

**Research and Consultancy  
at**

**BITS-Pilani, Goa Campus**

**Annual Research and Consultancy  
Report - 2008**



**RESEARCH CONSULTANCY AND EDUCATIONAL DEVELOPMENT  
DIVISION  
BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE,  
PILANI, GOA CAMPUS, ZUARINAGAR- 403726, GOA  
2008**

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## **Introduction**

### ***BITS Pilani Goa campus***

BITS Pilani Goa campus has been functioning since Aug 2004. It offers eleven first degree programmes in Engineering, Science and Humanities. The institute has started higher degree (M.E.) programmes in Design Engineering and Biotechnology from Aug 2008. Currently about 2500 students are enrolled in various degree programmes and the faculty strength is 140. The Institute has developed state-of-the-art laboratories and other research facilities and has recruited a balanced mix of enthusiastic young faculty and experienced Professors. To further the enthusiasm and potential of the faculty members, the institution has encouraged them to pursue active research in their fields of interest and to develop research proposals to generate funds from national and international funding agencies. The funds thus procured are being used in part to further develop the existing facilities. This in turn helps in training undergraduate students, starting new higher degree programmes, to carry out research in advanced areas and to provide consultancy services. Presently, there are 22 research projects funded by various National and International funding agencies. Several research scholars (SRF/ JRF) have been chosen to work in these projects.

## **Thrust Areas**

The Institute has identified thrust areas with the goals of achieving sustainable development and strengthen University- Industry linkage. Broadly, the thrust areas include:

- Green Technology Development
- Biotechnology
- Modeling and Simulation
- Communication and Information Technology
- Advanced Materials and Applications

## Promotion of Research

The BITS education system offers several opportunities to members of faculty to pursue research in various areas and to involve students at all levels through specialized projects. Research in the institution is promoted through various means, such as

- Faculty development scheme
- First degree & higher degree research programme
- Sponsored research projects by national & international agency
- Consultancy services

### *Faculty Development Scheme*

The faculty members possessing post graduate degrees, such as M.E., M.Tech, M.Phil. Degrees, recruited as Assistant Lecturers, are offered opportunities to pursue their Ph.D.degree programmes, after qualifying the Ph.D. Qualifying Examination (PHQE), conducted by RCEDD, BITS, Pilani Goa Campus. The qualified candidates are required to submit research proposal for the approval of the research board at BITS Pilani. The faculty member is promoted to the grade of lecturer; soon after his/her Ph.D. proposal is approved by the Research Board. Faculty member under the scheme is awarded the scholarship to cover tuition and admission fees. Each faculty members can avail Institute's annual contingency grant up to Rs.12000/- for covering professional expenses. Presently, there are 30 faculty members and 7 research scholars, are pursuing Ph.D. programmes in respective disciplines. Details of faculty members, their research topic and supervisor are given in **Annexure I**.

### *Pre-Ph. D. course work*

Faculty members, staff members and research staff under projects, with qualification as M.Sc., MBA, B. E. etc and with sufficient professional experience are recommended for undertaking pre-Ph. D. course work. On successfully completing the prescribed course work, under the supervision of a designated mentor, the candidate becomes eligible to write Ph.D. qualifying examination. Presently, there are 6 candidates who are pursuing their pre-Ph. D. course work. The details are given in **Annexure II**.

### ***Ph.D. Qualifying Examination March and October 2008***

In 2008, Ph.D. qualifying examination was conducted at BITS-Goa between 27-29 March 2008 and 25-27 October 2008. Total 13 candidates, including members of faculty and research staff have qualified the examination. Details of qualified candidates are given in **Annexure III**. The candidates are encouraged to choose thrust areas for their research.

### ***Research at Student Level***

Every semester, the students of first-degree programmes opt for project courses (as elective courses), under the supervision of faculty Instructors. These courses aim at developing skills and capability for undertaking lab oriented experimental work, computer oriented software based application development and testing, advance study pertaining to research problems at hand. About 250 students opt for these courses every semester in various disciplines. Senior undergraduate students have the choice of doing research for a semester and submit a thesis under the guidance of expert faculty. The details of the first degree theses completed in this year are given in **Annexure IV**.

### ***Students Contribution***

The students of first degree programmes also opt the industry oriented internship programmes, called Practice School-I and Practice School-II. Practice School-I is offered to students after completing first two years of their programmes and is of two months duration. The Practice School-II is offered to students in their final year and is of five and half month duration. During the tenure of these courses, the students carry out industry related work assignments in different industries, under the supervision of faculty Instructors. Often these assignments lead to consultancy works. Thus students also participate in consultancy oriented work at Practice School Centers. Students are encouraged to present results of their work in the Conferences, Seminars, Symposia and Training Programmers, organized on campus as well as elsewhere. Every year a techno-fest is organized by students, In that the students exhibit remarkable and ingenious models based on the latest advances in science and technology. The details of the students who attended conferences / scientists' interactions and participations in National level project competitions are presented in **Annexure V**.

### ***Sponsored Research***

Faculty members are encouraged to submit research proposals to various funding agencies for sponsored research projects. The research for the sponsored projects is carried out by recruiting special purpose staff, as provided under the project and faculty members who are pursuing research. Till date, many faculty members have obtained research funds from various research agencies including Department of Science and Technology, DRDO, CSIR, Ministry of Chemicals and Fertilizers, Govt. of India, Swedish Research Council, etc. The ongoing projects include twenty two sponsored research projects, in different research areas viz Bio-Nano Technology, Environmental Bio-technology, Radio Astronomy, Biosensors & Bioanalysis, Membrane separations, Semiconductor Physics and Materials, New Energy, Environmental Management etc. The details of sponsored research project are given in **Annexure VI**. The details of the projects under review are also given **Annexure VII**.

Appointment of SRF's and JRF's in various sponsored research projects was done by a committee appointed by the Director and a nominee from respective funding agency. The details of the candidates those are appointed as SRF's and JRF's in various projects are given in **Annexure VIII**.

### **Expertise and Facilities**

#### ***Research Areas/Expertise***

The Institute through its intense faculty recruitment drive has been constantly adding manpower at the senior level to provide leadership for R&D and at junior level to provide research work force. As a result, a number of faculty members at both these levels have joined this year.

Several faculty members in engineering as well as science disciplines are engaged in research in various areas including Biotechnology, Flexible Manufacturing Systems, Advance Separation Techniques, Energy and Environmental Management, Data Mining, Fiber Optics, Computer

Aided Analysis and Design, Digital Electronics, VLSI and Embedded Systems, Robotics and Intelligent Systems, Image Processing, Power Electronics, Nanotechnology Materials Science, etc. Details of expertise and areas of research interest of faculty members engaged in research & consultancy are given in **Annexure IX**.

### ***Laboratory Development***

The laboratory development has been guided by the need to strengthen academic and research facilities. The academic and research activities are well supported in various laboratories by existing facilities in the labs for engineering, science and humanities disciplines. All laboratories are fully equipped with advanced equipments / instruments, computational facilities and internet connection. **Annexure X** gives discipline wise existing laboratory facilities at BITS-Goa.

### ***BITS Connect***

A campus wide local area network (LAN) is the outcome of the BITS Connect project, having an outlay of about Rs.7crores (\$1.5 million). The project was jointly led by BITS alumni and BITS Pilani. The project has provided a state-of-the-art campus-wide network. This has resulted in a Gigabit backbone, broadband access, telephones and video conferencing capability (IP telephony). The network access is available in library, all hostel rooms, class-rooms, lecture theatres, staff quarters and guest house. The LAN has facilitated online access to several e-journals in various disciplines.

## **Extension Activities / Programmes/Events**

### ***Consultancy Projects and Services***

The Faculty members of the institute are involved in National / International consultancy projects and services. The details of consultancy work completed / undertaken are given in **Annexure XI**.

### ***Conferences / workshops***

Various groups organized National / International conferences / workshops. Following are details of organized / proposed events:

- Indo-Russian conference on Topical Problems in Solid Mechanics, in collaboration with IIT Delhi and Institute of Problems in Mechanics of RAS, Russia (11<sup>th</sup> to 14<sup>th</sup> November 2008) sponsored by DST (Department of Science and Technology) and the Russian Academy of Sciences. About 10 Russian delegates are expected to attend this Conference.
- International Congress for Environmental Research and Development (18<sup>th</sup> to 20<sup>th</sup> December 2008). About 500 delegates attend, out of which there are 100 foreign delegates. 350 papers will be presented at this Congress

### ***Engineer's Day Celebration***

Engineer's day was celebrated on September 15<sup>th</sup> 2008 at BITS-Pilani, Goa campus. On the occasion, the institution had organized panel discussion and poster presentations. The theme of the event was "**Role of Environmental Education in Sustainable Development**".

### **Publications**

Faculty members from various disciplines have published several research papers in reputed national, international journals and various conferences *Annexure XII-Annexure XV*. The details of the poster presentations are given in *Annexure XVI*. The details of the number of publications are given below:

<b>Sl. No.</b>	<b>Journal / conferences / Books</b>	<b>Total numbers</b>
1.	Journals	56 (papers)
2.	Conferences	44(papers)
3	Books	01

### **Course Material Development:**

The faculty members are encouraged to undertake publishing books, and other literature. Faculty members at BITS-Goa developed course materials and laboratory manuals for following mentioned courses.

EDD Notes which are printed at Goa Campus in the year 2008.

<b>Author</b>	<b>Name of the Course</b>
Biology Group	TAC 211 MT-I, Biology
Biology Group	BIO C241- Microbiology
EEE Group	EEE C 391-Digital Electronics and Computer Organization
EEE Group	EEE C371- Electric Machines Laboratory Manual
EEE Group	TOC C 235- Electrical & Electronics Egg. Lab. Manual
Mechanical Group	ME C331-Transport Phenomena II
Mechanical Group	ME C342- Production Techniques
Mechanical Group & EEE Group	TA C211-Measurement Techniques-I Laboratory Record for Physics
TA C112	Workshop Manual
TA C 222	M.T.-2

***Annexure I***  
***Details of Ph.D Candidates***

<b>Name &amp; I.D. No.</b>	<b>Supervisor / Mentor</b>	<b>Topic</b>
Mr. V.K. Deshpande 1990PHXF408	Dr. S.D. Manjare	Failure analysis of thermosyphon solar hot water systems on account of scaling.
Ms. Kanchanmala A. Kaddakkar 2003PHXF015	Dr. Sunil Bhand	Novel biosensor techniques for environmental analysis of pesticide & heavy metals.
Mr. Chaudhari Vikas 2004PHXF446	Dr. D.M. Kulkarni	Effect of working temperature on fracture behavior of extra deep drawn steel sheets
Mr. Waigaonkar S. D. 2004PHXF447	Prof. B.J.C. Babu	System Modeling & Investigations of Rotational Molding Process.
Mr. Abhishek Kumar 2004PHXF448	Prof. V.P. Agrawal	Modeling, analysis & evaluation of electroplating system.
Mr. C. Phaneendra Kiran 2004PHXF449	Prof. V.P. Agrawal	Modeling, analysis & concurrent engineering (CE) design of mechatronic system.
Mr. Varinder Singh 2004PHXF250	Prof. V.P. Agrawal	Development of a structuring system using total engineering approach.
Mr. P. Venkateswara Rao 2005PHX426	Dr. Srinivas Krishnaswamy	Techno-economic feasibility studies on an alternate process route for treating process condensate water in a fertilizer plant
Mr. V. V. S. N. V. Prasad 2005PHX427	Dr. D.M. Kulkarni	Study of supply chain performance measurement.
Mr. Raghavendra G. S. 2005PHX428	Dr. Prasanna Kumar N.	Nature inspired computational algorithms for solving complex optimization problems.
Mr. Mangesh V. Bedekar 2005PHX429	Dr. Bharat M. Deshpande	Intelligent Web Data-Mining
Mr. Anant C. Kulkarni 2005PHX430	Dr. D.M. Kulkarni	Investigation of contact stresses, wear & lubrication at metal-on-polymer articulating Surfaces of the Hip Joint.
Mr. K. V. R. B. Prasad 2005PHX431	Dr. P. M. Singru	Genetic algorithms for optimum design of turbo-alternator
Mr. Abhishek Kumar 2004PHXF448	Prof. V.P. Agrawal	Modeling, analysis & evaluation of electroplating system.
Veeky Baths	Dr. Utpal Roy	Structural modeling, evolution and causes of substitution

2007PHXF406		frequency variation in protein sequences of some clinically important pathogenic bacteria.
Ramprasad Joshi 2007PHXF408	Dr. Bharat Deshpande	Applicability of theoretical computer science to New practical computational techniques and paradigms
K.J. Sabreesaan 2007PHXF412	Dr. M.A.Shalu	Concurrent design, modeling, analysis and evaluation of supply chain network (SCN) to develop optimum information system.
Dillip Kumar Mohanty 2007PHXF410	Dr. P.M. Singru	Effect of Fouling on the performance of a Heat exchanger.
Abhilash M.T 2007PHXF407	Dr. M.K. Deshmukh	Computer modeling and simulation of Non-linear quantum effects in Nano Electronic Devices.
C. Balakrishna Moorthy 2007PHXF409	Dr. M.K. Deshmukh	Investigations on dynamic stability of grid connected wind power generating systems.
Nitin Sharma 2007PHXF414	Dr. K.R. Anupama	Performance optimization of wireless multi user multiple input multiple output system.
Susmitha Wils K. 2007PHXF413	Dr. M.K. Deshmukh	Computer modeling for development of Nano Biosensors in Bio- lab Chip environment
Prita Pant 2007PHXF033	Dr. N.N. Ghosh	Development of Chemical Methodologies for synthesis of $Fe_2O_3$ and $Ni_{1-x}Zn_xFe_2O_4$ ( $0 < x < 1$ ) nanopowders and study their structural and physical properties.
Mr. Amalin Prince 2006PHXF409	Prof. V.P. Agrawal	Structural Quality & Reliability Modeling and Analysis of Microelectromechanical Systems (MEMS) products.
Kiran D. Mali 2008PHXF012	Dr.P.M.Singru	Vibration Analysis of Rectangular Plates With Rectangular Penetration Patterns of Circular Holes for Different Perforation Size and Ligament Efficiencies
Naik Raghavendra Datta 2008PHXF011	Dr.P.M.Singru	Nonlinear Dynamics and Chaos in Vehicle Suspension System
Gautam Bacher 2008PHXF006	Dr.Sunil Bhand	Development of Microelectromechanical Systems "MEMS" Based Micro Biosensor Devices
Chhayadevi M. Bharmare 2008PHXF007	Dr.K.R. Anupama	Development of patched reactive heterogeneous multicore processor architecture for development of complex reactive embedded systems
Nitin Upadhyay 2008PHXF010	Dr.B.M.Deshpande	Concurrent Modeling, Analysis and Design of Component Based Software System (CBSS)
Sreejith V 2008PHXF008	Dr.K.R. Anupama	Development of energy efficient Routing Protocol for Mobile Wireless Sensor Networks.
Vaishnavi Unde	Cleared PhD qualifying	Proposal is yet to be submitted

2008PHXF005	Examination	
C. Sivaraman 2008PHXF009	Dr.M.Srikanth	Expression of Cyclodextrin Glucanotransferase (CGTase) Gene in Hydrocarbon Degrading Bacteria for enhancing Bioremediation
Harish VN	Cleared PhD qualifying Examination	Proposal is yet to be submitted
Meghanand B	Cleared PhD qualifying Examination	Proposal is yet to be submitted
Pinky Pawaskar	Cleared PhD qualifying Examination	Proposal is yet to be submitted
Dheeraj Behl	Cleared PhD qualifying Examination	Proposal is yet to be submitted
Apeksha Jadhav	Cleared PhD qualifying Examination	Proposal is yet to be submitted
Manisha Dixit 2008PHXP027	Dr. Joy Anuradha	Completing Pre Phd course work
Prasanna Mahavarkar 2007PHXP444	Prof. S. Ramaswamy	Completing Pre Phd course work
Mr. Bhanudas R. Naik 2007PHXP445	Dr. N.N. Ghosh	Completing Pre Phd course work
Ms. Zubeda Bi Aga 2007PHXP443	Dr. Sutapa R. Roy	Completing Pre Phd course work
Mr. Vilas Desai 2007PHXP446	Dr. Meenal Kowshik	Completing Pre Phd course work
Mr. Md. Shekh Raesh 2008PHXP028	Dr. Utpal Roy	Completing Pre Phd course work

***Annexure II***

***Faculty Members / Research Scholars pursuing their pre-Ph. D. course work***

<b>Name</b>	<b>Group</b>	<b>Position</b>	<b>Sponsoring Agency</b>
Ms. Manisha Dixit	Humanities & Mgmt. Group	Visiting Faculty	Faculty of Bits, Goa
Mr. Prassana Mahavarkar	Physics	Tech. asst.	staff
Ms. Zubeda Bi Aga	Physics	JRF	DRDO
Mr. Bhanudas R. Naik	Chemistry	JRF	DST
Mr. Vilas Desai	Biology	JRF	DST
Mr.Mohd. Raees sheikh	Biology	JRF	CSIR

*Annexure III*

*List of Candidates who have Qualified Ph.D Qualifying Examination in March and October  
2008*

<b>S.No.</b>	<b>Name</b>	<b>ID.No.</b>	<b>Group</b>
1.	Vaishnavi Unde	2008PHXF005	Chemical
2	Harish V.N	Yet to apply for admission	<i>Mathematics</i>
3	C. Sivaraman	2008PHXF009	<i>Biology</i>
4	Kiran D. Mali	2008PHXF012	<i>Mechanical</i>
5	Naik Raghavendra Datta	2008PHXF011	<i>Mechanical</i>
6	Sreejith V	2008PHXF008	<i>Computer Science</i>
7	Nitin Upadhyay	2008PHXF010	<i>Computer Science</i>
8	Chhayadevi M. Bharmare	2008PHXF007	<i>EEE</i>
9	Gautam Bacher	2008PHXF006	<i>EEE</i>
10	Mr. Meghanand Anantrao Bhamare	ID to be allotted	EEE
11	Ms. Dheeraj Bhola	ID to be allotted	Mathematics
12	Ms. Pawaskar Pinky	ID to be allotted	Humanities / management
13	Ms.Apeksha B. Jadhav	ID to be allotted	Chemical engineering

***Annexure IV***  
***First Degree Thesis Completed***

<b>Name of the candidate</b>	<b>ID N0.</b>	<b>Thesis Tittle</b>	<b>Name of supervisor</b>
R.R.Chandrasekhar	2004B2A7527G	Synthesis & Characterization of Nano-Structured Ferrites & Polybenzoxazine Ferrite Nanocomposites	Dr. N.N. Ghosh
Harish R Palnitkar	2004B4A4547G	Computational and experimental study on flow through Nozzles.	Dr. Shibu Clement
Lalitha Ranjala	2004B4A7574G	Image compression and web application	Dr. Bharat Deshpande
Meera.K	2004A1B1303G	Technical feasibility studies on an alternate process route for removal of methanol, ammonia & carbon dioxide from process condensate water in a fertilizer ammonia plant.	Dr.Srinivas Krishnaswamy
Saranya K	2004B1A1590G	Preparation of Hydroapatite powder using sol-gel Technique	Dr.Meenal Kowshik
Abhimanyu Jana	2005A8TS151G	Design of embedded systems using field programmable gate arrays(FPGA)	Dr.M.K.Deshmukh

***Annexure V***  
***Student Contribution***

<i>Name</i>	<i>ID</i>	<i>Topic</i>	<i>Event</i>
Mr. Gaurav Singh	2006A4PS047	Experimental determination of shear stresses near a blunt crack tip	Student Research Convention, <b>“Anveshan”</b> 2009, organized by Association of Indian Universities (AIU)
Mr. Manuj keshari	2005P8PS273	(i) Proposal for fingerprint Recognition (ii) Proposal for face Recognition	
Ms. Shradhha Vartak	2005A3PS001G	DSP Based image Processing for estimating various Cardiac Parameters	
Mr. Abhay Kumar Singh	2005A8PS135G		
Mr. Achal Kumar Mall	2006B2A3530G	Microbial Fuel Cell Using Sewage and Plant	
Mr. Govinda Upadhyay	2005B5A3434G		
Ms. Sowmya Balasubramaniam	2005B1A7932G		
Anmol Tiwari	2005B1A7919	<b>“Science Conclave- Interaction with Nobel Laureates”</b> Event organized by IIT Allahabad during December 15-21, 2008.	
Asko Ajoy	2005B5A3465		
G Vankatasurya	2005B4A7470		
M Sushi	2005B2A7515		

***Annexure VI***  
***Ongoing sponsored research project***

<b>Title of Project</b>	<b>Nam of Principal Investigator/ co-investigator</b>	<b>Funding Agency</b>	<b>Approved cost of the project (Rs. in Lakhs)</b>	<b>Duration/ Start Date</b>

Hypergraphical Graphs	<b>Dr. Tarkeswar Singh</b>	DST	<b>3.9</b>	3 years 03/01/2005 Completed
Studies of Micro-organisms for synthesis of Nanoparticles	<b>Dr. Meenal Kowshik</b>	DST	<b>8.28</b>	3 Years/ 25/7/2006
Genetic Diversity of Polyaromatic Hydrocarbon degrading bacteria and their role in biodegradation	<b>Dr. M. Srikanth</b>	DST	<b>9.96</b>	3 years/ 20/06/2006
Novel Aza and Oxa-aza Selenamacrocycles: Synthesis, Metal complexes and anion Binding.	<b>Dr. Arunashree Panda</b>	DST	<b>19.32</b>	3 years/ 28/12/2006
Novel Biosensor techniques for monitoring heavy metals and pesticides in coastal waters and sediments	<b>Dr. Sunil Bhand</b>	CSIR, Dona Paula-Goa	<b>14.47</b>	3 years/ 06/11/2006
Preparation and characterization of nanosized TiO <sub>2</sub> and studies on its photo degradation capacity of model organic pollutants.	<b>Dr. Meenal Kowshik</b> Dr. N. Sandharani	DST	<b>18.29</b>	3 years/ 22/01/2007
Interaction of young pulsars with their plerionic supernova remnants	<b>Dr. Ashish Asgekar</b>	DST	<b>2.28</b>	3 years/ 30/04/2007
Hybrid calyx(n) hyrin (s) with pyridine moiety, new block of macrocycles as potential candidates for anion sensing and metal coordination	<b>Dr. Iti Gupta</b>	DST	<b>17.4</b>	3 years/ 25/04/2007
Studies on moulding compounds and compression moulding techniques for FRP fasteners	<b>Dr.B.J.C. Babu</b> Dr. N.N. Ghosh Mr. G.J. Desai	DST	<b>21.09</b>	2 years/ 06/07/2007
Investigations on factors affecting nuclear accumulation of DNA studied using an in-house constructed confocal microscope	Dr. Geetha Varier	DST	<b>18.9</b>	3 Years/ 15/10/2007
Synthesis of mesoporous silica and alumina based oxide material	Dr. N. N. Ghosh	DST	<b>20.00</b>	3 Years/ 03/07/2007
Preparation and characterizations of Nanoferrite powders and polybenzoxazine nanoferrite composites	<b>Dr.N.N. Ghosh</b>	DRDO	<b>14.97</b>	3 years/ 12/03/2007
Synthesis of improved Ferroelectric materials by sol-gel emulsion technique	<b>Dr. Sutapa R. Ramanan</b>	DRDO	<b>14.99</b>	3years/ 07/05/2007
Isolation and screening of micro-organisms from Extreme and Unusual Environment for new and novel antimicrobial peptides to combat some clinically important multidrug resistant fungal pathogens	<b>Dr. Utpal Roy</b> Dr. Meenal Kowshik Dr. M. Srikanth	CSIR, New Delhi	<b>14.87</b>	3 years/ 28/04/2007
Techno-Economic Feasibility Studies on an alternative process route for removal of methanol, ammonia, and carbon dioxide from process condensate water in a fertilizer ammonia plant	<b>Dr. Srinivas K</b> Dr. N.N. Ghosh Dr. M. Srikanth	Ministry of Chemicals & Fertilizers	<b>86.99</b>	3 years/ 02/05/2007

A Parametric Study of the Proton Exchange membrane (PEM) Fuel Cell Performance	<b>Dr. S. D. Manjare</b>	Ministry of New & Renewable Energy New Delhi	<b>10.47</b>	3 Years/ 25/04/2007
Expression of cyclodextrin glucosyl transferase gene in hydrocarbon degrading bacteria for enhancing bio remediation	<b>Dr. M. Srikanth</b> <b>Dr. Anasuya Ganguly</b>	DBT	<b>17.02</b>	3 Years/ 11/10/2007
Radiation contribution to various flavour changing neutral current (FCNC) processes in B-meson decay	<b>Dr. Prasanta Das</b>	DST	<b>2.88</b>	3Years/ 2007
Synthesis and Spectral, Redox and Solid State Coordination Properties of Asymmetric and Highly Functionalised Thieryl- and Furyl-Porphyrins	<b>Dr. Bhavana. P</b>	DST	<b>19.97</b>	3 Years/ 27/02/2008
Development of Biosensors and micro-techniques for analysis of pesticide residues, aflatoxin, heavy metals and bacterial contamination in milk.	<b>Dr. Sunil Bhand</b>	ICAR	<b>232.84</b>	4.16 years/ 2008
Application of Life Cycle Assessment (LCA) to Diammonium Phosphate Plant (DAP)	<b>Dr. S. D. Manjare</b>	Ministry of Chemicals & Fertilizers	<b>27.00</b>	3 Years/ 26/02/2008
Anaerobic digestion of food waste in a horizontal plug flow reactor	<b>Dr. M. Srikanth</b>	UGC	<b>10.10</b>	3 Years/ 2008
<b>Total (Rs in Lakhs)</b>			<b>605.99</b>	

**Annexure VII**  
**Research Projects under review (with funding agencies)**

<b>Name</b>	<b>Title of Project</b>	<b>Amount (Rs.in Lakhs)</b>	<b>Submitted to</b>
<b>Dr. Reeta Dubey</b>	Water quality monitoring and Management using data mining	20.00	CSIR, New Delhi
<b>Dr. Utpal Roy</b>	Isolation and screening of micro-organisms for Micro-organisms for new and novel antimicrobial peptides to combat some selected presentday multidrug resistant human pathogens	12.00	UGC, New Delhi
<b>Dr. Judith M. Braganca</b>	Studies on haloarchaea producing polyhydroxyalkanoates	8.37	D.S.T.
<b>Dr. Sutapa Roy Ramanan</b>	Feasibility studies on Development of Corrosion Resistant Coatings on mild steel by Sol-Gel Technique.	5.05	Naval Base Karwar
<b>Dr. Reena Cheruvalth</b>	Attitude of Technological & Engineering students towards Humanities subjects	1.20	UGC New Delhi
<b>Dr. Neena Goveas</b>	Study of low dimensional systems using numerical technique	2.52	D.S.T
<b>Dr. Meenal Kowshik</b>	Biological Synthesis of Metal Sulfide and Metallic Nanoparticles using Halophilic Archaeobacteria.	22.95	ORMD, Govt. of India,
<b>Dr. P. Nandkumar</b>	Studies on the optical nonlinearity of gold nanoparticle embedded BaTiO <sub>3</sub> thin films.	14.94	DRDO
<b>Dr. P. Nandkumar</b>	Interferometric detection and micro-spectroscopy of single nanoparticles.	83.21	DST
<b>Dr. Judith M. Braganca</b>	Studies on haloarchaea producing polyhydroxy alkanoates	9.07	UGC
<b>Dr. D.M. Kulkarni</b>	Design, Analysis and Development of an Ice-Cooled air Conditioner 'Snowbreeze'	11.86	DST
<b>Dr. P. M. Singru</b>	"Development of NURBS Based Higher order Panel Method for Zero speed diffraction problems in Time Domain"	18.29	DST
<b>Dr N. N Ghosh</b>	Development and characterization of nanomaterials for biosensors and biocatalysts.	37.99	DST
<b>Dr. P.Nandakumar</b>	Photothermal imaging of nuclear transport	19.44	DBT
<b>Dr. Srinivas Krishnaswamy</b>	Experimental Investigations and comparative studies on novel and promising process/ processes technologies for syngas production and carbon capture in ammonia fertilizer plants	1372.80	Department of Fertilizers, Government of India
<b>Dr. Utpal Roy</b>	Screening of extremophile isolates for novel antimicrobial substances: Cloning and characterization of selected antimicrobial	29.55	Department of Science and Technology

	substances against multi-drug resistant human pathogens.		
<b>Dr. M Srikanth</b>	Uptake mechanism of hydrophobic environmental pollutants	84.71	Department of Biotechnology
<b>Dr. N. N. Ghosh</b>	“Development of Nano Structured High Surface Area Alumina and Silica Based Adsorbent with Tailored Pore Structure for Removal of Fluoride Ions from Ground Water.”,	31.73	Board of Research in Nuclear Science (BRNS) Trombay, Mumbai- 400085

**Annexure VIII**  
**SRF's and JRF's Candidates**

<b>Name</b>	<b>Project Title</b>	<b>Group</b>	<b>Position</b>	<b>Sponsoring Agency</b>
Ms. Prita Pant	Preparation and characterization of Non-Ferrite powders and polybenzoxazine-Nanoferrite Composites  <b>Dr. N.N. Ghosh</b>	Chemistry	<b>SRF</b>	DRDO
Ms. Zubeda Bi Aga	Synthesis of improved Ferroelectric materials by sol-gel emulsion technique  <b>Dr. Sutapa R. Roy</b>	Physics	<b>JRF</b>	DRDO
Mr. Bhanudas R. Naik	Synthesis of mesoporous silica and aluminium based oxide materials  <b>Dr. N.N. Ghosh</b>	Chemistry	<b>JRF</b>	DST
Mr. Vilas Desai	Preparation and characterization of nanosized TiO <sub>2</sub> and studies on its photodegradation capability of model organic pollutants  <b>Dr. Meenal Kowshik</b>	Biology	<b>JRF</b>	DST
Mr. C. Sivaramakrishna	Expression of cyclodextrin glucosyl transferase gene in hydrocarbon degrading bacteria for enhancing bio remediation  <b>Dr. M. Srikanth</b>	Biology	<b>JRF</b>	DBT
Mr. Rupesh Kumar Mishra	Development of Biosensors & micro-techniques for analysis of pesticide residues, aflatoxin, heavy metals & bacterial contamination in milk  <b>Dr. Sunil Bhand</b>	Chemistry	<b>SRF</b>	The Indian Council of Agricultural Research
Mr. Vinod Annasaheb Lohakane	Development of Biosensors & micro-techniques for analysis of pesticide residues, aflatoxin, heavy metals & bacterial	Chemistry	<b>JRF</b>	The Indian Council of Agricultural Research

	contamination in milk <b>Dr. Sunil Bhand</b>			
Mr. Amit Balsing	Studies on moulding compounds and compersion moulding techniques for FRP fasteners <b>Prof. B.J.C. Babu</b>	Chemistry	<b>JRF</b>	DST
Ms. Lizy Kanungo	Development of Biosensors & micro-techniques for analysis of pesticide residues, aflatoxin, heavy metals & bacterial contamination in milk <b>Dr. Sunil Bhand</b>	Chemistry	<b>JRF</b>	The Indian Council of Agricultural Research
Ms. Vidhya A. Prabhudessai	Anaerobic digestion of food waste in a horizontal plug flow reactor <b>Dr. M. Srikanth</b>	Biology	<b>JRF</b>	UGC
Ms. Apeksha Jadhav	A Parametric Study of the Proton Exchange membrane (PEM) Fuel Cell Performance <b>Dr. S.D. Manjare</b>	Chemical	<b>SRF</b>	Ministry of Chemicals and Fertilizers
Mr. Unmesh Ramesh Rao Dhumal	Application of Life Cycle Assessment (LCA) to Diammonium Phosphate Plant (DAP) <b>Dr. S.D. Manjare</b>	Chemical	<b>SRF</b>	Ministry of Chemicals and Fertilizers

**Annexure IX**  
**Faculty Research Areas**

<b>CHEMICAL ENGINEERING GROUP</b>	
<b>Name of Faculty</b>	<b>RESEARCH AREAS</b>
<b>Srinivas Krishnaswamy</b>	Membrane Separation Processes, Reforming Technologies For Syngas Production, Process Plant Simulation, Two Phase Flow
Manjuri Kumar	Ceramics, Polymer Technology
Sutapa Roy Ramanan	Material synthesis, ferroelectric and electronic materials, thin films, membrane development
Sampatrao D. Manjare	Environmental pollution control and management, Separation processes, Fuel cell and solar energy
Ranjan Dey	Thermodynamic and transport properties of liquids and liquid mixtures
P Venkateswara Rao	Environmental pollution control and management, Membrane processes
Surendran G.	Petroleum refining engineering
Saroj Sundar Baral	Environmental Pollution, Separation Sciences
Vaishnavi T. Unde	Environmental pollution
R.P. Vaid	Reaction Engineering, Process Control, Transport Phenomena
<b>COMPUTER SCIENCE &amp; INFORMATION SYSTEM GROUP</b>	
<b>Bharat Deshpande</b>	Set Valued Analysis, Optimization, Parallel Algorithms, Data Mining
J.V. Rao	Database Applications, Data Mining
Jayati Ghoshal	Artificial Intelligence, Fuzzy Logic, Robotics, Computer Vision and Genetic Programming
Neena Goveas	Condensed Matter Physics, Matter Physics Magnetic Materials Spin Chains Statistical models
Sanjay K. Sahay	Data Analysis, Numerical Simulation, Operating Systems, Gravitational Waves, Shell Scripting
Lucy J Gudino	Digital Signal Processing , Array Signal Processing, Speech Processing
Raghavendra G.S.	Evolutionary Computation
Mangesh V. Bedekar	Data Mining, Software Engineering, web data mining for personalised user experience
Ramprasad Joshi	Formal Theory of Computing, Evolutionary Computing
Nitin Upadhyay	Software Engineering, Quality Evaluation of Software Architecture, Mobile Computing Components certification, evaluation and selection methodologies
Sreejith V.	Computer Networks, Wireless Sensor Networks
N. Arul	Image Processing
Aruna G	Case Based Reasoning, Parallel Computing
D. Cenitta	Computer Networks
Rajendra Kumar Roul	DataBase
P Arun Kumar	Computer Networks
<b>ELECTRICAL &amp; ELECTRONICS ENGG. GROUP</b>	

<b>Vishwas K Deshpande</b>	Power System, Solar Energy Reliability
K. E. Raman	Control Systems
M. K. Deshmukh	Power system, Energy Management, Energy Planning
K.R. Anupama	Embedded Systems
K.V.R. Brahma Prasad	Optimization
Iven Jose	Optical Imaging, Signal and Image Processing, Biomedical Engineering
Amalin A. Prince	MEMS, Embedded, VLSI
Anita B. Agrawal	Biomedical Applications using image processing
C. Balakrishna Moorthy	Power Systems Stability, Wind Energy
Abhilash M.T.	Nano Electronics, Analog mixed signal IC Design
Nitin Sharma	Wireless MEMO Communication
Gautam G. Bacher	BioSensor
Chhayadevi M. Bhamare	Embedded, VLSI Design
Meghanand A. Bhamare	Embedded, VLSI Design
Jagmohan Singh	Power Electronics, Instrumentation, development of processing techniques and products prototypes
<b>MECHANICAL ENGINEERING GROUP</b>	
<b>Pravin Singru</b>	Machine Dynamics and Vibrations, Design of Algorithms, Theory of Elasticity & Plasticity, Machine Design, Robotics, CAD/CAM Artificial Intelligence and Genetic Algorithms, Analytical Theory of Vibration, Finite Element Methods
Bhaskara J. Chandra Babu	Mechanical Engineering Design, Materials Science, Composite Materials, FEM, Fluid Mechanics
Dhananjay M. Kulkarni	Fracture Mechanics, FEM, CAD, Failure Analysis, Materials Science
Shibu Clement	Experimental Aerodynamics, Jet Control Techniques, Nozzle flow Fluid Mechanics
Vikas Vinayak Chaudhari	Fracture Mechanics
Sachin D. Waigaonkar	Manufacturing Engg. & Automation
Abhishek Kumar	Electroplating, Graph Theory, MADM
C. Phaneendra Kiran	Manufacturing Systems
Varinder Singh	Modeling of Manufacturing Systems
Chelladurai H.	Vibrations and its Analysis, Virtual Instrumentation, Neural Networks
Dilip Kumar Mohanty	Applied Mechanics
Mali Kiran Dinkar	Experimental Vibration Analysis
Vishnu Prakash Agrawal	Robotics, System Design
<b>BIOLOGY GROUP</b>	
<b>Utpal Roy</b>	Cell Biology, Genetic Engineering, Bioprospecting, Antifungal research
Samarendra K. Ray	Computational Biology, Biochemistry
Meenal Anil Kowshik	Nanoparticles synthesis and assembly, Metal microbe interactions, Synthesis and antimicrobial activities of Titanium dioxide, Photocatalytic activity of titanium dioxide
Saby John K.	Plant tissue culture, Plant Biotechnology, Plant biochemistry
Srikanth Mutnuri	Environmental Biotechnology, Bioremediation, Waste water pollution treatment
Judith Maria Braganca	Haloarchaea, Metal Tolerance, Bioremediation, Microbial Fermentations
Anasuya Ganguly	Molecular Biology, Molecular Parasitology, Animal Cell and Tissue Culture, Cellular Aging
K. Prakash Chudalayandi	Molecular Biology, Yeast molecular genetics
Veeky Baths	Systems Biology, Bioinformatics and Structural Genomics
Meeta Rani Mannaert	Bioinformatics, Computational Biology, Protein Structural Biology
<b>CHEMISTRY GROUP</b>	

<b>Sunil Bhand</b>	Biosensors for Clinical & Environmental Analysis, Metal Speciation & Remediation
Aditya Prasad Koley	Synthesis and Characterization of Metal Complexes with Unusual Electronic Structures
Narendra Nath Ghosh	Nano structural Materials, Mesoporous Catalyst, Ceramics, Polymer Composite, Inorganic Chemistry
Raghu Nath Behera	Theoretical and Computational Chemistry
Tincy Lis Thomas	Photophysical Chemistry, Fluorescence Studies
Bhavana P.	Bioinorganic Chemistry
Anjan Chattopadhyay	Theoretical and Computational Chemistry
Rabi Narayan Panda	Synthesis, Characterization and Study of Metal, Alloy and Nitride nano-materials, Synthesis, Characterization and Study of oxide based nano-powder, Physical Chemistry, Solid State Chemistry/ Physics, Techniques of Materials Characterizations
Rashmi Chauhan	Polymer Chemistry, Synthetic Organic Chemistry
Iti Gupta	Synthesis of Porphyrinoids and Related Macrocycles with Novel Properties, Photophysics of Covalent and Non-Covalent, Multipigment Systems Design and Synthesis of Macrocyclic Receptors for Anions and Cations
Anoorkumar M. Saxena	Protein folding using fluorescence spectroscopy
K.P. Jayadevan	Semiconducting oxide thin fillings, Thermodynamics of materials
Sujit kumar ghosh	Physical Chemisrty
<b>MATHEMATICS GROUP</b>	
<b>Reeta S. Dubey</b>	Differential Equations in Abstract Spaces and Application to PDE, Integro-differential and Functional Differential Equations, Theory of Semigroups of Operators and Approximation of Solutions (Faedo-Galerkin method)).
Prasanna Kumar N.	Complex Analysis, Geometric Function Theory
Tarkeshwar Singh	Graph Theory (Graph Labeling Problems Domination & Energy of graph/sigraph)
Sabyasachi Pani	Functional Analysis (Variational inequalities & Complimentary Problems), Optimisation Techniques
Danumjaya Palla	Numerical Analysis & Scientific Computing, Computational Fluid Dynamics
Anil Kumar	Control and Optimization, Integro-Differential Equations, Theory of Semigroups of Operators, Finite Element Method
Shalu M. A.	Graph Theory
Subramania Pillai I	Topological Dynamics
Sarvesh Kumar	Applied Mathematics
Dheeraj Bahl	Compliment Optimazation Problem
Jessica Pereira	Graph Theory
<b>PHYSICS GROUP</b>	
<b>Suresh Ramaswamy</b>	High Energy Physics
Arun V. Kulkarni	Nuclear Theory
Gaurav Dar	Turbulence, Chaos
Radhika Vathsan	Mathematical Physics, Quantum Computing
Nandakumar Patincharath	Nonlinear optics, Ultrafast Laser Spectroscopy and Microscopy
Anindya Kumar Biswas	High Energy Physics
Ashish Asgekar	Radio Astronomy
Deepak P.N	Nuclear Theory
Raghunath Ratabole	High Energy Theory
Toby Joseph	Condensed Matter Theory
Sunilkumar V.	High Energy Theory
Mitaxi Mehta	Nonlinear Dynamics

Prasanta Kumar Das	High Energy Theory, Extra dimensional theories, B-meson physics
<b>LINGUISTICS, HUMANITIES, ECONOMICS &amp; MANAGEMENT GROUP</b>	
<b>ENGLISH</b>	
<b>Joy Anuradha</b>	Stylistics, Material Production for Specific Purposes, Professional Aspects of Communication
Basavadatta Mitra	English Literature, ELT
Shalini Upadhyay	Indian Writings in English, Non-Verbal Communication, Professional Communication, Personality Development, Business Communication, Soft Skills
Aruna B. Reddi	Post-Colonial Literatures, Regional Novel,
Manisha Dixit	Soft Skills, Professional Communication, Media and Mass Communication, Human Values
<b>ECONOMICS</b>	
Debasis Patnaik	Industrial Economics, Regional Economics, Social Science, Philosophy, Religion
G. V. Kumari	Development Economics, International Agricultural Development ,Geographic Information Systems, Remote Sensing
<b>HUMANITIES</b>	
R. P. Pradhan	International Relations
Reena Cheruvalath	Cognitive Science, Philosophy of Mind, Western Philosophy, Philosophy of Education
<b>MANAGEMENT</b>	
Ch.V.V.S.N.V Prasad	Supply Chain Management

*Annexure X*  
**Laboratories Developed**

**Biological Sciences Group**

- Biotechnology

- Microbiology (Includes 2 Laminar Air Flow apparatus)
- Genetic Engineering
- Measurement Techniques (Biology)

**Chemical Engineering Group**

- Mass Transfer
- Selected Chemical Engineering Operations (SCEO)
- Heat Transfer and Fluid Flow Operations (also part of mechanical engg group)
- Measurement Techniques (Chemical)
- Process Control and Reaction Engineering
- Computational Chemical Engineering

**Chemistry Group**

- Instrumental Methods of Analysis (include the equipment details)
- Chemistry Project
- Chemistry Special Project
- Computational Chemistry
- Measurement Techniques (Chemistry)

**Computer Science & Information Systems Group**

- IBM AIX Server with dB2
- 
- Measurement Techniques (Physics)
- Optics Laboratory

**Available Central Facilities**

- Center for Software Development
- Computer Center
- Centre for Entrepreneurial Development

**Newly Proposed Centers**

- Centre for Energy and Environmental Studies
- Centre for Embedded Technology
- Centre for Women Studies
- Centre for Nano Technology
- Centre for Soft Skills

- Oracle Educational Version

**Electrical, Electronics Engineering & Instrumentation Group**

- Electronic Instruments & Instrumentation Technology
- Electrical and Electronics Measurement Techniques
- Electromechanical Energy conversion
- Digital and Analog Electronics
- Digital Communication

**Languages and Personality Development Group**

- Computer-aided Language

**Mechanical Engineering Group**

- Fluid Mechanics and Machines
- Internal Combustion Engine
- CNC & FMS
- Automation
- Thermal Science
- Material Testing
- Machine Dynamics

**Physics Group**

- Solid State Physics Laboratory

***Annexure XI  
Consultancy Projects and Services***

Sr. No.	Name of the faculty/faculties	Organization to which consultancy is	Nature of work / service offered	Revenues Generated
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		<b>provided</b>		
1	Prof. T.C. Goel, Dr. D.M. Kulkarni, Dr. Praveen Singru, Mr. Amlin Prince and Ms.Sandhya Sawant	D-Link(India) Ltd. Goa	Opinion on manufacturing and assembly process of motherboards ( GIGABYTE make)	Rs. 30,000/-
2	Prof. B.J.C. Babu and Dr. P.M. Singru	IFB Washing Machine, Verna, Goa	Failure of drum of horizontal washing machine (in progress)	It is under progress. So far no revenue is generated.
3	Prof. B.J.C. Babu P. Mr. Venkateswara Rao, and Dr. Shubha Verma	Naval area, Indian Navy, Goa	Submitted Design drawings for analysis and design of an Platform for ground trials and static testing of the Sea Harrier Aircraft	Total Rs. 40,000/-
4	Dr. M. K. Deshmukh	Zuari Industries Ltd. , Vasco	Power Distribution Network: options for Renovation	No revenue
5	Dr. G.V. Kumari	International Potato Center Lima, Peru, South America	Map drought areas in India by using Satellite imagery data.	Rs. 400,000/-
	Dr.Joy Anuradha & Dr. Shalini Upadhyay	Zuari Industries Ltd	“Communication Skills for Professionals(managers)” for Zuari Industries Ltd	Rs. 31,000/-
6	Dr. K. Srinivas	Zuari Industry limited, Goa	Detail analysis for Process condensate water Cooling water treatment using ozone	No revenue
7	Dr. K. Srinivas	Sesa Goa Pvt Ltd., Goa	Viscosity measurement of iron ore samples	Rs.15,000/-
8	Dr. S.D.Manjare	Zuari Industry limited, Goa	Operational Improvements in DAP production unit	No revenue

***Annexure XII***  
**Journal Publications**

<b>Author(s)</b>	<b>Title of paper</b>	<b>Journal Name</b>	<b>Vol.</b>	<b>Yr</b>	<b>Page</b>	<b>Nat. / Int.</b>

Prasanna Kumar N	Teaching Mathematics in Colleges - Need of True Professionalism	International Journal of New Frontiers in Education	Vol 41, No 3,	2008	301-304	I
Atul Gaur and Alok Kumar Maloo	Maximally differential graded ideal in zero characteristic	Hiroshima Mathematical Journal	Vol. 38, No. 1	2008	31-35	I
Atul Gaur and Alok Kumar Maloo	Minimal Prime Submodules	International Journal of Algebra	Vol. 2, No. 20	2008	953-956	I
I S Pillai and V.Kannan	Polynomials hardly commuting with increasing bijections	Semigroup Forum	Vol.76	2008	124-132	I
Sarvesh Kumar, Neela Nataraj and Amiya K. Pani	Finite Volume Element Method for Second Order Hyperbolic Equations	International Journal of Numerical Analysis and Modeling	Vol. 5	2008	132-151	I
Rajan Arora and V. D. Sharma	Convergence of Strong Shock in a Van Der Waals Gas	SIAM J. Appl. Math	Vol. 66, No. 5	2008	1825-1837	I
Reeta S. Dubey	Application of Rothe Method to Abstract Quasilinear Implicit Integrodifferential Equations in Reflexive Banach Space	The Icfai University Journal of Computational Mathematics	Vol. 1 No. 1	2008	24-40	N
.V.S.N.V.Prasad, T.C. Goel.	Factors influencing Supply Chain Performance	ACRM Journal of Business and Management Research	Vol.3 (1),	2008	1-16	N
V.V.S.N.V.Prasad., T. C. Goel	Diaspora for Faster and Inclusive Growth	Journal on International Diaspora published from ISEC at Bangalore	Vol.4 (3)	2008	12-19	N
Prasanta Kumar Das, V.H.Satheesh Kumar, P.K. Suresh	Plasmon Annihilation into Kaluza-Klein Graviton:	<i>New Astrophysical Constraints on Large Extra Dimensions ?</i> Phys. Rev. D78:063011,	Vol.3 (2)	2008.	13-21	I
Ranjan Dey, A. K. Singh and J. D. Pandey	A Temperature dependent Viscometric Studies of Binary Liquid Mixtures	Journal of Molecular Liquids	Vol.137 ,	2008	88-91	I
S. S. Baral, S. N. Das, P. Rath, G. Roy Chaudhury, Y. V. Swamy	Biosorption of Cr (VI) using Thermally Activated Weed <i>Salvinia Cucullata</i> ,	<i>Chemical Eng.</i>	Vol.139	2008	245-255	I
S. S. Baral, S. N. Das, P. Rath, G. Roy Chaudhury	Adsorption of Cr (VI) by treated weed <i>Salvinia cucullata</i> : Kinetics and mechanism	<i>Adsorption</i> , IF-0.59	Vol.14	2008	111-121	I

S. S. Mohanty, S. S. Baral, D. Mohapatra And G. Roy Chaudhury	Use of Manganic ferrihydrite to treat Ar(VI) contaminated water	<i>Chemistry and Ecology</i> , IF-0.67	Vol.24	2008	37-47	I
S. Samdani, S. J. Attar, C. Kadam, S. S. Baral	Treatment of Cr(VI) contaminated wastewater using biosorbent, <i>Hydrilla verticillata</i> ,	International Journal of Engineering Research and Industrial Application	Vol.1	2008	271-282.	I
Koley, M., Sivasubramanian, S. C., Varghese, B., Manoharan, P. T., Koley, A. P	Synthesis and Characterization of Two Stable Paramagnetic Octahedral Chromium(IV) Complexes with Dianionic Tridentate SNO Donor Ligands and of a Chromium(III) Complex with a ONO Donor Ligand.	Inorganica Chimica Acta: 2008.	Vol.361	2008	1485-1495	I
Rashmi Chauhan and Veena Choudhary	“Copolymerization of MMA with N-(methoxyphenyl) Itaconimides”	<i>J. Appl. Polym. Sci.</i> ,	Vol.109	2008	987-996	I
P Pant, S Bhuvaneswari and N N Ghosh*	“Chemical Methodologies for preparation of Micron and Nanometer Scale ferrites”	<i>Recent Patents on Nanotechnology</i>	Vol.2	2008	8-18.	I
Piotr Krawiec, R. N. Panda, Emanuel Kockrick, Dorin Geiger and Stefan Kaskel,	High Surface area V-Mo-N materials synthesized from amine intercalated foams	J. Solid State Chemistry	Vol.181 (4)	2008	935-942.	I
S K Srivastava and Utpal Roy	Single Nucleotide Polymorphism in Granule Bound Starch Synthase-I (GBSS-I) gene in Indian rice genotypes.	International Journal of Integrative Biotechnology	Issue 3, Vol 1	2008		I
Utpal Roy	A preliminary study of smelling agents using electrical potential oscillations at liquid-liquid interface	Indian Journal of Biotechnology (NISCAIR)	Vol 7	2008	73-82	N
Utpal Roy, Veeky Baths	Reconstruction of Phylogenetic Tree of Some Selected House-keeping Proteins	ICFAI Journal of Mathematics, India	Vol1 No.-2	2008	7-20	N
Nitin Upadhyay	Modeling and Analysis of Object Oriented System: A Graph Theoretic Systems Approach	International Journal of System Control and Communications	Vol1 (2).	2008	240-254	I

D. M. Kulkarni	Aluminum Alloys an Alternative Material in the Shipbuilding Industry, a Technical Review	Bulletin of Marine Science and Technology, INDIA,	Vol 4,	2008	1-5	I
Sachin Waigaonkar, B. J. C. Babu and R. T. Durai Prabhakaran	A New Approach for Resin Selection in Rotational Molding	<i>Journal of Reinforced Plastics and Composites (JRPC),</i>	Vol.27	2008	1021-1037	I
Varinder Singh and V P Agrawal	Structural modeling and integrative analysis of a manufacturing system by graph theoretic approach	Journal of Manufacturing Technology Management	Vol 19	2008	844-870	I
V.P. Agarwal, R.T.D Prabhakaran, and B.J.C. Babu	DFX analysis applied to composite products	Journal of Reinforced Plastics and composites	Vol 2008 (3)		287-312	I
V.P. Agarwal, R.T.D Prabhakaran, and B.J.C. Babu	Quality evaluation of Resin transfer model products,	Journal of Reinforced Plastics and composites	Vol.2008 (6)		559-581	I
V.P. Agarwal, Piyali Ghosh and Geethika	Attribute based recruitment of knowledge workers using MADM approach	Journal of International business and Entrepreneurship development (JIBED),	Vol.2008		205-226	I
V. P. Agarwal and Varinder Singh	Structural modeling and integrative analysis of manufacturing systems using graph theoretical approach	Journal of manufacturing technology management	Vol.2008 (7)		844-870	I
V. P. Agarwal, Man Mohan and O.P.Gandhi	Real time reliability index of a steam power plant – A systems approach	proc. of I.Mech E., Part A, Journal of power and energy	Vol 2008 222		355-369	I
R. Ganesan, R.P. Pradhan & R.C. Maheswari	The Problem of Phenomenal Consciousness and Connectionist's Representationalism, Acta Philosophica-	An International Journal of Philosophy		2008	135-143	I
H.Chelladurai, V.K.Jain and N.S.Vyas	Development of a cutting tool condition monitoring system for high speed turning operations by vibration and strain analysis	International Journal of Advanced Manufacturing Technology	Vol.37	2008	471-485	I

***Annexure XIII***  
**Conference Publication**

Author	Title of paper	Conference Name	Yr	Nat. / Int.
R. Ganesan, R.P. Pradhan & R.C. Maheswari	An Empirical Exploratory Study on Indian Food Processing Women Entrepreneurs	Entrepreneurial Management Sage Publication	2008	I
Prasanta Kumar Das, N.G., Deshpande, G. Rajasekaran	Phys.Rev.D77:035010	<i>Moller and Bhaba scattering in the noncommutative SM</i>	2008	I
S. S. Baral, N. Das, T. S. Ramulu, S. K. Sahoo, S. N. Das, G. Roy Chaudhury	Removal of Cr(VI) by Thermally Activated Weed <i>Salvinia cucullata</i> in a Fixed-Bed Column, <i>J. Hazardous Materials</i>	IF-2.02	2008	I
S. S. Baral, S. R. Samdani. Chetan V. Kadam	Treatment of Cr(VI) contaminated water using weed	INSIGHT	2008	N
N. N. Ghosh, Prita P. Sarangi, B.D. Naik	Preparation of High Performance Polybenzoxazine- Ferrite Nanocomposite and their Properties	<i>16th International Conference on Composites or Nano Engineering, (ICCE-16), Kunming</i>	2008	I
Prita P. Sarangi, B D Naik and N N Ghosh	Preparation of A New Type High Performance Polybenzoxazine- Ferrite NanoComposite	<i>Materials for Hostile Environments, 19<sup>th</sup> AGM of Materials Research Society of India</i>	2008	N
Prita P. Sarangi, B D Naik, T C Goel and N N Ghosh	Development Of A Novel But Simple Chemical Methodology For Synthesis Of Single-Phase Ni- Zn Ferrite Nano-Powder	<i>Materials for Hostile Environments, 19<sup>th</sup> AGM of Materials Research Society of India</i>	2008	N
B D Naik, Sushu M, Srmriti Gupta, Ketan Jain, Prita P. Sarangi and N N Ghosh	Synthesis of Mesoporous Silicate by Using A Simple Chemical Technique and Incorporation Of Metal Ions Within This Porous Matrix	<i>Materials For Hostile Environments, 19<sup>th</sup> AGM of Materials Research Society of India</i>	2008	N
Prita P. Sarangi and N N Ghosh	Development of a Novel and Cost-Effective Precursor Based Chemical Methodology for Synthesis of Single Phase Ni-Zn Ferrite Nanopowder	<i>Advances in Nanomaterials and Drug Delivery, National Institute of Oceanography and St Xavier's College, Goa</i>	2008	N
B. D. Naik and N N Ghosh	Development of a modified Hydrothermal Technique for Synthesis of Nanostructured Mesoporous Silicate Based Materials	<i>Advances in Nanomaterials and Drug Delivery, NIO and St Xavier's College, Goa</i>	2008	N

N N Ghosh	Novel Synthetic Strategies and Characterization of Nanomaterials	<i>Advances in Nanomaterials and Drug Delivery</i> , National Institute of Oceanography and St Xavier's College	2008	N
Veeky Baths, Utpal Roy	Phylogenetic analysis of some developmental proteins using Distance-based methods'	ICFAI Journal of Computational Mathematics, India	2008	N
Snigdha Gupta, Saral Jain, Mohammad Kazi, Komal Kapoor, and Bharat M. Deshpande, Mangesh Bedekar	Personalization of Web Search Results Based on User Profiling	"ICETET-08", First International Conference on Emerging Trends in Engineering and Technology, G. H. Raisoni College of Engineering, Nagpur,	2008	I
Bharat M. Deshpande, Mangesh Bedekar, and Ramprasad Joshi	Web Search Personalization by User Profiling	"ICETET-08", First International Conference on Emerging Trends in Engineering and Technology, G. H. Raisoni College of Engineering, Nagpur, India	2008	I
Lucy Gudioho,	Linear phase FIR filter for narrow band filtering	Proceedings of the IEEE International Conference on Communications, Circuits and Systems, ICCAS 2008	2008	I
Lucy Gudioho	A novel design of sharp transition FIR filter for digital beam forming	" Proceedings of the IEEE Conference on Communication Systems, Networks and Digital Signal Processing	2008	I
Lucy Gudioho	A new filter design for uniform linear array	" Proceedings of the Fifth International Multi-conference on Systems, Signals and Devices IEEE SSD	2008	I
Lucy Gudioho	A Novel Filter Design for Spatially Interpolated Beam former	International symposium on intelligent signal processing and communication systems ISPACS	2008	I

Kulkarni D. M., Vikas Chaudhary, Ravi Prakash and Kumar A.N.	Effect of Thickness on Fracture Criterion in General Yielding Fracture Mechanics	International Journal of Fracture. DOI 10.1007/s10704-008-	2008	I
D. M. Kulkarni, P.S. Talan, Ravi Prakash and A. N. Kumar	Effect of Thickness on Fracture Criterion in General Yielding Fracture Mechanics	Proceedings of 8 <sup>th</sup> International Conference on Fundamentals of Fracture	2008	I
Kiran Mali and P.M. Singru	Vibration Analysis of Square Plate with Circular Cut-Out using FEM.”	Proceedings of International conference on Recent Advances in Materials Processing and Characterization	2008	I
Kiran Mali, P.M. Singru and D. K. Mohanty	Energy from Biomass for Sustainable Development; Potential and Harnessing Technologies	All India Seminar on Advances in Renewable Energy Technology	2008	I
Kiran Mali, P.M. Singru	Vibration Analysis of Square Plate with Circular Cut-Out using FEM	Proceedings of International conference on Recent Advances in Materials Processing and Characterization	2008	I
P.M. Singru, D. K. Mohanty	Energy from Biomass for Sustainable Development; Potential and Harnessing Technologies	All India Seminar on Advances in Renewable Energy Technology	2008	I
V.V.S.N.V.Prasad, T. C. Goel	Performance Evaluation of Supply Chain System: An Overview	International Conference on issues and challenges in supply chain management	2008	N
T. Singh	Skolem and hooked Skolem graceful sigraphs, Labelings of Discrete Structures and Applications	(Eds.: B.D. Acharya, S. Arumugam, and A. Rosa), Narosa Publishing House	2008	N
K.V.R.B. Prasad, Gautam Bacher and P.M. Singru	Turbo-Alternator Design Optimization using NSGA-II	International Conference on Power Electronic Drives & Power Systems	2008	I
Gautam Bacher, K.V.R.B. Prasad and P.M. Singru	Genetic Algorithm for Design Optimization of Transformer	International Conference on Power Electronic Drives & Power Systems	2008	I

**Annexure XIV**  
**Communicated/ Accepted Publications**

Author(s)	Title of paper	Journal/ Conference	Year	N. / I.
V. P. Agarwal and Amlin Prince	Coding, evaluation, comparison, ranking and optimum selection of microelectro mechanical system (MEMS) product	International Journal of mechartonics and manufacturing systems	2008	I
V. P. Agarwal and Abhishek Kumar	Attribute based specification, comparison and selection of electroplating system using MADM approach	Expert system with application	2008	I
V. P. Agarwal and Abhishek Kumar	Structural modeling and analysis of electroplating system	A graph theoretic approach, International journal of Surface engineering and management	2008	I
V. P. Agarwal and Naga Balaji Kiran	Concurrent design of computer network for 'X'abilites using MADM approach,	Concurrent Engineering: Research and Applications	2008	I
Vikas Chaudhari, D. M. Kulkarni, Ravi Prakash, and A. N. Kumar	Effect of thickness on fracture criterion in general yielding fracture mechanics	International Journal of fracture	2008	I
Abhishek Kumar	Structural Modeling and analysis of Electroplating System: A graph Theoretic System Approach	International Journal of Surface Science and Engineering, Inder Science.	2008	I
Abhishek Kumar	Attribute based specification, comparison and selection of Electroplating System Using MADM Approach	Expert System with Application, Elsevier Publication.	2008	I
N. N. Ghosh*, Prita P. Sarangi, B.D. Naik	Preparation of High Performance Polybenzoxazine- Ferrite Nanocomposite and their Properties.	<i>World Journal of Engineering</i> (In Press)	2008	I
Prita Pant Sarangi, B D Naik and N N Ghosh	Synthesis of $\alpha$ -Fe <sub>2</sub> O <sub>3</sub> Nano-powder by a Simple Chemical Method"	<i>Materials Technology: Advanced Performance Materials</i> (In Press)	2008	I
Prita P. Sarangi, B. D. Naik, S. R. Vadera, M. K. Patra, C. Prakash and N. N. Ghosh*	Development of a Simple Chemical Method for Synthesis of Single-Phase Ni-Zn Ferrite Nano-powders	<i>Materials Technology: Advanced Performance Materials</i> (In Press)	2008	I
Prita P. Sarangi, B. D. Naik and Narendra Nath Ghosh	Synthesis of Single-Phase $\alpha$ -Fe <sub>2</sub> O <sub>3</sub> Nanopowders by Using A Novel Low Temperature Chemical Synthesis Route	<i>Journal of the American Ceramic Society</i> (In Press)	2008	I

R. N. Panda, G. Balaji, P. K. Pandey and N. S. Gajbhiye	Magnetic and XPS investigations on nanocrystalline Fe <sub>3</sub> Mo <sub>3</sub> N, FeMoN <sub>2</sub> and Ni <sub>3</sub> Mo <sub>3</sub> N nitrides	Accepted for publication Hyperfine interactions.	2008	I
T. S. Ramlu, S. K. Sahoo, S. S. Baral, S. N. Das, Y. V. Swamy and G. Roy Chaudhury	Estimation of nitrous oxide emission from pulse cultivation in rain-fed uplands	<i>Current Science</i> , Accepted	2008, IF-0.737	I
T. Singh and Mukti Acharya	Skolem gracefulness of 2-signed stars	Congre. Numer (To appear in)	2008	I
T. Singh and Mukti Acharya	Embedding of sigraphs in graceful sigraphs	ARS Combinatoria (To appear in)	2008	I
S.K. Sahay	Independent points in the sky for the search of periodic gravitational wave.	Journal: Romania Reports in Physics accepted	2008	I
A Panda	Chemistry of Selena Macrocycles	<i>Coordination Chemistry</i> in Press;	2008	I
P.M. Singru, Mr. K.D. Mali	Energy from Biomass for Sustainable Development; Potential and Harnessing Technologies	All India Seminar on Advances in Renewable Energy Technology" Accepted	2008	N
Ranjan Dey, Jyotsna Chhabra , S. K Shukla and J D Pandey	A study of Pb-Sn alloy at variable elevated temperatures through prediction of ultrasonic velocities, excess parameters & molecular interaction parameter	<i>J. Pure Appl. Ultrason. (In Press)</i>	2008	I
Ranjan Dey, Richa Verma, Tanuja Nautiyal ,Nitya K Soni and J D Pandey	Determination of Kirkwood – Buff integrals of multicomponent liquid systems from the speed of sound	<i>Physics &amp; Chemistry of Liquids (In Press)</i>	2008	I
Ranjan Dey, Anjan Chattopadhyay, Ashish K Sharma and J. D. Pandey	Study of excess thermodynamic properties of multicomponent liquid mixtures	<i>J mol. Liq.</i>	2008	I
Rashmi Chauhan and Veena Choudhary	Thermal and Mechanical Properties of Copolymers of Methyl Methacrylate with N-aryl Itaconimides	Journal of Applied Polymer Science	2008	I
Chanakya Badi and Anasuya Ganguly	Biocatalytic Production of a commercial textile dye (indigo) from xenobionts	14th International Biodeterioration and iodegradation symposium	Oct. 6-11,2008	I

**Annexure XV**  
**Conference / Workshop Presentations / Invited Talks**

<b>Speaker(s)/ Presenter(s)</b>	<b>Title</b>	<b>Conf./Work. / Org.</b>	<b>Date</b>	<b>Place</b>	<b>N/ I.</b>
Joy Auradha	IT Paper presented at English Language Teachers Association of India (ELTAI)	Third International Conference held jointly organized by British Council & Sathyabhama University,	8-10 Feb'08	Chennai	<b>I</b>
Shalini Upadhyay	Guidelines for Designing and Developing Soft Skills Contents for Mobile Phones, International Conference on Soft Skills Development Strategies	Corporate And Academia Perspectives,	Sept'08	BITS-Pilani	<b>I</b>
Basavadatta Mitra	Asianizing English-Young India's English Vis-à-vis the Lingua Franca,6th Asia TEFL Conference on Globalizing Asia	The Role of ELT,Bali,	August, 2008	Indonesia	<b>I</b>
Basavadatta Mitra	"The Coming of Age of the Global Citizen- Cross Cultural Communication-A Case Study on Goan Industries"	International Professional Communication Conference, Montreal, organized by Professional Communication Society of IEEE	July,2008	Montreal	<b>I</b>
Basavadatta Mitra	"The Coming of Age of the Global Citizen- Cross Cultural Communication-A Case Study on a Practice School Station, ,	International Conference on Soft Skills Development Strategies: Corporate And Academia Perspectives	Sept'08	BITS-Pilani	<b>I</b>
Joy Anuradha	'Soft Skills Development Strategies: Corporate and Academia Perspectives	International Conference on Soft Skills Development Strategies: Corporate And Academia Perspectives	Sept'08	BITS-Pilani	<b>I</b>
Debasis Patnaik	Community Participation in Well irrigation Scheme'	'Community Participation' by jointly organized by Byraju Foundation and NIRD at Medchal Byraju Foundation	Nov 1, 2008	Medchal District in Andhra Pradesh	<b>N</b>
Debasis Patnaik	Developing a Dynamic Framework to test the relationships among stock market returns, assuming production and consumption in finite time',	Fourteenth National Conference of Input-Output systems	March 25-27-2008.	University of Hyderabad	<b>N</b>
Sunil Bhand	"Modern and emerging biological and non biological techniques for detection of food borne pathogens and adulterants"	Application of quality assurance and food safety systems in supply chain agri business development	Sept'30 Oct'20.	IARI, New Delhi)	<b>N</b>

Anil Kumar	<i>Numerical Computation by Using Matlab (Six Lectures)</i>	National Workshop on Soft Computing	Jan 21 - 27, 2008	Gandhigram Rural University, Tamil Nadu	N
Anil Kumar	<i>Numerical Analysis with Matlab (Ten Lectures)</i>	<i>Third Summer School on Mathematics Education</i>	June 16-28	Birla Institute of Applied Sciences, Bhimtal, Uttarakhand	N
Reeta Dubey	Eigen Function Expansion Method to solve Non-homogeneous Partial Differential Equations	National Seminar on Applied Mathematics	March 8, 2008	Dhempe College of Arts & Science, Goa	N
A.Amalin Prince	RTL Design-Custom CPU Design	National Level Technical Symposium	March 12, 2008	Sahrdaya college of Engineering and Technology-Thrissur, Kerala	N
Arun V Kulkarni	Electrical & Thermal Conductivity ( <i>Two Lectures</i> )	UGC refresher course lectures	Feb 12, 2008	Academic Staff College at the Goa University	N
Arun V Kulkarni	Elementary Particles	Workshop for Physics Teachers	Nov, 22-23, 08	IAPT, GOA Regional Council in association with SCERT (Goa Govt) & BITS-Pilani, Goa Campus	N
Chanakya Badi and Anasuya Ganguly	Biocatalytic Production of a commercial textile dye (indigo) from xenobionts	14th International Biodeterioration and biodegradation symposium	Oct. 6-11, 2008	icily, Messina, Italy	I
Manjare S.D. and Jadhav Apeksha	Environmental Impact Assessment of Fuel Cell Technology	International Congress of Environmental Research-2008	Dec. 18-20, 2008	BITS-Pilani, Goa Campus,	I

***Annexure XVI***  
***Poster Presentations***

<b>Author</b>	<b>Title of paper</b>	<b>Presentation Name</b>	<b>Year</b>	<b>Presentation Place</b>
Rashmi Chauhan and Veena Choudhary	Microstructure Determination of Methyl Methacrylate-N-arylsubstituted Itaconimide Copolymers by NMR Spectroscopy	POLYCHAR16 World Forum on Advanced Materials World Unity Convention Centre,.	2008,	Lucknow, India
Mutnuri S	8 <sup>th</sup> IWA Specialized Conference on Small Water and Wastewater systems and 2 <sup>nd</sup> IWA Specialized Conference on Decentralized Water and Wastewater International Network	“anthracene degradation by bacteria present in bilge oil	2008	Coimbatore
Hasina Begum, Kabilan M. and Judith M. Braganca	Isolation of Haloarchaea from Solar salterns and low salinity Coastal waters	International Congress of Environmental Research.	2008	BITS – Pilani, Goa Campus, Zuari Nagar, Goa
Anasuya Ganguly and S S Ganguly	Paradigm shift in water resource management	8 <sup>th</sup> specialized conference on small water and waste water systems (SWWS) and the 2 <sup>nd</sup> specialized conference on Decentralized Water and Waste water International Network (DEWSIW) at the Kumaraguru College of Technology	2008	Coimbatore
M Srikanth and Vidya Prabhudesai	Isolation of hydrocarbonoclastic bacteria from bilge oil waters	14th International Bio-deterioration and biodegradation symposium	2008	Messina, Italy
S.D. Manjare	ISO 14000: A Basic Approach For Sustainable Development	International Congress of Environmental Research-2008	Dec, 18-20, 2008	BITS-Pilani, Goa Campus

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