DEPARTMENT OF BIOTECHNOLOGY

INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI

ANNUAL REPORT

APRIL 2011 to MARCH 2012

1. INTRODUCTION

Contributing to the fascinating and emerging areas of Science, Indian Institute of Technology Guwahati established Department of Biotechnology in the year 2002. The Department is one of its kind in the north-eastern region of Indian and is dedicated for promoting goal-oriented interdisciplinary research by interfacing modern biology with applied engineering sciences, addressing problems affecting human health/welfare, and training students to be the next generation engineers and researchers. As of now, the department has twenty-five faculty members from diverse streams and specializations, eight well-trained scientific staff members, and two administrative staff members.

The detailed activities of the Department of the Biotechnology are given in below.

2. ACADEMIC ACTIVITIES:

The department offers B. Tech., M. Tech., and PhD programmes.

3. STUDENT INTAKE:

46 in B. Tech., 30 in M. Tech, and 31 in Ph. D.

4. FACULTY STRENGTH:

25 (as on March 31, 2012).

5. MAJOR EQUIPMENTS AND FACILITIES

Atomic Force Microscope - Contact Mode, Autotensiometer, Bioreactor, Trinocular Phase Contrast Microscope with Fluorescence attachment, Trinocular Stereo Zoom Microscope with Fibre Optic Light, DuoFlow, FACS Calibur Flowcytometer Analyser, Compact Spectrofluorometer, FPLC System, Digital Imaging System, Gradient PCR Thermal Cycler, HPLC System, Ion Chromatography system, Gas Chromatography system, Bioreactors, Freeze Dryer, Manual Rotary Microtome, Multimode Microplate Reader, Real-Time PCR System, Ultracentrifuge

6. RESEARCH AND DEVELOPMENT ACTIVITIES

The research in the Department of Biotechnology covers as diverse areas as biochemical engineering, plant biotechnology, environmental biotechnology, nanobiotechnology, protein and peptide chemistry, molecular biology, structural and computational biology, bioinformatics, parasite biology, tissue engineering, stem cell biology and gene therapy, enzymology, and proteomics. Keeping in mind the demands of the modern biotechnological research, the plans for establishing advanced research facilities are underway.

7. RESEARCH PROJECTS (In tabular format as given below)

a) New Sponsored Projects

S. No.	Principal Investigator	Name of Project	Sponsoring Agency	Amount Sanctioned (Rs. in Lakh)	Co-Investigator	Duration
1.	Prof. Arun Goyal	Development and application of recombinant and other cellulases for large scale recycling of cellulosic biomass	Department of Bio-technology (DBT) New Delhi	64.35	Prof D. Goyal, Thapar Univ	3 years
		Molecular and functional chararacterization of dextran production in Weisella spp-Superior Dextran producers for cereal applications	Indo-Finland Joint Project Department of Biotechnology (DBT) New Delhi	77.06	None	3 years
2.	Dr. B. Anand	Structural Basis for the Maturation of the Prokaryotic siRNA	DBT	38.48	-	3 yrs
		Dynamical Aspects of Era GTPase - 16S rRNA Interactions and its Implication in Ribosome Assembly	DAE	16.85	-	3 yrs
3.	Dr. Biman B Mandal	Bioengineered silk vascular grafts for blood vessel engineering	DAE-BRNS	17.00	None	3 years
		Silk based biomimetic scaffolds for tissue engineering applications	IITG-Start up grant	5.00	None	2 years
		Mechanically strong silk composite matrices for bone tissue engineering	ICMR-NE seed grant	10.00	None	3 years
4.	Dr. Bithiah Grace Jaganathan	Role of Rho GTPase RhoA on interaction between Human Mesenchymal Stem Cells and Hematopoietic Stem Cells	DBT	39.26	Dr. Anil M Limaye and Dr. Bosanta Boruah	03
		Cytoskeletal organization and migration potential of Mesenchymal Stem Cells (MSC) during different stages of differentiation	DST	24.2	None	03
		Isolation of Stem Cells from Human Limbal and Extra ocular muscle tissues and differentiation into retinal progenitor cells	ICMR	3.49	Dr. Damaris Magadalene (Sri Sankaradev Nethralaya Hospital)	01

5.	Dr. Debasish Das	Novel microalgal isolates as cell factory for biodiesel production: Identification of multiple targets and designing of optimal process via system biology and biochemical engineering approach.	DBT	52.27	Dr. Sanjeeva Srivastava, IIT Bombay	3 years from 2011-12
		Process optimization for Microbial synthesis of Hyaluronic Acid (HA) from new isolates: Development of structure kinetic model and experimental validations	CSIR	13.92	Prof. Arun Goyal	3 years from 2011-12
6.	Dr. Latha Rangan	Molecular and physico-chemical characterization of selected ginger species from North Eastern Region	DBT	52.75	Dr Ajay Parida (MSSRF Chennai) Dr Sudip Mitra (JNU New Delhi)	3 years (2011-2014)
7.	Dr. Lingaraj Sahoo	Development of Transgenic Cowpea for Virus Resistance Using the Tool of RNA Interference (RNAi)	DBT, New Delhi	83.34	Dr. Sunil Kumar Mukherjee, ICGEB, New Delhi	03 years
8.	Dr. Nitin Chaudhary (PI, IIT Guwahati) Dr. R. Nagaraj (PI, CCMB, Hyderabad)	Understanding the role of cation-π interaction in the self-assembly of amyloidogenic and *de novo* designed peptides	DBT-NER Twinning programme	45.33 (31.03 for IIT Guwahati)		3 years
9.	Dr. Rakhi Chaturvedi	Yield enhancement strategies for production of therapeutic compounds by cell and tissue cultures of *Tinospora cordifolia* (willd.) Miers ex Hook. F. & Thoms.	DBT, New Delhi	82.52	Prof. B. K. Patel	3 years
10.	Dr. S. S. Ghosh	Novel nanoscale materials targeted towards antimicrobial and anticancer activities.	DBT *Implemented at the Centre for Nanotechnology	169	Prof. A. Chattopadhyay Dr. Biplab Bose	03
11.	Dr.Utpal Bora	Development of Silk Protein Derived Artificial Nerve Growth Conduits for Neural Tissue Engineering	Central Silk Board	45.3	Dr.Ranjan Tamuli	Three years

12.	Dr. Vibin Ramakrishnan	Computational Engineering of Protein Folding Pathways: Implications on Stability, Mis-folding and Aggregation	Dept. of Biotechnology	22.26	Nil	2 years
13.	Dr. Vikash Kumar Dubey	Studies on trypanothione synthetase, a key enzyme of redox metabolism of *Leishmania donovani*	DBT	27.73	Nil	3 years
		*Variation in proteome profile of legume plants in response to heavy metal toxicity.	DST	23.5	Dr. Anil Verma, Chemical Engg	3 years
14.	Dr. Vishal Trivedi	Regulation of Macrophage CD36 Mediated Immune Response During Malaria.	DST	24.41	None	3 yrs

b) Ongoing Sponsored Projects

S. No.	Principal Investigator	Name of Project	Sponsoring Agency	Amount Sanctioned (Rs. in Lakh)	Co-Investigator	Duration
1.	Dr. Aiyagari ramesh	Evaluation of probiotic attributes of lactic acid bacteria based on bacteriocinogenic activity and in vitro adhesion properties	Council of Scientific & Industrial Research (CSIR)	11.30	Dr. Biplab Bose	3 years (2010-2013)
2.	Dr. Anil M Limaye	The SHBG-R_{SHBG} pathway: insights from prostate cancer cell lines.	DST (Fast Track Grant)	19	None	2010-2013
3.	Prof. Arun Goyal	Prebiotics and neutraceuticals production from Lactic acid bacteria.	Indo-Bulgarian Joint project DST, New Delhi	16.0	None	2010-2013
		Production of microbial carbohydrates and carbohydrate active enzymes for healthcare	DBT, New Delhi	11.74	None	2009-2012
		Probiotic fermentation as a platform for production of neutraceuticals.	(CSIR) New Delhi	20.1	None	2009-2012
		Bioinformatics Infrastructure Facility	DBT, New Delhi	20.0	Dr. V. Dubey as Deputy Coordinator	
		MTech Program Support	DBT, New Delhi	170.00	Coordinator	2009-2012
4.	Dr. Bithiah Grace Jaganathan	Study of Apoptotic Signalling Pathways in Mesenchymal Stem Cells during Normal and Differentiated State	DBT	91.05	Dr. Rajesh Singh (IIAR) Dr. Chandramani Pathak (IIAR)	03

5.	Dr. G.K.Saini for Collaborating Institute (IITG)	Isolation, characterization and identification of natural pigments of food and industrial values from filamentous fungi	DBT	56.76	Dr. Suresh (PI, North east Institute(NERIST)) Dr. N.C. Talukdar (PI, Collaborating Institute (IBSD)	3 Years
6.	Dr. Latha Rangan	DNAB (DNA Barcoding) based biodiversity inventory in Zingiberaceae of Northeast India	DIT, Ministry of Information Tech, Govt of India	71.18	Dr U Bora D L Sahoo	5 years (2008-2013)
		Cloning of fatty acid saturation genes and analysis of spatial and temporal expression from seeds of candidate plus tree Karanj (*P. pinnata* L.).	DBT, Govt of India	22.64	Dr BG Jaganathan	3 Year (2009-2012)
7.	Dr. Lingaraj Sahoo	Development of Pod Borer Resistant Transgenic Pigeonpea and Chickpea	ICAR, New Delhi	795.30 (58.00 For IITG for 3 years)	Coordinator: Prof. S. K. Sen, BREF Biotech, IIT Khragpaur	5 years
		Development and evaluation of transgenic mungbean over expressing AtNHX1 and AVP1 for salt tolerance	DBT, New Delhi	78.75	-	03 years
		Molecular cloning and functional Analysis of Na+ /H+ antiporter gene in Cowpea (Vigna unguiculata L. Walp)	DBT, New Delhi	44.88	Dr. S. K. Panda (AU, Assam)	03 years
		Amino acid polymorphism in conserved Motifs in HMA proteins and Heavy Metal Resistance in Plants	Indo-Japan DST Project	4.20	Prof. H. Koyama, Gifu University, Japan; Dr. Satoshi Iuchi, RIKEN BRC, Japan; Dr. S. K. Panda (AU, Assam)	03 years
8.	Prof. Pranab Goswami	Development of Enzyme Electrode for the Construction of Cholesterol Biosensor	CSIR	9.40	Dr. U. Bora	3.5
9.	Prof. R. Swaminathan	Protein aggregation: Early molecular events, mechanisms and inhibition	Department of Science and Technology, New Delhi.	53	None	3 years 2010 to 2013
		Conjugating luminescent quantum dots to proteins: Consequences on protein function and development of sensitive assays.	Council for Scientific and Industrial Research, New Delhi.	12	None	3 years 2009 to 2012
		Single molecule fluorescence investigations on the mechanism of lysozyme aggregation and RNA helicase activity	DBT, New Delhi	95	Dr. B. Anand (IIT Guwahati) and Dr. Sudipta Maiti (TIFR, Mumbai)	3 years 2011 to 2014

10.	Dr. Ranjan Tamuli (PI, IITG) and Dr. Durgadas P. Kasbekar (PI, CCMB)	Studies on the cellular roles of calcium signaling proteins in *Neurospora crassa*	DBT, New Delhi	72.88 (Total), 50.70 (for IITG)	Dr. Utpal Bora (IITG) and Dr. Ch. Mohan Rao (CCMB)	3 years
	Dr. Ranjan Tamuli	Functional analysis of calcium signaling proteins in *Neurospora crassa*	DST, New Delhi	15.352	None	3 years (2010-2012)
11.	Dr. S. Patra	Protein stability prediction of lipases *in silico* studies	DIT, New Delhi	41.89	Dr. V.K. Dubey	2008 - 2012
	Dr. S. Patra with CFTRI, Mysore	Purification of caffeine from waste tea leaves and their transformation to potent pharmaceutical molecules	DBT, New Delhi,	61.0	Dr. P.K. Iyer, Department of Chemsitry, IIT Guwahati	2011-2014
12.	DBT Programme Support	Fundamental Molecular Investigations in Biotechnology (Core Project) **Dr. S.S. Ghosh** (Project coordinator)	DBT	1133.68	Prof. P. Goswami Dr. L. Sahoo Dr. B. Bose Dr. A. Ramesh Dr. S. Patra	
		Studies and application of redox enzymes for bioelectornics devices **Prof. P. Goswami**			Dr. S. Patra	
		Combination therapy using suicide genes and recombinant antibody **Dr. B. Bose**			Dr. S. S. Ghosh	
		Investigations on the molecular mechanism of nanomaterial-cellular interactions **Dr. S. S. Ghosh**			Dr. B. Bose Dr. A. Ramesh	
		Molecular cloning and functional characterization of heavy metal stress specific phytochelatin synthase gene from *Eichhornia crassipes* **Dr. L. Sahoo**			None	
13.	Dr.Utpal Bora	Ganga river basin management plan: Thematic group-Ecology and Biodiversity. (IIT Consortia National Project)	Ministry of Environment and Forests (MOEF)	1600.00 (Total)	National Coordinator: Prof. Vinod Tare, IIT Kanpur, Dr. Ranjan Tamuli and Dr. Mrinal Kanti Dutta	1.5 years
		Silk Based scaffolds for Neural Tissue Engineering	DBT, New Delhi	58.44	Dr. Ranjan Tamuli	Three years
		Establishment of Institutional Biotech Hubs (IBThubs) by DBT under special programme for North Eastern States of India.	DBT, New Delhi	35.00	Prof.Chandan Mahanta & Dr.Ranjan Tamuli	Three years
		Development of Aptamer-Based Molecular Diagnostics for Breast Cancer	DBT, New Delhi	154.85	Dr. Ranjan Tamuli	Three years

14.	Dr. V. Venkata Dasu	Purification, Characterization and production of microbial Cutinase	DST, Government of India	33.48526	Nil	2008-2012
15.	Dr. Vikash Kumar Dubey	Studies on Peptide conjugated Nanoparticles mediated antileishmanial drug delivery to macrophages	DBT	31.83	Dr. S. Patra	3 years
		Betraying the parasite's redox system: Studies on spermidine synthase of *Leishmania donovani*.	DBT	82.18	Dr. V. Trivedi, BT; Dr. P.K.Iyer, Chem; Dr. S. Sundar, IITD; Prof. MV Jagannadham, BHU	3 years
		Deciphering the molecular mechanism underlying the activity of antitumor agents as antileishmanial agents and their potential for therapy	DBT	40.68	Nil	3 Years
		An integrated computational and biochemical approach to target Ornithione decarboxylase, a key enzyme involved in synthesis of trypanothione for antileishmanial drug discovery"	ICMR	40.00	Dr. V. Trivedi, BT	3years
		Studies on effect of small molecule compounds on folding and amyloid formation of proteins	CSIR	21.50	Dr. S. Patra	3years
		Studies on trypanothione Reductase from Leishmania Parasites: Structure, Function, Folding and Potential for Chemotherapy	DBT	35.76	Dr. S. Patra	3years
16.	Dr. Vishal Trivedi	Molecular Modeling, Design and Synthesis of Macrophage Phagosome-Lysosome Fusion Activators in Development of anti-malarials	BRNS	16.86	None	3 yrs
		Biochemical and Functional Characterization of RIO kinase (s) from Plasmodium falciparum as a Potential Drug Target	DBT	31.48	Dr. V.K. Dubey	3 yrs
		Winged Helix domain-oligonucleotide recognition as an axis to develop PfRIO-2 specific inhibitor: implication in anti-malarial drug development	DBT	82.10	Dr. Sanjukta Patra (IITG) Dr. Chandra lata Bal (PI at BIT Ranchi	3 yrs

c) Completed Sponsored Projects

S. No.	Principal Investigator	Name of Project	Sponsoring Agency	Amount (Rs. in Lakh)	Co-Investi-gator	Duration
1.	Dr. Anil M Limaye	Characterization of rat ventral prostate specific PBPC1BS and S100RVP gene promoters	IIT Guwahati (Start-up Grant)	5.0	None	2009-2011
2.	Prof. Arun Goyal	Microbial conversion of cellulose to sugars for ethanol production	(DBT) New Delhi	31.48	D. Goyal, Thapar Univ	3 years
3.	Dr. Biplab Bose	Inhibitor Based Selection of Blocking Antibodies against Heparin-binding EGF-like Growth Factor: Developing Potent Molecules for Antibody-based Cancer Therapy	DBT	11.72	Dr. S. S. Ghosh	2007 - 2010
		Development of Therapeutic Human Antibodies Against Cripto-1: Targeting Oncogenic Signaling. (Funded by DST, 2007 - 2010)	DST	10.34	-	2007-2010
4.	Dr. Lingaraj Sahoo	Genetic engineering of Cowpea (Vigna unguiculata) for resistance to pod borer and bruchid	DBT, New Delhi	11.62	Dr. L. Rangan	03 years
		Cloning of elite germplasm of Jatropha for large scale plantation	DARL, Center for Energy	9.98	-	03 years
		Genetic engineering of Cowpea (Vigna unguiculata L. Walp) for storage pest resistance	DST	4.92	-	03 years
		Development of micropropagation technology for Jatropha: A potential biofuel plant	NEDFi	4.0	-	03 years
5.	Dr. Rakhi Chaturvedi	In vitro production of haploids in Tea (Camellia sp).	DBT, New Delhi	34.49 Lakhs	Dr V. V. Dasu	3 Years
		In vitro morphogenesis and biochemical analysis of neem (*Azadirachta indica* A. Juss).	DST New Delhi	9.96 Lakhs	NONE	3 Years
6.	Dr.Utpal Bora	Synthesis of Biodegradable Nanocarriers for Targeted Drug Delivery	Department of Biotechnology (DBT)	14.686	Dr. Pranab Goswami	Three years
		Electrospun nanofiber Scaffolds For HepaticTissue Engineering	Department of Biotechnology (DBT)	52.55	Dr. R R Bhonde and Dr P. Goswami	Three years
		Nanoparticle mediated targeted siRNA delivery to cancer cell lines.	(DST)	12.96	NIL	Three years
7.	Dr. V.V. Dasu	Production of bacterial L-asparaginase: an approach for process optimization	DBT, New Delhi	6.0	Nil	2007-2009
8.	Dr. Vikash Kumar Dubey	Development of novel therapeutics against leishmaniasis	DIT	8.66	Dr. A. Goyal	2.5 years
		Structural Properties and folding mechanism of apocytichrome C552 from *Hydrogenobactor Thermophilus*	DST	11.5	NIL	3Years
		Structure, Stability and Functional Studies of 2,5-Diketo-D-gluconate Reductase	DBT	11.65	NIL	3Years

8. CONSULTANCY

None

9. RESEARCH PUBLICATIONS (PLEASE USE SERIAL NUMBERS)

International Journal (Name of the faculty members are bold)

1. M. D. Adhikari, B. R. Panda, U. Vudumula, A. Chattopadhyay and **A. Ramesh** 'A facile method for estimating viable bacterial cells in solution based on "subtractive-aggregation" of gold nanoparticles', *RSC Advances* 2, pp 1782-1793, 2012.
2. U. Vudumula, M. D. Adhikari, B. Ojha, S. Goswami, G. Das and **A. Ramesh** 'Tuning the bactericidal repertoire and potency of quinoline-based amphiphiles for enhanced killing of pathogenic bacteria', *RSC Advances*, DOI: 10.1039/C2RA20140B, 2012 (In Press).
3. Seema Patel and ***Arun Goyal** (2012) The current trends and future perspectives of prebiotics research: A review, 3 Biotech. DOI 10.1007/s13205-012-0044-x
4. Arijita Dutta, Deeplina Das and ***Arun Goyal** (2012) Purification and characterization of fructan and fructansucrase from *Lactobacillus fermentum* (AKJ15) isolated from Kodo ko Jaanr, a fermented beverage from North Eastern Himalayas. International Journal of Food Sciences and Nutrition. 63, 216-224. 2011
5. Swati Khanna, **Arun Goyal** and V.S. Moholkar (2012) Production of n-butanol from biodiesel derived crude glycerol using *Clostridium pasteurianum* immobilized on amberlite. *Fuel,* DOI 10.1016/j.fuel.2011.10.071.
6. Seema Patel and ***Arun Goyal** (2012) Recent developments in mushrooms as anticancer therapeutics: A review. 3 Biotech. DOI 10.1007/s13205-011-0036-2
7. Shraddha Shukla and ***Arun Goyal** (2011) Optimization of fermentation medium for enhanced glucansucrase and glucan production from *Weissella confusa*. Brazilian Archives of Biology and Technology 54(6) 1117-1124
8. Shraddha Shukla and ***Arun Goyal** (2011) 16S rRNA based identification of a glucan hyper-producing *Weissella confusa.* Enzyme Research, Vol 2011, 10 pages doi:10.4061/2011/250842
9. Damini Kothari, Ankur Tyagi, Seema Patel and ***Arun Goyal** (2011) Dextransucrase from the mutant *of Pediococcus pentosaceus* more stable than the wild-type. 3 Biotech, 1, 199-205.
10. Rishikesh Shukla, Shraddha Shukla, Veselin Bivolarski, Ilia Iliev, Iskra Ivanova and ***Arun Goyal** (2011) Production and structural characterization of insoluble dextran produced in the presence of maltose from *Leuconostoc mesenteroides* NRRL B-1149. Food Technology and Biotechnology 49(3) 291-296.
11. Deeplina Das and ***Arun Goyal** (2011) Expression of antagonism by Lactic acid bacterium isolated from Marcha: An ethnic fermented beverage of North-eastern Himalayas. International Journal of Biotechnology & Biochemistry 7(4), 411-422.
12. Deepmoni Deka, P. Bhargavi, Ashish Sharma, Dinesh Goyal, M. Jawed and ***Arun Goyal** (2011) Enhancement of cellulase activity from a new strain of *Bacillus subtilis* by medium development and analysis with various cellulosic substrates. Enzyme Research, Vol 2011, 8 pages doi:10.4061/2011/151656
13. Seema Patel, Damini Kothari and ***Arun Goyal** (2011) Purification and characterization of an extracellular dextransucrase from *Pediococcus pentosaceus* isolated from soil of North East India. Food Technology and Biotechnology 49(3) 297-303.
14. Seema Patel, Damini Kothari, Rishikesh Shukla, Debasish Das and ***Arun Goyal** (2011) Scale up of dextran production from a mutant of *Pediococcus pentosaceus* (SPAm) using optimized medium in a bioreactor. Brazilian Archives of Biology and Technology 54(6) 1125-1133.

15. Seema Patel and *__Arun Goyal__ (2011) Functional oligosaccharides: Production, properties and applications. World Journal of Microbiology and Biotechnology, 27, 119-1128.

16. **B. B. Mandal**, A. Grinberg, E. S. Gil, B. Panilaitis and D. L. Kaplan "High strength silk protein scaffolds for bone repair"*Procceedings of National Academy of Science USA*. DOI. 10.1073/pnas.1119474109

17. A. B. Das, P. Loying, **B. Bose** "Human recombinant Cripto-1 increases doubling time and reduces proliferation of HeLa cells independent of pro-proliferation pathways", *Cancer Lett,* 318(2), pp 189-98. 2012 (Epub 2011 Dec 17)

18. Ruchi Mutreja, **Debasish Das**[*], Dinesh Goyal and Arun Goyal[*] 'Bioconversion of agricultural waste to ethanol by SSF using recombinant cellulase from *Clostridium thermocellum*.' *Enzyme Research*, Vol 2011, 10 pages. doi:10.4061/2011/340279, 2011

19. Rajesh K Srivastava, Soumen K Maiti, **Debasish Das**, Prashant M Bapat, Kritika Batta, Mani Bhushan and Pramod P Wangikar 'Metabolic flexibility of D-ribose producer strain of *Bacillus pumilus* under environmental perturbations.' *Journal of Industrial Microbiology & Biotechnology,* DOI 10.1007/s10295-012-1115-z, 2012

20. Digar Singh and **Gurvinder Kaur** (2011) Optimization of different process variables for the production of an indolizidine alkaloid, Swainsonine from *Metarhizium anisopliae. Journal of Basic Microbiology*, Published online: 5 Dec 2011, DOI. 10.1002/jobm.201100255. (Publisher: Wiley-Blackwell).

21. V.Ranga and **Gurvinder Kaur (2011)**. Biochemical and molecular characterization of wild-type and fused protoplasts of *Beauveria bassiana* and *Metarhizium anisopliae*. *Folia Microbiologica*, 56, 289-295. (Publisher: Springer).

22. **K. Pakshirajan** and S. Kheria 'Continuous treatment of coloured industry wastewater using immobilized *Phanerochaete chrysosporium* in a rotating biological contactor reactor', *Journal of Environmental Management*, 101, pp 118-123, 2012.

23. K. Sen, **K. Pakshirajan** and S.B. Santra 'Modelling the biomass growth and enzyme secretion by the white rot fungus *Phanerochaete chrysosporium* in presence of a toxic pollutant', *Journal of Environmental Protection*, 3, pp 114-119, 2012.

24. P. Saravanan, **K. Pakshirajan** and P. Saha 'Biodegradation kinetics of phenol by predominantly *Pseudomonas* sp. in a batch shake flask', *Desalination and Water Treatment*, 36 (1-3), pp 99-104, 2011.

25. N.K. Sahoo, **K. Pakshirajan** and P.K. Ghosh 'Batch biodegradation of para-nitrophenol using *Arthrobacter chlorophenolicus* A6', *Applied Biochemistry and Biotechnology*, 165 (7-8), pp 1587-1596, 2011.

26. **K. Pakshirajan,** S. Jaiswal and R.K. Das 'Biodecolourization of azo dyes using *Phanerochaete chrysosporium*: effect of culture conditions and enzyme activities', *Journal of Scientific and Industrial Research*, 70, pp 987-991, 2011.

27. P. Sangeeta, S. Kheria and **K. Pakshirajan** 'Biodecolourization of real textile industry wastewater using the white rot fungus *Phanerochaete chrysosporium*', *Journal of Scientific and Industrial Research*, 70, pp 982-986, 2011.

28. P. Saravanan, **K. Pakshirajan** and P. Saha 'Kinetics of phenol degradation and growth of predominantly *Pseudomonas* species in a simple batch stirred tank reactor', *Bulgarian Chemical Communications*, 43(4), pp 502-509, 2011.

29. P. Saravanan, **K. Pakshirajan** and P. Saha 'Studies on growth kinetics of predominantly *Pseudomonas* sp. in internal loop airlift bioreactor using phenol and m-cresol', *Korean Journal of Chemical Engineering*, 28 (7), pp 1550-1555, 2011.

30. B. Mahanty, **K. Pakshirajan** and V. V. Dasu 'Understanding the complexity and strategic evolution in PAHs remediation research', *Critical Reviews in Environmental Science and Technology*, 41 (19), pp 1697–1746, 2011.

31. P. Saravanan, **K. Pakshirajan** and P. Saha 'Repeated batch operation of internal loop airlift bioreactor in degrading phenolics as single and mixed substrate by using *Pseudomonas* sp.', *Sustainable Environment Research (Formerly Journal of Environmental Engineering and Management)*, 21 (3), pp 135-140, 2011.

32. A. Daverey, **K. Pakshirajan** and S. Sumalatha 'Sophorolipids production by *Candida bombicola* using dairy industry wastewater', *Clean Technologies and Environmental Policy*, 13 (3), pp 481-488, 2011.

33. N.K. Sahoo, **K. Pakshirajan and** P.K. Ghosh 'Biodegradation of p-nitrophenol using *Arthrobacter chlorophenolicus* A6 in a novel upflow packed bed reactor', *Journal of Hazardous Materials*, 190 (1-3), pp 729-737, 2011.

34. N.K. Sahoo, **K. Pakshirajan**, P.K. Ghosh and A. Ghosh 'Biodegradation of 4-chlorophenol by *Arthrobacter chlorophenolicus A6*: Effect of culture conditions and degradation kinetics', *Biodegradation*, 22 (2), pp 275–286, 2011.

35. V Kesari, **L Rangan** 'Electrophoretic patterns of proteins isolated from immatured and matured stages of 10 candidate plus trees of versatile oleaginous legume, *Pongamia pinnata* (L.) Pierre', *Agroforestry Systems* 84, pp 157-161, 2012.

36. V Kesari, **L Rangan** 'Co-ordinated changes in storage proteins during development and germination of elite seeds of *Pongamia pinnata*, a versatile biodiesel legume', *Annals of Botany* Plants Vol 2011 pp 1-13 doi: 10.1093/aobpla/plr026 2011.

37. V Kesari, **L Rangan** 'Assessment of genetic diversity by RAPD markers in candidate plus trees of *P. pinnata*, a promising biodiesel plant', *Biomass and Bioenergy* 35, 3123-3128, 2011.

38. A Nath, A Das, **L Rangan**, A Khare 'Screening of antimicrobial activity of Copper nanoparticles against pathogenic bacteria', *Science of Advanced Materials* 34, 234-237, 2011.

39. A Jain, S Hallihosur, **L Rangan** 'Dynamics of Nanotechnology patenting- An Indian scenario', *Technology in Society* 33, pp 137-144, 2011.

40. A Das, V Kesari, MS Vinod, A Parida, **L Rangan** 'Genetic relationship of *Curcuma* species from North East India using PCR based markers', *Molecular Biotechnology* 49, 65-76, 2011.

41. A Nath, A Das, **L Rangan**, A Khare 'Antibacterial activity of Cu@Cu2O nanoparticles synthesized via laser ablation in liquids', In: Proceedings Photonics 2010: Tenth International Conference on Fiber Optics and Photonics SPIE 8173, 81730A (2010); doi:10.1117/12.899527. 2011.

42. S. Bakshi, B. Saha, N. K. Roy, S. Mishra, S. K. Panda and **L. Sahoo**. 'Successful recovery of transgenic cowpea (*Vigna unguiculata*) using phosphomannose isomerase gene as alternative selectable marker', *Plant Cell Reports,* DOI:10.1007/s00299-012-1230-3, 2012

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60. R. Deka, U. Sarma, D.A. Srivastava, R. Kumar, R. Gedela and **R. Tamuli** 'Understanding calcium signaling machinery of *Neurospora crassa*', *7th Conference on Yeast Biology*, Indian Institute of Technology Bombay, India, 10-13 December, 2011
61. R. Deka, R. Kumar, R. Gedela, U. Sarma, D.A. Srivastava and **R. Tamuli** 'Calcium signaling in *Neurospora crassa*', *Cell Signaling Networks 2011*, Merida, Mexico, 22-27 October, 2011
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63. **R.Tamuli**, D.A. Srivastava, R. Kumar, R. Deka and D. Mahor ' Genetics of calcium signaling machinery in *Neurospora crassa', Comparative genomics of eukaryotic microorganisms: understanding the complexity of diversity*, Sant Feliu de Guixols, Spain, 15 - 20 October, 2011
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76. **U. Bora**, S. Rahman and P.C. Bhattacharya 'Urban Biodiversity Management of Guwahati City: The Gateway to North East India', *Urban Wild Life Management and Planning Conference 2011,* Austin, Texas, USA, 22nd -25th May 2011

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78. **Vikash Kumar Dubey**. Computer added drug designing: targeting redox metabolism of Leishmania parasite. Workshop on "Bioinformatics: Application in Agriculture and Medical Sciences. Banaras Hindu University, Varanasi. Feb. 16-18, 2012. ***[Invited Talk]***

79. **Vikash Kumar Dubey**. Application of Bioinformatics in Protein Sciences. Workshop on "Bioinformatics: Application in Agriculture and Medical Sciences. Banaras Hindu University, Varanasi. Feb. 16-18, 2012. ***[Invited Talk]***

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81. Manjeet Kumar and **Vikash Kumar Dubey.** Quinacrine a potential biomarker to trace amyloid plaque: studies on Ab 40 peptide and hen egg white lysozyme amyloid as model system. Annual Meeting of Indian Biophysical Society, University of Madras, Chennai, India. January 19-21, 2012.

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83. Saudagar Prakash and **Vikash Kumar Dubey**. Trypanothion synthetase: A validated drug target enzyme from Leishmania donovani. The 18th International Conference (POST ISCBC-2012) IASST Guwahati, Assam, India, January 28-30, 2012.

84. Abhay Narayan Singh and **Vikash Kumar Dubey**. Procerain B: an industrially important cysteine protease; Purification, characterization and cloning. The 18th International Conference (POST ISCBC-2012) IASST Guwahati , Assam, India, January 28-30, 2012

85. Saravanan P, Avinash H, **Dubey VK** and **Sanjukta P**. Targeting essential cell wall lipase rv3802c to combat tuberculosis: homology modeling, virtual screening and comparative docking studies. Open Source Computer-Aided for Translational Medicine organized by IMTECH, Chandigarh, India. Febuary 22-25, 2012. ***[Oral Presentation]***

86. **Vikash Kumar Dubey**, Anil Kumar Shukla and Prakash Saudagar Dubey. Current trends in anti-leishmanial drug discovery. International conference on New Horizons in Biotechnology, Trivandrum, India, November 21-24, 2011***[Invited Talk]***

87. Prakash Saudagar and **Vikash Kumar Dubey.** Trypanothione Synthetase from L. donovani : Cloning, expression, characterization, and inhibition studies. 80th Annual Meeting of Society of Biological Chemists, held at Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow, India, November 12-15, 2011***[Best poster Award]***

88. Prity Yadav, Abhay Narayan Singh and **Vikash Kumar Dubey.** Heterologous expression of a novel plant cysteine protease: procerain B in E. coli and site directed mutagenesis to study the amino acids at catalytic triad. 80th Annual Meeting of Society of Biological Chemists, held at Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow, India, November 21-24, 2011***[Oral presentation]***

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91. Ruchika Bhardwaj, Anil Kumar Shukla and **Vikash Kumar Dubey**. Synthesis of Chitosan-PEG coated Gold nanoparticles entrapping doxorubicin for evaluation of anti-leishmanial activity and targeted delivery to macrophage. 80th Annual Meeting of Society of Biological Chemists, held at Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow, India, November 12-15, 2011

92. Shyamali Sarma and **Vikash Kumar Dubey.** Cloning, expression and characterization of spermidine synthase, a drug target enzyme of Leishmania donovani. 80th Annual Meeting of Society of Biological Chemists, held at Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow, India, November 12-15, 2011

93. Sushant Singh, Abhay Narayan Singh, Anil Verma, **Vikash Kumar Dubey**. Heavy metal stress induced Superoxidedimutase: Purification and characterization from Cicer arietinum L. seedlings. 80th Annual Meeting of Society of Biological Chemists, held at Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow, India, November 12-15, 2011

94. Abhay Narayan Singh and **Vikash Kumar Dubey.** Physiochemical characterization, immobilization and cloning of procerain B: an industrially important plant cysteine protease. 80th Annual Meeting of Society of Biological Chemists, held at Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow, India, November 12-15, 2011

95. Anil Kumar Shukla and **Vikash Kumar Dubey.** Synthesis of PEGylated nanospheres encapsulating doxorubicin and mitomycin C for their specific macrophage targeting, reduced toxicity and enhanced antileishmanial activity. 3rd EMBO meeting, Vienne, September 10-13, 2011***[DBT Travel Award]***

National

1. S. Goswami, M.D. Adhikari, C. Kar, G. Das and **A. Ramesh** 'Structural modulation of synthetic amphiphiles for enhanced bactericidal efficacy', Abstract MVM 84. 52nd Annual Conference of Association of Microbiologists of India (AMI), Chandigarh, Nov 3-6, 2011.

2. S. Mukherjee, A. K. Singh, M. D. Adhikari and **A. Ramesh** 'Probiotic assessment and in vitro adhesion potential of native lactic acid bacteria', Abstract DFM 29. 52nd Annual Conference of Association of Microbiologists of India (AMI), Chandigarh, 03-06 November, 2011.

3. Reeshav Gupta, Muthusivaramapandian Muthuraj, Sahil Batra, **Anil M Limaye** and **Debasish Das**. Screening of bioactive molecules from cyanobacteria and algal communities to combat multi drug resistance. Presented at the 2nd National Conference on Antimicrobial Resistance – A Cause for Global Concern at Sam Higginbottom Institute of Agriculture, Technology and Sciences, Allahabad, India (6th – 8th February, 2012)

4. Gauri Deb, Sahil Batra and **Anil M Limaye**. EGCG inhibits MMP-2 and MMP-9 activity by direct binding. presented in the 31st Annual Convention of Indian Association for Cancer Research and International Symposium on 'Cancer Genomics and its impact in the Clinic' held in ACTREC, Navi Mumbai (26th – 29th January, 2011)

5. Abrar Ali Khan, Anup K Singh, R Bankar, P Dutta and **Anil M Limaye**. Extracellular protease production by a local soil isolate of Bacillus cereus grown in pH adjusted whey. presented in the 52nd Annual Conference of Association of Microbiologists of India (AMI): International Conference on Microbial Biotechnology for Sustainable Development, held in Punjab University Chandigarh (2011)

6. T. Jagan Mohan Rao and ***Arun Goyal** (2012) Inhibition studies of glucansucrase from *Weisella cibaria* by UV and Fluorescence Spectroscopy. Conference on Photochemistry and Luminescence. March 9-10, Indian Institute of Technology Guwahati, Assam, India

7. Anil Kumar Verma and ***Arun Goyal** (2011) Cloning of a family 5 glycoside hydrolase (GH5-CBM) and carbohydrate binding module (CBM6) from *Clostridium thermocellum*. Symposium on carbohydrates at the interface of Chemistry and Biology (CARBO-XXVI) Nov 23-25 2011, Indian Institute of Chemical Biology, Kolkata, India.

8. Deepmoni Deka, Saprativ P. Das, Rajeev Ravindran, M. Jawed, **Debasish Das** and ***Arun Goyal** (2011) Approaches for identification of a combination of hydrolytic enzymes and fermentative microbes for bioethanol production from thatch grass. Symposium on carbohydrates at the interface of Chemistry and Biology (CARBO-XXVI) Nov 23-25 2011, Indian Institute of Chemical Biology, Kolkata, India.
9. Soumyadeep Chakraborty and ***Arun Goyal** (2011) Cloning of family 1 polysaccharide lyase (*Ct*PL1) and family 35 carbohydrate binding module (*Ct*CBM35) from *Clostridum thermocellum* for biochemical studies and characterization. Symposium on carbohydrates at the interface of Chemistry and Biology (CARBO-XXVI) Nov 23-25 2011, Indian Institute of Chemical Biology, Kolkata, India.
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11. Rishikesh Shukla, Rwivoo Barua and ***Arun Goyal** (2011) Production, purification and characterization of polysaccharides and oligosaccharides produced by hydrolysis from *Leuconostoc mesenteroides* NRRL B-1149. Symposium on carbohydrates at the interface of Chemistry and Biology (CARBO-XXVI) Nov 23-25 2011, Indian Institute of Chemical Biology, Kolkata, India.
12. Shraddha Shukla and ***Arun Goyal** (2011) Production, purification and characterization of glucan and gluco-oligosaccharides from *Weissella Confusa.* Symposium on carbohydrates at the interface of Chemistry and Biology (CARBO-XXVI) Nov 23-25 2011, Indian Institute of Chemical Biology, Kolkata, India.
13. Prajakta Naval, Muthusivaramapandian Muthuraj, Kumaran Sivalinga Vasu, Reeshav Gupta, Sukhomay Pal and **Debasish Das** "Improved Nile Red based neutral lipid quantification in novel freshwater microalgal isolates, *Chlorella* sp. and *Navicula* sp." Conference on Photochemistry & Luminescence (CPL-2012), at Dept. of Chemistry, Indian Institute of Technology, Guwahati. (9^{th} – 10^{th} March, 2012)
14. **L Rangan** 'Characterization of *Pongamia pinnata* - a versatile legume', 99th Indian Science Congress, Invited lecture in section of Plant Sciences Jan 3-7th 2012, Bhubneshwar. p.30 (Oral presentation) *(Prof Hiralal Chakravarty Award Lecture in Plant Sciences of ISCA 2012)*, 2012.
15. **L Rangan**, V Kesari, MS Vinod, A Parida 'Molecular markers based characterization in versatile forest tree species, P. pinnata', 99^{th} Indian Science Congress, Jan 3-7th 2012, Bhubneshwar. p.49 (Oral presentation in Agriculture Section), 2012.
16. S Basak, A Nandy, **L Rangan** 'Inhibition studies of cellulolytic activities isolated from *Fusarium oxysporum',* National symposium on 'Microorganisms and plant health' 24th Annual general meeting of Indian Phytopathological society Nov 04-05 2011, Gauhauti University, Assam, pp 46 (Oral presentation), 2011.
17. V Kumar, S Ghosh, V S Hedaoo, **U Bora**, **L Rangan** 'Physico-chemical characterization and antimicrobial activity from rhizome essential oil of *Alpinia nigra'*, 3rd Edition of Indian Youth Science Congress, Nov 3-5th 2011, Delhi. p.67 (Poster presentation), 2011.
18. V S Hedaoo, S Basak, V Kumar, S Ghosh, **U Bora**, **L Rangan** 'Molecular marker based characterization in *Alpinia nigra*', 3rd Edition of Indian Youth Science Congress, Nov 3-5th 2011, Delhi. p.18 (Oral presentation), 2011.
19. AM Ramesh, V Kesari, **L Rangan** '*Rhizobium pongamiae* sp. nov., from root nodules of a versatile legume *Pongamia pinnata',* L. Paper presented in National Seminar on Emerging Trends in Biotechnology, 24-26 September, 2011, p. 97-98, 2011.

20. AM Ramesh, A Das, N Kasoju, **U Bora**, **L Rangan** 'Chemical and biological investigation of essential oil of *Z. moran*, an endemic species from Northeast India', Paper presented in National Seminar on Emerging Trends in Biotechnology, 24-26 September, 2011, p. 163-164, 2011.

21. S. Bakshi and **L. Sahoo.** 'Expression of *Btcry1Ac* in transgenic cowpea and genetic stability', National Symposium on PTC and Biotech & XXXII PTCA (I) meet on 4th -6 th Feb, 2011, Rajasthan, India

22. S. Bakshi, A. Sadhukhan, N. K. Roy, S. Kailasam, D. P. Sahoo and **L. Sahoo.** 'Genetic engineering of cowpea with *Btcry1Ab* for resistance to Maruca pod borer', National Symposium on PTC and Biotech & XXXII PTCA (I) meet on 4th -6 th Feb, 2011, Rajasthan, India

23. P. Borah, N. Kalita, S. Bakshi S, S. Mishra and **L. Sahoo.** 'Genetic transformation of mungbean with *cry1Ac* gene for insect resistance', National Symposium on PTC and Biotech & XXXII PTCA (I) meet on 4th -6 th Feb, 2011, Rajasthan, India

24. S. Mishra, S. K. Panda and **L. Sahoo.** 'Cloning and characterization of a vacular Na+/H+ antiport gene VrNHX1 from the grain legume mungbean (*Vigna radiata*)', National Symposium on PTC and Biotech & XXXII PTCA (I) meet on 4th -6 th Feb, 2011, Rajasthan, India

25. Madhuri Das, **Pranab Goswami***, Electrochemical characterization and development of alcohol oxidase bioelectrode for enzymatic biosensor and biofuel cell application,80th Annual meeting of the society of Biological Chemists, 12th-15th November 2011,CSIR-CIMAP, Abstract no BB 6, Page no 61

26. Madhuri Das, **Pranab Goswami***,Development of Alcohol biosensor using Multiwalled carbon nanotube(MWCNT) -nafion-Polyethyleneimine (PEI) as electroactive matrix for immobilization of alcohol oxidase on electrode surface, Banglore India Bio 2011,May 4-6 2011,Banglore International Exhibition Centre,Abstact No 26

27. R.W. Daniel and **Chaturvedi Rakhi***. *In vitro* Clonal propagation and rooting of *Azadirachta indica* A. Juss. In: National Seminar (DBT, Govt. of India Sponsored) on Prospects of Biotechnological Applications for Sustainable Agriculture, January 30-31, 2012. B.B.K. College, Nagaon, Barpeta, Assam, India. Page No. 35, 2012

28. R. Radhika and **Chaturvedi Rakhi***. Establishment of callus and cell suspension cultures from leaf explants of *Spilanthes acmella* – A medicinal plant. In: National Seminar (DBT, Govt. of India Sponsored) on Prospects of Biotechnological Applications for Sustainable Agriculture, January 30-31, 2012. B.B.K. College, Nagaon, Barpeta, Assam, India. p34.

29. **Chaturvedi Rakhi***. Exploring dedifferentiated and redifferentiated *in vitro* cultures of *Azadirachta indica* A. Juss. for production of azadirachtin, a key component of the plant. In: XXXIII PTCA (I) Annual Meeting and National Symposium on Impact of Plant Tissue Culture on Advances in Plant Biology, January 19-21, 2012. St. Xavier's College and Loyola Centre for Research and Development, Ahmedabad, Gujrat, India. Page No. 135, 2012.

30. Tandle Kisan Archana and **Chaturvedi Rakhi***. Establishment of callus and cell suspension cultures of *Lantana camara* - a valuable medicinal plant. In: 80th Annual Meeting of the Society of Biological Chemists (SBC) India, sNovember 12-15, 2011. CSIR-Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow, Uttar Pradesh, India. p 274, 2011.

31. **U. Bora** 'Silk based Tissue Engineering', Brainstorming workshop on Silk Biotechnology Organized jointly by DBT Govt. Of India with Andhra Pradesh State Sericulture Research & Development Institute (APSSRDI), Hindupur in collaboration with the Centre for DNA Fingerprinting and Diagnostics (CDFD), Hyderabad, 19th August 2011

32. **Vishal Trivedi** Poster entitled "Pro-stimulatory potentials of methemoglobin in inflammation during cerebral malaria through heme polymer formation" at 80th annual meeting of the society of biological chemist (India) CSIR-Central Institute of Medicinal and Aromatic Plants, Lucknow -226015, India 12-15 Nov, 2011.
33. **Vishal Trivedi** Poster entitled "Potentials of Structural and Biochemical Characterization of PFI1625c from P.falciparumin in Drug Development against Malaria" at 80th annual meeting of the society of biological chemist (India) CSIR-Central Institute of Medicinal and Aromatic Plants, Lucknow - 226015, India 12-15 Nov, 2011.
34. **Vishal Trivedi** Poster entitled "Extracellular Methemoglobin Mediated Oxidative Stress Causes RBC Destruction: An Insight Into The Enhanced Hemolysis" at 80th annual meeting of the society of biological chemist (India) CSIR-Central Institute of Medicinal and Aromatic Plants, Lucknow - 226015, India 12-15 Nov, 2011.
35. **Vishal Trivedi** Poster entitled "In Silico Identification of Plasmodium Falciparum RIO-2 Kinase (PFD0975w) Inhibitors from Northeastern Plants of India: A Future of Anti-malarial Drug Discovery " at 80th annual meeting of the society of biological chemist (India) CSIR-Central Institute of Medicinal and Aromatic Plants, Lucknow - 226015, India 12-15 Nov, 2011.

Book, Chapter, etc.

1. N. K. Sahoo, **A. Ramesh** and **K. Pakshirajan** 'Bacterial Degradation of Aromatic Xenobiotic Compounds: An Overview on Metabolic Pathways and Molecular Approaches. *Microorganisms in Environmental Management. Microbes and Environment*. Satyanarayana, T., Johri, B. N., Prakash, A (Eds). Springer, 2012.
2. Deeplina Das and **Arun Goyal** (2012) "Lactic acid bacteria in food industry" in *Microorganisms in Sustainable Agriculture and Biotechnology*, Chapter 33, pp. 757-772 T. Satyanarayana, B.N. Johri and Anil Prakash (eds) Springer, 2012
3. S Mishra, **L Rangan**, S Mitra, 'Greenhouse Gases Emission from Rice Paddy Ecosystem and their Management'. In: Tuteja N and Singh S (eds) Crop Improvement Under Adverse Conditions: Springer Science + Business Media, Vol 1, pp. 1-10, 2012.
4. S. Mishra, **L. Sahoo** and S. K. Panda. 'Genetic engineering for acid soil tolerance in plants', *Improving Crop Productivity in Sustainable Agriculture*, Eds: N. Tuteja, S. S. Gill and R. Tuteja, Wiley-Blackwell, Germany, 2012
5. Priyanka Srivastava, Mithilesh Singh and **Rakhi Chaturvedi*.** Biotechnological improvement of neem. **In:** Ashwani Kumar and Shikha Roy (Editors) Plant Tissue Culture and Applied Plant Biotechnology. Aavishkar Publishers & Distributors, Jaipur, Rajasthan, India pp 191-219, **2011.**
6. **R. Swaminathan**, V. Kumar Ravi, S. Kumar, M. V. S. Kumar and N. Chandra 'Lysozyme: A Model Protein for Amyloid Research', In Rossen Donev, editor: *Advances in Protein Chemistry and Structural Biology*, Vol. 84*,* Burlington: Academic Press, 2011, pp. 63-111. ISBN: 978-0-12-386483-3
7. **R. Tamuli**, R. Kumar, D.A. Srivastava and R. Deka, R. (in press). Calcium Signaling. In: Kasbekar DP, McCluskey K (eds) Neurospora: Genomics and Molecular Biology. Horizon Press, United Kingdom.

10. CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED: INTERNATIONAL, NATIONAL (In tabular format as given)

Name of Faculty	Name of Conf./Workshop	Place	Date	International/ National
Dr. Aiyagari Ramesh	DBT-sponsored training program on "Molecular Biology Techniques in Microbiology"	CFTRI, Mysore, India	16 November 2011	National
Dr. Anil M Limaye	31st Annual Convention of Indian Association for Cancer Research and International Symposium on 'Cancer Genomics and its impact in Clinic	ACTREC, Navi Mumbai	26th to 29th Jan, 2012	International Symposium
	Gordon Research Conference on Applied and Environmental Microbiology: Functional Interactions from Molecules to Biomes	Mt Holyoke College, South Hadley, USA	10th to 15th July, 2011	International Conference
Prof. Arun Goyal	9th Carbohydrate Bioengineering meeting	Technical University of Lisbon, Portugal	May 15-18, 2011	International
	International Conference on New Horizons in Biotechnology	National Institute of Inter-disciplinary Science and Technology Trivandrum, India	Nov 23-26, 2011	International
	Symposium on carbohydrates at the interface of Chemistry and Biology (CARBO-XXVI)	Indian Institute of Chemical Biology, Kolkata, India	Nov 23-25, 2011	National
Dr. Biman B Mandal	TERMIS AP, 2011	Singapore	Aug 3-5, 2011.	International
	Healthcare India 2012, International conference,	New Delhi	Feb 20-23, 2012	International
	ICMPAR 2012	Rajasthan	March 29-31, 2012	International
Dr. B. Anand	Young Investigator Meeting (YIM)-2012	Lonavala	January 8-11, 2012	International
Dr. Debasish Das	1st International Conference on Algal Biomass, Biofuels and Bioproducts	St. Louis, USA	17-20 July, 2011	International
Dr. Kannan Pakshirajan	4th International Conference on Biotechniques for Air Pollution Control	Ã Coruna, Spain	October 12-14, 2011	International
Dr. Latha Rangan	Plant Genome Evolution	Amsterdam	4-6th Sep 2011	International
	7th ISCB International Conference (ISCBC-2012)	Solapur	21-24th Jan 2012	International
	99th Indian Science Congress	Bhubneshwar	3-7th Jan 2012	National
Dr. Nitin Chaudhary	The National Fluorescence Workshop (FCS-2011)	New Delhi	Nov 14-18, 2011	National
Prof. Pranab Goswami	Advances in Biodetection & Biosensors	Hamburg, Germany	30 June-01 July 2011.	International
Prof. R. Swaminathan	56th Annual Meeting of Biophysical Society	San Diego, USA	Feb 25-29, 2012	International
	FCS 2011: National Fluorescence Workshop: Spectroscopy and Microscopy in Biology and Chemistry	New Delhi	Nov 14-18, 2011	National

Dr. Ranjan Tamuli	Comparative genomics of eukaryotic microorganisms: understanding the complexity of diversity	Sant Feliu de Guixols, Spain	15 - 20 October, 2011	International
	Cell Signaling Networks 2011	Merida, Mexico	22-27 Oct 2011	International
	7th Conference on Yeast Biology	Indian Institute of Technology Bombay,	10-13 Dec 2011	International
Dr. S. S. Ghosh	International Conference on Advanced Nanomaterials and Nanotechnology (ICANN 2011) Chairing Session of "Nanobiotechnology"	IITG	8th December 2011	International
Dr. Utpal Bora	Isber Annual Meets & Exhibits 2011: Impact and Public Benefits of Biorepositories	Washington DC, USA	15-18th May 2011	International
	Urban wild life management and Planning Conference 2011	Austin, Texas, USA	22-25th May 2011	International
	Silk based tissue engineering. Brainstorming Workshop on Silk Biotechnology	Hindupur, Andhra Pradesh, India	19th August 2011	National
Dr. Vibin Ramakrishnan	Current Trends in Genomics and Proteomics	Pondicherry Central University	21-23 Sep, 2011	National
	Workshop on Basic Techniques in Bioinformatics	IIT Guwahati	12-14 Oct, 2011	National
	National workshop on Chemical Informatics; Applications in Drug Design	Tezpur University	21-24 March, 2012	National
Dr. Vikash Kumar Dubey	Second National Conference on Biotechnology, Bioinformatics and Bioengineering	Kolhapur, Maharashtra,	February 24-25, 2012.	National
	International conference on New Horizones in Biotechnology	Trivandrum	November 21-24, 2011	International
	Annual Meeting of the Indian Biophysical Society	Madras	January 19-21, 2012	National
	Workshop on "Bioinformatics: Application in Agriculture and Medical Sciences	Varanasi	Feb. 16-18, 2012.	National

11. INVITED LECTURES OF FACULTY: IN INDIA, ABROAD (In tabular format as given below)

(Please avoid lectures delivered in Short Term Courses or Refresher Courses)

Name of Faculty	Title of Lecture	Name of Inst./Org.	Place	Date
Dr. Aiyagari Ramesh	Biological Applications of Nanoscale Materials and Synthetic Amphiphiles	Central Food Technological Research Institute (CFTRI)	Mysore, India	November 16, 2011
Prof. Arun Goyal	Production, purification and characterization of glucan and gluco-oligosaccharides from *Weissella confusa.*	Indian Institute of Chemical Biology	Kolkata, India	November 23-25, 2011
	Biotechnological Applications of Genetic Engineering	College of Veterinary Science, Guwahati	Guwahati, India	September 09, 2011
	Biotechnological applications of dextrans from Lactic acid bacteria isolated from microbial diversity of Assam.	National Academy of Agricultural Sciences	New Delhi, India	June 4, 2011

Dr. Biman B. Mandal	Hierarchical silk scaffolds for Intervertebral disc engineering	TERMIS AP, 2011	Singapore	August 04, 2011
	Silk Matrix Based Tissue Engineering	Healthcare India 2012, IIT Delhi	New Delhi, India	February 22, 2012
	Silk Based Biomaterials for Tissue Engineering	ICMPAR 2012, MITS, Sikar	Sikar, Rajasthan, India	March 30, 2012
Dr. B. Anand	Phylogenetic Analysis	Assam University, Silchar	Silchar, India	Jul 22-23, 2011
Dr. Biplab Bose	Molecular Signaling Network of Human Oncofetal Protein Cripto-1	Dr B. Borooah Cancer Institute	Guwahati, India	28.02.2012
	Targeted Delivery in Nanotherapeutics	Bahona College	Jorhat, India	20. 05.2011
Dr. Latha Rangan	Clean Energy Options - Science Day Celebration	Tezpur University	Tezpur, India	28th Feb 2012
	Advances in Genomics in Rice and Rice relatives	Solapur University	Solapur, India	22nd Jan 2012
	Characterization of *Pongamia pinnata* - a versatile legume	KIIT University	Bhubneshwar, India	4th Jan 2012
	Application of Biotechnology in Bioresources Utilization and Conservation	Dhing College, Nagaon	Nagaon, India	29th Sep 2011
	DNAB as an ally for bioresources conservation	IIT Guwahati	Guwahati, India	13th July 2011
	Socio-economic Empowerment of NE through Innovations	NRDC New Delhi	Guwahati, India	26th May 2011
Dr. Lingaraj Sahoo	Genetic improvement of legumes for biotic and abiotic stress tolerance	Shizouka University, Shizouka	Japan	7th November 2011
	Writing an winning research proposal	Combined Graduate School, Gifu University, Shizouka University, Shizouka	Japan	10th November 2011
	Food and Nutritional Security: Vision for 2035	TIFAC, Department of Science & Technology, Government of India, meeting on *"Technology Vision 2035"* held at Bose Institute, Kolkota	Kolkota, India	7th June 2011
	Plant Genetic Engineering and Functional Genomics for Crop Improvement: Where we are!	Assam University, Silchar	Assam, India	12th August 2011
	Plant Genetic Engineering for Crop Improvement	Gauhati University	Assam, India	14th September 2011
	Agricultural Biotechnology – Current Scenario and Future Prospects	Nagaon College	Assam, India	30th January 2012
	Plant genetic engineering for crop improvement	Karimganj College	Assam, India	8th December 2011
	Prospects of Biofuel	QIP Program, Department of Mechanical Engineering, IIT Guwahati	Assam, India	29th August 2011
Dr. Nitin Chaudhary	Self-assembly of proteins and peptides	Guru Gobind Singh Indraprastha University,	Delhi, India	January 12, 2012
Prof. Pranab Goswami	Advances in biosensor research: Nano-materials as electroactive matrix for developing enzyme-based biosensors"	in Post ISCB	IASST, India	31 January 2012

Prof. R. Swaminathan	Molecular events in protein aggregation investigated using hen lysozyme as a model system	National Centre for Biological Sciences,	Bangalore, India	8th July 2011
	Protein Folding: Past, Present and Future	Tezpur University	Tezpur, India	26th Nov 2011
	Manipulating the size of hen lysozyme nanoparticles created by controlled self-assembly	Tata Institute of Fundamental Research	Mumbai, India	30th Sept. 2011
	Manipulating the size of hen lysozyme nanoparticles created by controlled self-assembly	Conference on Photochemistry and Luminescence 2012	IIT Guwahati, India	10th March 2012
Dr. Rakhi Chaturvedi	Applications of Plant Tissue Culture Technology	BIOTECT HUB of Department of Botany, Goalpara College	Goalpara, Assam, India	November 3, 2011
	Plant Tissue Culture and its Application to Plant Improvement and Bioactive Compound Production	Lucknow University	Lucknow, Uttar Pradesh, India	October 10-12, 2011
	In Vitro Tissue Culture Techniques for Bioresources Conservation	Department of Biotechnology, IIT Guwahati	Guwahati, Assam, India	July 11-15, 2011
Dr. S.S. Ghosh	Gene Therapy: prospects in combination therapy	Workshop on Molecular tools in Biotechnology Teaching and Research", March 19-30, 2012. Department of Botany, NEHU, Shillong	Shillong, India	21st March 2012
	Multiplexing of DNA nanotechnology and Theranostics	Workshop on Molecular tools in Biotechnology Teaching and Research", March 19-30, 2012. Department of Botany, NEHU, Shillong	Shillong, India	21st March 2012
	Nanomaterials for potential implications in therapy	Workshop on "Application of Molecular Biology in Cancer Diagnostics" at Dr B. Borooah Cancer Institute, Guwahati, from 28th Feb - 1st Mar, 2012.	Guwahati, India	29th February 2012
	1. Mutiplexing of DNA nanotechnology **2.** Silver nanoparticles as therapeutic agents	Refresher course in Chemistry at Academic Staff College [at Gauhati University]	Guwahati, India	19th November 2011
	Implications of nanomaterials as Therapeutic Agents	National workshop on "Recent Trends in Nanoscience and Technology", 20th and 21st May 2011Department of Chemistry and Physics, Bahona College, Jorhat, Assam	Jorhat, India	20th May 2011

Dr. Utpal Bora	Scope of Nanotechnology in Joint and Cartilage restoration	NEIGRIMHS	Shillong,Meghalaya, India	9-10th April 2011
	Silk as a Biomaterial	Central Muga Eri Research & Training Institute (CMER&TI), Central Silk Board: Ministry of Textiles Govt. of India	Lahdoigarh, Jorhat, India	27-29th September 2011
	Ecohydrology and Wetland Management	Kamrup District Administration, Govt. of Assam and Chandubi Festival Organizing Committee	Chandubi, Assam, India	31st Dec 2011 – 4th Jan 2012.
	Silk Based Scaffolds for Cardiac Tissue Engineering	Asian Polymer Association (APA) in collaboration with IIT Delhi and Jamia Hamdard University	New Delhi, India	20th -23rd February 2012
	Bio–polymers for tissue engineering (Keynote Address)	Velammal EngineeringCollege	Chennai, India	24th February, 2012
Dr. Vibin Ramakrishnan	Canonicalization of Molecular Structures for Virtual Activity Profiling.	Pondicherry Central University	Pondicherry, India	September 22, 2011.
	Reduced representations of Molecular Structures; Applications in Activity Profiling.	Tezpur University	Tezpur, India	March 22, 2012
Dr. Vikash Kumar Dubey	Fun with Flagellated parasite	Second National Conference on Biotechnology, Bioinformatics and Bioengineering Society of Applied Biotechnology	Kolhapur, Maharashtra, India	February 24, 2012.
	Computer added drug designing: targeting redox metabolism of *Leishmania* parasite	Workshop on "Bioinformatics: Application in Agriculture and Medical Sciences. Banaras Hindu University	Varanasi, India	Feb. 17, 2012
	Application of Bioinformatics in Protein Sciences	Workshop on "Bioinformatics: Application in Agriculture and Medical Sciences. Banaras Hindu University	Varanasi, India	Feb. 18, 2012
	Current trends in anti-leishmanial drug discovery	International conference on New Horizones in Biotechnology (Biotech Research Society of India)	Trivandrum, India	November 22, 2011

12. VISITORS FROM OTHER INSTITUTES/UNIVERSITIES/ORGANISATIONS (In tabular format as given below)
(Only distinguished visitors invited by appropriate authority)

S. No.	Name	Name of Inst./Univ./Org.	Purpose	Date	Remarks
1	Dr. Saurav Datta	Argonne National Laboratory, USA	Advanced Membrane Technologies for Bioengineering and Energy Applications	24th Jan 2012	
2	Prof. Dulal Panda	Department of Biosciences and Bioengineering, IIT Bombay	Bacterial cytoskeleton: An attractive target for a new class of antibacterial drugs	20th Jan 2012	
3	Dr. Sudip Mondal	National Centre for Biological Sciences, TIFR	Microfluidic devices for *in vivo* studies in genetic model organisms	24th Nov 2011	
4	Prof. Dulal Borthakur Professor & Graduate Chair	Department of Molecular Biosciences & Bioengineering, University of Hawaii at Manoa, Honolulu, USA	Bacterial and plant enzymes for degradation of mimosine, a toxin present in Leucaena leucocephala	22nd November 2011	
5	Dr. Apurba Kumar Sau	National Institute of Immunology	Regulation of GTP hydrolysis in interferon-gamma induced GTPases	4th Nov 2011	
6	Prof. Rajani Nadgauda	IIAR Gandhinagar	Plant tissue culture and secondary metabolite production through cell culture	22nd Sep 2011	
7	Prof. Anju Chadha	IIT Chennai	Biocatalytic One Pot Deracemisation Reactions: Towards Green Synthesis of Chiral Synthons	12th Sep 2011	
8	Mr. Sriganesh Srihari	NUS Singapore	Methods Integrating Biological Insights with Topology for Analysis of Protein Interaction Networks *Area*: Bioinformatics	20th May 2011	

13. SEMINARS/WORKSHOPS/CONFERENCES/SHORT TERM COURSES ORGANIZED (In tabular format as given below)

S. No.	Name of Faculty	Name of Sem./Wor./Con.	Funded By	Date	International/ National
1.	Dr. Latha Rangan and Dr. Utpal Bora	Short Term Course on 'Tools for Bioresources Protection'	QIP, IIT Guwahati	11-15th July 2011	
2.	Dr. Latha Rangan	Preparation of Instruction Material on Basics of IPR and Patents' CD-CELL Activity,	IIT Guwahati	July 2012	
3.	Dr. Lingaraj Sahoo	DBT Crop Biotechnology Task Force Meeting	DBT	23-24 March 2012	National
		DBT Sponsored Short-Term Course on "Advance Techniques in Biotechnology"	DBT	12-15 October 2011	National
4.	Dr. S. S. Ghosh (Coordinator)	Advance Techniques in Biotechnology	DBT	12-15 October 2011	
5.	Dr. V. Ramakrishnan, Dr. U. Bora, Prof. A Goyal, Department of Biotechnology, IIT Guwahati	Workshop on Basic Techniques in Bioinformatics	DBT	12-14 October, 2011	National

14. PATENT FILED:

1. **L Rangan**, A Das Medicinal herbal composition from the rhizome essential oil of *Zingiber moran* and the process thereof, TIFAC-DST T.1(49) / TIFA /2011.

2. **L Rangan**, A Das, N Kasoju, U Bora Multipurpose herbal utility of camphene from *Zingiber moran*, an endemic medicinal plant from northeast India, TIFAC-DST- T.1(49) / TIFA /2011.

15. AWARDS AND HONOURS (Only awards/honours at national/international level from reputed organisations)

Prof. Arun Goyal

1. 2012 Invited as member "Purchase Committee" meeting at Guwahati Biotech Park, Guwahati, March 27, 2012.
2. 2012 Invited as Chairman, "Institute Purchase Committee (IPC)" meeting at Institute of Biotechnology and Sustainable Development (IBSD) Imphal, Manipur, Mar 17, 2012.
3. 2011 Elected as FNAAS (Fellow, National Academy of Agricultural Sciences, India), June 2011.
4. 2011 Invited to Chair the Session on Industrial Biotechnology in an International Conference on "New Horizons in Biotechnology", Nov. 21-24, 2011, National Institute of Interdisciplinary Science and Technology (NIIST), Trivandrum, India.
5. 2011 Invited as Chairman, "Institute Purchase Committee (IPC)" meeting at Institute of Biotechnology and Sustainable Development (IBSD) Imphal, Manipur, Sep 27, 2011.
6. 2011 Invited as Chairman, "Institute Purchase Committee (IPC)" meeting at Institute of Biotechnology and Sustainable Development (IBSD) Imphal, Manipur, Aug 11, 2011.
7. 2011 Member, Board of Governors, Biotech Research Society of India (BRSI), (May 2011- April 2013)

Dr. B. Anand

1. **Young Scientist Research Award** from Department of Atomic Energy

Dr. Biman B. Mandal

1. "**Young Scientist Research Grant Award 2011**" from Department of Atomic Energy (DAE) for project "Bioengineered silk vascular grafts for blood vessel engineering".
2. "**SYIS Young Investigator Award 2011**" in TERMIS AP, International conference, Singapore for his work on "Hierarchical silk scaffolds for intervertebral disc engineering" carrying certificate and cash prize.

Dr. K. Pakshirajan

1. Dr. Kannan Pakshirajan has been awarded the **BOYSCAST Fellowship** for the year 2010-2011 by the Department of Science and Technology (DST), India, to conduct advanced research at Department of Environmental Resources, UNESCO-IHE, Westvest 72611 AX Delft, The Netherlands, for a period of twelve months starting from August 2011 onwards.
2. Dr. Kannan Pakshirajan was awarded the **HIYOSHI YOUNG LEAF AWARD - 2010** by Hiyoshi Corporation, Japan, for his outstanding contribution and progress in research and application in environmental conservation and protection.

Dr. Latha Rangan

1. ISCB YOUNG SCIENTIST AWARD the area of Biological Sciences for the year 2011-2012.
2. Prof. HiraLal Chakravarty Award in Plant Sciences awarded by Indian Science Congress Association (ISCA) 2011-2012.
3. Editorial Board Member of the Journal 'Agriculture and Food Security' by BioMed Central 2012.

Dr. Rakhi Chaturvedi

1. Awarded prestigious "Prof. Y. S. Murty Medal 2011" by Indian Botanical Society (IBS) in its XXXIV meeting at Lucknow University, Lucknow.
2. Member, National Academy of Sciences, India (NASI)

Dr. Vibin Ramakrishnan

1. Innovative Young Biotechnologist Award-Extension, 2011-2013 by Department of Biotechnology, Govt. of India

Dr. Vikash Kumar Dubey

1. **Dr. Vikash Kumar Dubey:** Young Scientist Award for 2011 by Society of Applied Biotechnology
2. **Dr. Vikash Kumar Dubey:** Work as corresponding author (PhD student: Saudagar Prakash) received Best Poster presentation Award during 80th Annual Meeting of Society of Biological Chemists, India held at Lucknow, November 12-15, 2011
3. Anil Kumar Shukla, Ph.D student under **Dr. Vikash Kumar Dubey** has been awarded travel award by Department of Science and Technology for attending European Molecular Biology Organization (EMBO) meeting 2011 held at Vienna.

16. ANY OTHER (SPECIAL MENTION)

i. **Ms. Priyanka Dhar** (PhD student) completed in September 2011, supervisor, Dr. G.K.Saini.

ii. **Dr Vigya Kesari** a former PhD student of Dr. Latha Rangan at the Department of Biotechnology, awarded Young Scientist Award of (ISCA) for the year 2011-2012 in the area of 'Agriculture and Forest Science' during 99th Indian Science Congress held at KIIT University, Bhubaneswar on January 7, 2012 by Former President of India Dr A P J Abdul Kalam.

iii. **Dr Archana Das** completed her PhD in the year 2011 under the supervision of Dr. Latha Rangan and pursuing Post Doctorate at Purdue University, USA.

iv. **Mr Tushar**, PhD student perusing research as Fullbright Scholar under the aegis of US India Fullbright Nehru Research Scholarship at University of Georgia, USA 2011-2012.

v. **Vinod Kr. Yata** (07610608) has completed PhD thesis defence on 23rd March 2012 under the guidance of Dr. S. S. Ghosh. His thesis is entitled, "Suicide Enzymes: Purification, Characterization and Encapsulation for Therapeutic Implications".

vi. Atomic Force Microscopy images of hen lysozyme protein acquired by Prof. R. Swaminathan's Ph.D. student, **Vijay K. Ravi** using AFM at *IIT Guwahati* has appeared in the COVER of Advances in Protein Chemistry and Structural Biology, Vol 84, R. Donev (Editor), Academic Press, 2011

17. LIST OF FACULTY MEMBERS ALONG WITH PhD, DESIGNATION, AND AREAS OF INTEREST (In alphabetical order according to surname)

S. No.	FACULTY MEMBER	DESIGNATION	AREAS OF INTEREST
1	Anand B., Ph. D.	Assistant Professor	Structural Biology, Bioinformatics & Computational Biology, RNA Biology, Molecular Evolution
2	Bora Utpal, Ph. D.	Associate Professor	Biomaterials, Nanotechnology, Drug Delivery and Tissue Engineering
3	Bose Biplab, Ph. D.	Assistant Professor	Cell Signaling, Computational Biology, Recombinant Proteins
4	Chaturvedi Rakhi, Ph. D.	Associate Professor	Plant Cell, Tissue & Organ Culture, Protoplast Isolation and Regeneration, Isolation, Purification and Characterization of Plant Secondary Metabolites
5	Chaudhary Nitin, Ph. D.	Assistant Professor	Peptide self-assembly and amyloid aggregates, Peptide-membrane interactions Curvature inducing proteins
6	Das Debasish, Ph. D.	Assistant Professor	Metabolic engineering, Biochemical engineering, Modelling of fermentation process, Biofuel
7	Dasu, Veeranki Venkata Ph. D.	Associate Professor	Bioprocess Development (upstream to downstream), Metabolic Engineering, Bioenergy
8	Dubey Vikash Kumar, Ph. D.	Associate Professor	Protein Biochemistry; Parasite Biochemistry

9	Ghosh Siddhartha Sankar, Ph. D.	Associate Professor	Gene Therapy, Expression Cloning (Mammalian Systems), Nanobiotechnology
10	Goswami Pranab, Ph. D.	Professor	Biocatalysis, Biosensor, Enzymatic Biofuel cell, and Biotransformation
11	Goyal Arun, Ph. D.	Professor and Head	Molecular Biology, Protein Engineering, Structural and Functional Proteomics of Carbohydrate active enzymes and other industrial microbial enzymes
12	Jaganathan Bithiah Grace, Ph. D.	Assistant Professor	Mesenchymal Stem Cells (Biology, For Tissue repair, In health and disease), Cell Therapy, Rho GTPases and Haematopoietic Stem Cells
13	Limaye Anil Mukund, Ph. D.	Assistant Professor	Molecular endocrinology, Cancer biology Gene expression and regulation in Eukaryotic and Prokaryotic systems
14	Mandal Biman B., Ph.D.	Assistant Professor	Cell based tissue engineering, Biomaterials, Stem cells, Drug delivery systems
15	Pakshirajan Kannan, Ph. D.	Associate Professor	(a) Environmental Biotechnology: biological removal of organic and inorganic pollutants from water and wastewaters (b) Biotechnological Products and Process Engineering: production, characterization and properties, process design, kinetics and optimization (c) Biohydrometallurgy and (d) Biofuels
16	Patra Sanjukta, Ph. D.	Assistant Professor	Enzymes - applications in pharma and food industry
17	Ramakrishnan Vibin, Ph.D.	Assistant Professor	Computational Biology, Bioinformatics, Biophysics, Bio-Organic Chemistry, Bio-nanotechnology
18	Ramesh Aiyagari, Ph. D.	Associate Professor	Nanobiotechnology, Molecular Microbiology
19	Rangan Latha, Ph. D.	Associate Professor	Molecular systematics, Biofuel, IPR
20	Sahoo Lingaraj, Ph. D.	Associate Professor	Genetic engineering and functional genomics of plants
21	Saini Gurvinder Kaur, Ph. D.	Associate Professor	Fungal Biotechnology, Biological Control, DNA fingerprinting and Transformation studies, Studies on extracellular enzymes and toxic metabolite production, Development of a potent biopesticide
22	Sivaprakasam Senthilkumar, Ph.D.	Assistant Professor	Bioprocess Analytical Technology (BioPAT) Biocalorimetry Bioprocess Monitoring and Control Environmental Bioprocess Sytems

23	Swaminathan R., Ph. D.	Professor	Spectroscopic and computational approaches to investigate the following: Intrinsically Disordered Proteins: Their identity and prevalence in the Proteome, Protein Aggregation: Their mechanisms and approaches to inhibit aggregation, Biochemical consequences of Macromolecular Crowding inside living cells.
24	Tamuli Ranjan, Ph. D.	Assistant Professor	Calcium signaling, DNA repair
25	Trivedi Vishal, Ph. D.	Assistant Professor	Intracellular Signaling in *Plasmodium falciparum*.

18. Office Staff Members

S. No.	Name of the Staff Member	Designation
1	Barah Niranjan	Junior Technical Superintendent
2	Barman Dipankar, Diploma in Electronics & Telecommunication Engg.	Junior Technical Superintendent
3	Baruah Rashmi , M.Sc. Botany, BEd	Junior Technical Superintendent
4	Das Anita, M.Sc. Biotechnology	Junior Technical Superintendent
5	Islam Nurul, M.Sc. Agril. Biotech.	Junior Technical Superintendent
6	Swargari Prarthana, M.Sc. Biochemistry	Junior Technical Superintendent
7	Nath Chandan Kumar, M.Sc. Computer Science	Junior Technical Superintendent
8	Yadav P. Raghuveer, M.Sc. Biotechnology	Junior Technical Superintendent
9	Sarma Dhrubajyoti	Junior Assistant
10	Bhuyan Pankaj	Attendant