K.S. RANGASAMY COLLEGE OF TECHNOLOGY

(An Autonomous institution affiliated to Anna University, Chennai)

(Accredited by NBA, Accredited by NAAC – 'A' Grade and Approved by AICTE)

K.S.R. Kalvi Nagar, Tiruchengode – 637 215

DEPARTMENT OF BIOTECHNOLOGY

ANNUAL REPORT FOR THE ACADEMIC YEAR 2014-15



Submitted by

Dr. P. Ponmurugan

Professor and Head, Department of Biotechnology

K.S.Rangasamy College of Technology, Tiruchengode.

June 2015

"If you really want to be successful you will find a way, if not you will find an excuse", with this thoughtful quote I humbly present the annual report of our department for the academic year 2014-2015 by highlighting all the academic and non academic accomplishments by the staff members and students.

1. Department Profile

The Department of Biotechnology was started in the year 2002, with the primary aim of providing high quality education in Biotechnology from the formative years of Bachelor degree to Ph.D., program to rural people of Tamil Nadu. We are very happy to submit the annual report for the academic year 2014-15 in which the activities of staff members and students of Biotechnology Department are enormous and noteworthy.

The Vision and Mission of the department of Biotechnology are

Vision: To produce competent Scientists, Technologists, Entrepreneurs and Researchers in Biotechnology through quality education.

Mission:

- Excel in Biotechnology education and the research through continual process improvement
- Be recognized as a place of excellence in teaching and learning
- Facilitate students to function as competent professional Biotechnologists

Programme Educational Objectives of the programme B.Tech. Biotechnology are

- I. Graduates are professionally competent in Biotechnology to solve problems in environmental, food, biochemical and biomedical engineering and technology.
- II. Graduates demonstrate proficiency in theory and practice of biotechniques through lifelong learning.
- III. Graduates perform as an individual and / or member of a team with professional and ethical behaviour.

Programme Outcome (POs) relevant to the B.Tech., Biotechnology programme are listed below:

 a) Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialisation for the solution of complex engineering problems in Biotechnology.

- b) Identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural science, and engineering sciences.
- c) Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for public health and safety, and cultural, societal, and environmental considerations.
- d) Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- e) Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities, with an understanding of the limitations.
- f) Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues and the consequent responsibilities relevant to the professional engineering and technology practice.
- g) Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- h) Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering and technology practice.
- Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- j) Communicate effectively on complex engineering activities with the engineering community and with the society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- k) Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- 1) Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

1.1. Ranking

"Team work divides the task but multiplies the success"

According to survey conducted by "Biospectrum Asia Magazine", Bangalore (Cyber media magazine) our Department ranked 4th position out of 280 private institutions offering Biotechnology course in India, with respect to teaching-learning process, quality in education, placement, infrastructure and academic achievements. ["Biospectrum Asia Magazine", Bangalore (Volume 11, Issue No. 5, May 2015)].

1.2. Courses offered

The department was established in 2002 with a student intake of 30 numbers. Later on due to the rapid developments and achievements of the department in academic activities the no. of intake was increased to 60 in 2007 by Anna University with the approval of AICTE. Now the department offers the following courses.

UG : B.Tech. Biotechnology with an intake of 60 students per year

PG : M.Tech. Biotechnology with an intake of 18 students per year

Research : Ph.D. Biotechnology with intake of scholars as per the norms of

corresponding university and guides

1.3. Lab facilities

Highly sophisticated lab with all the necessary chemicals and equipment is highly mandatory for any institution to carry out trending researches in life sciences. Our department is constructed with excellent infrastructure and state of art laboratories to meet the needs of students and researchers to excel in their academic and research process. At present the department holds 13 laboratories with well advanced facilities and high-end instruments along with animal house facility for animal studies.

The lists of laboratories are as follows,

- Biochemistry lab
- Bioinformatics and Molecular Modelling lab
- Bioprocess Engineering lab
- Cancer Biotechnology lab

- Chemical and Reaction Engineering lab
- Cyanobacteria lab
- Food Biotechnology lab
- Immunology lab
- Instrumentation techniques lab
- Microbiology lab
- Molecular Biology and Genetic Engineering lab
- Plant tissue culture lab
- Research lab
- Animal house facility (Approval awaited)

1.4. Annual budget

The management is magnanimous for allocating sufficient fund to the department towards the procurement of equipment, glassware and chemicals covering recurring and non-recurring budget head. This year a tune of Rs 16.00 lakh was sanctioned to the department.

S.No.	Purpose	Amount in Rs.
1.	Recurring	6,46,081
2.	Non-recurring	6,62,247
3.	R & D	6,43,327
4.	Total	19,51,655

1.5. Equipment purchased

As an evidence of continuous improvement and growth of the department, new equipment are purchased on each academic year for favoring the student community. Our management is benevolent in supporting our department for purchasing new equipment.

The details of equipment purchased on previous academic year are as follows,

S.No	Name of Equipment	Equipment Cost (Rs.)
1.	Micro centrifuge	27,000
	Make: Tarson	
	Model: MC02	
2.	Zoom stereomicroscope	84,000
	Make: Labomed	
3.	Gel documentation system, 1D analysis	2,59,000
	Make: Biotech	
4.	Rotary evaporator (from UGC fund)	1,39,440
	Make: Superfit	
5.	Semi auto analyser (from UGC fund)	1,01,210
	(Biochemical analyser)	
	Make: Merck	
6.	Blood cell counter (from UGC fund)	51,597
	Make : Superfit	
	Total	6,62,247

1.6. Staff members

"The art of teaching is the art of assisting discovery"

Such a success artists were serving for our department to bring out the best discoverers and inventors. United they uphold a coveted tradition of commitment and work culture. A total number of 18 faculty members are working in the department with various specializations as per the AICTE norms to scatter the knowledge in Biotechnology to the student communities. Among the teaching staff members, six of them are pursuing Ph.D., program. In addition, there are 12 supporting staff members working in different laboratory which also includes three programmers.

S. No	Name and designation of Faculty members	Qualification
1.	Dr. P. Ponmurugan, Professor and Head	M.Sc., M.Phil., M.Tech., Ph.D.,
2.	Dr. Puniethaa Prabhu, Associate Professor	MCA., M.Phil., Ph.D.,
3.	Dr. V. Balakrishnan, Associate Professor	M.Sc., M.Phil., Ph.D.,
4.	Dr. J. Philip Robinson, Associate Professor	M.Sc., M.Phil., Ph.D.,
5.	Dr. B. Bagyalakshmi, Associate Professor	M.Sc., M.Phil., Ph.D.,
6.	Ms. B. Kalpana, Assistant Professor	M.Sc., M.Tech., (Ph.D.,)
7.	Dr. S. Anita, Associate Professor	M.Sc., M.Phil., Ph.D.,
8.	Dr. M. Ramya, Associate Professor	M.Sc., M.Phil., Ph.D.,

9.	Dr. K. Poongothai, Associate Professor	M.Sc., M.Phil., Ph.D.,
10.	Mr. R. Subbaiya, Assistant Professor	M.Sc., M.Phil., M.Tech., (Ph.D.,)
11.	Mr. I. Muthiah, Assistant Professor	B.Tech., M.Tech., (Ph.D.,)
12.	Mr. S. Venkatesh Prabhu, Associate Professor	B.Tech., M.Tech., (Ph.D.,)
13.	Mr. R. Arulvel, Assistant Professor	B.Tech., M.Tech., MBA.,
14.	Dr. M. Balasubramaniam, Assistant Professor	M.Sc., Ph.D.,
15.	Ms. S. Poornima, Assistant Professor	B.Tech., M.Tech., (Ph.D.,)
16.	Ms. M. Nithya, Assistant Professor	M.Sc., M.Phil.,
17.	Mr. M. Karthikeyan, Assistant Professor	B.Tech., M.Tech.,
18.	Mr. G. Ayyappadasan, Assistant Professor	B.Tech., M.Tech., (Ph.D.,)

2. Performance report of the department

2.1. Neomutants – Association activity

Contemporary research in the area of Biotechnology has witnessed an enormous growth in the past few decades in order to keep abreast with the latest developments in the field of Biotechnology, an extremely high level of understanding and awareness is created for the student communities by the Department. Further the department also encourages scientist, academicians, administrators, policy makers and entrepreneurs to enhance the vision of budding biotechnologists. On focusing on these targets the department has created an association which runs for the students and by the students for organizing special guest lecture programs and other technical functions.

2.2. Guest Lectures organized by the department through NeoMutants Association "Knowledge increases by sharing not by saving"

Sharing knowledge has helped mankind survive and evolve into the intelligent and productive species he is today. In the animal kingdom and indeed in business, knowledge sharing can make the difference between survival and extinction. More than 40 guest lecture programs have been organized by the department association and eleven programs were organized by Neomutants in last academic year.

A brief report on the activities of Neomutant Association

Our department has been conducting various activities to promote the knowledge of the bidding biotechnologists. One among the activities includes conducting guest lectures on various topics by inviting the Industrial persons. The areas covered by the resource person are mentioned below.

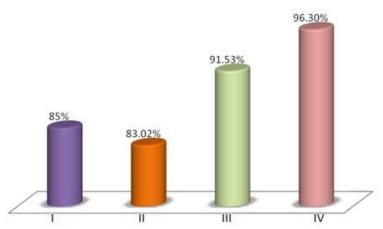
S.No	Date	Resource person	Topic of Lecture
1.	04.07.2014	Dr. V. Santhanaraj, President IEEE-EMBS, Madras Section	Research design
2.	11.07.2014	Dr. N. Sakthivel, Professor Department of Biotechnology, Pondicherry University	Importance of Research and Publication
3.	18.07.2014	Dr. V. Sanjeeva Nayaka, Scientist, Lichenology Laboratory, NBRI,Lucknow	Importance of Paper Publication
4.	27.08.2014	Dr. K. Vijay Kumar , Post Doctoral Research Associate, The University of Manchester, U.K	Type IV Pilus :Structural and Mechanistic Insight
5.	12.09.2014	Mr. J. Shanmuganathan, Associate Professor, Department of Management studies, K.S.R.College of Technology, Triuchengode	Education leads entrepreneurship livelihood and common sense.
6.	22.09.2014	Dr. S. Shankaranarayanan., M.D.S Director, Mother Cell regeneration centre, Trichy	Stem cell therapy and its clinical implication
7.	30.09.2014	Mr. M. Ganesh Karthick, Global Activist, Tirupur	Sustainability connecting the best ways for the solution to future generation
8.	21.01.2015	Dr. S. Umesha, Professor Department of Biotechnology, University of Mysore, Mysore	New Frontiers in Marine Biotechnology
9.	22.01.2015	Dr. S. Vankatesan, Professor, Department of Petrochemical Technology, Anna University, Trichy	Biofuel production from microalgae and petroleum degradation by marine organisms
10.	24.02.2015	Dr. K.B. Jayanthi, Professor, Department of Electronics and Communication Engineering, K.S.R.College of Technology, Triuchengode	Biomedical Imaging
11.	13.03.2015	Dr. S. Selvam, Professor, Department of Economics, PVKN Government College, Chittoor, Andhra Pradesh	Anticorruption Act.

2.3 Result analysis

"The result you obtain is directly proportion to the efforts you put in"

With a team of highly committed and dedicated faculty members it is never going to be tough task to make students excel in the field of biotechnology. As a measure of our hard work students of biotechnology produce good results with high grades.

B.Tech., Biotechnology



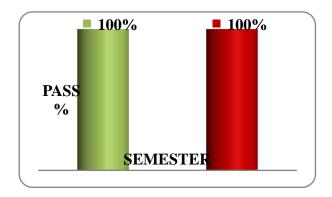
Autonomous end semester examination results for the odd semester of the academic year 2014-2015 have been published. Based on the results the following analysis was made to examine the academic performance of the students. The analysis revealed that the seventh semester results belong to the batch of 2011-2015 showed the pass percentage of 96.3%. The students of fifth semester of batch 2012-2016 produced the pass percentage of 83.02%, third semester of batch 2013-2017 showed the result of 83.02% and first semester of batch 2014-2018 secured the pass percentage of 85%.

With a team of experienced professionals, our department is smoothly moving in its own way to make the students excel in the field of biotechnology. There are many subjects in which 100% percent result has been achieved in the autonomous examination held during Nov/Dec 2014. Both B.Tech., and M.Tech., students has produced 100% result. The details of the subjects in which 100% results obtained were furnished.

The overall result of Department of Biotechnology is 83.2%. The analysis showed that the results were improved progressively as the students are moving to the higher semester.

M.Tech., Biotechnology

M.Tech. Biotechnology students of III and I semester showed cent percent results.



The overall pass percentage of M.Tech. Biotechnology is 100%. It shows that the academic performance of the M.Tech students is very good.

100% Result Details in B.Tech., Biotechnology Programme

S.No	Sub. Code	Subject Name	Staff Name	Semester
1.	10BTE21	Immunotechnology	Dr. M. Balasubramanian	VII
2.	10 BT 511	Food Biotechnology	Dr. S. Anita	V
3.	10BT711	Immunology	Dr. V. Balakrishnan	VII
4.	10BT712	Biopharmaceutical Technology	Dr. K. Poongothai & Ms. M. Nithya	VII
5.	10BT713	Nanobiotechnology	Mr. R. Arulvel	VII
6.	10BT714	Downstream Processing	Mr. S. Venkatesa Prabhu & Ms. S. Poornima	VII
7.	10BTE21	Immunotechnology	Dr. M. Balasubramanian	VII
8.	10BTE24	Stem Cell Technology	Mr. R. Subbaiya	
9.	10 BT 511	Food Biotechnology	Dr. S. Anita	V
10.	10BT512	Genetic Engineering	Ms. B. Kalpana	V
11.	10BT515	Enzyme Engineering and Technology	Mr. M. Karthikeyan	V
12.	10BT516	Bioprocess Engineering and Technology	Dr. P. Ponmurugan	V
13.	10BT311	Cellbiology and Genetics	Dr. J. Philip Robinson	III
14.	14BT101	Biology for Engineers	Dr. J. Philip Robinson	I

100% Result Details in M.Tech., Biotechnology

S.No.	Sub. Code	Subject Name	Staff Name	Semester
1.	10 PBT 301	Quality Control in Biotechnology	Dr. S. Anita	III
2.	10 PBT 302	IPR and Biosafety	Dr. Puniethaa Prabhu & Mr. R. Arulvel	III
3.	10 PBT E34	Clinical Research and Data Management	Mr. I. Muthiah & Dr. K. Poongothai	III
4.	40 PBT101	Mathematics for Biotechnologists	Dr. R. Jeyasudha & Mr. G. Mohan	I
5.	40 PBT102	Advanced Genetic Engineering	Ms. B. Kalpana & M r. R. Subbaiya	I
6.	40 PBT103	Biochemical Engineering	Mr. M. Karthikeyan	I
7.	40 PBT104	Quality Control in Biotechnology	Dr. B. Bagyalakshmi	I
8.	40 PBT105	Advanced Chemical Engineering	Mr. S. Venkatesa Prabhu	I
9.	40 PBT106	Industrial Biopharmaceutical Technology	Dr. V. Balakrishnan & Dr. J. Philip Robinson	I

3. Performance of Faculty members

"Happiness is not in the mere possession of money; it lies in the joy of achievement, in the thrill of creative effort." The Faculty of Biotechnology has proved themselves in the global scientific community by publishing various research papers, patents, taking up research projects and etc.,

3.1 Ongoing project details

Among KSR group of institutions, our department holds a special credit and fame by holding a high number of R&D projects funded by various, government and non-government funding agencies. The list of ongoing projects is given below:

S. No	Principal investigators	Amount in lakh(s)	Funding agency	Reference Number	Title of the project
1	Dr. P. Ponmurugan Mr. R. Subbaiya	8.60	AICTE, New Delhi	(20/AICTE/RIF D/RPS(POLICY -III)35/2012- 2013 dated March 13,2013)	Mass production of antibiotics from Streptomyces spp. for biomedical applications through bioprocess engineering
2	Dr. S. Anita	2.15	UGC, New Delhi	F.No:4.4/2014- 15 (MRP- SEM/UGC- SERC) Dated 17.11.2014	Formulation of probiotic health drink using different traditional herbs and its evaluation using animal models
3	Mr. G. Ayyappadasan	3.50	UGC, New Delhi	F.No:4.4/2014- 15 (MRP- SEM/UGC- SERC) Dated 17.11.2014	Pharmacological evaluation of anticancerous compounds obtained from lichens using animal methods

3.2 Proposals submitted for funding

Research proposals are submitted by our faculty members to various funding agencies regularly, to carry out intensified research works in various biological applications. Apart from this our vibrant faculty members also do not fail to submit proposals for funding agencies for financial assistance to conduct workshops/conferences/FDPs etc., The list of proposals submitted for R&D projects for the previous academic year are as follows.

S.No	Principal investigator	Title of Project	Sponsoring agency	Fund expected in Rs.	Status of the project
1.	Dr. P. Ponmurugan	Nanobiotechnological approaches	NTRF,	31,00,000	Sanctioned
		for the management of stem and root	Kolkata.		
		diseases of tea plants using			
		indigenous biocontrol agents			
2.	Dr. P. Ponmurugan	Evaluation of antibiotics producing	UGC,	16.06	Sanctioned
		Streptomyces spp. against rhizome	New Delhi		
		rot disease in turmeric			
3.	Dr. K. Manju	Development of organic amended	DST	34,00,000	Sanctioned
	Karunambika	liquid and solid bioformulation for	Women		

		effective management pf <i>Phomopsis</i> canker disease in tea plants	Scientist scheme, New Delhi		
4.	Dr. B. Nagarathinam	Prediction of binding sites of certain ligands for class I and class II type human Olfactory Receptors (ORs) subclusters and pharmacological study for proposed drugs in mouse cell lines, preclinical trials for inhalation therapy.	DST Women Scientist scheme, New Delhi	34,00,000	Sanctioned
5.	Dr. B. Bagyalakshmi	Exploration of potassium solubilizing bacteria for increased yield and quality in turmeric <i>Curcuma longa</i> L.)	UGC, New Delhi	19,47,166	Results awaited
6.	Dr. K. Poongothai	Studies on the ameliorative potential of folklove medicinal plants against experimental diabetic rats	UGC, New Delhi	19,97,420	Results awaited
7.	Mr. G. Ayyappadasan Dr. P. Ponmurugan	Bioinformatics approach for inhibition of toxic action of russels viper venom PLA ₂ by lichen compounds validated through albino wistar rat model	ICMR, New Delhi	26,49,900	Concept proposal accepted
8.	Dr. P. Ponmurugan Dr. B.G. Geetha Mr. I. Muthiah	Development of simple with rapid protocol for identification of lichens obtained from Western Ghats using Image Processing Techniques in cloud computing	SERB, New Delhi	29,72,200	Results awaited
9.	Dr. P. Ponmurugan Dr. Puniethaa Prabhu Dr. V. Balakrishnan	Application of image processing techniques for identification of Lichen diversity and conservation in Eastern Ghats of southern India	Ministry of Environment and Forest, New Delhi.	26,32,080	Results awaited
10.	Dr. P. Ponmurugan Dr. G. Vennila & Ms. S. Poornima	Sustainable management of water resources, water conservation measures and waste water treatment	DST, New Delhi	7,00,000	Concept proposal accepted
11.	Mr. G. Ayyappadasan	Demonstration and training on restoration technology for socio economic upliftment of young minds as Eco Engineers from rural areas of Tamil Nadu	NCSTC, Department of Science and Technology, New Delhi	9,20,000	Concept proposal accepted

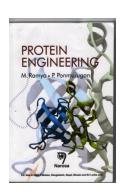
3.4 Faculty members visited abroad

Our faculty members had visited several foreign countries including Japan, Nepal and various other countries to share their knowledge with various scientists. A list of few visits is:

S.No	Name of all the authors	Title of the paper	Venue	Title of the conference	Date
1.	Dr. P. Ponmurugan	Mass production of Streptomyces griseus for the	Tokyo, Japan	International Conference	17-19 Dec.
		biological control of		on Life	2014.
		rhizome rot disease in		Science and	
		turmeric plants through		Biological	
	D. I. DI. II.	bioprocess engineering	D1 ' 1	Engineering	01.02
2.	Dr. J. Philip	In vito culture and	Bhairahawa,	International	01–03
	Robinson	reintroduction of <i>Emilia</i> zeylanica C. B. clarke a	Nepal	Conference on Advances	Nov. 2014
		valuable medicinal herb		in Plant	2014
		from Palani hills.		Science	
3.	Dr. V. Balakrishnan	In vitro propagation of	Bhairahawa,	International	01–03
		Cassia alata L. and its	Nepal	Conference	Nov.
		secondary metabolites.		on Advances	2014
				in Plant	
				Science	
4.	Mr. G.	Phytochemical investigation	Bhairahawa,	International	01–03
	Ayyappadasan	of lichen Rocella montagnei	Nepal	Conference	Nov.
		obtained from southern		on Advances	2014
		India for diabetic control in		in Plant	
		rat model		Science	

3.5 Book published by the faculty members

In addition to the publication of research articles in journals, the faculty members of biotechnology department are interested in publishing books also. An ex ample for one such publication is given here. Dr. M. Ramya and Dr. P. Ponmurugan have published a book entitled "Protein Engineering" through Alpha Science International Ltd., publication, Oxford UK with ISBN number 978-1-84265-945-8. The book furnishes all the details for the basic understanding of the proteins, their nature, structure and functional mechanisms.



3.6 List of papers published in various journals

The faculty members and the students of the department of biotechnology are good researchers' as well good publishers of the research work. Here are the publications made by faculty members as well students of various class of B.Tech., and M.Tech.,

S.No	Name of all the Authors	Title of the Paper	Name of the Journal	Volume No., Page No. and Year	National / Internatio nal	Impact Factor
1.	J.J Peter, C. Chellaram. and P. Ponmurugan,	Novel strategy for enhanced expression and purification of recombinant Bacteriorhodopsin in <i>Escherichia coli</i> .	Research Journal of Biotechnolo gy	10 (5): 55- 61. 2015.	Inter national	0.262
2.	B.Bagyalakshmi P. Ponmurugan and A. Balamurugan	Studies on nutrient solubilization, biocontrol and plant growth promoting traits of <i>Burkholderia</i> cepacia from tea soil	Journal of Plantation Crops	Vol.42(3),2 014 (Accepted)	National	Nil
3.	R Subbaiya, and M Masilamani Selvam	Synthesis and Characterization of Copper Nanoparticles using Eupatorium glandulosum Extract and Their Antimicrobial, Antioxidant Activities	Research Journal of Pharmaceuti cal, Biological and Chemical Sciences	Vol.6, 1117-1127, 2015	Inter national	0.35
4.	R Subbaiya, and M Masilamani Selvam	Green Synthesis of Copper Nanoparticles from <i>Hibicus</i> Rosasinensis and their antimicrobial, antioxidant activities	Research Journal of Pharmaceuti cal, Biological and Chemical Sciences	Vol.6, 1183-1190, 2015	Inter national	0.35
5.	J. Philip Robinson, K. Nithya, R. Ramya, B. Karthikbalan and K. Kripa	Effect of Vesicular Arbuscular Mycorrhiza Glomus faciculatum on the growth and physiological response in <i>Sesamum indiculm</i> L.	International Letters of Natural Sciences	Vol.18:47- 62, 2014	Inter national	-

6.	V.Balamurugan, V.Balakrishnan, J. Philip Robinson and M. Ramakrishnan	Anticancer and apoptosis-inducing effects of Moringa concanensis using hepG2 cell lines	Bangladesh Journal of Pharmacolog y	Vol.9, 604-09, 2014	Inter national	0.514
7.	Sruthi Prema Sunil, J. Philip Robinson, S. S. KarthickBalan, M. Anandhaprabha karan and V. Balakrishnan	In vitro regeneration and induction of multiple shooting in Cicer arietinum L. using cotyledonary nodal explants	African Journal of Biotechnolo gy	Vol.13- 2014	Inter national	0.57
8.	R.Arulvel, Y.Geetharani and E.Selvarajan	Studies On Kinetic Parameters and Biochemical Characteristics Of Polyphenol Oxidase Purified From Jackfruit (Artocarpus Heterophyllus) Waste	International Journal of Pharmacy and Pharmaceuti cal Sciences	Vol 6, 473-478 2014	Inter national	1.59
9.	K. Syed Zameer Ahmed, K. Poongothai, P. Ponmurugan, B. Senthil kumar	Ameliorative potential of <i>Solanum trilobatum</i> on oxidative stress in alloxan induced diabetic rats.	Pakistan Journal of Pharmaceuti cal Sciences	Vol.29	Inter national	0.95
10.	Balamurugan A. Bagyalakshmi,B Nepoleon,P., Kuberan,T,Mare eswaran,J., Jayanthi,R and T.Princy	Exploitation of Pseudomonas spp. for disease control and productivity in tea	International Journal of Multidiscipli nary Research and Developmen t	Vol.2(2), 227- 235,2015	Inter national	-

3.7 List of papers published by faculties in various conferences/ seminars

The faculty members of the department of biotechnology had participated and presented their research work in various national/ international conferences the list of which is provided below.

S.No	Name of the	Title of the Paper	Title of the	Venue	Date	National/
	Faculty		Conference			International
1.	Mr. R. Subbaiya	Synthesis and Characterization of Silver nanoparticles from Rhodococcus-2891 and its anti cancerous activity against Lung Cancer Cell Line	International Conference on Science Engineering and Management Research (ICSEMR 2014)	Vel Tech Multi Tech Dr.Rangarajan Dr.Sakunthala Engineering College, Chennai.	27-29, Nov. 2014	International
2.	Dr. S Anita	Formulation and evaluation of ready to serve herbal cold tea using Lactic acid bacteria	Nutrizione - 15	SRM University, Chennai.	26 -27 Mar. 2015	National
3.	Ms. M. Nithya	Comparative Studies On Biosorption Effiency Using Different Colored Bird Feathers	DNAX15-2015	Kongu Engineering college	29 th Mar. 2015	International
		Biostimulant properties of keratin obtained from spider web		PSG College of Technology, Coimbatore		National
		Aqueous two phase extraction of xylanase produced from mixed lignocelluloses waste by Streptomyces		Karpagam University, Coimbatore.		National
4.	Ms. S. Poornima	Xylanase production by Streptomyces geysiriensis using lignocellulosic wastes for paper pulp bleaching	International conference on Advances in Biotechnology, Civil and Mechanical Sciences		13-14, Mar. 2015	International
		Participation	National conference on challenges and future prospects of applied research in life sciences	Bharathidasan University, Trichy.	6 th , Feb. 2015	National

5.	Mr. G. Ayyappadasan	Activation and stabilization of enzymes entrapped into biosurfactants obtained from actinomycetes	National conference on Impacts of Petrochemicals in energy improvement	Ramanathan College of Engineering, Tirupur.	12, Feb. 2015	National
6.	Mr. R. Arulvel	In Vitro antilithiasis activity of Acalypha Indica Linn.	ICABCMS-15	Selvam College of Technology, Namakkal.	13-14, Mar. 2015	International
7.	Dr. K.	Evaluation of antidiabetic activity of <i>Leucus aspera</i> leaf on alloxan induced experimental diabetes	Biotechnological approach towards environmental sustainability and conservation	Bharat University, Chennai.	19 th Mar. 2015	National
	Poongothai	Larvicidal activity of terrestrial plants and mangrove plants – a comparative study and bioformulation of mosquito repellent mask (peel off)	Biotechnological approach towards environmental sustainability and conservation	Bharat University, Chennai.	19 th Mar. 2015	National
		Assessment of antidiabetic activity of <i>Acallipa</i> indica leaf on experimental diabetes mellitus.	DNAXIS 15	Adhiyaman Engineering College, Hosur.	23 rd Jan. 2015	National

3.8. List of Ph.D., degrees awarded during the academic year 2014-15

Three of our faculty members are having guideship in various universities to guide Ph.D., scholars. Every year certain number of scholars are registering and completing their Ph.D., under the guidance of the faculty members of our department. The list of scholars those who had completed their Ph.D., in the academic year 2014-15 are given here.

S.No	Name of the Ph.D scholar	Name of the research guide	Name of the university	Title of the thesis
1.	K. Manju	Dr. P.	Anna	Evaluation of <i>Pseudomonas spp</i> . For
	Karunambika	Ponmurugan	University,	plant growth promoting traits and
		_	Chennai	biological control of red root rot
				disease in tea plants

2.	Nagraja Suryadeva	Dr. P.	Anna	Isolation and molecular
		Ponmurugan	University,	characterization of multi-resistant
			Chennai	Pseudomonas fluorescens from
				turmeric fields if Andhra Pradesh
3.	B.Gangathara	Dr. P.	Bharathiar	The Pho PQ DNA binding protein as a
	Prabhu	Ponmurugan	University,	potent transcription regulator in
			Coimbatore	Salmonella
4.	V. Balamurugan	Dr. V.	Bharathiar	Pytochemical and pharmacological
		Balakrishnan	University,	studies of Moringa concanensis
			Coimbatore	against cancer
5.	V.Kanimozhi	Dr. P.	Bharathiar	Isolation characterization and field
		Ponmurugan	University,	evaluation of indigenous <i>Pseudomonas</i>
			Coimbatore	fluorescens for biocontrol activity
				against <i>Phomopsis</i> canker disease in
				tea

3.9 Topics discussed in Research Forum

In addition to the lectures conducted by the neomutant association to enhance the knowledge of the students, our department is also organizing a thought provoking session namely research forum on every fortnight interval. In this forum various research topics will be discussed by the faculty members. Those topics include:

S.No	Date	Name of faculty	Research topic
1	03-7-2014	Dr. P. Ponmurugan	Exploration of Biofertilizers in tea plantation.
2	24-7-2014	Mr. G. Ayyappadasan	Survey and distribution of lichens on Yercaud
			hills.
3	31-7-2014	Mr. M. Karthikeyan	Biomedical application of lichens
4	14-8-2014	Dr. V. Balakrishnan	Heavy metal stress on plants.
5	28-8-2014	Mr. I. Muthiah	Significance of beta carotene in the regulation of
			PD -1 during the suppression of malignant plural
			mesothalimia.
6	18-9-2014	Dr. Puniethaa Prabhu	2D & 3D –QSAR of β-lactam lsatin triazole
			derivatives against "trichomonas vaginalis"
			activities.
7	18-12-2014	Dr. S. Anita	Emerging trends in probiotics research.
			Modeling of breakthrough curves in fixed bed
		Ms. S. Poornima	adsorption.
8	8-1-2015	Mr. S. Venkatesh	Genetic algorithm based Response Surface
		Prabhu	Optimization of zinc coaching from sphalerlite
			ore using Leptospirillum feriphillum & its
			kinetics

9	12-2-2015	Dr. M.	Purification of TCW peroxidise from
		Balasubramanian	Cocosnucifera L: Biotransformation of
		Ms. M. Nithya	genotoxic into non-genotoxic compound.
			Studies on lina-cool extracted from <i>Cortandurm</i>
			salium menthe kamicearmulanya koneig111 for
			the antifungal & insecticidal activity.
10	19-2-2015	Dr. B. Bagyalakshmi	Impacts on environment due to Coal Bed
			Methane (CBM) extraction in the delta region of
			Tamil Nadu.
11	26-2-2015	Dr. K. Poongothai	Evaluation of antidiabetic of folk medicinal
			plant against experimental diabetes in rats.
12	5-3-2015	Mr. R. Subbaiya	An investigation on morphological
		_	characterization of actinomycetes isolated from
			marine sediments.

3.10 List of conferences organized by our department faculty members

Our department faculty members are not only good teachers and researchers, they are also potential organizers. Each and every countable number of workshops/ seminars/ conferences/ lectures will be conducted by our department faculties. The conferences organized by the faculty members during the academic year 2014-15 are given here.

	Name of the Conferences	Sponsors (with funds	Date of the
S. No		received)	Conferences
1.	National Seminar on Biodiversity	DST – SERB,	19- 20 th July,
	Conservation – Status, Future and Way	New Delhi.	2014
	Forward"	(Rs.50,000/-)	
2.	National Conference on Impact of Research	DBT, New Delhi.	23- 24 th
	and Development in Biotechnology for	(Rs.50,000/-)	December, 2014
	Sustainable Textile Production		
3.	Popular Lecture Series Programme in	DBT, New Delhi.	21- 23 rd
	Biotechnology Sponsored By Department	(Rs.1,26,840/-)	January, 2015
	Of Biotechnology, New Delhi		-
4.	National Conference on "Role of	DBT, New Delhi.	03- 04 th
	Biotechnology Tools and Techniques in	(Rs.50,000/-)	February, 2015
	Wastewater Management		,

3.11 IEEE-EMBS

The department of biotechnology is involved in various important activities. One such event is the involvement in the IEEE-EMBS student chapter and conducting various conferences

under IEEE-EMBS. The list of events organized includes the following. The collaborative event was also organized.

S.No	Name of the Event	Sponsors	Date of the event
1.	BIOELECTRONICS 2K15	IEEE-EMBS student's chapter,	23 rd March, 2015
	(Students Technical Quest)- Project	Madras (fund @ Rs. 18,000/-)	
	Exhibition, Technical Quiz and		
	Project Design Contest		
	IEEE-EMBS	Department of Biotechnology	25 th March, 2015
	Members meet	(fund @ Rs. 13,500/-)	

4. Performance of the students

4.1 Class toppers in Biotechnology

The performance of the students will speak the success of good teachers. The following students are the best performers in academic with the passion towards art of learning. The toppers in all the classes of biotechnology are given here.

Rank	Name	CGPA			
	IV B.Tech., Biotechnology				
1.	Deepak Kumar, P.	8.88			
2.	Judith, N.	8.66			
3.	Anu Priya, B.	8.47			
	III B.Tech., Biotechnology				
1.	Venkatraman, V.	9.14			
2.	Priyanga, R.	8.93			
3.	Lavanya, K.	8.88			
	II B.Tech., Biotechnology				
1.	Sandhya, S.M.	9.19			
2.	Uthira, M.	9.12			
3.	Vishnu Priyan, V.	8.89			
	II M.Tech., Biotechnology				
1.	Divya, P.	9.11			
2.	Nandakumar, A.	8.55			
3.	Rajani Sowparnika, J.	8.40			
	I M.Tech., Biotechnology				
1.	Mangayarkarasi, G.	9.00			
2.	Kalaivani, K.	8.77			
3.	Rubavathi, S.	8.62			

4.2 Number of students participated in various technical events outside the college

The best performers in academic indicate the success of good teacher. The participation and award winning students in various events held in out of the college symbolizes the best guidance provided by the researchers.

Program	Number of studen confe		Symposium
	National	International	National
UG	117	6	49
PG	8	3	4

4.3 Paper/poster presented by students in various conferences/ seminars

The students of our department actively participate in various technical and non technical events conducted in and out of our college. Here is the list containing the names of few pupil those who had participated and won prizes in other institutions.

S.No	Name of the Students(s)	Course, Branch & Year	Event	Organized By	Prize Won
1.			Paper presentation		First
	Sethupathi, S.	B.Tech. III year	Poster presentation	Bannari Amman Institute of Technology,	First
			Imagenome and Instrumethod Participated	Sathyamangalam	First
2.		B.Tech.	Imagenome and Instrumethod Participated	Bannari Amman Institute of	First
	Venkatraman, V.	III year	Poster presentation	Technology, Sathyamangalam	First
			Paper presentation		First
3.	Shanmuga Priya,	B.Tech. III year	Poster presentation	Bannari Amman Institute of Technology,	Second
	S.		Paper presentation	Sathyamangalam	Second
4.	Aravinth, S.	B.Tech. III year	Paper presentation	Bannari Amman Institute of Technology, Sathyamangalam	Second
5.	Gayathri, P.	B.Tech. IV year	Paper presentation	Sri Ramanathan Engineering College, Tirupur	Second

6.	Jeyasakthi, P.	B.Tech. IV year	Paper presentation	Sri Ramanathan Engineering College, Tirupur	First
7.	Narasimman, S.	B.Tech. IV year	Paper presentation	Sri Ramanathan Engineering College, Tirupur	Second
8.	Madhan, R. Shahul Hameed, K.	B.Tech. IV year	Technical Symposium	Adhiyamaan College of Engineering, Hosur	First
9.	Gayathri, P.	B.Tech. IV year	Technical Symposium	Adhiyamaan College of Engineering, Hosur	Second
10.	Mohanapreethi, M.	B.Tech. IV year	Paper presentation	Sri Ramakrishna Engineering College, Coimbatore	First
11.	Anupriya, B.	B.Tech. IV year	Paper presentation	Sri Ramakrishna Engineering College, Coimbatore	Second
12.	R. Naseeb	B.Tech. IV year	Oral Presentation	TamilNadu Agricultural University Coimbatore	First
13.	K. Maharaja Sundari	B.Tech. IV year	Poster presentation	TamilNadu Agricultural University Coimbatore	Third
14.	K. Lavanya	B.Tech. III year	Paper presentation	Adhiyamaan College of Engineering, Hosur	Second
15.	R. Subakeerthana	B.Tech. III year	Paper presentation	Adhiyamaan College of Engineering, Hosur	Second
16.			Paper presentation		Second
	R. Rathnachalam	B.Tech.	Problem Tacklers	Mepco Schlenk Engineering	Second
		III year	Word Association	College, Sivakasi.	Second
17.	G. Madhumathi	B.Tech. III year	Poster Presentation	Vivekanandha College of Engineering,	Third
			Paper presentation	Tiruchengode	Third
18.	B. Amutha	M.Tech. II year	Poster presentation	Kamaraj College of Engineering and Technology, Virudhunagar	Best Paper Award
19.	G P GI : :	B.Tech. III year	Technical Quiz	Mepco Schlenk Engineering	First
	G.B. Shrinivasan	B.Tech. III year	Word Association	College, Sivakasi	First
20.	S. Mani	B.Tech. III year	Problem Tacklers	Mepco Schlenk Engineering College, Sivakasi	Second

21.	K. Sanjay Kumar	B.Tech. III year	Problem Tacklers	Mepco Schlenk Engineering	First
	K. Sanjay Kumai	B.Tech. III year	Debate	College, Sivakasi	First
22.	J. Rajani sowparnika	M.Tech. , II year	Oral paper presentation	Vivekanandha College of Engineering, Tiruchengode	First
23.	S. Sudhan	B.Tech.,	Poster presentation	Kongu Engineering	Third
		IV year	Quiz	College, Erode	First
24.	P. Deepak kumar	B.Tech.,	Paper presentation	Kamaraj College of	Second
25.	B. Mahendrakumar	IV year	Poster presentation	Engineering, Virudhunagar	Second
26.	S. Jayaprakash	B.Tech., III year	Oral paper presentation	Kamaraj College of Engineering, Virudhunagar	Second
27.			Quiz		First
	V. Venkatraman	B.Tech.,	Poster presentation	Kongu Engineering College, Erode	Third
		III year	Oral presentation		First
28.			Bio-Lexicon		First
			Word Association	Mepco Schlenk Engineering	First
	P. Arun	B.Tech.,	Debate	College, Sivakasi	Second
		III year	Technical Quiz		First
29.			Paper presentation		Second
	G. Selvam	B.Tech., III year	Debate	Mepco Schlenk Engineering College, Sivakasi	Second
			Bio-Lexicon		First
30.	S. Aravinth	B.Tech., III year	Poster presentation	Adiyamaan College of Engineering, Hosur	Second
31.	V. Venkatraman	B.Tech., III year	Paper presentation	Vivekanandha College of Engineering, Tiruchengode	Second
32.	M. Nivethini and K. Selvambigai	B.Tech., II year	Poster presentation	Kamaraj College of Wngineering, Virudhunagar	Third
33.	G. Sibi and T.R.S. Karthikeyan	B.Tech., I year	Bio-Mystriz	PSG College of Technology, Coimbatore	First

34.	Thaiyalnayaki, R.	B.Tech. IV year	Technical Symposium and Project Design Contest	Bannari Amman Institute of Technology Sathyamangalam	First
35.	Narasimman, S.	B.Tech. IV year	Poster presentation	Sri Venkateswara College of Technology Sriperumpudhur	Third
36.	B. Vignesh	B.Tech., IV Year	Paper presentation	Kongu Engineering College Perundurai	Second
37.	M. Aravindh S. Shanmugapriya	B.Tech., III year	Product launch	Kongu Engineering College Perundurai	Second

4.4 List of students received Summer Research Fellowship

Each and every year, our students are receiving "Summer Research Fellowships" from Indian Academy of Science (IASc), Bengaluru, Jawaharlal Nehru Centre for Advanced Scientific Research, Mumbai and DST, New Delhi. The list of the students received their fellowship in this academic year is given below.

S.No	Name of the student	Institute offering Internship training	Year of study	Fellowship awarding institute
1.	P. Deepak Kumar	Institute for Stem Cell Biology and Regenerative Medicine, NCBS, Bangaluru.	IV B.Tech.,	Jawaharlal Nehru Centre for Advanced Scientific Research
2.	P.Arun	MDRF, Chennai.	III B.Tech.,	Indian Academy of Sciences, Bengaluru
3.	S. Sushmetha	CSIR Institute for Genomic and Interpretive Research, New Delhi.	III B.Tech.,	Indian Academy of Sciences, Bengaluru
4.	M. Uthira	National Brain Research Centre, Haryana.	II B.Tech.,	Indian Academy of Sciences, Bengaluru

5.	V.Venkatraman	Indian Institute of	III B.Tech.,	Indian Academy of
		Immunology, New Delhi		Sciences, Bengaluru
6.	K.S.Ganapathy Ram	Indian Institute of Technology- Madras, Chennai.	I B.Tech.,	DST, New Delhi

4.5 List of students got placed in various core companies in the academic year 2014-2015

The privilege of the department lies in the performance of the students and faculty members whereas the fame of the department depends on placing the students to pave way for their life. Such students who has brought fame for our department includes:

B.Tech., (2011-2015)

Name of the students		Name of the company
P.Gayathri	S.Prasanth	Zifo Technologies Private Limited # 21 A, Anna Salai Little Mount, Saidapet, Chennai - 600 015
D.Aambareesh N.Juditl V.A. Swarnalatha D.S.	Neha Halder K.M.Sanofar Tuthi M.Suganya	VWR Lab Products Private Limited Rathinam Techno Park Pollachi Main Road Eachanari Post Coimbatore - 641 021



M.Tech., (2013-2015)

Name of the students	Name of the company
A.G.Arunima P.Divya J.RajaniSowparnika	Fruzyme Biotech India Pvt Limited 274/1-A ,Ganapathypalayam Road, Veerapandi Post, Tirupur - 641 605
M.Bharath	VWR Lab Products Private Limited Rathinam Techno Park Pollachi Main Road Eachanari Post Coimbatore - 641 021
B.Amudha	Green Chem Lab 5-BDA, 2nd stage, 3rd phase, Domlur, Bengaluru – 560 071

4.6 Extracurricular activities of the students

The students of our department are keen learners and they involve themselves for the preparation of various competitive exams. They also serve for the betterment of the society through various events and make us to reach the height of glory.

4.6.1 CARE Club Activities

The center for academic research and excellence (CARE) has been organized to promote the communication skills and leadership of the students in various aspects. The preparation procedure for the competitive exams and tips will be given by the alumni students of our department. As New initiative of the CARE Club during the winter vacation of odd semester a workshop was conducted for third year and second year Under Graduate students on December 1, 2015 to December 5, 2015. The workshop was entitled as "Practical Application of Biotechnology". It was conducted as 10 sessions in 5 days covering different important dogma's of biotechnology like application of Chemical Engineering, Food Biotechnology, Bioinformatics, Biochemistry, Plant Biotechnology and Animal biotechnology. It also covers sessions which explains how to tackle of placement Interviews? and how to become an Entrepreneur? Total number of 25 students from both years enrolled their names and benefited by this workshop. This Workshop was possible by the support of all Staff Members who passionately came forward to take different sessions. This Journey of CARE Club will continue in for coming Vacations. Interested students can enroll their names for their participation in the workshop it was entitled as "Biotechnology and its research aspects".

List of events organized

S.No	Date	Event	Resource Persons
1	01/06/2014	How to apply a proposals for TNSCST and	Mr. R.Arulvel and
		ABLE India Fellowships	Mr. G.Ayyappadasan
2	12/07/2014	Placement Training Session	Alumni Students
3	01/08/2014	Quiz Competition	Office bearers
4	09/08/2014	Experience towards Summer Research	J.Jeslin (III B.Tech)
		Fellowship	
5	25/08/2014	Experience towards Summer Internship	S.Jeya prakash (III B.Tech)
		Programs	
6	09/09/2014	Higher studies in abroad	S.Sudan (IV B.Tech)
7	23/09/2014	How to crack the placement Interviews	S.Prasanth and P.Gayathri
			(IV B.Tech)
8	01/12/2014 -	Workshop on "Practical Application of	Faculty members and

	05/12/2014	Biotechnology"	Office bearers
9	22/01/2015	Debate on "Allopathy Medicine Vs	M.Kalaiselvi (Research
		Ayurvedic Medicine"	Scholar) and S.Rubavathi (I
			M.Tech)
10	10/02/2015	Micro-Talk	Office bearers
11	12/03/2015	Word Association and Bio-lexicon	Office bearers

4.6.2 Press and Media Club

• The press and media club organised a program entitled "Wer Du Bist Wie Geth Es Dis Wo Du Bist" on 25.08.2014 Monday for 9th standard students of K.S.R Matriculation school and Rajammal Rangasamy school.



• The program was conducted as various sessions to create awareness regarding child labour, wastage and value of food by projecting videos. Attempts were also made to create awareness regarding the corruption and its cause in third and fourth session.

- The program came to an end with a debate on "NUCLEAR FAMILY VERSUS **JOINED FAMILY**". The best performers were awarded with gifts. The booklet on current issues was circulated for creating awareness among the people on 06/9/2014.
- On 24/12/2014 the details of conference with its inauguration and valediction are published in the newspapers such as The Hindu, Indian Express, Dinathandhi, and Dinamani.

4.6.3 Public Awareness Club

- A Public awareness club is introduced for the very first time in the history of our department, in our college campus also.
- The club is organised to create awareness among the school students, youngsters, rural farmers and tribal



regarding the various diseases like Diabetes, Cancer, HIV/AIDS, and danger of junk foods, intake of expired medicines and usage of inorganic chemicals.

- It is also aimed to motivate the young mind to avoid illegal practices which would affect them and in turn the society also.
- The important events such as Science day, Cancer day has been celebrated by the club.
- The future aspects of the club are to serve for the betterment of the society in various ways through the science and technology.

5. Other activities of the department

- An in-house magazine called "Biozoom" is regularly released by the Department of Biotechnology every semester in which research articles, general articles, legendary works, new innovations, interesting facts and figures are compiled and edited by our own
 - students and staff members. In this academic year, Biozoom Volume 7, Issue 2 has been released along with the ISSN No: 2250 0693.
- Campus Compass program was conducted by the department to promote the interaction between the Alumni and the student representatives of the academic year 2014-2015.



6. Forthcoming events

- A collaborative conference between Department of Biotechnology and Department of Mechanical Engineering in our college have been planned to conduct it during 18-19th August, 2015. The conference is funded by DST-SERB and DBT, New Delhi.
- IEEE-EMBS student chapter inauguration: IEEE-EMBS student's chapter is to be inaugurated in the academic year 2015-2016.

7. Notable Moments

NABS Conference



Conference conducted by Department of Biotechnology in collaboration with Textile

Technology Department



Conference conducted by Department of Biotechnology in collaboration with Civil Engineering Department



Programs conducted by Neomutant Association



8. Final note

"Change is inevitable, progress is optional"

With all my pleasure, I am very proud to submit the annual report of our department highlighting all the changes made in our department along with the progress obtained by us. I also anticipate that the success tempo and intensification of the department will be in log phase ceaselessly. It is my colossal contentment to thank all the teaching, non-teaching staff members and the students who contributed their best to give a lift for our department.

Acknowledgement

I conclude the annual report with my profuse thanks and indebtedness to our honorable Chairman and beloved Secretary and Principal of KSR College of Technology whose generosity and bigheartedness have transformed the dreams of many people into a virtual reality. I would also like to extend my gratitude towards our Dean, Controller of Examinations, Directors, faculty members of the department, supporting staff members and students whose encouragement, contribution and appreciation has made it possible. I also thank Ms.M.Kalaiselvi, Research Scholar/BT, for preparing this annual report.

The best is yet to be.....

Thank you...