FORMAT

ANNUAL REPORT 2010-2011

Note: The report may please be sent to us in MS Office – WORD VERSION 7.0
Font (Text) & Headings 1-6 : ARIAL size 10 ; Font (Table) & Sub-headings: ARIAL size 9;
Please use the table format wherever indicated/necessary;

4 DEPARTMENT OF Biotechnology

1. Introduction:

The department of Biotechnology at this institute came in to formal existence in July 2004 but has grown rapidly in the past seven years. The first batch of B.Tech students graduated in July 2006, and the first dual degree batch students graduated in July 2007.

The vision of the department is to make international impact through research, teaching, technology transfer and service to society. At present, we have 27 faculty members and two adjunct faculties. The thrust areas of research are Bioprocess Engineering, Computational Biology, Chemical Biology and Medical Biotechnology related cancer and cardiovascular aspects. Faculty members of the department hold several patents and are also involved in active industrial consultancy. Several collaborative and technology transfer projects are currently running with numerous industries and the department also has collaborative research projects with hospitals. We have set up a Center of Excellence in "Bioprocess Engineering" to develop knowledge and expertise in this domain and a DST funded "National Facility to identify potential drug targets through cellular dynamics". We have funding from DBT for program support on Cancer Biology. A Bioinformatics Center has also been set up with funding from DBT. Three of the dual degree students who graduated in 2010, along with one of our project student have set up a start up company, "Sea6 Energy", for developing technology to grow and convert seaweeds into biofuel. This company is incubated in the Biotechnology Department

We offer B.Tech., Dual degree, M.S., and Ph.D progrmmes in Biotechnology. In addition, we offer M.Tech (Clinical Engineering) and Ph.D (Major: Biomedical Devices and Technology) programmes, jointly with Sree Chitra Tirunal Institute of Medical Sciences and Technology, Trivandrum and Christian Medical College, Vellore. The aim of the department is to produce talented graduate and undergraduate students who are confident to provide solutions to the technological problems faced by Indian Biotechnology industries. The undergraduate program in Biotechnology has strong emphasis on modern biology and engineering and on several laboratory experiences. M.S and Ph.D programmes emphasize research excellence. The M.Tech (Clinical Engineering) programme is designed to train students to address the complete management of the technology aspects in a hospital as well as the medical technology need of the country.

2. Academic Programmes: B.Tech, Dual Degree, M.S and Ph.D in Biotechnology, M.Tech in Clinical Engineering and Ph.D in Biomedical Devices and Technology

2.1 New Courses introduced:

Sl. No.	Course No.	Title
1	BT6901	Vascular Biology
2	BT5320	Metabolic Engineering

2.2 Students on roll as of September 2010+M.S. & Ph.D admission in Jan. 2011:

Programme	I year	II Year	III Year	IV Year	V Year & others	Total
B.Tech.	**40**	**27**	**26**	**19**	**6**	**112**
Dual Degree	**19**	**11**	**13**	**16**	**13**	**72**
M.A.	**-**	**-**	**-**	**-**	**-**	**-**
M.Sc.	**-**	**-**	**-**	**-**	**-**	**-**
M.Tech.	**8**	**10**	**-**	**-**	**-**	**18**
M.B.A.	**-**	**-**	**-**	**-**	**-**	**-**
M.S.	**6**	**8**	**1**	**-**	**-**	**15**
Ph.D.	**26**	**32**	**26**	**18**	**21**	**123**
Total	**99**	**88**	**66**	**53**	**40**	**346**

2.3 Names of Student/Scholar who attended Conference/ /Seminar and Symposia Abroad/India:

Sl. No.	Name of the Student/Scholar	Roll No.	Name of the Conference/ Seminar / Symposia / Workshop	Date and Venue	Financial Assistance from
Abroad					
1	V. Poornima	BT07D008	American society for cell biology	Dec 12-15, 2010 Philadelphia	IITM
2.	S. Hemaiswarya	BT05D007	58th International Congress and annual meeting of Natural Products and Medicinal Plants Research.	Aug 27- Sept 2, 2010 Berlin, Germany	DST
3	Geetha Venkatchalam	-	ICBBB "2011 international conference on Bioscience, Biochemistry and Bioinformatics".	Feb 26-28, 2011 Singapore	DST
4	V. Prabhawathi	-	International Conference on Antimicrobial Research (ICAR 2010) Formatex research center	Nov 3-5, 2010 Valladolid, Spain	DST
5	Sandip M, Swain	-	Collaborative work	May 10-28, 2010 Russia	DST
6	Dillip Kumar Bishi	-	NUS Singapore (Three months Training program on stem cell)	Feb – April, 2011	FLL
7	Santosh Madapati	-	NUS Singapore Three months Training program on stem cell)	Feb – April, 2011	FLL
8	Tarjan Kaliaperumal	-	Enzymes and Biocatalysis 2010, Shanghai, China	April 22-24, 2010	Shanghai Everbright Convention & Exhibition Center
9	Yoganathan.R.K	BTT095007	DAAD Fellowship	Aug 2010- May 2011	DAAD
10	Shashi Bala Prasad	BT05D016	14th International Biotechnology Symposium and Exhibition 14-18 September 2010 Rimini, Italy.	September 14-18, 2010	IITM
India					
1	Sowmya Lipsa Rath	BT09D043	Theoretical Chemistry Symposium 2010	Dec 5-12, 2010 IIT Kanpur	IITM
2	Debostuti Ghoshdastidar	BT10D015	Theoretical Chemistry Symposium 2009	Dec 5-12, 2010 IIT Kanpur	IITM
3	Aneesh C.N.A.	BT06D004	Royal Society of CHemistry West India Symposium	Sept 3-4, 2010 Univ of Goa	IITM
4	N. Kathiresan	BT06D012	Royal Society of CHemistry West India Symposium	Sept 3-4, 2010 University of Goa	IITM
5	N. Kathiresan	BT06D012	Imdo-US workshop on modern trends in macromolecular structures	Feb 21-24, 011 IIT Mumbai	IITM

6	P K Prabhakar	BT06D001	RSC West India Ph.D. students symposium 2010	Sep 3-4, 2010 University of Goa	IITM
7	P V Padma Priya	-	RSC UK-India MedChem Congress - 2011	Feb 25– 26, 2011 Indian Institute of Chemical Technology, Hyderabad	IITM
8	Sugapriya DM	-	International conference on Stem Cells and Cancer (ICSCC-2010): Proliferation, Differentiation and Apoptosis	Dec 11 -14, 2010 International Institute of Information Technology, Pune	DBT
9	Sreejit P	-	International conference on Stem Cells and Cancer (ICSCC-2010): Proliferation, Differentiation and Apoptosis	Dec 11 -14, 2010 International Institute of Information Technology, Pune	DBT
10	S. Stella	-	Chennai Chemistry Conference	Feb 11-13, 2011 IITM	IITM
11	P. Mahajabeen	-	13th National Symposium in Chemistry, Chemical Research Society of India	Feb 4- 6, 2011 NISER, Bhubaneswar	IITM
12	P. Mahajabeen	-	National conference on Recent Trends in Organic Synthesis-2011	Feb 24- 26, 2011, Tiruchirappally	-
13	Lakshmi Subramanian	BT10D008	36th Annual conference of Indian Society of Human Genetics (ISHG) and International Symposium on Genomics, Genetic Diseases and Diagnostics	February 14-16, 2011, Manipal University	DBT
14	Prasanna Kumar Reddy Allu	BT08D019	36th Annual conference of Indian Society of Human Genetics (ISHG) and International Symposium on Genomics, Genetic Diseases and Diagnostics	February 14-16, 2011, Manipal University	DRDO
15	Anshu Agarwal	BT09S005	36th Annual conference of Indian Society of Human Genetics (ISHG) and International Symposium on Genomics, Genetic Diseases and Diagnostics	February 14-16, 2011, Manipal University	IITM
16	Bhavani Shankar Sahu	BT09D004	4th World Congress of International Academy of Cardiovascular Sciences	February 1 – 3, 2011, Vadodara	DRDO
17	Binu K Sasi	BT08D009	4th World Congress of International Academy of Cardiovascular Sciences	February 1 – 3, 2011, Vadodara	DRDO

18	Parshuram J Sonawane	BT07D013	4th World Congress of International Academy of Cardiovascular Sciences	February 1 – 3, 2011, Vadodara	DRDO
19	Piyushkumar Kapopara	-	Indo-US workshop on Translating Molecular Cardiology into Clinical Practice	August 6-8, 2010, Rajiv Gandhi Centre for Biotechnology Thiruvanantha -puram	IITM
20	Binu K Sasi	BT08D009	Indo-US workshop on Translating Molecular Cardiology into Clinical Practice	August 6-8, 2010, Rajiv Gandhi Centre for Biotechnology Thiruvanantha -puram	DST

2.7 Names of students/scholars who won outside prizes and awards:

Sl. No.	Name of the Student/Scholar	Roll No.	Name of Prize	Prize awarded by
1.	Geetha Venkatachalam	-	Women Scientist Scheme	DST
2.	Sugapriya	-	Poster Presentation	ICSCC-2010
3.	Bhavani Shankar Sahu	BT09D004	Dr. N. K. Ganguly Young Investigator Award in Clinical Cardiology	4th World Congress of International Academy of Cardiovascular Sciences

2.8 Name of Students/Scholars who won Institute Convocation/Institute Day Prize:

Sl. No.	Name of the Student/Scholar	Roll No.	Name of Prizes	Name of Donor
1	Trishul Artham	BT05D001	Bhagyalakshmi Krishna Iyengar award for Environmental research	Sudir Krishna (IITM alumini)

3. Faculty and their activities:

3.1. Faculty:

Name and Qualifications	**Major area of specialization** (only 3 areas)
Professor:	
K.B. Ramachandran [**Head**]	Biorefinery, Bioprocess modeling, simulation and control, Metabolic engineering, Enzyme Engineering
G. K. Suraishkumar	Algal bio-energy, Reactive species, Microbial deactivation in drinking water
D. Karunagaran	Cancer Biology, Signal transduction, Apoptosis
V. S. Chakravarthy	Computational neuroscience, computational cardiology, Pattern recognition and neural networks
S. Mahalingam	Molecular virology, Cell biology
Mukesh Doble	Biomaterials, Drug design and biodegradation
Rama Shanker Verma	Stem cell biology and Tissue regeneration, Cancer therapeutic development, Molecular biology, Receptor biology
Anju Chadha	Biocatalysis, Enzyme mechanisms, biosensors

Guhan Jayaraman	Biochemical and Bioprocess Engineering
A. Jayakrishnan	Biomaterials Science and Technology
T.S. Chandra	Microbiology and Genetics
Associate Professor:	
A. Gopala Krishna	Signal transduction and Protein biochemistry
N. Manoj	Protein structure and function, Computational molecular evolution
Sanjib Senapati	Computational biophysics, Computational green chemistry
M. Michael Gromiha	Bioinformatics, Protein structure and function, protein interactions
K. Chandraraj	Biomass conversion, Biorefinery, Bioremediation
Rayala Suresh Kumar	Cancer biology
Amal Kanti Bera	Electrophysiology
Nitish R. Mahapatra	Cardiovascular genetics, Molecular medicine
Satyanarayana Gummadi	Bioprocess engineering
Assistant Professor:	
Madhulika Dixit	Vascular Biology, Diabetic Vasculopathy and Cell Biology
R Murugan	Theoretical Biophysics, Computational Biology, Systems Biology
R. Baskar	Developmental Genetics
V. Kesavan	Chemical Biology
Smita Srivastava (on contract)	Biochemical and bioprocess engineering, Plant cell technology
Vignesh Muthuvijayan	Biomaterials and Biomedical Engineering
Karthik Raman	Computational System Biology
Visiting Faculty:	
K. G. Mukherjee	Bioprocess Engineering
Adjunct Faculty:	
Dr. Shree Kumar Suryanarayanan	Bioprocess Engineering, Algal Biofuels
Dr. Venil Sumantran	Cancer Biology

3.2. Short-term Courses/ Workshops/ Seminars/ Symposia /Conferences organized by the faculty members:

sl.No.	Coordinator(s)	Title	Period
Conference:			
1	Rama S Verma	Healthcare outlook 2050	May 3, 2010
2	Rama S Verma	Heart Failure and Arrhythmia	Feb 5-6, 2011

Short term Course:			
1	Rama S Verma	Enviromental Management system in Pharma and Chemical Sector	March 22-24, 2011
2	Satyanarayana Gummadi and Mukesh Doble	Bioprocess Technology	July 12-12, 2010

3.3. Short-term Courses/ Workshops/ Seminars/ Symposia/ Conferences/ Training attended by the faculty members in Academic institutions and Public Sector Undertakings:

Sl. No.	Name of faculty	Title	Institution	Period
Workshop:				
1	Smita Srivastava	Faculty development program-2010, centre for continuing education, IIT Madras in collaboration with Texas A & M University	IIT Madras	Dec 8-10, 2010
2	Smita Srivastava	Hands-on workshop on Labview by National Instruments at Electrical Engineering department,	IIT Madras	Dec 15-16, 2010
3	Smita Srivastava	Workshop on knowledge economy and manpower development in biotechnology, at Department of Biotechnology, IIT Madras	IIT Madras	Feb7, 2011
4	Madhulika Dixit	JAX-Mouse Workshop	Instem, Bangalore	March 7- 9, 2011
5	D. Karunagaran	Indian Association For Cancer Research Satellite Meeting	Amala Cancer Research Centre, Thrissur	Feb 11-12, 2011
6	D. Karunagaran	International Cancer Research Symposium 2010	Rajiv Gandhi Centre For Biotechnology, Trivandrum	Dec 20-22, 2010
7	M. Michael Gromiha	Workshop On "Techniques In Bioinformatics"	Dept Of Biotechnology, IIT Mdras	Jan 21, 2011
8	M. Michael Gromiha	National Workshop On "Molecular Simulations And Cheminformatics Approaches Towards New Drug Development"	Karunya University, Coimbatore	Feb 26, 2011
9	M. Michael Gromiha	National Seminar On "Structural Bioinformatics"	Manonmanium Sundaranar University, Tirunelveli	March 4, 2011
10	Vignesh Muthuvijayan	Manpower Development in Biotechnology	IIT Madras	Feb 7, 2011
Seminar:				
1	Rama S Verma	28th Small meeting on Yeast Transport and Energetics (SMYTE	JNU New Delhi	Sep 23-27, 2010
Symposia:				
1	Smita Srivastava	International symposium for research scholars-2010 on metallurgy, materials science and engineering	IITMadras	Dec 20- 22, 2010

1	Rama S Verma	"Stem Cell and Development of cell lines " in Frontier and application of Biotechnology	C.S.R.D., Peoples Groups Bhanpur Bhopal MP	June 20, 2010
Conference:				
1	Sanjib Senapati	Self-assembled inverted micelles in CO2 stabilize ionic liquid domains	Chennai Chemistry Conference, IIT Madras	Feb 11-13, 2011
2	Sanjib Senapati	In-silico structure of free tubulin dimer from simulations	Biomolecular simulations: Algorithms and applications, JNU, Delhi	March 15-16 2011 March 15-16 2011
3	Rama S Verma	International conference on Genomic Sciences-Recent Trends (ICGS-2010)	Madurai Kamaraj University Madurai TN	Nov 11-14 2010
4	Rama S Verma	National Conference on Genomics: Tool for bio prospecting	MNIT Bhopal MP	Nov 20 2010
5	Rama S Verma	International Conference on Stem cell and Cancer (ICSCC 2010):Proliferation, Differentiation and Apoptosis	School of Biotechnology, International Institute of Information Technology ,Pune India	Dec11-14 2010
6	Smita Srivastava	Advances in Biotechnology, Biotech 2011	Global Science and Technology Forum, Singapore.	Feb 28-March1 2011
7	D. Karunagaran	International Conference on Stem Cells and Cancer	International Institute of Information Technology, Pune	Dec 11-14 2010
8	D. Karunagaran	International Conference on Genomic Sciences-2010	Madurai Kamaraj University, Madurai	Nov 12-14 2010
9	S. Mahalingam	International Conference On Genomic Sciences	Madurai Kamaraj University, Madurai	11-13 Nov 2010
10	K. Chandraraj	International Conference on Genomic Sciences-2010	Madurai Kamaraj University, Madurai	Nov 12-14 2010
11	Anju Chadha	5th International symposium on Environment	ATINER, Athens, Greece	May 20-23 2010
12	Anju Chadha	International Conference on Environmental Management (ICEM-2010)	JNTU, Hyderabad	Oct25- 28 2010
13	Anju Chadha	Indo-Canada workshop on "Exploitation of agro-industrial biomass for integrated biofuel and novel products through sustainable production systems	IICT, Hyderabad	Jan 27-28 2011

3.4. Special Lectures delivered by the faculty in other Institutions:

Sl. No.	Name of faculty	Topic of Lecture	Institution	Date
1	Madhulika Dixit	Chronic Hyperinsulinemia induces endothelial Inflammation via increased expression of cell adhesion molecules.	RCGB, Trivandrum	Aug 6 2010
2.	Madhulika Dixit	Stem Cells and regenerative Medicine	INSPIRE SCIENCE CAMP, Organized by DST at MDRF, Chennai	Dec 31 2010
3	D. Karunagaran	Role of micrornas in cancer	AU-KBC centre, Anna University	March 21 2011
4	D. Karunagaran	Molecular biology of cancer	University of Madras	Feb 22 2011
5	D. Karunagaran	Mechanisms of curcumin-induced apoptosis	University of Mysore	Jan 26 2011
6	Rama S Verma	Application of Bioinformatics for Developing Fusion Toxins	University of Allahabad	March 20-22 2011
7	Rama S Verma	Stem Cell and Development of cell lines	C.S.R.D. peoples Group, Bhanpur, Bhopal	June 20-06 2010
8	Rama S Verma	Development of Cardiomyocyte cell line	Indian Institute of Toxicological Research (IITR). Lucknow	July 24 2010
9	Rama S Verma	Identification of new transport systems for folic acid and methotrexate to normal human T lymphocytes and leukemic cell	Jawaharlal Nehru University, New Delhi	Sept 23-27 2010
10	Rama S Verma	Understanding the Behavior of Methotrexate Transport in Rheumatoid Arthritis	Madurai Kamaraj University, Madurai	Nov 12 2010
11	Rama S Verma	Identification of biomarkers in Fanconi Anemia using microarray analysis	MANIT, Bhopal.	Nov 20 2010
12	Rama S Verma	Stem cells and development of Cardio-myogenic cell lines	School of Biotechnology, International Institute of Information Technology, Pune	Dec 11-14 2010
13	Rama S Verma	Stem cells and development of Cardio-myogenic cell lines	Dhana Lakshmi college of Art and Science for Women,Perambulur, TN	Feb 10 2011
14	Anju Chadha	Over a decade of Organic Transformations with *Candida parapsilosis* ATCC 7330: Where do we go from here?	Max-Planck-Institut für Kohlenforschung Kaiser-Wilhelm-Platz 1 45470 Mülheim / Ruhr Germany	May 26 2010
15	Nitish R Mahapatra	The catecholamine storage vesicle protein chromogranin A plays crucial roles in the regulation of blood pressure.	Division of Molecular and Developmental Biology at the National Institute of Genetics, Mishima, Japan	May 17, 2010

16	Nitish R Mahapatra	Chromogranin A-derived peptide catestatin: implications for cardiovascular disease states	AU-KBC Research Centre, Anna University, Chennai	January 20, 2011
17	Nitish R Mahapatra	Pancreastatin: a novel biomarker for metabolic disorders.	Hindustan Uniliver Research Centre, Bangalore	March 25, 2011
18	K.B.Ramachandran	Research Opportunity in Biotechnology	IP Dome, Chennai	March 22, 2011

3.5. Visits abroad by faculty:

Sl. No.	Name of faculty	Country Visited	Date	Purpose of visit	Funding from
1	Amal Kanti Bera	Russia	May 10-28 2010	Research collaboration	DST
2	Amal Kanti Bera	Japan	June 14-18 2010	Scientific meeting	IIT Madras
3	G. K. Suraishkumar	USA	May 2010	Joint project work	Indo-US forum
4	Sanjib Senapati	University of Edinburgh	June 2010	Conference	IIT Madras
5	VS Chakravarthy	Japan	May-June 2010	Visiting researcher	RIKEN Brain Science Institute, Wako-shi, Japan
6	Madhulika Dixit	Sweden and Germany	June 12- 21 2010	Kickstart meeting of Indo-EU Functional food consortium	DBT, Government of India
7	D. Karunagaran	Universitas Klinikum at Mannheim, Germany	July19-Aug1 2010	DAAD research visit program	DAAD
8	Mukesh Doble	Beijing, China	Oct 23-26 2010	Attend conference titled Intern Drug design S&Techn, IDDST 2010	IIT Madras
11	R. Baskar	UK	Aug1-6 2010	International Dictyostelium meeting	IIT Madras
12	Anju Chadha	Greece	May 19-24 2010	Invited to deliver a lecture at the 5th International symposium on Environment	IIT Madras
13	Anju Chadha	Germany	May 24-30, 2010	Invited by DAAD: Gave alecture in MPI, Muelheim	DAAD
14	Rayala Suresh Kumar	USA	Dec 2010	Training	ICMR
15	Nitish R Mahapatra	Japan	May 12-19, 2010	Paper presentation in the 20th World Congress of the International Society for Heart Research, International Conference Center, Kyoto	IIT Madras
16	K.B.Ramachandran	Brazil	October 5-9, 2010	To present an invited talk in the 4th International Congress on Bioprocesses in Food Industry ICBF	IIT Madras

17	Guhan Jayaraman	Italy	September 14-18, 2010	Paper presentation in the 4th International Biotechnology Symposium and Exhibition 14-18 September 2010 Rimini, Italy	IIT Madras

3.6 Honours and Awards obtained by faculty:

Sl. No.	Name of faculty	Name of Award	Awarded by	Awarded for	Date of award
i. Honours:					
1	Mukesh Doble	Fellow of Royal Society of Chemistry	Royal Soc of London, UK	Life time Research contribution	Jan 2011
2	G.K. Suariaskumar	Faculty Selection Committee Member (Biotechnology) i	IIT Guwahat	Member	2010
3	G. K. Suraishkumar	Member Academic Committee	Sree Chitra Tirunal Institute for Medical Sciences & Technology, Trivandrum	Member	2010
4	G. K. Suraishkumar	Member	SASTRA University, Thanjavur	Curriculum Committee	2010
ii. Awards:					
1.	Smita Srivastava	Best Research Paper Award	Global Science and Technology Forum	Paper presentation in the International Conference, BIOTECH 2011	March1 2011
2	Mukesh Doble	Shining World Inventor Award	Supreme Master Ching Hai International Association, Taipei, Formosa	Safe Plastic Disposal Technology Helps Create a Sustainable Environment	June 9 2010
3	Anju Chadha	International Women's Day	University of Madras	Outstanding Contribution in the field of Science	March 8 2011

3.7. Books, Monographs authored/co-authored:

Sl. No.	Name of faculty	Title	Publisher	Author/ Co-author
Books:				
1.	Doble M.	"Biosorption of metals by soil bacteria" under the book entitled "Soil Microbes and Environmental Health" edited by Dr. Mohammad Miransari, Shahed University, Tehran, Iran	Nova Publishers, USA	Prabhawathi.V

3.8. Fellowships of Academies and Professional Societies:

Others:		
1	Mukesh Doble- Fellow of Royal Soc of Chemistry	2011

3.9 Journal Editorial Boards:

Sl. No.	Name of faculty	Position (Editor/Member)	Journal Name
1	Mukesh Doble	Editorial Board member	Chemical Engineering, McGraw Hill, USA
2	Mukesh Doble	Editorial Board member	Open Journal of Enzyme Engineering, Bentham publ
3	M. Michael Gromiha	Associate Editor	BMC Bioinformatics
4	M. Michael Gromiha	Editor-in-Chief	The Open Structural Biology Journal
5	M. Michael Gromiha	Member	Nature Reader Panel
6	M. Michael Gromiha	Member	Current Computer Aided Drug Design
7	Rama S. Verma	Associate Editor	Australian Journal of Basic and Applied Sciences
8	Rama S. Verma	Associate Editor	Bioinformation
9	Nitish R Mahapatra	Editorial Board Member	International Journal of Biosciences and Technology
10	K.B. Ramachandran	Member Editorial Board	Bioresource Technology
11	K.B. Ramachandran	Member Editorial Board	Preparative Biochemistry & Biotechnology
13	K.B. Rramachandran	Guest Editor	Enzymes in Biofuel Production, Special Issue

4. Design and Development Activities:

4.1. New facilities added or major equipment procured:

Sl. No.	Name of Equipment	**Value** (Rs. in lakhs)
1.	Multi-mode microplate reader	22.00
2	National facility on functional cell Dynamics: Ultra centrifuge	45.00
3	Barnacle tester	2.00
4	Langmuir Blodgett Film coater	10.00
5	Perkin Elmer Spectrophotometer	7.00
6	Berthold spectrophotometer	8.00
7	Typhoon	40.00
8	VersaDoc 5000	38.00
9	Perkin Elmer Liquid Scintillation Counter	15.00

4.2. Patents:

4.2.1 Patents filed:

Sl. No.	Name of faculty	Topic of patent
1	Mukesh Doble	New Antituberculosis antibiotic from marine actinomycetes strain R2, 247/DEL/2011, February 2, 2011

5. Research and Consultancy:

5.1 Sponsored Research Projects: (on going & new)

Sl. No.	Title	Period	Funding Agency	Amount (Rs. in lakhs)	Co-ordinators
1	Structural and functionall analysis of GABAA receptor	2008-2011	CSIR	23.91	Amal K. Bera

2	Study of mechanism of NO action on acid sensing ion channel	2009-2011	DST	19.08	Amal K. Bera
3	Modulation of voltage dependent anion channel by the proteins of BCl2 family	2009-2011	DRDO	24.21	Amal K. Bera
4	Mechanisms of P2x7 receptor mediated pore formation in neuron	2010-2013	DAE	19.89	Amal K. Bera
5	Role of pannexin in neuro-glial signaling and its modulation by nitric oxide	2010-2013	ICMR	23.88	Amal K. Bera
6	A photobioreactor for algal bio-fuel	2009-2011	DBT	13.00	G. K. Suraishkumar, Shrikumar Suryanarayan
7	Reactive Oxygen Species and Chlorine based inactivation of microbes	2008-2010	Indo-US forum	USD 30000	G. K. Suraishkumar, Jeanne VanBriesen (CMU)
8	Relating nucleotide-dependent conformational changes in tubulin dimers to microtubule dynamic instability	2011-2014	CSIR	19.66	Sanjib Senapati
9.	The properties of protein hydration water and their connection to protein motions	2008-2011	DST	20.38	Sanjib Senapati
10	Exploring the basis of differential binding of inhibitors to active and inactive CDK2	2008-2011	DBT	30.22	Sanjib Senapati D. Karunagaran V. Kesavan
11	A multi-disciplinary, systems-level investigation into neurobiology of Parkinson's disease	2010-2013	DBT	19.79	VS Chakravarthy (PI) B Ravindran (Co-PI) N Gupte (Co-PI)
12	On dynamical conditions for optimal neurovascular interaction in cerebral circulation	2010-2012	DST	12.97	V Chakravarthy (PI) Anil Prabhakar (Co-PI)
13	Development of online handwriting recognition system for Indian language (OHWR) – Phase II – Deployment of an application and improvement of engine performance	2010-2013	DIT	58.20	V Chakravarthy (PI) C. Chandrasekhar (Co-PI)
14	Regulation of Endothelial Barrier Function by Chronic Hyperinsulinemia and ipotoxicity.	2008- 2011	DST	33.63	Madhulika Dixit
15	Characterization of Gab1 (Gab2- associated binder protein-1) for therapeutic neovascularization	2008- 2011	DBT	26.87	Madhulika Dixit
16	Vascular complications of type2 diabetes: tyrosine phosphorylation of the endothelial nitric oxide synthase.	2010 -2012	DST	15.91	Madhulika Dixit
17	Exploring gab1 in the endothelium	2009 -2012	DST	13.44	Madhulika Dixit

18	Analysis of angiopoietin2 expression and its regulation in endothelial cells	2009 -2012	CSIR	26.26	Madhulika Dixit
19	Impact of agents with potential use in functional foods on biomarkers for induction on age related diseases	2010 -2014	DBT	126.00	Indian Co-ordinator: Dr. S. Nagini, Annamalai University, Chidambaram IITM PI: Madhulika Dixit
20	Program support in cancer biology	2008-2011	DBT	352.60	D. Karunagaran S. Mahalingam V. Kesavan Nitish Mahapatra Sanjib Senapati
21	Cytomodulins in oral cancer therapy	2009-2011	DBT	23.10	Raj Bhatnagar, Raj Bioengineering, New Delhi and S. Nagini, Annamalai University
22	Host cell MAPK/ERK-2 on HIV pathogenesis	2007-2011	DBT	91.71	S. Mahalingam
23	Development of surrogate virus system to understand HIV pathogenesis	2008-2011	DBT	48.308	S. Mahalingam
24	Role of Nucleolar GTPases on Tumorigenesis	2008-2011	DBT	66.07	S. Mahalingam
25	National facility to identify drug targets through functional cell dynamics	2008-2011	DST	664.42	S. Mahalingam
26	Outstanding research investigator award	2009-2014	DAE	100.00	S. Mahalingam
27	HCV-HIV-1 coinfection: immune mechanism, viral interaction and pathogenesis	2009-2012	ICMR	65.25	S. Mahalingam
28	Production of recombinant glycosyl hydrolases by fed batch fermentation of *Bacillus subtilis* and application in biomass conversion to fuel-ethanol	2010-2013	DBT	33.58	K. Chandraraj
29	Prostaglandin E Synthase (PGES) inhibitor: Computational Studies	2009-2010	DST	9.40	Mukesh Doble
30	Potential tuberculosis drugs from marine actinomycetes	2008-2010	DST	3.50	Mukesh Doble (co-PI)
31	Enhance biodegradation of polypropylene using biosurfactants	2007-2010	DST	29.00	Mukesh Doble
32	Performance of polymers (ldpe,hdpe,pp,pu,and pc) in marine environment	2008-2010	NRB	34.58	Mukesh Doble
33	Cost effective enzyme immobilized active food packaging	2010-2011	DBT	17.39	Mukesh Doble
34	Pharmaceuticals form marine and marine-derived fungi associated with seagrasses and seaweeds	2008-2011	DBT	5.55	Mukesh Doble (co-PI)
35	Bio compatibility studies on nano particle coated polymer surface	2008-2011	BRNS	19.07	Mukesh Doble
36	In vitro study on the bio-toxicity of nano-silver as anti-bacterial material	2010-2013	DBT	15.11	Mukesh Doble

37	Production of cyclic 1,2 B-glucans and its use as an anticancer drugs delivery system	2010-2013	DST	10.56	Mukesh Doble
38	Bioprocess development for production of linear and cyclic glucans	2010-2013	DBT	19.52	Mukesh Doble
39	Genetic dissection of pattern formation in the cellular slime mold Polysphondylium	2009-2012	DST	39.82	R. Baskar V. Kesavan
40	Chemical genetics approaches towards dissecting pattern formation in Polysphondylium	2009-2012	DST	39.65	R. Baskar V. Kesavan S. Baskaran (Dept. of Chemistry)
41	Live cell analysis of plant reproductive barriers	2009-2011	DST-JSPS	7.24	R. Baskar V. Kesavan
42	Cell fate determination in cellular slime molds'	2008-2011	CSIR	15.00	R. Baskar
43	Efficacy of E_PCAM conjugated drug loaded biodegradable nano particle for drug therapy in Retinobalstoma.	2008-2011	DBT	24.05	Rama S Verma
44	Studies on proliferation and differentiation of stem cells and cancer cells under microgravity	2009-2012	DRDO	25.00	Rama S Verma
45	Studying the proliferation and differentiation potential of an engineered cardiac biomaterial: a natural matrix for cardiac support and regeneration	2010-1013	DST	33.74	Rama S Verma
46	Identification of novel biomarkers and elucidation of molecular basis of phenotypic features of Fanconi anemia using micro array analysis	2010-2013	DBT	34.80	Rama S Verma
47	Characterization and transdifferentiation of mesenchymal stem cells into hepatocytes by HNF-3beta gene	2010-2013	DST	19.00	Rama S Verma
48	Development and Assessment of Functionalized Biomaterials to Improve Haemocompatibility	2011- 2014	IC&SR	15.00	Vignesh Muthuvijayan
49	Targeting Pak1 in alcohol induced liver cancer	2009-2012	DBT (Rapid Grant for Young Investigators)	25.42	Rayala Suresh Kumar
50	Characterization of KIBRA	2010-2013	DBT	84.00	Rayala Suresh Kumar
51	Molecular mechanism behind UV induced Skin Cancer	2010-2013	DRDO	30.00	Rayala Suresh Kumar
52	Targeting IGF1-R in Head and Neck Cancers	2010-2013	DBT	65.00	Rayala Suresh Kumar
53	Pak1 in Head and Neck Cancers	2010-2013	DAE (Young Investigator Grant)	14.50	Rayala Suresh Kumar

54	PDAC and signaling kinases	Feb 2011	DBT	75.00	Rayala Suresh Kumar
55	PELP1 and Inflammation	2010-2013	DST(Fast track for Young Investigator)	22.00	Rayala Suresh Kumar
56	Cellular and molecular studies on interaction of the physiological anti-hypertensive peptide catestatin at the neuronal nicotinic acetylcholine receptor	2009-2012	DST	38.85	Nitish R. Mahapatra Amal K Bera
57	Identification and functional characterization of regulatory elements in the mouse Hspa1a gene	2009-2012	DRDO	40.96	Nitish R. Mahapatra
58	Polymorphisms in the physiological anti-hypertensive peptide catestatin in an Indian population	2008-2011	DBT	48.48	Nitish R. Mahapatra
59	Molecular characterization of functional polymorphisms in mouse HMG-CoA Reductase gene	2008-2011	CSIR	21.22	Nitish R. Mahapatra
60	A structure-function correlation study to unravel the mechanism of action of human catestatin	2010-2013	DBT	50.00	Nitish R. Mahapatra Sanjib Senapati V Sureshbabu (Bangalore University)
61.	Development of a bioprocess for the production of Polyhydroxy butyrate (PHB) from bio-diesel industry generated glycerol	2008-2011	DBT	40.04	K. B. Ramachandran (PI) T.S. Chandra (Co-PI)
62	Production of hyaluronic acid by metabolically engineered *L. Lactis*	2009-2012	DST	17.14	K.B. Ramachandran (PI) Ms. Shashl Bala Prsad (Co-PI)
63	Production of humanized immunotoxins	2010-2012	DBT	16.81	Ramashankar Verma (PI) K.B. Ramachandran (Co-PI)

5.3 RBIC projects: (on going & new)

Sl. No.	Name of faculty	Title	Industry	Amount (Rs. in lakhs)
1	Krishnan Balasubramanian (PI) VS Chakravarthy (CoPI)	Automatic defect recognition algorithm	BHEL	10.00
2	Mukesh Doble	Biodegradation of polypropylene	RIL, Mumbai	15.00
3	K.Chandraraj & K.B. Ramachandran	Microbial analysis during detergent washing of fabrics	Henkel AG&Co, Germany	30.00
4	K.Chandraraj & K.B. Ramachandran	Screening of microorganisms producing lactone based bio-pesticide	Sree Ramcide Chemicals Pvt Ltd, Chennai	15.00

1.	Rama S Verma	Evaluation of Phyto-Pharmaceutical using nano particles	Laila Pharmaceutical Chennai	2.00

5.4 Retainer Consultancy: (on going & new)

Sl.No.	Name of faculty	Title	Industry	Amount (Rs. in lakhs)
1	K.B. Ramachandran	Biotransformation/ bioprocessing technologies for the manufacture of Cephalosporin derivatives.	Orchid Chemicals and Pharmaceuticals Ltd	4.20

5.5 Exchange programme with other Universities including Institutions/Universities under MOU;

1. G.K. Suraishkumar, Institute Coordinator, Joint Post-graduate Programmes with Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum and Christian Medical College, Vellore.

5.6 Faculty members participation with other institution under MoU:

Sl. No.	Name of faculty	Participation details	Name of University/Institution which has MoU
1	Dr. Rama S Verma	MOU Dr. Jeffery Smart Professor Ajay Kapoor	Swinburne University, Melbourne, Australia

5.7 Research Publications of the faculty members & research scholars:

Note: 1. Only papers which are published between 1.4.2010 and 31.03.2011 are to be given with volume pages and year.
2. Format as per Faculty Academic Profile (FAP).
3. Total number of publications of the following may be indicated separately for each item.

Total No. of papers published in Refereed National Journals: 1
Total No. of papers published in Refereed International Journals: 53
Total No. of papers presented in National Conferences: 1
Total No. of papers presented in International conferences: 4

Details:

a) In Refereed National Journals:

1. Santosh Mathapati, Satish Galla, Rama Shanker Verma, Kotturathu Mammen Cherian, Soma Guhathakurta (2010) Qualitative and Quantitative Detection of Sodium Deoxycholic Acid in Decellularized Tissue. *Ind J of Thoracic Cardiovascular Surgery*, **26**:129–131.

b) In Refereed International Journals:

1. S. Anup, S.M. Sivakumar and G.K. Suraishkumar (2010) Influence of Viscoelasticity of Protein on the Toughness of Bone. *Journal of Mechanical Behaviour of Biomedical Materials*,**3**:260-267
2. Aneesh Chandran, Karthigeyan Prakash, and Sanjib Senapati *(*2010). Structure and Dynamics of Acetate Anion-based Ionic Liquids from Molecular Dynamics Study.*Chem. Phys,***374:**13, 46 - 54.
3. Aneesh Chandran, Karthigeyan Prakash and Sanjib Senapati (2010). Self-assembled Inverted Micelles Stabilize Ionic Liquid Domains in Supercritical CO2.*J. Am.Chem.Soc*,**132**:12511– 12516.
4. S. Srivastava and A. K. Srivastava (2010) Application of NADH fluorescence sensing in plant cell bioreactor for Azadirachtin (a biopesticide) production. *AsPac J. Mol. Biol. Biotechnol.***18**:23-25
5. Ranjan K.Pradhan and V. S.Chakravarthy(Feb2011) Informational dynamics of Vasomotion in Microvascular Networks: A Review. *Acta Physiologica (Oxf),* **201**:193-218
6. V. Deepesh, R.J. Pardikar, A. Sricharan, V.G. Ramanathan, S.Chakravarthy and K. Balasubramaniam (2010). Automatic Defect Recognition System for Real Time Radioscopy of Hancock Valve Welds. *Journal of Non destructive Testing & Evaluation*, **9**:12-16
7. V.S.Chakravarthy, Denny Joseph Raju S.Bapi (2010) What do the Basal Ganglia Do? A modeling perspective. *Biological Cybernetics*, **103**:237-53.

8. S. Mohamed Yacin, M. Manivannan, V. Srinivasa Chakravarthy (2010) On non-invasive measurement of Gastric motility from finger photoplethysmographic signal. *Annals of Biomedical Engineering*,**38:** 3744-3755

9. M.Magdoom, D.Subramanian,V.S.Chakravarthy,B.Ravindran,ShunichiAmari.N.Meenakshisundaram (2011) Modeling Basal Ganglia for understanding Parkinsonian Reaching Movements, *Neural Computation,* **23**: 477-516

10. Anuradha.S Mohan, V.Gokulkrishnan, K.and Dixit M.(2010) *Metabolism- Clinical and Experimental*, **59**: 774-779.

11. Vidya Priyadarsini, R Senthil Murugan, R.Maitreyi, S.Ramalingam, K.Karunagaran, D.and Nagini, S. (2010) The flavonoid quercetin induces cell cycle arrest and mitochondria-mediated apoptosis in human cervical cancer (HeLa) cells through p53 induction and NF-κB inhibition. *Eur J Pharmacol,* **649**:84-91.

12. Murugan, R. S. Priyadarsini, R. V., Ramalingam, K Hara, Y Karunagaran, D. and Nagini, S. (2010) Intrinsic apoptosis and NF-κB signaling are potential molecular targets for chemoprevention by black tea polyphenols in HepG2 cells in vitro and in a rat hepatocarcinogenesis model in vivo. *Food Chem Toxic.***48**:3281-3287.

13. Dahai, G.Chundawat, S.P.Chandraraj, K.Balan, V.Dale, B.E. (2010) Mixture optimization of six core glycosyl hydrolases for the hydrolysis of ammonia fiber expansion (AFEX) pretreated corn stover. *Bioresource Technology,***101**:2770-81.

14. Chandraraj K, Leonardo da Costa S, Mingjie J, Linpei C, Dale, B.E. Balan, V. (2010) Alkali-Based AFEX Pretreatment for the Conversion of Sugarcane Bagasse and Cane Leaf residues to Ethanol. *Biotechnology and Bioengineering*,**101:** 441-450.

15. Qianjun, S. Chundawat, S.P.Chandraraj, K. Bals, B. Leonardo da Costa S,Thelen, K.D.Dale,B.E.and Balan,V. Enzymatic digestibility and ethanol fermentability of AFEX-treated starch-rich lignocellulosics such as corn silage and whole corn plant. *Biotechnol Biofuels*, **3**:12.

16. Sumith Retnamma Panicker, Prethish Sreenivas, Mani Sankar Babu, Devarajan Karunagaran and Chandrasekharan Cheranellore Kartha (2010) Quercetin attenuates Monocyte Chemoattractant Protein-1 gene expression in glucose primed aortic endothelial cells through NF-κB and AP-1. *Pharmacol Res* ,**62**:328-336.

17. Vidya Priyadarsini, R.Senthil Murugan, R. Sripriya, P. Karunagaran, D. and Nagini, S. (2010) The neem limonoids azadirachtin and nimbolide induce cell cycle arrest and mitochondria-mediated apoptosis in human cervical cancer (HeLa) cells. *Free Radic Res,* **44:**624-634.

18. M. Michael Gromiha*and K. Fukui. (2011). Scoring function based approach for understanding the recognition mechanism of protein-DNA complexes. *J. Chem. Inf. Model*,**51**:721-729

19. R Murugan. (2010). Theory on the mechanism of distal-action of transcription factors: Looping of DNA versus tracking along DNA. *J. Phys. A: Math. & Theor*, **43**:415002–17.

20. R.Murugan (2010) Theory of site-specific DNA-protein interactions in the presence of conformational fluctuations of DNA binding domains. *Biophys. J*, **99**:353-359.

21. R Murugan (2010) Theory of site-specific interactions of the combinatorial transcription factors with DNA. *J. Phys. A: Math. & Theo,* **43**:195003–23.

22. Prabhakar,P. K. Doble M.(2011) Interaction of phytochemicals with hypoglycemic drugs on glucose uptake in L6 myotubes.P*hytomedicine*,**18:**285-291

23. Artham,T.Mohanalakshmi, N.Paragi-Vedanthi, PP; Doble, M.(2011) Mechanistic investigations of lipase-catalyzed degradation of polycarbonate in organic solvents. *Enzyme and Microbial Technology*, **48**: 71-79

24. Suryanarayanan TS, Venkatachalam A, Thirunavukkarasu N, Doble M, Venkatachalam G (2010) Internal mycobiota of marine macroalgae from the Tamilnadu coast: distribution, diversity and biotechnological potential. *Botanica Marina,* **53**: 457-468.

25. Hemaiswarya S, Doble M,(2010) Synergistic interaction of phenylpropanoids with antibiotics against bacteria. *Journal of Medical Microbiology*,**59**:1469-1476

26. Sivakumar PM, Ganesan S, Veluchamy P, Doble M, (2010) Novel chalcones and 1, 3, 5-triphenyl-2-pyrazoline derivatives as antibacterial agents.*Chemical Biology and Drug,* **76** : 407-411.

27. Khandwekar AP, Patil DP, Hardikar AA, Shouche YS, Doble M. (2010) In vivo modulation of foreign body response on polyurethane by surface entrapment technique. *Journal of Biomedical Materials Research Part A*, 95A: 413-423

28. Sivakumar, PM; Prabhawathi, V; Doble. M 2-Methoxy-2 ',4 '-dichloro chalcone as an antimicrofoulant against marine bacterial biofilm. *Colloids and Surfaces b-Biointerfaces*, **81:** 439-446

29. Shanmugam, H; Doble, M,(Dec2010) Combination of ferulic acid and antibiotics as effective antibacterial agents.*Planta Medica*, **76**:1191-1191

30. Sangeetha, R; Kumar, R; Doble, M, Venkatesan R,(2010) Barnacle cement: An etchant for stainless steel 316L?. *Colloids and Surfaces b-Biointerfaces*,**79**:524-530

31. Arkatkar, A; Juwarkar, AA; Bhaduri, S, Uppara , PV; Doble M, (2010) Growth of Pseudomonas and Bacillus biofilms on pretreated polypropylene surface.*International Biodeterioration and Biodegradation*,**64**: 530-536

32. Sawant, SN; Kulshreshtha, SK; Yakhmi, JV, Doble M; Miyazaki A ;Enoki T (2010) Langmuir-Blodgett films of ethylenedithiotetrathiafulvalene derivative containing hydroxyl groups.*Thin Solid films*, **518** : 5820-5826

33. Karthikeyan,K. Sivakumar,P. M.Doble, M. Perumal, PT(2010) Synthesis, antibacterial activity evaluation and QSAR studies of novel dispiropyrrolidines. *European Journal of Medicinal Chemistry*, **45:** 3446-3452

34. Arutchelvi.J, Doble,M (2010) Characterization of glycolipid biosurfactant from *Pseudomonas aeruginosa* CPCL isolated from petroleum-contaminated soil. *Letters in Applied Microbiology*,**51**:75-82

35. Sivakumar, PM. Iyer, G. Natesan. L, Doble. M (2010) 3 '-Hydroxy-4-methoxychalcone as a potential antibacterial coating on polymeric biomaterials.*Applied Surface Science*, **256** : 6018-6024

36. Sivakumar, PM; Prabhawathi. V, Doble. M (2010) Antibacterial activity and QSAR of chalcones against biofilm-producing bacteria isolated from marine waters. *Journal SAR and QSAR in Environmental Research*, **21**:247-263

37. Sivakumar, PM; Seenivasan, SP Kumar V, Doble .M (2010) Novel 1,3,5-triphenyl-2-pyrazolines as anti-infective agents. *Bioorganic & Medicinal Chemistry Letters*, **20**: 3169-3172

38. Sreejit P and R S Verma (2011) Cardiogel supports adhesion, proliferation and differentiation of stem cells with increased oxidative stress protection. *Europian Cell and Material Jourrnal* (eCM), **21**:107-121

39. Moutushy Mitra, Fahima Dilnawaz , Ranjita Misra, Anju Harilal, Rama Shanker Verma, Sanjeeb K. Sahoo and Subramanian Krishnakumar (2010) Toxicogenomics of nanoparticulate delivery of etoposide: potential impact on nanotechnology in retinoblastoma therapy. *Cancer Nano, DOI* 10.1007/s12645-010-0010-4.

40. Santosh Mathapati, Rama Shanker Verma, Kotturathu Mammen Cheriana and Soma Guhathakurta (2011) Inflammatory responses of tissue-engineered xenografts in a clinical Scenario. *Interactive Cardio Vascular and Thoracic Surgery*,**12**:360-365

41. Potala Sirisha and Verma Rama S (2010) Targeting head and neck squamous cell carcinoma using a novel fusion toxin-diphtheria toxin/HN-1. *Molecular Biology Report,* **38:** 1389-1397.

42. Potala Sirisha and Verma Rama S (2010) Modified DT-IL2 fusion toxin targeting uniquely IL2R alpha expressing leukemia cell lines -Construction and characterization. *Journal of Biotechnology*,**148**:147-155

43. Moutushy Mitra, Mallikarjuna Kandalam, Rama Shanker Verma, Uma Maheswari and Subramanian Krishnakumar (2010) Genome wide Changes accompanying the knockdown of EpCAM in retinoblastoma. *Molecular vision,* **16**:828-84.

44. Pavithra P. S. Jannani S., Charumathi R., Indumathi J., and Verma Rama S. (2010) Antibacterial activity of Plants Used in Indian Herbal Medicine. *International Journal of Green Pharmacy,* **4:** 22-28.

45. Rayala SK, Reddy SDN, Ohshiro K, Pakala SB, Kobori N, Dash P, Yun S, Qin J, O'Malley B and Kumar R.(2011) Multiple coregulatory control of tyrosine hydroxylase gene transcription. *Proceedings of National Academy of Sciences (PNAS).USA*,**108**: 4200-5.

46. Rayala SK, Ohshiro K, Holm C, Pakala SB, Devijendra SR, Gururaj AE, Molli PR, Mansson SS, Ramezani A, Hawley RG, Landberg G, Lee NH and Kumar R.(2010) Acetylation-dependent oncogenic activity of MTA1 coregulator. *EMBO Reports*,**11**:691-7.

47. Ganesan K, Banerjee S, Gunasekaran P, Tan P and Rayala SK*.(2010) Integrative functional genomics in cancer research and its clinical implications. *J Cancer Molecules*,**5**:65-71.

48. Kumar R, Balasenthil S, Manavathi B, Rayala SK and Pakala SB.(2010) Metastasis associated protein 1 and its short form variant stimulates Wnt1 transcription via promoting its derepression from Six3 corepressor. *Cancer Res*,**70**: 6649-6658.

49. Kumar R, Balasenthil S, Pakala SB, Rayala SK, Sahin AA and Ohshiro K.(2010) Metastasis associated protein 1 short form stimulates Wnt1 pathway in mammary epithelial and cancer cells. *Cancer Res*,**70**: 6598-6608.

50. Pakala SB, Bui-Nguyen T, Reddy SDN, Li DQ, Peng S, Rayala SK , Behringer RR and Kumar R. (2010) Regulation of NF- circuitry by a component of the NuRD complex controls inflammatory response homeostasis. *J Biol Chem*,**285**: 23590-7.

51. Abdul Khaliq R, Sonawane PJ, Sasi BK, Sahu BS, Pradeep T, Das SK, Mahapatra NR. 2010. Enhancement in the efficiency of polymerase chain reaction by TiO_2 nanoparticles: crucial role of enhanced thermal conductivity. *Nanotechnology* **21**: 255704 (1-11). (Featured in Nature India: http://www.nature.com/nindia/2010/100614/full/nindia.2010.79.html)

52. Jirout ML, Friese RS, Mahapatra NR, Mahata M, Taupenot L, Mahata SK, Křen V, Zídek V, Fischer J, Maatz H, Ziegler MG, Pravenec M, Hubner N, Aitman TJ, Schork NJ, O'Connor DT. 2010. Genetic regulation of catecholamine synthesis, storage and secretion in the spontaneously hypertensive rat. *Hum Mol Genet* **19**: 2567-2580.

53. Sonawane PJ, Sahu BS, Sasi BK, Geedi P, Lenka G, Mahapatra NR. 2011. Functional promoter polymorphisms govern differential expression of HMG-CoA reductase gene in mouse models of essential hypertension. *PLoS ONE* **6:** e16661 (1-16).

c) In Proceedings of National Conferences:

1. S. Mohamed Yacin, M. Manivannan, and V. Srinivasa Chakravarthy (8-9thJan 2010) Effect of Gastric Myoelectric Activity on Pulse Rate Variability in Fasting and Postprandial Conditions, Proceedings of the International Conference on Recent Advancements in Electrical Sciences (ICRAES 10), India, pp296-304.

d) In Proceedings of International Conferences:

1. Hemaiswarya, S; Doble, M (2010) Synergisitic interaction of cinnamic acid with amikacin against Escherichia coli under in vitro conditions, *Advances in Biomedical Research,Proceedings*,95-98.

2. Sivakumar, PM; Kumar, V; Seenivasan, SP, Mohanapriya; Doble, M (2010) Anti tubercular Activity of Chalcones -Experimental and QSAR studies, Advances in Biomedical Research, Proceedings, 168-172.

3. Rama S Verma (11-14th Dec 2010) Invited talk on " Stem cells and development of Cardiomyogenic cell lines" In the Proceedsings of the International Conference on Stem cell and Cancer (ICSCC-2010): Proliferation, Differentiation and Apoptosis held on, Pune India.

4. Mahapatra NR, Subramanian L, Sahu BS, Reddy Allu PK. 2010. Functional polymorphisms in the Chromogranin A gene in an Indian population. In the Proceedings of the 20th World Congress of the International Society for Heart Research, May 13-16, International Conference Center, Kyoto, Japan.

5.8 Distinguished Visitors to the Department:

Sl.No.	Name of the visitor and Designation	Date of visit	Purpose of visit
1	Prof. Ralf. P. Brandes, Director Institute of Cardiovascular Medicine, Goethe University, Frankfurt am Main, Germany	2nd Dec 2010	Invited Talk and collaboration discussions
2	Dr. Beate Fisslthaler, Senior Scientist, Institute of Vascular Signalling, Goethe University, Frankfurt am Main, Germany	15-25th Feb 2011	Indo-German Joint DFG-DST project
3	Prof. Ajit Varki, Distinguished Professor of Medicine and Cellular & Molecular Medicine Co-Director, Center for Academic Research and Training in Anthropogeny (CARTA) Co-Director, Glycobiology Research and Training Center (GRTC) University of California, San Diego, USA	10-12, January 2011	To deliver special lectures on Glycobiology

6. Other Activities of the Department/Centre:

Incubating a start-up company “Sea6Energy”, founded by the dual degree students graduated in 2010.