of Physics

11. Cultural Activities

The cultural board of IISER-TVM organized various cultural programme during 2009-10. Independence day was celebrated in the campus on August 15, 2009. The Director, Prof. E.D. Jemmis, hoisted the flag and the students sang the national anthem. Onam-2009 was celebrated in the campus on Sept. 4, 2009 followed by Onam-Sadya and cultural activities of the students. The campus community also celebrated the Republic day on January 26, 2010. Students regularly organize various cultural events in the campus. IISER conducted its cultural fest on March 1-2, 2010.



12. Welfare Scheme

IISER-TVM offers medical facilities to students and employees. A medical doctor regularly visits the institute. Employees are covered under new pension fund scheme.

13. Summary of the Progress made during 2009-10

IISER-TVM has made significant progress in academic front during 2009-10 compared to the previous year. The progress made in terms of the construction of the new campus and creation of infrastructure in the transit campus is summarized below.

13.1 Transit Campus

The building space made available at the transit campus have been renovated, including rectification and vertical extension of existing infrastructure to create facilities for laboratories, lecture halls and offices. The project details are given below.

Sl. No.	Works	Estimated Cost of Works (Rs. in lakhs)	Physical Progress		Total Progress upto March 31, 2010		Remarks
			Upto 31-03-2009	During 2009-10	Physical	Financial (Rs.in lakh)	
1	Modification of Labs (Civil & Electrical)	10.62	20%	80%	100%	10.62	Completed
2	Vertical Expansion of IISER Block at CET	82.82	-	100%	100%	82.82	Completed
3	Electrical work on the second floor	10.14	-	100%	100%	10.14	Completed
4	Supply and Erection of 300 KVA, AVR; Supply and laying of UG cable	17.20	-	100%	100%	17.20	Completed
5	Miscellaneous works	2.64	-	100%	100%	2.64	Completed

13.2 Permanent Campus

Master plan for the entire campus at Vithura has been completed with an estimated cost of Rs. 534 crores against the allocation of Rs. 100 crores in the original DPR and the Board has approved the same. Construction will take place in phased manner. Phase-I cover setting up the minimum facilities required to shifting from its transit campus to the permanent campus. The cost of construction is estimated to be Rs. 210 crores. The Ministry has given approval for awarding contracts for Architectural Consultancy and Project Management Consultancy (PMC) Services. The campus will be constructed as per the guidelines of the Green Rating for Integrated Habitat Assessment (GRIHA) certification. The progress is given below.

- a. Approvals for the construction project are at various stages of clearance as given below.
 - i. GRIHA registration was completed on 25.02.2010.
 - ii. Pollution Control Board Clearance from Kerala State Pollution Control Board (KSPCB) is awaited.
 - iii. Environmental clearance from the Ministry of Environment & Forests, Govt. of India is awaited.
 - iv. The process of getting clearance from Local Gram Panchayat for the project implementation is in progress.
 - v. Power supply to the campus require bringing separate power lines from the nearest HT station and the necessary

paper work with Kerala State Electricity Board(KSEB) is also in progress.

- b. Pre-qualification of construction agencies has been finalized.
- c. Detailed drawings for the buildings and facilities have been prepared by the consultants and cleared. BOQ and conditions of contract are at final stage of clearance.
- d. Phase-I work is expected to start soon.

Sl. No.	Works	Estimated Cost of Works (Rs. in lakhs)	Physical Progress		Total Progress upto March 31, 2010		Remarks
			Upto 31-03-2009	During 2009-10	Physical	Financial (Rs.in lakh)	
1	Construction of Compound wall of 3500 meter	162.00	30%	70%	100%	114.51	Length of 3.5 KM is Completed
2	Temporary Road & Site office inside the IISER campus	51.77	70%	30%	100%	28.05	Completed
3	Master plan, Architectural and other Engineering Design Consultancy	743.00	-	15%	15%	111.41	In progress
4	PMC	189.00	-	3%	3%	5.67	Phase-I PMC contract is awarded on 08.03.2010 and the work is in progress
5	Construction building(academic & Residential) and other infrastructure	21000.00	-	-	-	-	For Phase-I facilities only. Tender document is under preparation

14. Finance and Accounts

The Annual Statement of Accounts of IISER-TVM for the year 2009-10 consist of Balance Sheet, Schedules forming part of Balance Sheet and the Income and Expenditure Account with the supporting Schedules. A Grant-in-Aid of Rs.2500 Lakh has been granted by the Ministry of Human Resource Development, Government of India vide Sanction F.No.38-13/2009-TS.V dated 18.05.09, 29.09.09, 27.01.10 & 24.02.10 during the year 2009-10 and there was an opening balance of Rs. 405.42 Lakh. There is other income of Rs.130.24 lakh such as Scholarship under KVPY, CSIR and INSPIRE Programme, Interest on Flexi Term Deposit, Fees etc., Total Expenditure of the institute during the year 2009-10 is Rs.2780.66 Lakh which includes expenditure on Salaries of Rs.236.02 Lakh and Non Salary expenditure of Rs.200.82 Lakh. In addition, Capital expenditure including committed expenditure on accrual basis during the year is Rs.2343.82 Lakh out of the grant received.

Separate Audit Report of the Comptroller & Auditor General of India on the Accounts of Indian Institute of Science Education and Research Thiruvananthapuram for the year ended 31st March 2010

We have audited the attached Balance Sheet of Indian Institute of Science Education and Research Thiruvananthapuram as at 31st March 2010 and the Income and Expenditure Account/ Receipts & Payment Account for the year ended on that date under Section 20(1) of the Comptroller & Auditor General's (Duties, Powers & Conditions of Service) Act, 1971 read with Regulation 16(2) forming part of Memorandum of Association of the institute. The audit has been entrusted for the period upto 2012-13. These financial statements are the responsibility of the Institute's Management. Our responsibility is to express an opinion on these financial statements based on our audit.

2. This separate Audit Report contains the comments of the Comptroller & 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 observations 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 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 statements. We believe that our audit provides a reasonable basis for our opinion.
4. Based on our audit, we report that:
 - i. We have obtained all the information and explanations, which to the best of our knowledge and belief were necessary for the purpose of our audit;
 - ii. The Balance Sheet / Income & Expenditure Account / Receipt & Payment Account dealt with by this report have not 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 Regulation 16.1 forming part of Memorandum of Association of the institution, in so far as it appears from our examination of such books.

iv. We further report that:

A. Balance sheet

A.1 Liabilities

A.1.1 Corpus / Capital fund and Liabilities (Sch.1)

Contribution towards Capital Fund Rs.23.52 Crore. This includes Rs.7.75 Crore being the value of purchase orders issued for lab equipments and library books. Neither the materials were received nor any payment made by the Institute. This has resulted in overstatement of Capital Fund and understatement of income under "Grants and Subsidies".

B Grants in aid

Out of the grants in aid of Rs.29.05 crore (including Rs.25 Crore received during the year), the organization could utilize a sum of Rs.27.46 crore leaving a balance of Rs.1.59 crore as unutilized grant as on 31 March 2010.

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 Balance Sheet and Income & Expenditure Account / 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 Accounts, and subject to the significant matters stated above and other matters mentioned in Annexure- I to this Audit Report give a 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 31st March 2010; and
- b. In so far as it relates to Income & Expenditure Account of the surplus for the year ended on that date.

For and on behalf of the C & AG of India

Sd

/- (V.Kurian)
Principal Accountant General (C&CA), Kerala

Thiruvananthapuram
29th October 2010

Annexure - I

1. Adequacy of Internal Audit System

The Institute has not yet constituted an Internal Audit wing though it started functioning from 2008 and it has not yet prepared an Internal audit manual.

2. Adequacy of Internal Control System

Cash Book and connected records are not maintained in accordance with the norms prescribed in Rule 13 of Central Government Account Receipt and Payment Rules. Fixed Asset Register maintained does not contain adequate information regarding assets.

3. System of Physical Verification of Fixed Assets

The Institute has not conducted verification of fixed assets ever since its inception.

4. System of Physical verification of Inventory

Physical verification of inventory has not been conducted ever since its inception.

5. Regularity in payment of statutory dues

The Institute is regular in payment of Statutory Dues.

Sd/-
Deputy Accountant General (CE)

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH, THIRUVANANTHAPURAM								
BALANCE SHEET AS AT 31st MARCH 2010								
						Amount in Rupees		
CORPUS/ CAPITAL FUND AND LIABILITIES						Sc h.	Current Year	Previous Year
							2009-10	2008-09
CORPUS/CAPITAL FUND						1	23,46,77,281 .00	2,88,14,923. 00
RESERVES AND SURPLUS						2	-	-
EARMARKED/ ENDOWMENT FUNDS						3		
SECURED LOANS AND BORROWINGS						4	.....	.....
UNSECURED LOANS AND BORROWINGS						5	.....	.....
DEFERRED CREDIT LIABILITIES						6	.....	.....
CURRENT LIABILITIES AND PROVISIONS						7	72,86,812 .00	16,10,168. 00
UNSPENT BALANCE OF GRANT						26	1,89,67,433 .00	4,05,41,629. 00
UNSPENT BALANCE OF EXTERNAL PROJECTS						27	16,70,345 .00	-
TOTAL							26,26,01,87 1.00	7,09,66,72 0.00
ASSETS								
FIXED ASSETS						8	15,25,91,904 .00	2,75,78,824. 00
INVESTMENTS-FROM EARMARKED/ENDOWMENT FUNDS						9	.....	.....
INVESTMENTS-OTHERS						10	.....	.....
CURRENT ASSETS, LOANS, ADVANCES ETC.						11	11,00,09,967 .00	4,33,87,896. 00
MISCELLANEOUS EXPENDITURE								
TOTAL							26,26,01,87 1.00	7,09,66,72 0.00
SIGNIFICANT ACCOUNTING POLICIES						24		
CONTINGENT LIABILITIES AND NOTES ON ACCOUNTS						25		

Sd/-
B.K.SUBBURAMAN
SPECIAL OFFICER

Sd/-
P.N.MOHANAN
CONSULTANT (F&A)

Sd/-
E.D.JEMMIS
DIRECTOR

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH, THIRUVANANTHAPURAM			
INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31.03.2010			
		Amount in Rupees	
	Sch.	Current Year	Previous Year
INCOME			
Grants/Subsidies	13	4,44,85,387. 00	1,33,20,596 .00
Fees/Subscriptions	14	12,19,200.0 0	2,72,500.00
Income form Investments (Income on Invest. from earmarked/endow. Funds transferred to Funds)	15		
Income from Royalty, Publication etc.	16	18,861.00	5,376.00
Interest Earned	1 7	33,36,762.0 0	12,36,099.0 0
Other Income	1 8	19,57,738.0 0	4,67,632.00
Depreciation Written Back		3,26,49,290. 00	39,94,593.0 0
Increase/(decrease) in stock of Finished goods an works-in-progress	1 9		
TOTAL (A)		8,36,67,23 8.00	1,92,96,79 6.00
EXPENDITURE			
Establishment Expenses	20	2,36,02,048. 00	52,37,243.0 0
Other Administrative Expenses etc.	21	2,32,77,809. 00	88,28,861.0 0
Expenditure on Grants, Subsidies etc.	22		
Interest	23		
Project Expenses	28	8,01,329.00	
Depreciation (Net Total at the year-end- corresponding to Schedule8)		3,26,49,290. 00	39,94,593.0 0
TOTAL (B)		8,03,30,47 6.00	1,80,60,69 7.00
Balance being excess of Income over Expenditure (A-B)		33,36,762.0 0	12,36,099.0 0
Transfer to Special Reserve			
Transfer to/ from General Reserve			
BALANCE BEING SURPLUS/(DEFICIT) CARRIED TO CORPUS/CAPITAL FUND		33,36,762. 00	12,36,099. 00
SIGNIFICANT ACCOUNTING POLICIES	24		

CONTINGENT LIABILITIES AND NOTES ON ACCOUNTS	25		
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Sd/-
B.K.SUBBURAMAN
P.N.MOHANAN
SPECIAL OFFICER

Sd/-
CONSULTANT (F&A)

Sd/-
E.D.JEMMIS
DIRECTOR

Receipts & payments for the year ended 31.03.2010

SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31.03.2010

SCHEDULES - 1 CORPUS / CAPITAL FUND

	Current Year		Previous year	
Balance at the beginning of the year		2,88,14,923.00		
(+) Add: Contributions towards Corpus / Capital Fund				
Amount utilized for acquiring Capital Asset	15,76,62,370.00		3,15,73,416.00	
Amount Committed for Lab Equipment and Library Books	7,75,12,516.00	23,51,74,886.00		
Land			1.00	3,15,73,417.00
(-) Less: Depreciation provided for the above mentioned item written back		3,26,49,290.00		39,94,593.00
Add/Deduct : Balance of Net Income / (expenditure) transferred from the Income & Expenditure Account		33,36,762.00		12,36,099.00
Balance at the Year End		23,46,77,281.00		2,88,14,923.00

Schedule - 7 CURRENT LIABILITIES AND PROVISIONS

	Current Year	Previous year
(A) CURRENT LIABILITIES		
1. Acceptances		
2. Sundry Creditors		
(a) For Goods		
(b) Others	53,02,359.00	7,84,791
3. Advances Received		
4. Interest accrued but not due on:		
(a) Secured Loans/ Borrowings		
(b) Unsecured Loans / Borrowings		
5. Statutory Liabilities		
(a) Overdue		
(b) Others	4,70,908.00	5,991.00
6. Other Liabilities	15,13,545.00	8,19,386.00
TOTAL - (A)	72,86,812.00	16,10,168.00
(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)	72,86,812.00	16,10,168.00

Sd/-
B.K.SUBBURAMAN
 SPECIAL OFFICER

Sd/-
P.N.MOHANAN
 CONSULTANT (F&A)

Schedule 8

SCHEDULE 11 - CURRENT ASSETS, LOANS, ADVANCES ETC.,

	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 (inclgd. Cheques/DDs & Impress)	1,44,345.00	62,549.00
4. Bank Balances:		
Main Account:		
a) With Scheduled Banks:		
- On Current Account	10,08,33,398.00	4,17,91,543.00
- On Deposit Accounts (includes Margin Money)	14,66,349.00	4,06,510.00
- On Savings Accounts	35,84,901.00	
b) With Non-Scheduled Banks:		
- On Current Account		
- On Deposit Accounts		
- On Savings Accounts		
Project Account:		
a) With Scheduled Banks:		
- On Current Account		
- On Deposit Accounts (includes Margin Money)		
- On Savings Accounts	17,14,259.00	
b) With Non-Scheduled Banks:		
- On Current Account		
- On Deposit Accounts		
- On Savings Accounts		
5. Post Office - Savings Accounts		
TOTAL - A CURRENT ASSETS	10,77,43,252.00	4,22,60,602.00
B. LOANS, ADVANCES AND OTHER ASSETS		
1. Loans		
a) Staff		
b) Other Entities engaged in activities / objectives similar to that of the Entity		
c) Other (Specify)		
2. Adv. and other amounts recoverable in Cash or in kind or for value to be recd.		
a) On Capital Account		
b) Pre-Payments	10,06,990	11,698.00
c) Others	17,000.00	17,000.00
3. Income Accrued:		
a) On Investments from Earmarked / Endowment Funds		
b) On Investment - Others		
c) On Loans and Advances		
d) Others (includes income due unrealized Rs. ...)	7,37,500.00	3,97,007.00
4. Claims Receivable	5,05,225.00	7,01,589.00
TOTAL (B)	22,66,715.00	11,27,294.00
TOTAL (A+B)	11,00,09,967.00	4,33,87,896.00

Sd/-

Sd/-

B.K.SUBBURAMAN
SPECIAL OFFICER

P.N.MOHANAN
CONSULTANT (F&A)

SCHEDULE - 13 - GRANTS / SUBSIDIES
(Irrevocable Grants & Subsidies Received)

	Current Year		Previous Year	
1) Central Government				
Revenue Grant				
Main Account			8,50,00,000.00	
Opening Unspent Grant	4,05,41,629.00			
Add: Grant Received during the year				
MHRD	25,00,00,000.00			
DST	49,04,000.00			
CSIR	6,21,663.00			
KVPY	9,65,700.00			
	29,70,32,992.00			
Less: Capital Expenses incurred during the year	15,68,68,985.00		3,15,73,416.00	
	14,01,64,007.00			
Less: Amount Committed for Lab Eqpt. and Library Books	7,75,12,516.00			
	6,26,51,491.00			
Less: Closing Unspent balance Grant	1,89,67,433.00	4,36,84,058.00	4,05,41,629.00	1,28,84,955.00
Project Account				
Grant Received during the year	32,65,059.00			
Less: Capital expenses incurred during the year	7,93,385.00			
	16,70,345.00	8,01,329.00		
2) State Government(s)				
3) Government Agencies				4,35,641.00
4) Institutions / Welfare Bodies				
5) International				

Organisations			
6) Others (Specify)			
TOTAL		4,44,85,38 7.00	1,33,20,596. 00

Sd/-
B.K.SUBBURAMAN
SPECIAL OFFICER

Sd/-
P.N.MOHANAN
CONSULTANT (F&A)

SCHEDULE - 14 - FEES / SUBSCRIPTIONS

	Current Year	Previous Year
1) One time Fees	46,900.00	27,300.00
2) Annual Fees / Subscriptions	11,72,300.00	2,45,200.00
3) Seminar / Program Fees		
4) Consultancy Fees		
5) Others (Specify)		
TOTAL	12,19,200.00	2,72,500.00

SCHEDULE - 16 - INCOME FROM ROYALTY, PUBLICATIONS ETC.,

	Current Year	Previous Year
1. Income from Royalty (River Sand)	18,861.00	5,376.00
2. Income from Publications		
3. Others (specify)		
TOTAL	18,861.00	5,376.00

SCHEDULE - 17 - INTEREST EARNED

	Current Year	Previous Year
Main Account		
1) On Term Deposits		
a) With Scheduled Banks	32,63,485.00	
b) With Non-Scheduled Banks		
c) With Institutions		
d) Others		
2) On Savings Accounts:		
a) With Scheduled Banks	29,162.00	12,36,099.00
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 Account		
1) On Term Deposits		
a) With Scheduled Banks	44,085.00	
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	33,36,762.00	12,36,099.00

Sd/-
B.K.SUBBURAMAN
SPECIAL OFFICER

Sd/-
P.N.MOHANAN
CONSULTANT (F&A)

SCHEDULE - 18 - OTHER INCOME

	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	19,57,738	4,67,632.00
TOTAL	19,57,738	4,67,632.00

SCHEDULE - 20 - ESTABLISHMENT EXPENSES

	Current Year	Previous Year
a) Salaries and Wages	236,02,048.00	52,37,243.00
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	2,36,02,048.00	52,37,243.00

SCHEDULE - 21 - OTHER ADMINISTRATIVE EXPENSES ETC

	Current Year	Previous Year
a) Purchases		
b) Labour and processing expenses		
c) Cartage and Carriage Inwards		
d) Electricity and Power	3,27,112.00	24,913.00
e) Water Charges	74,006.00	779.00
f) Insurance		
g) Repairs and Maintenance	3,04,090.00	95,725.00
h) Excise Duty		
i) Rent, Rates & Taxes	18,19,451.00	6,42,639.00
j) Vehicles, Running and Maintenance	1,08,635.00	1,12,650.00
k) Postage, Telephone & Communication charges	4,92,510.00	2,66,538.00
l) Printing and Stationery	3,15,196.00	2,42,911.00
m) Travelling and Conveyance charges	29,85,442.00	18,14,812.00
n) Expenses on Seminar / Workshops	10,71,631.00	7,11,162.00
o) Subscription Expenses	5,000.00	3,90,282.00

p) Expenses on Fees - Library Journals		
q) Auditors Remuneration	51,490.00	
r) Hospitality Expenses		
s) Professional Charges		
t) Provision for Bad & doubtful Debts/Advances		
u) Irrecoverable Balances Written-off		
v) Packing charges		
w) Freight and Forwarding Expenses		
x) Distribution Expenses		
y) Advertisement and Publicity	20,59,007.00	9,88,828.00
z) Others (specify)	1,36,64,239.00	35,37,622.00
	0	
TOTAL	2,32,77,809.00	88,28,861.00

Sd/-
B.K.SUBBURAMAN
SPECIAL OFFICER

Sd/-
P.N.MOHANAN
CONSULTANT (F&A)

Schedule - 24

Significant accounting Policies and Notes to Accounts forming part of accounts for the year ended 31st March 2010

I) Significant Accounting Policies:

i) Accounting convention:

The accompanying financial statements are prepared on historical cost convention.

ii) Fixed Assets:

Cost of assets acquired out of grant from Government of India is credited to general fund and depreciation on such assets acquired out of grant during the year has been written back to Income & Expenditure Account.

iii) Closing Stock:

Items issued to labs are treated as consumed and hence Closing Stock of lab consumables/ chemicals is taken as nil.

iv) Depreciation:

Depreciation on fixed assets has been charged under WDV 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.

v) Grant in aid:

Grant- in - aid received from Government of India, amounting Rs.25,00,00,000.00 during 2009-10 has been credited to the General Fund to the extent of amount spent for capital expenditure and the balance amount is credited in Income & Expenditure Account to the extent of actual utilization of revenue expenses.

vi) Interest on Flexi Fixed Deposits:

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

Schedule 25 - Notes to 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 AS 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 and Expenditure Account shows excess of income over expenditure of Rs. 33,36,762.00.

4) Change in accounting policies:

Library journals are reference material and used like library books hence it is capitalized in the current financial year.

SCHEDULE - 26 - UNSPENT BALANCE OF GRANT

	Current Year		Previous Year
a) Opening balance of the funds		4,05,41,629.00	
b) Additions to the Funds			
i) Donation / Grants			
MHRD	25,00,00,000.00		8,50,00,000.00
DST	49,04,000.00		
CSIR	6,21,663.00		
KVPY	9,65,700.00	25,64,91,363.00	
ii) Income from investments made on account of funds			
iii) Other additions			
TOTAL (a+b)		29,70,32,992.00	8,50,00,000.00
c) Utilisation/Expenditure towards objectives of funds			
i. Capital Expenditure			
- Fixed Assets		23,43,81,501.00	3,15,73,416.00
- Others			
Total		23,43,81,501.00	3,15,73,416.00
ii. Revenue Expenditure			
- Salaries, Wages and allowances etc.,		2,36,02,048.00	52,37,243.00
- Rent		18,19,451.00	6,42,639.00
- Other Administrative expenses		1,82,62,559.00	70,05,073.00
		4,36,84,058.00	1,28,84,955.00
Total (c)		27,80,65,559.00	4,44,58,371.00
NET BALANCE AS AT THE YEAR END (a+b+c)		1,89,67,433.00	4,05,41,629.00

Sd/-
B.K.SUBBURAMAN
SPECIAL OFFICER

Sd/-
P.N.MOHANAN
CONSULTANT (F&A)

SCHEDULE - 27 - UNSPENT BALANCE OF EXTERNAL PROJECT

Name of Project	O B	Grant Received	Net amount Received	Amount Utilised		Total Expenditu re	Closing Balance
				Fixed Asset s	Revenue		
DST F Project of Dr.K.M.Sureshan		9,00,000	9,00,000		2,12,272	2,12,272	6,87,728
DST SERC FT- Dr.Ayan Datta		12,50,000	12,50,000	7,93,385	2,92,041	10,85,426	1,64,574
JC Bose		11,15,059	11,15,059		2,97,016	2,97,016	8,18,043
TOTAL		32,65,059	32,65,059	7,93,385	8,01,329	15,94,714	16,70,345

SCHEDULE - 28 - PROJECT EXPENSES

	Current Year	Previous Year
a) Travelling and Conveyance Expenses	27,585.00	
b) Fellowship	1,60,000.00	
c) Consumables	6,179.00	
d) Contingency	36,082.00	
e) Man Power	2,16,483.00	
f) Overhead Charges	3,55,000.00	
TOTAL	8,01,329.0	NIL
	0	

Sd/-
B.K.SUBBURAMAN
 SPECIAL OFFICER

Sd/-
P.N.MOHANAN
 CONSULTANT (F&A)