ANNUAL DEPARTMENT REPORT
(PERIOD: 1 APRIL 2009 – 31 MARCH 2010)

1. INTRODUCTION

The Department of Biotechnology at the Indian Institute of Technology Guwahati was established in November 2002. The department has both undergraduate (B.Tech) and postgraduate (M.Tech and PhD) academic programmes. It has 22 faculty members from diverse streams and specializations. The department has a total of seven staff members-five well-trained Junior Technical Superintendent, one Junior Superintendent and one Junior Attendant. The major thrust of the department includes biochemical engineering, plant biotechnology, nanobiotechnology, computational biology, proteomics, tissue engineering. The department is on advance to establish advanced research laboratories in all the thrust areas. Apart from fundamental research, the goals of the department are also targeted to meet the demands of the biotechnology based industries.

2. ACADEMIC ACTIVITIES

The department has B. Tech., M. Tech., and Ph. D. academic programmes.

3. STUDENT INTAKE

Course	Intake capacity per year	Total No of Students Present (including all semesters)
B. Tech.	35	120
M. Tech.	24	24
Ph. D.	26	26
Others (Project JRF/SRF)	10	10

4. FACULTY STRENGTH

22 faculties till Date. Three Professors, nine Associate Professors, and ten Assistant Professors.

5. MAJOR EQUIPMENT AND FACILITIES

The department of Biotechnology at IIT Guwahati has developed sophisticated teaching and research laboratories to support the running of B.Tech, M.Tech and PhD programmes. The department is fully equipped with sophisticated research equipments as Atomic Force Microscope, Auto Tensiometer, Biologic LP System with Fraction Collector, Bioreactors, Biolistic Gun, Gel Documentation System , Flow Cytometer, HPLC System, Inverted Fluorescent Microscope, High Speed Centrifuge, Steady State Fluorimeters, Two-Dimensional Electrophoresis System by Isoelectric Focussing, Ultracentrifuge etc. The department has developed dedicated research facilities in areas such as bioprocess engineering, mammalian cell culture and tissue engineering and plant biotechnology. It is on its way towards developing stem cell culture facility and parasite culture facility. Further need of the department is complemented with many other facilities like, confocal Laser Scan Microscope, NMR (400 mHz) Scanning Electron Microscope, ESR spectroscopy, TEM, LC-

MS-MS etc. available in the adjacent Central Instruments facility of the institute and provide access to the researchers of the department. The department of Biotechnology, IIT Guwahati, has a separate computational lab facilities like Desktop Computers connected to Servers at the Institutional Computer Center by LAN. It is also equipped with dedicated departmental Server for computational biology work. Being a member institution of GARUDA grid, the department have access to this network and used for large scale computational biology works. Various software for computational Biology as SYBYL modules (Tripos) – SYBYL Base, Biopolymer, Dynamic, Amber 8, Delphi, PGI Workstation. These modules are used for molecular modeling and molecular dynamic simulations.

6. **RESEARCH AND DEVELOPMENT ACTIVITIES**

S. No.	Principal Investigator	Research and Developmental activities
1	Prof. Arun Goyal	Molecular Biology, Protein Engineering, Structural and Functional Proteomics of Carbohydrate active enzymes and other industrial microbial enzymes.
2	Dr. Aiyagari Ramesh	Nanobiotechnology, Molecular Microbiology.
3	Dr. Anil Mukund Limaye	Hormonal regulation of gene expression, Reproductive Biology and Molecular Endocrinology, Endocrine related cancers.
4	Dr. Biplab Bose	Therapeutic recombinant antibodies.
5	Dr. (Ms) Bithiah Grace Jaganathan	Genetic Engineering of Stem Cells for tissue repair, Mesenchymal Stem Cells in disease.
6	Dr. Debasish Das	Metabolic engineering, Biochemical engineering, Modelling of fermentation process, Biofuel.
7	Dr. (Ms.) Gurvinder Kaur Saini	Fungal Biotechnology, Biological Control, DNA fingerprinting and Transformation studies, Studies on extracellular enzymes and toxic metabolite production, Development of a potent biopesticide.
8	Dr. K. Pakshirajan	Environmental Technology.
9	Dr. (Ms.) Latha Rangan	Molecular systematics, Biofuel, IPR.
10	Dr. Lingaraj Sahoo	Genetic engineering and functional genomics of plants.
11	Prof. Pranab Goswami	Biocatalysis, Biosensor, Enzymatic Biofuel cell, and Biotransformation.
12	Prof. R. Swaminathan	Understanding Intrinsically Disordered Proteins, Protein Aggregation, and Biochemical consequences of Macromolecular Crowding inside living cells using spectroscopic and computational approaches.
13	Dr. (Ms.) Rakhi Chaturvedi	Plant Cell, Tissue & Organ Culture, Protoplast Isolation and Regeneration, Isolation, Purification and Characterization of Plant Secondary Metabolites.
14	Dr. Ranjan Tamuli	Calcium signaling, Identification of novel cancer relevant genes.
15	Dr. Sanjukta Patra	Enzymes - applications in pharma and food industry.
16	Dr. Siddhartha Sankar Ghosh	Gene Therapy, Expression Cloning (Mammalian Systems), Bionanotechnology.
17	Dr. Utpal Bora	Biomaterials, Nanotechnology, Drug Delivery and Tissue Engineering.
18	Dr. V. Venkata Dasu	Bioprocess Development (upstream to downstream), Metabolic Engineering, Bioenergy.
19	Dr. Vikash Kumar Dubey	Antileishmanial drug discovery; Protein folding and aggregation; Proteases; Environmental proteomics.
20	Dr. Vishal Trivedi	Intracellular Signaling in *Plasmodium falciparum*.
21	Dr. B. Anand	Structural Biology, Bioinformatics & Computational Biology, RNA Biology, Molecular Evolution
22	Dr. Sk. Z. Ahammad	Joined recently

7. **RESEARCH PROJECTS**

a) New Sponsored Projects

Principal Investigator	Name of Project	Sponsoring Agency	Amount Sanctioned (Rs. in Lakh)	Co-Investigator	Duration (Years)
Dr. Arun Goyal	Production of microbial carbohydrates and carbohydrate active enzymes for healthcare	DBT	11.74	None	03
Dr. Arun Goyal	Probiotic fermentation as a platform for production of neutraceuticals.	CSIR	20.1	None	03
Dr. Arun Goyal	Prebiotics and neutraceuticals production from Lactic acid bacteria.	Indo-Bulgarian Joint project DST	16.2	None	03
Dr. Arun Goyal	MTech Program Support	DBT	170.0	Co-ordinator	03
Dr. L Rangan	Cloning of fatty acid saturation genes and analysis of spatial and temporal expression from seeds of candidate plus tree, Karanj (*Pongamia pinnata* L.)	DST SERC	22.16	BG Jaganathan	03
Dr. Swaminathan	Conjugating luminescent quantum dots to proteins: Consequences on protein function and development of sensitive assays	CSIR	14.50	None	03
Dr. V.K. Dubey	Studies on effect of small molecule compounds on folding and amyloid formation of proteins	CSIR	21.50	Dr. S. Patra	03

b) Ongoing projects

Principal Investigator	Name of Project	Sponsoring Agency	Amount Sanctioned (Rs. in Lakh)	Co-Investigator	Duration (Years)
Anil Mukund Limaye	Characterization of rat prostate specific PBPC1BS and S100RVP promoters	IIT Guwahati, Start up Grant	5.00	None	02
Biplab Bose	Combination therapy using suicide genes and recombinant antibody	DBT	97.32	Dr. S. S Ghosh	05
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	03
Biplab Bose	Development of Therapeutic Human Antibodies Against Cripto-1: Targeting Oncogenic Signaling.	DST	10.34	None	03
Dr. K. Pakshirajan	Decolorization of textile	CSIR	11.49	None	03

	dyeing wastewaters by the white rot fungi *Phanerochaete chrysosporium* in a novel rotating biological contactor reactor				
Dr. K. Pakshirajan	*In situ* production of sophorolipid by the yeast *Candida bombicola* for pre-treatment of fats and oils containing dairy wastewaters	DST	16.8	None	03
Dr. K. Pakshirajan	Department of Biotechnology (DBT)	DBT	11.6	None	02
L Rangan	DNAB (DNA Barcoding) based biodiversity inventory in Zingiberaceae of Northeast India Northeast India	DIT	71.18	D L Sahoo	05
L Rangan	Analysis of start codon context and sequence characteristics around TIS in plant model systems	DBT	5.50	Dr K Pakshirajan	02
Dr. L. Sahoo	Development and evaluation of transgenic mungbean over expressing *AtNHX1* and *AVP1* for salt tolerance	DBT	78.75	None	03
Dr. L. Sahoo	Molecular cloning and functional characterization of heavy metal stress specific phytochelatin synthase gene from *Eichhornia crassipes*	DBT	78.40	None	05
Dr. L. Sahoo	Genetic engineering of Cowpea (*Vigna unguiculata* L. Walp) for resistance to pod borer and bruchid	DBT	11.62	Dr. L. Rangan	03
Dr. L. Sahoo*	Cloning of elite germplasm of Jatropha for large scale plantation	DARL	9.98	None	03
Dr. S. K. Panda (AU, Assam)	Amino acid polymorphism in conserved Motifs in HMA proteins and Heavy Metal Resistance in Plants	DST		Dr. L. Sahoo	05
Dr. S. K. Panda (AU, Assam)	Molecular cloning and functional Analysis of Na^+/H^+ antiporter gene in Cowpea (*Vigna unguiculata* L. Walp)	DBT	44.88	Dr. L. Sahoo	03
Dr. P.Goswami	Studies and application of redox enzymes for bioelectornics devices	DBT	94.96 (Within the programme support project)	Dr. S. Patra	05
Dr. P.Goswami	Development of Enzyme Electrode for the Construction of Cholesterol Biosensor.	CSIR	2.25 Lacs + fund for one RA/JRF/SR	Dr. U. Bora	03
Dr. P.Goswami*	Enzymatic Biofuel cell for Biomedical application	DBT	35	Dr. Anil Verma, CL; Dr. M. Barthakur, IITG Hospital; Dr. U. Bora, BT; Mrs. L. Borbora,CEE	02
Dr. Rakhi Chaturvedi	*In vitro* production of haploids	DBT	34.49	Dr V.V. Dasu,	03

	in Tea (*Camellia spp)*			IITG; Dr M. Hazarika, TRA, Jorhat	
Dr. Ranjan Tamuli	Functional analysis of translesion DNA polymerase Pol eta (η), Pol iota (ι), and Pol kappa (κ) in *Neurospora crassa.*	IIT Guwahati, Start up Grant	5.00	None	02
Dr. Sanjukta Patra	Protein stability prediction of lipases – *in silico* studies	DIT	40.89	None	03
Dr. V. Venkata Dasu	Process Development for the Production of Recombinant Cutinase	DST	33.48	None	03
Dr. V.K. Dubey	Studies on Trypanothione Reductase from Leishmania Parasites: Structure, Function, Folding and Potential for Chemotherapy	DBT	35.76	Dr. S. Patra	03
Dr. V.K. Dubey	Development of novel therapeutics against leishmaniasis	DIT	8.66	Dr. A. Goyal	02
Dr. V.K. Dubey	Structural Properties and folding mechanism of apocytichrome C552 from *Hydrogenobactor Thermophilus*	DST	11.5	None	03
Dr. V.K. Dubey	Structure, Stability and Functional Studies of 2, 5-Diketo-D-gluconate Reductase	DBT	11.65	None	03

* with Center for Energy, IITG Guwahati

c) Completed Sponsored Projects

Principal Investigator	Name of Project	Sponsoring Agency	Amount Sanctioned (Rs. in Lakh)	Co-Investigator	Duration
Dr. L. Sahoo	Oil analysis and DNA fingerprinting of Jatropha and Patchouli accessions	NEDFi		Dr. P. Mahanta	01
Dr. L. Sahoo	Development of micropropagation technology for *Jatropha*: A potential biofuel plant	NEDFi		None	03
Dr. L. Sahoo	Genetic engineering of Cowpea (*Vigna unguiculata* L. Walp) for storage pest resistance	DST		None	03
Dr. Rakhi Chaturvedi	*In vitro* morphogenesis and biochemical analysis of Neem (*Azadirachta indica* A. Juss).	DST	9.96	None	03
Dr. R. Swaminathan	Tracking the growth of soluble protein aggregates in real time using fluorescence and subsequent manoeuvres to	CSIR	9.80	None	03

	inhibit their growth				
Dr. V. Venkata Dasu	Production of bacterial L-asparaginase: an approach for process optimization	DBT	6.0	None	02

8. **CONSULTANCY**

Principal Investigator	Name of Project	Sponsoring Agency	Amount Sanctioned (Rs. in Lakh)	Co-Investigator	Duration

9. **RESEARCH PUBLICATIONS**

International Journal

1. Angad Singh, Avishek Majumder and Arun Goyal* (2009) Mutagenesis of *Leuconostoc dextranicum* NRRL B-1146 for higher glucan production. *Internet Journal of Microbiology,* 7(1) 1-7
2. Avishek Majumder and Arun Goyal* (2009) Rheological and gelling properties of a novel glucan from *Leuconostoc dextranicum* NRRL B-1146. *Food Research International* 42, 525-528.
3. Avishek Majumder, Sourabh Bhandari, Ravi Kiran Purama, Seema Patel and Arun Goyal* (2009) Enhanced production of a novel dextran from *Leuconostoc mesenteroides* NRRL B-640 by statistical optimization. *Annals of Microbiology* 59(2), 309-315.
4. Ravi Kiran Purama and Arun Goyal* (2009) Optimization of conditions of *Leuconostoc mesenteroides* NRRL B-640 for production of dextransucrase and its assay. *Journal of Food Biochemistry*. 33, 218-231.
5. B. M. Borah, A. K. Singh, A. Ramesh* and G. Das 'Lactic acid bacterial extract as a biogenic mineral growth modifier', *Journal of Crystal Growth* 311, pp 2664-2672, 2009.
6. A.K. Singh and A. Ramesh* 'Evaluation of a facile method of template DNA preparation for PCR-based detection and typing of lactic acid bacteria', *Food Microbiology* 26, pp 504-513, 2009.
7. Gurvinder Kaur* and Padmaja V. Relationships among activities of extracellular enzyme production and virulence against *Helicoverpa armigera* in *Beauveria bassiana. Journal of Basic Microbiology*, Vol. 49(3), pp. 264-274, 2009.
8. Uzma Mustafa and Gurvinder Kaur*. Extracellular enzyme production in *Metarhizium anisopliae* isolates. *Folia Microbiologica*, 54(6), 499-504, 2009.
9. Uzma Mustafa and Gurvinder Kaur*. Effects of carbon and nitrogen sources and ratio on the germination, growth and sporulation characteristics of *Metarhizium anisopliae* and *Beauveria bassiana* isolates. *African Journal of Agricultural Research,* 3(10), 922-930, 2009.
10. Uzma Mustafa and Gurvinder Kaur*. UV-B radiation and temperature stress causes variable growth response in *Metarhizium anisopliae* and *Beauveria bassiana* isolates. *Internet Journal of Microbiology*, Vol 7(1), 2009.
11. Priyanka Dhar and Gurvinder Kaur*. Effect of carbon and nitrogen sources on the induction and repression of chitinase enzyme from *Metarhizium anisoplaie* isolates. *Annals of Microbiology*, 59(3) 545-551, 2009.
12. K. Pakshirajan* 'Prediction of coliform bacteria in surface waters using artificial neural networks', Journal of Information Intelligence and Knowledge, 2(3), pp 191-202, 2010.
13. B. Mahanty, K. Pakshirajan* and V. V. Dasu. 'A two liquid phase partitioning bioreactor system for biodegradation of pyrene: comparative evaluation and cost benefit analysis', Journal of Chemical Technology & Biotechnology, 85 (3), 349-355, 2010.
14. A. Daverey and K. Pakshirajan*. 'Kinetics of growth and enhanced sophorolipids production by *Candida bombicola* using a low cost fermentative medium', Applied Biochemistry and Biotechnology, 160 (7), 2090-2101, 2010.
15. S. Singh and K. Pakshirajan*. 'Enzyme activities and decolourization of single and mixed azo dyes by the white rot fungus *Phanerochaete chrysosporium*', International Biodeterioration and Biodegradation, 64, 146-150, 2010.
16. K. Pakshirajan* and T. Swaminathan. 'Biosorption of lead by the immobilized fungus *Phanerochaete chrysosporium* in a packed bed column', International Journal of Environmental Technology and Management, 12 (2-4), 214-228, 2010.
17. P. Saravanan, K. Pakshirajan* and P. Saha. 'Hydrodynamics and batch degradation of phenol in an internal loop airlift reactor', International Journal of Environmental Engineering, 2(1-3), 303-315, 2010.
18. A. Daverey and K. Pakshirajan*. 'Production, characterization and properties of sophorolipids from the yeast *Candida bombicola* using a low-cost fermentative medium'. Applied Biochemistry and Biotechnology, 158, 663-674, 2009.
19. P. Saravanan, K. Pakshirajan* and P. Saha. 'Degradation of phenol by TiO_2-based heterogeneous photocatalysts in presence of sunlight', Journal of Hydro-environment Research, 3(1), 45–50, 2009.
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22. B. Mahanty, K. Pakshirajan* and V. V. Dasu 'Pyrene encapsulated alginate bead type for sustained release in biodegradation: preparation and characteristics'. Polycyclic Aromatic Compounds, 29, 56-73, 2009.

23. P. Saravanan, K. Pakshirajan* and P. Saha. 'Treatment of phenolics containing synthetic wastewater in an internal loop airlift bioreactor (ILALR) using indigenous mixed strain of *Pseudomonas* sp. under continuous mode of operation'. Bioresource Technology, 100, 4111-4116, 2009.

24. K. Pakshirajan* and T. Swaminathan. 'Biosorption of copper and cadmium in packed bed columns with live immobilized fungal biomass of *Phanerochaete chrysosporium*. Applied Biochemistry and Biotechnology, 157(2), 159-173, 2009

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28. A Das, Tushar, V Kesari, L Rangan* (2010). Aromatic Joha Rice of Assam- A Review. *Agriculture Reviews*. 31 (1):1-10.

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30. L Rangan*, A Rout, M Sudarshan, G Gregorio (2009). Molecular cloning, expression and mapping of translational initiation factor eIF1 gene in *Oryza sativa*. *Functional Plant Biology* 36(5); 442-452.

31. A Singh, S Hallihosur, L Rangan* (2009). Changing landscape in biotechnology patenting. *World Patent Information.* 31: 219-225.

32. V Kesari, K Anitha, L Rangan* (2009). Effect of auxin on adventitious rooting from stem cuttings of candidate plus tree *Pongamia pinnata* (L.), a potential biodiesel plant. *Trees- Structure and Function* 23: 597-604.

33. L Rangan* (2009) Impact of Cartagena protocol in developing countries. *International J of Biosciences, Agriculture and Technology* 1: 1-3.

34. L Rangan* S Mitra (2009) Building public-private partnership in agricultural biotechnology. *International Journal of Biosciences, Healthcare Technology and Management* 1(1): 1-4

35. L Rangan*, V Dhawan (2009) Plant biotechnology in India-seeds of survival. *International J of Biosciences and Technology* 1: 1-16.

36. J. Purkayastha, T. Sugla, A. Paul, P. Mazumdar, Basu A, S. K. Solleti, A. Mohommad, Z Ahmed. and L. Sahoo* 'Efficient in vitro plant regeneration from shoot apices and gene transfer by particle bombardment in *Jatropha curcas*'. *Biologia Plantarum*, 54, 13-20 (DOI: 10.1007/s10535-010-0003-5), 2010

37. P. Mazumdar, A. Basu, A. Paul, C. Mahanta and L. Sahoo* 'Age and orientation of the cotyledonary leaf explants determine the efficiency of de novo plant regeneration and *Agrobacterium tumefaciens*- mediated transformation in *Jatropha curcas* L.' *South African Journal of Botany* (DOI:10.1016/j.sajb.2010.01.001) 2010

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40. Adepu Kiran Kumar & Preety Vatsyayan & Pranab Goswami* 'Production of Lipid and Fatty Acids during Growth of Aspergillus terreus on Hydrocarbon Substrates' *Applied Biochemistry and Biotechnol*ogy 160 pp1293–1300 (2010)

41. M. V. S. Kumar and R. Swaminathan* 'A novel approach to segregate and identify functional loop regions in protein structures using their Ramachandran maps.' *Proteins*, 78 (4), pp 900-916, 2010.

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50. Das RK, Kasoju N, Bora U* (2010). Encapsulation of curcumin in alginate-chitosan-pluronic composite nanoparticles for delivery to cancer cells. Nanomedicine: Nanotechnology, Biology, and Medicine 6(1):153-60.

51. Kasoju N, Bhonde RR, Bora U* (2009). Fabrication of a novel micro-nano fibrous nonwoven scaffold with *Antheraea assama* silk fibroin for use in tissue engineering. Materials Letters 63(28): 2466-2469.

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National Journal

1. Avishek Majumder, Anshuma Mangtani, Seema Patel, Rishikesh Shukla and *Arun Goyal (2009) Gluco-oligosaccharides production from glucan of *Leuconostoc mesenteroides* NRRL B-742 by microwave assisted hydrolysis. *Current Trends in Biotechnology and Pharmacy* 3(4), 405-411.
2. Shadab Ahmed, Tushar Saraf and *Arun Goyal (2009) Prediction of catalytic and ligand binding sites and hydrogen bonding plot from protein sequence of family 39 glycoside hydrolase (*Ct*GH39) from *Clostridium thermocellum*. *Journal of Applied Bioscience and Biotechnology* 5(1), 25-31.

3. Deepmoni Deka, Shadab Ahmed, Nadeem Akhtar, Sangeeta Bharali, M. Jawed, Carlos M.G.A. Fontes, *Dinesh Goyal and *Arun Goyal (2009) Determining substrate specificity and biochemical characterization of a full length recombinant cellulase (Lic26A-Cel5-CBM11) of *Clostridium thermocellum. Journal of Applied Bioscience and Biotechnology* 5(1), 13-18.
4. Shadab Ahmed, Tushar Saraf and *Arun Goyal (2009) Homology modelling based structure prediction from protein sequence of family 39 glycoside hydrolase from *Clostridium thermocellum*. *Current Trends in Biotechnology and Pharmacy*. 3(2), 210-218.
5. Priyanka Dhar and Gurvinder Kaur. Compatibility of the entomopathogenic fungi B*eauveria bassiana* and *Metarhizium anisopliae* with neonicotinoid insecticide, Acetamiprid. *Journal of Entomological research*, Vol 33(3), 195-202, 2009.
6. Shampa Sen, Uzma Mustafa and Gurvinder Kaur. Effect of temperature and UV radiation on the growth of entomopathogenic fungi. *Journal of Entomological Research*,Vol 33(4), 349-354, 2009.
7. R. Tamuli. (2010). Genome Defense Mechanisms in Neurospora and Associated Specialized Proteins. Journal of Proteins and Proteomics 1, 15-23.
8. Shukla, A.K., Bora, U. and Dubey, V.K*. Functional Adaptations in Fibroblast Growth Factor (FGFs) Family. Journal of Proteins and Proteomics, 2010, 1, 33-35.

Conference/Workshop/Seminar/Symposia

1. Shadab Ahmed, Vikas Gupta, Carlos MGA Fontes and *Arun Goyal (2009) Investigating the 3-dimensional structure of family 43 glycoside hydrolase (*Ct*GH43), a cellulase from *Clostrdium thermocellum* structure for possible interactions using molecular docking and other bioinfomatics tools. IIIrd International Conference on Environmental, Industrial and Applied Microbiology (BioMicroWorld 2009), Dec 2-4, 2009, University of Lisbon, Lisbon, Portugal
2. Seema Patel and *Arun Goyal (2009) Production, purification and characterization of homopolysaccharides produced by two natural isolates of lactic acid bacteria, SPO and SPA. International Conference on Emerging trends Biomedical and Nanotechnology, Dec 19-21, 2009, Acharya Nagarjuna Univeristy, Guntur, India.
3. Nadeem Akhtar, Somesh Ajnavi, Dinesh Goyal and *Arun Goyal (2009) Enhanced biodegradation of cellulosic waste by a new isolate of *Bacillus* sp. and *Trichoderma reesei* (MTCC 164). International Conference on Emerging Trends in Biotechnology, Dec. 2-6 2009, Banaras Hindu University.
4. Seema Patel, Damini Kothari, Rajesh Singampalli and *Arun Goyal (2009) UV induced mutagenesis of exopolysaccharide synthesizing natural isolate of lactic acid bacteria SPA for strain improvement. International Conference on Emerging Trends in Biotechnology, Dec 2-6 2009, Banaras Hindu University.
5. Rishikesh Shukla, Mayur Agrawal and *Arun Goyal (2009) Structural Characterization of Dextran produced by two mutants (B-640M1 and B-640M2) of *Leuconostoc mesenteroides* NRRL B-640. International Conference on Emerging Trends in Biotechnology, Dec 2-6 2009, Banaras Hindu University.
6. Deepmoni Deka, Ashish Sharma, Dinesh Goyal and *Arun Goyal (2009) Partial purification and characterization of an alkaline carboxymethyl cellulase from a new isolate of *Bacillus* sp. International Conference on Emerging Trends in Biotechnology, Dec 2-6 2009, Banaras Hindu University.
7. Seema Patel, Shraddha Shukla and *Arun Goyal (2009) Production, purification and characterization of dextransucrases from two natural isolates of lactic acid bacteria, SPO and SPA. International Conference on Emerging Trends in Biotechnology, Dec 2-6 2009, Banaras Hindu University.
8. Mayur Agrawal and *Arun Goyal (2009) Mutagenesis of *Leuconostoc mesenteroides* NRRL B-640 for enhanced production of dextransucrase and dextran. 8th Carbohydrate Bioengineering Meeting, May, 10-13, 2009, Ischia Island, Naples, Italy, p-40.
9. Seema Patel and *Arun Goyal (2009) Characterization of two new isolates of Leuconostoc and their dextransucrases and dextrans. 8th Carbohydrate Bioengineering Meeting, May, 10-13, 2009, Ischia Island, Naples, Italy, p-89.
10. Avishek Majumder and *Arun Goyal (2009) Glucansucrase and novel glucan from *Leuconostoc dextranicum* NRRL B-1146. 8th Carbohydrate Bioengineering Meeting, May, 10-13, 2009, Ischia Island, Naples, Italy p-65.
11. Shadab Ahmed, Rahul Charan and *Arun Goyal (2009) Prediction of 3-D structure, catalytic and ligand binding sites of family 43 glycoside hydrolase (GH43) from *Clostridium thermocellum.* 8th Carbohydrate Bioengineering Meeting, May, 10-13, 2009, Ischia Island, Naples, Italy p-11.

12. M.D. Adhikari, B.R. Panda, A.K. Singh, A. Chattopadhyay and A. Ramesh 'Antagonistic activity of a gold nanoparticle-polythiophene composite against pathogenic bacteria', Abstract PS 61. International Workshop on Nanotechnology and Advanced Functional Materials, National Chemical Laboratory, Pune, 9-11 July, 2009.

13. A. Ramesh 'Smart nanomaterials in biological applications', Abstract OP 5. International Workshop on Nanotechnology and Advanced Functional Materials, National Chemical Laboratory, Pune, 9-11 July, 2009.

14. J. Deka, A. Paul, A. Ramesh and A. Chattopadhyay 'Gold nanoparticles in probing proteins', Abstract A-646. International Conference on Advanced Nanomaterials and Nanotechnology, Indian Institute of Technology Guwahati, Guwahati, 9-11 December, 2009.

15. Mehta T, Bose B. FlowPy: a python tool for extraction of flow cytometry data. The Eighth Asia Pacific Bioinformatics Conference (APBC2010), Bangalore, January, 2010.

16. Batra S, Bose B. Effect Of Ligand Mediated Cross-Linking On Lateral Diffusion Of Cell Surface Receptors. International Conference on Physics Biology Interface (ICPBI 2009), Saha Institute of Nuclear Physics, Kolkata, December, 2009.

17. Priyanka Dhar and Gurvinder Kaur, 2009. Optimization of process parameters for the mass production of *Beauveria bassiana* conidiospores under solid state fermentation. International conference on food security and environmental sustainability, December, 17-19, Indian Institute of Technology Kharagpur, proceedings, pp. 1-10.

18. Priyanka Dhar and Gurvinder Kaur, 2009. Production of cuticle-degrading proteases by *Beauveria bassiana* and theier induction in different media. International conference on Emerging trends in Biotechnology and 8th annual convention of the biotech research society of India, December, 4-6, Banaras Hindu University, pp.206.

19. N. K. Sahoo, K. Pakshirajan and P. K. Ghosh 'Growth and biodegradation kinetics of p-bromophenol and p-nitrophenol by *Arthrobacter chlorophenolicus A6', Proc. of International Conference on Environmental Health and Technology, EH&T10,* Kanpur, 15-17, March 2010.

20. N.K. Sahoo, K. Pakshirajan and P.K. Ghosh. 'Effect of culture conditions and degradation kinetics of ARthrobacter chlorophenolicus A6 for enhancing the biodegradation of 4-chlorophenol', *Proc. of International Conference on Emerging Trends in Biotechnology, ETBT09*, Varanasi, 4-6 December 2009.

21. A. Daverey and K. Pakshirajan. 'Utilization and pretratment of dairy industry wastewater by *Candida bombicola* for the production of sophorolipids', *Proc. of the 3rd International Conference on Environmental, Industrial and Applied Microbiology, BioMicroWorld09*, Lisbon Portugal, 2-4 December 2009.

22. B. Mahanty, K. Pakshirajan and V.V. Dasu. 'Two liquid phase partitioning bioreactor system for biodegradation of pyrene by *Mycobacterium frederiksbergense*', *Proc. of the 3rd International Congress on Biotechniques for Air Pollution Control*, Delft, The Netherlands, 28 – 30 September 2009.

23. A. Daverey and K. Pakshirajan. 'Utilization of agro-industrial wastes for the production of sophorolipids by the yeast *Candida bombicola*', *Proc. of First International Conference on Recycling and Reuse of Materials, ICRM09*, Kottayam, 17–19 July 2009**.**

24. A Jain, S Hallihosur, L Rangan* (2009) Nanotechnology patenting: An Indian Scenario. International Conference on Advanced Nanomaterials and Nanotechnology, Dec 7-9th 2009, IIT Guwahati, Assam, p.

25. L Rangan* (2009) Significance of translation initiation factor (eIF) in stress response of crop plants. International Conference on Emerging Trends in Biotechnology. 6th BRSI annual Convention, Dec 4-6th 2009, BHU, Varanasi, p. 279.

26. V Kesari, L Rangan* (2009) Anatomical and biochemical changes during seed maturation and germination in biofuel crop, *Pongamia pinnata* L. International Conference on Emerging Trends in Biotechnology. 6th BRSI Annual Convention Dec 4-6th 2009, BHU, Varanasi, p. 231-232.

27. A Das, L Rangan* (2009) Effect of plant growth regulators and culture conditions on shoot multiplication in three medicinally important *Zingiber* species of Northeast India. International Conference on Emerging Trends in Biotechnology. 6th BRSI Annual Convention, Dec 4-6th 2009, BHU, Varanasi, p. 095-096.

28. L Rangan*, V Kesari (2009) *Pongamia pinnata*- Sustainable Source of Feedstock for Biofuel. TWAS Regional Young Scientist Conference, "Food, Health and Fuel: Plants for the Future", 2-5th Nov 2009, Malaysia, p.47 **(Awarded Best Paper Award)**

29. V Kesari, D Suman, L Rangan* (2009) Physiological and phylogenetic characterization of *Rhizobium radiobacter* sp. nov. isolated from root nodules of a potential biodiesel crop - *Pongamia pinnata*. TWAS Regional Young Scientist Conference, "Food, Health and Fuel: Plants for the Future", 2-5th Nov 2009, Malaysia, p.23.

30. A Das, V Kesari, L Rangan* (2009) Antimicrobial activity of rhizome extracts of some important gingers of Northeast India. TWAS Regional Young Scientist Conference, "Food, Health and Fuel: Plants for the Future", 2-5th Nov 2009, Malaysia p.71.

31. Urmila Saxena, Madhuri Das, Seraj Ahmed and Pranab Goswami, An amperometric cholesterol biosensor based on multiwalled carbon nanotube-nafion-cholesterol oxidase-cholesterol esterase nanobiocomposite,*International Conference on Advanced Nanomaterials and Nanotechnology*, 2009, IIT Guwahati, Guwahati, Assam, 9-11 December, 2009. Abstract no.E-134.

32. Sandip Bordoloi, Madhuri Das, Pranab Goswami, Fabrication Of Carbon Nanotube-Based Cholesterol Oxidase Bioelectrode For Biosensor And Biofuel Cell Application, *International Conference on Advanced Nanomaterials and Nanotechnology* (ICANN)-2009, Indian Institute of Technology Guwahati,December 9-11, 2009.

33. Preety Vatsyayan, Sandip Bordoloi, Leepakshi Barbora and Pranab Goswami,Direct electrochemistry of large novel catalase from Aspergillus terreus immobilized on MWCNT-NF/PEI modified glassy carbon electrode and its fuelcell application, *Fucetech*, 2009, *International Symposium and Exhibition on Fuel Cell Technologies*, Mumbai, 11-13 November, 2009.Abstract number is 79 with page number 82.

34. Seraj Ahmad and Goswami Pranab, Production and partial characterization of cholesterol oxidase from Rhodococcus sp. 50th Annual conference, Association of Microbiologists of India, AMI 2009, NCL, Pune, December 15-18,2009 (P.No. 287). Abstract No.MM-053.

35. Hazarika R.R. and Chaturvedi Rakhi*. Effect of temperature and light treatments on callus induction through in vitro gynogenesis in Tea (*Camellia sinensis* (L) O Kuntze)". In: International Conference on Emerging Trends in Biotechnology, Dec. 4-6, 2009. Banaras Hindu University, Varanasi, India. Page No. 102, 2009.

36. Singh M. and Chaturvedi Rakhi*. Screening of *in vitro* cell lines for enhanced azadirachtin production. In: International Conference on Food Security and Environmental Sustainability, December 17-19, 2009. Agricultural and Food Engineering Department, IIT Kharagpur, India. Page No. 1, 2009.

37. Mishra V.K. and Chaturvedi Rakhi*. Factors affecting callus induction and proliferation of anther cultures of C*amellia sinensis* (L.) O. Kuntze In: International Conference on Biotechnological Solutions for Environmental Sustainability, Oct. 21-23, 2009. School of Biosciences and Technology (SBST), VIT University, Vellore, India. Page No. 251, 2009.

38. Hazarika R.R. and Chaturvedi Rakhi*. Effect of TDZ on *in vitro* organogenesis in cotyledon cultures of *Citrullus lanatus* (Thunb.) Matsum. & Nakai cv. Sugar Baby. In: International Conference on Biotechnological Solutions for Environmental Sustainability, Oct. 21-23, 2009. School of Biosciences and Technology (SBST), VIT University, Vellore, India. Page No. 236, 2009.

39. Chaturvedi Rakhi***** and Priyanka Srivastava. Enhanced Accumulation And Simultaneous Determination Of Betulinic Acid, Oleanolic Acid And Ursolic Acid In Cell Cultures Of *Lantana Camara L*. Using RP-HPLC. In: In Vitro Biology Meeting, June 6-10, 2009. Society for In Vitro Biology (SIVB), Charleston, South Carolina, USA. Vol 45, Page No. S68, 2009.

40. Singh M. and Chaturvedi Rakhi*. An efficient protocol for cyclic somatic embryogenesis in neem (*Azadirachta indica* A Juss) In: International conference on Energy and Environment, March 19-21, 2009. National Institute of Technology, Kurukshetra, Haryana, India. Page No. 78, 2009.

41. Srivastava P., Singh M. and Chaturvedi Rakhi*. Bioproduction of azadirachtin in anther cultures of *Azadirachta indica* and its antifungal activity on *Aspergillus sydowii*. In: International Herbal Conference, February 26-28, 2009, Bangalore, Karnataka, India, Page No. 152, 2009.

42. R. Deka, R. Kumar, R. Mandrawalia, and R. Tamuli, R. Genetic analysis of calcium signaling genes in *Neurospora crassa*. International Workshop on "Biology of Yeasts and Filamentous Fungi", Indo-U.S. Science and Technology Forum, Centre for Cellular and Molecular Biology, December 11-14, 2009, Hyderabad 500 007, India.

43. Saravanan Parameswaran, Alpana Thorat, Debamitra Chakravorthy, Sanjukta Patra. *IN SILICO* Characterization And Structural Modeling Of Thermoactive And Alkaline *Staphylococcus* Lipase. The Eighth Asia Pacific Bioinformatics Conference (APBC2010), Bangalore, January, 2010.

44. Saravanan Parameswaran**,** Alpana Thorat, Debamitra Chakravorthy, Sanjukta Patra. "Deciphering role of Amino Acids for the stability of Staphylococcusaureus lipase (SAL3). Ist IFIP International conference on Bioinfomatics March 25-28,2010. Surat. SVNIT (SardarVallabhbhai National Institute Technology).

45. Shukla, A.K., Venketesan, S.K., and Dubey, V.K*. Possible Molecular Mechanism Underlying the Anti-leishmanial activity of *Nyctanthes arbortristis*. 4th International conference on 'Current trends in drug discovery research (CTDDR-2010). Central Drug Research Institute ,Lucknow. 17th-21st Feb 2010.

46. Sarkar, N. and Dubey, V.K*. "Effect of small molecule aggregators on amyloid formation of proteins". Symposium on Recent Trends in Biophysics. Organized Indian Biophysical Society, Banaras Hindu University, Varanasi, during 13-15 February 2010.

47. Shukla, A.K., Venketesan, S.K., and Dubey, V.K*. Studies on Trypanothione Reductase from *Leishmania infantum*. 78th Annual Meeting of Society of Biological Chemists, India held at National Centre for Cell Science and University of Pune, Oct. 30-Nov. 1, 2009.

48. Venketesan, S.K., Shukla, A.K., and Dubey, V.K*. Structure based virtual screening approach to identify potential inhibitors of Trypanothione reductase from *Leishmania infantum.* 78th Annual Meeting of Society of Biological Chemists, India held at National Centre for Cell Science and University of Pune, Oct. 30-Nov. 1, 2009

49. Singh, A.N. and Dubey, V.K*. Procerain B a novel cysteine protease from the latex of medicinal plant Calotropis procera. 78th Annual Meeting of Society of Biological Chemists, India held at National Centre for Cell Science and University of Pune, Oct. 30-Nov. 1, 2009

50. Sarkar, N. Singh, A.N. and Dubey, V.K*. "Identification of amyloidogenic folding intermediate state of 2,5-Diketo-D-Gluconate Reductase A: Effect of Curcumin on Amyloid formation".21st IUBMB and 12th FAOBMB International Congress of Biochemistry and Molecular Biology held on 2-7 August 2009 and Young Scientist Program held on July30-August 2, 2009 in Shanghai, China. **(*The work was selected for IUBMB full travel fellowship funding as well as Young Scientist Program Award*)**

51. Singh, A.N., Singh, B.K. and Dubey, V.K*. Drug designing against leishmaniasis by targeting parasite specific trypanothione metabolic pathway. NE Conference of Medical Microbiologysts-09. Guwahati Medical College Guwahati, April 24-26, 2009.

National

1. Seema Patel, Damini Kothari, Arabinda Ghosh and *Arun Goyal (2009) Optimization of critical medium components using Response Surface Methodology for enhancing the dextran production by the mutant of a new isolate of lactic acid bacteria. 50th annual Conference of Association of Microbiologists of India. December 15-18, 2009, National Chemical Laboratory, Pune.
2. Seema Patel, Damini Kothari, S. Krishna Bindu, Deeplina Das and *Arun Goyal (2009) Statistical optimization of medium as a strategy to enhance the dextransucrase activity of mutant of a new isolate of lactic acid bacteria. 50th annual Conference of Association of Microbiologists of India, December 15-18, 2009, National Chemical Laboratory, Pune.
3. Deepmoni Deka, P. Bhargavi, Shuchi Singh, Saprativ P. Das., Ashish Sharma, Dinesh Goyal, M. Jawed and *Arun Goyal (2009) Activity enhancement of an alkaline cellulase from a new isolate of *Bacillus* sp. (AS3) by Statistical methods 50th annual Conference of Association of Microbiologists of India, December 15-18, 2009, National Chemical Laboratory, Pune.

4. Seema Patel and *Arun Goyal (2009) Antibiotic sensitivity profile and characterization of two new bacterial isolates of *Leuconostoc sp.* 2nd North East Conference of Medical Microbiologists (NEMICRON 2009), April 25-26 2009, DownTown Hospital, Guwahati.

5. Mayur Agrawal, Seema Patel and *Arun Goyal (2009) Characterization of two high dextran-yielding mutants of *Leuconostoc mesaenteroides* NRRL B640. 2nd North East Conference of Medical Microbiologists (NEMICRON 2009), April 25-26, 09, DownTown Hospital, Guwahati.

6. Vijay Kumar Mishra, Alika Khare and Rakhi Chaturvedi* Assessment of He-Ne laser pre-treatment of seeds on morphological, physiological and biochemical properties of *Brassica juncea* seedlings. In: Ninth DAE-BRNS National Laser Symposium, January 13-16, 2010, Bhabha Atomic Research Centre, Trombay, Mumbai, India in collaboration with India Laser Association, 2010 **(Accepted).**

7. Mishra VK. and Chaturvedi Rakhi*. Callus proliferation from anther cultures of *Camellia sinensis* (L.) O. Kuntze. In: National Seminar on Exploration, Utilization and Strategy Action Plan for Sustainable Management of Plant Resources, February 27-28, 2009. Department of Botany, Guwahati University, Guwahati, Assam, India, Page No. 33, 2009.

8. Singh M. and Chaturvedi Rakhi*. *De novo* shoot and root organogenesis in leaf disc cultures of *Azadirachta indica* A. Juss. In: National Seminar on Bioresources of North East India: Industrial Potential and Intellectual Property Right Issues. January 2-3, 2009. Department of Botany, Nowgong College, Assam, India. Page No. 39, 2009.

9. Chakravorty D., Saravanan P., Thorat A., Sadukhan A., Patra S., Thermostable lipases and their *in silico* Characterization. 50th Annual AMI conference . NCL Pune December 15-18 2009

Book, Chapter, etc.

1. S Mitra, L Rangan (2009) Climate Change: Science and Policies; In: A Christian Response to Ecological Crisis (T.Manuel and M. Koshy eds), CSS publishers 2009 pp 94-99.

2. L Rangan*, A Das, S Aggarwal, V Kesari, GC Sharma (2009) DNAB - A molecular systematic approach for species identification and bioresource protection. Diversity of Plant- A Molecular Approach. (J. S. Britto Ed), 2009, pp. 19-35.

3. Priyanka Srivastava, Mithilesh Singh and Rakhi Chaturvedi*****. 2010. Biotechnological improvement of neem. In: K. Ashwani (Editor) Advances in Plant Biotechnology. I.K. International Publishing House Pvt. Ltd., New Delhi, India (In Press).

4. Chaturvedi Rakhi* and Mishra V.K. 2009. In vitro haploid production – fast forward technique for improved crop production. In: B.S. Bhau (Editor). Biotechnological Tools & Techniques for Plant Biodiversity and Conservation Study. CRC press, New Delhi, India 2009 (In Press).

5. Singh M. and Chaturvedi Rakhi*. 2009. *De novo* shoot and root organogenesis in leaf disc cultures of *Azadirachta indica* A. Juss.. In: S.K. Borthakur (Editor) Bioresources of North East India: Industrial Potential and Intellectual Property Right Issues. Bishan Singh & Mahendrapal Singh, Deharadun, India 2009 (In Press).

10. **CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED: INTERNATIONAL, NATIONAL**

Name of Faculty	Name of Conf./Workshop	Place	Date	International/National
Dr. Arun Goyal	50th Annual Conference of Association of Microbiologists of India	National Chemical Laboratory, Pune	December 15-18, 2009	National
Dr.Aiyagari Ramesh	International Workshop on Nanotechnology and Advanced Functional Materials	National Chemical Laboratory (NCL), Pune, India	9-11 July 2009	International
Dr.Aiyagari Ramesh	International Conference on Advanced Nanomaterials and Nanotechnology	Indian Institute of Technology Guwahati, Guwahati, India	9-11 December 2009	International

Dr.G.K.Saini	International conference on Emerging trends in Biotechnology	BHU, Varanasi	December, 4-6, 2009	International
Dr.K. Pakshirajan	First International Conference on Recycling and Reuse of Materials. ICRM09	Kottayam, Kerala	July 17-19, 2009	International
Dr.K. Pakshirajan	3rd International Congress on Biotechniques for Air Pollution Control	Delft,The Netherlands	September 28-30, 2009	International
L Rangan	International Conference on Advanced Nanomaterials and Nanotechnology ICANN 2009	Guwahati	9-11th Dec 2009	International
R. Swaminathan	54th Annual Meeting of the Biophysical Society	San Francisco, USA	Feb 20-24, 2010	International
R. Swaminathan	International Conference on Physics Biology Interface	Saha institute of Nuclear Physics, Kolkata	Dec 13-16, 2009	International
Dr. Ranjan Tamuli	International Workshop on "Biology of Yeasts and Filamentous Fungi", Indo-U.S. Science and Technology Forum, Centre for Cellular and Molecular Biology (CCMB).	CCMB, Hyderabad.	December 11-14, 2009	International
Dr. Sanjukta Patra	The Eighth Asia Pacific Bioinformatics Conference (APBC2010), Bangalore	Bangalore, India	18-21st January, 2010	International

11. **INVITED LECTURES OF FACULTY: IN INDIA, ABROAD**

Name of Faculty	Name of Lecture	Name of Inst./Org.	Place	Date
L Rangan	Dynamic landscape in Biotechnology Patenting.	DBT-Elsevier Workshop on information and analytical tools for the life science researcher.	Veterinary Science College, AAU, Gauhati	18th March 2010
L Rangan	Plant Biotechnology and IPR issues.	Micro Small & Medium Enterprises, Govt of India, Khanapara.	Gauhati, Assam	12th March 2010.
L Rangan	Intellectual property rights and issues related to microbial biotechnology	Vivekanandha college of engineering for women.	Elayampalayam Namakkal, TN	17th July 2009
Dr. Ranjan Tamuli	Introduction to Phylogenetic Reconstruction using bioinformatics tools.	Assam Agricultural University.	Jorhat 785013, India	12th March 2010
Dr. U. Bora	First Asian Chapter Meeting of ISBER and Asian Network for Research Resource Center (ANRRC)	COEX center	Seoul, Korea	Septmber 22 – 25th 2009
Dr. U. Bora	International Symposium on Bioenergy & Bioresources:	Chungnam National University,	Korea	Sept. 25, 2009

	The present and the future.	Daejong, Korea.		
Dr. U. Bora	Gauhati University	Guwahati, India	Guwahati	26 October 2009
Dr. U. Bora	Institute of Bioresource and Sustainable Development, IBSD Lecture	Imphal, India	Imphal	8th December 2009
Dr. U. Bora	National Seminar on Recent Trends in Phytochemical & Phytopharmaceutical Research and Future Prospects	Gauhati University, Guwahati, India	Guwahati	26-27th March 2010
Dr. U. Bora	International Conference on Biomaterials, Artificial Organs & Tissue Engineering	Cochin, India	Cochin	28th February - 1st March 2010

12. **VISITORS FROM OTHER INSTITUTES/UNIVERSITIES/ORGANISATIONS**

Name	Name of Inst./Univ./Org.	Purpose	Date	Remarks

13. **SHORT-TERM COURSES**

1) Dr.L. Sahoo conducted DBT sponsored short term course on "Application of Molecular Tools for Crop Improvement" 16th to 21st November 2009.

2) Dr. Rakhi Chaturvedi and Dr. Ranjan Tamuli QIP short-term course on "Approaches to the Screening of Bioactive Molecules from Natural Resources", in the Department of Biotechnology, IITG, July 13-17, 2009.

3) QIP short-term course on "Advances in Drug Discovery" July 20-24, 2009 (Coordinators: Dr. V.K. Dubey and Dr. U. Bora)

14. **SEMINARS/WORKSHOPS/CONFERENCES ORGANIZED**

Name of Faculty	Name of Sem./Wor./Con.	Funded By	Date	International/National

15. **INVITED LECTURES**

Name	Name of Inst./Org.	Name of Lecture	Date

16. **PATENT FILED**

1) Mayur Agrawal, Rishikesh Shukla, *Arun Goyal (2009) "The mutant of *Leuconostoc mesenteroides* NRRL B-640 giving higher production of dextran" (Indian Patent Office, Appl No. 5/KOL/2010 dated Jan 02, 2010)

2) Dubey, V.K.*, Patra, S., Shukla, A.K. and Kannan, S. Iridoid glucosides from *Nyctanthes arbortristis* as new class of inhibitor of Trypanothion reductase of leishmania parasite. (306/KOL/2010)

3) Singh, A.N., Shukla, A.K. Jagannadham, M.V. and Dubey, V.K.*, A novel cysteine protease, procerain B, from Calotropis procera (1346/KOL/2009).

17. **AWARDS AND HONOURS**

1) Dr. Arun Goyal: Selected for Rashtriya Gaurav Award and Certificate of Excellence for meritorious services and outstanding performance by India International Friendship Society (IIFS), May 2009.

2) Dr. K. Pakshirajan: Awarded Top Reviewer of Bioresource Technology (a reputed International Journal) for the year 2008, by Elsevier in April 2009.

3) Dr. L. Rangan: Awarded DBT Overseas Associateship Award for the year 2010-2011 in area of Agricultural Sciences.

4) Dr. L. Rangan: Received Third World Academy of Sciences (TWAS) Best Poster Presentation Award during TWAS Regional Young Scientist Conference, "Food, Health and Fuel- Plants for future" held at Selangor, Malaysia 2nd -5th Nov 2009.

5) Pranab Goswami: Felicitated as "Resource person" in the workshop on "Microbial Diversity Database" held in NEHU during 29-30 October 2009 and delivered lecture their as invited speaker on "FUNGAL DEGRADATION OF HYDROCARBONS: A potential Source of Novel Redox Enzymes for biocatalytic and bioelectronics applications".

6) Dr. V. K. Dubey: Selected for "Innovative Young Biotechnologist Award" for 2009 by DBT. Government of India [Award includes Gold medal, Citation, Cash prize Rs. 3.00 Lakhs over three years period and a major project funding].

7) Dr. V.K. Dubey: Invited as Resource person of Bioinformatics, Assam University, Silcher, Jan. 27-28, 2010.

8) Dr. V.K Dubey: Invited Editor of "Journal of Proteins and Proteomics" (Serial publications)

9) Dr. V.K Dubey: Invited Associate Editor: Global Journal of Biochemistry (Simplex Academic Publisher)

18. ANY OTHER (SPECIAL MENTION)

1) Dr. Arun Goyal: Invited as an expert by The Department of Biotechnology, Government of India for a Brainstorming meeting at Guwahati to evolve Science Promotion Schemes for Colleges in North Eastern States of India. (May 2009)

2) Dr. Arun Goyal: Nominated as President, Biotech Research Society India (BRSI), Guwahati Chapter 2009

3) Ms. Vigya Kesari, PhD student under Dr. L. Rangan awarded DST travel fellowship to attend TWAS Regional Young Scientist Conference, “Food, Health and Fuel: Plants for the Future” held in Malaysia from 2-5th Nov 2009.

4) Ms.Vigya Kesari, PhD student under Dr. L. Rangan awarded CSIR-SRF by CSIR, Govt of India for two years starting from April 2009.

5) Prof. R. Swaminathan was an 'Invited Professor' at the University of Strasbourg in the Laboratory of Biophotonics and Pharmacology at the Faculty of Pharmacy in Strasbourg-Illkirch, France between May 15 and July 15, 2009.

6) Mr. Naresh Kasoju won the prestigious **"Bajpai-Saha Award"** for his work on the applications of *Antheraea assama* silk fibroin as a biomaterial for tissue engineering and regenerative medicine at the International Conference on Biomaterials, Artificial Organs & Tissue Engineering organized by Society for Biomaterials and Artificial Organs (India) and Society for Tissue Engineering and Regenerative Medicine (India) at Cochin 28 Feb – Mar 1 2010,.

7) Mr. Shashank Garg, M.T.P student (Guidance with Dr. Utpal Bora and Dr. R. Tamuli), got placement as Lecturer in Lovely Professional University, Punjab.

8) Ms. Sumithra Bapatla, M.T.P student (Guidance with Dr. Utpal Bora and Dr. V.K. Dubey), got placement as Lecturer in Lovely Professional University, Punjab.

9) Dr. Abhishek Sahu, after completing his Ph.D. moved for PDF research to "Instituto Engenharia Biomedica/Biomedical Engineering Institute" (INEB), Porto, Portugal.

10) Ms. Nandini Sarkar, PhD student under Dr. V.K. Dubey awarded IUBMB full travel fellowship to attend 21st IUBMB and 12th FAOBMB International Congress of Biochemistry and Molecular Biology held during 2-7 August 2009 in Shanghai, China.

11) Ms. Nandini Sarkar, PhD student under the guidance of Dr. V.K. Dubey received "Young Scientist Program Award" : 21st IUBMB and 12th FAOBMB International Congress of Biochemistry and Molecular Biology held during 2-7 August 2009 in Shanghai, China.

19. LIST OF FACULTY MEMBERS ALONG WITH PhD, DESIGNATION, AND AREAS OF INTEREST

1) Dr. Arun Goyal
Designation:Professor
Areas of interest: Molecular Biology, Protein Engineering, Structural and Functional Proteomics of Carbohydrate active enzymes and other industrial microbial enzymes.

2) Name: Dr. Aiyagari Ramesh
Designation: Associate Professor
Areas of interest: Nanobiotechnology, Molecular Microbiology

3) Dr. Anil Mukund Limaye
Designation: Assistant Professor
Areas of interest: Hormonal regulation of gene expression, Reproductive Biology and Molecular Endocrinology, Endocrine related cancers

4) Dr. B. Anand
Designation: Assistant Professor
Areas of interest: Structural Biology, Bioinformatics & Computational Biology, RNA Biology, Molecular Evolution

5) Biplab Bose Ph.D (Biochemistry), AIIMS, New Delhi
Designation: Assistant Professor,
Areas of interest: Recombinant antibody, Theoretical Biology

6) Dr. (Ms) Bithiah Grace Jaganathan
Designation: Assistant Professor
Areas of interest: Stem cells in Health and Disease and Genetic Engineering

7) Dr. Debasish Das
Designation: Assistant Professor
Areas of interest: Metabolic engineering, Biochemical engineering, Modelling of fermentation process, Biofuel

8) Dr. (Ms.) Gurvinder Kaur Saini
Designation: Assistant Professor
Areas of interest: Fungal Biotechnology, Biological Control, DNA fingerprinting and Transformation studies, Studies on extracellular enzymes and toxic metabolite production, Development of a potent biopesticide

9) Dr. K. Pakshirajan
Designation: Associate Professor
Areas of interest: (a) Removal and recovery of heavy metals from wastewaters by biosorption
(b) biodegradation of hazardous pollutants, and (c) Biotechnological products and process engineering

10) Dr. (Ms.) Latha Rangan
Designation: Associate Professor
Areas of interest: Molecular systematics, Biofuel, IPR

11) Dr. Lingaraj Sahoo
Designation: Associate Professor
Areas of interest: Genetic engineering and functional genomics of plants

12) Prof. Pranab Goswami
Designation: Professor
Area: Biosensors, Biofuelcell, and Biocatalysis

13) Prof. R. Swaminathan
Designation: Professor

Area: Spectroscopic and computational approaches to investigate Intrinsically Disordered Proteins, Protein Aggregation, their mechanisms and approaches to inhibit aggregation, Biochemical consequences of Macromolecular Crowding inside living cells

14) Dr. (Ms.) Rakhi Chaturvedi
Designation: Associate Professor
Areas of interest: Plant Cell, Tissue & Organ Culture, Protoplast Isolation and Regeneration, Isolation, Purification and Characterization of Plant Secondary Metabolites

15) Dr. Ranjan Tamuli
Designation: Assistant Professor
Areas of interest: Calcium signaling, Identification of novel cancer relevant genes

16) Dr. Sanjukta Patra
Designation: Assistant Professor
Areas of interest: Enzymes - applications in Pharma and food sector

17) Dr. Siddhartha Sankar Ghosh
Designation: Associate Professor
Research Interests: Gene Therapy, Expression Cloning (Mammalian Systems), Bionanotechnology

18) Dr. Utpal Bora
Designation: Associate Professor
Research Interests: Biomaterials, Nanotechnology, Drug Delivery and Tissue Engineering

19) Dr. V. Venkata Dasu
Designation: Associate Professor
Research Interests: Bioprocess Development (upstream to downstream), Metabolic Engineering, Bioenergy

20) Dr. Vikash Kumar Dubey
Designation: Associate Professor
Research Interests: Antileishmanial drug discovery; Protein folding and aggregation; Proteases; Environmental proteomics

21) Dr. Vishal Trivedi
Designation: Assistant Professor
Research Interests: Intracellular Signaling in *Plasmodium falciparum*.

22) Dr. Sk. Z. Ahammad
Designation: Assistant Professor