ANNUAL REPORT

2011 – 2012

BENGAL ENGINEERING AND SCIENCE UNIVERSITY, SHIBPUR
HOWRAH – 711 103

From the Desk of the Vice chancellor

Professor Ajoy Kumar Ray
Vice Chancellor

BENGAL ENGINEEERING AND SCIENCE UNIVERSITY, SHIBPUR

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It is a pleasure for me to bring out the Annual report of our University for the year 2011-12. This University, with its glorious heritage of one hundred and fifty six years is now on the verge of being transformed to Indian Institute of Engineering Science and Technology, Shibpur, which will be an Institute of National Importance. The Government of India has decided to confer this status to our Institute in recognition of its great contribution in the field of Science and technology. That this University is relentlessly pursuing its journey towards achieving excellence will be evident from our activities during the under consideration.

Our University has recorded significant progress in academic pursuits for the past one year by way of its program of teaching, research and extension activities. Casting a glance at our academic departments, the University can boast of the commendable performance of its faculty members, particularly of their research output, as evidenced by more than 500 publications in various peer reviewed national and international journals as well as conference proceedings, books, monographs etc. In the last convocation, 35 students have been awarded Ph.D. degree and 235 fresh candidates have enrolled for Ph.D. program.

The number of sponsored projects and funding have increased manifold. At present, about 92 sponsored research projects are under operation in the University with the financial outlay of about Rs. 62 crores. In the last one year, 27 new projects worth nearly Rs. 27 crores have been sanctioned which includes projects like Multifinger Dextrous Intelligent Robot Hand for Radioactive Material Handling, Assessment of Effects of Arsenic Pollution on Health in Rural Bengal and Implementation of Sustainable Technology Solution which has been sponsored by UK-India Education and Research Initiative, Development of Smart Prognostic System for early Indication of Cardiac Problem, Computer aided Analytical Tool for Patient specific Prosthesis for different Human Joints, sponsored by DST and DBT, Govt. of India , Development and Application of Potentially Important Jute Geo-Textiles, sponsored by CFC, Netherlands, Development of Semiconductor Nano materials and many other such nationally and internationally sanctioned projects.

During the year, many of our faculty members have won several awards and laurels for their excellence in academic pursuits. To name a few of them : Dr. Sujoy Kumar Saha from the Department of Mechanical Engineering has been declared as a Fellow of American Society of Mechanical Engineering, Dr. Kaushik Mukherjee of the Department of Electrical engineering has been selected as Visiting Professor at Windsor University, Dr. Sudip Kumar Chattopadhyay of the Department of Chemistry has published invited articles for a special issue in Chemical Physics and also in a special issue of the Journal of Physical Chemistry A, Prof. Sipra Das Bit of the Department of Computer Science and technology has received the best paper award in the

International Conference on Wireless Vitae, Dr. swarup Ghosh of the Department of Metallurgy has been awarded the Indranil Award for Metallurgy for the year 2010-11.

The University has been privileged to receive a good number of visitors from in-country and abroad, both from academic institutes and industry. Some of such illustrious visitors are: Dr. Gene Frantz and Dr. C. P. Ravikumar from Texas Instruments, Prof. Dong Xiang from Tsinghua Univarsity, Beijing, Professor Kumar Wickramasinghe from University of California and some others.

In a most congenial academic ambience the students of this University have also earned highly acclaimed academic success. The students of the Department of Electronics and Telecommunications Engineering have successfully established a new communication laboratory using Voice over Internet Protocol Technology in collaboration with Illinois Institute of Technology and Bell Labs. Students of the School of Mechatronics and Robotics received the best M. Tech project awards from the Institute of Engineers (India), a student from the Department of Metallurgy has got the Innovation Student Prtoject Award from INAE for the year 2011.

Besides teaching and research in the conventional course curriculum, the university has also initiated academic activities pertaining to new and frontier technology areas of societal importance. A major project on stting up of Technology Business Incubation has been undertaken under sponsorship from National Science and Technology Entrepreneurship Development Board. The DST sponsored solar hub at the University has been expanded by getting two more R & D projects from the DST-SERI program. Centre of Excellence for Green Energy and Sensor Systems has taken up a major nationally important project titled "Advanced Research on Thin Film Silicon Solar Cells and PV Systems".

The University has not confined itself only in the classrooms and laboratories but also undertaken social outreach programs like organizing a pre-clinical health check up camp for the slum dwellers in the vicinity of the University, preparation of Howrah Development and Rejuvenation Plan, Rehabilitation planning program for cyclone affected people etc.

The ultimate success of a predominantly technological University like ours is judged by its ability to develop technically sound, trained, industry-ready manpower and their placement in jobs. We are extremely happy that remarkable progress in placement has been achieved in the current year across various industries including some of the very high-end ones. Substantial effort has also been given to motivate the students in entrepreneurship by the Entrepreneurship Development Cell.

Significant augmentations in the infrastructure for facilitating academic research and administrative activities have also been undertaken during the past year.

From the Annual Report of the various Departments, Schools and Administrative sections, it will be evident that the University is consistently moving ahead in all its activities at a very fast pace, creating real man power and thus serving the country.

I would like to extend my heartiest thanks and congratulations to all the Faculty members, students, officers and staff of the University for working in harmony. My special thanks to the people who worked tirelessly to bring out this Annual Report.

(**Ajoy Kumar Ray**)

Contents

Introductory note with a brief history of the University

Bengal Engineering College, commonly known as B.E.College started its journey as the Civil Engineering College on 12th February 1856. During this long journey, this pioneering Engineering College achieved one milestone after another. Since 1856 a number of other Departments were gradually included which have produced many reputed Engineers.

❖ There are various phases through which this institution has passed, over the last 150 yrs

❖ On January 24, 1857 the faculty of Civil Engineering was formed with the establishment of Calcutta University.

❖ On May 2,1857 the Civil Engineering College was affiliated to the University.

❖ In November 1864 the Civil Engineering College lost its separate entity and independent existence and the Civil Engineering College become the Civil Engineering Department of the Presidency College and remained attached to it as an adjunct till 1879.

❖ The Civil Engineering College become the Civil Engineering Department of the Presidency College and remained attached to it as an adjunct till 1879.

❖ In the year 1880 the College occupied the premises of the Bishop's College at Shibpur and from the 5th April 1880, the college under the name Government Engineering College, Howrah started functioning.

❖ On 18th May 1887, the name was changed to the Civil Engineering College Seebpore, gradually under went changes, namely, first Sibpur and then Shibpur.

❖ As a first step to reach the goal of including other Departments along with Civil Department the nomenclature of the college was changed from the 12th February 1920 to the Bengal Engineering College, Sibpur

❖ From March 24, 1921 in order to avoid postal delay the College was redesignated as the "Bengal Engineering College" which came to be popularly known as B.E.College.

On 16.02.1993,the BE College was given the status of Deemed University and from October 1,2004 the Director was designated as the Vice-Chancellor and the Deemed University was given the status of a full fledged State University under the name Bengal Engineering and Science University, Shibpur.

LIST OF ADMINISTRATIVE HEAD / GOVERNANCE

Chancellor	**Shri M.K. Narayanan**
Vice Chancellor	**Prof. Ajoy Kumar Ray**
Dean of Faculty of Engg. and Technology	**Prof. Amit Kumar Das / Prof. Partha Pratim Chattopadhyay**
Dean of Faculty of Basic and Applied Sciences	**Prof. Bichitra Kumar Guha / Prof. Binayak S. Choudhury**
Dean of Faculty of Social and Management Sciences	**Prof. Manas Kumar Sanyal / Prof. Madhumati Dutta,**
Dean of Students (PICSA)	**Lt. Col A. K. Ghosh (Retd.)**

MEMBERS OF COURT

Name	Position	Address
Shri M. K. Narayanan **Chancellor** & **Governor of West Bengal**	Chairman	Raj Bhavan, Kolkata – 700001 Ph: 2200-1641 Fax: 033-22002444
Prof. Ajoy Kumar Ray Vice Chancellor	Vice Chairman	Bengal Engineering and Science University, Shibpur, Howrah – 711 103 Ph: 2668 2674, Fax : 2668 7575 E-mail : vc@becs.ac.in, ajoy_ray2004@yahoo.com
Prof. N.R. Banerjea, Immediate Preceeding Vice Chancellor, BESUS	Member	Kolkata
The Secretary, Higher Education Dept., Govt. of West Bengal, or his nominee	Member	Kolkata
Shri Dipankar Saha, **The Secretary, Finance Dept., Govt. of West Bengal, or his nominee**	Member	Bikash Bhawan, Kolkata – 700 091 Writers' Building, Kolkata – 700 001
The President, West Bengal Council of Higher Secondary Education	Member	Vidysagar Bhawan, 9/2, Block-DJ, Sector-11 Salt Lake, Kolkata – 700 091
The Director, Indian Association for Cultivation of Science	Member	Jadavpur, Kolkata – 700 032
Dean, Faculty in PG & UG Studies in Engineering and Technology Prof. Amit Kumar Das / Prof. Partha Pratim Chattopadhyay	Member	Bengal Engineering and Science University, Shibpur, Howrah – 711 103
Dean, Faculty in PG & UG Studies in	Member	Bengal Engineering and Science University,

Basic and Applied Sciences Prof. Bichitra Kumar Guha / Prof. Binayak S. Choudhury		Shibpur, Howrah – 711 103
Dean, Faculty in PG & UG Studies in **Social and Management Sciences** Prof. Manas Kumar Sanyal / Prof**.** Madhumati Dutta	Member	Bengal Engineering and Science University, Shibpur, Howrah – 711 103
Salil Halder Professor and Head of AEAM	Member	Bengal Engineering and Science University, Shibpur, Howrah
Arup Sarkar Head of ARTP	Member	Kolkata
Professor and Head, Department of Civil Engineering	Member	Bengal Engineering and Science University, Shibpur, Howrah
Shyamal Kumar Chattopadhyay Professor and Head, Department of Chemistry	Member	Bengal Engineering and Science University
Sipra Das Bit Professor & Head, Department of Computer Science and Technology	Member	Bengal Engineering and Science University
Biswarup Basak Professor and Head, Department of Electrical Engineering	Member	Bengal Engineering and Science University
Monojit Mitra Associate Professor & Head, Department of Electronics & Tele Communications	Member	Bengal Engineering and Science University
Bhabani Prasad Mukhopadhyay Professor and Head, Earth Sc. Department	Member	Bengal Engineering and Science University
Manas Kumar Sanyal Professor & Head, Department of Human Resource Management	Member	Bengal Engineering and Science University
Mallika Ghosh Sarbadhikary Associate Professor & Head, Humanities and Social Sciences Department	Member	Bengal Engineering and Science University
Santi Prasad Maity Associate Professor & Head, Department of Information Technology	Member	Bengal Engineering and Science University
Murari Mitra Professor and Head, Mathematics Department	Member	Bengal Engineering and Science University
Sujoy Kumar Saha Professor and Head, Department of Mechanical Engineering	Member	Bengal Engineering and Science University
Sanjoy Sadhukhan Associate Professor and Head, Department of Metallurgy And Materials Engineering	Member	Bengal Engineering and Science University, Shibpur, Howrah – 711 103
Prabir Kumar Paul Professor & Head, Department of Mining Engineering	Member	Bengal Engineering and Science University
Sampad Mukherjee Associate Professor and Head, Physics Department	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. N.R.Bandyopadhyay , Director, School	Member	Bengal Engineering and Science University,

of Material Science and Engineering		Shibpur, Howrah
Prof. Souvanic Roy / Sudip Roy, Director, School of Ecology Infrastructure and Human Settlement Management	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Ambarish Ghosh, Director, School of Disaster Mitigation Engineering	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. S.C.Saha, / Prof. S.R. Bhadra Chaudhuri Direcor, School of Management Science	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. N.R.Bandyopadhyay , Director, School of Material Science and Engineering	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. P.K.Ray, Direcor, School of Mechatronics & Robotics	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. B.K.Bhattacharya, Director, School of Safety & Occupational Health Engineering	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Hafizur Rahaman, Director, School of VLSI Technology	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Arindam Biswas, Director, Purabi Das School of Information Technology	Member	Bengal Engineering and Science University, Shibpur, Howrah
Nominee : UGC Dr. Jalees Ahmed Khan Tareen UGC Member & Vice Chancellor	Member	Pondicherry Central University, R.Venkataraman Nagar, Kalapet, Puducherry – 605 014
Nominee : AICTE Dr. N.K.Kole	Member	Regional Officer, AICTE-South Western Regional Office Bangalore University Campus Bangalore – 560 009
Dr. D. Bhattacharyya, One Member of the West Bengal Legislative Assembly, to be elected by the Members of the West Bengal Legislative Assembly	Member	Kolkata
Shri Subrata Ghosh, Member Secretary, West Bengal State Council of Higher Education	Member	147A, Rashbehari Avenue, Kolkata – 700 029
Shri Archan Kusum Majumdar Chairman, West Bengal State Centre, The Institution of Engineers (India)	Member	(F-16022-CV), AE-701, Sector-I, Saltlake, Kol-34 email : archanm@yahoo.com

Other Members
Professors

Prof. Goutam Bandyopadhyay Dept.of Electrical Engineering`	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Netai Chandra Dey Dept.of Mining Engineering, BESUS	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Shyamal Kumar Chattopadhyay Dept.of Chemistry, BESUS	Member	Bengal Engineering and Science University, Shibpur, Howrah

Teachers		
Sri Amitava Roy Dept.of Architecture	Member	Bengal Engineering and Science University, Shibpur, Howrah
Sri Manas Hira Dept.of Computer Science & Technology	Member	Bengal Engineering and Science University, Shibpur, Howrah
Sri Sugato Pal Dept.of Civil Engineering, BESUS	Member	Bengal Engineering and Science University, Shibpur, Howrah
Student		
Post-Graduate Student		
Md Firoz Khan	Member	Bengal Engineering and Science University, Shibpur, Howrah
Under Graduate Students		
Sri Bidhan Chandra Pal	Member	Bengal Engineering and Science University, Shibpur, Howrah
	Member	Bengal Engineering and Science University, Shibpur, Howrah
Sm. Pritha Chatterjee	Member	Bengal Engineering and Science University, Shibpur, Howrah
Elected Officers		
Dr. Biman Das, Development Officer	Member	Bengal Engineering and Science University, Shibpur, Howrah
Dr. Hari Prasad Sharma, Deputy Librarian	Member	Bengal Engineering and Science University, Shibpur, Howrah
Elected Non-Teaching Staff		
Sri Anil Kumar Majhi	Member	Bengal Engineering and Science University, Shibpur, Howrah
Sri Satyajit Barua	Member	Bengal Engineering and Science University, Shibpur, Howrah
Nominated by the State Government		
Sri Birenjit Kumar Pal Former Managing Director, West Bengal Power Development Corporation	Member	22, Ram Charan Naskar Lane Howrah – 711 107

Ltd		
Sri Goutam Roy Vice President CESC Ltd.	Member	CESC House Kolkata – 700 001 E-mail : goutam.ray@cesc.co.in Ph : 9831054644 (M)
Prof. Siddhartha Datta Pro-Vice-Chancellor, Jadavpur University	Member	Jadavpur, Kolkata – 700 032
Prof. Sabyasachi Sengupta, Nominated by the Chancellor Vice Chancellor, WBUT	Member	BF-142, Sector 1, Salt Lake City Kolkata – 700 064
Prof. Sudhangshu S. Chakraborty Chairman & M.D., Consulting Engineering Services (India) Private Limited	Member	57, Nehru Place (5th Floor) , New Delhi – 110 019 Ph : 011-2648 4074/2643 1915, 41606759, 41392466 Fax : 011 – 2628 1898 E-mail : ssc@cesinter.com
Sri Santanu Chatterjee, Members of the Alumni Association Nominated by the State Govt.	Member	Executive Director, CESC Ltd., CESC House Kolkata – 700 001
Sri S.P.Datta, Former Project Director, PWD (Roads) Govt. of West Bengal	Member	FD-217/7, Salt Lake Kolkata – 700 064 Ph : 9830292214 (M)
Dr. Biman Bandyopadhyay, Registrar	**Secretary**	Bengal Engineering and Science University, Shibpur, Howrah Ph : 2668 1503 (O), Fax : 2668 2916 E-mail : regis@becs.ac.in
Shri M.N. Sarkar, F.O.	Invitee	Bengal Engineering and Science University, Shibpur, Howrah

Members of the Executive Council

Name	Position	Address
Vice Chancellor Dr. Ajoy Kumar Roy	Chairman	Bengal Engineering and Science University, Shibpur, Howrah Ph: 2668 2674, Fax : 2668 2916 E-mail : vc@becs.ac.in, ajoy_ray2004@yahoo.co.in
Deans : Faculty Councils for PG & UG Studies		
Engineering and Technology Prof. Amit Kumar Das	Member	Bengal Engineering and Science University, Shibpur, Howrah
Basic and Applied Sciences Prof. Bichitra Kumar Guha	Member	Bengal Engineering and Science University, Shibpur, Howrah
Social and Management Sciences Prof. Manas Kumar Sanyal	Member	Bengal Engineering and Science University, Shibpur, Howrah
Professor Elected by the Faculty Councils		
Prof. Goutam Bandyopadhyay Dept.of Electrical Engineering	Member	Bengal Engineering and Science University, Shibpur, Howrah
Teacher Elected by the Faculty Councils		
Dr. Pritha Das Dept.of Mathematics	Member	Bengal Engineering and Science University, Shibpur, Howrah
Professor Elected by the Court		
Prof. Netai Chandra Dey Dept.of Mining Engineering	Member	Bengal Engineering and Science University, Shibpur, Howrah
Teacher Elected by the Court		
Sri Sugato Pal Dept.of Civil Engineering	Member	Bengal Engineering and Science University, Shibpur, Howrah
Members **other than Teachers,** **Students and Non-Teaching Staff**		
Sri Goutam Roy General Manager (HR),	Member	General Manager (HR), CESC Ltd., CESC House Kolkata – 700 001

Elected Officer		
Dr. Biman Das, Development officer	Member	Bengal Engineering and Science University, Shibpur, Howrah
Elected Representative : Non Teaching Staff		
Sri Satyajit Barua	Member	Bengal Engineering and Science University, Shibpur, Howrah
Nominated by the Vice Chancellor		
Prof. N.R.Bandyopadhyay, Director, School of Material Science and Engineering	Member	
Nominated by the Chancellor		
Prof. S.Dutta Gupta, Director, IISER Kolkata	Member	Mohanpur Campus, P.O.-BCKV Campus, Mohanpur, Nodia, 741252 (W.B.)
Nominated by the State Govt.		
Sri Sailapati Gupta, Secretary, Housing Dept. & Former President, HRBC	Member	AE-502, Salt Lake, Sector – I Kolkata – 700 064
Sri Bhaskar Sen Chairman, Senz Natural Food Pvt. Ltd. & Former President, BNCCI 26A, Prince Anwar Shah Road Lake Gardens, Kolkata – 700 045	Member	Chairman, Senz Natural Food Pvt. Ltd. & Former President, BNCCI 26A, Prince Anwar Shah Road Lake Gardens, Kolkata – 700 045
Shri U. S. Mondal, Joint Secretary, Higher Education Dept. Govt. of West Bengal, or his nominee not below the rank of Joint Secretary or Special Secretary to the Govt. of West Bengal Bikash Bhawan, Kolkata – 700 091	Member	Bikash Bhawan, Kolkata – 700 091
The Secretary, Finance Dept., Govt. West Bengal, or his nominee not below the rank of Joint Secretary or Special Secretary to the Govt. of West Bengal	Member	Writers' Building, Kolkata – 700 001
Secretary to the Executive Council		
Dr. Biman Bandyopadhyay, Registrar	Member	Bengal Engineering and Science University, Shibpur, Howrah Ph : 2668 1503 (O), Fax : 2668 2916 E-mail : regis@becs.ac.in
Shri M.N. Sarkar, F.O.	Invitee	Bengal Engineering and Science University, Shibpur, Howrah

Members of the Faculty Council for PG and UG Studies in Engineering and Technology:

Name	Position	Address
Prof. Ajoy Kumar Ray	Vice Chancellor [Chairman]	Bengal Engineering and Science University, Shibpur, Howrah Ph: 2668 2674, Fax : 2668 7575 E-mail : vc@becs.ac.in, ajay_ray2004@yahoo.com
Dean		
Prof. Amit Kumar Das		Bengal Engineering and Science University, Shibpur, Howrah
The Head or Heads of the Department or Departments		
Aerospace Engineering & Applied Mechanics Prof. Sujoy Kumar Mukherjea / Dwijendra Nath Mallick	Member	Bengal Engineering and Science University, Shibpur, Howrah
Architecture, Town & Regional Planning Prof. Aditya Bandyopadhyay / Souvanic Roy	Member	Bengal Engineering and Science University, Shibpur, Howrah
Civil Engineering Prof. K.K. Chattopadhyay	Member	Bengal Engineering and Science University, Shibpur, Howrah
Computer Science & Technology Prof. Jaya Sil / Susanta Chakraborty	Member	Bengal Engineering and Science University, Shibpur, Howrah
Electrical Engineering Prof. Srikumar Mallick / Debasis Sarkar	Member	Bengal Engineering and Science University, Shibpur, Howrah
Electronics & Telecommunication Engineering Prof. S.R.Bhadra Chaudhuri / Arabinda Roy	Member	Bengal Engineering and Science University, Shibpur, Howrah
Information Technology Prof. Hafizur Rahaman	Member	Bengal Engineering and Science University, Shibpur, Howrah
Metallurgy & Materials Science Engineering Prof. Amitava Basumallick / Prof. Partha Pratim Chattopadhyay	Member	Bengal Engineering and Science University, Shibpur, Howrah
Mining Engineering Prof. Indranath Sinha /Suranjan Sinha	Member	Bengal Engineering and Science University, Shibpur, Howrah
Mechanical Engineering Prof. Debasis Dutta	Member	Bengal Engineering and Science University, Shibpur, Howrah
The Directors of Schools		
School of Community Science & Technology Prof. N.R.Bandyopadhyay	Member	Bengal Engineering and Science University, Shibpur, Howrah
School of Ecology Infrastructure and Human Settlement Management	Member	Bengal Engineering and Science University, Shibpur, Howrah

Prof. Souvanic Roy		
School of Disaster Mitigation Engineering Prof. Ambarish Ghosh	Member	Bengal Engineering and Science University, Shibpur, Howrah
School of Material Science and Engineering Prof. N.R.Bandyopadhyay	Member	Bengal Engineering and Science University, Shibpur, Howrah
School of Mechatronics & Robotics Prof. P.K.Ray	Member	Bengal Engineering and Science University, Shibpur, Howrah
School of Safety & Occupational Health Engineering Prof. B.K.Bhattacharyay	Member	Bengal Engineering and Science University, Shibpur, Howrah
School of VLSI Technology Prof. Hafizur Rahaman	Member	Bengal Engineering and Science University, Shibpur, Howrah
Purabi Das School of Information Technology Prof. Arindam Biswas	Member	Bengal Engineering and Science University, Shibpur, Howrah
Professors of the Departments		
Aerospace Engineering & Applied Mechanics		
Prof. Sujay Kumar Mukherjea	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Mrityunjoy Chattopadhyay	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Salil Halder	Member	Bengal Engineering and Science University, Shibpur, Howrah
Architecture, Town & Regional Planning		
Prof. Swati Saha	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Aditya Bandyopadhyay	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Arup Sarkar	Member	Bengal Engineering and Science University, Shibpur, Howrah
Civil Engineering		
Prof. Ambarish Ghosh	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Anirban Gupta	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Kalyan Kumar Bhar	Member	Bengal Engineering and Science University, Shibpur, Howrah

Prof. Goutam Bhattacharya	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Subrata Chakraborty	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Sudip Kumar Roy	Member	Bengal Engineering and Science University, Shibpur, Howrah
Computer Science & Technology		
Prof. Amit Kumar Das	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Uma Bhattacharya	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Sipra Das Bit	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Jaya Sil	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Biplab Sikdar	Member	Bengal Engineering and Science University, Shibpur, Howrah
Electrical Engineering		
Prof. Abhijit Chakraborty	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Ashoke Sutradhar	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Biswarup Basak	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Debasis Sarkar	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Gautam Bandyopadhyay	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Jagadish Pal	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Prasid Syam	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Abdur Rouf	Member	Bengal Engineering and Science University, Shibpur, Howrah

Prof. Chandan Kumar Chanda	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Ashok Kumar Maitra	Member	Bengal Engineering and Science University, Shibpur, Howrah
Electronics & Telecommunication Engineering		
Prof. Baidyanath Roy	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Dipankar Mukherjee	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. S.R.Bhadra Chaudhuri	Member	Bengal Engineering and Science University, Shibpur, Howrah
Information Technology		
Prof. Hafizur Rahaman	Member	Bengal Engineering and Science University, Shibpur, Howrah
Mechanical Engineering		
Prof. Apurba Kishore Dutta	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Sisir Kumar Guha	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. S. K. Karmakar	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Bidyut Kumar Bhattacharyya	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Bijan Kumar Mandal	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Shyamal Chatterjee	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Sujoy Kumar Saha	Member	Bengal Engineering and Science University, Shibpur, Howrah

Mining Engineering		
Prof. N.C.Dey	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. I.N. Sinha	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Prabir Pal	Member	Bengal Engineering and Science University, Shibpur, Howrah
Metallurgy & Materials Science Engineering		
Prof. Subrata Chatterjee	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Amitava Basu Mallick	Member	Bengal Engineering and Science University, Shibpur, Howrah
Electeded Teachers belonging to the Departments of the Faculty Council Concerned		
Sri Debashis Moitra Dept. of Civil Engineering	Member	Bengal Engineering and Science University, Shibpur, Howrah
Dr. Mainak Sengupta Dept. of Electrical Engineering	Member	Bengal Engineering and Science University, Shibpur, Howrah
Dr. Sekhar Mandal Dept. of Computer Science & Technology	Member	Bengal Engineering and Science University, Shibpur, Howrah
Dr. Sudip Ghosh Dept. of Mechancial Engineering	Member	Bengal Engineering and Science University, Shibpur, Howrah
Sri Sukanta Das Dept. of Information Technology	Member	Bengal Engineering and Science University, Shibpur, Howrah
Nominee of the Vice Chancellor having special knowledge in the subject or subject concerned		
Prof. Mita Nasipuri	Member	Dept. of Computer Science & Engineering. Jadavpur University Kolkata – 700 032 Ph : 9831128131 (M) E-mail : mnasipuri@cscjdvu.ac.in
Prof. Niladri Chakraborty	Member	HOD, Power Engineering Jadavpur University, Kolkata – 700 032 Ph : 9830602872 (M) E-mail : chakraborty_niladri2004@yahoo.com
Prof. S.K.Ray	Member	Advisor, HIDCO, Salt Lake Stadium Complex Gate No 3, Sector – III Kolkata – 700 091 Ph : 9830028022 (M)

Dr.Soumitra Tarafdar	Member	Scientist 'F', Dy. Director, NML Jamshedpur – 831 007
Prof. Tapan Basu	Member	Advisor, Engg. And Science Aliah University, DN-41, Sector-V, Salt lake, Kol-91
Nominated by the Executive Council having special knowledge in the subject		
Vacant		
Prof. Sankhayan Chowdhury	Member	Dept of Computer Science & Engineering Calcutta University, Senate House 87/1, College Street, Kolkata – 700 073 Ph: 9433040414 (M), E-mail: sankhayan@gmail.com
Prof. Sivaji Chakraborti	Member	Dept of Electrical Engg, Jadavpur University, Kolkata – 700 032 Ph: (0)2414 6948, Email: sivaji@ee.jdvu.ac.in
Dr. Debasis Datta	Secretary to the Faculty Council	Secretary to Vice Chancellor E-mail address : secy2vc@yahoo.co.in

16.03.2012 – July 2012

Members of the Faculty Council for PG and UG Studies in Engineering and Technology

Dr. Ajoy Roy
Vice Chancellor, Chairman Faculty Council
Ph: 2668 2674, Fax: 2668 2916
E-mail: vc@becs.ac.in

Prof. Amit Kumar Das
Dean Faculty of Engineering and Technology

The Head of the Departments
Aerospace Engineering & Applied Mechanics
Dwijendra Nath Mallick
Member

Architecture, Town & Regional Planning
Prof. Souvanic Roy
Member

Civil Engineering
Prof. K.K. Bhar
Member

Computer Science & Technology
Prof. Susanta Chakraborty
Member

Electrical Engineering
Prof. Debasis Sarkar
Member

Electronics & Telecommunication Engineering
Prof. Arabinda Roy

Member

Information Technology
Prof. S. P. Maity
Member

Mechanical Engineering
Prof. Debasis Datta
Member

Metallurgy & Materials Science Engineering
Prof. Partha Pratim Chattopadhyay
Member

Mining Engineering
Prof. Suranjan Sinha
Member

The Director of Schools
Vacant
The Professor or Professors of the Departments
Aerospace Engineering & Applied Mechanics

Prof. Sujay Kumar Mukherjea
Member

Prof. Mrityunjoy Chattopadhyay
Member

Prof. Salil Halder
Member

Architecture, Town & Regional Planning

Prof. Aditya Bandyopadhyay
Member

Prof. Arup Sarkar
Member

Prof. Swati Saha
Member

Prof. Keya Mitra
Member

Civil Engineering

Prof. Goutam Bhattacharya
Member

Prof. Kalyan Kumar Chattopadhyay
Member

Prof. Subrata Chakraborty

Member

Prof. Anirban Gupta
Member

Prof. Ambarish Ghosh
Member

Prof. Sudip Kumar Roy
Member

Computer Science & Technology

Prof. Amit Kumar Das
Member

Prof. Uma Bhattacharya
Member

Prof. Jaya Sil
Member

Prof. Sipra Das Bit
Member

Prof. Biplab Sikdar
Member

Electrical Engineering

Prof. Gautam Bandyopadhyay
Member

Prof. Abhijit Chakraborty
Member

Prof. Biswarup Basak
Member

Prof. Jagadish Pal
Member

Prof. Ashoke Sutradhar
Member

Prof. Abdur Rouf
Member

Prof. Prasid Syam
Member

Prof. Chandan Kumar Chanda

Member

Prof. Ashok Kumar Maitra
Member

Electronics & Telecommunication Engineering

Prof. S.R.Bhadra Chaudhuri
Member

Prof. Dipankar Mukherjee
Member

Prof. Baidyanath Roy
Member

Information Technology

Prof. Hafizur Rahaman
Member

Mechanical Engineering

Prof. Sisir Kumar Guha
Member

Prof. S. K. Karmakar
Member

Prof. Sujoy Kumar Saha
Member

Prof. Apurba Kishore Dutta
Member

Prof. Bijan Kumar Mandal
Member

Prof. Shyamal Chatterjee
Member

Prof. Bidyut Kumar Bhattacharyya
Member

Metallurgy & Materials Science Engineering

Prof. Subrata Chatterjee
Member

Prof. Amitava Basu Mallick
Member

Mining Engineering

Prof. Prabir Kumar Pal
Member

Prof. N.C.Dey
Member

Prof. I.N. Sinha
Member

Teachers Elected
vacant
Dr. Debasis Datta
Executive Secretary to the Vice Chancellor
Secretary Faculty Council

Members of the Faculty Council for PG and UG Studies in Basic and Applied Sciences:

Name	Position	Address
Prof. Ajoy Kumar Ray	Vice Chancellor [Chairman]	Bengal Engineering and Science University, Shibpur, Howrah Ph: 2668 2674, Fax : 2668 7575 E-mail : vc@becs.ac.in, ajay_ray2004@yahoo.com
Dean		
Prof. Bichitra Kumar Guha	Member	Bengal Engineering and Science University, Shibpur, Howrah
The Head or Heads of the Department or Departments		
Chemistry Prof. Anup Mondal	Member	Bengal Engineering and Science University, Shibpur, Howrah
Mathematics Prof. Guruprasad Samanta	Member	Bengal Engineering and Science University, Shibpur, Howrah
Physics Prof. Sukhendu Sekhar Sarkar / Prof. Mousumi Basu	Member	Bengal Engineering and Science University, Shibpur, Howrah
The Directors of Schools		
School of Community Science & Technology Dr. N.R. Bandapadhyay	Member	Bengal Engineering and Science University, Shibpur, Howrah

Professors of the Departments		
Chemistry		
Prof. Bibhutosh Adhikary	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Jayati Dutta	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Prasanta Nandi	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. S.P.Goswami	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Shyamal Kumar Chattopadhyay	Member	Bengal Engineering and Science University, Shibpur, Howrah
Mathematics		
Prof. B.Mukhopadhyay	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. B.Samaddar Chowdhury	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. T.K.Roy	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. S.K.Majumder	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Murari Mitra	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Ashok Kr. Dhar	Member	Bengal Engineering and Science University, Shibpur, Howrah
Physics		
Prof. B.K.Guha	Member	Bengal Engineering and Science University, Shibpur, Howrah
Dr. S.S. Sarkar	Member	Bengal Engineering and Science University, Shibpur, Howrah
Prof. Dipali Banerjee	Member	Bengal Engineering and Science University, Shibpur, Howrah

Earth Sciences		
Dr. B.P. Mukhopadhyay	Member	Bengal Engineering and Science University, Shibpur, Howrah
Dr. Ananya Biswas	Member	Bengal Engineering and Science University, Shibpur, Howrah
Teachers Elected		
Dr. Mousumi Basu Dept. of Physics	Member	Bengal Engineering and Science University, Shibpur, Howrah
Dr. Pritha Das Dept. of Mathematics	Member	Bengal Engineering and Science University, Shibpur, Howrah
Dr. Sudip Kumar Chattopadhyay Dept. of Chemistry	Member	Bengal Engineering and Science University, Shibpur, Howrah
Dr. Syed Minhaz Hossain Dept. of Physics	Member	Bengal Engineering and Science University, Shibpur, Howrah
Dr. Tapan Kumar Kar Dept. of Mathematics	Member	Bengal Engineering and Science University, Shibpur, Howrah
Nominee of the Vice Chancellor		
Prof. A.Goswami	Member	Dept. of Mathematics, IIT Kharagpur Kharagpur – 721 302, West Bengal
Prof. Dipak Ghosh	Member	Dept. of Physics, Jadavpur University Kolkata – 700 032 Ph : 9831204247 (M)
Prof. Nibir Mondal	Member	Dept. of Earth Science, IISER Kolkata IIT Kharagpur Extension Centre Block – HC, Sector – III, Salt Lake City Kolkata – 700 106
Prof. Samaresh Bhattacharya	Member	Dept. of Chemistry, Jadavpur University Kolkata – 700 032
Prof. Sovakar Ganguly	Member	Dept. of Mathematics University of Calcutta, Kailaspuri South of Sethpukur, Barasat, 24pgns (North), Pin-700124

Nominated by the Executive Council		
Prof. Arghya Deb	Member	Dept. of Physics, Jadavpur University Kolkata – 700 032 Ph : 9433426531 (M)
Prof. Jyoti Das	Member	Dept. of Mathematics, University of Calcutta 248B,B.B. Chaterjee Road, P.O.-Kasba, Kolkata-42
Prof. Pradip Mohapatra	Member	Dept. of Chemistry, Jadavpur University Kolkata – 700 032 Ph : 9433257808 (M) E-Mail : mppradip@hotmail.com
Shri S. N. Datta Ph : 2668 4561 (O) E-mail : dr@becs.ac.in	Secretary to the Faculty Council	Bengal Engineering and Science University, Shibpur, Howrah

16.03.2012- 30.06.2012
Members of the Faculty Council for PG and UG Studies in Basic and Applied Sciences

Dr. Ajoy Roy
Vice Chancellor, Chairman Faculty Council
Ph: 2668 2674, Fax : 2668 2916
E-mail : vc@becs.ac.in

Prof. Bichitra Kumar Guha
Dean Faculty of Basic and Applied Sciences

The Head of the Departments
Prof. Shyamal Kumar Chattopadhyay
Chemistry
Member
Prof. Murari Mitra
Mathematics
Member
Prof. Mousumi Basu
Physics
Member
Prof. Ananya Biswas
Earth Sciences
Member

The Director of the Schools
The Directors of Schools

School of Ecology Infrastructure and Human Settlement management
Professor Souvanic Roy
Member

School of Disaster Mitigation Engineering
Professor Ambarish Ghosh
Member

School of material Science and Engineering
Professor N.R. Bandyopadhyay
Member

School of Mechatronics & Robotics
Professor Aurobindo Roy
Member

School of Safety & Occupational Health Engineering
Professor B. K. Bhattacharya
Member

School of VLSI Technology
Professor Hafizur Rahaman
Member

Purabi Das School of Information Technolog
Professor Arindam Biswas
Member

School of Mangement Science
Prof. S. C. Saha / Prof. S. R. Bhadrachaudhury
Member

School of Community Science & Technology
Prof. N. R. Bandyopadhyay
Member

Member
The Professor or Professors of the Departments
Chemistry
Prof. Bibhutosh Adhikary
Member

Prof. Jayati Dutta
Member

Prof. Prasanta Nandi
Member

Prof. S.P.Goswami
Member

Prof. Anup Mondal
Member

Earth Sciences
Prof. Bhabani Prasad Mukhopadhyay
Member

Mathematics

Prof. B.Mukhopadhyay
Member

Prof. B.Samaddar Chowdhury
Member

Prof. T.K.Roy
Member

Prof. S.K.Majumder
Member

Prof. Guru Prasad Samanta
Member

Prof. Ashok kr. Dhar
Member

Physics

Prof. B.K.Guha
Member

Prof. Dipali Banerjee
Member

Prof. Sukhendu Sekhar Sarkar
Member

Shri S. N. Datta
Secretary to the Faculty Council
Ph : 2668 4561 (O)
E-mail : dr@becs.ac.in

Members of the Faculty Council for PG and UG Studies in Social and Management Sciences:

Name	Position	Address
Prof. Ajoy Kumar Ray Vice Chancellor	*Chairman*	Ph: 2668 2674, Fax : 2668 7575 E-mail : vc@becs.ac.in, ajay_ray2004@yahoo.com
Prof. Manas Kumar Sanyal, **Dean faculty of Social and Management Sciences**	Member	Bengal Engineering and Science University, Shibpur
The Head of the Departments		
Prof. M.K.Sanyal , **HRM**	Member	Bengal Engineering and Science University, Shibpur
Prof. M.Datta , **Humanities**	Member	Bengal Engineering and Science University, Shibpur
The Director of Schools		
Prof. S.C.Saha / S.R.Bhadra Chaudhri, **School of Management Science**	Member	Bengal Engineering and Science University, Shibpur
The Professor or Professors of the Departments		
Prof. P.S.Roy, **Humanities**	Member	Bengal Engineering and Science University, Shibpur
Lt. Col (Retd.) A.K.Ghosh, **PICSA**	Member	Bengal Engineering and Science University, Shibpur
Teachers Elected		
Sri Dibyendu Chatterjee Workshop,	Member	Bengal Engineering and Science University, Shibpur Ph : 9433284629 (M) E-mail : dibyendu_c60@yahoo.co.in
Dr. Partha Sarathy Roy Dept. of Humanities	Member	Bengal Engineering and Science University, Shibpur
Sri Rupen Basu Mallik Dept. of Humanities	Member	Bengal Engineering and Science University, Ph : 9831313642 (M) E-mail : rbmallik@gmail.com
Sri Sandip Chattopadhyay Dept. of HRM	Member	Bengal Engineering and Science University, Ph : 9432183961 (M)
Dr. Zia-ul-Alam Dept. of HRM	Member	Bengal Engineering and Science University, Ph : 9433128404 (M)

Nominee of the Vice Chancellor		
Dr.A.K.Chakraborty Former Chairman, West Bengal School Service Commission	Member	14/3B, Jadunath Ukil Road Kolkata – 700 041
Dr. Gautam Sengupta Chief Operating Officer & Vice President Kitchen Appliance India Ltd.		Sector V, Block BP, Salt Lake City, Kolkata – 700 091 Ph : 9831036663, E-mail : goutamsengupta@videoconmail.com
Prof. Jayashree Roy Dept. of Economics, Jadavpur University	Member	Jadavpur University Kolkata – 700 032 Ph : 2425 7382, 6414 7760
Prof. Ranjit Chakraborty Dept. of Management, University of Calcutta	Member	University of Calcutta Alipore Campus, 1, Reformatory Street Kolkata – 700 027
Prof. Subir Chowdhury Ex-Director, IIMC	Member	50U, Garcha Road, Kolkata – 700 019
Nominated by the Executive Council		
Prof. Ishita Mukherjee Dept. of Economics, University of Calcutta	Member	University of Calcutta Senate House, 87/1, College Street Kolkata – 700 073 Ph : 9830045339 (M) E-mail : imukhopadhyay@hotmail.com
Prof. Nilanjana Gupta Dept. of English, Jadavpur University	Member	Jadavpur University Kolkata – 700 032 Ph : 9830543884 (M) E-mail : nilaguptaju@yahoo.com
Prof. Tarun Patra Vice Principal & HOD, Dept. of Commerce, Shibpur Dinabandhu Institution (College)	Member	Shibpur Dinabandhu Institution (College) Howrah Ph : 9830035346 (M)
Dr. Debasis Datta Sec. to Vice Chancellor	**Secretary to the Faculty Council**	Bengal Engineering and Science University, Shibpur, Ph. No.- 91-33-2668-4561(extn. no.-212)

16.03.2012- July2012

Dr. Ajoy Roy
Vice Chancellor, Chairman Faculty Council
Ph: 2668 2674, Fax : 2668 2916
E-mail : vc@becs.ac.in

Prof. M. K. Sanyal(- 18.12.2012)
Dean Faculty of Social and Management Sciences

The Head of the Departments

Prof. M.K.Sanyal
 HRM
Member

Prof. M.Datta (- 15.03.2012)
Prof. Rupen Basu Mallick (16.03.2012- till),
 Humanities   and Social Sciences
Member

 The Director of Schools

The Professor or Professors of the Departments

Prof. P.S.Roy, (-15.03.2012)
Prof. Madhumati Dutta (16.03.2012-till)
Humanities

Lt. Col (Retd.) A.K.Ghosh,
PICSA

Teachers Elected

MEMBERS OF THE PLANNING & MONITORING BOARD

Name	Position	Address
Prof. Ajoy Kumar Ray	Chairman	Ph: 2668 2674, Fax: 2668 7575 E-mail: vc@becs.ac.in, ajay_ray2004@yahoo.com
Prof. Amit Kumar Das , Dean Faculty of Engg & Tech	Member	Bengal Engineering and Science University, Shibpur, Ph. No.- 91-33-2668-4561
Prof. Bichitra Kumar Guha, Dean Faculty of Basic & Applied Sc.s	Member	Bengal Engineering and Science University, Shibpur, Ph. No.- 91-33-2668-4561
Prof. Manas Kumar Sanyal, Dean Faculty of Social and Management Sciences	Member	Bengal Engineering and Science University, Shibpur, Ph. No.- 91-33-2668-4561
Dr. Biman Das, Development Officer, Nominees of the Executive Council	Member	Bengal Engineering and Science University, Shibpur, Ph. No.- 91-33-2668-4561
Prof. N. C. Dey, Dept. of Mining Engg, Nominees of the Executive Council	Member	Bengal Engineering and Science University, Shibpur, Ph. No.- 91-33-2668-4561
Dr. N. R. Bandyapadhyay, School of Material Sc.& Engg, Nominees of the Executive Council	Member	Bengal Engineering and Science University, Shibpur, Ph. No.- 91-33-2668-4561
Sri Rupen Basu Mullick Dept. of Humanities, Nominees of the Faculty Council	Member	Bengal Engineering and Science University, Shibpur, Ph. No.- 91-33-2668-4561
Prof. Souvonic Roy School of Eco. Infrastructure & Human Settlement Mgmt., Nominees of the Faculty Council	Member	Bengal Engineering and Science University, Shibpur, Ph. No.- 91-33-2668-4561
Dr. Tapan Kumar Roy Dept. of Math, Nominees of the Faculty Council	Member	
Secretary, West Bengal State Council of Higher Education	Member	Kolkata
Sri Archan Kusum Majumdar Chairman, The Institution of Engineers (I), Alumni, nominated by the Court	Member	IIE, Kolkata
Sri S.P. Datta, Project Director PWD, Alumni, nominated by the Court	Member	Kolkata
One member nominated by the State Govt. Sri Bhaskar Sen Former President, BNCCI & Chairman, Senz Natural Food Pvt. Ltd.	Member	Kolkata
Dr.B.Bandyopadhyay, Registrar	Convenor	Bengal Engineering and Science University, Shibpur, Ph. No.- 91-33-2668-4561
Shri Subrata Kar, Unversity Engineer	Invitee	Bengal Engineering and Science University, Shibpur, Ph. No.- 91-33-2668-4561

MEMBERS OF THE FINANCE COMMITTEE

Name	Position	Address
Dr. Ajoy Roy Vice Chancellor	**Chairman**	Bengal Engineering and Science University, Shibpur, Ph. No.- 91-33-2668-4561
Sri Birenjit Kr. Pal Former MD, WPDCL, Nominees of the Court	Member	Kolkata
Dr. Bhaswati Mitra Controller of Exam., Nominees of the Court	Member	Bengal Engineering and Science University, Shibpur, Ph. No.- 91-33-2668-4561
Prof. Bichitra Kr. Guha Dean, Basic & Applied Sc., Nominees of the Executive Council	Member	Bengal Engineering and Science University, Shibpur, Ph. No.- 91-33-2668-4561
Sri Archan Kusum Majumdar Chairman, The Institution of Engineers (India)	Member	IIE, Kolkata
The Secretary, Department of Higher Education, Govt. of West Bengal, or his nominee, not below the rank of a Deputy Secretary to the Govt. of West Bengal.	Member	Bikash Bhavan, Salt Lake, Kol-91
The Secretary, Department of Finance, Govt. of West Bengal, or his nominee, not below the rank of a Deputy Secretary to the Govt. of West Bengal	Member	Kolkata
Shri Satyajit Barua	Member	Bengal Engineering and Science University, Shibpur, Ph. No.- 91-33-2668-4561
Dr.B.Bandyopadhyay, **Registrar**	Member	Bengal Engineering and Science University, Shibpur, Ph. No.- 91-33-2668-4561
One expert in the financial management, nominated by the State Govt. Sri Rabindranath Roy Accounts Officer (PAC) **and Dy. Secretary, H.E. Dept.**	Member	Kolkata
Sri M. N. Sarkar, Finance Officer	**Secretary**	Bengal Engineering and Science University, Shibpur, Ph. No.- 91-33-2668-4561

The Members of the Library Committee

The Vice Chancellor or his nominee – Chairman

Dr. Ajoy Roy

The Deans of the Faculty Councils:

a) Prof. Amit Das - Member

Dean, Faculty of Engg. & Technology

b) Prof. B. K. Guha - Member

Dean, Faculty of Basic & Applied Sciences

c) Prof. M. K. Sanyal - Member

Dean, Faculty of Soc. & Management Sciences

Dr. Biman Bandyopadhyay - Member

Registrar

Three Professors of the University who are in the Executive Council :

(i) Prof. N. R. Bandyopadhyay - Member

(ii) Prof. Goutam Bandyopadhyay - Member

(iii) Prof. N. C. Dey - Member

Two representatives of the non-teaching employees in the Executive Council :

(i) Dr. Biman Das - Member

(ii). Shri Satyajit Barua - Member

Dr. Biplab Chakraborty - Member

Professor, Dept. of Library & Information Sc., C.U.

All Heads of Departments of the three Faculty Councils :

(i) Faculty Council for Engineering & Technology

• HOD of Civil Engineering - Member

• HOD of Mechanical Engineering - Member

• HOD of Electrical Engineering - Member

• HOD of Computer Sc. & Tech. - Member

• HOD of Information Technology - Member

• HOD of Architecture, T & RP - Member

• HOD of Aerospace & Applied Mechanics - Member

• HOD of Electronics & Telecommunication - Member

• HOD of Metallurgy & Materials Engineering - Member

• HOD of Mining Engineering - Member

(ii) Faculty Council for Basic & Applied Sciences

• HOD of Mathematics - Member

• HOD of Physics - Member

• HOD of Chemistry - Member

• HOD of Geology - Member

(iii) Faculty Council for Social & Management Sciences

• HOD of Humanities - Member

• HOD of Human Resource Management - Member

President of each of the Students' Union :

(i) President of UG Students' Union - Member

(ii) President of PG Students' Union - Member

Dr. H. P. Sharma - Secretary

Dy. Librarian, in charge of Library

Students' Welfare/Sports Board

(a) Prof. Ajoy Kumar Ray - Chairman
Vice Chancellor

(b) The Deans of the Faculty Councils :

(i) Prof. Amit Kumar Das - Member
Dean, Faculty of Engg. & Tech.

(ii) Prof. Bichitra Kumar Guha - Member
Dean, Faculty of Basic & Applied Sciences

(iii) Prof. M. K. Sanyal - Member
Dean, Faculty of Social & Management Sciences
And Professor of Training and Placement

(c) The Professor of Training and Placement – Member
   HoD, HRM

(d) Three Superintendents of Hostels nominated by the Vice Chancellor :
(i) Prof. Aditya Bandyopadhyay - Member
(ii) Prof. Anindita Sengupta- Member
(iii) Prof. Nityananda Nandi- Member

(e) Two Physical Instructors :
 (i) Dr. Zia-Ul-Alam – Member
 (ii) Sandip Chattopadhyay - Member

(f) President of each of the Students' Union :
(i) President of UG Students' Union - Member
(ii) President of PG Students' Union - Member

(g) One alumnus nominated by the Executive Council :
Shri Asish Sen - Member
Plant Superintendent, Padmapukur Water Treatment Plant, Howrah

(h) Lt. Col. A. K. Ghosh - Secretary
Professor-in-charge of Students' Activities

Name of Dept., Centers and Schools, Heads of the Dept. and Professor-in-charge

Name of Departments
1. Aerospace Engineering and Applied Mechanics
2. Architecture, Town and Regional Planning
3. Chemistry
4. Civil Engineering
5. Computer Science & Technology
6. Electrical Engineering
7. Electronics & Tele Communication
8. Earth Sciences
9. Humanities and Social Sciences
10. Human Resource Management
11. Information Technology
12. Mathematics
13. Mechanical Engineering
14. Metallurgy And Materials Engineering
15. Mining Engineering
16. Physics
17. Dept. of Students' Activities

Name of the Schools
1. Purabi Das School of Information Technology (PDSIT)
2. School of Materials Science & Engineering (SMSE)
3. School of Management Sciences (SOMS)
4. School of Community Science and Technology (SOCSAT)
5. School of Disaster Mitigation Engineering (SDME)
6. School of Ecology, Infrastructure & Human Settlement Management (SEIHSM)
7. School of Mechatronics & Robotics (SM&R)
8. School of Safety & Occupational Health Engineering (SSOH)
9. School Of VLSI Technology (SOVLSIT)

The Center in the university
1. Computer Centre
2. Video Conferencing Facility
3. Centre of Excellence

Centre of Excellence
1. Health Care Science and Technology
   Coordinator - Professor Jayanta Chakraborty

2. Green Energy and Sensor Systems
   Coordinator - Professor Hiranmoy Saha

Name of the Heads of Departments
1. Aerospace Engineering and Applied Mechanics – Sujoy Kumar Mukherjea / Dwijendra Nath Mallick
2. Architecture, Town and Regional Planning - Prof. Aditya Bandyopadhyay / Prof. Souvanic Roy/ Prof. Arup Sarkar
3. Chemistry - Dr. Anup Mondal / Shyamal Kumar Chattopadhyay
4. Civil Engineering - Kalyan Kr. Chattopadhyay / Kalyan Kr. Bhar
5. Computer Science & Technology - Prof. Jaya Sil / Prof. Susanta Chakraborty
6. Electrical Engineering - Prof. Srikumar Mallick / Debasish Sarkar

7. Electronics & Tele Communication - Arabinda Ray
8. Geology - Prof. Bhabani Prasad Mukhopadhyay / Prof Ananya Biswas
9. Humanities and Social Sciences - Madhumati Dutta / Prof. Rupen Basu Mallick
10. Human Resource Management - Prof. Manas Kumar Sanyal
11. Information Technology - Prof. Hafizur Rahman / Prof. S.P. Maity
12. Mathematics - Guruprasad Samanta / Murari Mitra
13. Mechanical Engineering - Prof. Sisir Kr. Guha / Prof. Debasis Datta
14. Metallurgy And Materials Engineering - Prof. Amitava Basumallick / Prof. P.P. Chattopadhayay
15. Mining Engineering - Prof. Suranjan Sinha/ Prof. I.N. Sinha
16. Physics - Prof. S. S. Sarkar / Prof. Mousumi Basu
17. Dept. of Students' Activities – Lt. Col. A. K. Ghosh

Name of the Directors / Professor-in –charge of Schools
1. Purabi Das School of Information Technology - Prof. Arindam Biswas
2. School of Materials Science & Engineering - Prof. N.R.Bandyopadhyay
3. School of Management Sciences - Prof. S.C.Saha / Prof. S.R. Bhadra Chaudhuri
4. School of Community Science and Technology - Prof. N.R.Bandyopadhyay
5. School of Disaster Mitigation Engineering - Prof. Ambarish Ghosh
6. School of Ecology, Infrastructure & Human Settlement Management - Prof. Souvanic Roy
7. School of Mechatronics & Robotics – Prof.Pabitra Kumar Ray / Prof. Arabinda Roy
8. School of Safety & Occupational Health Engineering - Prof. B.K.Bhattacharya
9. School Of VLSI Technology - Prof. Hafizur Rahman
10. Director of Research and Consultancy – Prof. S. Chatterjee

Distinguished Professors and Adjunct Professors who have joined this University in recent period:

1. Prof. K. L. Chopra, Padmashree
   Former Director, IIT, Kharagpur
   University Distinguished Professor

2. Dr. Nrisinha Prasad Bhaduri
   Former Associate Professor
   As Adjunct Professor, HRM

3. Sri Asoke Kumar Paul
   Former CMD, Bharat Cooking Coal Fields Ltd.
   As Adjunct Professor, Dept. of Mining Engineering

4. Professor Barun Kr. Saha
   As Adjunct Professor, School of Management Science

5. Dr. T.K. Roy
   Formerly Tata Chair Professor
   As Adjunct Professor, Dept. of Metallurgy and Materials Engineering, BESUS

6. Professor Bhargab B. Bhattacharyya
   IEEE Fellow, Professor ACM Unit
   ISI, Kolkata-203, B.T. Road
   Kolkata- 700108
   As Research Professor, Dept. of IT, BESUS

7. Prof. Samir Kr. Lahiri
   Former Professor ECE and Former DD, IIT, Kharagpur

As Professor S.S. Baral Research Professor, Dept. of E&TC, BESUS

8. Professor Krishnendu Chakraborty
IEEE Fellow, Professor Dept. of Electrical and Computer Engineering, Pratt School of Engineering, Duke University, Durham, USA
As Research Professor

9. Prof. Subhas Chandra Datta Roy
Emeritus Faculty, Dept. of Electrical Engineering, IIT, Delhi
As University Distiguished Professor, BESUS

10. Dr. Biswadip Mitra (Bobby)
President & MD, Texus Instruments India Pvt. Ltd. , Bangalore-560093
As University Distinguished Professor, BESUS

11. Prof. G.P. Das
Sr. Professor, Dept. of Materials Science, Indian Cultivation of Science, Jadavpur, Kol-64
As Honorary Adjunct Professor
School of Materials Science and Engineering

12. Dr. Samar Das
Former Technical Officer, IIT, Kanpur & Scientist, E1, NML, Jamshedpur
As Scientific Officer, School of Materials Science and Engineering, BESUS

13. Dr. Tinku Acharya
Director, Intellectual Ventures India
As Honorary Research Professor, PDSIT, BESUS

14. Dr. Laxman Prasad
Former Mission Director, Dept. of Science and Technology, GOI, New Delhi
As Honorary Adjunct Professor of CEGESS, BESUS

15. Dr. Bibek Bandyopadhyay
Director, Solar Energy Centre and Advisor, Ministry of New Renewable Energy, New Delhi
As Honorary Adjunct Professor, CEGESS, BESUS

16. Dr. R. Bhattacharyya
Formerly Scientist 'G' (Scientist, Director Grade) and Head, Division of Electronic Materials, National Physical Laboratory, New Delhi- 110012
As Adjunct Professor , CEGESS, BESUS

Professor-in-Charge

1. International Relations and Alumni Affairs of the university : Santanu Karmakar
2. Computer Networking : Manas Hira
3. Library : Sudip Kumar Chattopadhyay
4. Furniture: Sudipta Mukhopadhyay

Dean
- Dean of Faculty of Engg. and Technology   Prof. Amit Kumar Das
- Dean of Faculty of Basic and Applied Sciences   Prof. Bichitra Kumar Guha
- Dean of Faculty of Social and Management Sciences   Prof. Manas Kumar Sanyal

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University Engineer
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Assistant Proctor
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Accounts Officer
Shri Kartick Samanta
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Assistant Training Officer
Shri Usha Shankar Bhattacharyya
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Ph. No.- 91-33-2668-4561,(extn. no.-289), Mob. No. : 91-9433928509

Assistant Librarian
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E-mail address : susmitachakraborty94@gmail.com

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E-mail address : abani,oraon@yahoo.co.in

Assistant Controller
Sri Dipankar Chakraborty
Ph.No. - 91-33-2668-4561(extn. no.-640), Mob. No. : 91-9830182266
E-mail address : dcosd@yahoo.co.in

DEPARTMENT OF

AEROSPACE ENGINEERING

&

APPLIED MECHANICS

About the department

The department of Applied Mechanics was established as a separate major engineering department in 1947 and subsequently the Drawing Section was attached to it in late fifties. Over the years the department garnered enough human resources in the areas of fluid mechanics and structures. With effect from 2008 the department has been renamed as the department of Aerospace Engineering and Applied Mechanics. The department runs regular postgraduate programme in engineering mechanics and started undergraduate programme in aerospace engineering from academic session 2010 – 11 with an approved intake of 30 students.

Academic Programmes :

Undergraduate Level :
i.	Degree offered :	B.E. in Aerospace Engineering
ii.	Sanctioned students intake :	30
iii.	Additional intake through lateral entry :	Nil.

Postgraduate Level :
i.	Degree offered :	M.E. in Engineering Mechanics
ii.	Sanctioned students intake :	54
iii.	Additional intake through other programmes :	Nil.
iv.	Specialisations in :	Solid Mechanics and Fluid Mechanics.

Doctoral Level :
i.	Degree offered :	Ph.D.
ii.	No. of candidates enrolled :	3
	Registered :	9
	Awarded :	Nil.

Faculty position :

Sanctioned faculty post :   27   Vacant post :   8

Faculty Profile :

Name	Designation	Highest Qualification	Specialisation/ Research Area	Contact No. E-mail
Dr. B.N. Datta	Professor (Re-employed)	Ph.D.	FM, Hyd. Machines, FPE	2668-9782 bndatta2004@yahoo.com
Dr. J.K. Chakraborty	Professor (Re-employed)	Ph.D.	Biomech., Solid Mech.	9831540074 Jayantakrchakraborty@yahoo.com
Dr. S.K. Mukherjea	Professor	Ph.D.	FM, CFD	9831209985 mksujay@gmail.com mksujay@lycos.com skmukherjea@appmech.becs.ac.in

Name	Designation	Highest Qualification	Specialisation/ Research Area	Contact No. E-mail
Dr. D.N. Mallick	Professor	Ph.D.	FPC & Heat Transfer	9903857124 me.dwijen@gmail.com

Dr. S. Halder	Professor	Ph.D.	Solid Mech., FEM	9830671153 salilhaldar@lycos.com
Dr. A.K. Mazumdar	Professor	Ph.D.	EM & Heat Transfer	9830651360 ashis.mazumder@rediffmail.com
Dr. A.K. Bhattacharya	Associate Professor	Ph.D.	Hyd. , Water Resources Engg.	9831046091 amartyakumar@yahoo.co.in
Dr. B. Bhattacharyya	Associate Professor	Ph.D.	Numerical Methods, Biomech.	9433235720 basubec@yahoo.com
Dr. S. Bhaumik	Associate Professor	Ph.D.	Robitics, Mechatronics	9836044278 sbhaumik@lycos.com
Dr. M.C. Manna	Associate Professor	Ph.D.	Vibration, Dynamics	9433228694 mcmbecdu@lycos.com
Dr. A. Roychowdhury	Associate Professor	Ph.D.	Biomech., Solid Mech., FEA	9830465710 arc_98@rediffmail.com
Dr. N. Nandi	Associate Professor	Ph.D.	Hyd. , Water Resources Engg.	9830354744 nityananda@mailcity.com
Dr. K. Debnath	Associate Professor	Ph.D.	Fluid Dynamics, Hyd.	9830434409 debnath_koustuv@yahoo.com
Dr. P.K. Das	Associate Professor	Ph.D.	Earthquake Engg, Struc. Dyn.	9433429156 drpkdbesu@gmail.com
Dr. S. Majumder	Associate Professor	Ph.D.	Biomechanics	9833477867 majumder.santanu@gmail.com
Dr. S. Basak	Associate Professor	Ph.D.	Geotech., Gr.water Hyd., Hydro.	9830846295 basackdrs@hotmail.com
Dr. R. Roy	Associate Professor	Ph.D.	Earthquake Engg, Soilstructure interaction	9433154976 rroybec@yahoo.com
Sri N. Khutia	Assistant Professor	M.E.	FE, Frac.Mech., FPC	9883263316 niloy@mailcity.com
Sri D. Pal	Assistant Professor	M.E.	Fluid Mech., CFD, Microfluidics, FTE	9432136913 debashispal_2000@yahoo.com

Awards and Laurels :

Faculty members have received the following awards :

Fellowship of the Institution of Engineers (India).

Post Doctoral Fellow on the Research assignment in the University of Wollongong, Australia.

International Travel Grant

2010 Best Technical Note Award.

Best Journal Paper of the Year Award, Rekha Nandi and Bhupesh Nandi Award.

Research Area :

a. Analysis of structures under different loading :

Applications of Finite Element Method

b. Biomechanics

c. Robotics and Mechatronics

d. Earthquake Engineering, Dynamic Soil-structure interaction.

e. Dynamics of Structures

Research facilities :

i.   Material Testing using UTM
ii. Implant Testing using Knee Joint Simulator
iii. Dynamic Analysis of Gait using Kistler Force Platform & Barograph
iv. Dynamic Model Testing using Shaker Table
v.   Aerodynamic Model Testing using Wind Tunnel.
vi. Tilting Flume.
vii. Micro-Acoustic Doppler Velocimeter (16 MHz).
viii. Compressible Flow Bench
ix. Nozzle Pressure Distribution Measuring Setup
x.   Nozzle Performance Experimental Setup.
xi. Multifinger Dexterous Robot Hand
xii. Data Glove
xiii. Grip Pressure Sensor

Name of the Laboratories :

1	Strength of Materials Lab		
2	Fluid Mechanics & Hydraulics Lab		
3	Biomechanics Lab		
4	CAD Lab		
5	Mechatronics and Robotics Lab		
6	Viscous Fluid Flow Lab	:	Est. in 2011
7	Low Speed Aerodynamics Lab	:	Est. in 2012
8	Aerospace Structure Lab	:	Est. in 2012
9	Thermodynamics Lab	:	Proposed
10	Propulsion Lab	:	Proposed
11	High Speed Aerodynamics Lab	:	Proposed
12	Jet Propulsion Lab	:	Proposed
13	Mechanical Vibration Lab	:	Est. in 2012
14	Stability and Control Lab	:	Proposed
15	Computation Lab	:	Proposed

Consultancy Work :

Design of two chimneys of 40 m and 75 m height, of DESCON Consultancy Services.

Project on Entrepreneurship Development Cell (along with HRM Deptt.) (Sponsoring Agency – AICTE).

Project on Centre for green TBI (Sponsoring Agency - NSTEDB, DST, Govt. of India).

Support staff position :

    (i)   Sanctioned technical post :

        Technical Assistant – 7 (vacant – 6)
        Laboratory Assistant – 3
        Instrument Mechanic – 1
        Mechanic – 1
        Draughtsman – 1   (vacant)

    (ii) Technical staff profile

Name	Designation	Highest Qualification	Contact No.	E-mail
Asis Ghosh	Laboratory Assistant	B. Sc.	9433477829	
Arun Kr. Nandi	Laboratory Assistant	B. Sc.	9433452131	
Sharmila Sengupta	Laboratory Assistant	M. Sc.	9836031804	ssg1956@gmail.com
Amalendu Sahoo	Technical Assistant I	M. E.	9432647772	
Jayanta Kundu	Instrument Mechanic	H.S. (Sc. & Tech.)	9830456467	
Narayan Ch. Ghosal	Sr. Mechanic	Upto Class X	9051426136	

J. Sponsored Research :

Sl. No.	Title of Research Project	Sponsoring Agency	Amount sanctioned Rs. in lakhs
1	DST-FIST Project	DST	98.5
2	Analysis of Interface Stress in Implant – bone configuration	AICTE	5
3	Development of a Sensor Integrated Servo Controlled Hydraulic Robot with Stewart Platform Based Anthropomorphic Multi Degrees of Freedom Dexterous Hand	AICTE	7.50
Sl. No.	Title of Research Project	Sponsoring Agency	Amount sanctioned Rs. in lakhs
4	Evaluation of Seismic Torsional Ductility Demand in Structural Elements of Reinforced Concrete Buildings with Asymmetry	DST	1.92
5	Study of Improved Design Methodology of Strip Footings of Multistorey Frames	UGC	4.64
6	Inelastic Response of Reinforced Concrete Structures during Severe Earthquake	BRNS, BRC Mumbai	7.14
7	Effect of Soil-structure Interaction on Dynamic Behaviour of Reinforced Concrete Elevated Water Tanks	DST, W.B.	2.75
8	Development of a Mobile Robot for Stair Navigation	DST, N. Delhi	12.00
9	Design, Analysis and Simulation of Micro-electromechanical Robotic Systems Integrated with Mechatronics Sensors, Actuators and Control (PI)	AICTE	10
10	Computer Aided Design, Analysis and Development of Patient Specific Prosthesis for different Human Joints, specially Hip Joint on Indian Perspective		6.9
11	Guideline Development for Bridge Pier Scour in Cohesive Bedded Rivers	DST, N. Delhi	24

No. of publications:

        Journal :   Int. –   2 ;   Nat. –   4 .

        Conference :   11.

        Books/ Monograms :   01.

Publications :

International Journal :

1. Fatahi, B., **Basack, S**., Khabbaz, H. & Premenenda, S. (2011), "Analysis of Young's Modulus, Dilatancy Angle and Ground Settlement of Stone Column Reinforced Soft Ground", Australian Geomechanics Journal. [Accepted for publication].

2. Fatahi, B., Khabbaz, H. & **Basack, S.** (2011), "Effects of Salinity and Sand Content on Liquid Limit and Hydraulic Conductivity of Soil", Australian Geomechanics Journal. 46 (1), 67-76.

National Journal :

1. **Debashis Pal** and Suman Chakraborty, "An Analytical Approach to the Effect of Finite-sized End Reservoirs on Electroosmotic Transport through Narrow Confinements", Electrophoresis, Vol. 32, pp. 638-645, 2011

2. **S. Haldar** and A.H. Sheikh (2011), "Bending Analysis of Composite Folded Plates by Finite Element Method", Finite Elements in Analysis and Design (Elsevier), vol. 47, pp. 477 – 485.

3. **Debnath, K.** and Chaudhury, S. (2011), "Effect of suspended sediment concentration on local scour around cylinder for clay-sand mixed sediment beds", Engineering Geology, Elsevier, 117, pp. 236 – 245.

4. **M.C. Manna** (January, 2012), "Free Vibration of tapered isotropic rectangular plates", Journal of Vibration and Control, Vol. 18 (1), pp. 76 – 91.

Conference Publications :

1. **Basack, S.,** Indraratna, B. & Rujikiatkamjorn, C. (2011), "Design Recommendation for Stone Column Reinforced Soft Clay Deposit", PanAm Conference on Geotechnical Engineering, Toronto, Canada [Abstract accepted and full length paper sent for publication].

2. **Basack, S.** (2011), "Single Pile Response to Cyclic Lateral Loading in Sand", Proceedings, International Conference on Advances in Geotechnical Engineering, Perth, Australia, 1021-1026.

3. **Basack, S.,** Sen, S. and Dey, S. (2011) "A Mathematical Solution of Pile subjected to Torsion", Proceedings, Indian Geotechnical Conference, Kochi, India, 807-810.

4. **Basack, S**. and Dey, S. (2011) "Pile subjected to Lateral Cyclic Load in Sand", Proceedings, Indian Geotechnical Conference, Kochi, India, 951-954.

5. **Bhattacharya, A. K. and Basack, S.** (2011), "A Review of Use of Pre-Loading Technique and Vertical Drains for Soil Consolidation", Proceedings, Indian Geotechnical Conference, Kochi, India, 361-364.

6. Dey, S. and **Basack, S.** (2011), "Boundary Element Analysis of Laterally Loaded Pile in Sand with Increasing L/D/ ratio", Proceedings, National Seminar on Geotechniques, Kolkata, India, 23-26.

7. Sen, S. and **Basack, S.** (2011), "Response of Piles subjected to Torsion --- A Brief Review", Proceedings, National Seminar on Geotechniques, Kolkata, India, 27-31.

8. S.Roy, **N. Khutia, Amit Roy Chowdhury**, "Weight and Natural Frequency Optimization of Automotive Engine Oil Sump Using Fibre Reinforced Composite Laminates", Third Asian Conference on Mechanics of Functional Materials and Structures-2012 (ACMFMS-2012) held at IIT Delhi

9. Sandipan Roy, Debojyoti Panda, Arunava Deb, Sauradeep Bhowmick, **Niloy Khutia, Amit RoyChowdhury,** "Response of the effective modulus for different percentage of pore volume and pore size", Indian Society of Theoretical and Applied Mechanics-2012 (ISTAM 2012) held at DIAT, Pune.

10. Srijan Bhattacharya, Bikash Bepari and **Subhasis Bhaumik** (2012), "IPMC Actuated Compliant Mechanism Based Multi-Functional Multi-finger Micro-gripper", International Conference on Microactuators and Micromechanisms (MAMM 2012), CMERI Durgapur, January 19-20, 2012.

11. Debal Saha, Ranjit Ray and **S. Bhaumik** (2012), "Dynamic Modelling of a Skid-Steered Twelve wheeled Mobile Robot using a 'slip' - 'friction coefficient' relationship and its Trajectory Tracking Control" , IEEE- International Conference on Advances in Engineering, Science and Management (ICAESM – 2012), March 30 – 31, 2012, pp. 192 – 197, ISBN : 978-81-909042-2-3 @ 2012 IEEE.

Book :

1.   Machine Drawing   - by **Dr. B. Bhattacharyya**

      ISBN : 9780198070771

      Oxford University Press, New Delhi.

Department of Architecture, Town and Regional Planning

About the Department:

Bengal Engineering College was established in 1856. Later it was conferred the status of A Deemed University in 1993 and then became a full-fledged university under UGC Act from 2006. The Department of Architecture, Town & Regional Planning was established in 1949 as a constituent department of the Bengal Engineering College, and it was the first B.Arch. Degree awarding institution in the country. PG diploma in Town Planning was also started, as a part time course from 1949 and subsequently it became a full time course in Master of Town and Regional Planning from 1976 abolishing the part-time course. Since then it has produced about one thousand Under Graduate Students and three hundred Post Graduate students.

The vision of our Department is to carry forward our legacy that aims in making a student aware of the cultural, social, historical and technological aspects of design from the micro to the global scale with the aim to enhance quality of life on individuals and communities through a sustainable and humane approach to the profession, rooted in responsible use of resources and sensitive to ethno-cultural diversity of human kind.

Our mission is to engage our students in an exemplary architectural education program that has as its backbone a diversified and comprehensive curriculum that encourages independent innovative thinking through teaching, research and service in an unprejudiced and ethical academic environment reverent to history, culture and heritage and dynamic enough to embrace the challenges of the future.

Academic Programs

Undergraduate Level

i. Degree offered: Bachelor of Architecture (B.Arch)
ii. Sanctioned student intake: 24
iii. Additional intake through lateral entry in 3rd semester: Not applicable as per Council of Architecture (COA) Norms

Post-Graduate Level

i. Degree offered: Master of Town and Regional Planning (MTRP)
ii. Sanctioned student intake: 16
iii. Additional intake through other programs (i.e. QIP) As per rule
iv. Specializations in Town and Regional Planning

Doctoral Level

i. Degree offered PhD
ii. No. of candidates enrolled, registered and awarded
Enrolled: 7
Registered: 7
Awarded: 2

Faculty position

Sanctioned faculty post: 13   Vacant post: 4 (2 occupied by superannuated faculty)

Faculty profile (in following table)

Name	Designation	Highest Qualification	Specialisation/ Research Area	Contact No. E-mail
Aditya Bandyopadhyay	Professor	Doctorate	Mathematical Models in Urban Planning, Regional Planning	bandyopadhyay.aditya@gmail.com
Souvanic Roy	Professor and Head	Doctorate	Spatial and Environmental Planning, Alternative Technology and Green Building Techniques, Community Based Natural Resource Management	souvanic_roy@yahoo.co.in
Arup Sarkar	Professor	Doctorate	GIS, Urban and Regional Planning	arupsarkar.ar@gmail.com
Swati Saha	Professor	M.C.P.	Urban and Regional Planning	swatisaha04@yahoo.com
Keya Mitra	Professor	Doctorate	Seismic Evaluation, Disaster Risk Mitigation and Management, Cultural heritage seismic risk	keyamitra@gmail.com

			mitigation, Urban Design	
Parthasarathi Mukhopadhyay	Associate Professor	M. Arch.	Disaster Resistant Architecture, Urban Design, Technical Education, Visual Design	(+91) 98312 76459 parthasm@gmail.com
Amitava Roy	Associate Professor	Doctorate	Energy and Architecture	r.amitava@gmail.com
Subrata Kumar Paul	Assistant Professor	Doctorate	Transport Planning, Urban and Regional Planning	subrata2412@gmail.com
Soumen Mitra	Assistant Professor	M.T.R.P.	GIS, Urban and Regional Planning	mitrasmen@yahoo.co.in
Sibabrata Halder (Superannuated)	Professor	Doctorate	Housing, Urban and Regional Planning	halder.sibabrata@gmail.com
Manju Halder (Superannuated)	Professor	Doctorate	Conservation, Urban and Regional Planning	halder.manju@gmail.com

Awards and Laurels

1. Dr. Keya Mitra: Mary Fran Myers Scholarship, 2011 to attend the Hazards Research and Applications Workshop. This scholarship recognizes outstanding individuals who are committed to disaster research and practice and who have the potential to make a lasting contribution to reducing disaster vulnerability.
2. Dr. Souvanic Roy: Shastri Indo- Canadian Fellowship to conduct collaborative research with the University of Victoria, British Columbia in Canada.
3. Dr. Souvanic Roy: Nominated as Chairman of Institute of Town Planners India (West Bengal Regional Chapter).
4. Dr. Souvanic Roy: Nominated as expert in Urban Strategy Committee for Govt. of West Bengal.
5. Dr. Souvanic Roy: Nominated as Advisor to Master Plan Committee for ISI Tejpur Centre
6. Parthasarathi Mukhopadhyay: Fellowship of the Indian Institute of Architects
7. Parthasarathi Mukhopadhyay: Selected among the Top 7 of the Lafarge Invention Awards 2011 for the entry "Low Embodied-Energy Bamboo Concrete Flooring."

Research Area (only mention broad title without description in detail)

1. Architecture and Built form.
2. Computer Aided Architecture.
3. Vernacular and Rural Architecture
4. Energy and Building.
5. Urban Design.
6. Architectural Conservation.
7. Housing and Human Settlement Planning.
8. Transportation Planning.
9. Remote Sensing and Geographical Information System.
10. Environmental Planning and Management.
11. Rural Planning and Development.
12. Regional Planning and Development.
13. Earthquake resilient Buildings and Builtform.
14. Urban Planning/ Town Planning.
15. Regional Planning.
16. Urban administration, management and finance.
17. Climate Change and Human Settlements.

Research Facilities (name specific equipment / picture etc.)

Computer facilities for Remote Sensing and GIS
CAD Simulation Laboratory

Name of the laboratories

Material Museum is used for permanent display of samples of building materials for acquaintance of the students.
Construction Yard demonstrates various techniques of construction.
Computer Aided Architectural Design Laboratory is used for learning and practice of CAD for the students and Multimedia Simulation Laboratory for Research and Development.
Remote Sensing and GIS Laboratory facilitates training for the students of Town and Regional Planning in GIS, GPS and Remote Sensing technologies.

Consultancy Work

1. Proposed New Town at Domjur, Howrah, West Bengal by Prof. Souvanic Roy and others for Howrah Improvement Trust, 2010.

2. Assessment of Carrying Capacity and Strategic Plan for Bally Municipal Area by Prof. Souvanic Roy and others for DFID, 2010

Support Staff position
   (a) Sanctioned Technical Post: 3

   (b) Technical Staff Profile (in the following table)

Name	Designation	Highest Qualification	Contact No.	E-mail
Anjana Sengupta	Technical Assistant (Gr. I)	M. E. (Civil Engg.)	+913326684561-63 (Extension 401)	anjanasenguptaa@yahoo.com,
Keya Rani Mandal	Technical Assistant (Gr. II)	I.I.A. Examination Passed (equivalent to B. Arch.)		rani_mandal@rediffmail.com
Sarbani Sarkar	Technical Assistant (Gr. II)	I.I.A. Examination Passed (equivalent to B. Arch.)		sarkar_sarbani@rediffmail.com

Sponsored Research (mention area)
Dr. Souvanic Roy, Professor. Protected Area Governance in Canada: Role of Local Communities and Civil Society in Planning and Management funded by Shastri Indo-Canadian Institute, New Delhi, August, 2011 to October, 2011.

No. of Publications (This year only)

Journal   7
Conference   6
Books / Monographs
(List to be included)

Technology developed or innovations

Parthasarathi Mukhopadhyay, Associate Professor
Indian Patent Application No. 1220/KOL/2011 filed on 19 September 2011 titled PROCESS FOR PRESERVATION OF BAMBOO FOR STRUCTURAL APPLICATION AND PRESERVED BAMBOO THUS PROCESSED applied by Rabi Mukhopadhyay and Parthasarathi Mukhopadhyay.

List of publications of faculty members for 2011-2012

1. **Roy, S.,** 2011. Developing a Behavioural Model for Past and Future of Bengal Sunderban Deltaic Islands. In Proceedings of the First Joint International Conference of IGCP 588/INQUA Coastal and Marine Process Commission in Hong Kong, pp 67-79.
2. **Roy, S.,** 2011. Urban Water-Bodies and Wetlands: Management Needs and Challenges in Indian Cities. In SPANDREL, Journal of School of Planning and Architecture, Bhopal, Issue 2, Spring 2011, pp 2-9.
3. **Roy, S.,** 2012. Urban Poverty and Inclusive Planning: Critical Agenda for Reorienting Planning Education in India. In Proceedings of "60th National Town and Country Planners Congress" published by Institute of Town Planners India, pp 103-111.
4. **Roy, S.,** 2012. Influence of Geological Parameters on Landslide Vulnerability Zonation of Darjeeling Town in Eastern Himalayas. Asian Journal of Environment and Disaster Management (AJEDM), 4(2), 145-164.
5. Rai, D.C., Mondal, G., Singhal, V., Parool, N., Pradhan, T & **Mitra, K**, 2012. Reconnaissance report of the M6.9 Sikkim (India–Nepal border) Earthquake of 18 September 2011, Geomatics, Natural Hazards and Risk, 2012. ISSN 1947-5705 (Print).
6. Rai, D.C., Mondal, G., Singhal, V., Parool, N., Pradhan, T & **Mitra, K**, 2012. The M 6.9 Sikkim (India–Nepal Border) earthquake of 18 September 2011, Current Science (vol. 102) May 2012. ISSN 0011-3891.
7. **Mitra, S., Paul, S.K.** & **Roy, S.** 2011. Fusion Elements in Provincial Style of Islamic Architecture in Medieval Bengal, ABACUS (A Bi- Annual Internationally Refereed Journal on Architecture, Conservation and Urban Studies), Spring 2011, Vol.6, No.1 (ISSN: 0973-8339).
8. **Paul, S.K.** (2011). A Network Utility Based Approach for Deciding Bridge Location in Urban Areas, International Journal of Civil Engineering Applications Research(IJCEAR), Vol.2, Issue 2 (ISSN:2249-653X).

Participation in International/national conferences/seminars
International
   i. Keya Mitra, Professor, visited the University of Colorado at Boulder, USA and attended the Natural Hazards Workshop at the University of Colorado Boulder organized by the Natural Hazards Center, University of Colorado Boulder, USA during July 9-12, 2011 at Broomfield, Colorado

National

1. Mitra, K. (2012). Invited Lecture at the Workshop on Sikkim Earthquake 2011 at the National Institute of Disaster Management (NIDM), New Delhi on February 9, 2012.
2. Keya Mitra, Professor, coordinated the National Workshop on Earthquake Resistant Practices for Undergraduate Students of Architecture held at IIT Kanpur during July 2011 under the aegis of NICEE to sensitize the students of architecture in earthquake resistant design practices through technical lectures followed by design studios.
3. Parthasarathi Mukhopadhyay, Associate Professor delivered a lecture on "Reconnaissance Based Damage Survey of a Few Moderate Earthquakes and a Severe Cyclone of the Ganges-Brahmaputra Delta" on Jan 19, 2012 as a part of *NPCBEERM* held under the aegis of the Dept. of Disaster Management, Govt. of W. Bengal at the Dept. of Civil Eng., BESU, Shibpur;
4. Parthasarathi Mukhopadhyay, Associate Professor delivered a lecture on "Performance of Buildings during Earthquakes and Cyclones — Configurational Aspects" on Jan 20, 2012 as a part of National Programme for Capacity Building of Engineers in Earthquake Risk Management (NPCBEERM) held under the aegis of the Department of Disaster Management, Government of West Bengal at the Dept. of Civil Eng., BESU, Shibpur.

Department of Civil Engineering

About the Department

Department of Civil Engineering, the second oldest Civil Engineering Department of the country started in 1856 with 10 students and 2 teaching staff. At that time, the University was named after the department, as Civil Engineering College. Since 1954, it has been offering Master of Engineering degrees. It was recognized as one of the Quality Improvement Training Programme Centres by the Govt. of India for training Teachers of Degree College in Civil Engineering. To respond to the growing need of the industry and in the interest of continuing education, the Civil Engineering Department introduced with effect from August, 1997, the Part- time Post Graduate Programmes for the Degrees of Master of Engineering in (a) Structural Engineering, (b) Geotechnical Engineering and (c) Environmental Engineering, and subsequently in (d) Transportation Engineering and (e) Water Resources Engineering. The Past background of the department is glorious having its graduates serving in high positions executing important projects in country and abroad.

Academic Programmes

Undergraduate Level

i.   Degree offered: B.E.
ii.   Students' intake: 100
iii.   Additional intake through lateralentry
     in 3rd Semester :   10

Postgraduate Level (Regular)

i.   Degree offered: M.E.
ii.   Students' intake: 38 (GATE)
iii.   Additional intake through other
     programmes: Nil
iv. Specializations: Environmental Engineering, Geotechnical Engineering, Highway and Traffic Engineering, Structural Engineering and Water Resources Engineering

Postgraduate Level (Part time)

i.   Degrees offered: M.E. in Environmental Engineering,
                      M.E. in Geotechnical Engineering
                      M.E. in Structural Engineering,
                      M.E. in Transportation Engineering,
                      M.E. in Water Resources Engineering
ii.   Students' intake: 39

Doctoral Level

i.   Degree offered: Ph.D.
ii. No. of candidates: Enrolled: 18; Registered: 7, Submitted: 4, Awarded: 04

Faculty position   Sanctioned: 34
                                                                      Vacant: 7

Faculty profile (in the following table)

SL No.	Name	Designation	Highest Qualification	Specialisation/ Research Area	Contact No. E-mail
01	Madhujit Mukhopadhyay	Bijoy – Ashu Chair Professor	Ph.D.	Structural Engg.	2668-4561 (Extn. 679)
02	Saibal Kumar Ghosh	Professor	Ph.D.	Structural Engg., Conc. Tech.	2668-4561 (Extn. 659)
03	Gautam Bhattacharya	Professor	Ph.D.	Geotech. & Highway Engg.	2668-4561 (Extn. 281)
04	Sekhar Chandra Dutta [*]	Professor	Ph.D.	Structural Engg.	2668-4561 (Extn. 752)
05	Kalyan Kumar Chattopadhyay	Professor & Head	Ph.D.	Geotech. & Structural Engg.	2668-4561 (Extn. 660)
06	Ajit Lal Guha	Professor	Ph.D.	Structural Engg. & Mgmt.	2668-4561 (Extn. 678)
07	Kalyan Kumar Bhar	Professor	Ph.D.	Water Resources Engg.	2668-4561 (Extn. 674)
08	Subrata Chakraborty	Professor	Ph.D.	Structural Engg., Conc. Tech.	2668-4561 (Extn. 673)
09	Anirban Gupta	Professor	Ph.D.	Environmental Engg.	2668-4561 (Extn. 675)
10	Sudip Kumar Roy	Professor	Ph.D.	Transportation Engg.	2668-4561 (Extn. 666)
11	Ambarish Ghosh	Professor	Ph.D.	Geotechnical Engg.	2668-4561 (Extn. 653)
12	Sugato Pal	Associate Professor	M.E.	Structural Engg.	2668-4561 (Extn. 714)
13	Debashis Moitra	Associate Professor	M.E.	Geotechnical Engg.	2668-4561 (Extn. 711)
14	Chaitali Ray	Associate Professor	Ph.D	Structural Engg.	2668-4561 (Extn. 661)
15	Pratip Bandyopadhyay	Associate Professor	M.E.	Environmental Engg.	2668-4561 (Extn. 657)
16	Arun Kumar Chakraborty	Associate Professor	MTRP	Structural Engg., Conc. Tech.	2668-4561 (Extn. 645)
17	Aparna (Dey) Ghosh	Associate Professor	Ph.D.	Structural Engg.	2668-4561 (Extn. 663)
18	Pranab Kumar Lai	Associate Professor	M.E.	Water Resources Engg.	2668-4561 (Extn. 667)
19	Debabrata Mazumber	Associate Professor	Ph.D.	Environmental Engg.	2668-4561 (Extn. 654)
20	Prasanta Chakraborty	Asst. Professor	M.E.	Structural Engg.	2668-4561 (Extn. 715)
21	Ashis Kumar Bera	Asst. Professor	Ph.D	Geotechnical Engg.	2668-4561 (Extn. 655)
22	Sujata Biswas	Asst. Professor	Ph.D	Water Resources Engg.	2668-4561 (Extn. 662)
23	Tapash Kumar Roy	Asst. Professor	Ph.D	Geotechnical & Transportation Engg.	2668-4561 (Extn. 668)
24	Chanchal Majumder	Asst. Professor	M.E.	Environmental Engg.	2668-4561 (Extn. 661)
25	Soumya Bhattacharjya	Asst. Professor	Ph.D.	Structural Engg.	2668-4561 (Extn. 715)
26	Sandip Chakraborty	Asst. Professor	M.E.	Transportation Engg.	2668-4561 (Extn. 672)
27	Asok Adak	Asst. Professor	Ph.D.	Environmental Engg.	2668-4561 (Extn. 658)
28	Sujit Kumar Dalui	Asst. Professor	Ph.D.	Structural Engg.	2668-4561 (Extn. 822)

*On lien

Awards and laurels

- Prof. Subrata Chakraborty Elected as Fellow of the Indian National Academy of Engineering from January 01, 2011 to recognize distinguished contributions to Engineering
- DelPHE Project on Arsenic Mitigation was selected as one of the best projects from a large number of projects funded by DFID (UK) around the world in 2011.
- Prof. Subrata Chakraborty was Invited as Guest of Honour and delivered keynote address on Engineering Preparedness for Disaster Mitigation on the Engineers' Day celebration by IEI, Qatar on Sept.30, 2011 at Doha, Qatar
- Technology Solution developed by the department for Arsenic mitigation was adopted by the Govt. of Karnataka.

Research area (only mention broad titles without description in detail)

Environmental Engineering

- Development of Domestic and Community-based Arsenic Removal Units and Installation at Arsenic-contaminated areas
- Testing and standardizing a low-cost domestic water filter for iron and arsenic removal
- Screening of public water sources for arsenic contamination
- Rapid assessment for fluoride contamination in West Bengal
- Development of new materials for arsenic removal
- Water treatment for surface water at village-level
- Technology for treatment of septic tank effluent

- Characterization of and energy recovery from municipal solid waste

Geotechnical Engineering

- Application of stone columns as cost effective foundation system in soft soil
- Application of Jute Geotextiles in Civil Engineering
- Application of Geotube in Civil Engineering Construction
- Reliability in Geotechnical Engineering
- Analysis & Design of waste containment liner design for containment transport modeling
- Risk evaluation of pile foundation in liquefiable soil
- Study on liquefaction of soil for mutation and of mitigation strategy with special emphasis to microzonation of Kolkata
- Use of waste materials for Road Construction
- Behaviour of piles under complex loading

Structural Engineering

- Fibre Reinforced Composite Structures
- Concrete Technology (High performance concrete, Lightweight concrete, Geopolymer concrete, High-volume fly ash concrete, Self compacting concrete etc.)
- Reliability Analysis of Structures
- Structural Dynamics and Earthquake Engineering
- Finite Element/Boundary element based analysis
- Structural Health Monitoring
- Corrosion of steel in concrete
- Passive vibration control of structures

Transportation Engineering

- Traffic Simulation Model
- Public Transport System and Road Safety
- Subgrade with Alternative Material
- Design and Management of Rural Roads
- Reliability in Pavement Design
- Alternate Pavement Material
- Pavement Distresses and Maintenance Management
- Urban Traffic Engineering and Transport System Planning

Water Resources Engineering

- Water Resources Planning and Management
- Flood Hazard Mitigation
- Reservoir operation
- Stochastic Hydrology
- Storm Water Management
- River Hydraulics and Modeling
- Watershed Management
- Remote Sensing and GIS Applications
- ANN Applications in Water Resources Systems

Research Facilities: (Major equipment / picture etc.)

Environmental Engineering • Atomic Absorption Spectrometer • Gas Chromatography	 Atomic Absorption Spectrometer
Geotechnical Engineering • Pile Integrity Testing Setup • Digital Triaxial Testing Setup • Seismic Down Hole Testing System	 Digital Triaxial Testing Setup
Structural Engineering • Modal Testing Set-up • Automatic Compression Testing Machine • Corrosion Analysis Instrument	 Automatic Compression Testing Machine
Transportation Engineering • Field Asphalt Content Tester • Hand-held Falling Weight Deflectometer	 Field Asphalt Content Tester
Water Resources Engineering • Remote Sensing and GIS Setup • High-performance Computing	 Remote Sensing and GIS Setup

Laboratories

Name of the Laboratory	Purpose
1. Computer Lab	
2. Concrete Technology Lab	
3. Environmental Engineering Lab	
4. GIS Lab	• To conduct regular laboratory classes according to undergraduate and postgraduate curricula
5. Geotechnical Engineering Lab	
6. Geotextile Engineering Lab	
7. Model Analysis Lab	• To provide testing facilities to outside agencies.
8. Structural Engineering Lab	
9. Structural Dynamics Lab	• To undertake research work
10. Surveying Lab	
11. Transportation Engineering Lab	
12. Water Resources Engineering Lab	

Consultancy work:

Title	Principal Investigator	Funding Agency	Amount (Rs. In Lakhs)
Inspection work of Vidyasagar Setu along with approach viaducts and interchanges under BESU cell of HRBC.	Saibal Ghosh, Kalyan Kumar Chattopadhyay, Subrata Chakraborty	HRBC	540.0
State Technical Agency, PMGSY	Sudip Kumar Roy, Gautam Bhattacharya, Tapas Kumar Roy, Sandip Chakraborty	PMGSY	6.0
Soil exploration work at different infrastructure projects of Howrah Improvement Trust	Ambarish Ghosh	HIT	6.0
Design of support structure for a 36 ft dia overhead crude oil jetty line at HBCPL, Haldia		IOCL	5.0
Vetting of estimates for infra structural project of HDA	Tapas Kumar Roy, Pranab Kumar Lai, Sandip Chakraborty, Sudip Kumar Roy	HDA	3.0

Support staff position:

i) Sanctioned technical post: 13

ii) Technical staff profile (in the following table)

Name	Designation	Highest Qualification	Contact No./ E-mail
Shri Tinkari Patra	Superintendent (Tech)	B.Sc. DCE	2668-4561(Extn.769)
Shri Dipak Kumar Roy	Superintendent (Tech)	B.Sc. DCE	2668-4561(Extn.283)
Shri Ranjan Kumar Biswas	Superintendent (Tech)	B.Sc. DCE	2668-4561(Extn.283)
Shri Swapan Kumar Roy	Lab. Asst.	B.Sc.	2668-4561(Extn.254)
Shri Indranath Chakraborty	Jr. Superintendent	DCE	2668-4561(Extn.665)
Shri Sajal Kumar Chakraborty	Tech. Asst. I	B.Sc. (Hons.)	2668-4561(Extn.283)
Mrs. Amrita Bandyopadhyay	Tech. Asst. I	B.Sc. (Hons.), MCA	2668-4561(Extn.677)
Shri Amar Tarafder	Tech. Asst. II	DCE	2668-4561(Extn.282)
Shri Mohini Mohan Debsharma	Tech. Asst. II	DCE	2668-4561(Extn.282)
Md. Shafiul Alam	Tech. Asst. II	B.E.(C.E.)	2668-4561(Extn.761)
Shri Swarup Shovan Mukherjee	Tech. Asst. II	DCE	2668-4561(Extn.282)

Sponsored Research (Ongoing):

Title	Principal Investigator	Funding Agency	Amount (Rs. In Lakhs)
International			
Capacity building for technological solution and training to improve groundwater resources management in arsenic affected areas of Eastern India	Kalyan Kumar Bhar	DFID, UK	£60000
Assessment of effects of arsenic pollution on health in rural Bengal and development andimplementation of sustainable technology solution.	Kalyan Kumar Bhar	UKIERI(UK-India Education and Reasearch Initiative)	£40000
Provision of safe water and appropriate sanitation in schools	Anirban Gupta	Water For People	US$106374.44
Safe Water and Sanitation in Schools, Communities and Clinics.	Anirban Gupta	Water For People, USA	US$ 43693
Development and Application of Potentially Important Jute Geo-Textiles	Ambarish Ghosh, Sudip Kumar Roy, Ashis. Bera, Sandip Chakraborty	CFC, The Netherlands	Rs. 40 Lakhs
National			
Hydrogeological study of sub-surface water flow/storage characteristics for creation of sustainable source on rain fed river for semi-arid and fluoride affected six blocks in connection with comprehensive water security plan for Damodar&Kangsabati River under Bankura district.	Kalyan Kumar Bhar	PHED (West Bengal)	Rs. 63.0 Lakhs
Static and Dynamic failure analysis of laminated composite stiffened plates for marine structures	Chaitali Roy	Ministry of shipping	Rs. 40.0 Lakhs
Geometric nonlinear thermo-mechanical analysis of FRP bridge deck	Chaitali Roy	DST, New Delhi	Rs. 18.0 Lakhs

Preparation of Ganga River Basin Environmental Management Plan, in partnership with IIT Consortium	Anirban Gupta	MoEF, GoI	Rs. 4.0 Lakhs (for first 3 quarters)
Rural road pavement performance study	Sudip Kumar Roy	NRRDA, Govt. of India	Rs. 4.0 Lakhs
Technology Development of high performance fibre reinforced concrete composites for different applications	Arun Kumar Chakraborty	Tata Steel	Rs. 17.5 Lakhs
Household Arsenic Mitigation Programme in Raichur, Karnataka	Anirban Gupta	UNICEF	Rs. 17.64 Lakhs
Integrated Fluoride Mitigation in Purulia District	Anirban Gupta	UNICEF	Rs. 10.5 Lakhs
Development of a Novel Nondestructive Robust Structural Health Assessment Technique with Minimum Noise Contaminated Information	Subrata Chakraborty	DST, Govt. of India	Rs. 6.2 Lakhs
Seismic Hazard Assessment, Microzonation and Evaluation of Vulnerability, Risk and Socio Economic Impacts for the City of Kolkata	Ambarish Ghosh	Ministry of Earth Science, Govt. of India	Rs. 8.0 Lakhs
Utilization of alternative materials for construction of subgarde and sub base layer of flexible pavements	Tapash Kumar Roy, Sudip Kumar Roy	UGC	Rs. 7.0 Lakhs
Wind effects on Irregular Plan Shape Tall Buildings	Sujit Kumar Dalui	DST, New Delhi	Rs. 3.6 Lakhs
Factorial design approach to investigate the model parameters for prediction of arsenic removal by electrocoagulation using solar energy	Chanchal Majumder	UGC	Rs. 2.0 Lakhs

Industry Institution Interaction

Visits

i) Departmental Faculty Members

- Prof. Kalyan Kumar Bhar and Prof. Chanchal Majumder visited Queen's University, Belfast, UK, i) during 26th March to 4th April, 2011 and ii) during 1st July to 9th July, 2011.
- Prof. Subrata Chakraborty visited Doha, Qatar to deliver keynote address on 'Engineering Preparedness for Disaster Mitigation" on the occasion of Engineers' Day celebration by IEI, Qatar Chapter on during 29 September to 1st October 2011.
- Prof. Ambarish Ghosh attended the 14th Asian Conference on Soil Mechanics and Geotechnical Engineering held at Hong Kong Polytechnic University, Hong Kong, China.
- Prof. Sudip Kumar Roy and Prof. Ambarish Ghosh visited Dhaka regarding discussion between BUET & BESUS on number of technical issues of the project on Development and Application of Potentially Important Jute Geo-Textiles during April 4 - 5, 2012.
- Prof. Subrata Chakraborty visited Defense Metallurgical Research Laboratory (DMRL), Hyderabad to attend the Induction Ceremony for newly elected Fellows of INAE at the Annual Convention of the Academy on December 23-24, 2011.
- Prof. Tapas Kumar Roy attended Indian Geotechnical Conference at Kochi during December 16-18, 2011.

ii) External Visitors

- Professor Kumaresh C Sinha, Edgar B. & Hedwig M. Olson Distinguished Research Professor of Civil Engineering at Purdue University visited on 15 February 2012 and delivered a lecture on "Transportation Asset Management" on that day in the Seminar Hall of this Department.
- Professor Achintya Haldar, Professor and Da Vinci Fellow, Department of Civil Engineering and Engineering Mechanics, University of Arizona, Tucson, USA, had been a visiting faculty in this Department from Dec. 28, 2011 to Jan. 14, 2012 under the CP-STIOscheme of the DST.
- Prof. Bhaskar Sengupta, Queen's University, Belfast visited the department on 27th February, 2011.
- Research Scholars Neelambari Phalkey and C. Rory of Queen's University, Belfast, UK visited BESU during Dec. 8-12, 2011.

Invited Lectures
- Prof. Kalyan Kumar Bhar delivered lecture on "Application of GIS" in the Workshop on "Role of Computing in Better Governance" organized by Computer Society of India, Kolkata.
- Prof. Kalyan Kumar Bhar delivered lecture on "Green Technology and Health Care" at the Institution of Engineers, Kolkata.
- Dr. Subrata Chakraborty delivered lecture on "Robust Optimization of Structures with Incomplete Probabilistic Information" at the Annual Convention of INAE at DMRL, Kanchanbagh, Hyderabad.
- Dr. Subrata Chakraborty delivered lecture on "Research Activities on reliability and related areas at CE Dep.t BESU and future research need in our country" in the second annual meeting of the Advanced Facility for Research in Reliability Engineering (AFRRE), IIT Kharagpur.
- Dr. Chaitali Ray visited IIT Kharagpur for invited lecture on "Advanced Composite Structure."
- Prof. Aparna (Dey) Ghosh visited Budge Budge Institute of Technology to deliver lecture on "Understanding Earthquake as a Structural Engineer".
- Prof. Tapas Kumar Roy visited NITTTR, Kolkata to delivered lecture on "Advanced Transportation Engineering".

No. of publications:
Journal Publication: 20
Conference Publication: 16

List of Publications
Journals
1. Subrata Chakraborty and Rama Debbarma, Stochastic earthquake response control of structures by Liquid column vibration absorber with uncertain bounded system parameters, *Structural Safety.* 33, 2011, 136-144
2. Subrata Chakraborty and Bijan K Roy, Reliability Based Optimum Design of Tuned Mass Damper in Seismic Vibration Control of Structures with Bounded Uncertain Parameters, *Prob. Engng. Mech. 26(2), 2011, 215-221*doi:10.1016/j.probengmech.2010.07.007.
3. S Bhattacharjya and S Chakraborty, Robust optimization of Structures subjected to stochastic earthquake excitation under limited information on system parameters uncertainty, *Engineering Optimization.* 43(12), 2011,11311-1330. DOI:10.1080/0305215X.2011.554545.
4. Subrata Chakraborty and Soumya Bhattacharjya, Improved robust design optimisation of structures, *Engineering and Computational Mechanics164(EM1), 2011, 47-57*. DOI: 10.1680/eacm.9.00034
5. Ashis Kumar Bera and Amalendu Ghosh (2011) Regression model for prediction of optimum moisture content and maximum dry unit weight of fine grained soil, *International Journal of Geotechnical Engineering* Vol.5, Issue 3, pp.297-305
6. Ashis Kumar Bera(2011) Effect of sand content on engineering properties of fine grained soil., *Electronic Journal of Geotechnical Engineering*, *(ISSN: 1089-3032)*, USA, Vol. 16, Bundle O, pp. 1275-1286.

7. Bagui,S.K. and Ghosh,A. (2011). "Traffic and Revenue Forecast at Risk for a BOT Road Project", *Korean Society of Civil Engineering*

8. Ambarish Ghosh and Chillara Subbarao (2011). Deformation Modulus of Fly Ash Modified with Lime and Gypsum, *Geotechnical and Geological Engineering*, Netherland, Online First, 8 November 2011.

9. Swapan Kumar Bagui and Ambarish Ghosh (2011), Three Dimensional Analysis for Determination of Anti- glare Screen Barrier Height, *Jordan Journal of Civil Engineering*, Vol 5, No. 4, pp. 468-479.

10. Swapan Kumar Bagui and Ambarish Ghosh (2011), Risk Analysis for a BOT Project, *Jordan Journal of Civil Engineering*, Vol 5, No. 3, pp. 330-342.

11. Swapan Kumar Bagui and Ambarish Ghosh (2011). Development of Model for Optimum Debt Capacity Ratio for a Road Project, Indian Highways of Indian Road Congress, August, pp. 27-31.

12. Swapan Kumar Bagui and Ambarish Ghosh (2011), Modification of Stopping Sight Distance and Length of Crest Vertical Curve Using Air Resistance and Drag Force Parameters, Indian Highways, January, pp. 21-29.

13. Adak, A., Mazumder, D. and Bandyopadhyay, P., "Simulation of process design model for anaerobic digestion of municipal solid waste", *International Journal of Civil and Environmental Engineering*, Vol. 3, No. 3, March, 2011, pp. 177-182.

14. Koner, S., Saha, B. K., Kumar, R. and Adak, A., "Adsorption kinetics and mechanism of methyl orange dye on modified silica gel factory waste", *International Journal of Current Research*, Vol. 3, No. 6, June, 2011, pp. 128-133.

15. Koner, S., Pal, A. and Adak, A., "Utilization of Silica Gel Waste for Adsorption of Cationic Surfactant and Adsolubilization of Organics from Textile Wastewater: A Case Study", *Desalination*, Vol. 276, No. 1-3, August, 2011, pp. 142-147.

16. Koner, S. and Adak, A., "Modelling of Fixed Bed Column Adsorption of Cationic Surfactant on Silica Gel and Use of Exhausted Adsorbent for Adsolubilization of Organics", *Asian Journal of Water, Environment and Pollution*, Vol. 8, No. 2, January, 2011, pp. 71-76.

17. Subrata Hait and Debabrata Mazumder (2011); High-rate Wastewater Treatment bya Shaft-type ActivatedSludge Reactor; *International Journal ofCivil and Environmental Engineering*; 3; 1; 22 - 27.

18. Debabrata Mazumder, DebabrataGhosh and Pratip Bandyopadhyay (2011); Treatment of Electroplating Wastewater by Adsorption Technique; *International Journal ofCivil and Environmental Engineering*; 3; 2; 101-110.

19. Debabrata Mazumderand SomnathMukherjee (2011); Treatment of Automobile Service Station Wastewater by Coagulation and Activated Sludge Process; *International Journal of Environmental Science and Development*; 2; 1; 64-69.

20. Debabrata Mazumder (2011); Process Evaluationand Treatabilitystudy ofwastewaterin a Textile Dyeing Industry; *International Journal ofEnergy andEnvironment*; 2; 6; 1053-1066.

Conferences

1. Ghosh, A., Gangopadhyay, A., and Basu, B. (2011). "Performance investigation of multiple compliant liquid column dampers for control of seismic vibrations." *Proc. 8tht International Conference on Structural Dynamics (EURODYN)*, Leuven, Belgium, 1671-1677.

2. Marano, GC and S Chakraborty, Evolutionary algorithms for robust design in vibration control with uncertain bounded parameters, 2nd*Int.Conf.on Soft Computing Technology in Civil, Struct & Environ Engn*, Chania, Crete, Grece, 6-9 September 2011.

3. G. Quaranta, S. Chakraborty, and G. C. Marano, Robust design of tuned liquid column dampers under stochastic ground motion considering fuzzy uncertanties, *ECCOMAS Thematic Conference - COMPDYN 2011: 3rd Int Conf on Computational Methods in Structural Dynamics and Earthquake Engineering: An IACM Special Interest Conference,* Greece, 26-28 May 2011

4. Pal, S. K. and Ghosh Ambarish (2011), Compaction and Hydraulic Conductivity Characteristics of Indian Fly Ashes, *Proceedings of Indian Geotechnical Conference, December* 15-17, 2011, Kochi, pp. 773 -776.

5. Chakraborty, R. and Ghosh Ambarish (2011), Design of Earthen Barriers using Finite Difference Method, *Proceedings of Indian Geotechnical Conference*, December 15-17, 2011, Kochi, pp. 851 - 854.

6. Ghosh, Ambarish, Chaudhuri, B., Mahapatra R., and Pal Sudhanwa (2011), Design Analysis and Installation of Geotextile Tube in Civil Engineering Application, *Proceedings of the National Seminar on Geotechniques for Construction, Design and Performance of Structures*, Indian Geotechnical Society, Kolkata Chapter, September 09-10, pp. 135-139.

7. Ghosh, Ambarish, and Majumder, Susmita (2011), Site Specific Response Spectrum – An Overview, *Proceedings of the National Seminar on Geotechniques for Construction, Design and Performance of Structures, Indian Geotechnical Society*, Kolkata Chapter, September 09-10, pp. 83-87.

8. Chattopadhyay, K. K., Ghosh, Ambarish, Saha, Debasish, Karak, Kanchan Kumar, and Sarkar, Arup (2011), Shear Wave Velocity of different Fill Materials, *Proceedings of the National Seminar on Geotechniques for Construction, Design and Performance of Structures, Indian Geotechnical Society*, Kolkata Chapter, September 09-10, pp. 77-82.

9. Ghosh, Ambarish, Saha, Karak, Kanchan Kumar, Debasish, and Sarkar, Arup (2011), Liquefaction Resistance of Kolkata Soil Deposit, *Proceedings of the National Seminar on Geotechniques for Construction, Design and Performance of Structures, Indian Geotechnical Society*, Kolkata Chapter, September 09-10, pp. 72-76.

10. Chakraborty, Ritwik And Ghosh, Ambarish (2011), Decontamination of Pollutants from the Contaminated Site using FDM, *Proceedings of the 14th Asian Regional Conference on Soil Mechanics and Geotechnical Engineering*, Hong Kong, China, 23-27 May.

11. Pal, S. K. And Ghosh, Ambarish (2011), Correlation to Assess Angle of Internal Friction of Fly Ash, *Proceedings of the 14th Asian Regional Conference on Soil Mechanics and Geotechnical Engineering*, Hong Kong, China, 23-27 May.

12. Ashis Kumar Bera, Aridom Roy, (2011). *Geotechnical Characterization of Jute Geotextile, ,* IGC,. *Kochi* PP. 515-518

13. Ashis Kumar Bera, Prabir Bhattacharya, and Amalendu Ghosh, (2011). *Effect of fibre content on California Bearing Ratio value of pond ash, IGC , Kochi, pp.511-514.*

14. Ashis Kumar Bera, Partha Saha and Samrat Ghose (2011). Effect of number of geotextile ties on uplift behavior of anchor embedded in sand,*Proc: National seminar, IGC* Calcutta chapter, Calcutta. Pp.140-143.

15. Chanchal Majumder and Anirban Gupta (2011). "Mathematical modeling for prediction of arsenic removal by electrocoagulation: a factorial design approach." *International conference on Environmental Technology and Construction Engineering for Sustainable Development (ICETCESD-2011)*, SUST, Sylhet, Bangladesh, 10-12 March, 2011

16. Kuity, A., Roy, T.K., and Roy, S.K.(2011), "Use of Laterite Soil as Admixture to Alluvial Soil for Improving Roadway Subgrade Characteristics" *Proceedings of the Indian Geotechnical Conference* (IGC), IIT Delhi.

Books and Book Chapters

1. Subrata Chakraborty and Palash Chandra Sam, Reliability Analysis of Structures under Hybrid Uncertainty, in Safety and Risk Modeling and Their Applications Ed. Hoang Pham, Springer Verlag London 2011 pp76-100. DOI 10.1007/978-0-85729-470-8.

Journals Reviewed by the Faculty Members

- Journal of Materials in Civil Engineering, ASCE
- Journal of Bridge Engineering, ASCE
- Journal of Engineering Mechanics, ASCE
- Earthquake Spectra, EERI, Cal Tech, USA
- Canadian Geotechnical Journal, Canadian Society of Civil Engineers
- Journal of Computer Methods in Applied Mechanics and Engineering, Elsevier
- Journal of Sound and Vibration, Elsevier
- Journal of Finite Element in Analysis and Design, Elsevier
- Probabilistic Engineering Mechanics, Elsevier
- Structural Safety, Elsevier
- Computers and Structures, Elsevier
- Engineering Structures, Elsevier
- Journal of Hazardous Materials, Elsevier
- Journal of Geotextiles and Geomembranes, Elsevier
- Structural & Multidisciplinary Optimization, Springer
- Journal of Vibration and Control, SAGE
- International Journal of Structural Health Monitoring, SAGE
- International Journal of Materials and Structural Integrity
- Structural Engineering and Mechanics, Korea, Techno Press
- Journal of Zhejiang University Science, China
- Journal of Civil Engineering and Management, BENTHAM
- Journal of Structural Engineering, SERC, Chennai
- Indian Geotechnical Journal
- ISET Journal of Earthquake Technology
- Journal of Institution of Engineers (India), Civil Engineering Division

Seminar / Workshops / Conferences / Training programme organized by the Department

- International Symposium on Engineering under Uncertainty: Safety Assessment and Management (ISEUSAM), January 4 – 6, 2012
- Training Programme for Regeneration of Activated Alumina used in Defluoridation Filters, 23-14 June 2011
- Workshop on Arsenic contamination: source, effects and mitigation, June 13, 2011
- Workshop on Preparation of Ganga River Basin Management Plan, March 8, 2011

Technology Developed and Innovation

- Development and Installation of a Highly Successful and Socially Accepted "Amal Arsenic Filter" at several Arsenic affected Villages in West Bengal.
- Development of High Strength High Volume Fly Ash Concrete (1st time in India)
- Technology development for high performance Steel Fibre Reinforced Concrete.

Others

Milestones
- Started as Civil Engineering College on 24th November 1856, in the premises of the Writers' Buildings, Calcutta
- First Degree Examination in 1864
- First Post Graduate Course introduced in 1954 (first time in India)

- Faculty exchange program with University of Wisconsin in 1954
- Had the distinction of having pioneers in Engineering like Prof. Gerald Pickette, Prof. James R. Villemonte, Prof. Paul Anderson, Prof. R.L. Daugherty, Prof. A.C. Ingersoll, as visiting faculty members under the TMC scheme with USA
- Selected as Teachers' Training Institute Centre in 1959
- First PhD in Engineering in 1962
- QIP Centre for M.E. (Civil) in 1990
- QIP Centre for PhD (Civil) in 2006
- In 2005 the Department was recognized as one of the State TechnicalAgencies (STA) under the Pradhan Mantri Gram Sadak Yojona
- In 2007 the Department celebrated its 150th Anniversary by organizing an International Conference on Civil Engineering in the New Millennium: Opportunities and Challenges.
- In 2008 the School of Disaster Mitigation Engineering was established with initiative from this Department.
- In 2008 the Advanced Centre for Environment and Water Resources Engineering was established in collaboration with Queen's University, Belfast.

Illustrious Alumni
- Rai Bahadur Anukul Ch. Mitra (1900) EngineeringIn-charge of construction of Victoria Memorial Hall, Calcutta.
- Rai Bahadur Girish Ch. Da (1891) Engg. In Charge, High Court Building, Calcutta.
- Dr. Fazlur Rahaman Khan, Pioneer in Structural Engineering
- Dr. Kajal Gupta, Chief Technologist, NASA-DFRC, USA.
- Dr. B.C.Ganguly, Former Chairman, Indian Railway Board
- Dr. P.K. Basu, Former Chair, C.E. Department, Vanderbilt University
- Shri Amrit Das, Founder Chairman, Research Engineers Inc. USA.
- Dr. Sriman Kumar Bhattacharya, Director, Central Building Research Institute
- Dr. Subhomay Gangopadhyay, Director, Central Road Research Institute

Department of Chemistry

About the Department:

The more than hundred years old department has a glorious past. At present the faculty members are involved in research in the frontier areas of Chemistry and Chemical Physics, which include Coordination & Bioinorganic Chemistry, Crystal Engineering, Carbohydrate Chemistry, Electrochemistry & Corrosion Science, Fuel Cell Technology, Molecular Recognition & Supramolecular Chemistry, Synthetic Organic & Organometallic Chemistry, Thin Film Semiconductor, Solar Photo-voltaic & Photo-electrochemical Solar Cells, Non-linear Optical Phenomena: Modeling & Computing, Non-equilibrium Statistical Mechanics, Relativistic & non-relativistic Electronic Structure Theory. The two year four semesters M. Sc. Course in Applied Chemistry offered by the department is designed to satisfy the needs of academia and industries. The department is endowed with a number of research projects sponsored by various funding agencies. The department has also been selected for MHRD special grant and DST-FIST and UGC-SAP programme.

Academic Programmes:

Post graduate level:
  (i) Degree offered: M. Sc
 (ii) Student's Intake: 25
 (iii) Additional intake through other programmes: Nil
 (iv) Specialization in

Doctoral Level
 (i) Degree offered: **Ph.D.**
 (ii) No. of candidates enrolled:

Registered / Enrolled: **42**
Awarded: **08**

Faculty position
Sanctioned Faculty Position: **15**   **Vacant Posts**: **03**

Name	Designation	Highest Qualification	Specialization/ Research Area	Contact No. E.mail
Dr. S. P. Goswami	Professor	Ph.D.	Molecular Recognition and Supramolecular Chemistry	9433301414 spgoswamical@yahoo.com
Dr. B. Adhikary	Professor	Ph.D.	Nanomaterials and Co-ordination Chemistry	033 25385701 adhikarybibhu@yahoo.com
Dr. (Mrs.) J. Dutta	Professor	Ph.D.	Electrochemical Nanoscience, Fuel Cells, Solar Cells	09830029798 jayati_datta@rediffmail.com

Dr. A. Mondal	Professor & Head	Ph.D.	Thin film semiconductors and solar cells	9681420714 anupmondal2000@yahoo.co.in
Dr. S. K. Chattopadhyay	Professor	Ph.D.	Coordination Chemistry, Bioinorganic Chemistry	9874339079 shyamalchattopadhyay @gmail.com
Dr. P. K. Nandi	Professor	Ph.D.	NonLinear Optics: Modeling and Computation	9432177021 Nandi_pk@yahoo.co.in
Dr. B. K. Ghorai	Associate Professor	Ph.D.	Synthetic Organic, Organometallic and Materials chemistry	9433843142 bkghorai@yahoo.co.in
Dr. Sudip Kr. Chattopadhyay	Associate Professor	Ph.D.	Theoretical Molecular Sciences	9433144725 sudip_chattopadhyay @rediffmail.com
Dr. A. K. Mahapatra	Associate Professor	Ph.D.	Design, Synthesis and Recognition of Bio-active Molecules	9434508013 akmahapatra@rediffmail.com
Dr. (Mrs.) J. Ganguly	Assistant Professor	Ph.D.	Carbohydrate Chemistry	gangulyjhuma@yahoo.com
Dr. C. Bhattacharya	Assistant Professor	Ph.D.	Photoelectrochemical Solar Cells, Conducting Polymers, Corrosion Science	09433639041 c.bhattacharya@rediffmail.com
Dr. P. Biswas	Assistant Professor	Ph.D.	Coordination and Bioinorganic Chemistry, catalysis, nanomaterials	09433135103 biswaspapu@rediffmail.com

Awards and Laurels:

International Visit:
- Prof. J. Datta participated in the workshop on Smart Grid and Energy Storage, **Bath, UK, 2012** as Indian Delegate nominated by **DST**.
- Dr. J. Ganguly. Visiting as a Research Associate of Dr. R.W. Carlson in Complex Carbohydrate Reserch Centre (CCRC), University of Georgia, Athens, GA, USA, in 2011
- Dr. C. Bhattacharya, visited as BOYSCAST Fellow to The University of Texas at Austin, USA for one year (2011-12) to work with Prof. Allen J. Bard.

Research Area (only mention broad titles without description in detail)**:**

1. Coordination & Bioinorganic Chemistry

2. Glycobiology.

3. Electrochemistry, Non-conventional Energy, Fuel Cell, Corrosion Science.

4. Molecular Recognition & Organic Synthesis

5. Synthetic Organic, Organometallic and Materials Chemistry

6. Thin Film Semiconductors, Solar Photo-voltaic, Photo-electrochemical Solar Cells

7. Theoretical and Computational Molecular Sciences

8. Conducting Polymers & Photoelectrochemical Solar Cell

Research Facilities: (name specific equipment / picture etc.)

1. Spectrofluorimeter
2. Luminescence Spectrometer
3. Atomic Absorption Spectrophotometer
4. Potentiostat – Galvanostat
5. Optical Microscope with image analyzer
6. TG-DTA-cum-DSC System
7. Vacuum Coating unit
8. Electrochemical Quartz Crystal Microbalance System
9. FTIR with FT-Raman Spectrophotometer
10. Analytical cum Preparative HPLC with Mass Detector
11. Microwave Synthesizer
12. Chemisorption and Physisorption Measuring Unit
13. Fuel Cell / Solar Characterization System
14. Semiconductor Characterization System
15. Monochromator / Radiometer
16. UV-Visible Spectrophotometer
17. Hall Effect Setup
18. Ion-Chromatograph
19. PGSTAT 12 with Frequency Response Analyzer
20. AUTOLAB 30 Potentiostat/Galvanostat
21. PAR Versastat-II Potentiostat and electrochemistry system
22. Precision L-C-R Meter

Name of the Laboratories:

1. Coordination & Bioinorganic Chemistry

2. Glycobiology

3. Electrochemical Nano Science, Fuel Cell and Solar Cells.

4. Molecular Recognition & Organic Synthesis

5. Synthetic Organic and Organometallic Chemistry

6. Thin Film Semiconductors & solar cells

7. Theoretical and Computational Chemistry

8. Theoretical Molecular Sciences

9. Conducting Polymers & Photoelectrochemical Solar Cell

Supporting Staff position:

(i) Sanctioned technical Post: 08

(ii) Technical staff profile (in the following table):

Name	Designation	Highest Qualification	Contact No.	E. mail
S. Munshi	Technical Assistant- II	M.Sc.	9432307325	
R. Halder	Technical Assistant - II	B.Sc. (2 years)	9547215236	
A. Das	U.D.C.	B.A.; L.L.B.	9432432241	
B. Das	Sore Helper	Madhyamik	9674774122	
B.Dey	Group-D	Class-VIII	9339637595	
J. Ali	Group-D	Madhyamik	9733930005	
S. Mahato	Group-D	Class-VIII	9231897280	

Sponsored Research: (mention area)

Ongoing (Prop value) in Lakhs	Sponsoring agencies
54	CSIR
18	UGC
163	DST
225	DST-SERI
38.00	MNRE
7.0	DST (W.B.)
21.0	AICTE
10.0	DRDO

No. of publications: (2011-12)

Journal:76

Conference: 17

Books/Monograms: **2**
(List to be included)

Seminar / Workshops / Conferences/ Training programme organized by the Department (in last year):

1 National Seminar on "Recent Advances in Selected Topics of Chemistry-II" March 24-25, 2011.

Others:

(I) In the year of 2011, Dr. Dr. Sudip Kumar Chattopadhyay of the Department of Chemistry has contributed invited papers for *J. Phys. Chem. A 115*, 3665 (*Graham R. Fleming Festschrift" Issue)*.
(II) *Publication of Dr. J. Datta in 'Vertical News', USA (Energy Weekly) on "Novel Platinum reduction technology for Bio-ethanol Fuel Cell" as 'Recent Finding from Bengal Engineering and Science University Highlight Research in Ethanol' 2012*

(II) Seminar lecture delivered (April 2011- March 2012):

1. Prof. S. P. Goswami delivered an invited talk at the International Symposium on *Facets of Weak Interactions in Chemistry at University of Calcutta, held during 13th-15th January, 2011.*
2. Invited talk in Discussion Meeting on Hydrogen Storage and Generation, **MRSI kolkata Chapter, 12- 13 Jan, 2012.**
3. Invited talk in Meeting at National Design And Research Forum, Bangalore, **14th September, 2011**
4. Invited talk in Celebration of International year of Chemistry and Achraya PC Roy memorial Symposium organized by Indian Chemical Society, **Calcutta University, Aug, 2011.**
5. Invited talk in Celebration of International year of Chemistry, Indian Chemical Society, **Bhagalpur University, Sep, 2011.**
6. Prof. S.P. Goswami delivered a lecture at the Dept. of Chemistry, North Bengal University in 16th March, 2011.

7. Prof. S. K. Chattopadhyay delivered invited lecture "Metal complexes as Energy harvesting materials" at National Seminar on "Green Chemistry in Sustainable Development"on 5.3.2012 at Seemanta Mahavidyalaya, Mayurbhanj, Orissa.

List of details of publications of each faculty member:

Dr. Sudip Kumar Chattopadhyay
Electronic Structure Theory (Relativistic and Nonrelativistic):

1. Mahapatra, U. S., **Chattopadhyay, S.** and Chaudhuri, R. K., **(2011)** *J. Comp. Chem.* **32,** 325.

2. **Chattopadhyay, S.,** Chaudhuri, R. K. and Freed, K. **(2011)** *J. Phys. Chem. A* *115*, 3665 *(Invited Article, Part of the "Graham R. Fleming Festschrift" Issue.).*

3. Mahapatra, U. S and *Chattopadhyay, S*. **(2011)** *J. Chem. Phys.* **134**, 044113.

4. **Chattopadhyay**, S., Chaudhurib R. K. and Freed R. K. **(2011)** *Phys. Chem. Chem. Phys.,* **13**, 7514

5. Das, M., Chaudhuri, R. K., **Chattopadhyay, S.,** and Mahapatra, U. S **(2011)** *J. Phys. B: At. Mol. Opt. Phys*. **44** 065003**.**

6. Mahapatra, U. S and **Chattopadhyay, S**. **(2011)** *J. Phys. B: Atomic, Molecular and Optical Physics* **44**, 105102.

7. Das, M., Chaudhuri, R. K., **Chattopadhyay, S.,** Mahapatra, U. S. and Mukherjee, P. K., **(2011)** *J. Phys. B: Atomic, Molecular and Optical Physics* **44** 165701.

8. Chaudhuri, R. K., **Chattopadhyay, S**., K. F. Freed, and Mahapatra, U. S. **(2011)** *J. Chem. Phys.* **135**, 084118.

9. **Chattopadhyay, S.,** Chaudhuri, R. K., and Mahapatra, U. S. **(2011)** *Chem. Phys. Chem*. **12**, 2791

10. Das, M., Chaudhuri, R. K., **Chattopadhyay, S.,** and Mahapatra, U. S **(2011)** *Phys. Rev. A*. **84**, 042512

Statistical Mechanics (Equilibrium and Non- equilibrium Aspects)

11. Ghosh, P., Shit, A., **Chattopadhyay, S.,** and Ray Chaudhuri, J **(2011)** *J. Stat. Mech.* P02026 **(2011)** doi:10.1088/1742-5468/2011/02/P02026**.**

12. Ghosh, P., Shit, A., **Chattopadhyay, S.**, and Ray Chaudhuri, J **(2011)** *Chaos* **21**, 013117**.**

13. Shit, A., Ghosh, P., **Chattopadhyay, S.**, and Ray Chaudhuri, J **(2011)** *Phys. Rev. E*. **83**, 031125**.**

14. Shit, A., Bhattacharya, S., **Chattopadhyay, S.**, and Ray Chaudhuri, J **(2011)** *Physica A* **390** 2880**.**

15. Shit, A., **Chattopadhyay, S.** and Ray Chaudhuri, J. **(2011)** *Chem. Phys*. **386,** 56.

16. Shit, A., **Chattopadhyay, S.** and Ray Chaudhuri, J. **(2011)** *Phys. Rev. E* **(Rapid Communication) 83** 060101(R).

17. Bhattacharya, S., **Chattopadhyay, S.**, Chaudhury, P., and Ray Chaudhuri, J **(2011)** *J. Math. Phys.* **42,** 073302.

Dr. Papu Biswas

1. S. Dutta and **Papu Biswas**, *J. Mol. Str.*, 2011, **996**, 31–37.

Dr. Binay K. Ghorai

1. P. Roy and **B. K. Ghorai**, *Tetrahedron Lett*. **2011**, *52*, 251–253.

2. S. Mukherjee, P. Roy and **B. K. Ghorai**, *Synthesis*, **2011**, 1419–1426.

3. P. J. P. Yadav, B. Maiti, **B. K. Ghorai**, P. U. Sastry, A. K. Patra, V. K. Aswal and P. Maiti, *Macromolecules*, **2011**, *44*, 3029–3038.

4. P. Roy and **B. K. Ghorai**, *Tetrahedron Lett*. **2011**, *52*, 5668–5671.

5. D. Jana and **B. K. Ghorai**, *Tetrahedron Lett*. **2012**, *53*, 196–199.

6. D. Jana and **B. K. Ghorai**, *J. Indian Chem. Soc.* **2012**, *89*, 405–410.

Dr. Prasanta K. Nandi

1. K. Hatua**, P. K. Nandi,** *Comp. and Theo. Chem.* **2012***, 996*, 82 – 90.
2. A. K. Mahapatra, R. Maji, P. Sahoo, **P. K. Nandi,** S.K. Mukhopadhyay, A. Banik **2012,** *Tetrahedron Letters***,** *53,* 7031 – 7035.

Dr. A. K. Mahapatra

1. **A. K. Mahapatra**, R. Maji, P. Sahoo, P. Kumar Nandi ,S. K. Mukhopadhyay , A. Banik , *Tetrahedron Lett.,* **2012**, 53, 7031-7035.
2. **A. K. Mahapatra**, J. Roy, P. Sahoo, S. K. Mukhopadhyay, A. Roy Mukhopadhyay, D. Mandal, *Bioorganic & Medicinal Chemistry Letters*, **2012**, 22, 5379–5383.

3. **A. K. Mahapatra**, J. Roy, S. Kumar Manna, S. Kundu, P. Sahoo, S. K. Mukhopadhyay, A. Banik, *Journal of Photochemistry and Photobiology A: Chemistry*, **2012**, 240, 26-32.

4. **A. K. Mahapatra**, Jagannath Roy, Prithidipa Sahoo, Subhra Kanti Mukhopadhyay and Amarnath Chattopadhyay, *Org. Biomol. Chem.*, **2012**, 10, 2231-2236.

5. **A. K. Mahapatra,** G. Hazra, P. Sahoo, *Bioorganic & Medicinal Chemistry Letters ,* **2012**, 22, 1358-1364.

6. **A. K. Mahapatra**, S. K. Manna and P. Sahoo, *Talanta*, **2011,** 85, 2673-2680.

7. **A. K. Mahapatra,** J. Roy and P. Sahoo, *Tetrahedron Letters*, **2011,** 52, 2965-2968.

8. **A. K. Mahapatra**, G. Hazra, N. K. Das and S. Goswami , *Sensors and Actuators B: Chemical*, **2011,** 156, 456-462 .

9. **A. K. Mahapatra**, G.Hazra, J. Roy and P. Sahoo, *Journal of Luminescence*, **2011,** 131, 1255-1259.

10. **A. K. Mahapatra**, G. Hazra, N. Kumar Das, P. Sahoo, S. Goswami and H.K. Fun, *Journal of Photo Chemistry and Photobiology A: Chemistry*, **2011,** 222, 47-51.

11. **A. K. Mahapatra**, P. Sahoo, G. Hazra, S. Goswami and H. K. Fun, *Journal of Luminescence*, **2011,** 131, 59-68.

Dr. B. Adhikary

1. S.K. Maji, A.K. Dutta, P. Biswas, B. Karmakar, A. Mondal, **B. Adhikary**, Sensor. Actuat. B: Chem., 166– 167 (2012) 726– 732.

2. A. K. Dutta, S. K. Maji, S. Dutta, C. R. Lucas, **B. Adhikary**, J. Mol. Struct. 1029 (2012) 68–74.

3. S.K. Maji, A.K. Dutta, D.N. Srivastava, P. Paul, A. Mondal, **B. Adhikary**, J. Mol. Cat. A: Chem. 358 (2012) 1– 9

4. S.K. Maji, A.K. Dutta, P. Biswas, D.N. Srivastava, P. Paul, A. Mondal, **B. Adhikary**, Appl. Cat. A: Gen. 419-420 (2012) 170-177.

5. S.K. Maji, N. Mukherjee, A. Mondal, **B. Adhikary**, Polyhedron 33 (2012) 145–149.

6. S.K. Maji, N. Mukherjee, A.K. Dutta, D.N. Srivastava, P. Paul, B. Karmakar, A. Mondal, **B. Adhikary**, Mater. Chem. Phys. 130 (2011) 392–397.

7. S.K. Maji, A.K. Dutta, D.N. Srivastava, P. Paul, A. Mondal, **B. Adhikary**, Polyhedron, 30 (2011) 2493–2498.

8. S. K. Maji, N. Mukherjee, A. Mondal, **B. Adhikary**, B. Karmakar, S. Dutta, *Inorg. Chem. Acta*, **2011**, 371 (2011) 20–26.

9. A. K. Dutta, K. Mitra, M. C. Dul, S. Dutta, C.R. Lucas, B. Adhikary, Inorg. Chim. Acta, 377 (2011) 56–61.

10. S. K. Maji, N. Mukherjee, A. Mondal, **B. Adhikary**, B. Karmakar, J. phys. Chem. Solid, 72 (2011) 784–788.

Prof. J. Datta

1. **J. Datta*** A. Dutta**, M. Biswas, **Electrochemistry Communication**- 20 (2012) 56–59.

2. A K Mandal, P M Sarma, B Singh, C P Jeyaseelan, V A Channashettar, B Lal and **J Datta**. J. Sustainable Development and Environmental Protection, 1(3) (2011) 5-23. (ISSN – 2251- 0605).

3. **J. Datta*,** A. Dutta, and S. Mukherjee; **Journal of Physical Chemistry C** – Vol 115 (31), **2011,** PP.15324

4. **J. Datta***, S. Singh,– **Ionics-** 17(2011)785-798

5. A. Dutta, S. Sinha Mahapatra and **J. Datta***, **Int. J. Hydrogen Energy** 36(2011)14889 – 14904

6. S. Sinha Mahapatra, A. Dutta and **J. Datta***, **International Journal Hydrogen Energy**-36(2011)14873 – 14883

7. **J. Datta***, S. Sen Gupta, S. Singh, S. Mukherjee and M. Mukherjee , **Materials and Manufacturing Processes** – Vol. 26, **2011,** PP. 261-271

Prof. A. Mondal

1. S.K. Maji, A.K. Dutta, D.N. Srivastava, P. Paul, **A. Mondal**, B. Adhikary, Journal of Molecular Catalysis A: Chemical 358 (2012) 1– 9

2. Swarup Kumar Maji, Amit Kumar Dutta, Papu Biswas, Basudeb Karmakar, **Anup Mondal**, Bibhutosh Adhikary, Sensors and Actuators B 166– 167 (2012) 726– 732

3. Swarup Kumar Maji, Amit Kumar Dutta, Papu Biswas, Divesh N. Srivastava, Parimal Paul, **Anup Mondal**, Bibhutosh Adhikary, Applied Catalysis A: General 419– 420 (2012) 170– 177

4. Swarup Kumar Maji, Nillohit Mukherjee, **Anup Mondal**, Bibhutosh Adhikary, Polyhedron 33 (2012) 145–149

5. Swarup Kumar Maji, Nillohit Mukherjee, Amit Kumar Dutta, Divesh N. Srivastava, Parimal Paul, Basudeb Karmakar, **Anup Mondal**, Bibhutosh Adhikary, Materials Chemistry and Physics, 130 (2011) 392– 397

6. S.K. Maji, A.K. Dutta, D.N. Srivastava, P. Paul, **A. Mondal**, B. Adhikary, Polyhedron, 30 (2011) 2493– 2498

7. Nillohit Mukherjee, Bibhutibhushan Show, Swarup Kumar Maji, Utpal Madhu, Sanjib Kumar Bhar, Bibhas Chandra Mitra, Gobinda Gopal Khan, **Anup Mondal**, Materials Letters 65 (2011) 3248–3250

8. Nillohit Mukherjee, Sk. F. Ahmed, Swarup Kumar Maji, and **Anup Mondal**, Journal of Applied Physics 109, (2011) 104312

9. Swarup Kumar Maji, Nillohit Mukherjee, **Anup Mondal**, Bibhutosh Adhikary, Basudeb Karmakar, Journal of Physics and Chemistry of Solids, 72 (2011) 784-788

Prof. Shyamal Kumar Chattopadhyay

1. S. Naskar, S. Naskar, A. J. Blake, H. Tadesse, **S. K. Chattopadhyay**, *J. Chem. Crystallogr.*, 41, 986-990 (**2011**).

2. S. Naskar, S. Naskar, H. M. Figgie, W. S. Sheldrick, **S. K. Chattopadhyay**, *Polyhedron*, 30, 529–534 (**2011**).

3. S. Naskar, S. Naskar, S. Mondal, P. K. Majhi, M. G. B. Drew, **S. K. Chattopadhyay**, *Inorg. Chim. Acta*, 371, 100-106 (**2011**)

Prof. Shyamaprosad Goswami

2011

1. H.-K. Fun, M. Hemamalini, A. Hazra, S. Goswami, *Acta crystallographica. Section E, Structure reports online. 12/2011; 67(Pt 12):o3415.*

2. H.-K. Fun, M. Hemamalini, A. Hazra, S. Goswami, *Acta crystallographica. Section E, Structure reports online. 11/2011; 67(Pt 11):o3120.*

3. H.-K. Fun, M. Hemamalini, A. Hazra, S. Goswami, *Acta crystallographica. Section E, Structure reports online. 11/2011; 67(Pt 11):o2932.*

4. H.-K. Fun, M. Hemamalini, A. Hazra, S. Goswami, *Acta crystallographica. Section E, Structure reports online. 11/2011; 67(Pt 11):o2956.*

5. H.-K. Fun, J. H. Goh, A. C. Maity, S. Goswami, *Acta crystallographica. Section E, Structure reports online. 01/2011; 67(Pt 2):m181-2.*

6. H.-K. Fun, J. H. Goh, A. C. Maity, S. Goswami, *Acta crystallographica. Section E, Structure reports online. 01/2011; 67(Pt 2):o290.*

7. H.-K. Fun, J. H. Goh, A. C. Maity, S. Goswami, *Acta crystallographica. Section E, Structure reports online. 01/2011; 67(Pt 2):o427.*

8. **S. Goswami,** N. K. Das, D. Sen, G. Hazra, J. H. Goh, Y. C. Sing and H.-K. Fun**, New Journal of Chemistry**, 2011, **35**, 2811–2819

9. **S. Goswami**, N. K. Das, K. Aich, D. Sen, **Journal of Luminescence** *,* **2011,** *131*, 2185–2188.

10. **S. Goswami**, A. Kar, **Synthetic communication,** 2011, 41, 2500–2504.

11. **S. Goswami**, D. Sen, N. K. Das, H.-K. Fun and C. K. Quah. **Chem comm**, 2011,47, 9101-03.

12. **S. Goswami** and S. Jana. **Mini reviews in organic chemistry**, 2011, 8, 7-16.

2012

1. **S. Goswami,** A. K. Das, D. Sen, K. Aich, H.-K. Fun, and C. K. Quah, **Tetrahedron Letter**, 2012, *53*, 4819–4823.

2. S. Jana, A. L. Whiting, A. Hazra, S. Sen, **S. Goswami**, G. Mehta, H.-K. Fun and F. Hof **Supramolecular Chemistry**, 2012, 4, 24, 264-271.

3. **S. Goswami**, K. Aich and D. Sen. **Chemistry letters**. 2012, 41, 863.

4. **S. Goswami**, N. K. Das, D. Sen & H.-K. Fun. **Supramolecular Chemistry**, 2012, 24, 264-271.

5. S. Goswami, A. Manna, K. Aich, S. Paul, **Chemistry Letters**, 2012, 41, 1600.

Dr. J. Ganguly

1. M. Bhatnagar, S. Pareek , **J. Ganguly** and A. Bhatnagar, **Journal of Applied Phycolgy,** 2012**,** DOI 10.1007/s10811-012-9791-7.

Department of
Computer Science and Technology

About the department

Department of Computer Science and Technology (CST), established in 1982, is the 2nd youngest of the ten Engineering departments in the one and half century old Bengal Engineering College (DU). The CST department, since its inception, has maintained a steady growth in every sphere of its activities and played an important role in bringing a vibrant and forward looking academic environment within the University. It is a premier institution offering high quality undergraduate and postgraduate engineering courses as well as providing an excellent infrastructure and facilities for advanced research and consultancy.

The importance of introducing a separate discipline on Computer Science and Technology was felt back in mid 70s. To serve the growing need of manpower with specialisation in Computer Design and Applications a proposal to start the new discipline was submitted to MHRD and the approval was obtained in 1981. The new department started functioning from within the Electrical Engineering department and admitted the first batch of Bachelor of Engineering (BE) students in July 1982 and a separate CST department came into existence in August 1984. In January 1988 Master of Computer Application (MCA) course was introduced; the first in Eastern region. The full time Master of Engineering (ME) course in Computer Science and Technology started from July 1992. The department conferred its first Ph D degree in January 1999.

This department has been accredited by the **National Board of Accreditation (NBA)** as 'A' grade department for 5 years (1999-2004). The department is also acquired **ISO 9000** certification in 1999-2000.

Academic Programmes:

Undergraduate Level

  i.   Degree Offered : Bachelors of Engineering (BE)
  ii. Sanctioned students' intake : 60
  iii. Additional intake through lateral entry in 3rd Semester : 6

 Postgraduate Level

  i.   Degree offered : **Master of Engineering (M.E.)** Postgraduate Degree Course
  ii. Sanctioned students intake : 16 (GATE) + 2 (sponsored)
  iii. Additional intake through other programmes (i.e. QIP)
  iv. Specialiasations in : INFORMATION TECHNOLOGY & COMPUTER
                              ENGINEERING

 Doctoral Level

   i. Degree offered : **Ph.D.** program in Computer Engineering
   ii. No of candidates enrolled: 12, Registered: 14 (2011-12)

Faculty position: Sanctioned faculty post…20…. Vacant Post …6…,

Faculty profile

Name	Designation	Highest Qualification	Specialisation / Research Area	Contact No. (Extn. No.) & E-mail Address
Dr. Amit Kr. Das	Professor	PhD	Image Processing	(033) 2668 4561 / 2 / 3, Extn. 281 amit@cs.becs.ac.in
Dr. Uma Bhattacharya	Professor	PhD	Broadband computing, Fault tolerance, interconnection network	(033) 2668 4561 / 2 / 3 Extn. 575 ub@cs.becs.ac.in; uma_bh2000@yahoo.co.in
Dr. Jaya Sil,	Professor	PhD	Image Processing, Bio-informatics, Pattern Recognition	(033) 2668 4561 / 2 / 3 Extn. 227 js@cs.becs.ac.in
Dr. Susanta Chakraborty	Professor	PhD	Testing Synthesis and placement of Bio-chip, Testing and Synthesis of Quantum Circuit and Nano-Circuit , Low Power Design, Synthesis and Testing of VLSI Circuits.	(+91) 9433503748, Extn. 600/ 602 susanta.chak@gmail.com sc@cs.becs.ac.in
Dr. Sipra Das Bit	Professor & HOD	PhD	Computer Science and Engg./Mobile Computing	(033) 2668 4561 / 2 / 3 Extn. 601 sb@cs.becs.ac.in, HOD_CST@yahoo.co.in
Dr.Biplab Kr. Sikdar	Professor	PhD	Computer Science and Engg./Cellular Automata	(033) 2668 4561 / 2 / 3, Extn. 606 biplab@cs.becs.ac.in
Manas Hira	Associate Professor	M.Tech.	Temporal Logic & Circuit Verification.	(033) 2668 4561 / 2 / 3, Extn.578, manas@cs.becs.ac.in, manashira2002@yahoo.com
Somnath Pal	Associate Professor	M.E.	Data Mining & Knowledge Discovery, Chemo informatics	(033) 2668 4561 / 2 / 3, Extn. 582, sp@cs.becs.ac.in
Dr. Sulata Mitra	Associate Professor	PhD	Mobile Computing, Wireless Communication	(033) 2668 4561 / 2 / 3, Extn. 599, sulata@cs.becs.ac.in
Dr. Abhik Mukherjee	Associate Professor	PhD	Control Systems	(033) 2668 4561 / 2 / 3, Extn. 596 & 612(Lab), abhik@cs.becs.ac.in
Dr. Sekhar Mondal	Associate Professor	PhD	Document Image Processing	(033) 2668 4561 / 2 / 3, Extn. 580, sekhar@cs.becs.ac.in
Dr Asit Kr. Das	Asst. Professor	PhD	Data Mining, Bioinformatics,Pattern Recognition, Social Network	(033) 2668 4561 / 2 / 3, Extn. 598 akdas@cs.becs.ac.in
Apubba Sarkar	Asst. Professor	M.Tech.	Embedded Computing	(033) 2668 4561 / 2 / 3, Extn. 228 sarkar[AT]cs.becs.ac.in, sakarapurba[AT]yahoo.co.in
Saptarshi Ghosh	Asst. Professor	M.Tech.	Data Mining, Social Network	(033) 2668 4561 / 2 / 3, Extn 595 sghosh@cs.becs.ac.in,

Awards and Laurels:

Prof. Susanta Chakraborty	1. *Publicity Chair* & Program Committee member of 2nd IEEE International workshop on Reliability Aware system Design and Test (RASDAT), January, India, 2011. 2.Advisory Committee member of 2nd International Conference on computing and systems , March 19 – 20,2012. 3.Publication Chair, IEEE WRTLT-2011 International workshop., India, 2011. 4.Publicity Chair & Program Committee member of 3rd IEEE International workshop on Reliability Aware system Design and Test(RASDAT), January, India, 2012
Prof. Sipra DasBit	Best Paper Award in Int. Conf. WIRELESS VITAE 2011.

Research Area (only mention broad titles without description in detail)

i. VLSI Design and Testing for Sub-micron Technology
ii. Mixed Signal Design and Testing
iii. Theory and Applications of Cellular Automata in Diverse Fields
iv. Database Verification / Consistency Checking and Data Mining
v. Information System for Control and Management Applications
vi. Mobile Computing
vii. Testing of Quantum circuit, Reversible Circuit and Nano-Circuit.
viii. Testing and Placement of Bio-Chip
ix. Broadband Computing
x. Image Processing including Document Image Processing and CBIR
xi. Soft computing
xii. Computational geometry
xiii. Data mining
xiv. Wireless sensor network

Research facilities: (name of specific equipment / picture etc.)

Sl. No.	EQUIPMENT	
	Name	**Make/Spec**
1	Function Generator	Yokogawa/ FC-300(15MHZ), Synthesized Function Generator
2	Digital Signal Oscilloscope(DSO)	Yokogawa/ DL-9505L 5GS/S 500MHZ
3	Labview(Software)	National Instrument/ NI-DAQMX for Windows Vista, Vista X64 Edition, XP/2000.Also includes: Labview Signal Express
4	P/C with Robot Interface	Parallax Boe –Bot Robot Kit , Hex- Crawler Kit, Robot Arm
5	FPGA	Xilinx Altera
6	Microcontroller	KEIL
7	Cluster and Distributed Computing Platform	IBM,Intel
8	Storage and Network	IBM

| 9 | Wireless Explore Kit(WEK) | IEEE 802.15.4 Standard |

Name of the Laboratories:

■ **Software Laboratories**	■ **Hardware Laboratories**

Resources:
• **PC'S**: 150
• **Servers** : 20
• **OS** : Linux, Windows, Unix
• **Software**: Oracle 9i, matlab,
         CASE Tool, VLSI etc.
 	
Supporting the following courses:
  i)Data Structure
 	
  ii)Object Oriented Technology
 	
iii)Discrete Structures
 	
 iv)Operating Systems
 	
 v)Algorithm
 	
vi)Analysis, Design & Management of Information   Systems
 	
vii) Database Management System
 	
vii)Computer Networks
 	
viii)Systems Programming
 	
ix)Computer Graphics
 	
x)Compiler Design
 	
xi)Symbolic Logic & Artificial   Intelligence
 	
xii)Software Engineering
 	
\xiii) VLSI Design
 	
xiv)Electronic Design &   Automation
	Digital Circuit Experimentation Kit, Microprocessor S/W Development Kits, Embedded System Design Kits, Progrmmable Logic Controller, GPS Receiver Unit, RFID Reader.
	
	Supporting the following courses:
	
	  i)Digital Logic
	
	  ii)Computer Organization
	
	  iii)Microprocessor Based System Design
	
	  iv)Digital Systems Design
	
	  v)Embedded System
	
	  vi) Computer Control of Industrial Process

Consultancy Work: Automation of Assessment and Billing activities of Howrah Municipal Corporation.

Support staff position:

(a) Sanctioned technical post….:- 8
(b) Vacant Post: 1

Technical staff profile (in the following table)

Name	Designation	Highest Qualification	Contact No.	E-mail
BIMAL PRASAD JANA	SUPDT. TECH. (TEACHING)	LEE	2668 4561 / 2 /3 Extn 576	bjana@cs.becs.ac.in
SUSANTA CHAKRAVORTY	SUPDT. TECH. (TEACHING)	LEE	2668 4561 / 2 /3 Extn. 611	schak@cs.becs.ac.in
PRADIP KUMAR ROY	TECH.ASST. - I	LEE	2668 4561 / 2 /3 Extn. 576	pkr@cs.becs.ac.in
SUMITRA BAGCHI	TECH.ASST. - II	MCA, B. Sc (Physics)	2668 4561 / 2 /3 Extn. 584	bagchi@cs.becs.ac.in
SARBANI BARARI	TECH.ASST. - II	Diploma in Electronics & Telecommunication Engineering, B. Sc	2668 4561 / 2 /3 Extn. 577	sarbani@cs.becs.ac.in
SUJATA MISRA	TECH.ASST. - II	Diploma in Computer Science & Technology, B. Sc	2668 4561 / 2 /3 Extn. 576	sujata@cs.becs.ac.in
RUMELI BOSE	TECH.ASST. - II	M.Tech	2668 4561 / 2 /3 Extn. 611	rumeli@cs.becs.ac.in

Sponsored Research:

Name of PI / Co-PIs	Title Of the project	Funding Agency	Total Quantum support	Status
Dr. Abhik Mukherjee	Conceptual design of NGC loop for PGM's	DRDO(RCI)	10 lacs	Completed
Dr. Abhik Mukherjee	Alignment and Ejection studies of PGM	DRDO(RCI)	8 Lacs	Continued
Dr. Abhik Mukherjee	Guidance, Control &Target Tracking strategies for a PGM	DRDO(RCI)	22 Lacs	Continued

PUBLICATIONS 2011-2012

Dr. Amit Kr. Das	International Conference : 6
Dr. Uma Bhattacharya	International Journal:4 International Conference: 9
Dr. Jaya Sil,	International Journal: 8 International Conference: 8 Books/Monograms:
Dr. Susanta Chakraborty	International Journal: International Conference : 5 Books/Monograms:
Dr. Sipra Das Bit	International Journal: 2 International Conference :9 Books/Monograms: 1
Dr.Biplab Kr. Sikdar	International Journal: International Conference : Books/Monograms:
Somnath Pal	International Journal: 1 International Conference : Books/Monograms:
Dr. Sulata Mitra	International Journal: 4 International Conference :6 Books/Monograms:
Dr. Abhik Mukherjee	International Journal: 5 International Conference: 4
Dr. Sekhar Mondal	International Journal: International Conference:
Dr Asit Kr. Das	International Journal: International Conference: 2 Books/Monograms:
Saptarshi Ghosh	International Journal: 6 International Conference :2 Books/Monograms:

Prof. Somnath Pal

List of Papers:

- Sanjay Ram and Somnath Pal, An Efficient Algorithm for Automating Classification of Chemical Reactions into Classes in Ugi's Scheme, International Journal of Chemoinformatics and Chemical Engineering, 2(2), 1-14, 2012.

Dr. Uma Bhattacharya:

International Journal/Book-series

1. M. Chatterjee, S. Sanyal, M. Nasipuri, U. Bhattacharya, "A wavelength assignment algorithm for de Bruijn WDM networks", accepted for publication in 2011 in International Journal of Parallel, Emergent and Distributed Systems (IJPED), Taylor & Francis, UK
2. .Ditipriya Sinha, Uma Bhattacharya And Rituparna Chaki" A Novel Distributed Clusterized Approach Towards Building An Agent Based Routing Topology For MANET"in proceedings of the   The Third International Conference on Wireless & Mobile Networks (WiMoN-2011) will be published by Springer (LNCS) in Communications in Computer and Information Science (CCIS) Series in 2011.

3. Ditipriya Sinha, Uma Bhattacharya and Rituparna Chaki, "A CRT based encryption methodology for secure communication in MANET", published in International Journal of Computer Applications (IJCA) Vol.39, No.-16, 2012. DOI number is 10.5120/4904-7406.

4. M. Chatterjee, S. Sanyal, M. Nasipuri, U. Bhattacharya, "A wavelength assignment algorithm for de Bruijn WDM networks", accepted for publication in 2012 in International Journal of Parallel, Emergent and Distributed Systems (IJPED), Taylor & Francis, UK

International Conferences

- "Heuristic for Routing and wavelength assignment in de Bruijn WDM networks based on Graph Decomposition", M. Chatterjee, A. Goswami, S. Mukherjee, U. Bhattacharya, Proceedings of 5th International Conference IEEE ANTS 2011 to be held in Bengaluru, India during December 18-21, 2011(to be published in IEEE explore)

- "Heuristic Routing for Reducing Congestion in Presence of Link Fault in de Bruijn WDM Networks ", M. Chatterjee, U. Bhattacharya, Proceedings of IEEE TENCON 2011 to be held at Indonesia, Bali 2011 (to be published in IEEE explore).

- "A New Channel Reservation Scheme to Reduce Call Blocking in Cellular Networks ", A. Sharma, U. Bhattacharya, Proceedings of iCOST 2011 held at Shanghai, China, October 10-12, 2011. (to be published in IEEE explore).

- "Applications of Wireless sensor network in Intelligent traffic systems: A Review ", Abhijit Sharma, R. Chaki, U. Bhattacharya, Proceedings of 3rd International Conference on Electronics Computer Technology (ICECT 2011) held at Kanyakumari, India, April 8-10, 2011, pp. 53-57. (published in IEEE explore).

- "New Strategies for Static Routing and Wavelength Assignment in De Bruijn WDM Networks", M. Chatterjee, S. Barat, D. Majumder and U. Bhattacharya, Proc. of 3rd IEEE International Conference on Communication Systems and Networks 2011(COMSNETS 2011), Bangalore, India, pages 1-4.

- Ditipriya Sinha, Uma Bhattacharya And Rituparna Chaki "A Secure Routing Scheme in MANET with CRT based Secret Sharing", in Proceedings of 15th International Conference of Computer and Information Technology,2012(ICCIT 2012), paper to be included in IEEE XPlore.

ABHIJIT SHARMA, Uma Bhattacharya, "An Efficient Scheme to Reduce Call Blocking in Cellular Networks", IEEE 1st International Conference on Mobile Services (IEEE MS 2012), Hawaii, 2012. (ACCEPTED)

ABHIJIT SHARMA, Uma Bhattacharya, "An Efficient Call Admission Control Scheme to Reduce Call Blocking in Mobile Cellular Systems", IEEE International Conference on Communication, Networks and Satellite (ComNetSat), 2012. (ACCEPTED)

- .ABHIJIT SHARMA, Avijit Roy, SumanGhosal, RituparnaChaki, Uma Bhattacharya, "Load Balancing in Cellular network: A Review", 3rd International Conference on Computing Communication & Networking Technologies (ICCCNT), Coimbatore

Dr. Jaya Sil:

International Journal Papers published:

- P. Dey, S. Dey, S. Datta and J. Sil, Dynamic Discreduction Using Rough Sets, Applied Soft Computing, Elsevier Science Direct, 11 (2011), 3887–3897.

- Indrajit De and Jaya Sil, ANFIS Tuned No-Reference Quality Prediction of Distorted/Decompressed Images featuring Wavelet Entropy, International Journal of Computer Information Systems and Industrial Management Applications ISSN 2150-7988 Volume 3 (2011) pp. 298-305, © MIR Labs, www.mirlabs.net/ijcisim/index.html

- Suparna Biswas, Jaya Sil and Nandita Sengupta, Background Modeling and Implementation using Discrete Wavelet Transform-A Review, ICGST-GVIP Journal, Volume 11, Issue 1, March 2011.

- Das and J. Sil, An Efficient Classifier Design Integrating Rough Set and Set Oriented Database Operations, Applied Soft Computing, Elsevier Science Direct, 11 (2011), 2279–2285.

- Jaya Sil and Asit K Das, Variable Length Reduct Vs. Minimum Length Reduct - A Comparative study, Procedia Technology, Elsevier, 00 (2011) 1 – 10

- Kankana Mukhopadhyay, Jaya Sil and N.R. Banerjea, A Competency Based Management System for Sustainable Development by Innovative Organizations: A Proposal of Method and Tool, Vision, 15, 2 (2011): 153-162

- [5] Ranita Biswas and Jaya Sil, An Improved Canny Edge Detection Algorithm Based on Type-2 Fuzzy Sets, Procedia Technology, Elsevier, 4 (2012) 820 – 824

-] Indrajit De and Jaya Sil, Entropy based fuzzy classification of images on quality assessment, Journal of King Saud University – Computer and Information Sciences, Elsevier, (2012) 24, 165–173.

International Conference Paper:

- Indrajit De and Jaya Sil, No Reference Image Quality Assessment by Designing Fuzzy Relational Classifier using MOS Weight Matrix, D.-S. Huang et al. (Eds.): ICIC 2011, LNBI 6840, pp. 361–369, © Springer-Verlag Berlin Heidelberg 2011

- Maity, Seba Sil, Jaya Maity, Santi P. Delpha, Claude, Fuzzy-GA Hybridization in M-band Wavelets for Collusion Resilient Optimized SS Watermarking, 10.1109/EuVIP.2011.6045527, pp-205-210, EUVIP 2011.

- Indrajit De and Jaya Sil, No reference image quality Assessment using Fuzzy Relational Classifier, H. Deng et. Al. (Eds): AICI2011, Part I, LNAI 7002, Springer-Verlag, pp. 551-558, 2011

- Nandita Sengupta and Jaya Sil, Comparison of Performance for Intrusion Detection System using Different Rules of Classification, ICIP 2011 CCIS 157, pp.87-92, Springer-Verlag, 2011

- Amit Paul and Jaya Sil, Estimating Missing value in Microarray Gene Expression Data, FUZZ-IEEE 2011

- Saikat Maity and Jaya Sil, Image Segmentation using Grey Scale Weighted Average method and Type-2 Fuzzy Logic Systems, AIM 2011, Springer LNCS-CCIS

- Nandita Sengupta and Jaya Sil, Evaluation of Rough Set Theory Based Network Traffic Data Classifier Using Different Discretization Method, IEEE International Conference on Intelligent Information Networks, pp. 110-114, 2011

- Santanu Phadikar, Jaya Sil and Asit K Das, Classification of Rice Leaf Diseases Based on Morphological Changes, IEEE International Conference on Network Communication and Computer (ICNCC 2011), pp 389-393, 2011

- Nandita Sengupta and Jaya Sil, Comparison of Different Rule Calculation Method for Rough Set Theory, IEEE International Conference on Network Communication and Computer (ICNCC 2011), pp 400-404, 2011

- Sen, P. Banerjee and J. Sil, Feature Selection of Network Traffic Data to Develop Intruision Detection System, Proceedings of the first International Conference on SCICT 2011, pp. 197-201, 2011

- Saikat Maity and Jaya Sil, Generalization of Centroid using Modified Kernik Mendel (KM) Algorithm, IEEE Proceedings of ICCMS-2011, 610-614, ISBN:978-1-4244-9241-1

Dr. Susanta Chakraborty:

Publications:

International Conference Proceedings

- "Bridging fault detection of the reversible circuit using unitary Matrix" *Proceeding of the 2nd International conference RASDAT, 2011 on reliability aware system design and test*. Chenni, 2011.

- Bikromadittya Mondal, Pradyut Sarkar and Susanta Chakraborty "Synthesis of Reversible Logic Circuit using Unitary Matrix". *Proceeding of the 2nd International conference RASDAT, 2011 on reliability aware system design and test.* January, Chenni, 2011.

- Pranay Kumar Saha , Pradyut Sarkar and Susanta Chakraborty "Synthesis of Reversible Logic Circuit using Unitary Matrix". *Proceeding of the 3rd Workshop on Reversible Computing July 4th - 5th, 2011, **Gent, Belgium***.

- Biswanath Chakraborty, Siddhartha Bhattacharyya and Susanta Chakraborty, "An unsupervised approach to video shot boundary detection   using higher order and probalistic fuzzy entropy measures", *Applied Soft Computing* (Communicated)

- Pradyut Sarkar and Susanta Chakraborty ,"Test set Compaction for Bridging Faults Detection in Reversible Circuits

Conferences Attended:

- 3rd Workshop on Reversible Computing,   July 4th -5th, 2011, **Gent, Belgium.**

- Twenty-four, International Conference on VLSI Design, **IEEE CS** 2011 Press, Bangalore, India

- 2nd IEEE workshop on Reliability Aware System Design and Test (RASDAT) 2011 Bangalore, India

- 20th Asian Test Symposium(ATS-2011), 20-23rd November, 2011

- 3rd IEEE workshop on Reliability Aware System Design and Test (RASDAT) 2012 Hyderabad, India

- 2nd International Conference on computing and systems, March 19 – 20, 2012 , New-Delhi, India

Dr. S. Das Bit:

Book

- S. Mitra and S. DasBit, ′ Location Management and Related Issues in Cellular Mobile Environment′, Lap Lambert Academic Publishing, Germany, September, 2011.

Journal

- A. Ghosal, S. Halder and S. DasBit, ′ A Dynamic TDMA Based Scheme for Securing Query Processing in WSN′, Wireless Networks, Springer, Vol.18, no. 2,pp16 5-184,2012.

- S. Halder, A. Ghosal and S. DasBit, ′ A Pre-determined Node Deployment Strategy to Prolong Network Lifetime in Wireless Sensor Network′, Journal Computer Communications, Elsevier Science, Vol 34, Issue 11, pp 1294-1306, 2011.

Refereed Conference Proceedings

- A. Dan, S. Halder, S. DasBit, ′ Localization with Enhanced Location Accuracy using RSSI in WSN′, IEEE ANTS 2011.

- S. Halder, A. Ghosal, A. Saha and S. DasBit, ′ Energy-Balancing and Lifetime Enhancement of Wireless Sensor Network with Archimedes Spiral′, Proc. 8th Int'l Conf. on Ubiquitous Intelligence and Computing (UIC), LNCS, Springer-Verlag, vol. 6905, pp. 420-434, September 2011.

- S. Halder, A. Ghosal, A. Chaudhury and S. DasBit, ′ A Probability Density Function for Energy-Balanced Lifetime-Enhancing Node Deployment in WSN′, Proc. 11th Int'l Conf. Computational Science and its Application (ICCSA), LNCS, Springer-Verlag, vol. 6018, pp. 472-487, June 2011.

- A. Ghosal, S. Halder, Md. Mobashir, R.K. Saraogi, and S. DasBit, ′A Jamming Defending Data-Forwarding Scheme for Delay Sensitive Applications in WSN′, Proceedings Wireless Vitae'11 IEEE Xplore, pp 1-5, February 2011.

- S. Chaurasia, T.Pal and S. DasBit, ′ An Enhanced Energy-Efficient Protocol with Static Clustering for WSN′, Proceedings IEEE Xplore, Int.Conf. on Information Networking (ICOIN), Kuala Lumpur, pp 58-63, January 2011.

- S. Chaurasia, J. Sen, S. Chatterjee, S. DasBit, ʹ An Energy-Balanced Lifetime Enhancing Clustering for WSN (EBLEC)ʹ, Int. Conf. ICACT 2012, IEEE Xplore.

- I. Dutta, R. Banerjee, T. Acharya, S. DasBit, ʹ *An Energy Efficient Audio Compression Scheme Using Wavelet with Dynamic Difference Detection Technique*ʹ Int. Conf. ICACCI, ACM digital library, pp 360-366, 2012.
- S. Halder, S. DasBit, ʹ*A Lifetime Enhancing Node Deployment Strategy using Heterogeneous Nodes in WSNs for Coal Mine Monitoring*ʹ, ACM MSWiM, pp 117-124, Oct 2012.

- A. Ghosal, S. Sur, and S. DasBit, ʹ *μSec: A Security Protocol for Unicast Communication in Wireless Sensor Networks*ʹ, Int. Workshop on Autonomous and Spontaneous Security (SETOP) held in conjunction with European Symposium on Research in Computer Security (ESORICS), LNCS, Springer- Verlag, vol 7731, pp 258-273, Sept 2012.

Dr. Sulata Mitra

- S.Mitra and S.Pyne, "Fuzzy Logic Based Route Optimization in a Multihomed Mobile Networks", Wireless Network, Springer Netherland, vol.17, no.1, pp. 213-229, 2011.

- S.Mitra and A. Goswami, "Performance Comparison of HA POSANT and RADAR POSANT Routing Algorithm for Mobile Ad-hoc Networks", International Journal of Applied Research on Information Technology and Computing, 2011, May – August Issue.

- S.Mitra and A.Goswami, "Load Balancing in Integrated MANET, WLAN and Cellular Network", BVICAM's International Journal of Information Technology (BIJIT), Special Issue, pp. 34-41, 2011.

- S.Mitra, S.Pyne and A.Goswami, "MANEMO for Fishing Trolleys in Deep Sea", BVICAM's International Journal of Information Technology (BIJIT), Special issue, pp. 11-18, 2011.

- Seamless Mobility Management – A need for next generation all-IP wireless networks, Security, Privacy, Trust, and Resource Management in Mobile and Wireless Communications, Danda B. Rawat, Bhed B. Bista and Gongjun Yan, IGI Global, USA.

Conference:

- S.Mitra, "Dynamic Mobility Management and Resource Management in Heterogeneous Wireless Networks Environment", International Symposium on Devices MEMS, Intelligent Systems & Communication, 2011.

- S.Mitra, "Security Architecture of a Seamless Mobility Management System in Heterogeneous Wireless Networks Environment", International Conference on Wireless Networks and Embedded Systems, 2011 (To be appeared)

- International Conference on Advances in Computing, Communications and Informatics, Aug.3 – Aug.5, 2012, Chennai, India

- A.Mondal and S.Mitra, "Identification, Authentication and Tracking Algorithm for Vehicles using VIN in Centralized VANET", International conference of Communication, Network and Computing, proceedings published by Springer LNICST, vol.108, 2012.

- S.Mitra and A.Mondal, "Identification, Authentication and Tracking Algorithm for Vehicles using VIN in Distributed VANET", International Conference on Advances in Computing, Communications and Informatics, proceedings published in ACM digital library, pp.279-286, 2012.

- T. Ghosh and S.Mitra, Congestion Control by Dynamic Sharing of Bandwidth among Vehicles in VANET, 2012 12th International Conference on Intelligent Systems Design and Applications, pp. 291-296.

Dr. Abhik Mukherjee

Journals:

- Durjoy Majumder and Abhik Mukherjee; A passage through systems biology to systems medicine: adoption of middle-out rational approaches towards the understanding of therapeutic outcome in cancer; "Critical Review" published by Analyst, 2011; vol. 136, pp. 663-678.
- Jagadish Kundu and Abhik Mukherjee; Pricing model for eliminating productivity concerns of outsourced software maintenance service; Int. J. Industrial and Systems Engineering, accepted.
- Prabir Dhar, Durjoy Majumder and Abhik Mukherjee; Difference delay equation based analytical model of hematopoiesis'; accepted in Automatic Control of Physiological State and Function, 2012.
- Jagadish Kundu and Abhik Mukherjee; Pricing model for eliminating productivity concerns of outsourced software maintenance services; Int. Journal of Industrial and Systems Engineering; Vol. 11, Nos. 1/2; pp. 167-178; 2012.
- Sreemoyee Roy and Abhik Mukherjee; Exploring the dynamics of capped inversion from sodar data; Fluctuation and Noise Letters; Volume 11, Issue 04, 1250025 (10 pages), December 2012.

Conferences:

- International Conference on EAIT; pp. 331-334; paper presented at Kolkata in February 2011.
- A fuzzy based strategy for improved search coverage of an airborne seeker; 2nd International Conference on EAIT; pp. 305-308; paper presented at Kolkata in February 2011.
- Sreemoyee Roy and Abhik Mukherjee; Design of Air Quality Information Systems: Gaps and Prospects; presented and extended abstract published at the Seminar on "Research and Application of Environment-friendly Solutions for Metallurgical Industries", BESU, Shibpur; Jan 2012.

- Sreemoyee Roy and Abhik Mukherjee; Information system analysis for monitoring of air quality in peri-urban Howrah; Third International Conference on Emerging Applications of Information Technology (EAIT), Dec 2012 **Page(s):** 231 - 234, available in IEEExplore.

Dr. Asit Kr. Das

- Santanu Phadikar, Jaya Sil and Asit kumar Das, "Classification of Rice Leaf Diseases Based on Morphological Changes", Accepted in 2011 International Conference on Network Communication and Computer (ICNCC 2011).

- A. K. Das and A. Sarkar, "Comparative Analysis of Handwritten Numeral Recognition with GA and PSO", Accepted in National Conference on Computer Applications and Management, NCETCAM'11, Aarupadai Veedu Institute of Technology, Chennai.

Prof. Saptarshi Ghosh

Journals:

(1) N. Ganguly, S. Ghosh, T. Krueger, A. Srivastava, "Degree Distributions of Evolving Alphabetic Bipartite Networks and their Projections", Theoretical Computer Science, Elsevier, vol. 466, pp. 20-36, December 2012.

(2) S. Ghosh, A. Srivastava, N. Ganguly, "Effects of a Soft Cut-off on Node-degree in the Twitter Social Network", Computer Communications, Elsevier, vol. 35, issue 7, pp. 784-795, 2012.

(3) S. Ghosh, N. Sharma, F. Benevenuto, N. Ganguly, K. Gummadi, "Cognos: Crowdsourcing Search for Topic Experts in Microblogs", ACM SIGIR Conference, Portland, USA, August 2012.

(4) N. Sharma, S. Ghosh, F. Benevenuto, N. Ganguly, K. Gummadi, "Inferring Who-is-Who in the Twitter Social Network", Workshop on Online Social Networks (WOSN), Helsinki, Finland, August 2012.

(5) A. Chakrobarty, S. Ghosh, N. Ganguly, "Detecting Overlapping Communities in Folksonomies", ACM Hypertext Conference, Milwaukee, USA, June 2012.

(6) S. Ghosh, B. Viswanath, F. Kooti, N. Sharma, G. Korlam, F. Benevenuto, N. Ganguly, K. Gummadi, "Understanding and Combating Link Farming in the Twitter Social Network", ACM World Wide Web Conference (WWW), Lyon, France, April 2012.

Seminar, Symposium/Conference attended / organized:

1) Attended ACM International SIGIR Conference, Portland, USA (August 2012)

(2) Attended ACM International Conference on World Wide Web, Lyon, France (April 2012)

Department of Electrical Engineering

About the Department:

The Department of Electrical Engineering is one of the oldest in this 'ancient-new' University. Started in 1912, undergraduate degree course was introduced in this department from 1935-36 and postgraduate course from 1955. The first Ph.D. was produced by this department in 1959. The number of Ph.Ds awarded from this department has now been grown to 22 out of which 17 had been in last 10 years. From 1989, the Ministry of Human Resource Development declared this department as one of the QIP Centres for Post Graduate Studies and Research.

The faculty and other staff members of the department are committed to imparting excellent education at par with national / international seats of learning. An extraordinary pool of talents exists in fields as diverse as Electrical Machines, Power Systems, Control Systems, Power Electronics and Instrumentation. Research activities in the department are on a climbing ramp. The department has been included in the 'National Mission on Power Electronics Technology' (NaMPET), a project launched by DIT, MCIT, Govt. of India. In this programme, it shares the limelight with three IITs, IISc. and Anna University. Under NaMPET the department has received a grant of Rs. 73.2 lakhs to spearhead research on Power Electronics. The department has also executed the DST-FIST project under which a grant of Rs. 1.5 crores had been received. It has also received its share of about Rs.60 lakhs under the TEQIP scheme. Other research activities include condition monitoring of electrical equipment (a MOU with TISCO has been signed), application of soft computing tools to electrical machine and power system related problems, design of robust controllers for defense applications, biomedical instrumentation, power quality studies, embedded technology etc.

Academic Programmes:

Undergraduate level (NBA accreditation for 3 years)

i.   Degree offered – **B. E. (Electrical Engg.)**
ii.   Sanctioned students' intake – **60**
iii. Additional intake through lateral entry in 3rd semester - **6**

Postgraduate level (NBA accreditation for 5 years)

i.   Degree offered – **M. E. (Electrical Engg.)**
ii.   Sanctioned students' intake – **24**
iii. Additional intake through other programs – **2** (QIP)
iv.   Specialisations in -   **(a) Control Systems**
                              (b) Electrical Machines
                              (c) Power Electronics

<center>**(d) Power Systems**</center>

Doctoral level

i.   Degree offered – **Ph. D.**
ii.   No. of candidates registered/enrolled – **20**
        Awarded   – 0

Faculty positions:

Sanctioned faculty post – **28:**   Vacant post – **3** (One adjunct Professor should not be counted, sr. no 2)

Faculty profile:

Sr.No.	Name	Desig-nation	Highest Qualification	Specialisation / Research Area	E-mail id
1.	S. C. Konar	Professor (Re-employed)	Ph. D.	Electrical Machines & Power Systems	su_ch_konar@hotmail.com
2.	S. Mallik	Adjunct Professor	M.E.E.	Electrical Machines	srikumar_mallik@hotmail.com
3.	D. Ghosh	Professor (Re employed)	Ph. D.	Instrumentation, Digital Systems & Networks	dean_besus@yahoo.co.in
4.	S. P. Ray	Professor (Re employed)	Ph. D.	Electrical Machines, Electromagnetic Fields	spray1949@gmail.com
5.	A. Chakrabarti	Professor	Ph. D.	Power Systems, Networks	a_chakraborti55@yahoo.com
6.	B. Basak	Professor	Ph.D.	Electrical Machines, Power Electronics & Drives	biswarup_basak@yahoo.com
7.	D. Sarkar	Professor & Head	Ph. D.	Electrical Machines, Electromagnetic Fields	debasissrkr@yahoo.co.in
8.	G. Bandyopadhyay	Professor	Ph. D.	Power Systems, Computer Applications	gautamkabi@hotmail.com
9.	J. Pal	Professor	Ph. D.	Power Systems, Computer Applications & Expert Systems	jagadish_pal@hotmail.com
10.	A. Sutradhar	Professor	Ph. D.	Instrumentation, Digital systems	asee1@rediffmail.com
11.	P. Syam	Professor	Ph. D.	Solid State Circuits, Control Systems, Power Electronics	prasidsyam@yahoo.co.uk
12.	A.K. Maitra	Professor	Ph. D.	Power Systems, Power System Protection	ashokmaitra@gmail.com
13.	C.K. Chanda	Professor	Ph. D.	Power System, Electrical Machines	ckc_math@yahoo.com
14.	A. Rouf	Professor	M.Tech.	Electrical Machines, Non-Conventional Energy	rauf_a@hotmail.com

15.	D. Ganguly	Asso. Professor	M.E.E.	Power Electronics & Drives, Microprocessor Applications	ganguly.debjani@gmail.com
16.	M. Sengupta	Asso. Professor	Ph. D.	Electromagnetic Fields, Electrical Machines and Drives	mainak.sengupta@gmail.com
17.	D. Roy	Asso. Professor	Ph. D.	Electrical Machines & Drives	dbr_roy@yahoo.co.in
18.	Aparajita Sengupta	Asso. Professor	Ph. D.	Control Systems	aparajitasg@rediffmail.com
19.	K.Das(Bhattacharya)	Asso. Professor	Ph. D.	Microprocessor & Power System Protection	poopoolee50@hotmail.com
20.	A. Barman	Asstt. Professor	M.E.E.	Digital Computers	amalburman@yahoo.com
21.	A.B. Choudhury	Asstt. Professor	M.E.E	Power Systems	ab_choudhury@yahoo.com
22.	Anindita Sengupta	Asstt. Professor	Ph. D.	Instrumentation, Control Systems	aninsen2002@yahoo.com
23.	A. De	Asstt. Professor	Ph. D.	High Voltage Engg., Power Systems	abhinandan.de@gmail.com
24.	K. Mukherjee	Asstt. Professor	Ph. D.	Power Electronics / Electrical Machine Drives, Distributed Generation, Power Quality	(O) 033 26685018, extn. 22, 033 26684561-63, extn. 594 / kaushikk_mukh@rediffmail.com, kmukherjee@ee.becs.ac.in
25.	P. Chattopadhyay	Asstt. Professor	Ph. D.	Power System, Microprocessor, Pondition Monitoring	paramita_chattopadhyay@yahoo.com
26.	S. Parui	Asstt. Professor	Ph. D.	Electrical Machines & Drives, Power Systems	sp_74107@yahoo.com

Awards and Laurels:

1. Dr.Kaushik Mukherjee   : Leadership demonstrated as Secretary, IEEE Industry Applications (IAS) Kolkata Chapter, which won '2011 IAS Continued Outstanding Performance Small Chapter Award for 2010 performance, from IEEE IAS Headquarter, award received in October 2011.

2. Dr.Kaushik Mukherjee   : Offered and availed of 'Visiting Professor' assignment, related to R&D activities, in the Centre of Hybrid and Automotive Research and Green Energy (CHARGE), University of Windsor, Canada during July 2011-June 2012.

Research Area
1. **Power Electronics**
2. **Application of Advanced Signal Processing and Soft-computing Techniques in Condition Monitoring of Induction Motor.**
3. **Smart Energy Saving Device for Power Factor Control.**

4. **Identification of Physiological Processes and Analysis, Synthesis and Design of Controllers for Drug Delivery System.**

5. Robust Control applications in aerospace and ballistic problems

6. Stability, Economic and Optimum Operation and Control of EHV Power

Transmission System

Research Facilities:

▶ **Electrical Machine Laboratory**

Synthetic Rotating Machines comprising of:

1. 1ph. Sq. cage Ind. Motor (Capacitor Start Induction Run) Model: BEC/0.75/01/04.
2. 1ph. Sq. cage Ind. Motor (Capacitor Start/Run) Model: BEC/1.5/01/04
3. 1ph. Sq. cage Ind. Motor (Resistor Split type) Model: BEC/0.5/01/04
4. 3ph. Slip Ring Ind. motor Model: BEC/5.6/02/04
5. 3ph. Sq. cage Ind. motor Model: BEC/5.6/01/04
6. DC compound motor Model: BEC/5.6/DC1/04
7. Permanent Magnet DC motor Model: BEC/1.5/PMDC1

3ph. Sq. cage Ind. motor

3ph. Slip Ring Ind. Motor

1ph. Sq. cage Ind. Motor (Resistor Split type)

1ph. Sq. cage Ind. Motor (Capacitor Start /Run)

1ph. Sq. cage Ind. Motor (Cap Start /Induction Run)

DC compound motor

Permanent Magnet DC motor

▶ **High Voltage Laboratory**

AC High Voltage Test Set

DC High Voltage Test Set

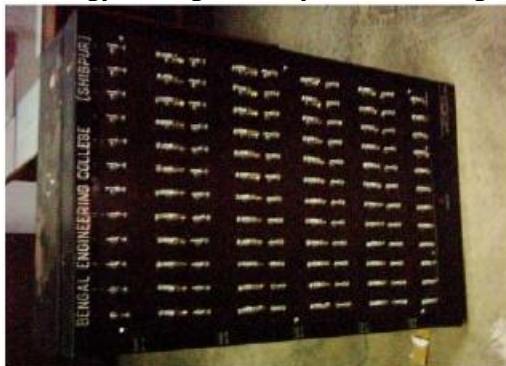Test Set for measuring Tanδ & BDV

Lightning Impulse Test Set

Insulation cum Polarization Index Test Set

▶ **Energy Laboratory:**
1. Automatic Dry Cell Battery Testing Setup
2. Energy Management System including SCADA

Automatic Dry Cell Battery Testing Setup

Laboratory Model of a SCADA

▶ **Condition Monitoring Laboratory:**
   a) A full set of Machinery Fault Simulator, Spectra Quest, USA, fitted with vibration and current sensors (AICTE)
   b) High speed Data Acquisition System (DAS) (Hardware and Software) (AICTE/ DST
   c) Adequate computing and printing facilities along with good working atmosphere (DST/ AICTE)
   d) Multi user ANSYS software. (DST)
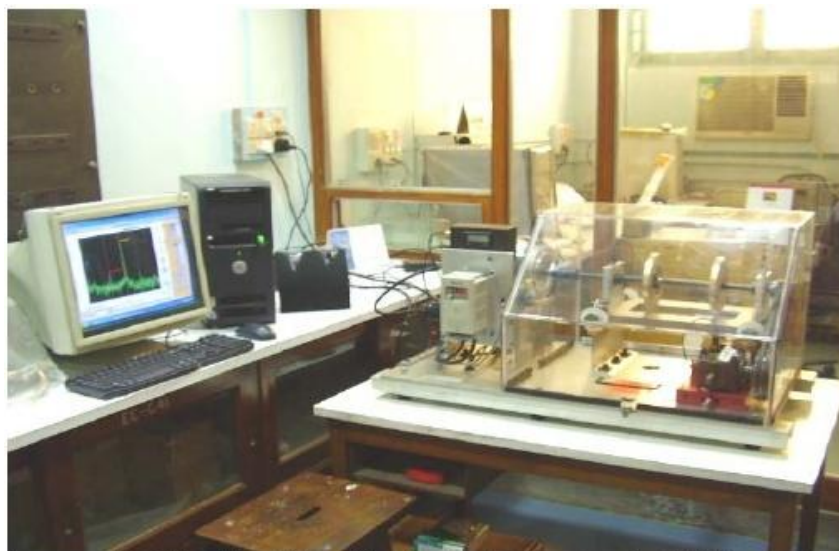
Existing Condition Monitoring Laboratory in EE Dept.

▶ **Calibration Laboratory**

This laboratory has been set up with the help of DST FIST support to build an infrastructure for regular experiments of the curriculum, research works and calibration of instruments. A full set up of calibration equipment has been procured by which all single phase meters and watt-meters excluding energy meters can be calibrated in house, which is being done at present. We also have single phase and three energy meter calibration units. Presently laboratory experiments are performed and PG research activities are on. Some training courses have been offered and the laboratory facilities had been extended to the engineers and technicians from industries like M/S Stuarts and Lloyds (Refresher course). One PG project work has been carried out in this laboratory on "Calibration of Temperature sensors… " under the supervision of Dr. D. Ghosh.

Only one equipment worth Rs. 8-10 lakh producing precision three phase variable voltage source with phantom loading and clock pulses by PC control has to be procured and formalities are to be fulfilled for NABL accreditation of the lab and one or two full time technical assistants are to be appointed so that the infrastructure may be fully utilized for teaching, research as well as commercial purpose.

The equipments in this Laboratory are:

a) ISOTECH 650 Plus dry bath with temperature indicator/controller.
b) Times Electronics 5051: Multifunction Calibrator.
c) Times Electronics 5077: Power Calibrator with current probe.
d) Times Electronics 5075: 6½ digit precision multimeter.
e) Times Electronics Pressure calibrator.
f) Shenzen Clou C112: Portable single phase energymeter calibrator
g) Shenzen Clou C312: Three phase energymeter calibrator.
h) Yakogawa DL1620 digital storage oscilloscope.
i) Pentium IV PC with core 2 duo processor and 1GB RAM.
j) EASYCAL calibration and report generation software.
k) MATLAB 7.3 Release 2008b licensed software.

The pictures of the equipments in the laboratory are shown below:

Single Phase Power Calibrator

Precision Multimeter

650° Dry Bath

DL1620 Digital Storage Oscilloscope

Pressure Calibrator

Multi-function/Multi-product Calibrator

3-ph Energy Meter calibrator

Single phase Energy Meter Calibrator

▶ **Advanced Power Electronics Laboratory:**
   Equipments procured and utilized:
   1.   Variable Voltage Static DC source.
   2.   Isolation Transformer

3Regulated DC Power Supply similar to model 19 rack adaptable Regulated DC power Supply

4. Regulated DC similar to model Regulated DC power Supply Dual and Triple Output

5. Regulated DC similar to model Regulated DC power Supply Single Output
6. Mixed Signal Oscilloscope with built in printer
7. Mixed Signal Oscilloscope
8. DC Electronic Load (Main Frame and Load Module)
9. Handheld Battery operated Digital Power scope
10. Arbitrary Waveform Function Generator
11. 10 KVA IGBT – UPS
12. DSP Based Motor Control and Power Electronics Training Kit
13. DSP Based Motor Controller Training Kit
14. 10 KVA 3 Phase STATCOM
15. 10 KVA Unified Power Quality controller
16. 10 KW 4 Quadrant Line Regenerative AC Drive
17. FPGA Mother Board
18. FPGA Interface Card

Name of the Laboratories:

1. Electrical Machine Laboratory
2. Power System Laboratory
3. Drives Laboratory
4. Power Electronics Laboratory
5. Process Control and Instrumentation Laboratory
6. Calibration Laboratory
7. Microprocessor Laboratory
8. Circuits & Measurement Laboratory
9. Control System Laboratory
10. Energy Systems Laboratory
11. Simulation Laboratory
12. Industrial Electronics Research Laboratory
13. Relay Laboratory
14. Basic Electrical Engineering Laboratory
15. Condition Monitoring Laboratory
16. Advanced Power Electronics Laboratory
17. High Voltage Laboratory

Consultancy Work:

Company	Total cost (Rs.)
M/S Netware	0.18 lac
Webel Mediatronics	1.0 lac
Webel Toolsind Ltd.	0.195 lac
Electrotherm Ltd.	0.65 lac
Haldia Development Authority	1.98 lac

Support Staff position:

    (i)   Sanctioned technical post :

    (ii)   Technical staff profile:

Name	Designation	Highest Qualification	Contact No.	e-mail id
D. Datta	Technical Assistant	L.L.E.	9883233891(M)	
B. Dey	Technical Assistant	L.E.E.	033-65452279 (R)	
R. Maity	Technical Assistant (Grade II)	D.E.E		ra_ktim@hotmail.com
R. Bandyopadhyay	Technical Assistant (Grade II)	D.E.E		rajib_nh@sify.com
P. K. Das	Technical Assistant (Grade II)	D.E.E		pradipkdaselec@ rediffmail.com
A. Pal	Technical Assistant (Grade II)	D.E.E		amit_raju_pal@sify.com
P. S. Baruri	Technical Assistant (Grade II)	D.E.E		mr.dekacom@rediffmail.com
S. K. Ray	Mechanic	Workman's Permit (Dir. Of Electricity, Govt. of WB)		roysamir26@yahoo.in
B. Santra	Instrument Mechanic	JDE & NCVT (Govt. of India)		Bablu_Santra@yahoo.com
S. Pramanik		ITI		

Sponsored Research :

Title	Project Investigator	Sponsoring Agency	Total Amount (Lakhs of Rupees)
Development of a smart energy-saving device for power factor control and power quality monitoring	K. (Das) Bhattacharya & Dr. D. Ghosh	CSIR	17.0
National Mission on Power Electronics Technology (NaMPET)	M. Sengupta, P. Syam, D. Ganguly & K. Mukherjee	DIT	90.2
Full Spectrum Simulator	M. Sengupta, P. Syam, D. Ganguly & K. Mukherjee	DIT	15.25
A Variable Speed Induction Motor Drive with a Matrix Converter as a Static Commutator in the Rotor	P. Syam	UGC Major Research Project	7.62
Computer aided Design and Analysis for Optimization of Thermal Conditions in Rotating Electric Machines	D. Sarkar	UGC Major Project	4.08
Estimation of Kinetic state of ballistic target using fusion of a) Radar & RF seeker data b) RF & IIR seeker data & c) Radar RF & IIR seeker data	Aparajita Sengupta	DRDL RCI, (Hyderabad)	24.75
Six degree-of-freedom modeling & closed loop robust control of a Renewable winged body satellite launch vehicle (RLV)	Aparajita Sengupta	ISRO	7.32
Implementation of Robust Control Techniques through a DSP Platform on a Lab-Scale real-time system	Aparajita Sengupta	AICTE	8.85
Modernisation of Junior Simulation Laboratory (U.G.)	HoD – EE	AICTE (MODROB)	5.0
BPL Communication through underground and overhead lines	P. K. Ray (ETC) & D. Ghosh (EE)	MCIT, GoI	92.0
Computer-aided design and analysis for optimization of thermal conditions in rotating electrical machines	D. Sarkar & A. De	UGC	4.04
Spectral Identification of Potentised Homeopathic Medicines	C. R. Mahata & A. Sutradhar	CCRH	26.2
Bifurcation in Electrical Drives	S. Parui	AICTE	10.5
Development of a FPGA controller-based commutatorless motor drive with selectable hard or soft characteristics	K. Mukherjee	AICTE	4.2
A Hybrid Wavelet –ANN approach in Transformer Protection	P. B. Chattopadhyay	IE(I)	1

Support Vector Machines (SVM) Based Condition Monitoring of Induction Motor	P. B. Chattopadhyay	CSIR	8.6
Development of a sensor integrated multi-filgered dexterous robot hand with data glove interface	D. Ganguly (Co-Investigator)	DAE/ BARC	61
Development of an efficient staple yarn characterization unit with multi- sensor fusion and field programmable gate array (FPGA) based data reduction card.	A. N. Sengupta	DST	31.094
Embedded Systems in Instrumentation and Control	Aparajita Sengupta	UGC-SAP DRSI	51.25

Industry – Institute Interaction

To promote Industry - Institute Interaction following schemes are being undertaken

- Organizing Workshops, seminars etc. for the industries.
- Encouraging engineers from industry to deliver lectures on industrial practices, trends and experiences to UG and PG students (a list of such lectures is provided in **M** below).
- Participation of experts from industry in curriculum development.
- Arranging visits of faculty members to various industries.
- Professional consultancy by the faculty to industries (list in **H** above).
- Industrial testing by faculty & technical assistants in our laboratory.
- Joint research programmes by faculty and people from industries.
- Memoranda of Understanding between the Institute and industries and/or Govt. bodies to bring the two sides strategically closer.
- Human resource development programmes by the faculty for practising engineers (Continuing Education Program).
- B.Tech. and M.Tech. projects/dissertation work in industries under joint guidance of the faculty and experts from industry.
- Scholarships/fellowships instituted by industries at the Institute for students (under discussion).
- Practical training of students in industries.

No. of publications:

Journal – 3

Conference – 12

List of Publications (last 1 year):

Journals

1. Arpita Mukherjee, Aparajita Sengupta, "A Recursive Maximum a Posteriori Estimator",   Asian Journal of Control, Vol. 13, Issue 3, pp. 465-469, May, 2011.

2. D. Mondal, A. Chakrabarti and A. Sengupta, "Small signal stability assessment employing PSO based TCSC controller with comparison to GA based design," *World Academy of Science Engineering and Technology*, Issue 56, no. 281, pp 1594-1601, August 2011, www.waset.org.

3. D. Mondal, A. Chakrabarti and A. Sengupta, "Small signal stability improvement and congestion management using PSO based TCSC controller," *International*

Journal on Recent Trends in Engineering & Technology, *ACEEE*, India, vol. 5, no. 2, pp.38-43, Mar 2011. **ISSN: 2158-5563/5555**

Conference Proceedings

1. Roy T., and A. Sengupta " Tracking of a Chaotic System Using an Observer based Nonlinear State Feedback Controller", International Conference on Control, Robotics and Cybernetics, ICCRC 2011, Delhi, March 19-20, 2011.

2. D. Mondal, A. Chakrabarti and Aparajita Sengupta, "PSO Based PSS and TCSC Controllers to Mitigate Small Signal Stability Problem**",** International Conference on Emerging Technologies (ICET-2011) , (To appear in 2011).

3. D. Mondal, A. Chakrabarti and Aparajita Sengupta, "Small Signal Stability Improvement and Congestion Management Using PSO Based TCSC Controller" International Joint Journal Conference in Engineering 2011, March 2011, (To appear).

4. D.Sarkar, A.K.Naskar "Appoximate analysis of transient heat conduction in an induction motor during reactor starting", Published in India International conference on power electronics , New Delhi , January 28-30, 2011.

5. K. L. V. Iyer, X. Lu, K. Mukherjee, and N. C. Kar, "Online Stator and Rotor Resistance Estimation Scheme Using Swarm Intelligence for Induction Motor Drive in EV/HEV", in proceedings of the 1st IEEE International Electric Drives Production Conference (EDPC), Erlangen-Nuremberg, Germany, 2011, pp. 202-207 (Digital Object Identifier: 10.1109/ EDPC.2011.6085571).

6. S. B. Chaudhury, M. Sengupta and K. Mukherjee, "Time stepping Finite Element analysis based simulation study of air gap flux distribution for rotor cage induction motor", in Proceedings of the 6th National Power Electronics Conference (NPEC), Howrah, India, December 2011, pp. 64 - 69.

7. Subhendu Banerjee, K. Mukherjee and Gautam Bandyopadhyay, "Hardware implementation of A Field Programmable Gate Array based Commutatorless DC Motor Drive with Shunt Characteristics", in Proceedings of the 6th National Power Electronics Conference (NPEC), Howrah, India, December 2011, pp. 58 - 63.

8. Raju Patwary, **A.B. Choudhury**, **D. Roy** and Debraj Sarkar, "Harmonics and Interharmonics Estimation of a Passive Magnetic Fault Current Limiter Using Haar Wavelet Transform", *National Conference on Energy System Planning Implementation and Operation (ESPIO-2011),* **19th August, 2011**, jointly organized by Department of Electrical Engineering, JIS College of Engineering and AICTE, New Delhi, India. [Page 17-21]

9. **A.B. Choudhury**, Raju Patwary, **D. Roy** and Debraj Sarkar, "Harmonics and Interharmonics Estimation of a Passive Magnetic Fault Current Limiter Using Daubechies Wavelet Transform", *National Conference on Recent Development in Electrical Engineering, NCRDEE-2011,* **10th & 11th June, 2011,** organized by Electrical Engineering Department of Jalpaiguri Government Engineering College, Jalpaiguri, West Bengal, India.[page 102-107]

10. D. Mondal, A.Sengupta and A. Chakrabarti, "PSO based location and parameter setting of advance SVC controller with comparison to GA in mitigating small signal oscillations,"

IEEE International Conference on Energy, Automation and Signal (ICEAS-2011), SOA University, Bhubaneswar, India, pp. 1-6, Dec. 2011

11. D. Mondal, A. Chakrabarti and A. Sengupta, "PSO based PSS and TCSC controllers to mitigate small signal stability problem," *International Conference on Emerging Trends (ICET-2011)*, NIT, Durgapur, India, March 2011. (Also Published in *International Journal of Electronics and Computers: International Science Press,* India, vol. 3, no. 1, pp. 65-70, Jan-Jun 2011, **ISSN: 0975-3796**).

12. Ujjwal Mondal,Rajeev Ranjan Pathak **Anindita Sengupta**, Ashoke Sutradhar, " Repetitive Controller in Liquid Level System: A Discrete Wavelet based approach" IEEE National Conference on Electrical, Electronics and Computer Engineering(**CALCON11**),Jadavpur University,pp.52-54,4-5 Nov,2011.

Books/Monograms

1. "Digital Fundamentals and Applications", C. K. Chanda and S. Banerjee, First edition,January,2011.

Seminars / Workshops / Conferences / Training programs organized:

(i)   Short term Course on Power Electronics Applications in the Industry, Feb. 2011.

Innovation and Technology Developed:

Having done the developments of research on **Power Electronics** with generous and continued support from the NaMPET Project, the Power Electronics group at EE, BESU, Shibpur has already started reaping benefits through a much improved course curriculum in PE at both UG and PG level. It has also gained reasonable visibility. However to justify the infrastructure created the next essential step is first to procure funded research projects and doctoral manpower and to produce time-bound results in those projects through the recruited manpower.

The major achievements in the field of Power Electronics are
1. Design and fabrication of the power electronic converter for a double sided axial flux SR motor for an electric bicycle,
2. Experimental determination of Parameters of a wound – Field Three Phase Synchronous Motor and Modeling and Simulation of its Performance under Self – Control,
3. Development of a complete commutatorless DC motor drive,
4. Three Phase To Three Phase Matrix Converters performance simulation with inductive load, design and fabrication of sensing and interface cards and implementation of current commutation on FPGA platform,
5. Application of a TMS320LF2407A platform in implementing pace Vector Modulation based control of a Matrix Converter,
6. 1 kW, 48V, 2000rpm, 4-pole BLDC Motor for EV application,
7. 1 kW, 48 V, 3000 RPM, 3 phase Switched Reluctance Motor for electric vehicle application - Weight optimized design, fabrication, controller design, system modeling, performance simulation and open loop running,
8. Finite element based design, fabrication and Testing of a 2kW, 20 A, 10 kHz CSI-fed single Phase Induction Heating Furnace for Application in bar/billet heating,
9. Investigations on a CSI fed induction heating system

10. Implementation of Indirect Space Vector Modulation Strategy for a three phase Matrix Converter in FPGA Cyclone II EP1C12Q240C8 platform,

11. Design and Implementation of DSP based Space Vector Pulse Width Modulation Strategy for Three Phase Matrix Converter in DSP TMS320LF2407A platform,

12. A linear induction motor based conveyor system and its power electronic control,

13. DSP based Robust Control of a 10 kVA STATCOM,

14. Realisation of a sensorless 4 kW, 1500 rpm Switched Reluctance Motor Drive, and many more.

In the field related to the **Condition Monitoring of Electrical Machines,** a team under Dr. P. B. Chattopadhyay is actively engaged in the research work for last ten years developing the technology of application of ANN to the condition monitoring of induction motors and wavelet techniques used to detect broken rotor bar, motor current and vibration etc. They are trying to upgrade the condition-monitoring laboratory in the department to international standard. The supervisor has successfully completed two research projects under DST, Govt. of India and AICTE, Govt. of India. Present work is on the applications of various soft computing techniques like artificial neural networks (ANN), support vector machines (SVM) in the field of condition monitoring of induction motors.

Dr. Chattopadhyay as a visiting professor in the school of computer and Electrical Engineering, Hanyang University, South Korea in fall semester 2008 has performed advanced research works in the area of signal processing.

In the field of **Smart Energy Saving Device for Power Factor Control** and Power Quality monitoring, Dr. K. (Das) Bhattacharya along with other faculty members and her team of scholars has developed optimization techniques around an embedded system using a DSP BF533 microcontroller that runs on a co-operative agent based algorithm oriented on the Ant Colony System (ACS). The system aims to reduce energy consumption for bulk consumers of electricity connected to the 33KV and 11KV buses. This work aims at optimizing the selection of capacitor banks quickly and using less memory at a reasonably low cost. Optimizing Parameters would include p.f., Voltage profile, Frequency, health and state of capacitors and also the instant of switching.

In comparison to other heuristics, ACS provides better result because it includes following advantages: i) Distributed Computation due to a large amount of parallelism offered by the presence of several agents. ii) Positive Feedback, as the search proceeds new population of ants who contribute to a higher fitness value in terms of rich pheromone (organic deposition from ants) trail overpowers the one having a weaker pheromone trail. iii) Robustness which enables the colony to find a solution for problems which are dynamically evolving. Research is on for other applications and several publications have yielded.

The above micro-controller based low-cost power factor correction device developed in our laboratory has been accepted by the WBSEDCL for their 11kV-33kV system and approved for its commercial production.

In the field of **Advanced Control Systems and Applications,** Dr. A. Sutradhar is working on *Modeling and Control of Physiological Processes*. He has developed the identification techniques for the non-linear glucose-insulin interaction model in NIDDM patients and developed the control algorithms for implantable insulin delivery system in presence of disturbances like food ingestion and physical exercise:

The implantable drug delivery systems are currently in clinical trials in developed countries but the same have not been sufficiently addressed in our country. We already have the experience in

modeling and designing robust controllers for implantable micro-insulin dispenser system for diabetic patients. A number of critical design and performance obstacles are still there. We would like to continue our research in this area with indigenous biomaterials and devices. Efforts are being made to improve control algorithms so that greater miniaturization of the device is possible. The theoretical results and the simulation studies with available data are believed to be the building blocks necessary to obtain a complete understanding of the adaptive control algorithms applicable to practical situations of dynamics of devices for PIMS. Prototypes will be developed. The implementation of the closed loop implantable drug delivery systems will be undertaken jointly with medical institutions.

Other system identification and control algorithms developed in his laboratory include the Artificial Neural Network and various model structure algorithms (like NARX, NARMAX) used to identify and simulate and control of multivariable nonlinear systems like physiological processes, inverted pendulum system etc.

Dr. Aparajita Sengupta has been working for quite a long period and contributed a lot in the field of (i) Robust Control applications in aerospace and ballistic problems, (ii) Parameter Estimation, (ii) Model uncertainty, (iii) H∞ control, (iv) Robust Kalman filtering and (v) self tuning PID control for linear and non-linear systems etc.

Dr. Anindita Sengupta has developed several algorithms and tools for (i) Analysis of Continuous Time dynamic Systems by Triangular Orthogonal Functions, (ii) Microprocessor based identification of sampled data system with/without hold device using a set of Sample-and-Hold and Direc Delta Functions, (iii) Online measurement of Triangular Domain Spectral coefficient of a sine wave, (iv) Online application of Wavelet Transform methods for signal analysis and (v) Identification of Sampled Data System with/without hold devices, (vi) Application of ANN in control system etc.

In the field of **Stability, Economic and Optimum Operation and Control of EHV Power Transmission System**, Dr. A. Chakrabarti has been working for quite a long period. Indian power system is on the fast track of development. The essence of the development activity in this area with proper planning monitoring and control of the entire system of operation right from generation to distribution, power transmission stability is possibly one of the most important aspects in proper operation of the power system, particularly when power transmission in India is being upgraded in the recent days. In India the transmission system being a longitudinal, it needs in depth study and research for successful power transmission economically and at stable state. The voltage stability of power systems in developing country and concentrated in the research of power transmission has been investigated. The following items highlight the achievements and results of the research in this field.

The criterion of voltage stability in a multibus power system has been developed an

application of static VAR compensators to mitigate the problem have been explored.

2. Detail model of mulibus power system equivalenced as a two bus model have been developed.
3. Accurate model of static VAR compensator has been developed for simulation in multimachine power system.
4. HVDC transmission has been explored to improve the transient stability.
5. Voltage security and different aspects of contingency analysis have been investigated.
6. A variety of voltage stability indicators have been investigated and applied to different power systems.The result have been analysed and interpreted.
7. Small signal stability problem of longitudinal power system is being investigated and attempt is being made to mitigate this problem.
8. Optimum location of SVC and PSS has been explored.

9. ANN has been implemented in order to simulate the highly complex the voltage stability problem in a multibus power system.
10. Digital protection system for distribution feeder has been developed.
11. Matrix analysis has been extensively used in addition to eigenvalue analysis in order to investigate the performance of operation of power system.
12. Effective research have been conducted in order to observe multi frequency resonance problem on EHV grid transformers.

During the assignment as 'Visiting Professor' in the University of Windsor from July 2011-June 2012, Dr. Kaushik Mukherjee has been a part of US provisional patent application filed on "Mechanism for Seamless Power Transfer between **SunSource's** PV Source, End Users and Power Grid"**.**

Others

The following faculty members went abroad for presenting papers at conferences and/or visiting foreign universities for collaborative research.
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- **Prof Ajit K. Chattopadhyay**, Honorary Emeritus Professor also delivered an **Invited Tutorial Lecture on "Advances in High Power Industrial AC Drives and their Control" and a Plenary Session Lecture on " Current and Future Trends in Power Electronics Technolgy" during India International Conference on Power Electronics (IICPE'10)** held at NSIT, Delhi during 28-29 January 2011.

- **Prof. Abhinandan De** was nominated as an Expert in the board of Interviewers for the selection and recruitment of Assistant Engineers (Electrical) in West Bengal State Transmission Company Ltd. (WBSETCL) in February, 2011.

Department of Electronics & Telecommunication Engineering

About the department

The Department of Electronics and Telecommunication Engineering started its journey in July, 1968 after its nucleation from the Department of Physics & Telecommunication from the erstwhile Bengal Engineering College. The first batch of Graduates & Post Graduate passed out in 1971 & 1974 respectively. The Department offers Bachelor of Engineering (B.E.) course in Electronics & Telecommunication Engineering for a duration of 4 years (8 Semesters). Master of Engineering (M.E.) programs of 4 semester duration (2 years) are conducted for the specializations in Digital Systems & Instrumentation, and Microwave Communication. Department also offers Ph.D. degree in Electronics and Telecommunication Engineering in various fields.

Academic Programmes :

Undergraduate Level

i.	Degree offered	Bachelor of Engineering (B.E.)
ii.	Sanctioned students' intake	40
iii.	Additional intake through lateral entry in 3rd Semester	02

Postgraduate Level

i.	Degree offered	Master of Engineering (M.E.)
ii.	Sanctioned students' intake	8 + 8 = 16
iii.	Additional intake through other programmes (i.e. QIP)	Nil
iv.	Specializations in	a) Digital System and Instrumentation
		b) Microwave Communication

Doctoral Level

i. Degree offered	Ph.D.
ii. No of candidates enrolled	24
registered	11
awarded	01

Faculty position :

Sanctioned faculty post : 13   Vacant Post : 1

Faculty profile (in the following table)

Name	Designation	Highest Qualification	Specialisation / Research Area	Contact No. & E-mail
Dr. Sekhar Ranjan Bhadra Chaudhuri	Professor	Ph. D.	Microstrip antenna and circuits, Wireless / Mobile Comm. & Network, Information & Network Security, Digital System Design	prof.srbc@gmail.com prof_srbc@yahoo.com
Dr. P.K. Ray	Professor	Ph.D.	Broadband power line comm., RF and Microwave Technology	pabitrakroy@hotmail.com
Dr.Dipankar Mukherjee	Professor	Ph.D.	Optoelectronics, Micro-electronics & Renewable Energy	dipankarm@rediffmail.com
Dr..Baidynath Ray	Professor	Ph.D.	VLSI Design and Testing, Mobile Communication and Networking, Image Processing	bnr@telecom.becs.ac.in
Prof. Arabinda Roy	Associate Professor	M.E.	Microprocessor based system, Signal Processing, Power Electronics	arabinda@telecom.becs.ac.in oruroy@yahoo.co.in
Dr. Monojit Mitra	Associate Professor	Ph.D.	Fabrication of Microwave Device Like IMPATT, its Characterization and System development	monojit_m1@yahoo.co.in
Dr. Santanu Das	Associate Professor	Ph.D.	Microstrip circuits, Components and antennas	santanumdas@yahoo.com
Dr. Susanta Kumar Parui	Assistant Professor	Ph.D.	Microstrip filters, Couplers, Power dividers, Patch antenna (MSA) and arrays, Freq. selective surfaces (FSS), Electromagnetic bandgap structures (EBG), Defected ground structures (DGS)	arkapv@yahoo.com
Prof. Ayan Banerjee	Assistant Professor	M.Tech.	VLSI Architectures for Comm. and Biomedical Engg.CORDIC	ayanb12@gmail.com

			based DSP architectures Digital Signal Processing	
Dr. Chirasree Roychoudhury	Assistant Professor	Ph.D.	Biosensors, MEMS based pressure & conductivity sensor, VLSI based signal processing.	chirasreepram@yahoo.com
Dr. Tamaghna Acharya	Assistant Professor	Ph.D.	Wireless Communication – Physical & MAC Layer issues, Wireless Ad Hoc & Sensor Network, Speech Processing.	tamaghna_acharya@yahoo.com
Dr. Partha Bhattacharyya	Assistant Professor	Ph.D.	Nanomaterial based Chemical Sensors, MEMS based Sensors and Its Signal Processing, Low Power VLSI Design	pb_etc-besu@yahoo.com
Prof. Debasis Mitra (Contractual)	Assistant Professor	M.E.	Antenna Design, Electro-magnetic theory, Microwave Engineering,EMI & EMC, Digital Signal Processing	debasisiit@gmail.com , debasis.mitra@telecom.becs.ac.in
Prof. Abhijit Chandra (Contractual)	Assistant Professor	M.E.	Communication and Signal Processing	abhijit922@yahoo.co.in,

Awards and Laurels :

By Dr. C. RoyChaudhuri

- Young Engineer Award, Indian National Academy of Engineering, 2011
- Young Faculty Research Award, Global Alumni Association, BESU, 2011

Research area (only mention broad titles without description in detail):

1. **Microwaves and Antennas**
   o Planar circuits and antennas
   o Microwave avalanche devices
   o IMPATT amplifiers and oscillators
   o Meta-materials and its applications
   o Phased array antennas
   o Electromagnetic band-gap materials
   o Surface integrated waveguides (SIW)
   o RFID and its applications

2. **Microelectronics, Devices and VLSI**
   o Biosensors
   o MEMS based pressure and conductivity sensors
   o Nanostructured semiconducting metal oxides for sensor applications
   o Chemical sensors
   o MEMS based gas sensors and its CMOS integration
   o VLSI design and testing
   o VLSI based signal processing
   o VLSI Architectures for Communication and Biomedical Engineering

3. **Communication and Signal processing**
   o Wireless Ad-hoc and sensor networks
   o Cognitive Radio networks
   o Hardware efficient FIR filter design
   o Space-time coding for wireless communication

- DSP algorithms
- Design of CDMA spreading codes
- Medical imaging
- Sensor signal processing
- CORDIC based DSP architectures

Research facilities :

Areas	Equipments / Set up	Design Softwares / Tools
Microwaves and Antennas	- Network Analyser (10 MHz – 20 GHz) - Signal Generator (10 KHz – 3 GHz) - Power Meter (DC – 26 GHz) - PCB fabrication set up by photolithograpy - Prototype fabrication by milling process - Radiation characteristics measurement bench	- IE3D - HFSS - FDTD
Microelectronics, Devices and VLSI	- E-Beam Evaporation System - Mass Flow controller & Mass flow Meter - Spin Coating Unit - Dip Coating Unit - Laminar Flow Clean Bench - Millipore water purification system - Gas line manifold - Temperature Controlled annealing Furnace (1050°C) - Portable Ph meter, range 1-14 ph - Temperature Controlled Oven (upto 300°C)	
Communication and Signal processing	- Spectrum analyzer (9 kHz - 3.0 GHz) - Vector signal generator (10 KHz – 3 GHz) - Arbitrary function generator - DSO (500 MHz)	MATLab

Name of the laboratories:

Basic Electronics Engg. Lab	Advanced Microprocessors Lab
Network Theory Lab	Waveguides and Antenna Lab
Electronic Devices Lab	Wireless Communication and Networking Lab
Analog Electronics Lab	Digital Image Processing & Computer Vision Lab
Analog Communication Systems Lab	Microwave and RADAR Engineering Lab
Digital Electronics Lab	VLSI Design Lab
Microelectronics Lab	Opto-Electronics & Optical Communication Lab
Digital Communication Lab	Thin film/Sensors Lab
Integrated Circuits and Systems Lab	RF and Microwave measurement Lab
Microprocessors and Microcontrollers Lab	Control Engineering Lab
Electronic Instrumentation and Measurements Lab	Audio & Video Engineering Lab
Digital Signal Processing Lab	Power Electronics Lab

Support staff position :

(i) Sanctioned technical post : 10   Vaccant : 2

(ii) Technical staff profile (in the following table)

Name	Designation	Highest Qualification	Contact No.	E-mail
Mr. S. Bose	Inst.Mechanic	H.S., Diploma in Electrical Engg.	9903215751	
Mr. K. N. Chowdhuri	Technical Suptd.	Diploma in Electronics Engg.	9831497043	
Mr. Rajat Mukherjee	Technical Asst.	Diploma in Electrical Engg.	9432367342	mukherjeera.2009@rediffmail.com
Mr. Dibyendu Pal	Mechanic	H.S.	9831342357	paul.dibyendu@rediffmail.com
Mr. Brindaban Patta	Jr. Technical Asst.	Diploma in Electronics Engg.	9830970287	brindaban_patta@yahoo.co.in
Smt. Indrani Santra	Jr. Technical Asst	Diploma in Electronics Engg.	9434223985	indrani.santra08@gmail.com
Mr. Biswajit Samanta	Jr. Technical Asst	Diploma in Electronics Engg.	9002322109	biswajit_samanta21@rediffmail.com
Mr. Pradip Mistry	Jr. Technical Asst	Diploma in Electronics Engg.	9432269081	pradip.mistry75@gmail.com

Sponsored Research: (mention area)

Name of Project	PI	Sponsoring agency	Prof value in Rs. Lakh	Date	Duration
Development of a Chemical Sensor to Monitor the Spoilage of Potato in the Cold Storage	Dr. Partha Bhattacharyya	CSIR	14	April'11	3 years
Current mode FPAA Design	Dr. B.N. Ray	SERC-DST	29.33	Sept'10	4 years
CMOS VLSI Design	Dr. B.N. Ray	SERC-DST	16	Aug'11	3 years
Establishment of MEMS Design Center under National Program on Micro and Smart Systems(NPMASS)	C.RoyChaudhuri	ADA	17	2009-2014	6 years
Integrated Sensor System for Elderly Health Monitoring	C.RoyChaudhuri	DST, IDP	24	2010-2012	3 years
Feasibility of a low cost and portable pathogenic bacteria detector using porous silicon microelectrode array	C.RoyChaudhuri	DST, IDP	22	2008-2011	3 years
Design and Development of Compact and Wideband Microstrip Filters Using Electromagnetic Bandgap Technology	Dr. Santanu Das	CSIR	17	Sept'10	3 years

No of publications:
Journal : 31
Conference : 51
Books/Monograms : 1

List of publications – **Annexure I**

Seminar / Workshops/ Conferences/ Training programme organized by the   department (in last year)

Date	Title	Organizer	Speaker
21.09.2011	Broadband Communications through Underground and Overhead Powerlines	BESU, CESC	Dr. P.K. Ray

Others

Books/Monograms :

1. Book Chapter: S. Basu, **P. Bhattacharyya**, Solid State Hydrogen Gas Sensors: Applications at Different Temperatures (pp. 203-250), in the book 'Gas Sensors: Developments, Efficacy and Safety', Edited by Xiaotun Qiu**, Nova Science Publishers**, Inc., New York, USA (2011).

Paper Published

International and National Journals

1. P. Bhattacharyya, P. K. Basu, S. Basu, Methane Detection by Nano ZnO based MIM Sensor Devices, Sensors and Transducers Journal (International Frequency Sensor Association (IFSA) Publishing) (ISSN 1726-5479), vol.10 pp.121-130 (2011).

2. S.Basu, P. Bhattacharyya, A Review on Legacy of Chemical Vapour Deposition Grown Thin Films for Solid State H_2 Sensors, Sensor Letters (American Scientific Publishers), vol.9 pp.1575-1591 (2011). (Impact Factor: 1.587).

3. P. Bhattacharyya, G. P. Mishra, S. K. Sarkar, The Effect of Surface Modification and Catalytic Metal Contact on Methane Sensing Performance of Nano ZnO-Si Heterojunction Sensor Microelectronics Reliability (Elsevier), vol.51 pp.2185-2194 (2011). (Impact Factor: 1.212).

4. P.Saha, A. Banerjee, A. Dandapat, P. Bhattacharyya, Vedic Mathematics Based 32-Bit Multiplier Design for High Speed Low Power Processors, International Journal on Smart Sensing and Intelligent Systems (ISSN 1178-5608), vol. 4 (2) pp.268-284 (2011).

5. P. Saha, A. Banerjee, A. Dandapat, P. Bhattacharyya, ASIC Implementation of High Speed Processor for Calculating Discrete Fourier Transformation using Circular Convolution Technique, World Scientific and Engineering Academy and Society (WSEAS) Transactions on Circuits and Systems (ISSN: 1109-2734), vol. 10 (8) pp.278-288 (2011).

6. P. Saha, A. Banerjee, A. Dandapat, P. Bhattacharyya, ASIC Design of a High Speed Low Power Circuit for Factorial Calculation Using Ancient Vedic Mathematics, Microelectronics Journal (Elsevier), vol. 42 pp.1343-1352 (2011). (Impact Factor: 0.874)

7. P. Bhattacharyya, S. Basu, CVD Grown Materials for High Temperature Electronic Devices: A Review, Transaction of the Indian Ceramic Society, vol.70 (1) pp.1-9 (2011). (Impact Factor: 0.349)

8. B. Ghosh, M. Haque, Debasis Mitra , " Miniaturization of Slot Antennas using Slit and strip Loading", IEEE Transactions on Antennas & Propagation ,Vol 59, Issue 10, Oct 2011.

9. Kasturi Ghosh, Arabindo Roy, Sekhar Mandal, and Baidyanath Ray: Parametric Deviation Based Analog Test and Diagnosis System, urnal of Circuits, System and Computer (JCSC), World Scientific Press. Vol. 20, No. 7,(2011) pp. 1323-1340.

10. R.DevDas, A.Dey, S.Das, C.RoyChaudhuri, "Interdigitated Electrode-less High Performance Macroporous Silicon Structure as Impedance Biosensor for Bacteria Detection", *IEEE Sensors*, vol.11,pp.1242-1252, 2011. (Impact Factor: 1.52)

11. C.RoyChaudhuri, S.Barma, "A High Performance 1GHz Voltage Controlled Oscillator Using Neural System Architecture", *Analog Integrated Circuits and Signal Processing*, *(Springer)*, vol.66, pp.459-465, 2011. (Impact Factor: 0.55)

12. N. P. Futane, S. RoyChowdhury, C. RoyChaudhuri, H.Saha, "Analog ASIC for improved temperature drift compensation of a high sensitive porous silicon pressure sensor", *Analog Integrated Circuits and Signal Processing*, *(Springer)*, vol.67, pp.383-393, 2011. (Impact Factor: 0.55)

13. Tamasi Moyra, Susanta Kumar Parui and Santanu Das, "Design of a Quasi- elliptic Lowpass Filter using A New Defected Ground Structure and Capacitively Loaded Microstrip Line" *International Journal on Electrical Engineering and Informatics,* Vol.-3, No.- 1, pp. 61-73, April 2011. (University Press, *Bandung*).

14. T. Moyra, S.K. Parui and S. Das, "Modeling of quasi-elliptic Lowpass Filter using two concentric rectangular split ring defected ground and microstrip structures," *The Mediterranean Journal of Electronics & Communications,* Vol.-7, No.- 2, pp. 160-165, 2011.

15. Tapan Mandal and Santanu Das "Bandwidth Enhancement of Stacked Microstrip Antennas Using Hexagonal Shape Multi-resonators", *International Journal on Advances in Power Electronics and Instrumentation Engineering Communications in Computer and Information Science*, Volume 148, Part 1, pp.1-6, 2011 (Springer Publications).

16. Tamasi Moyra, Somdotta Roy Choudhury, Susanta Kumar Parui and Santanu Das, "Modeling of Elliptic Filters by Using Circular Split-ring Type Defected Ground Structure," *Journal of Electrical and Control Engineering (JECE)*, vol.1, no.1, pp.1-4, 2011.

17. Partha Sarathi Banerjee, J.Pal Choudhury and S.R.Bhadra Chaudhuri, "A Framework on Fuzzy Logic Based Routing in Ad Hoc Wireless Network", International Journal of Computer Information Systems December 2011,Vol. 3, No. 6, 2011,p.p.62-67.

18. Tapas Mondal, Rowdra Ghatak, S R Bhadra Chaudhuri, "NMOS Based Variable Phase Shifter for Phased Array Antenna Application", Journal of Telecommunications", December, 2011, Issue 2, Vol.11, p.p., 27-32.

19. Partha Sarathi Banerjee, J.Pal Choudhury and S.R.Bhadra Chaudhuri, "K-means Clustering based optimal routing in mobile ad hoc network", International Journal of Computer Applications,(IJCA)(4385-6076), Volume 35- No.4, December, 2011, p.p.1-4.

20. Tanmay Bhattacharya, Nilanjan Dey and S. R. Bhadra Chaudhuri, "A Novel Session Based Dual Image Encoding and Hiding Technique Using DWT and Spread Spectrum", International Journal on Computer Science and Engineering (IJCSE), Vol. 3, No.11, November 2011, p.p. 3510-3517.

21. Tanmay Bhattacharya, Nilanjan Dey and S. R. Bhadra Chaudhuri, "A Novel Session Based Dual Steganographic Technique Using DWT and Spread Spectrum", International Journal of Modern Engineering Research (IJMER), Vol.1, Issue1, October 2011, p.p.-157-161.

22. Satyendra Nath Mandal, Arghya Ghosh,Subhojit Roy, J. Pal Choudhury & S. R. Bhadra Chaudhuri:"An Innovative Approach of Tabu Search in Prediction of Pod Yield of Mustard Plant",International Journal of Engineering Sciences,ISSN:2229-6913,Special Issue, September 2011,Volume 4,p.p. 301-311.

23. Tanmay Bhattacharya, Sirshendu Hore and S. R. Bhadra Chaudhuri, " A Novel Data Encryption Technique by Genetic Crossover of Robust Finger Print Based Key and Handwritten Signature Key", International Journal of Computer Science Issues (IJCSI), Vol. 8, Issue 5, No 2, September 2011, p.p. 209-214.

24. Tanmay Bhattacharya, Sirshendu Hore, Ayan Mukherjee and S. R. Bhadra Chaudhuri, "A Novel Data Encryption Technique by Genetic Crossover of Robust Biometric Key and Session Based Password, International Journal of Network Security & Its Applications (IJNSA), Vol.3, No.2, March 2011. p.p 111-120.

25. Sanjoy Mitra, Subir Chowdhury and Sekhar Ranjan Bhadra Chaudhuri : "Product Prioritization Matrix: A Strategic Tool, To Plan Brand Promotion Priority for Optimized BusinessGrowth" International Journal of Management & Information Technology, Volume 1, No 3, September, 2012.

26. Sanjoy Mitra, Subir Chowdhury and Sekhar Ranjan Bhadra Chaudhuri : "Achievement of Leadership Status Despite Late Entry in a Competitive Market: A Study of Mankind Pharma", ASBM Journal of Management, Vol V, Issue II, July, 2012.

27. Sumanta Deb, Surabhi Sinha and Sekhar Ranjan Bhadra Chaudhuri : "Applicability of SECI Model to Develop Social Capital and Performance of Brick Fields of West Bengal: A Conceptual Approach", ASBM Journal of Management, Vol V, Issue II, July, 2012

28. Chandan Kumar Ghosh, Susanta Kumar Parui, "Design of a compact bandpass filter by spur lines loaded by capacitance" International Journal of Microwave and Optical Technology (IJMOT), vol 6, no.3, pp. 120-123, May 2011

29. Chandan Kumar Ghosh, Biswarup Rana and Susanta Kumar Parui, "Performance Enhancement of Microstrip patch antenna array with EBG Structure" International Journal of Electronics and communication Engineering and technology, IJECET, vol.2, Issue no.4, pp.280-283, Oct-Dec 2011

30. B.Chakrabarty, D.Ghosh, M.Mitra, High Frequency Performance of GaN Based IMPATT Diodes, International Journal of Engineering Science and Technology (IJEST), Vol.- 3, No.- 8, pp. 6153-6159, August 2011.

31. S.Pal, G.K.Das, M.Mitra, Gap-Coupled Microstrip Antennas For Dual Frequency Operations, International Journal of Engineering Science and Technology (IJEST), Vol. - 3, No. - 8, pp. 6149-6152, August 2011.

International and National Conferences papers

1. High Speed ASIC Design of Complex Multiplier Using Vedic Mathematics, P. Saha, A. Banerjee, P. Bhattacharyya and A. Dandapat, IEEE Students' Technology Symposium (IEEE TechSym 2011) 2011, 14-16 January, 2011, IIT Kharagpur, West Bengal, India.

2. A Pd/TiO_2/Pd Metal-Insulator-Metal (MIM) Resistive Memory Devices for Low Power Applications, **P. Bhattacharyya,** A. Hazra, C.K.Sarkar and S. Basu, European Materials Research Society (EMRS) Fall meeting 2011,19-23September,2011, Warsaw University of Technology, Poland.

3. Structural Characterization and Resistive Switching Properties of Sol-Gel Derived TiO_2 Bipolar Memory Device, A. Hazra, P. Bhattacharyya, C.K.Sarkar and S.Basu, National Conference on Recent Trends in Material Science (RTMS 2011), 8-10October,2011, Jaypee University of Information Technology (JUIT), H.P.

4. C.RoyChaudhuri, R. Dev Das, S.Dey, S.Das,"Functionalised silicon microchannel immunosensor with portable electronic readout for bacteria detection in blood", pp.323-326, IEEE Sensors Conference, Oct 28-31, 2011, Limerick USA.

5. N.Mondal, D.Mondal, C.RoyChaudhuri, A.Barui, S.Dhara, J.Chatterjee, "A Simple and Sensitive Cytosensor Based Electrical Characterization of *in vitro* Wound Healing Assay for Keratinocytes" , pp.47-50, Life Science Systems and Applications Workshop (LiSSA), 2011 IEEE/NIH, 7-8 April 2011.

6. N.Mondal, D.Mondal, C.RoyChaudhuri ,"Analysis and Testing of Macroporous Silicon as an Electrical Platform for Clinical Diagnostics", Workshop on Advances in Micro-Electro-Mechanical Systems, March 07-09, 2011, Benaras Hindu University

7. S.Ghosh, S.Dey, C.RoyChaudhuri "An improved signal conditioning unit for low power MEMS gas sensor", p.38, National Conference on Sensors and Actuators : Science and Technology, 11th -12th March 2011, CGCRI Kolkata.

8. Tapan Mondal, B. Mandal and Santanu Das, "Bandwidth Enhancement of Stacked Microstrip Antennas Using Hexagonal Shape Parasitic Multiresonators," *International Conference on Electonic Systems (ICES-2011)*, National Institute of Technology, Rourkela, (COM_2011_1008), pp. 243-246, 7-9 January, 2011. (ISBN: 978-93-80697-50-5)

9. Tapan Mondal, B. Mandal and Santanu Das, "Bandwidth enhancement of microstrip antennas Using Additional Gap-Coupled Resonators to the Radiating Edges," *International Conference on Electonic Systems (ICES-2011)*, National Institute of Technology, Rourkela, (COM_2011_1007), pp. 239-242, 7-9 January, 2011. (ISBN: 978-93-80697-50-5)

10. Avisankar Roy and Santanu Das, "A novel compact design of dual-frequency microstrip antenna," *International Conference on Electonic Systems (ICES-2011)*, National Institute of Technology, Rourkela (COM_2011_1004) Rourkela pp. 7-9 January, 2011. (ISBN: 978-93-80697-50-5)

11. T. Mandal, Neha Das and S. Das "Bandwidth Enhancement of Defected Ground plane Suspended Stacked Microstrip Antennas using Hexagonal Shape Multi-resonators," *International Conference on Convergence of Optics and Electronics (COE2011)*, Science City, Kolkata, pp.196-201, 26-27 March, 2011. (ISBN-978-81-906401-1-4)

12. Somdotta Roy Choudhury, Susanta Kumar Parui, Lakhindar Murmu and Santanu Das, "A New Interdigital Type Defected Microstrip Structure (DMS) for Bandstop Filtering," *Internatonal Conference Covergence of optics and Electronics (COE2011)*, pp.202 -206, Science city, 26-27 March'2011 (ISBN-978-81-906401-1-4)

13. Krishnendu Chattopadhyay, Soumava Mukherjee, Santanu Das and Shekhar Ranjan Bhadra Chaudhuri, "'Bandwidth Enhancement of Microstrip Dipole Using Proximity Coupling Method," *IEEE International Symposium on Antennas and Propagation and USNC/URSI National Radio Science Meeting* (AP-S/URSI 2011), Washington, USA, Paper #2736, pp.1758-1761, July 3-8, 2011.

14. Susanta Kumar Parui, Somdotta Roy Choudhury, A. Roy, L. Murmu, Santanu Das, "Bandstop Filtering Characteristics of a New Spiral Defected Microstrip Structure (DMS)," *International Symposium on Devices MEMS, Intelligent Systems & Communication* (ISDMISC proceedings published by International Journal of Computer Applications IJCA, New York, USA), pp.17-19, September 09, 2011.

15. T. Mandal and S. Das, "Spanner Shape Hexagonal Monopole Antennas for UWB Application," *International Conference on Laser, Materials Science & Communication (ICLMSC-2011)*, pp. 292-295, Burdwan, December 7-9, 2011. (ISBN-93-80813-14-7)

16. Tamasi Moyra, Somdotta Roy Choudhury, Susanta Kumar Pauri and Santanu Das, "Design of Filter Using Circular Split-Ring Type Defected Ground Structure," *International Conference on Laser, Materials Science & Communication (ICLMSC-2011)*, pp. 292-295, Burdwan University, Burdwan, December 7-9, 2011. (ISBN-93-80813-14-7)

17. Meheli Samanta and Santanu Das, "Circularly polarized hexagonal microstrip antenna for bluetooth application," *IEEE Applied Electromagnetics Conference (AEMC) & IEEE Indian Antenna Week 2011*, Student Paper No.1041, Dec.18-22, Kolkata 2011.

18. Somdotta Roy Choudhury, Susanta Kumar Parui and Santanu Das, "A Bandstop Filter Using A New Defected Microstip And Defected Ground Structures" *IEEE Applied Electromagnetics Conference (AEMC) & IEEE Indian Antenna Week 2011*, Paper No.MDC-33-7342, Dec.18-22, Kolkata 2011.

19. Somdotta Roy Choudhury, Susanta Kumar Parui and Santanu Das, "Improvement Of Stopband Using A Spiral Defected Microstrip And Defected Ground Structures" *IEEE Applied Electromagnetics Conference (AEMC) & IEEE Indian Antenna Week 2011*, Paper No.MDC-34-8392, Dec.18-22, Kolkata 2011.

20. Tapan Mondal and Santanu Das, "UWB Printed Hexagonal Monopole Antennas with WLAN Band Rejection" *IEEE Applied Electromagnetics Conference (AEMC) & IEEE Indian Antenna Week 2011*, Paper No.MPA-7-5368, Dec.18-22, Kolkata 2011.

21. T. Mandal and S. Das "Printed Planar Hexagonal Monopole Antennas for Mobile Communication," *National Conference & Workshop on Recent Advances in Modern communication System and Nanotechnology* (*NCMCN)*, Jaipur , Paper No 11, 06-08 January 2011.

22. Tamasi Moyra, Susanta Kumar Parui and Santanu Das, "Banstop Filter Using Defected Ground Structure and Defected Microstrip Structure," *National Conference on Electrical, Electronics & Computer Engineering* (CALCON11), Jadavpur University, Kolkata, pp.199-202, Nov.4-5, 2011.

23. Tamasi Moyra, Susanta Kumar Parui and Santanu Das, "Typical Coplanar Waveguide Lowpass Filter Using Open Complimentary Split Ring Resonator," *National Conference on Electrical, Electronics & Computer Engineering* (CALCON11), Jadavpur University, Kolkata, pp.203-206, Nov.4-5, 2011.

24. Tamasi Moyra, Susanta Kumar Parui and Santanu Das, "Coplanar Waveguide Elliptic Filter Using T-Shaped Defected Ground Structure," *National Conference on Advanced Communication Systems and Design Techniques* (NCACD 2011), Haldia, West Bengal, pp.11-14, Nov.5-6, 2011.

25. Tamasi Moyra, Susanta Kumar Parui and Santanu Das, "Design of High Quality Factor and Harmonic Reduced Bandpass Filter Using Coupled Resonators and Defected Ground Structurs," *National Conference on Advanced Communication Systems and Design Techniques* (NCACD 2011), Haldia, West Bengal, pp.37-40, Nov.5-6, 2011.

26. Tapas Mondal, Milan Mazumdar, Rowdra Ghatak, S. R. Bhadra Chaudhuri, "Adaptive Phased Array Antenna Based on NMOS Phase Shifter for Intelligent Transport System Application", 2011 IEEE Applied Electromagnetics Conference (IEEE AEMC) and IEEE Indian Antenna Week (IEEE IAW), Kolkata, December 18-22, 2011, West Bengal, India. available in IEEE-Xplore.

27. Jhimlee Adhikari Ray and S. R. Bhadra Chaudhuri, "A review of PIFA Technology", accepted to be published in the 2011 IEEE Applied Electromagnetics Conference (IEEE AEMC) and IEEE Indian Antenna Week (IEEE IAW), Kolkata, December 18-22, 2011, West Bengal, India. available in IEEE-Xplore.

28. Debasis Mitra, Swarup Das, Dhruba Das and S. R. Bhadra Chaudhuri, "Wideband CPW fed Planar Monopole Antenna with dual notch", 2011 IEEE Applied Electromagnetics Conference (IEEE AEMC) and IEEE Indian Antenna Week (IEEE IAW), Kolkata, December 18-22, 2011, West Bengal, India. available in IEEE-Xplore.

29. Debasis Mitra, Dhruba Das, Swarup Das and S. R. Bhadra Chaudhuri, "Dual Band Metal Loaded Double-Segment Cylindrical DRA", 2011 IEEE Applied Electromagnetics Conference (IEEE-AEMC) and IEEE Indian Antenna Week (IEEE-IAW), Kolkata, , December 18-22, 2011, West Bengal, India. available in IEEE-Xplore.

30. Debasish Mitra, Jhimlee Adhikari Ray and Sekhar Ranjan Bhadra Chaudhuri, "'A Novel Design of Broadband Non-planar Monopole Antenna", IEEE/IET sponsored Loughborough Antenna & Propagation Conference : LAPC 2011, Loughborough University, November 14-16, 2011, U.K. available in IEEE-Xplore.

31. Satyendra Nath Mandal, J. Pal Choudhury, Debasis Mazumdar, Dilip De and S.R. Bhadra Chaudhuri:"Prediction of Productivity of Mustard Plant using Variable Reduction and Artificial Neural Network Model", Proceedings CIIT ,November, 2011 CCIS250, Springer- Verlag, Berlin Heidelberg, pp 133-137.

32. Satyendra Nath Mandal, J. Pal Choudhury, and S.R.Bhadra Chaudhuri, "Performance Analysis of Soft Computing Model in Prediction of Time Series Data", Proceedings- International Conference on Soft Computing and Engineering applications(SEA- 2011), September 11,2011,Interscience Research Network(India), Bhubaneshwar, pp 3-10.

33. Satyendra Nath Mandal, J. Pal Choudhury, Debasis Mazumdar, Dilip De and S.R. Bhadra Chaudhuri,"Application of Neuro-Statistics model on a Time Series DATA",2011 8th International Conference on Informaton Technology:New Generations,IEEE Computer Society,pp 1095-1096, April 2011. Digital Object Identifier 10.1109/ITNG.2011.203: available in IEEE-Xplore.

34. Sourav Moitra, Arabinda. Roy, and Susanta Kumar Parui, "A Circular Patch Microstrip UWB antenna with Band-rejection Characteristics at IEEE 802.11a bands ", International Symposium of Devices, MEMS, Intelligent systems and communication (ISDMISC2011), code-186, Sikim, pp.279-282, 12-14 April, 2011

35. Chandan Kumar Ghosh, Sourav Moitra, Jhuma Kundu, A. K Mukhapadhyaya, S. K. Parui "Design of a Dual Polarized Rectangular Patch Antenna Using DGS", ATT- IEEE 2011

36. Pratik Mondal, Bhupesh Mukherjee, Arabinda Roy, Susanta Kumar Parui, "Hairpin model of CRLH Transmission Line and Floating Slot Approach for Wide-Band Bandpass Filter", Proceedings of 2nd Annual International Conference IEMCON 2012, pp.140-144, Kolkata, 17-18 January, 2012

37. Chandan Kumar Ghosh, Biswarup Rana, **Susanta Kumar Parui**, "Design and development of E-shaped array antenna using Defected Ground Structure at 5.25GHz band" Proceedings of 2nd Annual International Conference IEMCON 2012, pp.405-408, Kolkata, 17-18 January, 2012

38. Chandan Kumar Ghosh, Biswarup Rana, Arabinda Roy and Susanta Kumar Parui, "A Diversity Antenna for MIMO Application", Proceedings of 2nd International Conference on Computer, Communication, Control and Information Technology, ELSIVIER, Procedia Technology 4, pp406-410, 2012

39. Pratik Mondal, **Arabinda Roy**, **Susanta Kumar Parui**, "Wide-Band Bandpass Filter Using CRLH Transmission Line and Floating Slot Approach", Proceedings of 2nd International Conference on Computer, Communication, Control and Information Technology, ELSIVIER, Procedia Technology 4, pp466-471, 2012

40. Chandan Kumar Ghosh, A.Roy, S.Maitra, B. Rana and S. Parui, "DGS Integrated Wideband E-shaped Microstrip Antenna Array for Wireless Application", pp49-52, Proceedings of Workshop on Advanced Antenna Technology, Gangtok, May27-31, 2012

41. Chandan Kumar Ghosh, Sanchita Datta, Ankita Mitra and **Susanta Kumar Parui**, "Performance Studies of Microstrip Patch Antenna with EBG Structure at the Ground Plane", PGSPC IEEE,2012

42. Bhupesh Mukherjee, and **Susanta Kumar Parui**, "Design of an inset CPW fed patch antenna for WIMAX application", National conference on Recent Advancements in Microwave Technique and Applications (MICROWAVE-2012), Jaipur, code: MW1272, July, 2012

43. Pratik Mondal, **Arabinda Roy**, and **S. K. Parui**, "Design of Ultra-wideband bandpass filter with WLAN bandnotch National conference on Recent Advancements in Microwave Technique and Applications (MICROWAVE-2012), Jaipur, code: MW1234, July, 2012

44. Bhupesh Mukherjee, Bappaditya Mandal and **Susanta Kumar Parui**, "A Compact patch antenna with a Circle-headed angular slot loaded radiating patch", National conference on Recent Advancements in Microwave Technique and Applications (MICROWAVE-2012), Jaipur, code: MW1238, July, 2012

45. Anindya Kundu, Sukanta Roy and **Susanta Kumar Parui**, "Performance of Smart Antennas in Wireless Sensor Networks", International Conference on Communication, Circuits and Systems, KIIT University, Bhubaneswar, code: MOC101, Oct. 5-7, 2012

46. Chandan Kumar Ghosh, Bippadiyata Mondal, B. Rana and **S. Parui**, "Reduction of Cross-polarization Radiation of Eshaped Microstrip Antenna Array using Spiral-Ring Resonator", International Conference on computer and Devices for Communication, CODEC, Calcutta University, December 2012

47. Chandan Kumar Ghosh, Bippadiyata Mondal, and **S. Parui**, "Omni-Directional Printed Antenna Array for MIMO Application", International Conference on computer and Devices for Communication, CODEC, Calcutta University, December 2012

48. B. Rana, Chandan Kumar Ghosh, Bippadiyata Mondal, **A Roy** and **S. Parui**, "Half-Mode Substrate Integrated Waveguide Fed T-Shaped Slot Array Antenna", International Conference on computer and Devices for Communication, CODEC, C.U. Dec 2012

49. Pratik Mondal, **Arabinda Roy**, **S. K. Parui** "Design of a Bandpass Filter using Multimode Resonators for Ultra-Wideband Application", International Conference on computer and Devices for Communication, CODEC, Calcutta University, Dec 2012

50. Anindya Kundu, Sukanta Roy and **Susanta Kumar Parui**, "Performance of DOA Based Adaptive Beamforming for TDSCDMA-4G Cellular Networks", International Conference on computer and Devices for Communication, CODEC, Calcutta University, December 2012

51. Anindya Kundu, Sukanta Roy, **A.Roy** and **Susanta Kumar Parui**, "DOA Based Adaptive Beamforming with RAKE for TDSCDMA Cellular Networks", International Conference on communication, Devices and Intelligent Systems, code no 116, CODIC, Jadavpur University, December, 2012

Department of Earth Sciences

The Department

Bengal Engineering and Science University and the subject Geology possess a century old relationship. Many eminent geoscientists have offered their teaching and research expertise in the past. Previously teaching in geology was introduced in this university to meet the need of the would be engineering graduates only in Civil Engineering, Mining Engineering and Metallurgical Engineering branches. The science streams have emerged as an integral part of the university offering postgraduate degrees from 2001. The Department of Geology, however, has started to offer independent postgraduate courses in geology after its separate identity as a science department from 2005. In 2011, name of the department has been changed to the Department of Earth Sciences to hold an umbrella to develop teaching and research in various disciplines of geology, geophysics, atmospheric and planetary sciences.

The Department of Earth Sciences is dedicated to improve the understanding of the solid earth, its geotechnical and other applied aspects through teaching, research and field training programme. Students are being trained by permanent and eminent visiting faculties of diverse fields of geology, involved in frontier areas of research like sedimentology, basin tectonics, mineralogy, geochronology, tectonothermal evolution, hydrogeology and paleontology etc. The Master degree programme of the department has a modern and updated syllabus to cope up with the need of the hour and aims to prepare students for a broad range of geoscientific careers which includes petroleum or mineral exploration, natural hazard mitigation and geoscientific activities in different universities and research institutes. Students are able to find employment in mining companies, petroleum industries and various corporate houses.

Academic Programmes:

	Undergraduate Level	
i.	Degree offered	NIL
ii.	Sanctioned students' intake	NIL
iii.	Additional intake through lateral entry in 3rd Semester	NIL
	Postgraduate Level	
i.	Degree offered	M.Sc In Applied Geology.
ii.	Sanctioned students' intake	25
iii.	Additional intake through other programmes (i.e. QIP)	NIL
iv.	Specialisations in	Sedimentology & Basin Tectonics, Paleontology (Invertebrate), Geohydrology, Metamorphic Petrology, Geochronology.
	Doctoral Level	
i.	Degree offered	Ph.D in Science (Geology)
ii.	No of candidates enrolled	03
	registered	0
	awarded	0

Faculty position:

Sanctioned faculty post : 8 (Professor-01, Assistant Professor-03, Lecturer-04)
Vacant Post : Assistant Professor-02, Lecturer-02 (already advertised)

Faculty profile

Name	Designation	Highest Qualification	Specialisation/ Research Area	Contact No. E-mail
Bhabani Prasad Mukhopadhyay	Professor	Ph.D.	Sedimentology & Basin Tectonics	+91-9830019506. bpmbesus@gmail.com
Ananya Biswas	Assistant Professor	Ph.D.	Sedimentology & Stratigraphy	+91-9830012606 +919433516731 anniegeol@hotmail.com
Tapas Ganguly	Assistant Professor (Sr.) (WBHES)	Ph.D.	Invertebrate Paleontology	+91-9903570914 tapasgeolbe@yahoo.com
Kaushik Das	Lecturer	Ph.D.	Metamorphic Geology & Geochronology	+91-9433045322 Kaushik.met@gmail.com

Research area (only broad titles):

Sedimentology, Basin Tectonics, Geohydrology, Invertebrate Paleontology, Mineralogy, Geochronology, Metamorphic Petrology

Research facilities: (name specific equipment / picture etc.)

Binocular Microscope with photographic attachments, GPS, Petrological microscope (student model),Rock cutter, rock polishing machine, Hotplate, Spectrophotometer, ph meter & conductivity meter

Name of the laboratories:

1.Sedimentology
2.Paleontology
3.Metamorphic Petrology
4.Rock cutting & polishing

Support staff position:

(i) Sanctioned technical post: 01

(ii) Technical staff profile

Name	Designation	Highest Qualification	Contact No.	E-mail
Panchdeo Rangwa	Section Cutter	H.S.	+919038880675	--

Sponsored Research: (only areas mentioned)

Ongoing (Prof value)	Sponsoring agency
Sedimentology-Rs /-20,58,500	ONGC
Sedimentology-Rs /-21,16,000	DST
Hydrogeology-Rs.16,11,600.00	Govt. of W.B.

**Department received DST-FIST support under FIST-2009 –
Rs. 40.75 Lakhs.—Continuing in 2011-12**

Industry- Institute Interaction

Department is collaborating with ONGC for drill-site training of students
& research work.

No of publications:
   Journal   -9 (published)
   Conference - 1
   Books/Monograms- 0
   (List to be included)

Seminar/Workshop Attended :

Prof.B.P.Mukhopadhyay, Dr.A. Biswas presented paper entitled, " Tectonic Evolution of Late Proterozoic Basins of Lesser Himalaya, H.P." during September, 2011 in the National Seminar, Benaras Hindu University, Varanasi.

List of Publications(2011-12)

Biswas, A. and Mukhopadhyay,B.P.2011. Signature of a Paleogene Submarine-fan from the Jenam Formation, Barail Group, Assam-Arakan Orogen, Northeastern India. Journal of Geological Society of India, vol.78 (December Issue).

Das, Kaushik, Bose, Sankar, Karmakar, Subrata, Chakraborty, Supriya, 2011. Structural framework of granulites from northern part of Chilka Lake area, Eastern Ghats Belt, India: Compressional vis-à-vis transpressional tectonics. *Journal of Earth System Sciences* (in press).

Karmakar, S., Basu Sarbadhikari, A., Bose, S. and Das, Kaushik, 2011. Evolution of granulite enclaves and associated gneisses from Purulia, Chhotanagpur Granite Gneissic Complex, India: Evidence for a 980-970 Ma tectonothermal event at the eastern India cratonic fringe zone. *Journal of Asian Earth Sciences*, 41, 69-88. DOI 10.1016/j.jseaes.2010.12.006

Priyabrata Das, Kaushik Das, Partha Pratim Chakraborty and S. Balakrishnan, 2011. 1420 Ma diabasic intrusives from the Mesoproterozoic Singhora Group, Chhattisgarh Supergroup, India: Implications towards non-plume intrusive activity. *Journal of Earth System Sciences*, 120, 223-236.

Chakraborty, P.P., Das, K., Tsutsumi, Y. and Horie, K., 2011. Depositional History of the Chhattisgarh Basin, Central India: Constraints from New SHRIMP Zircon Ages: A Discussion. *Journal of Geology*, DOI: 10.1086/660893

Sankar Bose, Kaushik Das, Supriya Chakraborty, and Hiroyuki Miura, 2011. Petrology and Geochemistry of Metamorphosed Basic Intrusives from Chilka Lake Granulites, Eastern Ghats Belt, India: Implications for Rodinia Breakup. In: R. K. Srivastava (Ed), *Dyke Swarms, Springer-Verlag, Berlin, Hydelberg.* DOI 10.1007/978-3-642-12496-9_14.

Bose, S., Dunkley, D., Dasgupta, S., Das, K. and Arima, M., 2011. India-Antarctica-Australia-Laurentia connection in the Paleo-Mesoproterozoic revisited: Evidence from new zircon U-Pb SHRIMP and monazite chemical age data from the Eastern Ghats Belt, India. *Bulletin Geological Society of America* doi: 10.1130/B30336.1.

Das, Kaushik, Bose, Sankar, Karmakar, Subrata, Dunkley, Daniel J. and Dasgupta, Somnath, 2011. Multiple tectonometamorphic imprints in the lower crust: first evidence of ca. 950 Ma (zircon U-Pb SHRIMP) compressional reworking from aluminous granulites of the Eastern Ghats Belt, India. *Geological Journal*, 46, 217-239. DOI: 10.1002/gj.1246

Kumar,R., Mukhopadhyay,B.P. and Biswas,A.,2011. Tectonic Evolution of Late Proterozoic Basins of Lesser Himalaya, H.P. National Seminar, Benaras Hindu University, Varanasi.

Department of Humanities & Social Sciences

About the Department

Essentially engineering and science are made for human society. Science and technology education is never meaningful without studying Economics, Social & Behavioral Science components. Knowledge in these subjects enables a student to apply scientific principles, along with human, moral and social understanding. The Department of Humanities & Social Sciences was established in 1945 keeping in mind these objectives. At present, the Department has five disciplines, namely, Economics, Financial Management, Marketing Management, English, and Sociology. Its faculty offers a vast range of courses at the B.E. and Ph.D. levels. The Department occupies an exclusive and distinctive position in an institute where the spirit of science and technology is predominant.

The purpose of the undergraduate courses taught by the Department is to make the technology students aware of the various issues relating to man and the society and also to sensitize students to the broader social, economic, cultural, ethical and humane issues involved in social change. The department has good opportunities and facilities for the pursuit of research and development. At present, a number of research scholars are pursuing their Ph.D. degree. A few students of this Department have already received their Ph.D. degrees and have made a mark as excellent academicians and professionals. The inter-disciplinary 'School of Management Sciences' was established by active contributions from the faculty of this department. The Faculty is actively engaged in the development of the School in all possible ways still today.

Apart from the Institute level facilities, the Department has its own Computer Lab. Photo-copying and other infrastructure facilities are also forthcoming very soon. The Department is going to possess a modern and well-equipped Language Laboratory also. The Department has competent faculty members with a high degree of excellence who keeps pace with the current developments in their fields of specialization.

Academic Prgrammes:

Undergraduate Level   **Teaching in BE all Branches.**

i.   Degree offered

ii.   Sanctioned students' intake

iii.   Additional intake through lateral entry in 3rd Semester

Postgraduate Level

i.   Degree offered   **Teaching in MBA.**

ii.   Sanctioned students' intake

iii.   Additional intake through other programmes (i.e. QIP)

iv.   Specialization in

Doctoral Level	**Ph. D**	
i. Degree offered		
ii. No. of candidates enrolled	One.	
registered	Twelve.	
awarded	Two.	

Faculty position :

Sanctioned faculty post	Nine.
Vacant Post	Four.

Faculty profile

Name	Designation	Highest Qualification	Specialization / Research Area	Contact No. E-Mail
Rupen Basu Mallik	Associate Professor & Head	M.Com, FCMA.	Finance & Accounting	rbmallik@gmail.com
Madhumati Dutta	Professor	Ph.D	Economics/Environmental Economics	033-24187755, madhumatidutta@yahoo.co.in
Partha Sarathy Ray	Associate Professor	Ph.D. (Marketing)	Marketing	Psray740@rediffmail.com
Mallika Ghosh Sarbadhikary	Associate Professor	M.Phil	Gender Studies, Renasssance Studies	Ghosh16mallika@gmail.com
Subhasis Bandyopadhyay	Assistant Professor	M.A. in Sociology (NET)	STS/Theory/Industry/Environment	9836945013 subhasisban@gmail.com

Awards and Laurels :

Madhumati Dutta	Member, Advisory Committee, State Disaster Management Authority.
Rupen Basu Mallik	Fellow, ICAI.

Research areas :

Madhumati Dutta	Environmental Economics/Management (Climate Change Mitigation Policy)
Rupen Basu Mallik	Finance & Accounting, Corporate Governance.
Partha Sarathy Ray	Marketing, Strategic Management .
Mallika Ghosh Sarbadhikary	Renaissance Studies, Gender Studies.
Subhasis Bandyopadhyay	Sociology of Science and Technology; S&T Policy Studies.

Research Facilities :   Internet Facility,

                                                            Computer Lab, Library etc.

Name of the laboratory :   Computer Lab

Support staff position: Support Staff :   Two.

No. of Publications : (This year only)

Journal   ……1

Conference   ……………   4

Books / Monograms …………3
 (List to be included)

- 'Factors that Determine the Choice of Passenger Transport Modes and Policy Implications for the Reduction of Urban Pollution: A Case Study of Kolkata', in P.Pal, A.K. Bhaumik and K.Gupta (eds.), Emerging Issues in the Indian Economy, Regal Publications, New Delhi,2011 (Madhumati Dutta with Guruprasad Samanta), 430 – 459

- **'Evolving Feasible Modal Structures for Cost Efficient Pollution Reduction: The Case of Passenger Transport in an Indian Megacity', (Madhumati Dutta with Joyshankar Bhattacharyya), in Essays in Honour of Biswajit Chatterjee, ed. Ambar Ghosh, in**

print

- **'Expenditure Patterns and Climate Change in India: Implications for Policy', in Contemporary Issues in Development Economics, ed. P.Pal et al, Regal Publications, New Delhi, in print**

Seminar / Workshops / Conferences / Training programmes Attended/ organized by the department (in last year)   **Eleven.**

Technology Developed / Innovations   **Nil**

Others

1.Rupen Basu Mallik was invited by EDC of BNCCI to deliver a series of lectures on Finance and Accounting for Small Business.

2. Mallika Ghosh Sarbadhikari was invited by the postgraduate department of Maulana Azad College , Kolkata to deliver a series of lectures on Renaissance Texts.

Department of Information Technology

Introduction

The Department of Information Technology started its journey in the year 2000. It is one of the youngest departments of this 157 years old University. The department has produced excellent IT engineers who are serving in different reputed organizations and pursuing higher studies at Institutes of excellence in India and abroad. The department provides state of the art computational facilities for the students. The strength of the department has been in its diverse areas of research in which it has a remarkable contribution.

Academic Programmes

Undergraduate Level

B.E. in Information Technology: The B.E. program is a four -year course oriented undergraduate program. The course work is spread across all the semesters. The courses include a set of core courses offered by the department, a set of departmental electives, and some free electives. Apart from this, a student must complete three courses in his or her minor area. The minor area must be different from Information Technology. Besides, a student must also complete a mini project in 6th semester and a project in fourth year ($7^{th} - 8^{th}$ semester) towards the fulfillment of the degree requirements.

Postgraduate Level

M.E. in Information and Communication Engineering: The M.E. program is a two-year course oriented graduate program. The student has to take a set of core courses and a set of electives. The course work is spread across the first two semesters with an option of taking one elective in the third semester. This is followed by a project in the third and fourth semester in which the student can take up a project of his or her interest, supervised by a faculty member.

Doctoral Level

PhD in Information Technology: The PhD programs are postgraduate research oriented programs. The scholar works in an area of his/her interest under the supervision of a faculty member. The scholar has to obtain a minimum number of credits by taking courses. The highlight of the program is the independent research work taken up by a scholar, leading to a dissertation at the end of the program. The average duration of a PhD. program is between four to five years.

Student's intake

	U.G	P.G	Ph.D
Sanctioned students' intake	60	18	1- Awarded
			1- Thesis submitted
Additional intake through lateral entry/ QIP	6	-	11- Registered
			13- Enrolled

	Nos.
Sanctioned faculty post	**13**
Professor	**1**
Associate Professor	**2**
Assistant Professor	**6**
Vacant post	**4**

Faculty Name	Designation	Highest Qualification	Specialization/ Research Area	Contact No. / Mail Id
Dr. Hafizur Rahaman	Professor	Ph.D	➤ Design & Test of VLSI Circuits ➤ Network-On-Chip ➤ SOC Testing ➤ Design & Testing of Cryptographic Hardware ➤ Design & Testing of Micro fluidic Bio Chip	rahaman_ h@it.becs.ac.in Extn. no.260/848
Dr.Santi Prasad Maity	Associate Professor	Ph.D	➤ Digital Image Watermarking ➤ Wavelets for image de-noising, watermarking, Access control and Error concealment ➤ Optimized spread Spectrum watermarking ➤ VLSI for watermarking ➤ PAPR reduction in multicarrier communication ➤ Wireless Channel Estimation ➤ Multiuser Detection in MC-CDMA ➤ Optical Computing	santipmaity@it.becs.ac.i n Extn. no.846
Dr. Arindam Biswas	Associate Professor	Ph.D	➤ Digital Geometry ➤ Image Processing and Pattern Recognition ➤ Medical Image Analysis	abiswas@it.becs.ac.i n barindam@gmail.co m Extn. no.864
Dr. Sukanta Das	Assistant Professor	Ph.D	➤ Cellular Automata ➤ Distributed Computing	sukanta@it.becs.ac.i n Extn. no.847
Dr. Tuhina Samanta	Assistant Professor	Ph.D	➤ Design of algorithms for VLSI inter connect design ➤ Developing of algorithm for Physical design of Digital Micro-fluidic Biochip	t_samanta@it.becs.ac. in Extn. no.857
Dr. Prasun Ghosal	Assistant Professor	Ph.D	➤ 3D Integration of VLSI Physical Design ➤ Network-On-Chip ➤ Design of Embedded Systems ➤	p_ghosal@it.becs.ac.i n Extn. no.309
Dr. Chandan Giri	Assistant Professor	Ph.D	➤ VLSI digital Circuit Testing ➤ System-On-Chip Testing ➤ Network-On-Chip	chandangiri@gmail.co m Extn. no.858

				Testing	
Mr.Indrajit Banerjee	Assistant Professor	M.Tech	➢	Wireless ad-hoc Sensor Network	ibanerjee@it.becs.ac.in Extn. no.860
Mr.Surajit kr. Roy	Assistant Professor	M.Tech	➢	SOC Testing	suraroy@gmail.com Extn. no.861

Research area

Below we mention selected areas of research contributions made by the department.

A. Systems Architecture and Design
      Computer Architecture, Design,
      Testing,
      Verification,
      Algorithms and VLSI
      CAD

B. Theory and Applications of Cellular Automata in
      Distributed Computing,
      Pattern Recognition, Traffic
      Modeling and
      VLSI design & Test

C. Digital Image Watermarking and Signal Processing
      LBM and Additive watermarking using signal processing tools
      High Payload Spread Spectrum watermarking using Wavelets
      QIM watermarking for Access control and Error Concealment
      Optimized Spread Spectrum watermarking
      VLSI architecture for watermarking

D. Digital Geometry and Image Analysis
      Shape Analysis
      3D Image Analysis
      Face Recognition
      Document Image Analysis

E. Wireless and Mobile Communication, Sensor Network
      PAPR reduction in Multicarrier System
      Multiuser Detection in MC-CDMA
      Channel estimation
      Optimized system design
      Efficient Routing protocol
      Energy efficient WSN Management

F. Medical Image Analysis
      Mammogram
      Bone fracture detection from X-Ray images
      Vessel Detection in Retina

Research facilities

i) Computing Facilities:

Model	Specification	No.
A. MAIL SERVER & FILE SERVER	X Series 236 @ server (IBM) Intel Single Xeon DP Processor @ 3.2 GHz EM 64T	2
B. SUN SERVER	SUN FIRE V215 SERVER PROCESSOR 2X ULTRA SPARC 111	1
C. ORACLE SERVER	Single or Dual Intel® Xeon® 3.0 GHz processors or Single or Dual Intel® Xeon® 3.2 GHz processors (dependent on model)	1
D.HP XW 4600Workstation	Intel Dual Core 3 GHZ	2
E. HP COMPAQ DX 7200 MICROTOWER & DELL OPTIPLEX 780 Desktop	INTEL P-IV HT 3 GHZ & CORE DUO 2.80 GHZ 2GB DDR2 RAM	180
F. HP Compaq dx7400 MICROTOWER	INTEL CORE 2 DUO 1.60 GHZ 1 GB DDR2 RAM	
G. HP COMPAQ DX 7200 MICROTOWER	INTEL P-IV HT 3 GHZ	

ii) Software:

- Windows 98(SE)
- Red Hat Linux 703 professional
- Norton systems works
- Personal oracle 8015 (Win 98 compatible)
- Visual studio .Net professional (Single user)
- MS office XP (Prof)
- Macromedia flash
- ADOBE Photoshop CS2 version 9 educational paper license
- ADOBE Photoshop CS2 version 9 Edu media kit on CD
- Windows 2000 (OEM Pack)
- Win 2000 server plus (Academic editions) Client license
- Oracle 10G database std-I edition on linux
- McAfee Active Virus Scan P:1 Gold(101 user)
- Adobe Acrobat Professional 9
- Extra Cyber Emulator

- Matlab R2008a (Client Server) (30 user)
- Simulink (5 user)
- Signal Processing Toolbox(5 user)

- ATS for oracle std-I for 1 year
- Media for oracle in CD
- Internet developer suite on windows XP OS
- Sound forge (latest version) Edu full box on CD
- Rational Rose
- Microsoft windows XP prof. Upgrade OLP NL-AE
- Microsoft office 2003 prof. OLP NL-AE
- Microsoft studio 8 Edu paper license
- Microsoft windows XP prof. Media kit on CD
- Microsoft office 2003 prof. Media kit on CD
- Microsoft studio 8 Edu media kit on CD
- 1SE Design Suite Foundation 8.1i,9.1i,10.1i,11.1i
- Chip scope Pro
- Embedded Development kit
- Plan Ahead
- System Generator
- Accel DSP
- Model XE Simulator

iii) Electronics Equipment:

Sl. No.	Name of the Item	Qty
1	Microcontroller Kit SDA 51.	12
2	P-N Sequence generator.	04
3	Function Generator	09
4	Test ROM for NIFC- 27.	01
5	26 pin I/O connector.	15
6	PMS DSP 320C 30Trainer KIT.	06
7	Parallel Port Cable for DSP C-30.	06
8	Input /Output Cable.	06
9	Power Supply for SDA –51.	12
10	8085 Microprocessor Trainer kit.	18
11	8086 Microprocessor Trainer kit.	06
12	Digital Trainer kit	08
13	Digital Communication Trainer kit	15
14	Traffic Light simulator Interface Kit (ALS -NIFC-11).	06
15	DAC for ADC Temperature Sensor Dual slope ADC interface for µP trainers(ALS-NIFC-10).	04
16	Interface to study A/D and D/A converter(NIFC-27).	02
17	JP6 of Interface card to Trainer Kit Connector.	02
18	Test ROM for NIFC- 01and NIFC-11.	01
19	CROSS COMPILER FOR DSP	01
20	DIGITAL STORAGE OSCILLOSCOPE	01
21	CATHODE RAY OSCILLOSCOPE	11
22	SPECTRUM ANALYZER	01
23	Vector Signal Generator	01
24	Spartan-3 AN FPGA Development Board	05
25	Spartan-3 FPGA Development Board	01
26	Virtex-5 FPGA Development Board	02
27	Vector Signal Analyzer	01
29	Agilent N5182A-403 Calibrated AWGN	01

Support staff position

TECHNICAL ASSISTANT				
Name	**Designation**	**Highest Qualification**	**Contact No**	**E-mail Id**
Soma Sardar	**Technical Assistant**	**D.C.S.T, MCA, M.TECH**	**9433487298**	**somabeit@gmail.com**
Soumen Gope	**Technical Assistant**	**D.C.S.T, B.TECH, M.TECH**	**9433985637**	**soumencse@gmail.com**
Souvik Patra	**Technical Assistant**	**D.C.S.T, B.TECH, M.TECH**	**9433730433**	**souvik.patra804@gmail.com**
Subhajit Biswas	**Technical Assistant**	**D.C.S.T, AMIE(PURSUING)**	**9830146357**	**subhajitbesu@gmail.com**
Snehashis Saha	**Technical Assistant**	**M.Sc(Math),P.G.D.C.A, M.SC(Computer)**	**9830573478**	**snehasissaha@yahoo.com**
Amiya Ratan Rout	**Technical Assistant**	**M.Sc(Computer),M.TECH**	**9232606401**	**shiboham@gmail.com**
Samaresh Hazra	**Technical Assistant**	**D.C.S.T, M.Sc(Computer), AMIE, M.TECH**	**9231596396**	**samaresh.hazra@gmail.com**
Bishnu Pada Choudhury	**Technical Assistant**	**B.Sc, MCA**	**9432926952**	**bisbnu1@yahoo.com**
Suman Chakraborty	**Technical Assistant**	**B.TECH, M.TECH**	**9831399726**	**sumanrbrbehala@gmail.com**
Sanchayita Dhara	**Technical Assistant**	**D.E.T.C, AMIE(Pursuing)**	**9433957440**	**sanchayita.dhara@gmail.com**
OFFICE STAFF				
Malay Dhir	**Office Assistant**	**B.com**	**9831365531**	**malay_dhir@yahoo.co.in**
Suman Sarkar	**Group D**	**Madhyamik**	**9007612086**	**sarkar_becit@yahoo.co.in**
Dinabandhu Sadhukhan	**Group D**	**Madhyamik**	**9062477213**	

Detailed Publication: <u>Year: 2011- – 2012</u>

International Journals/Edited Volumes

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Publications:

Visitors to the Department

The department has been privileged to receive a good number of important visitors both from India and abroad. Illustrious visitors to the University during 2010-11 included:

Prof. Krishnendu Chakraborty, IEEE Fellow, Department Computer Science and Engineering, Duke University, Durham, USA has visited department of Information Technology and School of VLSI BESUS and delivered an invited lecture on 'Design and test issues and challenges in Micro-fluidic Biochips' on 05th August 2010.

Prof. Krishnendu Chakraborty and Prof. Bhargab B Bhattacharyya have been appointed distinguished Research Professors of Department of Information Technology, BESUS.

Delivered Invited talk:

Seminar, symposium/conference attended/organized in 2011-2012

ISED-2012: (As organizing chair) International Symposium on Electronic System Design, December 19-22, 2012, Bengal Engineering and Science University, Shibpur, Howrah, India.

ICVGIP-2012: (Attended) The Eight Indian Conference on Computer Vision, Graphics, and Image Processing, December 16-19, 2012, Indian Institute of Technology, Bombay, India.

VDAT-2012: (As organizing chair) 16th International Symposium on VLSI Design and Test, July 1-4, 2012, Bengal Engineering and Science University, Shibpur, Howrah, India.

Others

Placements: 2011-2012

Number of admitted students	52
Number of students who obtained jobs as per the record of placement office	42
Number of students who found employment otherwise at the end of the final year	6

Students' activities:

1) **Students** organized Tech Fest "**INSTRUO 11**" during 2011. INSTRUO

-11 March 4th - 6th March 2011.

2) 10 years Celebrations: X-ANNOS-2011

X annos 2011 marked the celebration of completion of 10 years for the department of Information Technology, BESU. The event took place between 11-13th March simultaneously at Institute Hall, Alumni Seminar Hall and Madhusudan Bhavan respectively. X-annos is a combination of two latin words. The 'X' part means the numeral 10 and 'annos' means years. Hence X -annos signifies celebrating 10 years of our age. The event started on Friday, 11th of March with some mesmerizing performances performed by the Undergarduate and Post graduate students of the department. Saturday kicked off with a very interesting seminar on Web 2.0 by IBM followed by a technical quiz contest that happened at Alumni Seminar Hall. The treasure hunt competition was also a grand success with students hunting for 'treasures' throughout the universities and finally grabbing their treasure. The day finally ended with some very good cultural performances by the students at Madhusudan Bhavan.

The final day kicked off at Institute Hall with the X-annos open quiz which was very popular, considering a total of 25 teams participating from the college. This was followed by a Lunch session at Madhusudan Bhavan, in the presence of some of the distinguished alumni of the department.

The final event Antakshari was conducted at Institute Hall again and the day wrapped up with a closing ceremony in the presence of honorable Vice Chancellor Dr Ajay Kr Ray, Head of the department Prof Hafizur Rahman, and convener Prof Prasun Ghoshal.

X annos would not have been possible without the valuable contribution of the sponsors-HP Procurve, IBM and IMS. Contributions from The PDSIT(Purabi Das School of Information Technology) were invaluable too. Generous contributions from alumni as well as the students from the department made it a grand success. The event was followed actively on the official website: http://it.becs.ac.in/xannos/xannos.html

Social Commitments and Community services

Department of Information Technology organized 'Teachers Training on Open Source software (Linux) ' for Howrah District School Teachers sponsored by DIT, Govt. of West Bengal during December 1ˢᵗ -6ᵗʰ, 2010.

Department of Mathematics

About the Department

Since the inception of B. E. College the Department of Mathematics has earned, over the years, a glorious heritage of conducting research activities in various fields of Pure and Applied Mathematics. The department also undertakes teaching of Mathematics, including Statistics, Operations Research, Numerical Analysis and Computational Techniques using computers, to undergraduate and postgraduate students in various branches of Engineering and Architecture. With the introduction of the post graduate course M.Sc. in Applied Mathematics (in the year 2000), the research activities of the faculty members of the department have been increased substantially. Past and present members of faculty of the department have been conducting research in different branches of Pure and Applied Mathematics. The M.Sc. students who have graduated from this department have proved their credentials by establishing themselves as successful researchers in various research institutions and universities, and as teachers in college education as well as in school education and also in the corporate sector. Three D. Sc. and 59 Ph. D. have been awarded from this department during the last four decades. This year, six research scholars have been awarded Ph.D. from this department. At present fifty three research scholars (most of whom are part time) are working in various fields of Mathematics in this department.

Academic Programmes: No undergraduate programme in Mathematics is conducted by the department. However, the department is involved in teaching Mathematics in all undergraduate engineering branches (approximately 800 students per academic year).

	Undergraduate Level	
i.	Degree offered	
ii.	Sanctioned students' intake	
iii.	Additional intake through lateral entry in 3rd Semester	
b.	**Postgraduate Level**	
i.	Degree offered	M.Sc in Applied Mathematics
ii.	Sanctioned students' intake	25
iii.	Additional intake through other programmes (i.e. QIP)	Nil
iv.	Specialisations in	Solid Mechanics, Operations Research, Mathematical Biology
c.	**Doctoral Level**	
i.	Degree offered	Ph.D.(Sc)

ii.	No of candidates enrolled		15
	registered		22
	awarded		06

Faculty position:

Sanctioned faculty post…17…. Vacant Post 02………
Faculty profile (in the following table)

Name	Designation	Highest Qualification	Specialisation/ Research Area	Contact No. E-mail
Basudeb Mukhopadhyay	Professor	Ph.D	Elasticity, Thermo elasticity, Thermo visco elasticity, Micropolar elacticity	bmukherjee2006@yahoo.co.in
Binayak Sammadar Choudhury	Professor	Ph.D	Functional Analysis, Topology, Nonlinear Dynamics, Mathematical Economics, Quantum Information theory, Fuzzy systems, Stochastic differential equation	binayak@.becs.ac.in, binayak12@yahoo.co.in
Asit Kumar Chongdar	Professor	Ph.D	Lie theory and Special Functions.	chongdarmath@yahoo.co.in
Guruprasad Samanta	Professor & Head	Ph.D.	Mathematical Biology and Operations Research	g_p_samanta@yahoo.co.uk
Murari Mitra	Professor	Ph.D.	Reliability Theory, Mathematical Statistics, Operations Research, Nonparametric Inference	murarimitra@yahoo.com
Tapan Roy	Professor	Ph.D.	Fuzzy and Intuitionistic Fuzzy set Theory, Inventory, Transportation, Reliability Optimization, Information Theory, Portfolio Optimization, Fuzzy and Stochastic Optimization	roy_t_k@yahoo.co.in
Sanat Majumder	Professor	Ph.D.	Information, Optimizition, O.R, Entropy Optimization and its applications in different branches of Science and Technology	majumder_sk@yahoo.co.in
Asoke Kumar Dhar	Professor	Ph.D.	Non-linear waves in Ocean	asoked @math.becs.ac.in
Jagabandhu De	Professor	Ph.D.	Elasticity & Plasticity, Mathematical Methods, Fracture Mechanics,Fluid Mechanics	jagabandhu_de@yahoo.com
Parbati Saha	Associate Professor	Ph.D.	Computational Intelligence	parbati_saha@yahoo.co.in
Tapan Kar	Associate Professor	Ph.D.	Mathematical Ecology, Dynamical systems, stability and bifurcation theory, population dynamics, mathematical modelling in ecology and epidemiology, management and	t_k_kar@yahoo.com

			conservation of fisheries, bio-economic modelling of renewable resources	
Pritha Das	Associate Professor	Ph.D.	Mathematical biology, Neural network, Nonlinear data analysis	prithadas01@yahoo.com
Shariful Alam	Assistant Professor	Ph.D.	Financial Mathematics	salam50in@yahoo.co.in
Ujjal Debnath	Assistant Professor	Ph.D.	General Relativity, Cosmology.	ujjaldebnath@yahoo.com
Smita Pal (Sarkar)	Assistant Professor	M.Sc.	Mathematical Theory of Elasticity & Plasticity	smita1308gmail.com

Awards and Laurels:

Research area : Mathematical Biology , Operations Research, Fuzzy and Intuitionistic Fuzzy set Theory, Inventory, Transportation, Reliability Optimization, Information Theory, Portfolio Optimization, Fuzzy and Stochastic Optimization, Information, Optimization, Entropy Optimization, Mathematical Ecology, Dynamical systems, stability and bifurcation theory, population dynamics, mathematical modelling in ecology and epidemiology, management and conservation of fisheries, bio-economic modelling of renewable resources, Neural network, Nonlinear data analysis General Relativity, Cosmology, Lie theory and Special Functions, Functional Analysis, Topology, Nonlinear Dynamics, Mathematical Economics, Quantum Information theory, Mathematical theory of Elasticity , Thermo elasticity, Thermo visco elasticity, Micropolar elasticity, Fracture Mechanics, Fluid Dynamics, Non-linear waves in Ocean, Computational Intelligence, Reliability Theory, Mathematical Statistics, Nonparametric Inference

Sponsored Research:

Ongoing (Prof value)	Sponsoring agency
Incorporating ecosystem objectives into the management sustainable marine fisheries: Ecological economic modeling with some case studies along the costal side of West Bengal. –**Rs.12,00,000/-**	UGC

No of publications: (This year only)
Journal …………………40 ………………………………….; Annexure I
Conference…………………………………………………..…….; Annexure II
Books/Monograms ………………………………………………..;
(List to be included)

Others : Students awarded Ph.D(Sc) in 2011-12

Annexure I

1	Emergent Scenario in Anisotropic Universe	Shuvendu Chakraborty and Ujjal Debnath	*International Journal of Theoretical Physics*	Vol. 50, No. 1, pp. 80-87 ,2011
2	Correspondence between Ricci and other dark energies	Surajit Chattopadhyay and Ujjal Debnath	*Int. J. Theo. Phys.*	Vol. 50, No. 2, pp. 315-324,2011
3	Validity of Thermodynamical Laws in Dark Energy Filled Universe	Samarpita Bhattacharya and Ujjal Debnath	*Int. J. of Theo.l Phys.*	Vol. 50, No. 2, pp. 525-536,2011
4	Dynamics of Logamediate and Intermediate Scenarios in the Dark Energy Filled Universe	Piyali Bagchi Khatua and Ujjal Debnath	*Int. J. of Theo. Phys.*	Vol. 50, No. 3, pp. 799-832,2011
5	Accelerating Universe in Brans-Dicke Theory in presence of Chaplygin gas	Anup Kumar Singha and Ujjal Debnath	*Int. J. of Theo. Phys.*	Vol. 50, No. 5, pp. 1536-1542,2011
6	FRW Cosmology with Variable G and Λ	Mubasher Jamil and Ujjal Debnath	*Int. J. of Theo. Phys.*	Vol. 50, No. 5, pp. 1602-1613,2011
7	Interacting Modified Chaplygin gas on loop quantum Cosmology	Mubasher Jamil and Ujjal Debnath	*Astrophysics and Space Science*	Vol. 333, No. 1, pp. 3-8 ,2011
8	Thermodynamics in Quasi-Spherical Szekeres Space-Time	Ujjal Debnath	*Europhysics Letters*	Vol. 94 , pp. 29001,2011
9	Emergent Universe in Chameleon, f(R) and f(T) Gravity Theories	Surajit Chattopadhyay and Ujjal Debnath	*Int. Journal of Modern Physics D*	Vol. 20, No. 6, pp. 1135-1152,2011
10	Brans-Dicke Theory in Anisotropic Model with Viscous Fluid	Shuvendu Chakraborty and Ujjal Debnath	*Gravitation and Cosmology*	Vol. 17, No. 3, pp. 280-283,2011
11	Emergent Universe with Exotic Matter in Brane World Scenario	Ujjal Debnath and Subenoy Chakraborty	*Int. J. of Theo. Phys.*	Vol. 50, No. 9, pp. 2892-2898,2011
12	Thermodynamical Laws in Horava-Lifshitz Gravity	Samarpita Bhattacharya and Ujjal Debnath	*International Journal of Modern Physics D*	Vol. 20, No. 7, pp. 1191-1204,2011
13	Dynamics of interacting phantom and quintessence dark	Muhammad Umar Farooq, Mubasher Jamil	*Astrophysics and Space Science*	Vol. 334, No.2, pp 243-

				248,2011
14	Interaction between Tachyon and Hessence (or Hantom) Dark Energies	Surajit Chattopadhyay and Ujjal Debnath	*Int. J. of Theo. Phys.*	Vol. 50, No. 10, pp 3166-3175,2011
15	Brans-Dicke Theory and Thermodynamical Laws on Apparent and Event Horizons	Samarpita Bhattacharya and Ujjal Debnath	*Canadian Journal of Physics*	Vol. 89, No. 8, pp 883-889,2011
16	Correspondence between DBI-essence and Modified Chaplygin Gas and the Generalized Second Law of Thermodynamics	Ujjal Debnath and Mubasher Jamil	*Astrophysics and Space Science*	Vol. 335, No. 2, pp 545-552 ,2011
17	Generalized Second Law of Thermodynamics in Emergent Universe	Ujjal Debnath and Surajit Chattopadhyay	*Int. J. of Theo. Phys.*	Vol. 50, No. 11, pp 3415-3420,2011
18	Gravitational Collapse in Generalized Vaidya Space-Timefor Lovelock Gravity Theory	Prabir Rudra, Ritabrata Biswas and Ujjal Debnath	*Astrophysics and Space Science*	Vol. 335, No. 2, pp 505-513,2011
19	Role of generalized Ricci dark energy on Chameleon field in the emergent universe	Ujjal Debnath and Surajit Chattopadhyay	*Canadian Journal of Physics*	Vol. 89, No. 9, pp 941-948. ,2011
20	A Study of Generalized Second Law of Thermodynamics in Magnetic Universe in the light of Non-Linear Electrodynamics	Tanwi Bandyopadhyay and Ujjal Debnath	*Physics Letters B*	Vol. 704, No. 3, pp 95-101,2011
21	Modified Chaplygin Gas with Variable G and Λ	Ujjal Debnath	*Chinese Physics Letters,*	Vol. 28, No. 11, pp 119801 (1-4) ,2011
22	A bioeconomic assessment of the Bangladesh srimp fishery.	Tapan Kr. Kar & Kunal Chakraborty	*World J. Modelling & Simulation*	Vol. 7, No. 1, pp. 58-59,2011
23	Optimal control of harvest and bifurcation of a prey-predator model with stage structure.	K. Chakraborty, M Chakraborty, Tapan Kr. Kar	*Applied Mathematics and Computation*	Vol. 217, pp. 8778-8792,2011
24	Stability and optimal control of an SIR epidemic model by vaccination.	Tapan Kr. Kar, Ashim Batabyal	*Biosystems*	Vol. 104, pp. 127-135,2011
25	Dynamic behaviour of a delayed predator-prey model with harvesting.	Tapan Kr. Kar, Abhijit Ghorai	*Applied Mathematics and Computation*	Vol. 217, pp. 9085-9104,2011
26	Global dynamics and bifurcation in delayed SIR epidemic model.	Tapan Kr. Kar, Prasanta Mondal	*Nonlinear Analysis : Real world Applications*	Vol. 12, pp. 2058-2068,2011
27	Bifurcation and control of a bioeconomic model of prey-predator system with time delay.	K.Chakraborty M. Chakraborty Tapan Kr. Kar	*Nonlinear Analysis: Hybrid Systems*	Vol. 5, pp. 613-625,2011
28	Chaoticity of the generalized shift map under a strong definition	I. Bhaumik and B. S. Choudhury	*International Journal of Applied Mathematics*	Vol. 24, No.1, pp. 47-55,2011
29	Uniform convergence and sequence of maps on a compact metric space with some chaotic	I. Bhaumik and B. S. Choudhury	*Anal. Th. Appl.*	Vol. 26, No. 1, pp. 53-58,2011

	properties			
30	Analysis of a nonautonomous predator-prey model incorporating a prey refuge and time delay	G. P. Samanta and D. N. Garain	Journal of Applied Mathematics and Informatics, Korea	Vol.29, No,3-4, p.955-967, 2011.
31	Thermoelastic waves with thermal relaxation in isotropic plate	S. Shaw and B. Mukhopadhyay	*Sadhana*	Vol.-36, No.-2, pp. 209-221, 2011
32	Generalized theory of micropolar-fractional thermoelasticity with two temperature	S. Shaw and B. Mukhopadhyay	*Int.J.Appl.Math. Mech*	Vol-7(19), pp. 32-48, 2011
33	Moving heat source response in a thermoelastic micropolar half space under two temperature theory	S. Shaw and B. Mukhopadhyay	*ISST J.Math. Comp. Sys.*	Vol.-2, No.-1, pp. 21-27, 2011
34	A Unified Field Approach on Fractional Ordered Micropolar Thermoelasticity With Diffussion	S. Shaw and B. Mukhopadhyay	Global Journal of Research in Engineering Numerical Methods (USA)	Vol. 11, issue-7, 2011
35	Electro-Magneto-Thermo Viscoelastic Plane Waves in Rotating Media	M.Rakshit, B.Mukhopadhyay and M.Mondal	J.Tech	Vol.XXXXII, 2011, 83-94
36	- A Simple Proof of the Chaoticity of Shift Map Under a New Definition of Chaos	Bhaumik, B.S. Choudhury and B. Mukhopadhyay	Analysis in Theory and Applications	Vol.-27, No.-4, 2011
37	A Problem of Two Collinear Griffith Cracks in an Orthotropic Elastic Medium Using Complex Variable Technique	Anusree Bhattacharyya and J.De	J.Tech	Vol. XXXXII, 67-81, 2011
38	Construction of a New Airport in a developing country, using entropy optimization method to the model	Kakali Karmakar (Sur) and Sanat Kumar Majumder	General Mathematics Notes	Vol.-8,No.-1, 2011
39	Optimization of the utility of a structural model of the demand for multi-destination non-work travel using maximum entropy method	Kakali Karmakar (Sur) and Sanat Kumar Majumder	International Journal of Pure and Applied Sciences and Technology	Vol.4(1), (2011),pp.23-29
40	Entropy & Utility in Trip distribution model	R.Kar & S.K. Mazumder	AJOMS	2011

Department of Mechanical Engineering

About the Department

The inception of the Mechanical Engineering Department may be traced back to 1921 when a diploma course in Mechanical Engineering was started in this Institute. The first degree course in Mechanical Engineering was started from 18th July, 1930. Over the last eight decades, the Department of Mechanical Engineering consolidated to its present condition offering 8-Semester Undergraduate Courses with an approximate current intake of 66 students annually and 4-Semester Postgraduate Courses with an intake of 27 students annually. The post-graduate course in the department started in the year 1954. Currently PG course is offered in three specializations, namely, Machine Design, Heat Power Engineering and Production Engineering, leading to the degree of Master of Engineering. Thirteen PhD scholars enrolled in the department during 2011-12.

Academic Programmes:

a.	**Undergraduate Level**	
i.	Degree offered	Bachelor of Engineering (Mechanical)
ii.	Sanctioned students' intake	60
iii.	Additional intake through lateral entry in 3rd Semester	06
b.	**Postgraduate Level**	
i.	Degree offered	Master of Engineering (Mechanical)
ii.	Sanctioned students' intake	27
iii.	Additional intake through other programmes (i.e. QIP)	NIL
iv.	Specialiasations in	Machine Design, Heat Power Engineering and Production Engineering
c.	**Doctoral Level**	
i.	Degree offered	Ph.D.
ii.	No of candidates enrolled	13 (during 2011-12)
	registered	09
	awarded	01

Faculty position:

Sanctioned faculty post…**26**…. Vacant Post …**08**

Name	Designation	Highest Qualification	Areas of Interest	Contact Information E-mail/Tel. No.
Dr. D. Datta	Professor and Head	Ph.D.	Ultrasonic Nondestructive evaluation, Composite Materials, Machine Design	debasis_datta@rediffmail.com 0091-33-2668 4561-63 Extn: 297
Dr. S.K. Guha	Professor	Ph. D.	Machine Design & Bearing Lubrication	gsk@mech.becs.ac.in
Dr. S.K. Karmakar	Professor	Ph.D.	Tribology (Friction, Wear Modelling, Contact Mechanics, Machine Design	skk@mech.becs.ac.in
Dr. S.K. Saha	Professor	Ph. D.	Heat Power Engineering.	sujoy_k_saha@hotmail.com
Dr. A.K. Dutta	Professor	Ph.D.	M/C. Design	apurba@mech.becs.ac.in
Dr. B.K. Bhattacharya	Professor	Ph.D.	Production Engg.	bidyut@mech.becs.ac.in
Dr. B.K. Mandal	Professor	PhD	Numerical Heat Transfer, CFD, Combustion	bijan@mech.becs.ac.in Mobile:9830017592
Dr. S. Chatterjee	Professor	Ph.D.	Nonlinear Dynamics of mechanical and Micro-mechanical systems	shychat@gmail.com 2668-4561; extn: 357 Mobile: 9831689337
Dr. S. Chakraborty	Professor	Ph.D.	Power Plant Engineering, CFD, Biomedical	somnathbec@rediffmail.com
Sri A.K.	Associate	M.E.	M/C. Design,	achinkumar_becs@rediffmail

Chowdhury	Professor		Combustion	.com
Dr. P.P. Dey	Associate Professor	Ph.D	CAD/CAM, Fracture Mechanics	ppdey2000@yahoo.com
Dr. S. Ghosh	Associate Professor	Ph.D	Power Plant Engineering, Renewable Energy	sudipghosh.becollege@gmail.com 091-033-2668-4561, Extn:279
Sri A Guha	Assistant Professor	M. Tech.	Advanced Machining, Fluid flow	aguha_me@rediffmail.com
Dr. S C Mondal	Assistant Professor	Ph.D	Production Engg.	sc_mondal@indiatimes.com
Sri A. Ganguly	Assistant Professor	M.E.	Heat Power Engineering, Greenhouse Technology	aritra78@gmail.com 9433032840
Sri U. Rana (on study leave)	Assistant Professor	M. Tech.	Thermal Engineering, CFD	Urana1980@rediffmail.com 9732177964
Sri R.N. Dey	Assistant Professor	M.E	Production	rathin5500@yahoo.com 9231532180 (M)
Dr. D N Basu (on lien)	Assistant Professor	Ph.D	Nuclear thermal-hydraulics, Solar energy	dipankar.n.basu@gmail.com

Awards and Laurels: Prof. Sujoy Saha was elected Fellow of ASME.

Research area (only mention broad titles without description in detail):

Numerical Heat Transfer
Multi-phase Flow and CFD
Combustion and alternative fuels
Biofluid Dynamics
Multiphase flow
Renewable Energy
Greenhouse Technology
Tribology
Dynamics, Vibration and Control
Composite Materials
NDT
Non-Conventional Machining

Research facilities: (name specific equipment)

1	Surface Profilometer (created under DST-FIST)
2	Pin-on-disc Machine (created under DST-FIST)
3	High-temp high-vacuum tribometer (yet to be installed)
4.	Ansys software (created under AICTE project)

5	Athena Visual Studio software (created under UGC grant)
6	g-PROMS (created under UGC grant)
7	Aspen simulation software (created under UGC grant)
8	Variable compression ratio internal combustion engine
9	Different heat transfer equipment test rigs
10	Vapour absorption AC test rig
11	MPFI engine model
12	Several models of power plant equipments

Name of the laboratories: No new laboratory was established during the period.

Support staff position:

(i) Sanctioned technical post…**8**..
(ii) Technical staff profile (in the following table)

Name	Designation	Highest Qualification	Contact No.	E-mail
Ashish Kumar Paul	Tech Asst Gr II	DME	94333-43232	
Bijit Kumar Dey	Tech Asst Gr II	ME	94334-13093	bijitde@yahoo.com
Subhasish Pradhan	Tech Asst Gr II	DME, BSc	94344-67729	
Nani Gopal Roy	Tech Asst Gr II	ME	94331-03465	
Kankar Mohan Das	Tech Asst Gr II	DME	98304-36517	
Pradip Kumar Dey	Mechanic	ITI	99037-70323	

Sponsored Research: (mention area)

Ongoing	Sponsoring agency
Tribology and Vibration control FIST, 16,800,000 INR	DST, GOI
Modeling of Mass Transport through Arterial Wall during Initiation and Progression of Atherosclerosis,	AICTE (RPS scheme)

539,000 INR	
Characterization of Damage in Armours subjected to Ballistic Impact through Non-Destructive Evaluation (NDE), 5,65000 INR	Proof and Experimental establishment , DRDO, Ministry of Defence, GOI
Heat Transfer and Pressure Drop Characteristics of Turbulent Flow through a Circular Tube Fitted with Helical Ribs and Twisted Tapes with Oblique Teeth, 19,55000	DST, GOI

Industry-Institute Interaction

A two-week Refresher Course was successfully organized by Mechanical and Aerospace Engg. & Applied Mechanics Dept for twenty one Engineers working in Larson and Toubro Limited (L&T) from 18-30th June, 2012.

Dr. P.P.Dey worked as the Coordinator for the above course.

No. of publications: (This year only)

Journal: 36

Conference: 13

Books / Monograms: Nil

(List to be included)

1	Thermohydraulics of Turbulent Flow through Square and Rectangular Ducts with Transverse Ribs and twisted Tapes with and without Oblique Teeth	Journal of Enhanced Heat Transfer	2011	18 (4)	281-293
2	On the Efficacy of an Active Absorber with Internal State Feedback for Controlling Self-Excited Oscillations	Journal of Sound and Vibration	2011	330	1285-1299
3	Modeling and analysis of solar photovoltaic-electrolyser- fuel cell hybrid power system integrated with a floriculture greenhouse	Energy and Buildings	2011	42 (11)	2036-3043
4	A review of ventilation and cooling technologies in agricultural greenhouse application	Iranica Journal of Energy and Environment	2011	2 (1)	32-46
5	Performance Analysis of a Floriculture Greenhouse Powered by Integrated Solar PV-Fuel Cell System	ASME Journal of Solar Energy Engineering	2011	133 (4)	1-7
6	Biomass integrated gasification fuel cell systems - Concept development and experimental results	Biomass and Bioenergy	2011	35 (1)	354-362
7	Influence of Different Bell Shaped Stenoses on the Progression of the	Journal of Mechanical Science	2011	25 (8)	1933-1947

	Disease, Atherosclerosis	and Technology			
8	Influence of Primary Stenosis on Secondary One and Vice Versa in case of Double Stenoses	Journal of Applied Fluid Mechanics	2011	4 (4)	31-42
9	Visualization of flow boiling heat transfer in a microtube	Heat and Mass Transfer	2011	47 (8)	941-949
10	A Case Study on Municipality Solid Waste Management in Salt Lake City	International Journal of Engineering Science and Technology	2011	3 (8)	6208-6211
11	Prevention of Industrial Accidents Using Six Sigma Approach	International Journal of Lean Six Sigma	2011	2 (3)	196-214
12	Self-excited Oscillation under Nonlinear Feedback with Time-delay	Journal of Sound and Vibration	2011	330(9)	1860-1876
13	On the Stiffness-Switching Methods for Generating Self-Excited Oscillations in Simple Mechanical Systems	Journal of Sound and Vibration	2012	331(8)	1742-1758
14	Two-phase Natural Circulation Loops: A Review of Recent Advances	Heat Transfer Engineering	2011		Accepted for publication
15	Mathematical Model Development for Optimum Orientation of a Flat Plate Collector	Journal of Energy and Environment	2011		Accepted for publication
16	A Numerical Study on the Performance of a Sudden Expansion with Multistep as a Diffuser	International Journal of Applied Mechanics	2011		Accepted for publication
17	Environmental impact of using bio-diesel as fuel in transportation: a review	International Journal of Global Warming	2011	3(3)	232-256
18	Mathematical model development for optimum orientation of a flat plate collector	Journal Energy & Enviroment			Accepted for publication
19	Construction of 2-D parametric surfaces bounded with four irregular curves	International Journal of Computer aided Engineering and Technology	2012	4(5)	474-478
20	Thermohydraulics of laminar flow through a circular tube having integral helical rib roughness and fitted with centre-cleared twisted-tape	Exp. Thermal Fluid Science	2012		In press

21	Thermohydraulics of laminar flow of viscous oil through a circular tube having integral axial rib roughness and fitted with centre-cleared twisted-tape	Exp. Thermal Fluid Science	2012		In press
22	Laminar flow heat transfer enhancement using transverse ribs and helical screw-tape insert	AIAA J Thermophysics and Heat Transfer	2012		In press
23	Friction and thermal characteristics of laminar flow of viscous oil through a circular tube having axial corrugations and fitted with helical screw-tape Inserts	ASME J Fluids Engineering	2012		In press
24	Heat Transfer Enhancement of laminar flow through a circular tube having wire-coil inserts and fitted with centre-cleared twisted-tape	ASME J Thermal Science and Engineering Applications	2012		In press
25	Enhancement of heat transfer of laminar flow of viscous oil through a circular tube having integral axial rib roughness and fitted with helical screw-tape inserts	Heat Transfer Research	2012	43(2)	1-21
26	Thermohydraulics of laminar flow of viscous oil through a circular tube having axial corrugations and fitted with centre-cleared twisted-tape	Exp Thermal Fluid Science	2012	38	201-209
27	Heat Transfer, Thermodynamics and Thermal Power Laboratory Description	Int. J Microscale and Nanoscale Thermal and Fluid Transport Phenomena	2012	3(2)	
28	Advances in biomimetic fluid flow at different scales	Nanoscale Research Letters	2011	6:344	
29	Visualization of flow boiling heat transfer in a microtube	Heat and Mass Transfer	2011	47(8)	941-949
30	Influence of Different Bell Shaped stenoses on the Progression of the Disease, Atherosclerosis	Journal of Mechanical Science and Technology	2011	25(8)	1933-1947
31	Influence of Primary Stenosis on Secondary One and Vice Versa in case of Double Stenoses	Journal of Applied Fluid mechanics	2011	4(4)	31-42
32	Modelling and Analysis of 2-D Flow in a Sudden Expansion with Central Restriction – Viewed as a Combustor	International Journal of Engineering Sciences Research	2011	2(5)	371-380
33	A Numerical Study on the Flow through a Plane Symmetric Sudden Expansion with Fence viewed as a Diffuser	International Journal of Engineering, Science and Technology	2011	3(8)	210-233
34	On the Efficacy of an Active Absorber with Internal State Feedback for	Journal of Sound and Vibration	2011	330	1285-1299

	Controlling Self-Excited Oscillations				
35	Investigating morphology of proximal femur of Indian Population towards design of femoral stem	Journal of Long Term Effects of Medical Implants	2012	ISSN: 1934-0508 Online in press	ISSN: 1050-6934 Print
36	Ultrasonic Assessment of Bullet Inflicted Damage in Aramid Laminated Composites	Defence Science Journal	2012	62(3)	153-158

List of Conferences

1	Safety Analysis on industrial Noise Hazards – Preventions and Management	National Conference on Industrial Engineering	WBUT, Kolkata	2011	
2	A Holistic Approach for Integrated Solid Waste management System at Kolkata Municipality Corporation Area	IEEE 18th International Conference on Industrial Engineering and Engineering Management	Chang Chune, China	2011	
3	Performance analysis of Solar PV- Fuel cell integrated floriculture greenhouse	5th ASME International Conference on Energy Sustainability and 9th Fuel Cell Science	Engg. & Tech. Conf., Washington DC USA	2011	ESFuelCell 2011-54017
4	Simulated performance of an integrated biomass gasification combined cycle employing indirectly-heated gas turbine	International Conference on Mechanical Engineering (ICME2011)	Dhaka	2011	Published
5	Fractal Dimension of Waveforms as a Useful Feature in Ultrasonic Imaging	18th World conference on NDT (18thWCNDT)	Durban, South Africa	2012	Presented and published
6	Imaging of Impacted Composite Armours using Data Clustering	18th World conference on NDT (18thWCNDT)	Durban, South Africa	2012	Presented and published
7	A sensitivity analysis of different kinematic hardening parameters of Chaboche model for Low Cycle Fatigue simulation	Fatigue Fracture Integrity Assesment (FFIA - 2012)	Jamshedpur	2012	Presented in the symposium

8	Non-linear dynamics of time-delayed feedback control system by FFT based IHB method	Fourth International Conference on Structural Stability and Dynamics (ICSSD 2012)	Jaipur	2012	Presented and published
9	Study on the Performance of a Condenser used in a 210 MW Thermal Power Unit	Proc. of the Int. Conf. on Design and Advances in Mechanical Engineering (ICDAAME 2011)	Tiruvannam alai	2011	Presented and published
10	Study on the Variation of Effectiveness, Effective Length of Diffuser and Stagnation Pressure, with the Configuration of a Sudden Expansion with Two Fences	Proc. of 9th Int. Conf. on Mechanical Engineering	Dhaka	2011	Presented and published
11	Numerical Study on Flow Characteristic through Sudden Expansion with the help of Sream Line Contours	Proc. of the Int. Conf. on Mechanical Engineering Technology	Palai (India)	2011	Presented and published
12	Study on Average Static Pressure Characteristics and their related important parameters in case of a Sudden Expansion Configuration used as a Diffuser	Proc. of UGC National Conf. on Advances in Computer Integrated Manufacturing (NCACIM-II),	Jodhpur	2012	Presented and published
13	Effect of Reynolds Number on Biomagnetic Fluid Flow through a Channel under the action of Constant Magnetic Field placed at the Bottom Wall	Proc. of National Conference on Innovation In Mechanical Engineering, Singhad Institute of Technology	Lonalva	2012	Presented and published

Seminar / Workshops / Conferences / Training programme organized by the department (in last year)

i) One day workshop titled Recent Advances in Thermal Engineering (RAME) was organised in the department in November 2011.

ii) One day workshop titled Workshop on Advances in Mechanical Engineering (WAME) was organised in the department on 1st February 2012.

Department of Metallurgy and Materials Engineering

ABOUT THE DEPARTMENT:

The Department of Metallurgy started its journey at the Bengal Engineering College in 1939 with the introduction of a three year degree course in Metallurgy under the Calcutta University. Bengal Engineering College is one of the oldest engineering institutions in India and the department is the second oldest metallurgy department of the country.

In 1953 the Department introduced a 2-year Postgraduate degree programme in Physical Metallurgy which now became a 4-semester course at the All India level. It may be mentioned that this department was the first to introduce a postgraduate course in metallurgy in this country.

Prof. N. N. Sen who later became Principal of the College, was the first Professor and Head of the Department of Metallurgy, Chemistry and Geology. In 1965 Chemistry was made a separate department and Geology was attached to the Department of Mining.

In 1949, Prof. W. Baukhloh of Techniche Hach Schule, Berlin joined the Department as a Professor of Metallurgy and many foreign trained faculties joined the Department. There was a spurt in the research activity in the Department since 1949, particularly after Dr. A. K. Seal joined the Department after completing his Ph.D in Sheffield University. In fact, the Department owes much of its eminence and wide-spread fame due to the tireless efforts of Dr. A. K. Seal and the gifted and dedicated faculties in the Department.

Over the years the Department has produced a good number of eminent metallurgists working with distinction in India and abroad who have made significant contribution in the fields of Metallurgy and Materials Engineering. The Department has, so far, produced a good number of Ph.D.s, and several Ph.D. programmes are running in the Department.

This Department has always been very active in incorporating the recent trends in the fields of Metallurgy and Materials Engineering and in evolving suitable means for effective technology transfer to the existing industries. The Department has already pioneered in the development of

certain important steels and alloys like HSLA steels, maraging steels, shape memory alloys etc. These developments have had a tremendous impact on the total development of the subject in the national scenario and by this it has contributed significantly to the cause of Metallurgy and Materials Engineering of India today. The Department has always worked with inadequate resources but still has achieved academic distinction. All efforts have been successful solely due to excellent interaction with industries, institutions and research houses created by a band of devoted faculty members. The department feels proud to announce its collaborative ventures with organisations like TISCO, SAIL, ISRO, BARC, NML, ICDC, NMRL.

The Department is now actively engaged in modernizing the existing laboratories along with the development of newer ones in accordance with the current trends in Metallurgy and Materials Engineering. The department has been receiving aids towards Modernization of various Laboratories as well as in the form of Sponsored Research Grants from various sources. This has enabled us to consolidate the undergraduate and postgraduate training and research in Metallurgy and maintain our tradition as one of the leading centers for metallurgical education and research in the country. During the Golden Jubilee celebration of the Department in 1989-1990, M/s. M. N. Dastur & Co. showed its affection towards the Department by advancing funds for Research on Materials Science and Engineering. Further, the Chair of Tata Golden Jubilee Professor was instituted during the same year by an endowment of Tata Steel, to lead advanced research and consultancy work. The Steel Authority of India is funding for Steel Chair Professor and giving scholarship to the UG students with the undertaking of making their career in the field of ferrous metallurgy.

The Department to-day is thus in a position to undertake various advanced research and consultancy work in various fields, to fulfill the vision of those who were pioneer in establishing and in nurturing the Department. A vigorous Ph.D. programmes continues in the Department and a large number of Ph.D. candidates are pursuing their Ph.D programmes. Faculty members of the Department have also received awards, medals, fellowships, patents from Government of India and other professional bodies. Some faculty members are also pursuing collaborative programmes with foreign universities.

ACADEMIC PROGRAMMES:

The Department offers the following courses:

i)   4-year Undergraduate Programme leading to B.E. Degree in Metallurgy and Materials Engineering.
ii)   Regular 4-semster Postgraduate Programme leading to Masters Degree in Metallurgy and Materials Engineering with specialization in Physical Metallurgy
iii) 6-semester Part-time PG Course leading to Masters Degree in Industrial Metallurgy.

Number of students admitted at under graduate level -   30
Number of students Passed out at Master's Level-   2
Number students enrolled Ph. D. programme-   11

Number of students completed Ph.D. programme-   01

FACULTY POSITION:

Sanctioned faculty post 14   Vacant Post   05

Faculty profile

Name	Designation	Highest Qualification	Specialisation/ Research Area	Contact No. E-mail:
Sanjoy Sadhukhan	Associate Professor & Head	M.Tech	Physical Metallurgy, Materials Characterization, Mechanical testing, Heat treatment	033-2668-4561 to 63 (Extn: 236) skhan_besus@yahoo.co.in
Dr. S. Chatterjee	Professor	Ph.D	Microalloyed Steel, Advance joining technique	033-2668-4561 to 63 (Extn: 236) schatterjee@metal.becs.ac.in
Dr. P. P. Chattopadhyay	Professor	Ph.D	Phase Transformation	033 2668-4561 to 63 (ext-2) ppc@metal.becs.ac.in
Dr.A. Basumallick	Professor	Ph.D	Nanostructured Materials, Electronic and Magnetic materials	033-2668-4561 to 63 (ext- 236) abasumallick@metal.becs.ac.in
Sumit Ghosh	Associate Professor	M.E.	Development and Characterization of in situ metal matrix nanocomposites	033 2668-4561 to 63 (Ext - 236) g_sumit@metal.becs.ac.in
Dr. Swarup Kr. Ghosh	Associate Professor	Ph.D	Phase Transformation, Ferrous and non-ferrous alloys, ANN modelling study	(033) 26684561 to 63, (Extn: 236) skghosh@metal.becs.ac.in
Manojit Ghosh	Associate Professor	Ph.D	TMSof Aluminium Alloys Texture study Powder Metallurgy of self lubricating bearing	033-2668-4561 to 63 (ext-236) manojit_ghosh1@rediffmail.com
Debdulal Das	Assistant Professor	M.Tech	Phase Transformation Wear of Materials Nanomaterials & Nanocomposites	033-2668-4561 to 63 (ext-236) debdulal_das@metal.becs.ac.in
Dr. Sukumar Kundu	Assistant Professor	Ph.D	Physical Metallurgy, Advance Joining technique, Wear resistance materials,	033-2668-4561 to 63 (ext-236) erskundu@yahoo.com
Dr. P. S. Banerjee (Under extension)	Professor	Ph.D	Corrosion, Process metallurgy	033-2668-4561 to 63 (ext- 236) psban_2000@yahoo.co.in

Name	Designation	Highest Qualification	Specialisation/ Research Area	Contact No. E-mail:

Dr. T. K. Ray	Adjunct Professor	Ph.D.	Iron and Steel making	033-2668-4561 to 63 (ext- 236)
Prof. H. S. Ray	Adjunct Professor	Ph.D.	Extractive Metallurgy	033-2668-4561 to 63 (ext- 236)
Prof. U. K. Chatterjee	Adjunct Professor	Ph.D.	Corrosion	033-2668-4561 to 63 (ext- 236)
Dr. S.K. Bhattacharya	Steel Chair Professor	Ph.D.	Steel Making	033-2668-4561 to 63 (ext- 236)

Technical and Non technical existing supporting Staff: 21 (Technical Staff: 12, Office Staff: Nil)

AREAS OF RESEARCH

- High strength low alloy steel
- Ultra low carbon bainitic steel
- Ultra high strength steel
- Dual phase steel
- Nano Materials
- Shape memory alloys
- Diffusion bonding
- Friction of Stir Welding
- Metal matrix composite
- Texture of metal and alloys
- Aluminum based alloy

RESEARCH FACILITY:

Upgradation of Research facilities in the The Department of Metallurgy and Materials Engineering is a continuous process for creating a better environment for academics and research. A number of new equipment and instruments are acquired regularly for various laboratories, pertaining to rapidly expanding research horizons. A major research area for materials development and characterization comprises the broad fields of Metallography and Optical and Electron microscopy laboratories, the X-ray laboratory and the Differential Scanning Calorimetry (DSC) laboratory. The Physical Metallurgy laboratory, which has traditionally been the most important one in the Department, consists of an adequate sample preparation section, including abrasive cutter and Electro-polishers; a number of heat treatment furnaces with programmable control; high temperature (1700°C) furnaces capable of powder sintering.

The optical microscopy section has been modernised with a number of Research grade microscopes with micro-hardness testing facility. The acquisition of the Scanning Electron Microscope with EDS system has given a new impetus to advanced research. For research in the field of Mechanical Metallurgy, the department has two Instron Testing machines, one static and the other, a dynamic machine with servo-hydraulic drive. A laboratory scale Rolling mill, various hardness testers, Impact testing machine etc are the other facilities in this area.

Recent additions have been made to augment the gamut of research areas. The Wear Testing facility enables investigations in the field of Tribology. Researches have been in progress in the field of nano-structured materials, produced by different routes. Planetary Ball Mills have been installed for the

mechanical alloying route for powders. A device for evaluating magnetic properties of materials is another notable addition in the field of research on new materials. The X-ray diffraction unit for phase identification and the Differential Scanning Calorimeter for characterization are the important facilities, which are now used intensively for meaningful research.

The Department also has a large computer laboratory with internet connectivity, which shall induce further in researches on simulation and modelling.

Procurement of several other equipments, which is in the pipe line, shall further boost the research capability of the Department in near future.

The Department can boast of a rich tradition of research, mostly with practical and industrial applications. Sponsored and Collaborative projects have been taken up and completed for organisations like Bhabha atomic Research Centre (BARC), Indian Space Research Organisation (ISRO), UGC, AICTE, Ministry of Steel, Govt. of India, Ministry of Defence, Govt. of India, Defence Research and Development Laboratory, Naval Research Laboratory etc.

The important Projects of the Department are mentioned in a separate section to give a glimpse of the wide range of vigorous research activity of the faculty members of the small but dynamic Department.

Instrument and Equipment facilities:

- Air Induction furnace
- Heat Treatment Furnaces (up to 1700° C), Sintering furnace
- Abrasive cutter, Grinding and Polishing facilities, Electropolisher
- Optical Microscopes, including Research microscopes (Carl Zeiss, Leica)
- Hardness Testers
- Micro-hardness Testers (Leica & Reichart)
- Scanning Electron Microscope with EDS facility
- Differential Scanning Calorimeter
- Instron Testing machines - Static & Dynamic (Servo-hydraulic)
- Charpy Impact Testing machine
- Diffusion bonding set-up for joining dissimilar metals
- X-ray Diffraction unit ((Philips)
- Planetary Ball Mill for nano-material preparation and Mechanical alloying Wear Testing machine
- Computer laboratory
- Magnetic hysterisis measuring device
- Friction stir welding Machine

NAME OF THE LABORATORIES

- Optical metallographic Laboratory
- Heat Treatment Laboratory
- Computer Laboratory
- Corrosion Laboratory
- X-ray Laboratory
- SEM Laboratory
- Melting and casting
- Foundry Laboratory
- Smithy Laboratory
- welding Laboratory

CONSULTANCY WORK

Brand ambassador of PMC Prestige TMT bars- sponsored by Purulia Metal Casting PVT. LTd. - Rs. 250000/- for three years, PI: S. Sadhukhan

SUPPORT STAFF POSITION:

(i) Sanctioned technical post : **26**
(ii) Technical staff profile

Name	Designation	Highest Qualification	Contact No.
Sri Shyamal Chakraborty	Lab. Asst.	BSc	09874595387
Sri Salil Kr. Dalui	Tech. Asst. II	BE (Met.Eng.)	09831435065
Sri Swapan Kr. Jana	Tech. Asst. II	Diploma (Mech.)	09231791660
Sri Santanu Chattopadhyay	Supdt. Tech	Diploma (Mech.)	09830229800
Sri Rash Behari Nayak	Supdt. Tech	Diploma (Mech.) & Adv. Diploma in Foundry Tech.	09231828193
Sri Jayanta Kr. Chandra	Supdt. Tech	Diploma (Mech.) & Adv. Diploma in Foundry Tech.	09433739104
Sri Sujit Kr. Roy	Supdt. Tech	Non-Matriculate	09143469096
Sri Bagala Prasad Patra	Tech. Asst. II	H.S. & NCVT	09635860758
Sri Ranjit Karmakar	Workshop Instructor	Non-Matric	09433609711
Sri Rupchand Naskar	Workshop Instructor	ITI	07872331640
Sri Srikanta Adak	Workshop Instructor	ITI	09143757199
Sri Samarnath Panja	Workshop Instructor	ITI	08902131912

SPONSORED RESEARCH:

Development of diffusion bonded joints between Titanium alloy and micro-duplex stainless steel with intermediate, sponsored by Science and Engineering Research Board (SERB), PI: S. Kundu

INDUSTRY-INSTITUTE INTERACTION

- Colorado School of Mines, Golden, USA
- University of Queensland, Australia
- University of New South Wales, Sydney, Australia
- Australian National University, Australia
- Tata Steel, Jamshedpur
- IISc Bangalore
- IIT Kharagpur
- IIT Kanpur
- NML, Jamshedpur
- Jadavpur University

NO OF PUBLICATIONS: (this year only)

Journal: 18
Details of Journal publication 2011-2012

1. "Energy Survey for Indian Non-ferrous Industries", M. Ghosh, P.S. Banerjee, H.S. Ray and D. De. Sarkar, Proceedings of the seminar on "Research and Application of Environment-friendly Solutions for Metallurgical industries", 2012, p.34

2. P. S. Bandyopadhyay, S. Kundu, S. K. Ghosh and S. Chatterjee, Structure and properties of a low-carbon, microalloyed, ultra-high-strength steel, Metallurgical and Materials Transactions A, 42A (2011) 1051-1061.

3. P. S. Bandyopadhyay, S. K. Ghosh, S. Kundu and S. Chatterjee: Evolution of microstructure and mechanical properties of thermomechanically processed ultrahigh strength steel, Metallurgical and Materials Transactions A, 42A (2011) 2742- 2752.

4. S. Chatterjee, S. K. Ghosh, P. S. Bandyopadhyay and Sanak Mishra: Phase transformation and mechanical properties of an ultrahigh strength steel, Journal of Iron and Steel Research International, 18 (Supplement 1-1) (2011) 192-199.

5. S. K. Ghosh, P. S. Bandyopadhyay, S. Kundu and S. Chatterjee: Copper bearing microalloyed ultrahigh strength steel on a pilot scale: microstructure and properties, Materials Science and Engineering A, 528 (2011) 7887-7894

6. R. Shukla, S. K. Das, B. Ravi Kumar, S. K. Ghosh, S. Kundu and S. Chatterjee: An Ultra-low Carbon, Thermomechanically Controlled Processed Microalloyed Steel: Microstructure and Mechanical Properties, Metallurgical and Materials Transactions A, 43A (2012) 4835-4845.

7. S. K. Ghosh: Anomalous Dilatometric Response in Fe–Mn–Al–Si Steel, Journal of the Institution of Engineers (India): Series D, 93 (1) (2012) 1-5.

8. S. K. Ghosh, D. Mahata, R. Roychaudhuri and R. Mondal: Effect of Rolling Deformation ad Solution Treatment on Microstructure and Mechanical Properties of a Cast Duplex Stainless Steel, Bulletin of Materials Science, 35 (5) (2012) 839-846.

9. S. K. Ghosh and P. P. Chattopadhyay: Phase Evolution and Mechanical Behavior of 0.36 wt% C High Strength TRIP-Assisted Steel, Steel Research International, 83 (2012) (12) 1163-1171.

10. S. Chatterjee and S. K. Ghosh: Evolution of Phases and Mechanical Properties of Thermomechanically Processed Ultra High Strength Steels, International Symposium Volume, NMD-ATM 2012, Tata Steel, Jamshedpur, India, 2012.
11. S. Chatterjee and S. K. Ghosh: Evolution of Microstructures and Mechanical Properties of Thermomechanically Processed Ultrahigh Strength Steels, Simpro'12, Research and Development Centre, SAIL, Ranchi, India, 2012.

12. Subhranshu Chatterjee, A. Basu Mallick: Enhancement in field emission characteristics of multifunctional ZnO/C hybrid nanostructures, Materials Chemistry and Physics, 135 (2012)411-415
13. B.N. Mondal, S.Chabri, A.Basumallick , P.P.Chattopadhyay: Influence of ternary addition oftransition elements(Cr,SiandMn) on the microstructure and magnetic properties of nano-structured Cu–Co alloy;, Journal of Magnetism and Magnetic Materials 324 (2012) 2776–2780.
14. S.P.Pati, B. Bhushan, A.Basumallick, S. Kumar, D.Das : Exchange bias and suppression of superparamagnetism of α- Fe nanoparticles in NiO matrix: Materials Science and Engineering B: Solid-State Materials for Advanced Technology. Vol. 176, no. 13, pp. 1015-1020. 15 Aug 2011.
15. Gobinda Gopal Khan, Arijit Sinha, A. Basumallick, P.P.Chattopadhyay: Photoluminescence of the electrochemically grown porous oxide layer on the NiTi alloy surface; J. Tribology and surface engineering vol 2, issue 1-2, pp 109-106, 2011.

16. R. Goswami, P.Deb, R. Thakur, K.P. Sarma, A. Basumallick : Removal of As(III) from aqueous solution using functionalized ultrafine iron oxide nanoparticles :. Separation science and technology, volume 46, no 6, pp 1017-1022, 2011.
17. B.N. Mondal, A.Basumallick, D.N.Nath and P.P.Chattopadhyay: Effect of Mn on the microstructure and magnetic properties in Cu-Fe-Co alloys; Metallurgical and Materials Transactions A vol 42 No 2 pp 517-523, 2011.
18. Mahuya Das, Dipa Ray, Sri Bandyopadhayay, Nil. R. Bandyopadhyay, Amitava Basumallick: Thermogravimetric and resistivity study of ex-situ and in-situ poly(methy lmethacrylate) /carboxylic acid group functionalized multiwalled carbon nanotubes composites; Journal of applied polymer science, volume 120,issue 5, pp 2954-2961, 5th June 2011.

M. Seminar/ workshops/Conferences/Training programme organized by the department (in last year)

1. **Seminar on Research & Application of Environment-friendly Solutions for Metallurgical Industries, January 21, 2012**
2. **Workshop on Surface Engineering of Metals and Alloys, March 1-2, 2012**

Department of Mining Engineering

About the department

Department of Mining Engineering Bengal Engineering and Science University, Shibpur, was established in the year 1906. This department is the oldest mining engineering department in this country. Both under graduate and post graduate courses are being offered by this department, also this department is an approved QIP centre for post – graduate studies. The placement, at present, is hundred percent. Faculties of this department are involved in interdisciplinary research activities.There is significant number of research projects in the last few years which, so far,produced several PhD scholars, and also, at present, number of research scholars is also pursuing their PhD programmes. The major research areas of the faculty members are : Remote sensing and GIS applications, mine safety, workload assessment with physiological performance evaluation of miners, Environmental aspects of mining , Geo- mechanics , Mine closure policy design , Environmental modeling , Coalbed methane and Carbon sequestration. Mineral beneficiation. The major sources of funding of these research projects are DST, UGC, AICTE, MOEF, ISRO,World Bank, and BP International. A number of research publications have come out of these intensive research endeavors by the faculty members.

Academic Programmes :

Undergraduate Level

i.   Degree offered   B.E. in Mining Engineering
ii.   Sanctioned students intake   30
iii.   Additional intake through lateral entry in 3rd Semester   3

Post graduate Level

i.   Degree offered   M.E. in Mining Engineering
ii.   Sanctioned students intake   18
iii.   Additional intake through other programmes (i.e. QIP) Nil
iv.   Specialisations in   Mining Engineering

Doctoral Level

i.   Degree offered   Ph.D in Mining Engineering
ii.   No. of candidates Enrolled: 7
                              Registered: NIL
                              Awarded :   3

Faculty position:

Sanctioned faculty post 12 Vacant Post3

Faculty profile (in the following table)

Name	Designation	Highest Qualification	Specialisation/Research Area	Contact No E-mail
S. Sinha	Professor& Head	PhD	Opencast. Environment	suranjan1980@gmail.com
P.K.Paul	Professor	PhD	Metal Mining. GIS and Remote Sensing	prabirpaul59@gmail.com
N.C.Dey	Professor	PhD	Coal Mining. Safety and Ergonomics	netaidey@hotmail.com
I.N.Sinha	Professor	PhD	Mine Environment	indranath.sinha@gmail.com

P.Dutta	Associate Professor	PhD	Rock Mechanics. Coal Bed Methane	dutta.pratik@gmail.com
S.Mukhopadhyay	Assistant Professor	PhD	Mineral Dressing	sudipta1973@yahoo.com
A. Ghosh	Assistant Professor	PhD	Mine Planning	apurnag2000@yahoo.com
G .C.Roy	Assistant Professor	PhD	Coal Mining. Mining Machinery	gcroy_besus@yahoo.co.in
Md.M.Islam	Assistant Professor	M.Tech	Rock Mechanics, Management	miraj77@gmail.com

Award s and Laurels :

Dr. Rajendra Prasad Memorial Award for best paper to Prof. P.K. Paul

Research area (only mention broad titles without description in detail)

1. GIS and Remote Sensing
2. Ergonomics and Safety
3. Coal Bed Methane
4. Carbon Sequestration
4. Rock Mechanics
5. Mine Planning
6. Ventilation Planning

Research facilities : (name specific equipment/picture.)

GIS and Remote Sensing : The department has well established GIS and Remote Sensing research laboratories. The facilities include GIS software's like ARCMAP, ILWIS, GEOMEDIA etc. and Remote Sensing software's like ERDAS, ENVI etc. The department has AO scanner, AO plotter, workstations, handheld GPS and other associated software.
Safety and Ergonomics: The department has a good infrastructure for research and consultancy in the field of safety and ergonomics. The infrastructure include Oxylog consumption monitor, whole body vibration meter, hand arm vibration meter, mobile heart rate monitor. Asman Hygrometer etc
Coal bed Methane and Carbon sequestration: The department has a Gas Flow Characterization Laboratory for studies on unconventional gas reservoirs. The facilities include high-pressure adsorption isotherm test set up and core flooding experimental facility for evaluation of permeability. State-of-the-art instruments like Gas Chromatograph, syringe pump, and data acquisition system are available in the Laboratory.
Rock Mechanics: The department has well established rock mechanics laboratory which includes, UTM, Rock drilling and cutting machines, Shear testing apparatus, Triaxial set up and software necessary for analysis.
Mine Planning: The department uses SURPAC and MINEX software for mine planning and design.
Survey : The department has well established survey laboratory. The equipment in lab includes, total station, electronic theodolite, DGPs and single frequency GPS.

Name of the laboratories :

Mine Survey Laboratory	1. Dual frequency GNSS Receivers for DGPS survey 2. Single frequency GNSS receivers for DGPS survey 3. Hand held GPS 4. Robotic Total Station 5. Total Station 6. Electronic Theodolite 7. Levels 8. LISSCAD software 9. Ski Pro software
Computer Laboratory	1. PC's 2. Server 3. Surpac 4. Minex 5. RocScience
Gas Flow Characterization Laboratory	1. Gas Chromatograph 2. Adsorption Isotherm set up 3. Syringe pump 4. Core Flooding set up
Rock Mechanics laboratory	1. 100 ton UTM 2. Rock drilling and cutting machine 3. Rock permeability testing setup 4. Shear box test setup 5. Triaxial test setup
GIS and Remote Sensing laboratory	1. ARCMAP 11 (3 users) 2. ERDAS 2011 (5 users) 3. Envi 5.0 (10 Users) 4. Geomedia Professional 5. Raster to vector software 6. ILWIS 7. Modflow 8. A0 Scanner 9. A0 Plotter 10. Servers 11. Workstations
Mineral Dressing Laboratory	1. Jig Based Pilot Plant 2. Hydrocyclone test rig 3. Jaw crusher 4. Raymond Mill 5. Pulverizer
Safety and Ergonomics Laboratory	1. Oxygen consumption monitor (Oxylog) 2. Whole body vibration meter 3. Hand arm vibration meter 4. Mobile heart rate monitor(Polar) 5. ECG, Asman Hygrometer 6. TMT 7. Globe thermometer 8. Goniometer(digital + axis)
Mine Ventilation Laboratory	**1.** Blast vibration measuring Instrument 2. Gravimetric Dust Sampler 3. Gas Chromatograph 4. Rescue Apparatus 5. Crossing Point Apparatus 6. High volume air sampler

LANDCOVER AND LANDUSE
KALIMPONG SUB DIVISION, W.B.

RL OF WATER TABLE POSTMONSOON
MINING AREAS OF BURDWAN DISTRICT, WEST BENGAL
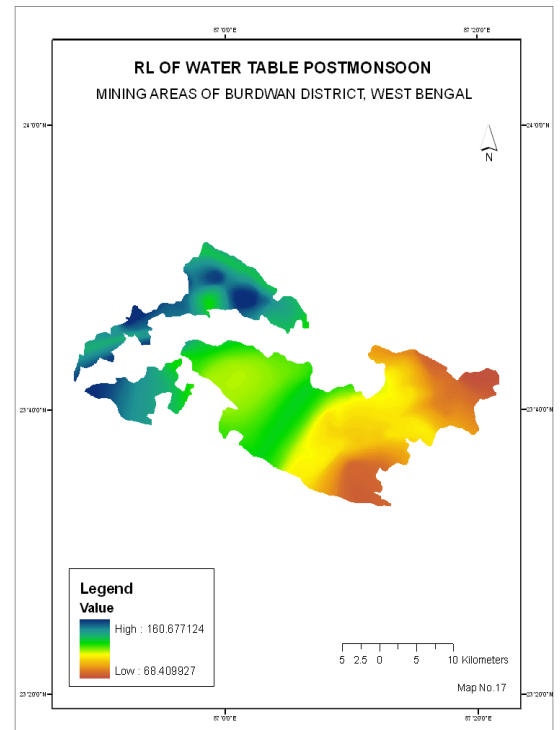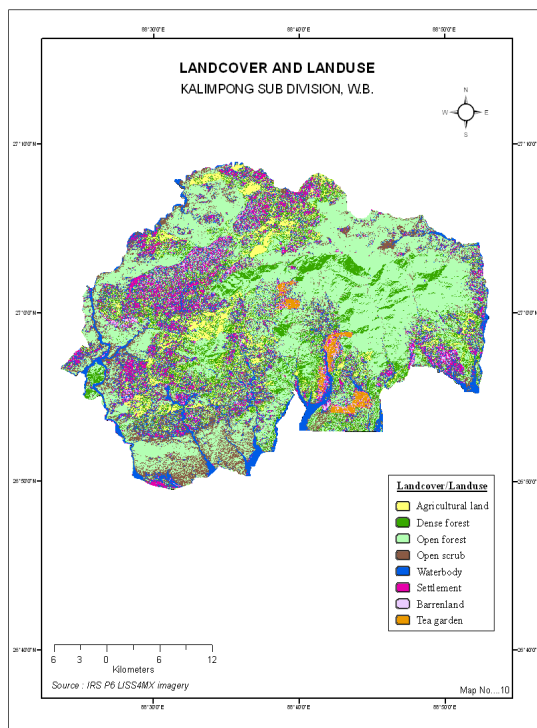
Consultancy Work

1. Testing of chemical composition of cement capsules for U/G roof.
2. Geotechnical properties of rock and top soil for Nimbri-Chandawatan project of Binani cement Ltd.
3. Geotechnical properties of coal-measure rocks for Mahuagarhi coal company Ltd.

Support staff position:

    (i) Sanctioned technical post: 5

    (iii)   Technical staff profile (in the following table)

Name	Designation	Highest Qualification	Contact No.	E-mail
Prasanta Gope	Tech-Asst-(Gr-l)	Diploma in Mining		
Janardan Kar	Tech-Asst-(Gr-ll)	Diploma in Mining		
Amitava Chowdhury	Tech-Asst-(Gr-ll)	Diploma in Mining		
Saibal Ghosh	Sr. Instrument Mechanic	I.T.I		

    Sponsored Research :

Ongoing	Sponsoring agency
Ergonomics	UGC
Mine closure	MOEF
Environment	DST
Mineral Dressing	UGC
GIS and Remote Sensing	MOEF

    Industry – Institute Interaction

    No. of publications : (This year only)

    Journal   12
    Conference   07

    Seminar/Workshops/Conferences/Training programme organized by the department (in last year).

Tunnelling techniques - Quo Vadis?".Held on 26th and 27th November 2010, at Floatel, Kolkata. Jointly organized with Journal of Minines Metals and fuels.

Department of Department of Physics

About the department

The department of Physics has a century old past and has come through the era of revolutionary thoughts in the world of physics to the present century of technological revolution. As far back in 1926, Prof. Satyendra Nath Bose and Prof. Meghnad Saha , then post graduate students of Calcutta University used to come to this department to study original works of Max. Planck and Albert Einstein. Our library was so rich even at that time under the able leadership of Prof. Bruhl. They also used to do their M.Sc. practical in the laboratory of this physics department. An unforgettable name in the history of the department is Prof. S.S. Boral, who initiated the course on Electronics and Telecommunications which itself finally branched out to be one of the advanced engineering department of the university. Our department can justifiably feel proud of eminent teachers like Prof. P.K. Chattopadhyay, Prof. B.R. Gupta, Prof. N.C. Mukherjee, Prof. M. Mitra and others who taught the undergraduate engineering students of B.E. College and made a strong base for their further studies. Our present faculty members are also faithfully tracing their paths.

The year 2000 was a landmark for our department when the M.Sc. course in Applied Physics was introduced. New faculty members started joining the department, having expertise in modern thrust areas of physics and related technology. On the one hand, theoretical works are being pursued in the field of *Nuclear and High energy physics* and *Atomic and Molecular physics*; on the other hand in view of latest technological advancement, different studies are carried out in the field of *Fiber Optics, Electroceramics*, *Spectroscopy of Laser and Luminescent materials*, *Transport phenomena in solids*, *Synthesis of Nanomaterials by sol gel route and their characterization, Silicon nanostructure based : Light emitters, Detectors, Sensors etc.* At the same time, experimental works are undertaken creating a rich environment of advanced research. In the last five years the faculty members of the department have contributed more than 100 research papers in international journals of repute and international conference proceedings. Many of our students are engaged in research and some of them are also in scientific jobs in various premier research institutions of India, such as SINP, IACS, TIFR, BARC, IPR, CGCRI etc. A considerable number of them are pursuing Ph.D. programme in the department itself.

Academic Programmes:

Undergraduate Level

i.	Degree offered	BE (Physics course for 1st ,2nd semesters (all) and 3rd Semester (EE and ME))
ii.	Sanctioned students' intake	500 approximately
iii.	Additional intake through lateral entry in 3rd Semester	-

Postgraduate Level

i.	Degree offered	M.Sc. in Physics
ii.	Sanctioned students' intake	25
iii.	Additional intake through other programmes (i.e. QIP)	nil
iv.	Specialisation in	Material Physics

Doctoral Level

i.	Degree offered	Ph.D
ii.	No of candidates enrolled	6
	registered	5
	awarded	-

Faculty position:

Sanctioned faculty post: 14 Vacant Post …4 (3 assistant profs+ 1 associate prof.)……
Faculty profile (in the following table)

Name	*Designation*	Highest Qualification	Specialization / research area	E-mail
Dr.Sukhendusekhar Sarkar	Professor	M.Sc., Ph.D	Nuclear Physics Nuclear Structure & Nuclear Astrophysics	ss@physics.becs.ac.in
Dr. Bichitra Kr. Guha	Professor	M.Sc., M.Phil., Ph.D	Solid State Physics Electroceramics	bkg@physics.becs.ac.in
Dr.(Mrs.) Dipali Banerjee	Professor	M.Sc., M.Phil., Ph.D	Solid State Physics Transport properties of solids	banerjee_dipali@yahoo.co.in
Dr. Sampad Mukherjee	Asstt. Professor.	M.Sc., Ph.D	Solid State Physics Synthesis and characterization of nano materials	smukherjee0309@yahoo.com
Dr. Mousumi Basu	Asso. Professor & Head	M.Sc., M.Tech., Ph.D	Fibre Optics in linear and nonlinear domain	mbasu@physics.becs.ac.in, mousumi_basu@yahoo.com
Dr. Samar Jana	Asstt. Professor	M.Sc., Ph.D	Spectroscopy of Laser and Luminescent materials	samarjana@yahoo.com, sjana@physics.becs.ac.in
Dr. Debasis Ray	Asstt. Professor	M.Sc., Ph.D	Theoretical Atomic Physics Atomic Physics in Plasmas, Laser-atom interactions, Spectroscopy of confined quantum systems, Many-body techniques in atomic physics.	dray@physics.becs.ac.in
Dr. S. M. Hossain	Asstt. Professor	M.Sc., Ph.D	Optoelectronic Materials & Devices Silicon nanostructure based : Light emitters, Detectors, Microcavities , Sensors.	shminhaz@physics.becs.ac.in
Dr. Krishnendu Mukherjee	Asstt. Professor	M.Sc., Ph.D	High Energy Physics,	kmukherjee@physics.becs.ac.in
Dr. Amit Kundu	Asstt. Professor	M.Sc., Ph.D	High Energy Physics, Cosmology	amit_kundu@physics. becs.ac.in

Research area (only mention broad titles without description in detail):

o Nuclear structure and nuclear astrophysics
o High energy physics
o Quantum field theory at finite temperature and density
o Synthesis & characterization of thermoelectric nanomaterials and composites
o Magnetic properties of materials
o Characterization of Fuel cells & its components
o Preparation & characterization of oxide glass by sol-gel route
o Spectroscopic investigation on rare earth and transition metals in search of LASER materials.
o Fluorescence and phosphorescence study of rare earth materials.
o Design and optimization of optical fibers for dense WDM system.
o Nonlinear pulse propagation through single mode optical fibers.
o Atomic Physics in Plasmas, Laser-atom interactions.
o Spectroscopy of confined quantum systems, Many-body techniques in atomic physics.
o Nanostructure based Photonics, Photovoltaics and Sensors.
o Processing and characterization of electroceramic materials used as capacitor dielectrics, sensors and actuators etc.

Research facilities: (name specific equipment / picture etc.)

1. Microprocessor controlled 1800^0C box furnace
2. Hydraulic pressing machine.
3. Hp LCR Meter
4. Spectrophotometer (UV-Visible)
5. Luminescence Spectrometer
6. Electric Furnace (1400^0C)
7. IBM- Z pro work station
8. Dell T7500 work station
9. Ultrasonic PULSER/RECEIVER instruments (MAKE- MATEC INC.).
10. Magnetic succeptibility measurement
11. Closed cycle liquid helium cryostat
12. Vacuum coating unit
13. Magnet with power supply
14. GM Counter and radioactive sample with lead shield

Name of the laboratories:

Research laboratories

1.	Synthesis and Characterization Of Oxide Glass Laboratory
2.	LASER and Luminescent Materials Research Laboratory
3.	Material Research Laboratory
4.	Fiber Optic Design Laboratory
5.	Electroceramics Laboratory

Laboratories for PG & UG studies

1.	General and electronics laboratory
2.	**Optics laboratory**
3.	Solid state laboratory
4.	Nuclear physics laboratory
5.	UG general laboratory

Support staff position:

(i) Sanctioned technical post : 3

(ii) Technical staff profile (in the following table)

Name	Designation	Highest Qualification	Contact No.	E-mail
Dr. Bibhas Ch, Mitra	TA-II	Ph.D	9434715128	bcmitra@yahoo.com
Mr. Amal Kr. Mandal	TA-II	M.Sc.	9830586320	akm627@yahoo.co.in
Mr. Sintu Das	TA-II	B.Sc.	9903262750	-
Mr. Amiya Kr. Paul	Junior Peon	H.S.	9433819077	amiyaamrita_01@yahoo.co.in
Mr. Asim Das Chakraborty	Junior Asst.	M.A.	9433126999	

1. **Accelerator And Radiation Based Collaborative Research Scheme CRS Project Using DAE Facilities:** _Title of the Project:_ Study of shape coexistence in ^{153}Ho and few-valence particle nuclei around ^{146}Gd. One Project Fellow/Research Associate plus Contingency running	UGC-DAE CSR, Kolkata Centre
2. Fiber optics Title: Studies on dispersion managed fiber and waveguides in linear and nonlinear domain P.I : Dr. M.Basu Project cost: ~ Rs. 15.6 lakhs Running from 1st March, 2010.	DST, Govt. of India
3. Synthesis & Characterization of Nano particle of Bismuth Telluride & its One dimensional Composite with Conducting Polymer. P.I : Dr. Dipali Banerjee (in collaboration with J.U) Rs. 26,83,680/-	DST, Govt. of India
4. Development of Phosphoric Acid Gel Electrolyte Matrix and Study of its Effect on Performance of Fuel Cell. Co P.I : Dr. Dipali Banerjee (in collaboration with J.U) Rs. 9,32,000/-	DRDO (CARS)
5. Expert system based Statistical Analysis of Experimental Data on performance and endurance of phosphoric acid fuel cell: Development of performance indices and neuro-fuzzy rules P.I. Dipali Banerjee (in collaboration with J U) Rs 9,34 000/-	DRDO-CARS
6. Opto-electronic properties of nano-structured porous silicon. Co-P.I. - Dr. Syed Minhaz Hossainin collaboration with SMSE, BESU, Rs. 96 lacs (Completed-2011)	DST-NSTI

7. "Solar Photovoltaic Hub at BESU" Co-P.I. - Dr. Syed Minhaz Hossain in collaboration with Center of Excellence for Green Energy and Sensor Systems, BESU, Rs. 8.5 crore (started: Jan 2011)	DST
8. "Advanced research on thin silicon solar cell and PV systems" Co-P.I. - Dr. Syed Minhaz Hossain in collaboration with Center of Excellence for Green Energy and Sensor Systems, BESU, Rs. 13 crore (started: August 2011)	MNRE

No of publications: (This year only)
Journal ………10……………………………………………………….;
Conference……………14 ………………;
Archive: 1
Books/Monograms ……………………1 …………………………..;
List of Publications:

Journal

1. *Study of Optical Properties of GeO2 nanocrystals as synthesized by Hydrothermal Technique, Navonil Bose, Mousumi Basu and Sampad Mukherjee, Material Research Bulletin (2012), doi:10.1016/materresbull.2012.03.009.*

2. *Dynamic polarizability of an atomic ion within a dense plasma, Joyee Basu and **Debasis Ray**, Phys. Rev E 83, 016407 (2011).*

3. *Performance Enhancement of Phosphoric acid Fuel cell using Phosphosilicate Gel based Electrolyte, Kajari Kargupta, Swati Saha, Dipali Banerjee, Mrinal Seal, Saibal Ganguly, Journal of fuel chemistry and Technology, 40 (2012) 707-713.*

4. *Optimization of performance of phosphoric acid fuel cell (PAFC) stack using reduced order model with integrated space marching an electrolyte concentration inferencing, S. Ganguly, S. Das, K. Kargupta, D. Banerjee, Computer Aided Chemical Engineering, 31, part B,(2012), 1010 -1014.*

5. *Bismuth Nitrate Doped Polyaniline – Characterization and Properties for Thermoelectric Application, Krishanu Chatterjee, Saibal Ganguly, Kajari Kargupta, Dipali Banerjee. Synthetic Metals 161 (2011) 275– 279.*

6. *Samar Jana and Subrata Mitra, "Characteristics of the energy bands and the spectroscopic parameters of Pr3+ ions in PrCl3 mixed methanol, iso-propanol and butanol solutions", Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy, Volume 83, Page 52-55, (2011).*

7. *New phenomenon in exotic neutron-rich Sn isotopes: role of 3-body force, <u>S. Sarkar</u> and M. Saha Sarkar, Journal of Physics: Conference Series 267 (2011) 012040.*

8. *Identification of the slow E3 transition $^{136}Cs^m \rightarrow {}^{136}Cs$ with conversion electrons, K. Wimmer, U. Koster, P. Hoff, Th. Kroll, R. Krucken, R. Lutter, H. Mach, Th. Morgan, <u>S. Sarkar</u>, M. Saha Sarkar, W. Schwerdtfeger, P. C. Srivastava, P. G. Thirolf, and P. Van Isacker, Phys. Rev. C 84, 014329 (2011). *

9. *Enhancement of open circuit voltage and short circuit current of silicon solar cell by incorporation of silicon nano-crystals, T. S. Basu, A jana, **S. M. Hossain**, M. Ray and N. R. Bandyopadhyay, Journal of The*

Institution of Engineers (India), Mettalurgical and Materials Engineering (MM), Vol 92, April 18, 2011, page 16-20.

10. *Temperature dependent photoluminescence from porous silicon nanostructures: quantum confinement and oxide related transitions,* Mallar Ray, Nil Ratan Bandyopadhyay, Ujjwal Ghanta, Robert F. Klie, Ashit Kumar Pramanick, Samaresh Das and Samit K. Ray, **Syed Minhaz Hossain**, Journal of Applied Physics, 110, 094309(2011).

PUBLICATIONS (CONFERENCES, SYMPOSIA ETC.)

1. *Synthesis and Characterization of GeO_2 Nanocrystals, Navonil Bose, **Mousumi Basu** and Sampad Mukherjee Proc. Of International Conference on Specialty Glass and Optical Fiber:Materials, Technology & Devices (ICGF - 2011), Page-217 ,2011.*

2. *Studies on A Multicladded Erbium Doped Non Zero Dispersion Shifted Fiber to Achieve A Flattened Gain Spectrum, Navonil Bose, Dipankar Ghosh, Sampad Mukherjee and **Mousumi Basu**, Proc. Of International Conference On LASER, Materials Science and Communication (ICLMSC-2011),Manuscript Id-C13.*

3. *Characterization of GeO2 nanoparticles as synthesized by Hydrothermal route, Mrinal Seal and Sampad Mukherjee, Proc. Of International Conference On LASER, Materials Science and Communication (ICLMSC-2011).*

4. *"Investigation of thermoelectric property of polyaniline nanorods doped with organic andinorganic dopants." Krishanu Chatterjee, Saibal Ganguly, Kajari Kargupta, Jayita Pal, Dipali Banerjee. ICPEAM, Malaysia, 12-14 June, 2012.*

5. *"Cyclic Voltammetry Driven Controlled Drug Release Through Conducting Polymer Membrane," Ratul Das, Sreeya Kundu, Priyanka Bose, K. Kargupta, Saptarshi Majumder, Dipali Banerjee, Saibal Ganguly ICPEAM2012-BIO_112,Malaysia 12-14 June 2012.*

6. *"Bismuth Nanoparticle - Synthesis and Characterization." Palash Dhara, Krishanu Chatterjee, Kajari Kargupta, Dipali Banerjee. First National Conference on Recent Trend in Condense Matter Physics Incuding Laser Application, Burdwan University, 6th March, 2012.*

7. *Samar Jana and Subrata Mitra, "Optical absorption and emission properties of Pr3+ -doped 0.55PbO-0.45P2O5 glass", Abstracts of the 16th International Conference on Luminescence (ICL'11), University of Michigan, Ann Arbor, USA, Page 48 (WP234), (26 June - 1 July, 2011).*

8. *Correlating states across isomers in ^{152}Ho isotope, Dibyadyuti Pramanik, A. Bisoi, S. Ray, A.Chakraborty, G. Dey, Krishichayan, R. Kshetri, I. Ray, S. Ganguly, M. K. Pradhan, M. Ray Basu, R. Raut, G. Ganguly, S.S. Ghugre, A.K. Sinha, S.K. Basu, A. Goswami, P. Banerjee, A. Mukherjee, S. Bhattacharya, M. Saha Sarkar, <u>S. Sarkar</u>, Proc. DAE-BRNS Symp. Nucl. Phys. (India) 56 (2011) 392.*

9. *High Spin Spectroscopy of ^{34}Cl, Abhijit Bisoi, S. Ray, D. Pramanik, R. Kshetri, S. Nag, K. Selva Kumar, P. Singh, A.Goswami, S. Saha, J. Sethi, T. Trivedi, B. S. Naidu, R. Donthi, V. Nanal, R. Palit, <u>S. Sarkar</u>, M. Saha Sarkar, Proc. DAE-BRNS Symp. Nucl. Phys. (India) 56 (2011) 362.*

10. *Study of side-feeding time for light mass nuclei, Sudatta Ray, A. Bisoi, D. Pramanik, R. Kshetri, S. Nag, K. Selva Kumar, P. Singh, A. Goswami, S. Saha, J. Sethi, T. Trivedi, B. S. Naidu, R. Donthi, V. Nanal, R. Palit,* **S. Sarkar**, *M. Saha Sarkar, Proc. DAE-BRNS Symp. Nucl. Phys. (India) 56 (2011) 394.*

11. *Competing collectivity and multiplet structure in 154Ho,* **S Sarka**r *in Dibyadyuti Pramanik et al, Roc. DAE-BRNS Symp. Nucl. Phys. (India) 57(2012)212.*

12. *Deformed states in 35Cl : A shell model description, Abhijit Bisoi,* **S Sarkar** *ansd M Saha Sarkar, Proc. DAE-BRNS Symp. Nucl.Phys. (India) 57 (2012).*

13. "**Photoluminescence from Porous Silicon having Regular Macromorphology**", U. Ghanta; National Review & Coordination Meeting of Nano Mission Council (NSNT2011), IIT Delhi, February 25-27, 2011. (Poster no. SP-8), Page No. 134.

14. "**Linearly Polarized Photo Luminescence from Colloidal Silicon Quantum Dots**", U. Ghanta, A. Jana, M. Ray, N. R. Bandyopadhyay, S. M. Hossain , National Conference on Recent Advancement In Materials & Technology (NCRAMT-2011), June 24-26, 2011.

In Archive

1. Pairing and shell evolution in neutron rich nuclei, M.Saha Sarkar and **S. Sarkar**, arXiv:1204.5127v1 [nucl-th] 23 Apr 2012

Books:
iii) Study of neutron-rich nuclei near doubly magic ^{132}Sn, M. Saha Sarkar and **S. Sarkar**, Proceedings of The 8th International Conference on Progress in Theoretical Physics (ICPTP 2011), Mentouri University, Constantine, Algeria 23 – 25 October 2011,N. Mebarki, J. Mimouni, N. Belaloui, K. Ait Moussa (Eds.), AIP Conference Proceedings, Volume 1444, Pg. 117 (2012).

- **Seminar / Workshops/ Conferences/ Training programme organized by the department (in last year)**
    1. Organised one day .symposium on *"Centenary celebration of Rutherford's experiment: Rutherford's way to unravel the mystery of nature"* on 30th November, 2011 on the occasion of 154th birth anniversary of Acharya J C Bose . (Speakers: Prof. Sunanda Banerjee, Prof. Amitava Roychowdhury and Prof. S. Sarkar).
    2. Refresher workshop for school leaving students " Foundation of Physics" from 16 May, 2011 to 26 May, 2011.

- **Technology Developed/ Innovations: Innovative experiments developed as part of project works of M. Sc (Applied Physics), such as,**

    a. **Setting up a spectrometer using COMPACT DISC as a reflection grating.**
    b. **Studies on Fourier optics using a digital camera and an image processing software.**

- **Others: Faculty members contributed to other public services by participating in public seminars, UGC Staff College etc., and delivering talk there.**
    1. Dr. S.M.Hossain received KR fellowship awarded by the American Physical Society.
    2. Dr. S.M. Hossain delivered invited talk at the CKM workshop at SNBCBS, July-2012

Department of Human Resource Management

About the department :

The erstwhile Training and Placement Depaartment of the Institute was rechristened as Department of Human Resource Department in the year 1994 -95 and is headed by one Professor and supported by one Assistant Training Officer and other staff. The Department has its current activities in the following areas :

- Job Placements of students of the university though Campus and Off-campus selection processes.
- Vacational / Summer Training of the students of the University
- Government of India Apprenticeship Programme
- Grooming up (Personality/Soft-Skill/ Performance Effectiveness) Programme for the Students
- Facilitation for other career options : Preparatory programme for Competitive Exams and other Educational options abroad
- Industry-Contact progammes / Academic collaborations
- Entrepreneurship Development Programme
- IPR Awareness and Facilitation
- Career Counseling
- Industry Liasoning

Academic Programmes

This is a service department catering to all UG, PG and Ph. D students. The Department has also started offering Ph.D prgramme under Faculty of Social and Management Sciences.

Faculty position : 1 (One)

Sanctioned faculty post.: 1 (One) Vacant Post : Nil

FacuIty Profile (in the following table) –

Name	Designation	Highest Qualification	Specialisation / Research Area	Contact No. E-mail
M.K.Sanyal	Professor	Ph.D	Entrepreneurship. IPR, Environmental Planning	9831352950 hodhrm@becs.ac.in

D. Others :

Vital Information :

- Number of Company Visited for Campus Selection Process for UG Students : **59 + 7 (Off-Campus)**

- Total Number of Offers made to UG Students through Campus Selection process : **519** (Including Dream Slot Offers)

- Number of Company Visited for Campus Selection Process for PG Students : **14**

- Total Number of Offers made to PG Students through Campus Selection process : **105** (including dream slot offers)

- Range of Pay Packages Offered : **Rs. 8. 75 Lakh** (Annual CTC) – **Rs. 2.65 Lakh** (Annual CTC)

- **Department-wise Placement** (UG) in %

Dept.wise Campus Placement Chart (UG) 2011-12

CST 207, ETC 233, EE 165, IT 208, ME 86, CE 69, MET 82, MIN 89, ARCH 5
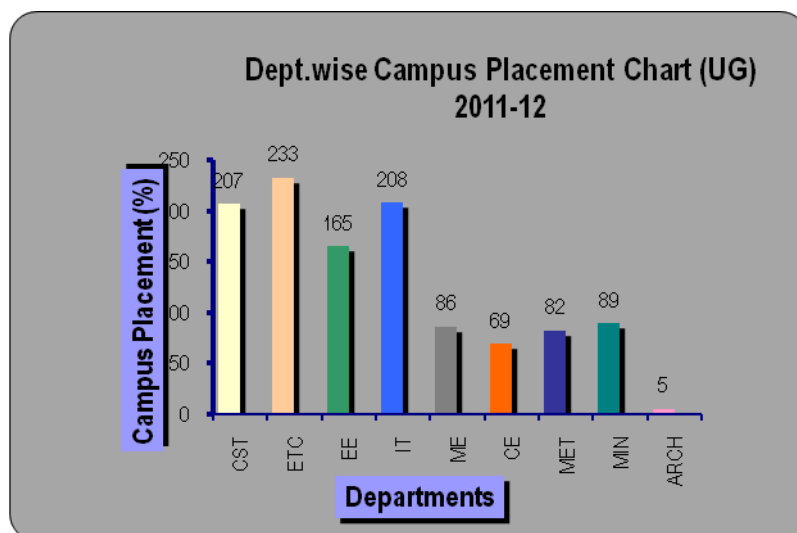
Vacational Training

During the year around 270 seats were organized in 36 organizations for summer placements of the students of pre-final year from 7 engineering disciplines in addition to facilitating a few other students having internships in different academic Institutions and R & D organizations both in-country and abroad.

Grooming Activities organized by HRM Department

- UGC Career Counselling Cell
- IEEE Workshop on Soft Skill Development

Activities related to Students career where HRM department was represented

- Industry Meet on Placement issues organized by various industries .
- Industry sponsored Faculty Development Programme

Classes taken by HRM Faculty

- Classes on Group Discussion and & Seminar for 7th. Semester Engineering Students.
- Entrepreneurship and HRM   Course for MSc. Students.
- Course on IPR for M.Sc. Students at Kolkata University

Industry promoted students' activities facilitated by HRM Department

- CTS Certified Programme
- Students Workshops by TCS
- Presentation on Panasonic Scholarship Programme in Japan
- Presentation by Indo-German Training Centre on Scopes of Employment in Indo-German Member Companies

Other events organized by HRM Department

- Workshop on Women Entrepreneurship sponsored by NRDC and attended by more than 200 women participants including more than 50 girl students of this University.
- Gallery –II under control of HRM department was thoroughly renovated and refurbished with modern facilities for Placement activities by courtesy of alumni of 1984 and 1986 batches and was rechristened as Gateway Hall.
- Presentation by young Alumnus Mr. Gaurav Konar on "Career Options Beyond BESU".

Academic Participation of HRM Faculty Members

- Expert Member of the AIU Equivalence Committee
- Career Counselling at Goenka Management Institute
- Professor-in-charge of Faculty Council of for Post-Graduate Studies in Social and Management Studies

- Industry Consultant on Public Health Engineering

- Selection Committee Member for Recruitment at WBUT

- Expert Member for WBUT for Inspection of affiliated Colleges.

Projects under HRM Department

- Setting up of **Entrepreneurhip Development Cell** funded by AICTE – ongoing

- Setting up of **Centre for Green Technology Business Incubation** – Proposal submitted to NSTEDB-Govt. of India.

Department of Students' Activities

HISTORIC PROFILE

On recommendation of the first Review Committee (1953), PICSA department was started as the Proctorial Department in 1956 with the objective of improving the personal qualities of students and looking after their discipline, welfare, and extra-curricular activities. The department was later renamed as the department of Students' Activities with the redesignation of the Proctor in 1985 to Professor-in-charge of Students Activities. The department functions under the direct supervision of the Professor-in-charge of Students' Activities.

BROAD PERSPECTIVES

Improving the personal qualities of students and looking after their discipline, welfare and extra-curricular activities.

- **Election to the Students' Union, Sports, Cultural Activity, Quiz Fest, Tech Fest, Gardening, Blood Donation Camp, Annual reunion, Seminars etc.**
- **Smooth and successful conduct of Additional Elective PT/NCC course for 1st. year BE students.**
- **Allotment of Hall/Hostels. Supervision of Halls / Hostel is made regularly by Superintendents, selected specially from the Faculty members & Officers of the university community.**
- **Management and Supervision of Messes – through Joint Mess Committee**

HOSTEL & MESS AFFAIRS

Presently total student strength – 3000 nos. (including UG & PG Day Scholars and Research Scholars). There are 15 nos. Halls/Hostels, (09 nos. Hostels for UG students, 02 nos. Hostels for UG and PG combined Students, 02 no. only for PG students and 02 nos. only for the girls.) Each Hall/Hostels is under the direct supervision of a Superintendent selected from the members of the faculty and officers. Hostels and Messes are supervised by the respective Mess Committee. A joint Mess Committee is a common forum for smooth running of the messes where the Professor-In-charge of Student Activities acts as the Vice-Chancellor's nominee. There is also Executive Committee constituted to expedite the work relating to the service condition of the mess employees and other Hostel/Mess related works.

Faculty / Staff Profile

Faculty Position : 3
Officer :1

Physical Training Instructor

(part Time) : 1
Football Coach (Part Time) : 1
Support Staff : 15

Athletic Club and Facilities

The University has an Athletics Club and has got the facilities for almost all outdoor and indoor games. At present there are two permanent Physical Instructors who is assisted by 7(seven) ground workers. The college has spacious ground like "Oval" & "Lords" and also three Tennis, Volleyball and Badminton Courts, a Swimming Pool (renovation going on in full swing) and a Very Well equipped gymnasium. The University engages eminent Personalities in games and sports as coaches. Various events for games and sports are organized by Athletic Club, BESUS in our campus every year. During this period our students not only took part in games and sports activities organized by the University but also actively participated in sports events organized by other Institutions such as CAB, IFA, BIT Mesra Ranchi etc.

SPORTS & GAMES FACILITIES AVAILABLE IN UNIVERSITY
Managed through Athletic Club

OVAL and LORDS ground Used for PT/NCC classes, Football, Cricket, Athletics (300 mtr. Track with 6 lanes). Out-door Tennis Court , Hard Court , Grass Court , Out-door Volleyball Court, Table Tennis Board, Badminton Court, Swimming Pool (Being renovated) for swimming, Gymnasium , Multi- Gym, Central facility for Boys – 1 no. with 16 stations. Exclusively for Girls with vibrator apparatus – 1 no.Weight Training apparatus Sufficient Dumbell, Barbell, Weight Plate, Waist-Belt, Rope etc.

Now a days, the students strength of the university is increasing in regular basis. So, the games and sports facility available in the university is not sufficient enough to overcome the problems of the students by giving them enough scope for practicing regularly.

CENTRAL FACILITIES

- **Institute Hall with a capacity of 300 spectators with all modern facilities.**
- **A well equipped Gymnasium.**
- **Students Canteen- 2 nos.**
- **Well maintained multi use Sports Field.**
- **One multi purpose building with Badminton Court.**
- **Swimming Pool –Being renovated.**
- **Students' Union Office (UG & PG separately).**
- **NCC Unit Office (Registered to BN. Bengal NCC).**
- **THE AMENITIES:**
  - **. University Guest House**
  - **. Hospital with Indoor and Outdoor Facilities.**
  - **. Extension Service to Community:**

- **The Udayan Sob-peyechir Asar- specially developed for children fitness, general health, games & sports, drawing & painting and cultural activities of the University Employees Community.**

- **The Vivekananda Youth Circle (for Boys) and Sister Nivedita Study Circle (for Girls) – for holistic development of personality of children of university community.**

Sports Activities 0f 2011-2012

INTER – MURAL COMPETITIONS:

A. INTER YEAR/DEPARTMENT/HOSTEL:

1. **Inter Hostel Badminton (M) Tournament:** (UG & PG) 11.01.2011-18.01.2011

2. **Inter Year Badminton (W) Tournament** (UG & PG) 13.01.2011-15.01.2011

3. **Inter Hostel Table Tennis (M) Tournament** (UG & PG) 13.01.2011-25.01.2011.

4. **Inter- Hostel Volleyball (M) Tournament** (UG & PG) 03.03.2011-
   22.03.2011.

5. **Inter Year Cricket (M) Tournament:** (UG& PG) 06.03.2011-
   07.03.2011.

6. **Inter-Hostel Football (M) Tournament:** (UG & PG) 05.04.2011-23.04.2011

7. **Inter Department Football (M) Tournament for**
   first SEM. Under Graduate Boys: 19.08.2011-27.08.2011.

8. **Inter Year Football (M) Tournament:** (UG & PG) 30.08.2011-
   06.09.2011.

9. **Inter Department Football (M) Tournament** (UG & PG) 28.09.2011-11.10.2011
   (Semifinal & Final Match pending).

10. **Inter Hostel Volleyball (M) Tournament** (UG & PG)
    Scheduled on 3rd week of March 2011

11. **Inter Hostel Badminton for Boys & Girls** (UG &PG)
    Scheduled on 3rd week of March 2011

12. **Inter Hostel Table Tennis (M) Tournament** (UG & PG)
    Scheduled on 3rd week of March 2011

13. **Inter Hostel Football (M) Tournament**
    Scheduled on 1st week of April 2011

ANNUAL ATHLETIC MEET :
3rd February 2011

IVITATION CRICKET TOURNAME :
2nd Mar to 11th Mar 2011

INVITATION FOOTBALL TOURNAMENT :
24th March- 31st March 2011

PARTICIPATED IN EXTRA MURAL COMPETITIONS:

A. INTER UNIVERSITY/COLLEGE TOURNAMENTS:

1. **19th Chetan Devraj Inter Technical Institute Cricket Tournament at BIT, Mesra, Ranchi 22.01.2011-26.01.2011.**

   Our students won 3 matches out of four but due to stiff competition and games rule we could not reach the finals.

2. **Inter College/ University Elloit Challenge Shield organized by I F A 5th March2011**

3. **Invitation Inter Technical College Cricket Tournament (Organized by C.E.M, Kolaghat) 12th March 2011**

4. **Invitation Inter University Night Football Tournament (To be organized by ISI Kolkata) Likely to participate (scheduled between 21-25 March2011)**

N.B. **Academic Assignment**:

1. PT/NCC Examination for 2nd Semester students – In the month of April.
2. PT/NCC Examination for 1st Semester students – Last week of November – 1st week December.

Some photographs of various events during 2011-12

Others Activities :
In addition to games and sports activities, other activities like Quiz, drama, cultural evenings, Gardening Competition, blood donation camp. etc. are also being organized through out the year.

GARDENING COMPETITION
HELD ON 26 FEB. 2011

A Tribute in memories of late Smt. Suchitra Mitra
Held on 12 January 2011

STUDENTS' ACTIVITY CENTRE

To develop the creative aspects of the students such as

creative art, painting, drama, dance, debate etc, the following societies have been formed last year:

i) Art and Photography Society
ii) Dramatics Society
iii) Music Society(Vocal/Instrumental)
iv) Innovation Society
    a) Robotics Society
    b) Technology Society
v) Dance & Choreography Society
vi) Open Software System Society
vii) Quiz, Debate & Creative writing Society

It is very heartening to note that some of the societies like Quiz, Debate, Robotics and Drama society have become very vibrant under the guidance of a faculty member.

SCHOLARSHIPS:

The University takes special care for those students who are economically challenged. This department takes an active part to ensure that financial condition should not be a major hindrance for continuation of studies. It is worth mentioning that in the current year 202 students were recipients of Merit and Maintenance Scholarship. The value of full Scholarship is Rs-12000/- (i.e tuition fee for the year) This is also worth mentioning that Global Alumni Association contributes immensely for the meritorious and economically challenged students. This year 130 students were benefited by our Global Alumni Association.

PROJECT WORTH MENTIONING

Construction of swimming pool by global alumni association is on the verge of completion. The cost of the project will be approx 90 lakhs.

A UGC sponsored project proposal for development of sports infrastructure and equipments was placed and with their fund assistance one new basket ball court has been constructed.

To modernize the equipments, one motorized (medium weight) roller for maintenance of ground and two portable lawn mower including one hedge cutter have been procured for our athletic club.

School of Community Science and Technology (SOCSAT)

About the School

Bengal Engineering & Science University, Shibpur has a fairly long tradition of rendering community service in a modest manner besides conducting academic programme. Community service rendered by the faculty members consists of formulation and implementation of specific programme of technology innovation and technology transfer to the Rural Sector. In response to the demand for proper co-ordination and integration of such activities of the faculty at University level, School of Community Science & Technology (SOCSAT) was created in 2004 at University for facilitating the development and growth of the unorganized sector in our country.

The objective of the school is to foster sustainable development of different marginalized communities by empowering stakeholders with inputs from institutionalized Science & Technology Community.

The school since then made significant progress in the frontier areas of basic and applied research in juxtaposition with various training programmes that are congruous with the objectives of the school. In this respect various science awareness programmes, several training programme on Advanced Pottery, Metal Art, Batik, Jute diversification including Advance Food Processing & Preservation Technology were organized by this school. The objectives of these programmes are to impart training to the marginalized people especially women Self-Help Groups of Howrah district in order to promote technology and create entrepreneurship. The training on food processing will improve the technical skills and knowledge in the processing of fruits and vegetables to the women of the rural areas and to take up income generating activities. As a result, two SHGs named Suktara and Prayas comprising those women were formed in Howrah District with the initiative of this School.

In this backdrop, the Academic Council of the University approved a four semester M.Sc. Course on **"Food Processing& Nutrition Science"** which had been started from the **Academic session (2007-2008).** Around 100 students obtained MSc degree from this University under this course and placed in the Food Processing industries, R&D organization in food sectors, Academic institutes involved in R&D activities including PhD programmes and the Food analysis laboratories.

Besides above **Government of India's Corporate Social Responsibility(CSR) scheme,** The Garden Reach Shipbuilders & Engineers Limited (GRSE),Kolkata, a Govt. of India undertaking under the Ministry of Defence, entrusted SOCSAT with a CSR project to impart "Skill development/Vocational Training to the unemployed youth around the locality in Metiabruz, Kolkata" where the GRSE plant is situated. The objective of the proposed programme is to appropriately train the unemployed youth for their employment in appropriate trade and /or to enable them to start entrepreneurship.

Objective of the school:

a. To promote awareness amongst different targeted communities about the role of science & technology in solving environmental, health and developmental problems. Awareness and training programs related to science, technology and environment would be initiated, encouraged, supported and implemented.

b. Searching for solutions that people and communities can implement themselves by continuously developing scientific & technological know-how through rigorous research using University's infra-structural facilities — academia to community transfer of scientific and technological knowledge.

c. Development of positive long-term relationships that will contribute to collect, preserve, disseminate, and upgrade (if necessary) the scientific and technical information and knowledge of traditional communities, thereby reviewing priorities in research and development — community to academia transfer of knowledge.

d. Promote interdisciplinary research and education within the school to encourage better understanding of community related environmental issues.

e. Provide strategic leadership and direction in the innovation and cost-effective use of modern scientific & technical methods to improve the efficiency of government program delivery and administration at the community level.

f. To investigate the key ethical issues related to the implementation of modern technologies with regards to moral and ethical obligations of different communities.

g. Science education, at all levels of a community is to be revamped, and with gender equity, so as to establish an atmosphere which will enhance the nation's capacity and capability to develop and sustain basic and applied sciences, toward meeting the needs of the twenty-first century.

h. provide quality post-graduate education in Food and Nutrition Science

i. To develop and modernize the multidisciplinary post-graduate curriculum to keep in tune with the rapid developments in this area.

j. To integrate postgraduate education with basic and applied research through combination of lecture courses with laboratory work, projects, example classes and supervisions in small groups.

Academic Programmes

Postgraduate Level

i) Degree Offered: Master of Science in Food Processing and Nutrition Science.
ii) Sanctioned Students' intake: 25 nos. students per year
iii) Additional intake through other programmes N.A
iv) Specialisation in (a) Microbial Enzyme Technology (b) Nutritional Biochemistry

Doctoral Level
i) Degree Offered: Science
  No of candidates enrolled: 07   **Registered:** 04   **Awarded:** 0   **Submitted:** 0
Faculty position:

Faculty profile (In the following table)

Name	Designation	Highest Qualification	Specialisation/Research Area	Contact no E-mail
Dr. N. R. Bandyopadhyay	Professor & Director	Ph.D	Materials Characterization, Nano-Technology, Community Science &S/T extension	nrb@matsc.becs.ac.in
Prof.D.K.Bhattacharyya	Adjunct professor	PhD (Science)	Oil Technology	Dkb_olitech@yahoo.co.in
Dr. Mnakshi Ghosh	Assistant Professor (Contractual)	Ph.D. (Science)	Analytical Chemistry/ Extraction Technology	g_minakshi2000@yahoo.com
Dr. Jayati.Bhowal	Assistant Professor (Contractual)	PhD (Science)	Biochemistry and Microbiology	bjayati@yahoo.com

Awards and Laurels:
N. R. Bandyopadhyay

- Visited Dhaka, Bangladesh to delivered **Invited lecture** on **"Bio-materials for Implants: Metallic, Ceramic and Polymers'** at the International workshop on "Tools Bio-materials & Implants" during **May 17-18, 2012**

Prof. N. R. Bandyopadhyay holds the following positions:
- **Chairman, CATE and Strategic Plan Committee, IEI**

- **Vice-President, Materials Research Society of India (MRSI)**

- **Consulting Editor: Journal of MME, and Technorama, IEI**

Prof.D.K.Bhattacharyya
- **Life time achievement Award presented to Prof. D. K. Bhattacharyya by Oil Technologist Association (OTA) onNov, 18,2011 for research and academic activities**.
- **Eminent teacher Award fro Calcutta University on 22nd March, 2012.**

Students:

1. **Moumita Ghosh awarded INSPIRE Fellowship in Basic and Applied Sciences under Department of Science and Technology, Ministry of Science and Technology, Govt. of India and registered for PhD programme under this University.**

2. **Priyadarshini Chakraborty awarded INSPIRE Fellowship in Basic and Applied Sciences under Department of Science and Technology, Ministry of Science and Technology, Govt. of India and registered for PhD programme under this University.**

E. Research area

- Food NanoTechnology
- Food Microbiology
- Quality assessment and Food Safety
- Food Product Development
- Microbial Enzyme Technology
- Extrusion Technology
- Biochemistry

Research facilities:

Name of Equipment	Few words	Pictures
Twin Screw Extruder	Twin screw extrusion is used extensively for mixing, compounding, or reacting polymeric materials. The flexibility of twin screw extrusion equipment allows this operation to be designed specifically for the formulation being processed. the configurations of the screws themselves may be varied using forward conveying elements, reverse conveying elements, kneading blocks, and other designs in order to achieve particular mixing characteristics.	
Centrifuge	In Centrifuges the centrifugal force is mechanically generated by turning the equipment containing the fluid in a circular path causing the fluids to separate. This method has been used in the laboratories and primitive industries for over a century. It has mainly been used to separate fluids in static state, i.e. ,specific volumes which needed to be separated.	
Vacuum Tray Drier	Under the condition of vacuum, the boiling point of raw material	.

	will decrease and make the pushing force become greater. Therefore for a certain amount of heat radiation, the conducting area of evaporator can be saved.The heat source for operation of evaporation may be Iow pressure steam or surplus heat steam.The heat loss of evaporator is less . During the period of drying, there is no impurity material mixing. It belongs to static drier. So the shape of raw material to be dried can not be destroyed.	
Hot Air Oven	This electrical devices used in sterilization. The oven uses dry heat to sterilize articles. Generally, they can be operated from 50 to 300 °C (122 to 572 °F) . There is a thermostat controlling the temperature. These are digitally controlled to maintain the temperature.	.

Laminer Flow	Horizontal Laminar Airflow Table Top Workstation provides a HEPA filtered clean work area that is ideal for operations requiring a particle-free, bacteria-free, clean air environment. . The clean work area provides an excellent work space for small laboratory appliances, microscopes, pipetting, or similar applications.	.
BOD Incubator	Finer Microstructural details can be examined by Scanning Electron microscopy. Local chemical constituents are measured through Energy Dispersive X-ray (EDS) Spectroscopy. The Electron Back Scattered Diffraction Pattern (EBSP) can be examined.	.

Microwave	This instrument measures the chemical composition of metals and alloys by optical emission through Spectroscopic analyses.	
Reynolds apparatus	To determine the Reynold's number and hence the type of flow either Laminar or turbulent and also to determine upper & lower critical Reynold's number's & velocities.	
Sieves Shaker with Brass Sieves	Used to agitate sieves for determining gradation in soils and finest modules in aggregates. Unique orbital motion ensures precise gradation. Quick release adjustable clamps secure sieves firmly in position. Hold feature on the 15-minute timer permits continuous agitation. Holds up to eight sieves plus a dust pan and accepts either eight or twelve inch sieves.	

Colorimeter	A device used in colorimetry. In scientific fields the word generally refers to the device that measures the absorbance of particularwavelengths of light by a specific solution. This device is most commonly used to determine the concentration of a known solute in a given solution by the application of the Beer-Lambert law, which states that the concentration of a solute is proportional to the absorbance.	
Microscope	An instrument used to see objects too small for the naked eye. The science of investigating small objects using such an instrument is called microscopy. Microscopic means invisible to the eye unless aided by a microscope.	

Name of laboratories:

1. **Food Processing Lab**:
2. **Food Preservation Lab**:
3. **Microbiology Lab**.
4. **Unit Operation Lab:**
5. **Chemical Analysis Lab**
6. **Student Computer Lab.**

Sponsored Research (during 2011-2012):

Sl. No.	Title of Research Project	Sponsoring Agency	Year of Start and duration
01.	Development of technology to make low cost nutritionally effective 'ready to eat' protein rich human food from oil seeds or deoiled edible seed cakes (seed meals) by co-extrusion with cereals **Value: 10.70 lakhs.**	Ministry of Consumer Affairs, Food & Public Distribution, Government of India	January 2012

Industry-Institute Interaction

Corporate Social Responsibility (CSR) project to impart "*Skill development/Vocational Training to the unemployed youth around the locality in Metiabruz, Kolkata*" by Garden Reach Shipbuilders & Engineers Limited (GRSE),Kolkata, a Govt. of India undertaking under the Ministry of Defence.

Value: 58.00 lakhs

No. of Publications (during 2011-2012)

(Journal only)

Sl. No.	Title of Research paper	Title of the Journal	Year	Vol./ issue No	Page Nos.
01.	Antioxidant Proprties of Aqueous and organic Extracts of Whole Fat Rice Bran and Defatted Rice Bran	Journal of Lipid Science and Technology	2011	Vol. 43 No. 3	95-101.
02.	In vitro antioxidant study of vegetable oils containing conjugated linolenic acid isomers	Food Science and Technology	2012	46	10-15

Seminar/Workshops/Conferences/Training programme organised by the Department (during 2011-2012)

- Organized a three days "Workshop on "SKILL UP GRADATION TRAINING ON OIL & FATS "FOR ENTREPRENEURS during November 23-25, 2011 at SOCSAT, BESU, Shibpur. sponsored by **DST,West Bengal**.

- Skill development/Vocational Training to the unemployed youth around the locality in Metiabruz, Kolkata" , Garden Reach Shipbuilders & Engineers Limited (GRSE),Kolkata, a Govt. of India undertaking under the Ministry of Defence.from January 19,2012.

Technology Developed/Innovations.

o Technology of production of functional food products such as non dairy yogurts, soy and other peanut butter like spread products of superior quality.

School of Diaster Mitigation

Engineering

The source of man's unhappiness is his ignorance of Nature.

— Paul Henry Thiry d' Holbach

INTRODUCTION

Even in this era of being netizens, despite tremendous effort and advancement in the spheres of science, engineering and technology, many a time people have succumbed to the vagaries of nature. Globally, natural disasters account for nearly 99% of all the disaster-affected people in the last decade.[1] The further disturbing fact is that even in a region like South Asia, where poverty, deprivation, and death due to disasters are a common enough feature of life, India remains the worst-affected country. In fact, between 1997 and 2006, disasters reportedly killed 83,252 people and affected another 704.21 million in India.[2] Experiences and study tell us that the actual figures greatly exceed the documented ones. This type of devastating forces of nature certainly points out the immediate need of expertise to combat the major natural disasters, viz. earthquake, flood, drought and cyclone; and, minor natural disasters, viz. heat wave, cold wave, landslide, avalanche, tornadoes and hailstorm. In this context, Bengal Engineering and Science University, Shibpur with the help of a group of distinguished faculty members pursuing their research in the area of Earthquake, Windstorm, Hydrology, Stability of Land slopes etc., wholeheartedly desires to extend the academic expertise to cater to the need of minimizing the devastating effect of such calamities.

The geographical location of our state is in a peculiar situation; the northern portion of it is surrounded by a number of active faults in the Himalayan Region, and the North Indian Ocean Cyclone Region is at its south. The entire North Bengal is surrounded by a number of active faults in the Himalayan region, and hence is included in the Zone IV of the Indian earthquake code.[3] Broadly speaking, the earthquake tremors of the active faults of this region results into landslides; again, the landslides on their turn compounded with deforestation causing soil erosion, results into flood in the lower districts of the state. Again the threat of super-cyclones has of late become an annual

Fig.1: Map of West Bengal

feature during the months of May or November. The different facets of natural disasters, which are threatening the nation as a whole and the state as a particular, need to be tackled in a holistic manner.

The Issue of Earthquake

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[1] World Disaster Report, 2007

[2] Ibid

[3] IS: 1893 (Part 1) – 2002

Earthquakes unleash energies on the scale of nuclear explosions. While they rarely announce their arrival in advance, even the strongest earthquakes are over in a matter of moments. Tectonic motion cannot be prevented, but the probability of the occurrence of earthquakes of different magnitudes can be estimated. Safety measures can then be undertaken in advance. Damage control is a life-saving and cost-effective alternative to reconstruction. This is more so important because, of all disasters, only earthquakes permanently reconfigure a landscape. However, for survival of structures in

Fig. 2: Devastating Earthquake in Gujarat

the event of earthquake following measures should be immediately taken —

i) Seismic microzonation of the area in question to assess the seismic vulnerability of various locations; and,

ii) Formation of appropriate guidelines, rules and regulation for the survival of buildings and other utility structures during earthquakes.

The Issue of Landslide

Fig. 3: Front pictorial view of the Penegal landslide at Sikkim[4]

A landslide is a sudden collapse of a large mass of hillside. There are many different types of landslides, where not only earth, but rock, mud, and debris flow down the side of a slope. All earth and material on a slope has an "angle of repose," or an angle at which that material will remain stable. Loose dry rock remains in place at angles up to 30 degrees, but wet clay will start to slip at more than 1 or 2 degree inclinations. Landslides are the sudden downhill movements of earth or other solid material, and are usually caused by rain, thaws, or forces increasing the top material weight, lubricating the material layers, or making the slope too steep. They can be triggered by earthquakes, saturation with heavy rain, or crashing waves. History's largest and most destructive landslides are due to earthquakes that started the material moving. Excessive rain or snowmelt, however, is also known to saturate and lubricate soil on steep angles. Rapid temperature changes can also cause land slide by alternately shrinking and expanding soil formations, or by forming ice heaves between layers of rock. Forest fires are indirectly responsible for landslides because they take away slope vegetation, making erosion easier. Man can also cause slides by mining the earth, underground excavation, pumping and draining groundwater levels, or overdeveloping hillsides.

Complete prevention of landslides and toe erosion is not a feasible proposition but the aim of prevention can be partly achieved by any one or more of the following means —

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[4] *www.rurkiu.ernet.in/. ../slide7a.jpg*

i) Easing of slopes;

ii) Bitumen asphalt mulching or grouting by use of asphaltic cement bitumen emulsion on outback bitumen;

iii) Afforestation;

iv) Provision of stilling pools or hydraulic jump immediately below the site of toe erosion;

v) Removal of all obstacles like huge boulders in the way of the current;

vi) Provision of chutes and sloping aprons.

Relevant data in respect of geology, hydrology and seismology of the areas enables engineers to determinate correct design parameters and to assess forces to be countered upon by the structure correctly.

The Issue of Flood

The term "flood" is a general or temporary condition of partial or complete inundation of normally dry land areas from overflow of inland or tidal waters or from the unusual and rapid accumulation or runoff of surface waters from any source.

Flooding and flash flooding are the deadliest of natural disasters. Floodwaters claim thousands of lives every year and render millions homeless. One of the more frightening things about flooding is that it can occur nearly anywhere, at any time. It can result from excess

Fig. 4: Crossing the flood – Effect of Teesta[5]

water jams on rivers, even moderate rain, or a single very heavy downpour.

Destruction of Natural Terrain: Growth of Unplanned Settlement

It is observed that for the establishment of large scale settlements, often the natural slope is destroyed by cut and fill method, and, man-made new terrains are created. These man-made terrains have a cumulative effect on accumulation of rain water and disposal of the same to the nearest river bed. But going against nature ultimately proves fatal. The study team will demarcate areas which should only be used for the purpose of shelter-construction, and, shall propose methodologies to avoid the destruction of natural terrain.

OBJECTIVES

With this petite introduction regarding different facets of natural disasters, the objectives of the School of Disaster Mitigation Engineering, which was set up in 2007 by the University, are stated below.

Technology Development

➢ To study the structural and architectural details of the low-cost non-engineered structures at the coastal regions.

➢ To work out architectural plan and the design procedure of the anchorages for the roofs, bonds for walls etc. from the viewpoint of wind engineering through a computational study.

➢ To carry out the tests of model buildings in wind tunnels to check the adequacy of the suggested design procedures.

➢ To advocate seismically resistant economically viable design methodology of structures.

➢ To put forward improved design methodology of dams and embankments to ward off the dreadful effect of flood.

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[5] *www.azeecon-lwf.com*

- ➢ Finally to arrive at the drawings and structural detailing of some typical domestic units that can be directly constructed.
- ➢ To construct one or two pilot structure at the site to study the performance of the same in real situation.

Technology Transfer

Various developed methodologies are required to reach at the hand of practicing engineers. Hence, a number of Tailor-made Short Term Courses are to be conducted on regular basis by the research group at the School and the practicing engineers are the expected participants. Outcomes of the research work will also be published and attempted to be included in the Code.

ACHIEVEMENTS IN THE AREA

- ➢ More than 50 research publications in Journals and Conferences of International and National repute.
- ➢ A number of research projects funded by *Board of Research in Nuclear Sciences*, *Council of Scientific and Industrial Research*, *University Grants Commission*, *Department of Science and Technology* and *All India Council of Technical Education*.
- ➢ Research involvement of four doctoral students in the field.
- ➢ Recognition of a faculty member as Young Scientist by Department of Science and Technology, Government of India, for his research in this field.
- ➢ Award of Sir Arthur Cotton Memorial Medal by institution of Engineers (India) for a publication in the field of Earthquake Engineering in Institution's Journal. This was judged as the best paper in Civil Engineering for the year.

ANNUAL REPORT (2007-10) : SCHOOL OF DISASTER MITIGATION ENGINEERING

1. As per resolution in BOM, dated 24.11.05, the School was proposed to be established.

2. Dr. B. C. Chattopadhyay, Professor, Department of Civil Engineering, was appointed Director of School from 15-03-2007 vide RDO/ 2/ 767/ 4/ 0/ 6 dated 15-03-2007 from Registrar, BESUS.

3. An Working Committee to help the Director was framed on 21-03-2007 consisting of Dr. S. C. Dutta, Professor, Department of Civil Engineering; Dr. N. R. Bandopadhyay, Professor and Director, School of Material Science and Engineering; Dr. A. Ghosh, Assistant Professor, Department of Civil Engineering; Dr. P.K. Das, Assistant Professor, Department of Applied Mechanics and Drawing; Mr. R. Roy, Assistant Professor, Department of Applied Mechanics and Drawing; Mr. P. Mukhopadhyay, Assistant Professor, Department of Architecture, Town and Regional Planning; and, Mr. S. Kar, University Engineer. The Committee met from time to time to discuss and finalise needed actions.

4. The first priority before Director was to help TEQIP to procure a 1.5m x 1.5m Horizontal Shaking Unit with payload of approximately 7 tonne, capable of producing around 1.5g of PGA for testing the seismic performance of model structures. The proposal for procurement of such a facility with its detailed specification was prepared by Dr. S. C. Dutta. The whole equipment was finalised to be procured through AIMIL Ltd. for USA.

5. Housing was planned for the said Shaking Unit on the plot near Old Hospital Building of the University. Necessary planning, designing, tendering and construction were made through University Engineer with financial help by authority of the University. A 4.2m x 8m shed was finally constructed for housing.

6. All internal detailing of the Work Station will be done in near future.

7. The equipment was installed and demonstrated before the members of Working Committee on 28-05-2008. The details of the equipment installed are appended at the end of the report.

8. The School is allotted third floor of the second newly constructed Eight Storied Building vide order AT/ 38 – 19/ 2007/ 427 dated 27-11-2007.

9. Request was made to the Convenor LIPMU for procuring Vibration Shaker of low capacity for pursuing doctoral thesis of Mr. P. Mukhopadhyay on 02-07-2007.

10. Dr. S. C. Dutta, Professor of Civil Engineering was appointed new Director of the school vide AT/ BOM – 43/ 2008/ 461 dated 03-06-2008.

11. Dr. Ambarish Ghosh, Professor of Civil Engineering was appointed new Director of the school vide RMS-1/4018 dated 08.01.10

12. A Working group has been formed with the permission of the Vice Chancellor for smooth functioning of the School. The working group consists of the following personalities:

    Prof. N. R. Bandopadhyay, School of Material Science and Engineering

    Prof. P K Das, Dept. of AEAM

    Prof. Rana Roy, Dept. of AEAM

    Prof. Mukhopadhyay, Dept of Arch. Toewn and Regional Planning

    Prof. S Dalui, Dept, of Civil Engg.

    Er S Kar, University Engineer, BESUS

13. The following analyser has been purchased for the model studies

    (a) OR36-FREQ-4 & OR-36/8-XPD-B: 4 channel analyzer
    (b) 731-207: Seismic Accelerometer
    (c) Pore pressure sensor
    (d)Multichannel display for pore pressure sensor

HORIZONTAL SHAKE UNIT

INTRODUCTION

For the last few years there were several fatal earthquakes throughout the world which came as an ultimate disaster over the human civilization and took toll thousands of life and caused enormous damage in the properties. Modern civilization demand urban & rural development in very quick pace which ultimately results in increasing number of engineering structures as well as non-engineering structures throughout the world. At the same time it is increasing the probability of damage occurred due to earthquake. This situation is boosting up the research & development works in 'Disaster Management & Studies' field to develop knowledge and technologies which will be used to develop smart structures which can withstand earthquake shocks and thus minimize the overall damage.

To study the earthquake, prime & most important challenge is simulation of earthquake signal. The system used for this purpose is called a Seismic Vibration Shaker which generates real time to & fro motion and earthquake like movement on a Square Table. The structure under test is placed on the table and hence it is being excited by the table movement. Dynamic response of the structure is then studied and thus one can analyze its various structural parameters and design aspects.

FIG. A: SINGLE AXIS SEISMIC SHAKE TABLE WITH BASE PLATE

SERVO HYDRAULIC CONTROLLED SHAKER SYSTEM

Total System Consist of following two main parts —

(a) Mechanical & Hydraulic Part, and,

(b) Controller Part.

The installed horizontal shaking unit has the following applications:

- Earth Quake Signal Simulation & Control.
- Structural Vibration Study.
- Reliability Study of Engineering and Non-Engineering Structures.

Mechanical and Hydraulic Part

The sub-parts of the mechanical and hydraulic part are as follows —

a) Horizontal single Axis Seismic Table 1.5 m x 1.5 m.

b) Hydraulic Linear Actuator.

c) Hydraulic Service Manifold.

d) Hydraulic Power Supply.

e) Servo Control System.

f) Hydraulic Oil Cooling System (Heat Exchanger + Pump)

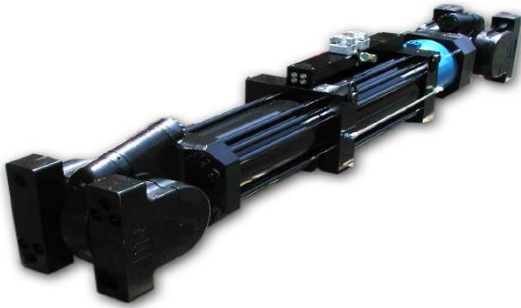Photographs of the different sub-parts of the mechanical and hydraulic part are given below.

FIG. B1: SERVO HYDRAULIC LINEAR ACTUATOR

FIG. B2: SERVO HYDRAULIC LINEAR ACTUATOR ASSEMBLY

FIG. C1 & C2: HYDRAULIC SERVICE MANIFOLD

FIG D: HYDRAULIC POWER SUPPLY

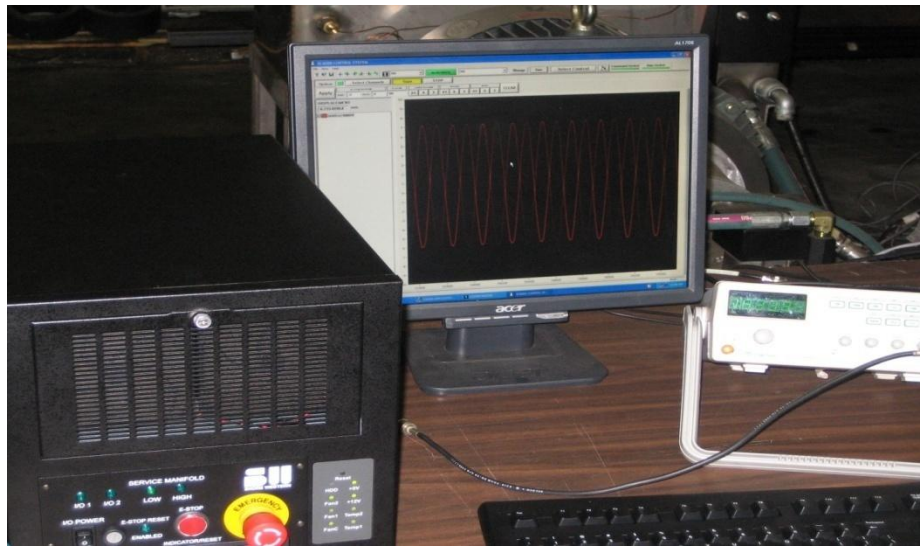**FIG. E1 & E2: SERVO CONTROL SYSTEM**

FIG. E3: SERVO CONTROL SYSTEM

FIG. F1 & F2: HYDRAULIC OIL COOLING SYSTEM (HEAT EXCHANGER + PUMP)

Controller Part (JAGUR Main Controller, Data Acquisition & Analysis):

i)   8 inputs Channels & 1 Output channel.

ii)   Data Acquisition and analysis Software.

iii)   Sine, Random & Shock Vibration Control Hardware along with Software.

iv)   Random Vibration Control Software.

v)   MIMO Shock Vibration Control Software (Multi Shaker Controller)

vi)   Earthquake signal simulation through close loop control system.

vii)   Controller cum Data Acquisition and Analyzer System.

viii)   MATLAB Software.

ix)   Can control additional 5 number Actuators.

Photograph of the different sub-parts of the Controller Part are given below.

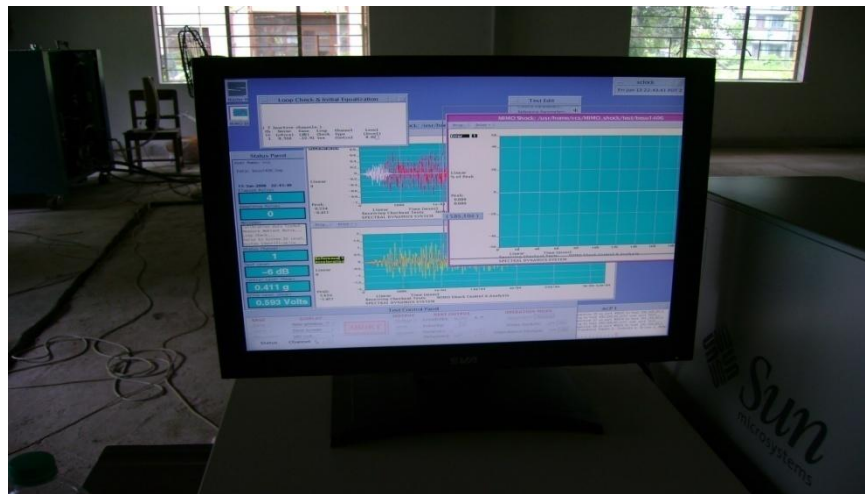**FIG. G: HEART OF SEISMIC SHAKER (JAGUAR CONTROLLER)**

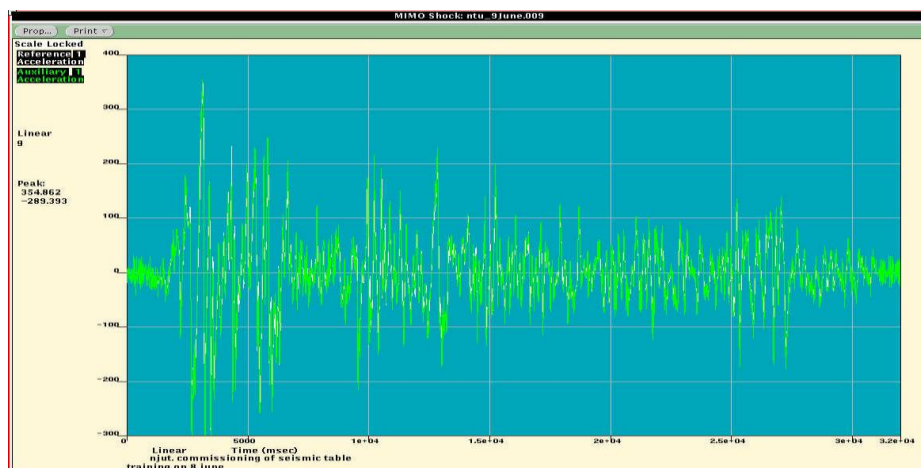

FIG. H1 : EARTHQUAKE SIGNAL ON JAGUAR DISPLAY

FIG. H2: EARTHQUAKE SIGNAL ON JAGUAR DISPLAY

FIG. I1 & I2: COMPLETE SYSTEM
TRAINING AND DEMONSTRATION ON 28TH MAY, 2008

FIG. J1: TRAINING AND DEMONSTRATION

FIG. J2: TRAINING AND DEMONSTRATION

TRAINING AND DEMONSTRATION ON 28TH MAY, 2008

FIG. J3: TRAINING AND DEMONSTRATION

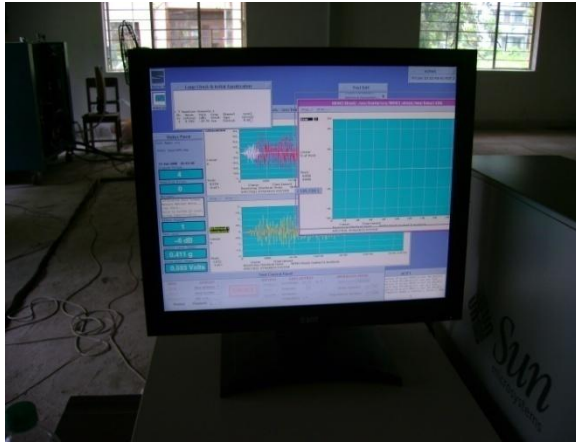**FIG. J4: TRAINING AND DEMONSTRATION**

FIG. J5: TRAINING AND DEMONSTRATION

FIG. J6: TRAINING AND DEMONSTRATION

FIG. J7: TRAINING AND DEMONSTRATION

FIG. J8: TRAINING AND DEMONSTRATION

SCHOOL OF ECOLOGY, INFRASTRUCTURE AND HUMAN SETTLEMENT MANAGEMENT (SEIHSM)

About the School:

Environment and ecology of the globe in the era of globalization and rapid urbanization are subjected to unprecedented stress. The resource destructive development practices compel the human settlements growing beyond the thresholds of sustainability. To address the environmental and ecological challenges confronting the developmental process today, formation of a multidisciplinary research group for adopting alternative approaches for planning and management of human settlements and infrastructure development was felt necessary in this 150 year old University with diversified human resource pool. The **School of Ecology, Infrastructure and Human Settlement Management** came into existence to conduct interdisciplinary and cutting edge research, post graduate studies and extend technical support services on issues having the critical interface of ecology, human settlements and infrastructure development.

Thrust Areas for Research, Consultancy and Training:

- Spatial and Environmental Planning

- Community-Based Natural Resource Management
- Infrastructure and Utilities Planning
- Carrying Capacity Assessment for Urban Settlements
- Human Settlement Planning for Ecologically Fragile Areas
- Environmental Risk Mitigation for Low-Income Settlements
- Historic Architecture and Principles of Sustainability
- Vernacular Architecture and Sustainability
- Planning for Heritage Conservation
- Climate Change and Human Settlements
- Rehabilitative Planning for Climate Refugees
- Natural Resource Extraction and Livelihood Sustainability of Local Communities
- Green Building Techniques
- Institutional Reform and Capacity Building for Urban, Rural and Resource Natural
  Governance

Academic Programme:

i.   Degree Offered: **PhD in Engineering**
ii.   Number of candidates enrolled/registered: **5**

Faculty profile:

Name	Designation	Highest Qualification	Specialisation/ Research Area	Contact No. E-mail
Sudip K Roy	Director	Ph.D.	Traffic & Transportation Planning and Engineering Infrastructure Planning	royksudip@gmail.com 9830233172
Souvanic Roy	Professor	Ph.D.	Environmental Planning, Urban Planning, Natural Resource Management	souvanic_roy@yahoo.co.in 9836093392
Manas Sanyal	Professor	Ph.D.	Spatial and Environmental Planning	Sanyal_manas@yahoo.co.in 9831352950
Suranjan Sinha	Professor	Ph.D.	EMP and SIA in Mining Areas and Natural Resource Economics	Suranjan1980@gmail.com 9433401631
Subrata Pal	Assistant Professor	Ph.D.	Transportation Planning	subrata2412@gmail.com 9831017508
Soumen Mitra	Assistant Professor	Master of Town and Regional Planning	Environmental Planning and GIS Applications	mitrasmen@yahoo.co.in 9831443101

Research Projects:

(a) Development of public transport system planning method for incremental growth of small and medium cities of eastern and north-eastern States' presented before the Programme Advisory Committee and likely to be funded DST, Govt. of India

(b) 'Utility and Robustness Based Approach for Planning of Capital Intensive Transportation

Links (Bridges and Tunnels) in the Northeast' presented before the Programme Advisory Committee and likely to be funded DST, Govt. of India

(c) Ecosystem Management and Role of Local Communities: Comparative Study of Canadian and Indian Perspective sponsored by Shastri Indo Canadian Institute

(d) Development of Decision Support System for Urban Planning in Darjeeling Hills, West

Bengal sponsored by AICTE

(e) Development of Mine Closure Strategy for Sustainable Surface Coal Mining in West

Bengal sponsored by MOEF, Govt. of India

(f)   Collaborative Research Project on "Implementing Sustainable Behaviour through Sediment

Husbandry in West Bengal Sunderbans – Jointly with Queen's University Belfast, UK

(g) Development of Models for Assessment of Carrying Capacities of Existing Towns and

Cities sponsored by DFID

Sponsored Research:

 (a) **Rehabilitative Planning for Cyclone Affected People in the Sunderban   Region through**
Peoples Participatory Approaches sponsored by WWF Eastern
Region

 (b) **Design and Development of Green Building to Accommodate Guest House and Ancillary**
Infrastructure at New Digha sponsored by Students Health Home,
Kolkata

(c) **Analyzing the Impact of Jawaharlal Nehru Urban Renewal Mission funded Slum Improvement Projects on Children Across Slums in India**" funded by Bernard Van Leer Foundation, Hague, Netherlands.

 Research facilities:

Instruments for physical and chemical analysis of water- Portable water analysis kit, soil analysis kit, sound level meter, PH meter, DO meter, Nephelo meter, TSS meter
Weather Sensors like Temperature, Humidity, Solar Radiation, Air Velocity and Direction, Rainfall Sensor, Data Logger and Data Acquisition System
Digital Thermo- Hygrometer, Digital Thermo- Anemometer, Sound Level Meter, Digital Lux Meter
Building and Settlement Level Energy Simulation Software
Statistical analysis software, ARGUS(Ground Water Modeling), ARMOD (Air Pollution Modeling), Map Source (GPS Software)

 List of Journal Publications:

 1. Urban Water-Bodies and Wetlands: Management Needs and Challenges in Indian Cities: Souvanic Roy, Suchandra Bardhan and Krishna Ghosh in SPANDREL, Journal of School Planning and Architecture, Bhopal, Issue 2, Spring 2011

2.   Protected Area Governance in Thailand: Issues, Challenges and Institutional Responses: Souvanic Roy in Local Environment- The   International Journal of Justice and Sustainability, 15 (9-10)

3.   Carrying Capacity Based Development Plan- A Tool for Sustainable Urban Planning and Management: A Case Application for a Typical Municipal Town in India: Manas Kumar Sanyal, Souvanic Roy, Sudip Roy and Subrata Kumar Paul in Journal of Xiamen International Forum on Urban Environment

4. Developing a Behavioural Model for Past and Future of Bengal Sunderban Deltaic Islands":

Julian Orford, Keith Bennett, S. Kumar and Souvanic Roy in Journal of IGCP Coastal and Marine Process Commission

5. Growth of Housing Sector in India- Application of Cost-Effective Construction Technologies to Reduce Greenhouse Gas Emission: Nilanjan Sengupta (PhD Scholar) in Architectural Engineering Journal of Institution of Engineers (India), Vol. 91, October 2010 Issue

6. Alternative Housing Process for Upgrading Living Condition in Urban Fringes: Sourav Sen (PhD Scholar) in SPANDREL, Journal of School Planning and Architecture, Bhopal, Issue 2, Spring 2011

Conference Publications:

1. "Public Participation in Planning and Development: Experience of A Small City in India": Souvanic Roy, Subrata Kumar Paul and Soumen Mitra. Paper published in the proceedings of the 44th EAROPH Regional Planning Conference in March 8-10, 2011 at Brunei, Darussalam

2. "Neoliberal Urbanisation and Coping Strategies: Indian Experience": Souvanic Roy, Subrata Kumar Paul and Soumen Mitra . Paper published in the proceedings of the Asia Pacific Network for Housing Research (APNHR) Conference in January 8-10, 2011 at Hong Kong

Details of the Seminars, Workshops and Symposia organized   :

SEIHSM has organized Three Programes on Green Building and GRIHA Rating System sponsored by Ministry of New & Renewable Energy (MNRE as per the following schedule

· **One-day Awareness Programme on Green Building and Building Rating System on 7th March 2012 at BESU campus.**
· **Two-day Seminar on Capacity Building on Green Building and GRIHA Rating System during 11-12 April, 2012 at Agartala**

· **Three Day Training Programme for the Trainers & Evaluators on GRIHA Rating System during 24-26 July 2012 at BESU campus**

Academic /Research Collaboration, if any:

Collaborative Research with University of Victoria, British Columbia, Canada on Comparative Study of Ecosystem Management in India and Canada

Purabi Das School of Information Technology

Contents :

Name of the Department

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Academic Programmes

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Sponsored Research

Industry – Institute Interaction

Publication summary

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Technology Developed / Innovations

Others

About the Department

The **Purabi Das School of Information Technology (PDSIT)** is established at Bengal Engineering and Science University, Shibpur (BESUS). The School is a collaborative effort of BECDU, Purabi Das Foundation (USA), Research Engineers Inc. (USA) and CMC Ltd. The School has been established with an aim to provide best quality teaching and training in the field of IT. The mandate before PDSIT is to establish itself as a leading centre of excellence. The other essential prerequisite is that - PDSIT should be financially self-supporting from the day one with no burden on the University or Government budget. In close collaboration with IT industries, PDSIT offers postgraduate degree courses.

Academic Programmes

Undergraduate Level

PDSIT do not conduct Undergraduate Course

b. Postgraduate Level

M.Tech in Information Technology The M.Tech programme is a three-year, 6 semester Evening course. The student has to take a set of core courses and a set of electives. The course work is spread across the first to fourth semesters with an option of taking one elective in the fifth semester. This is followed by a project in the fifth and sixth semester in which the student can take up a project of his or her interest, supervised by a faculty member.

Student's intake

	U.G	P.G	Ph.D
Sanctioned students' intake	Nil	36	Awarded - 1 Registered - 2
Additional intake through lateral entry/ QIP	Nil	-	

Doctoral Level

PhD in Information Technology: The PhD. programs are postgraduate research oriented programs. The scholar works in an area of his/her interest under the supervision of a faculty member. The scholar has to obtain a minimum number of credits by taking courses. The highlight of the program is the independent research work taken by a scholar, leading to a dissertation at the end of the program. The average duration of a PhD. program is between four to five years.

PhD. Registered

1. Anirban Mukherjee, Thesis topic: Automatic Diagram Drawing Based on Natural Language Text Understanding.

2. Soumyabrata Ghosh, Thesis topic: "Theory and Application of Cellular Automata for Biological Sequence Analysis."

Faculty Position:

Faculty Profile (in the following table)

Faculty Name	Designation	Highest Qualification	Specialization/ Research Area	Contact No. / Mail Id
Dr.Arindam Biswas	Director	Ph.D	o Digital Geometry o Image Processing and Pattern Recognition	abiswas@it.becs.ac.in barindam@gmail.com Extn. no.864
Mrs. Zeenat Rehana	Assistant Professor	M.E. (CSE)	o Wireless Sensor Network	Zeenatrehena@yahoo.co.in 09732870280
Prof. S. Barat	Professor (Visiting Faculty)	M.Sc. M.Tech	o Data Base Management System,RFID & System Biology	Sbarat@hotmail.com
Mr. Prasun Ghosal	Assistant Professor (Visiting Faculty)	Ph.D	o 3D Integration of VLSI Physical Design o Network-On-Chip o Design of Embedded Systems	p_ghosal@it.becs.ac.in Extn. no.309
Mr.Indrajit Banerjee	Assistant Professor (Visiting Faculty)	M.Tech	o Wireless ad-hoc Sensor Network	ibanerjee@it.becs.ac.in Extn. no.860
Dr. Chandan Giri	Assistant Professor (Visiting Faculty)	Ph.D	o VLSI digital Circuit Testing o System-On-Chip Testing o Network-On-Chip Testing	chandangiri@gmail.com Extn. no.858
Mr. Shyama Prasad Choudhuri	Seniour Member of Technical Staff VEDENETICS (Visiting Faculty)	ME Ph.D Student of Queen's University, Belfast		

Research area

Digital Geometry, Medical Image Analysis, Sensor Netoworks

International Journal

1. A. Biswas, P. Bhowmick, M. Sarkar, and B. B. Bhattacharya, <u>A Linear-time Combinatorial Algorithm to Find the Orthogonal Hull of an Object on the Digital Plane</u>, *Information Sciences*, Elsevier (accepted, unedited version), 2012, DOI: 10.1016/j.ins.2012.05.029.

2. P. Bhowmick, A. Biswas, and B. B. Bhattacharya, <u>On the Representation of a Digital Contour with an Unordered Point Set for Visual Perception</u>, *Journal of Visual Communication and Image Representation*, Vol. 22(7), pp. 590 – 605, 2011, DOI: 10.1016/j.jvcir.2011.07.005.

3. S. Chatterjee, R. Karim, A. Biswas , A. K. Ray, <u>Image Processing of Ultrasound Color Doppler to Characterize Malignant Breast Lesion</u>, *Advanced Materials Research Journal (AMR)*, Vol. 403 – 408, pp. 830 – 834, 2011, DOI: 10.4028/<u>www.scientific.net/AMR.403-408.830</u>, ISSN:1022-6680.

4. S. Chatterjee, A. K. Ray, R. Karim, and A. Biswas, <u>Architectural Design to Characterize Malignant Breast Lesion</u>, *International Journal of Computer Applications*, Vol. 31(11), pp. 8-15, 2011, DOI: 10.5120/3939-5529, ISBN: 978-93-80865-13-7.

5. M. Dutt, A. Sarkar, A. Biswas, P. Bhowmick, and B.B. Bhattacharya, <u>Efficient Word Segmentation and Baseline Localization in Handwritten Documents Using Isothetic Covers</u>, *International Journal of Digital Library Systems*, Vol. 2(3), pp. 1 – 13, 2011, DOI: 10.4018/jdls.2011070101.

6. M. Dutt, A. Biswas, P. Bhowmick, and B.B. Bhattacharya, <u>On Finding an Orthogonal Convex Skull of a Digital Object</u>, *International Journal of Imaging Systems and Technology*, Vol. 21(1), pp. 14 – 27, 2011, DOI: 10.1002/ima.20266.

International Conferences

1. Indrajit Banerjee, Prasenjit Chanak, Biplab Sikdar and Hafizur Rahaman, : ***EER: Energy Efficient Routing in Wireless sensor Networks,*** : 2011 IEEE Students' Technology Symposium at IIT Kharagpur, West Bengal .

2. S. Chatterjee, A. K. Ray, R. Karim, A. Biswas, <u>Classification of Malignant Tumors Using Multiple Sonographic Features</u>, IEEE Proceedings of the International Conference on Recent Trends in Information Systems(ReTIS-2011), pp. 252 – 256, Dec. 21 – 23, 2011, Jadavpur University, Kolkata, India.

3. S. Chatterjee, A. K. Ray, R. Karim, A. Biswas, <u>Micro-calcification Detection to Characterize Malignant Breast Lesion</u>, <u>Annual IEEE India Conference (INDICON 2011)</u>, pp. 1 – 4, Dec. 16 – 18, 2011 Hyderabad, India.

4. S. C. Dutta, A. Biswas, S. Mitra, and C. Saha, Extraction of Lip Region from Video Sequences of Basic Facial Expressions, in Proc. ofInternational Conference on Computational vision and Robotics: ICCVR'11, Aug. 13 – 14, 2011 (accepted).

5. N. Karmakar, A. Biswas, P. Bhowmick, and B.B. Bhattacharya, <u>Construction of 3D Orthogonal Cover of a Digital Object</u>, in Proc. of <u>14th International Workshop on Combinatorial Image Analysis: IWCIA'11</u>, Madrid, Spain, Lecture Notes in Computer Science (LNCS), Springer, Vol. 6636, pp. 70 – 83, May 23 – 25, 2011, DOI:10.1007/978-3-642-21073-0_9.

6. S. Chatterjee, R. Karim, A. Biswas , A. K. Ray, Image Processing of Ultrasound Color Doppler to Characterize Malignant Breast Lesion, in Proc. of <u>International Conference on Control, Robotics and Cybernetics: ICCRC'11</u>, New Delhi, India, IEEE Catalog Number: CFP1176M-PRT, ISBN: 978-1-4244-9709-6, pp. VI: 159 – 162, Mar 21 – 23, 2011.

7. M. Dutt, A. Biswas, and P. Bhowmick, <u>ACCORD: With Approximate Covering of Convex Orthogonal Decomposition</u>, in Proc. of <u>16th IAPR International Conference on Discrete Geometry for Computer Imagery: DGCI'11</u>, Nancy, France, Lecture Notes in Computer Science (LNCS), Springer, Vol. 6607, pp. 489 – 500, April 6 – 8, 2011, DOI:10.1007/978-3-642-19867-0_41.

8. S. Pal, P. Bhowmick, and A. Biswas, <u>FACET: A Fast Approximate Circularity Estimation Technique</u>, in Proc. of <u>2nd International Conference of Emerging Applications of Information Technology: EAIT'11</u>, Kolkata, India, IEEE CS Press, pp. 106 – 109, February 19 – 20, 2011, DOI: 10.1109/EAIT.2011.45.

9. A. Sarkar, A. Biswas, P. Bhowmick, and B.B. Bhattacharya, <u>Combinatorial Construction of the Orthogonal Concavity Tree of a Digital Object</u>, in Proc. of <u>2nd International Conference of Emerging Applications of Information Technology: EAIT'11</u>, Kolkata, India, IEEE CS Press, pp. 210 – 213, 2011, DOI: 10.1109/EAIT.2011.55.

10. Indrajit Banerjee, Prasenjit Chanak, Biplab Sikdar, and Hafizur Rahaman:, DFDNM: A Distributed Fauilt Detection and Node management scheme for WSN,: Acc-2011, Kochi, Kerala, India,

11. Prasun Ghosal : Obstacle Aware RMST generation using Non-Manhalln Routing for 3D ICS AIRCC – 12

12. Prasun Ghosal : A Novel Routing Algorithm for on – Chip Communication in NOC on Diametrical 2D much Interconnection Architecture : AIRCC – 12

13. Prasun Ghosal : A new class of obstacle Aware Steiner Routing in 3D Integrated Circuits : A Fasthest Pair Approach : AIRCC-12.

14. Pranab Roy,Rupam Bhattacharya,Hafizur Rahaman,Parthasarathi Dasgupta,“ An intelligent compaction technique for pin constrained routing in cross referencing DMFBs”,*IEEE CODES+ISSS*, 2012 ,Tempere,Finland (accepted).

15. Pranab Roy,Rupam Bhattacharya,Hafizur Rahaman,Parthasarathi Dasgupta,“A new algorithm for routing aware net placement in cross referencing DMFBs ”,*IEEE ISVLSI*,2012,Amherst,Massachusetts (accepted).

16. Pranab Roy, Rupam Bhattacharya, Hafizur Rahaman and Parthasarathi Dasgupta. “A Best Path Selection Based Parallel Router For DMFBs,” *IEEE International Symposium on Electronic Design (ISED 2011),*Kochi,India pp.176-181.

17. Pranab Roy, Sukanta Roy, Hafizur Rahaman, and Parthasarathi Dasgupta, “A Novel Placement algorithm for Multipin Digital Microfluidic Biochips”, *IEEE MWSCAS 2011,* Seoul, Korea*, pp.1-6.*

18. Debnath Bhattacharyya, Arpita Roy, Pranab Roy, and Tai-hoon Kim,“ Receiver Compatible Data Hiding in Color Image”,*International Journal of Advanced Science and Technology,* volume 6, May, 2009,pp 15-24.

19. Suman Bhattacharjee，Subhasree Bhattacharjee，Amit Konar and Pranab Roy, “Throughput Analysis for a Dynamic Spectrum Sharing Model with Finite Primary Users and Infinite secondary Users”, *IEEE, ICCSIT, 2011, Chengdu,China*

20. Dipankar .Bhattacharya, B.Sarkar and Pranab.Roy,“ Effect of template matching in vehicle number plate identification ”, *IEEE,ICCSIT,2011,*Chengdu,China **Zeenat Rehena**, Krishanu Kumar, Sarbani Roy and Nandini Mukherjee, “ Application of Wireless Sensor Networks in Forest Fire Detection”, in The National Conference on Second India Disaster Management Congress, New Delhi, November 4-6, 2009.

21. **Zeenat Rehena,** Krishanu Kumar, Sarbani Roy, Nandini Mukherjee, “SPIN Implementation in TinyOS Environment using nesC”, in the proceedings of 2nd International conference on Computing, Communication and Networking Technologies (ICCCNT 2010), Karur, Tamilnadu, India, July 29-31 2010.

22. **Zeenat Rehena,** Sarbani Roy, Nandini Mukherjee, “ A Modified SPIN for Wireless Sensor Networks”, in the 3rd International Conference on Communication Systems and Networks(COMSNETS 2011), IEEE, Bangalore, India, January 4-8, 2011.

23. **Zeenat Rehena,** Sarbani Roy, Nandini Mukherjee, “ Topology Partitioning in Wireless Sensor Networks using Multiple Sinks”, in the 14th International Conference on Computer and Information Technology (ICCIT 2011), IEEE, Dhaka, Bangladesh, December 22-24, 2011.

24. **Zeenat Rehena,** Debasree Das, Sarbani Roy, Nandini Mukherjee, "A Comparative Study of Partitioning Algorithms for Wireless Sensor Networks", in the 3rd International Conference on Wireless and Mobile Networks (WiMoNe -3.0) by Springer in LNICST, Bangalore, India, January 2- 4, 2012.
25. **Zeenat Rehena,** Sarbani Roy, Nandini Mukherjee, "Data Forwarding Techniques in Multiple-sink Wireless Sensor Networks", communicated for International Journal, 2012.
26. Debasree Das, **Zeenat Rehena,** Sarbani Roy, Nandini Mukherjee, "Sink Placement Strategies in Partitioned Wireless Sensor Networks", communicated for International Journal, 2012.
27. **Zeenat Rehena,** Debasree Das, Sarbani Roy, Nandini Mukherjee, "Handling Area Fault in Multiple-Sink Wireless Sensor Networks", submitted to an International Conference, 2012.

Research facilities:

The PDSIT laboratory is equipped with 50 No of high configuration Desktop Computers.

a) All computers are connected to Internet with the 1 Gbps. LAN Support.
b) Department is equipped with WiFi connection.
c) International Journal from IEEE, Elsevier, etc. is available on line.
d) Laboratory is open from 8.00 AM to 9.00 PM.
e) PDSIT has a Departmental Library.

Name of the Laboratories : Computing facilities in Promoda Lodh (Mobile Computing) laboratory :
Hardware and Software:
IBM X226 Server -- 2Nos.
IBM Websphere Everyplace Access Server and client.

Wireless Equipment:

IBM Think Pad W/High rate Wireless LAN
Linkys Network Adapter
IBM high rate Wireless
Palm M505
Palm Palm Portable , Palm Serial Cable, Palm Hatsync Cradle
Palm Flash Memory Pre - Installed on Palm
Palm Handheld Stylus Pack of 3,XIRCOM Wireless LAN Module
i PACK- 2NOS.

Special purpose facilities available in the school:
☐ Laser Printers connected to Network.
☐ Scanner is available.
☐ Web Camera (for project purpose)
☐ Students have the scope to modify, configure or administrate any Server or Workstation

Support staff position

(i) **Sanctioned technical post : 3**

(ii)Technical staff profile (in the following table) : Recruitment
   Process is going on

(iii) **Administrative Staff :**

Support staff position

    (i)   **Sanctioned technical post : 3**

    (ii)   **Administrative Staff :**

Staff Name	Designation	Highest Qualification	Contact No	E-mail Id
Office Staff				
Goutam Bandopadhyay	Accountant	B.Com (Distinction) M.Com, ICWAI (Inter) PGDCA	9433134162	gb8206@gmail.com
Susanta Sarma	Office Assistant	B.Sc.	9433609953	Sarma.susanta15@yahoo.in
Rabindra Nath Das	Group D	Class - VIII	9836662273	

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    No of Publications : (This year only)

        Journal   : 6

        Conference : 27

School of Materials Science and Engineering

About the department

School of Materials Science and Engineering started functioning since 2001 as an multidisciplinary educational and research centre with a vision to create a vibrant, supportive community of materials scientists and engineers committed to expand fundamental understanding of materials, develop advanced technologies, and provide leadership through education and innovative research geared to meet the current and future needs of society. The School is an integral part of Bengal Engineering and Science University, Shibpur and aims at providing an ideal environment for interdisciplinary teaching and research. Since its inception the School has embarked on several programmes to facilitate fundamental developments in the physics and chemistry of materials alongside applications in manufacturing processes and engineering design. We actively seek applications from new undergraduates, research students and research fellows, and we are keen to investigate further opportunities for collaboration and scientific exchanges. Within a short span of less than 10 (ten) years, the school could make noteworthy progress in the field of materials education and research.

The objective of the school is

- To provide a lively meeting ground for material scientists & engineers from industry and academia and increase the level of cooperation between the participating institutions both at national and international levels.
- To provide quality post-graduate education in materials science and engineering.
- To take materials research forward with a rapidly growing commitment to develop materials for sustainable development.
- To develop and modernize the multidisciplinary post-graduate curriculum to keep in tune with the rapid developments in this area.
- To integrate postgraduate education with basic and applied research through combination of lecture courses with laboratory work, projects, example classes and supervisions in small groups.
- To apply our technical expertise in materials science & engineering for addressing a broad range of issues of national and international priority, like energy and environment.
- To promote international collaborative ventures involving scientists, engineers, policy makers and industrial entrepreneurs.
- To consider systematically the environmental and ethical consequences of frontier research in materials technology, and to limit these consequences to intended effects.

The school is in close touch with leading research institutions and industries in India like CSIR, DRDO laboratories and Tata Steels. It has also has research collaboration with various Universities abroad viz. UIC, UCI, USA and UNSW, Australia. During last five years School is working in the area of Silicon Nanostructures and Advance Nano composite. Extensive efforts are being given in this emerging field, which culminated to the initiation a project on `**Luminescent silicon nanostructures'** under DST-Nano STI program of Department of Science and Technology, Govt. of India and Indo-US Science and Technology Forum (IUSSTF). Further School has dealt with several research projects sponsored by DST, UGC, AICTE, DRDO etc and recently this school has been awarded with a **National Projec**t **for Expertise Augmentation** for worth of **Rs 6.50 crores** sponsored by **Ministry of Steel, Govt. of India.**

Academic Programmes

Postgraduate Level

i) Degree Offered: Master of Technology in Materials Science and Technology
ii) Sanctioned Students' intake: 18 nos. students per year (AICTE approved)
iii) Additional intake through other programmes (i.e. Q.I.P) .. Nil
iv) Specialisation in (a) Materials Design & Application and

                 (b) Materials Modelling and Optimization

Doctoral Level

i) Degree Offered: Engineering

  No of candidates enrolled: 08   **Registrar:** 10   **Awarded:** 14

  Submitted: 04

d. Post-doctoral level:

  No of candidates: 2 (Two)

  (1) Dr. Hirak Kumar Patra as **UGC-Dr. D.S.Kothari Post doctoral Fellow**

  (2) Dr.Md. Salim Kaiser, Bangladesh as **Post doctoral Fellow**.

C. Faculty position:

  Sanction faculty post (permanent): 04, **Vacant post: 03**

  Endowment Faculty: 01, Vacant: 0

  Contractual Faculty: 01, Vacant: 0

  (a) Faculty profile (In the following table)

Name	Designation	Highest Qualification	Specialisation/Research Area	Contact no E-mail
Dr. N. R. Bandyopadhyay	Professor & Director	Ph.D. (Engineering)	Physical Metallurgy of Steel, Materials Characterization, Nano-materials, Energy Materials	nrb@matsc.becs.ac.in <u>nrbbesus@gmail.com</u>
Dr. Mallar Ray	Assistant Professor (Endowment)	Ph.D. (Engineering)	Experimental and theoretical investigations on semiconductor and hybrid nanostructures.	mray@matsc.becs.ac.in
Dr. Arijit Sinha	Assistant Professor (Contractual)	Ph.D. (Engineering)	Nanomaterials Characterization, Composite Materials, Shape Memory alloys	arijit@matsc.becs.ac.in sinharijit@gmail.com

D. Awards and Laurels:

__N. R. Bandyopadhyay__

- Visited Dhaka, Bangladesh to delivered **Invited lecture** on **"Bio-materials for Implants: Metallic, Ceramic and Polymers'** at the International workshop on "Tools Bio-materials & Implants" during **May 17-18, 2012**

Prof. N. R. Bandyopadhyay holds the following positions:

- **Chairman, Committee for Advancement of Technology and Engineering (CATE) of The Institution of Engineers (I) (IEI)**
- **Vice-President, Materials Research Society of India (MRSI)**
- **Editor –in Chief, IEI- Springer Series D Journal for Metallurgical & Materials Engineering.**
- **Consulting Editor, Technorama, a flagship Journal of IEI for Professional Engineers and Decision Makers.**

M. Ray

- **Awarded G.C.Jain Memorial Award for the best Doctoral Thesis in Materials Science by Materials Research Society of India, 2011.**

- **Visiting Scientist to pursue collaborative research with University of Illinois, Chicago and University of California, Irvine, USA** under the Indo-US Center for Research Excellence on Fabrionics, IUSSTF program during October – December 2011.

Students

Mr. Tuhin Shuvra Basu, CSIR-SRF, SMSE

- **Visiting Scholar to pursue collaborative research with University of Illinois, Chicago and University of California, Irvine, USA** under the Indo-US Center for Research Excellence on Fabrionics, IUSSTF program during July –October, 2011.

- Awarded **CSIR-SRF** in Materials Engineering

Ms. Swati Sikdar, CSIR-SRF, SMSE

- Recipient of the **Young Engineers Award** from The Institution of Engineers (India) in January 2011.

Ms. Arpita Jana, Ph.D. Scholar, SMSE

- **Visiting Scholar to pursue collaborative research with University of Illinois, Chicago, USA** under the Indo-US Center for Research Excellence on Fabrionics, IUSSTF program during July – October, 2011.

- Recipient of **Best Poster Presentation Award** at MRSI AGM held at Bhopal in February, 2011.

- Recipient of **Best Poster Presentation Award** in the Nano-Science Mission Conference of DST, Government of India at IIT, New Delhi in February 2011.
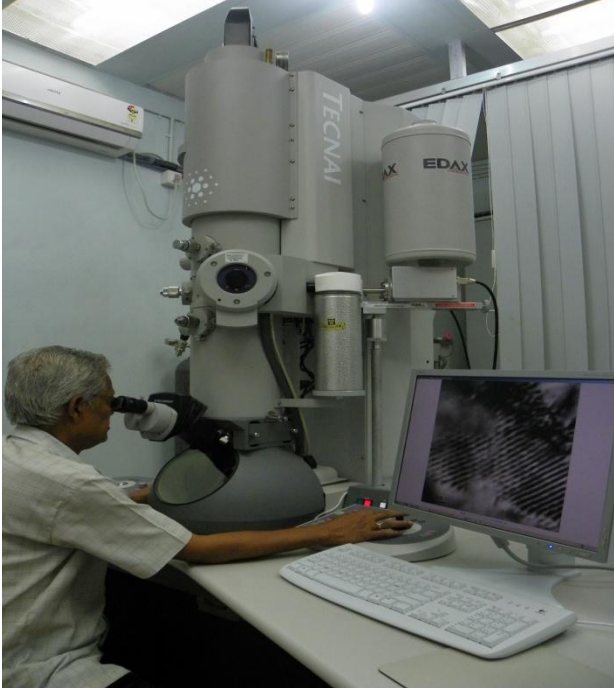
Research area

- Nano-Semiconductor materials
- Advanced steel
- Composite materials
- Energy materials
- Environmental materials
- Super-conducting materials
- Smart materials
- Biomaterials
- Computational materials science
- High strength non-ferrous metals

Research facilities:

Name of Equipment	Few words	Pictures
Olympus Optical Microscope with Image Analyzer	Basic Instrument for materials characterization. Microstructure, which governs the materials (Metal, Ceramics, Polymer or Composites) property, can be examined.	**Left Hand Side:** Olympus Optical Microscope with Image Analyzer **, Right Hand Side:** Leco Micro-Vickers Testing Machine
Leco Micro-Vickers Testing Machine	Preliminary determination of mechanical properties of all kind of materials through measuring the hardness of the sample.	
Ducom Fretting Wear Testing Machine	Abrassive or wear resistance property under service condition is examined in fine details.	

and under Central Materials Research Facility

Veeco Atomic Force Microscope	Surface Property determination through scanning probe microscopy / atomic force microscopy. Attachments for electrical and magnetic property characterization is available with the instrument	
CSM Nano-indentor	Nano scale indentation for mechanical property characterization.	
Hitachi Scanning Electron Microscope with Horiba EDS System and EBSP	Finer Microstructural details can be examined by Scanning Electron microscopy. Local chemical constituents are measured through Energy Dispersive X-ray (EDS) Spectroscopy. The Electron Back Scattered Diffraction Pattern (EBSP) can be examined.	

Leco Glow Discharge Spectroscope	This instrument measures the chemical composition of metals and alloys by optical emission through Spectroscopic analyses.	
Photoluminescence (PL) System	Optical Characterization Instrument	
FEI Tecnai G2 20 S-TWIN Transmission Electron Microscope (TEM) 200 KV with EDX	Very high resolution microstructural characterisation, electron diffraction and energy dispersive x-ray analytical facility for micro-chemical analysis	

Instron 8801 Axial Servohydraulic Dynamic Testing System ± 100 kN capacity	For tensile compression and other mechanical testing for determining YS, UTS etc.	
Instron 8862 Axial Servoelectric Dynamic Testing System ± 250 kN capacity	For tensile compression and other mechanical testing for determining YS, UTS etc with higher capacity	

Name of laboratories:

1. **Nano Semiconductor Lab**:
2. **Materials Characterisation Lab**:
3. **Computational Materials Science Lab**.
4. **Tribology Lab:** Fretting Wear Tester (Ducom)
5. **Low Length Advanced Materials Synthesis (SMALL) Lab.**
6. **Student Computer Lab.**

Consultancy work

Sl. No.	Title of project	Name of the Industry	Year of Start and duration
01	Technology up-gradation and preparation of TPR & DPR for Common Facility Centre (CFC) 'Metal Spare Parts at Bargachia under JB Pur Block' ,Howrah	Directorate of Micro & Small Scale Enterprises, Govt. of West Bengal.	2011
02	Identification/investigation of tampering of electric energy meter of CESC/WBSEB through visual inspection, metallurgical and electrical testing.	CESC & WBSEB.	2011
03	Sample preparation, Transmission Electron Microscopic (TEM) imaging and Energy Dispersive X-ray Spectroscopy (EDS)	Tata Steel Ltd, Jamshedpur	2012

Support staff position:

(i) Sanctioned technical post: 01

(ii) Technical staff profile

Name	Designation	Highest Qualification	Contact no	E-mail
Dr. Subhas Ganguly	Technical Assistant	Ph.D. (Engineering)	2668-8140 (Office)	subhas@matsc.becs.ac.in

Sponsored Research (during 2011-2012):

Sl. No.	Title of Research Project	Sponsoring Agency	Year of Start and duration
01.	Development of high-strength low-carbon multiphase steels (YS~1000 MPa, UTS~1300 MPa and Elongation 40-50%) **Value : Rs 628.00 lakhs**	Ministry of Steel , Govt. of India	Three (3) years
02.	Studies on Mechanical Property Evaluation of Coatings by Instrumented Indentation Technique **Value : Rs 7.70 lakhs**	Gas Turbine Research Establishment (GTRE), Bangalore , DRDO	18th Months
03.	Fabrication of cost effective oxygen reduction catalyst for low temperature fuel cells **Value : Rs 1.50 lakh**	The Institution of Engineers (India)	1 (1) year
04.	Development of a Jute Based Bi-Composite Utilizing Polyolefin and/or Polylactic Acid-its Characterisation and Industrial Process Development **Value : Rs 1.50 lakh**	The Institution of Engineers (India)	1 (1) year

05.	Conducting Polymer Nanowire based electrical biosensor for bacteria detection **Value : Rs 1.00 lakh**	The Institution of Engineers (India)	1 (1) year

No. of Publications (during 2011-2012)

(Journal only)

Sl. No.	Title of Research paper	Title of the Journal	Year	Vol./ issue No	Page Nos.
01.	Detailed characterization of calcium silicate precipitation tube (CaSPT) as a multi-cation adsorbent in aqueous medium	Materials Research Bulletin	2012	47	677
02.	Temperature dependent photoluminescence from porous silicon nanostructures: quantum confinement and oxide related transitions.	J. Appl. Phys.	2011	110	094309
03.	Superparamagnetic iron oxide nanoparticle attachment on array of micro test tubes and microbeakers formed on p-type silicon substrate for biosensor applications	Nanoscale Research Letters	2011	6	540
04.	Formation and assembly of blue emitting water lily type ZnO flowers	Solid State Sciences	2011	13	1633
05.	Enhancement of Open Circuit Voltage and Short Circuit Current of Silicon Solar Cell by Incorporation of Silicon Nano-crystals	IE(I) Journal-MM	2011	92	16
06.	Investigation of Cu(II) adsorption on cobalt silicate precipitation tube (CSPT) in aqueous medium	Hazardous Materials	2011	185	1326.
07.	Physico-mechanical properties of the jute micro/nanofibril reinforced starch/polyvinyl alcohol biocomposite films	Composite: Part B	2011	42	376.

Seminar/Workshops/Conferences/Training programme organised by the Department (during 2010-2011)

- Organized a fifteen days "Short term course on **Materials Engineering: An Overview"** during May 31 to June 15, 2012 at BESU, Shibpur for Bangladeshi Participants

- Organized a five days "Short term course on Scanning Electron Microscopy for Beginners" during February 7-11, 2011 at BESU, Shibpur. 30 participants from across India and faculty members of BESU attended the course.

Technology Developed/Innovations.

Solar cell coated with Silicon nano-crystals which is fabricated at Nano-semicondutor Laboratory at SMSE shows considerable increase in open-circuit voltage and short- circuit current which can potentially increase overall efficiency of coated solar ce

School of Management Sciences

About the department

With the advent of the globally interdependent business environment, B. E. College responded to the needs of the industry. This process was triggered in 1999 by starting B. E. College School Of Management Sciences (BECSOMS) which subsequently became rechristened as **School of Management Sciences (SOMS)** *along with statutory birth of Bengal Engineering and Science University, Shibpur with effect from 1ˢᵗ October 2004, with a view to preparing managers equipped with the knowledge of corporate strategies, inter-working of the functional areas like marketing, finance, operations, human resources, Information Technology Management and the spirit of entrepreneurial thoughts and action.*

To keep abreast with the latest developments in business and industry, teams of teachers work in close co-operation with various government institutions and industries. This has helped the faculty in undertaking relevant research and development of teaching materials including cases related to Indian conditions.

SOMS *helps in creating individuals with specialized skills in marketing, finance, human resource, operations and IT research along with a strong theoretical and practical as well as experimental knowledge in the basic disciplines of management.*

Academic Programmes:

Postgraduate Level

i.	Degree offered	*Master of Business Administration (Full Time)*
ii.	Sanctioned students' intake	*60 per semester*
iii.	Specializations in	*Marketing, Finance, Human Resource, Operations and Information Technology Management*

Doctoral Level

i.	Degree offered	*Ph.D.*
ii.	No. of candidates enrolled	: 3 (2010 – 11)
	Registered	: 1
	Awarded	: 2

Faculty position:

Faculty profile (in the following table)

Name	Designation	Highest Qualification	Specialization / Research Area	Contact No. E-mail
Dr. Sekhar Ranjan Bhadra Chaudhuri	*Director*	*Ph.D*	*Communication Engineering/ Strategic Management*	*26688355*
Faculty On Contract				
Dr. Poulomi Mukherjee (Mondal)	*Assistant Professor*	*Ph.D*	*Operations*	*26684561 extn :422 poulomi_mondal@yahoo.com*
Sukanti Roy	*Assistant Professor*	*MBA*	*Marketing*	*26684561 extn :433 9836803353 9477487195 roysukanti@yahoo.com*
Monalika Dey	*Assistant Professor*	*MBA*	*HRM*	*26684561 extn :423 monalika.dey@gmail.com*
Sumanta Deb	*Assistant Professor*	*MBA*	*Marketing*	*26684561 extn :423 sumanta04@gmail.com*
Surabhi Sinha	*Assistant Professor*	*MBA*	*HRM*	*26684561 extn :423 surobhisinha@yahoo.co.in*

Research Area (only mention broad titles without description in details)**:**
1. Marketing Management 3. Operations Management
2. Human Resource Management

Research facilities: (name specific equipment / picture etc.)

Books and Journal : In the process of acquiring EBSCO and JGATE

Support staff position:

Technical staff profile (in the following table)

Name	Designation	Highest Qualification	Contact No.	E-mail
Goutam Sarkar	Office Assistant	B.Com	26684561 Extn : 439	gsarkar01@yahoo.com
Kanchan Maji	Accounts Assistant	M.Com	26684561 Extn : 439	kkmaji4u@gmail.com
Dipsikha Chandra (Pal)	Computer Assistant	M.Sc.	26684561 Extn : 443	dipsikha84@gmail.com
Mousumi Das	Assistant Librarian	M.Sc	26684561 Extn : 442	dasmousumi37@yahoo.in
Pranab Satpati	Office Peon	Madhyamik	26684561 Extn : 439	pranab_satpati@yahoo.co.in
Sukanta Guha	Office peon	B.Com	26684561 Extn : 439	-

No. of publications: (This year only)
    Journal
Dr. Poulomi Mukherjee Mondal

1. **A Software Model for Managing Productivity in Small and Medium Commercial Printing Organizations, Perspectives on Management**, Vol. 3, pp 67-82, September 2011, ISSN 0974-7095
2. **Supplier Selection Using Compromise Ranking and Outranking Methods** with Dr. S. Chakraborty International Journal of Industrial Engineering July 2011

Sumanta Deb
    1.Spatial Influence on Organizational Creativity: Through Syntactic Analysis of Space, with Sinha. S, **Asian Journal of Management Research** , Special Issue no. 1, 2011, pp- 114-129 (ISSN No. 2229-3795)

    2. Spatial Influence on Retail Consumer Behaviour: Way-Finding Explained With Visibility Analysis of Space, Perspectives on Management, Bi-Annual Journal issued by MEC, Heritage Institute of Technology, Vol. 3, No. 7& 8, September 2011, pp-35-48 (ISSN No. 0974-7095)
    Surabhi Sinha
    1.Spatial Influence on Organizational Creativity: Through Syntactic Analysis of Space, with Deb. S, **Asian Journal of Management Research** , Special Issue no. 1, 2011, pp- 114-129 (ISSN No. 2229-3795)
    Monalika Dey
    1. **Minimizing gaps in Microfinance Institution: A Total Quality Management Approach**,
Perspectives on Management, Vol. 3, pp 14-20, September 2011, ISSN 0974-7095

Conference :

Monalika Dey & Sumanta Deb

Attended Conference on "Employment and Employability: Focus West Bengal" organized by CII (Eastern Region) on 30 July 2011

Seminar / Workshops / Conferences / Training programme organized by the department (in last year)

    Professor Ashish Banerjee , IIM Calcutta delivered Lecture on **Marketing in 21st Century in** February 2012

Others

1. Workshop attended on **Optimisation Methods, Risk analysis and News Analytics** by Dr. P. Mukherjee (Mondal) held at IIM Calcutta from 14th to 17th March, 2012.

2. Workshop on **Women Entrepreneurship** attended by Sumanta Deb, Surabhi Sinha and Sukanti Roy organized by Entrepreneurship development cell (Bengal Engineering and Science University, Shibpur in collaboration with National Entrepreneurship Network in 19th November, 2011.

3. Workshop attended on **Hydrocarbon Conclave organized by CII** by Dr. P. Mukherjee (Mondal) Sukanti Roy and Surabhi Sinha

School of Mechatronics & Robotics

About the School

The beginning of this century is marked with multi disciplinary technological advancement which has not only revolutionized Indian and global industrial market but also has put an impact on engineering education system. BESUS responded to the changed technology scenario by introducing a new specialized engineering post graduate degree course in Mechatronics under the School of Mechatronics & Robotics. The course is unique with respect to similar degree programs offered by other Indian Universities and is framed accordingly to educate graduate engineers to become experts in the multidisciplinary area involving mechanical engineering, electrical engineering, electronics along with computer software. The school of Mechatronics & Robotics was established as an interdisciplinary school in 2007. The School undertakes different research and development activities in areas of cutting edge technology. A Post Graduate course (M. Tech.) in Mechatronics has been introduced in collaboration with three reputed National level Laboratories under Council of Scientific and Industrial Research (CSIR), New Delhi namely Central Electronics Engineering Research Institute (CEERI), Pilani, Central Scientific Instrument Organization (CSIO), Chandigarh and Central Mechanical Engineering Research Institute (CMERI), Durgapur. This is a unique and new initiative for generating trained manpower in the futuristic multi-disciplinary area of Mechatronics. A memorandum of understanding (MOU) was signed between BESU and CSIR for this purpose in February, 2007. The program is of two years duration and is conducted by the participating institutes by utilizing their expertise and facilities available. The programme is structured around the core competence of all the four constituent institutions. The faculty members have been drawn from all the four places based on the expertise of scientists and academicians. While the course is conducted at BESU, CEERI, CSIO and CMERI, the academic degree (M.Tech.) is awarded to students by BESU on successful completion of the course. The curriculum is designed to provide multidisciplinary knowledge and to endow the students with the ability to design mechatronics systems.

Academic Programmes :

Post-graduate Level
i.   Degree offered : M.Tech in Mechatronics
ii.   Sanctioned students' intake: 18 GATE qualified + 5 sponsored candidates
iii.   Specialisations – Mechatronics & Robotics

Doctoral Level
Degree offered: Ph.D

Faculty Position

The school is interdisciplinary in nature and faculty members from relevant departments / school extend support to conduct classes / laboratories.

Faculty profile

Name	Designation	Highest Qualification	Specialisation/ Research Area	Contact No. E-mail
Prof. Arabinda Roy	Director & Professor (ETC)	ME	Power Electronics, Microprocessor based system, Signal Processing	M – 9434313049 Email: arabinda@telecom.becs.ac.in, oruroy@yahoo.co.in
Dr. S. Bhaumik	Coordinator & Associate Professor (AE&AM)	Ph.D.	Mechatronics & Robotics/ Automation	M- 9836044278 Email: sbhaumik_besu@yahoo.co.in

Awards and Laurels: 2

IE(I) student research project award

ATC-DRDO (DRDL-JU) student award, ISTE – L&T student award

Research Area:

Mechatronics, Robotics, Industrial Automation, Instrumentation & Control, Product and System Design, Microsystem

Research Facilities:

i) Mechatronics System
ii) Robotics Systems
iii) Sensors, Actuators and Control, Measuring devices
iv) Hydraulic Manipulator, Pneumatic Manipulator, Vision System, Mobile Vehicle.
v) Software tools for System Modeling
vi) Virtual Instrumentation

Name of the Laboratories:

1.	Mechatronics Laboratory
2.	Robotics Laboratory
3.	Simulation Laboratory

Sponsored Research

Ongoing	Sponsoring agency
Development of a Sensor Integrated Multi Finger Dexterous Robot Hand with Data Glove Interface (3 years, June 2010- June 2013) Rs.61,38,500/- (in Robotics Lab, AE&AM Department)	BRNS, Dept. of Atomic Energy, BARC, Mumbai
Grant-in-Aid award for students project (PG) entitled "Development of Autonomous Blimp for Aerial Surveillance", 2011	Institution of Engineers (India)
M.Tech. project related funding 2012	Advanced Technology Cell (DRDO Cell – Joint Programme between DRDL and Jadavpur University)

Industry Institute Interaction:

- Central Scientific Instruments Organization (CSIR-CSIO) Chandigarh
- Central Mechanical Engineering Research Institute (CSIOR -CMERI) Durgapur
- Central Electronics Engineering Research Institute (CSIR-CEERI) Pilani
- National Institute for the Orthopaedically Handicapped (NIOH under MSJE, Govt. of India)

No. of publications:

Conference   -   6

i. Ranjit Ray, S. Nandy, S. N. Shome, S. Bhaumik - Towards Dynamics and Control of an Arm-Wheel based Autonomous Stair Climbing Robotic Vehicle, ICCRC 2011 Int. Conf. on Control, Robotics and Cybernetices, 21-23 March 2011, New Delhi, Venue – S R M University New Delhi, (IEEE Catalog Number: CFP1176M- PRT ISBN: 978-1-4244-9709-6) and Advanced Materials Research Vols. 403-408

(2012) pp 4743-4752 Online available at www.scientific.net © (2012) Trans Tech Publications, Switzerland doi:10.4028/www.scientific.net/ AMR.403-408.4743

ii. D. Biswas, S Bhaumik - A Unique Path Tracking Methodology of a Rectangular Robot, 15th National Conference on Machines and Mechanisms (NaCoMM -2011), IIT Chennai, 1-2 December 2011, Machines and Mechanism, page no. 515-526, Narosa Publishing House, New Delhi

iii. R Chattaraj, A Barman, S Bhaumik, B Bepari - Trajectory Planning and Intelligent Control of Robotic Finger, 8th Control Instrumentation System Conference (CISCON) 2011 (International Conference) MIT Manipal, P 510-512

iv. Ananda Sankar Kundu, Oishee Mazumder, Dr. Subhasis Bhaumik - Design of Wearable, Low Power, Single Supply Surface EMG Extractor unit for Wireless monitoring, 2nd International Conference on Nanotechnology and Biosensors – (ICNB), December 2011, Dubai, UAE. IPCBEE vol.25(2011) © (2011) IACSIT Press, Singapore

v. Srijan Bhattacharya, Bikash Bepari, Subhasis Bhaumik - IPMC Actuated Compliant Mechanism Based Multi-Functional Multi-finger Micro-gripper, International Conference on Microactuators and Micromechanisms (MAMM 2012), CMERI Durgapur
January 19-20, 2012

vi. Sandip Nair, Dr. Subhasis Bhaumik, Dr. Nabhiraj P. Y. - Design and Development of Blimp for Aerial Surveillance, Twenty Fifth National Convention of Aerospace Engineers (NCAE2011), BIT Mesra, November 04 – 05, 2011

Seminar/ Workshop/ Conferences/ Training programme organized by the School

All India Seminar on "Recent Advancement in Robotics & Mechatronics", organized by IE(I), West Bengal State Centre and BESU Shibpur, 19-20 August 2011.

Technology developed/ Innovations:
EMG based prosthesis, Aero blimp, Dexterous robot hand.

Others :

i. A team of three students from the school was awarded second position in annual technical competition at IIT Guwahati.

ii. Dr. S. Bhaumik participated in IUCEE Workshop on Mobile Robotics (coordinated by Prof. Fred Martin, University of Massachusetts Lowell) at Chitkara University, Chandigarh, 3-7 January 2011.

iii. Dr. S Bhaumik participated in TCS Excellence in Computer Science week 2012 on Cyber Physical System, Tata Research Development and Design Centre (TRDDC) Pune, 9-12 January 2012.

iv. Dr. S Bhaumik delivered invited lecture at National Instruments, Bangalore, Educators Day 2011 on "Mechatronics and Robotics – The Practice of 21st Century Multidisciplinary System Engineering with LabVIEW".

v. Dr. S Bhaumik delivered tutorial lecture on "Intelligent Neuro-fuzzy Control for Anthropomorphic Dexterous Robot Hand", 5th International multi-conference on Intelligent Systems (IISN-2011), 18-20 February 2011, Institute of Science & Technoloy, Klawad, Yamunanagar, Haryana.

vi. Dr. S. Bhaumik acted as Co-Chairman, Organising Committee, All India Seminar on "Recent Advancement in Robotics & Mechatronics", organized by IE(I), West Bengal State Centre and BESU Shibpur, 19-20 August 2011.

vii. Dr. S. Bhaumik acted as Member and reviewer, Programme Committee, NaCoMM 2011 organised by IIT Chennai.

viii. Dr. S Bhaumik was invited as speaker on Micro-Robotics in the Staff Development Programme (SDP) on "Robotics Technologies in Manufacturing", Dept. of Production Engg., Madras Institute of Technology (MIT), Anna University, Chennai, 20th December 2011.

ix. Dr. S. Bhaumik acted as Vice-President (Eastern Zone) of Association of Machines & Mechanism (AMM) and Member, Editorial Board, Association of Machines and Mechanism (AMM).

x. Dr. S. Bhaumik delivered lecture in the Refresher's course for L&T Engineers, June 2012, BESU Shibpur.

School of Safety and Occupational Health Engineering

About the department

Bengal Engineering & Science University, Shibpur introduced a part-time Postgraduate programme in safety and Occupational Health Engineering with effect from August 2007, the first of its kind in India. It is a resolute step towards achieving excellence in the arena of Science and Technology which has been the motto of the institution since its inception.

The university functions as research-intensive university of which the prime areas of activity are:
- *Creation of knowledge*
- *Dissemination of knowledge*

In an environment of research which ensures that teaching and learning are conditioned by the latest research and that the nation is endowed with skilled manpower of the highest quality.

- *The above are being achieved with the help of qualified and motivated faculties, highly motivated students and the state of the art of the laboratory.*
- *Study of Safety and Occupational Health (SOH) is required because in view of the dramatic change in the world of work, global, domestic and in local contexts, the current occupational and environmental health research and education plans and diverse occupational pursuits and hazards. The modest endeavor of the national centres provides directions and success indicators for national and international level promotion in safety and occupational health environment.*
- *The success indicator of SOH national programmes may be seen by innovative approaches, to develop resource base for societal, local government and corporate interaction and communication.*
- *The core competency on human resource as well as quality delivery of SOH services will be to create many more research and learning centres and strengthen existing infrastructures into quality standard laboratories.*
- *The current education and awareness programme of SOH primarily concentrate on sector of organized industries. Greater endeavor is demanded to informal and farming and other vulnerable sectors, including women, children and slderly workforce and need-based attempts will increase knowledge potentials of the sector.*
- *The provision require strengthening the elements of a management system in defining SOPH goals and objectives, performance measures measures, programs and procedures and continual improvement.*

Academic Programmes:

	Postgraduate Level	
i.	Degree offered	*M.Tech. (School of Safety ad Occupational Health Engineering)*
ii.	Sanctioned students' intake	*18*
	Doctoral Level	
i.	Degree offered	*Ph.D.*
ii.	No of candidates enrolled	*two*
	registered	*one*

Faculty position:

Faculty profile (in the following table)

Name	Designation	Highest Qualification	Specialisation/ Research Area	Contact No. E-mail
Dr. B. K. Bhattacharyya	*Professor (Mechanical) & Director of the School*	*M.E., Ph.D.*	*Management*	
Dr. B. K. Saha	*Advisor of the School*	*M.E., Ph.D.*	*Production*	
Dr. S. P. Roy	*Professor (Electrical Engineering Department)*	*M.E., Ph.D.*		
Prof. P. K. Lai	*Assistant Professor (Civil Engg.)*	*M.E.*		
Dr. A. Roychowdhury	*Ex. Dy. Director, ROHC (E), Kolkata*	*M.Sc., Ph.D.*		
Dr. D. Moulik	*Environmental Engineer, WBPCB*	*M.E., Ph.D.*		
Mr. R. N. Bishnu	*Inspector of Factories (Chemical)*	*M.Tech.*		
Dr. A. K. Majumder	*Ex. Director, CLI, Mumbai*	*M.Sc., Ph.D.*		
Mr. U. K. Das	*Director (Safety), RLI*	*M.E.*		
Dr. Durjoy Majumder	*Lecturer, PDSIT*	*M.Sc, Ph.D.*		
Dr. Prasun Das	*Technical Officer, Grade-I (Equi. To Asso. Prof.)ISI, SQC& OR Unit*	*M.S., Ph.D.*		
Mr. Subir Ghosh	*Retd. Jt. Chief Inspector of Factories (Chemical)*	*B.C.H.E., M.Phil.*		
Dr. Amalendu Samanta	*Ex-Scientist, All India Inst. Of Hygene & Public Health*	*Ph.D.*		
Prof. Shankarashis Mukherjee	*Professor, Calcutta University*	*M.Sc., M.Tech.*		
Mr. D. B. Deb	*Ex. Dy. Director General, DGFASLI, Present Co-ordinator of the School*	*B.E.*		

Research area (only mention broad titles without description in detail):
- *Ergonomics*
- *Waste Management*
- *Occupational Health Engineering*
- *Identifying Critical Success Factors & Effectiveness Measurement System of Six Sigma Initiatives in Business Processes*

Name of the laboratories:

Ergonomic Lab	*Set up*
Environmental Lab	
Occupational Health Hygiene Lab	*Data Logging Area Heat Stress Monitor, Personal Noise Exposure Monitor*

Consultancy Work: *Conducting Safety Audit for **CESC Ltd., Kolkata**, of five districts Distribution Network & two Generation Station in West Bengal*

No of publications: (This year only)   Four

Conference:

(i) "**Dimensional Inspectionand Feature Recognitions through Machine Vision**", *17ᵗʰ International Conference on **Industrial Engineering and Engineering Management** during October 28-30, 2010 at Xiamen, China.*

(ii) "**Safety Analysis on Industrial Noise Hazards – Preventions and Management**", National Conference on Industrial Engineering 2011, 17-18 Feb., 2011 organized by West Bengal University of Technology, Kolkata.

(iii) "**Improve Customers Complain Resolutions ProcessUsing Six Sigma**"International Conference on Industrial Engineering and Operations Management (IEOM), Kualalumpur, Malaysia held on Jan 22 – 24, 2011.

(iv) "**A Holistic Approach for Integrated Solid Waste Management System at Kolkata Municipality Corporation Area**", 18ᵗʰ International Conference on "Industrial Engineering and Management" during Sept. 1 – 5, 2011, at Chang Chune, China.

Others

Keynote address by the Director, 18ᵗʰ International Conference on "Industrial Engineering and Management" during Sept. 1 – 5, 2011, at Chang Chune, China.

School of VLSI Technology

About the Department:

During academic session 2005-2006, School was established with a special initiative from DIT, MCIT, Govt. of India with a Special Manpower Development Project (Phase II). The need to integrate to efforts of scientists and engineers working with the different fields of microelectronics and semiconductors devices has been the primary motivation of creation of this school. The research and education at School of VLSI Technology is closely associated with industry and several other primary academic Institutions of repute with an aim to foster cutting edge research and establish the School and one of the pronounced leaders in field of VLSI and Microelectronics. The M-Tech (VLSI Design) with an intake 12 students was introduced during academic session 2006-2007. PhD in different fields of VLSI Design and embedded system has been introduced during 2008-2009.

Academic Programmes :

Postgraduate Level

i.	Degree offered	:	M. Tech in VLSI Design
ii.	Sanctioned students intake	:	18 nos.
iii.	Additional intake through other programmes (i.e. QIP) :		
iv.	Specializations in	:	VLSI Design

Doctoral Level

i.   Degree offered : Ph.D. (Doctor of Philosophy)

ii.   No. of candidates enrolled : 4

Sl. No.	Scholar's Name
1.	SoumyajitPoddar
2.	ParthaSarathi Gupta
3.	Sabir Ali Mondal
4.	KunalSinha

iii.   No. of candidates registered : 1

Sl. No.	Scholar's Name
1.	Debaprasad Das

Faculty position:

Sanctioned Faculty Post : 3 (Contractual)
Vacant Post : 2

Faculty profile (in the following table)

Name	Designation	Highest qualification	Specialization/ research Area	Contact No. E-mail
Mr. SudipGhosh	Assistant Professor	M. Tech.	Digital VLSI Design,Digital Watermarking & VLSI Architectures	033-22191833 8017040884 sudip_etc@yahoo.co.in

Full time Research Scholar

Name	Designation	Highest qualification	Specialization/ research Area	Contact No. E-mail
Mr. Pranab Ray	Research Scholar, DIT,WB	M. Tech.	Biochip design Automation, Embedded System, Algorithm and data structures ,	033-22270143 9433800260 ronmarine@yahoo.co.in
Mr. Somshubhra Talapatra	Research Scholar, DIT,MCIT	M. E.	VLSI Architecture and Digital Design	2668-4561(Ext.-755) s_talapatra@vlsi.becs.ac.in
Mr. Partha Sarathi Gupta	Research Scholar, DIT,WB	M. Tech.	Low power VLSI design, Evolutionary Algorithms.	9674128771. 033-24152571 gupta_parthasarathi@yahoo.co.in
Mr. Soumyajit Poddar	Research DIT, WB	M. Tech	Photonic Network on Chip Design	9681285712 033-23710617 poddar18@gmail.com spoddar18@yahoo.co.in
Mr. Manodipan Sahoo	Research DIT, WB	M. Tech	Carbon Nanotube Based Interconnects and Devices	9038496889 manodipansahoo@gmail.com manodipan_sahoo@yahoo.co.in

Support staff position

Technical staff profile (in the following table)

Name	Designation	Highest Qualification	Contact No.	E-mail
Sri Goutam Paul	Technical Assistant (Project)	B.Tech (ECE)	9874405431	goutam.paul82@lycos.com
RatnaGhosh	Technical Assistant (Contractual)	D.E.T.C., A.M.I.E. (Pursuing)	9239825264	ratna_vlsi@yahoo.co.in

Research area :

1. Digital VLSI Design.
2. Analog Mixed Signals Design.
3. VLSI Testing.
4. Nanotechnology.
5. Bio-chip Design Automation.
6. NOC & SOC Design.
7. FPGA Synthesis and Testing.
8. VLSI Physical Design Automation.
9. Digital Watermarking.
10. VLSI architecture

Research facilities: (name specific equipment/picture etc)

EDA Tools

1. Mentor Graphics
2. Synopsis
3. Cadence
4. CoWare
5. Magma
6. Xilinx ISE Webpack (for FPGA Applications)
7. Chipscope pro (for FPGA)
8. EDK with PowerPC and MicroBlaze(for FPGA Applications)
9. System Generator for DSP(for FPGA Applications)
10. Plan Ahead Design analysis(for FPGA Applications)
11. Matlab
12. TCAD

Hardware Devices and Design Kits

S.No.	Item/Description	Quantity
1.	HCL Infinity Orbita 2200 SY	03
2.	HCL Challenger	9
3.	HCL 19" TFT monitors	12
4.	Redhat Linux OS	12
5.	PC 100 MBPS Network Card	3
6.	External DVD Writers	3
7.	V DEC boards	5
8.	48 CM (19) 6U Rack wall Mount 500 mm	1
9.	Cisco 2950 10/100 24 Port Manageable Switch	1
10.	HP LaserJet 1320n Printer	2
11.	HP LJ Q 5949A Black Print Cartrige	2
12.	3M SCP716 Projector	1
13.	HCL Cat6 Mounting Cord 2mtrs	12
14.	HCL Cat6 Mounting Cord 3mtrs	12
15.	HCL Cat6 Single I/O with Shutta and SMB	12
16.	HCL Cat6 24 Port Jack Panel (UL)	1
17.	Hardware screw 20/pkt for Racks	1
18.	Horizontal Cable Manager for Racks	1
19.	AC mains channel Horizontal for Racks	1
20.	LACIE IEX External DVD Writer	3
21.	100 Lan CU W/BR-PXE-RPL-D-Link	3
22.	Blank 8X DVD + R Media	30
23.	NEC NP-50G LCD Projector	1
24.	ISE 8.2i (Software)	1(20)
25.	EDK8.2i (Software)	1(20)
26.	SYSGEN 8.2 (Software)	1(20)
27.	CSP 8.2i (Software)	1(20)
28.	PLANAHEAD 8.2i(Software)	1(1)
29.	Spartan 3E	15
30.	Virtex 2 Pro	5
31.	DIO5	5
32.	AIO1	5
33.	Compact Flash 512 MB	10
34.	256 DDR MB RAM	5

Name of the laboratories:

1.	Ganapati Sengupta VLSI Laboratory (Research Lab)
2.	SMDP-II Laboratory

3.	Incubation Centre Lab	

Sponsored Research: (mentioned area)

Ongoing Projects	Sponsoring agency
SMDP-II (Special Man Power Development Project-II)	DIT, Government of India
VLSI Design Centre Project	DIT, Government of West Bengal

Technology Developed/ Innovations

India Chip Programme

Only 31 institutes/Universities from India including IIT and IISC are eligible to take part in this mission venture. The School of VLSI Technology (BESUS) took part in Chip Design Programme and fabricated 4 circuits as chip.

During academic year 2011-2012, DIT, MCIT has selected School of VLSI Technology as Chip Integrator to fabricate one complete chip along with participating Institute IIK-KGP and NIT-Rourkela. This is a great achievement for a State University like BESUS.

Accolades Received by Faculty Members
Among the 33 Institutes including IITs, IISc., NITs, Other Universities, M.Tech. thesis entitled "VLSI Architecture of Galois Field Arithmetic Circuit" (Under the Guidance of Dr. H. Rahaman) has been awarded Best M.Tech. Thesis by DIT, MCIT, under SMDP-II Project during 2011-2012.

Seminars, symposia, colloquia organized.
One day Texas Instrument workshop on MSP430 has been organized by School of VLSI Technology in collaboration with Dept. of Information Technology and Dept. of Electronics and Telecommunications, BESUS. Dr. Gene Frantz Principal Fellow, Texas Instruments has delivered lecture on "Wireless Heath".
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Visitors to the University

The University has been privileged to receive a good number of important visitors both from India and abroad. Illustrious visitors to the University during 2011-12 included:
1. Dr.C.P.Ravikumar delivered Lecture on MSP430 on July 2011.
2. Dr. Gene Frantz Principal Fellow, Texas Instruments has delivered lecture on "Wireless Heath**"** on 27 January 2012.
3. Prof. Dong Xiang, Tsinghua University, Beijing, China, delivered lecture on 'Selective Test Response Collection for Low-Power Scan Testing in Test Compression Environment", on November 29, 2011.

Academic collaboration with universities in India and abroad

We have already research collaboration with following University/Institutes…
1) *Department Computer Science and Engineering, Duke University, Durham, USA.*
2) *Department Computer Science, University of Bristol, UK*
3) *ACM Unit, Indian statistical Institute, Kolkata, India*
4) *Department of Computer Science and Engineering, IIT Karagpur, India*
5) *Department of Electronics and Communication Engg., IIT Karagpur, India*
6) *Department of Electronics and Communication Engg., IISC., Bangalore, India*
7) *Institute of Radio Physics, Calcutta University, Kolkata, India*
8) *Department of Electronics Science, Calcutta University, Kolkata, India*

No. of publications: (2011-2012)

International Journal   : 13

International Conference Proceedings   :   27

Details of Publications in the year 2011-2012

Journals
1. Debaprasad Das and HafizurRahaman,"Crosstalk Overshoot/undershoot Analysis and its impact on Gate Oxide Reliability in Multi-wall Carbon Nanotube Interconnects", **Journal of Computational Electronics (Springer), 2011**, Volume 10, Number 4, pp..360-372. (With PhD Student).
2. Indrajit Banerjee, PrasenjitChanak, Biplab Kumar Sikdar and HafizurRahaman, "DFDNM: A Distributed Fault Detection and Node Management Scheme for Wireless Sensor Network", LNCS.192, Springer-Verlog Berlin, Vol. 192(2), pp.68-81, 2011.
3. DebasisMitra, SarmishthaGhoshal, HafizurRahaman, Bhargab B Bhattacharya, KrishnenduChakraborty, 'Test Planning in Digital Microfluidic Biochips using Efficient Eulerization Techniques', **International Journal of Electronic Testing: Theory and Applications(JETTA), 2011,** pp.657-671. . (With PhD Student).
4. Debaprasad Das and HafizurRahaman,"Analysis of Crosstalk in Single- and Multi-Wall Carbon Nanotube Interconnects and its Impact on Gate Oxide Reliability*", IEEE Transactions on Nanotechnology*, *vol. 10, no. 6*, pp. 1362-1370, Nov. 2011 (With PhD Student).
5. PrasunGhosal, HafizurRahaman, Satrajit Das, Arundel Das, and ParthasarathiDasgupta, "*Obstacle Aware Routing in 3D Integrated Circuits*", LNCS, Volume 7135/2012, pp.451-460.
6. HafizurRahaman, Dipak K. Kole, Debesh K. Das, Bhargab B. Bhattacharya, *"Fault Diagnosis for Missing-Gate Fault (SMGF) Model in Reversible Quantum Circuits", **International Journal of Computer and Electrical Engineering (Elsevier),vol.** 37 (2011) 475–485. (With PhD Student).
7. J. Mathew, K. Maharatna, H. Rahaman and D. K. Pradhan, "Pseudo-parallel Datapath Structure for Power Optimal Implementation of 128-pt FFT/IFFT for WPAN*", International Journal of Circuits, Systems and Signal Processing (2011),* Springer, v<u>ol. 30, No. 4</u>, pp.871-882 (With Post Doc Supervisor).
8. PrasunGhosal, HafizurRahaman, Koyel Mukherjee, and DibyenduBallabh, "*A Low Power, Low Jitter DLL Based Low Frequency (250 KHz) Clock Generator*", International **Journal of Signal and Imaging Systems Engineering (IJSISE) (with PhD student).**
9. Indrajit Banerjee, PrasenjitChanak, HafizurRahaman, "SBFDR: Sector Based Fault Detection and Recovery In Wireless Sensor Networks", *High Performance Architecture and Grid Computing: Communications in Computer and information Science (Springer), v*olume 169, 2011, pp.461-469.
10. Indrajit Banerjee, PrasenjitChanak, Biplab k. sikdar, HafizurRahaman "DFDNM: A Distributed Fault Detection and Node Management Scheme for Wireless Sensor Network", *Advances in computing and Communication*: *Communications in Computer and Information Science*(Springer), Volume 192, 2011, pp. 68-81.
11. Indrajit Banerjee, PrasenjitChanak, HafizurRahaman "MFTR: Multipath Fault Tolerant Routing in Wireless Sensor Networks", Computer Networks and Intelligent Computing : Springer Communications in Computer and Information Science, Volume 157, pp. 410-415, 2011.
12. T. Samanta, H. Rahaman, P. Dasgupta, "Near-optimal Y-routed delay trees in nanometric interconnect design "*,IEE Computers and Digital Techniques*, 2011, vol. 5(1), pp. 36 – 48. *). (with PhD student).*

13. Indrajit Banerjee, PrasenjitChanak, HafizurRahaman "CCABC: Cyclic Cellular Automata Based Clustering for Energy Conservation in Sensor Network", International Journal of wireless & Mobil Networks (IJWMN),Volume 3, Number 4, ISSN : 0975-3834, 2011.

Conference

14. *Surajit Kumar Roy, ChandanGiri, SouravGhosh, and HafizurRahaman*, Optimization of Test Wrapper for TSV Based 3D SOCs", *IEEE International Symposium on Electronic Design (ISED 2011)*, pp.188-193.

15. Pranab Roy, Rupam Bhattacharya, HafizurRahaman and ParthasarathiDasgupta. "A Best Path Selection Based Parallel Router For DMFBs," *IEEE International Symposium on Electronic Design (ISED 2011)* pp.176-181.

16. Debaprasad Das and HafizurRahaman, "Crosstalk and Gate Oxide Reliability Analysis in GrapheneNanoribbon Interconnects*", IEEE International Symposium on Electronic Design (ISED 2011)* , pp.182-187.

17. Nachiketa Das, Pranab Roy and HafizurRahaman, "Runtime Congestion and Crosstalk Aware Router for FPGA Using Jbits3.0 forPartial Reconfigurable Application", *IEEE International Symposium on Electronic Design (ISED 2011)* , pp.146-151.

18. PrasunGhosal, HafizurRahaman, Satrajit Das, Arundel Das, and ParthasarathiDasgupta, "*Obstacle Aware Routing in 3D Integrated Circuits*", International Conference on Advanced Computing, Networking and Security (ADCONS 2011), India (*Best Paper Awardee in ADCONS 2011*), pp.451-460.

19. Debaprasad Das, and H. Rahaman "RF Performance Analysis of Single- and Multi-Wall Carbon Nanotube Interconnect", IEEE*Indicon 2011.*

20. Debaprasad Das, AvishekSinha Roy, and H. Rahaman "SWCNT Based Interconnect Modeling Using Verilog-AMS",*18th Annual International Conference on High Performance Computing (HiPC) 2011*

21. DipakKole, HafizurRahaman, Debesh K Das and Bhargab B. Bhattacharya, "Derivation of Automatic Test Set for Detection of Missing Gate Faults in Reversible Circuits",*IEEE International Symposium on Electronic Design (ISED 2011)* , 200-205.

22. Indrajit Pan, ParthasarathiDasgupta, HafizurRahaman and TuhinaSamanta, "Ant Colony Optimization Based Droplet Routing Technique in Digital Microfluidic Biochip", *IEEE International Symposium on Electronic Design (ISED 2011). Pp.223-229.*

23. Surajit Kumar Roy, ChandanGiri, ArnabChakraborty, Subhro Mukherjee and HafizurRahaman. Optimizing Test Architecture for TSV based 3D Stacked ICs using Hard SOCs", *IEEE International Symposium on Electronic Design (ISED 2011)*, pp.230-235.

24. Pranab Roy, Sukanta Roy, HafizurRahaman, and ParthasarathiDasgupta, "A Novel Placement algorithm for Multi-pin Digital Microfluidic Biochips",*IEEE MWSCAS 2011, pp.1-6.*

25. Nachiketa Das, Pranab Roy, and HafizurRahaman, "New Technique for Testing of Delay fault in Cluster Based FPGA", ",*IEEE MWSCAS 2011, pp.1-6.*

26. Surajit Kumar Roy, ChandanGiri, SouravGhosh and HafizurRahaman, "Wrapper Design for Embedded Cores for Three Dimensional System-on-Chips (SOC) Using Available TSVs", *IEEE MWSCAS, Seol, Korea, August 7-10th, 2011, pp.1-6 .*

27. Pranab Roy, HafizurRahaman, and ParthasarathiDasgupta, "Route Aware Placement Technique for Intelligent Collision Avoidance in Digital Microfluidic Biochips", *IEEE ASQED 2011, pp.85-90.*

28. N. Das, and H. Rahaman, "Build-In-Self-Test of FPGA For Diagnosis of Delay Fault", *IEEE ASQED 2011*, pp.54-59.

29. Sabir Ali Mondal, SomsubhraTalapatra and HafizurRahaman, "Analysis, Modeling and Optimization of Transmission Gate Delay", *IEEE ASQED 2011*, pp.54-59.

30. Debaprasad Das and HafizurRahaman, "IR Drop Analysis in Single- and Multi-Wall Carbon Nanotube Power Interconnects in Sub-Nanometer Designs", *IEEE ASQED 2011*, pp.174-179.

31. Nachiketa Das,Pranab Roy, and HafizurRahaman, "On-Line Detection of Crosstalk Fault in FPGA Using BIST Model," *IEEE VLSI Design and Test Symposium (VDAT 2011),* 2011.

32. Pranab Roy, HafizurRahaman, and ParthasarathiDasgupta, "A Group-Preferential Parallel-Routing Algorithm for Cross-referencing Digital Microfluidic Biochips*", IEEE/ACM ISVLSI 2011, pp.317-318.*

33. ChandanGiri, Surajit Ray and H. Rahaman, "Optimizing Test Wrapper for Embedded Cores using TSV based 3D SOCs", *IEEE/ACM ISVLSI 2011*, pp.31-36.

34. Pranab Roy, HafizurRahaman and ParthasarthiDasGupta "Hierarchical Multi-pin droplet routing in Digital Microfluidic Biochips with Intelligent Collision Avoidance", <u>*ACM Great Lakes Symposium on VLSI 2011*</u> (*GLSVLSI 2011*), pp.229-234.

35. DebasisMitra, SarmishthaGhoshal, HafizurRahaman, Bhargab B Bhattacharya, KrishnenduChakraborty, "On Residue Removal in Digital Microfluidic Biochips", <u>*ACM Great Lakes Symposium on VLSI 2011*</u>(GLSVLSI 2011), pp.391-394.

36. NachiketaDas ,HafizurRahaman and I. Banerjee, "BIST to Diagnosis Delay Fault in the LUT of Cluster Based FPGA", IEEE ICNCC 2011, ISBN: 978-1-4244-9550-4, pp. 252-256.

37. PrasunGhosal, Koyel Mukherjee, DibyenduBallabh, and HafizurRahaman, "A Low Power, Low Jitter DLL Based Low Frequency (250 KHz) Clock Generator", *International Conference on Electronic Systems (ICES - 2011)*, January 7-9, Rourkela, India, pp. 178-181.

38. TuhinaSamanta, SanoaraKhatun, HafizurRahaman, and ParthasarathiDasgupta, "Crosstalk Aware Coupled Line Delay Tree Construction for On-chip Interconnects", *12th International Symposium on Quality Electronic Design (ISQED 2011)*, pp.353-358.

39. Pranab Roy, HafizurRahaman and ParthasarthiDasGupta, "A Multipin droplet routing algorithm for Digital Microfluidic Biochips biodevices", *INSTICC*, Biodevices, 2011, Rome, Italy pp.217-223.

40. PrasunGhosal, HafizurRahaman, ParthasarathiDasgupta, "Cell Level Thermal Placement in 3D ICs", *Annual IEEE India Conference (INDICON), 2010 (INDICON 2010), pp.1-4.*

Centre of Excellence for Green Energy and Sensor Systems

About the Department

Worldwide efforts are going on for switching over to sustainable alternative / renewable energy sources (non-polluting, non-fossil-fuel, environmentally friendly sources now known as. **Green energy** sources).   For these purposes, the University on its own has set up a Centre of Excellence entitled "Centre of Excellence for Green energy and Sensor Systems (CEGESS)" in November, 2009. The center envisages providing the required environment and facilities for the scientists, engineers and technicians to work in critical R&D areas.

Research & Development:

i.   Establishment of state of the art fabrication facility of crystalline silicon solar cells.

ii.   Establishment of state of the art fabrication facility of amorphous silicon solar cells.

iii. Efficiency enhancement of c- Si, a- Si and other thin film solar cells.

iv.   New generation Solar cells and systems with new, novel nano- materials and green methods.

v.   Fuel cells: New bio-mass and methodologies.

vi.   New methodologies of solar energy storage (including super capacitors).

vii.   Advanced solar photovoltaic systems for lighting and power plant applications.

viii. Sensors (including bio-sensors, gas sensors and humidity sensors) based on novel materials (including quantum dots) and techniques for agricultural, environmental, automobile and healthcare applications.

ix.   Smart sensor systems.

Academic Programmes:

Post graduate Level:

* M. Tech courses in Renewable Energy Science and Technology is likely to start from the year 2013.

Doctoral Level
i)   Degree offered: Ph.D
ii)   No of candidates enrolled: 7 (enrolled), 3 (to be enrolled)

Faculty position

Faculty profile (in the following table)

Name	Designation	Highest Qualification	Specialisation/ Researh Area	Contact No. E-mail
Prof. H.saha	S S Baral Chair Professor and Coordinator	Ph.D	Photovoltaics and Sensors	shahiran@gmail.com
Prof. A.K.Barua	Hony. Emeritus Professor	D.Sc	Photovoltaics	eruakb@yahoo.com
Prof. R.Bhattacharya	Hony. Adjunct Professor	Ph.D	Photovoltaics and Sensors	raghubhatin@yahoo.com
Prof. S.P. Gon Chaudhuri	Hony. Adjunct Professor	D. Sc	Green Energy and Technology	nbirt2008@yahoo.com
Prof. Bibek Bandyopadhyay	Hony. Adjunct Professor	Ph.D	Photovoltaics and Solar Thrmal	bbibek@nic.in
Prof. Swapan K . Datta	Adjunct Professor	Ph.D	Photovoltaics and Sensors	swapansumana@gmail.com
Dr. Nillohit Mukherjee	Assistant Professor	Ph.D		nilsci@yahoo.co.uk
Dr. Sumita Mukhopadhyay	Assistant Professor	Ph.D	Photovoltaics	mukhopadhyay_sumita@yahoo.co.in
Shri Avra Kundu	Assistant Professor	Ph.D	Photovoltaics and Sensors	avrakundu@rediffmail.com

Awards and Laurels:

1. Best poster award in National conference on sensors and actuators: Science to technology (NCSA-2011) for paper entitled, "The application and packaging of MEMS based microheater with coplanar IDE for gas sensing applications." By Avra Kundu et. al.

2. Bharat Jyothi Award to Prof. A. K. Barua by India International Friendship Society, New Delhi.

Researh area (only mention board titles without description in detail)

Photovoltaic
(i) Fabrication of crystalline silicon solar cells
(ii) Fabrication of amorphous silicon solar cells
(iii) Efficiency enhancement of c- Si, a- Si and other thin film solar cells.
(iv) New generation Solar cells and systems with new, novel nano- materials and green methods.
(v) New methodologies of solar energy storage (including super capacitors).
(vi) Advanced solar photovoltaic systems for lighting and power plant applications.

Sensors

(i) Sensors (including bio-sensors, gas sensors and humidity sensors) based on novel materials (including quantum dots) and techniques for agricultural, environmental, automobile and healthcare applications.
(ii) Smart sensor systems.

Research facilities: (name specific equipment/ picture etc.)

Major Materials and Device Processing units for solar photovoltaic and systems research and development

- Clean Room Equipment and accessories

- Oxidation/ Diffusion Furnace

- Multizone PECVD Cluster

- Screen Printing machine

- Drying and Firing Belt furnaces

- E- Beam evaporation system

- Reactive ion etching system

- RF Sputtering units

- Laser Scriber

- Soft Conformal Imprint Lithography

- Planetary Ball Mill

- Deionized water system

PECVD cluster tool

Electron beam and Thermal Evaporation

Reactive Ion Etching (RIE) System

Oxidation/ Diffusion Furnace

Drying/Firing furnace for silicon solar

Major Characterization Equipments

- Solar Simulator and Spectral Response setup
- Scanning probe microscope
- FESEM
- PL set up
- Thickness profilometer
- Optical microscope with image analyzer

Spectral response setup

Major Equipments for SPV Systems

- 30 kW Solar Array Simulator

30 kW Grid Simulator

Rabi Kutir:

A BIPV initiative of CEGESS at BESUS

Sponsored Research : (mention area)

The centre has already been awarded a number of research projects in the field of solar energy and sensors by different funding agencies of the Govt. of India:

Industry- Institute Interaction

No of Publications: (This Year only)
   Journal : 14 (for 2011-2012)
   Conference : 24 (for 2011-2012)
   Books/Monograms

Research Projects	Funding Agency	Sanctioned Amount	Duration
Solar Photovoltaic Hub at BESU	DST	9.42 Crores	5 years
Advanced Research on thin Film Silicon Solar Cells and PV systems	MNRE	14.76 Crores	4 years
Development of an Intelligent Recognizer for Component Analysis of Manhole Gas Mixture	DST	18.34 Lakhs	2 years
Lab- Scale precision I-V and C-V real time analyzer for design and development of a selective gas sensor	DST	19.80 Lakhs	2 years
Associate Hub member in Sensor Hub at CGCRI, Kolkata	DST	2.5 Crores	5 years

Seminar /Workshops/Conferences/Traning programme organized by the department (in last year)

1. Teachers' Training Program on Solar Photovoltaics: Fundamentals, Technologies and Applications during 12th-22nd December, 2011 at BESU (Remote Centre).

2. One month summer training for engineering students in the field of Solar Photovoltaic and Solar Thermal Systems (June – July), 2011.

SEMINAR, SYMPOSIUM/ CONFERENCE ATTENED/ ORGANIZED

ATTENED

International Conferences

1. Realization of a cost effective production technology for single junction amorphous silicon solar modules: Chandan Banerjee, P. M. Ratheesh Kumar, K. Mohanchandran, S. Prasanth and A. K. Barua: *26th European Photovoltaic Solar Energy Conference*, 5-9 September 2011, Hambur, Germany, pp. 2348 - 2349.

2. Plenary Lecture by Prof. A.K.Barua at *18th International Conference on Advanced Materials*, Decmber 2011, Coimbatore, India.

3. Plenary Lecture by Prof. A. K. Barua at *Indo-US Workshop on Frontiers of Photovoltaic Technology*, Januaary, 2012, IIT , Bombay.

4. Plasmonics for enhancing efficiency of thin film silicon solar cells: M. G. Sreenivasan, Chandan Banerjee, K. Mohanachandran, S. Prasanth and A. K. Barua accepted in *26th European Photovoltaic Solar Energy Conference.*

5. Plasma Deposition of Multilayers for Surface Engineering.,R.Bhattacharyya & Sushil Kumar (invited) *Indian vacuum Society Symposium on Thin Films: Science & Technolgy,*TFST-2011 ,Nov-09-12, BARC – Mumbai

6. Plasmonics based devise   in Photovoltaics, Sensing & Communication- an appreciation-R,Bhattacharyya (invited), *National conference on Advanced Technologies*, 27th-29th Feb 2012,ABV –Indian Institute of Technology & Management ,Gwalior,

7. ”Green Nanotechnolgy” (key note address), *"National Conference on Nanoscience and Nanotechnology".* March 10-12,2012,Aligargh Muslim University.

8. Nanomaterials and Nanostructures for High Efficiency Crystalline Solar Cells" by H.Saha and S.K.Datta at Dum Dum Motijheel College, Kolkata on 10/12/2011.

9. Plasmonic And 3-G solar Cell - Challenges and Oppurtunities by H.Saha and S.K.Datta, *"Frontiers in Electronics, Communication, and Instrumentation Technology-FECIT 2011"* , 3 - 4 November 2011, Indian School of Mines.

10. Nanomaterials and nanostructures for plasmonic and 3-g solar cells by H.Saha and S.K.Datta, *"Physics behind electronics/optoelectronics and their Applications (PEAA-2011),* 1-2 December, 2011, Department of Physics, Sammilani Mahavidyalaya.

11. Degradation Analysis of Different PV Modules after Prolonged Field Operation: O.S. Sastry, Rahul Chandel, R.K.Singh, Richie Brian Stephen, P.K.Dash, Rajesh Kumar, Bibek Bandyopadhyay, *26th EU PVSEC*, 5-9 September 2011, Hamburg, Germany.

12. Performance Comparison of Three Technology Modules under Similar Outdoor Conditions: O.S. Sastry, A. Kumar, R.K. Singh, D. Adiraju, A. Anand, R. Kumar and Bibek Bandyopadhyay, *26th EU PVSEC*, 5-9 September 2011, Hamburg, Germany.

13. Degradation in Performance Ratio and Energy Yields of Exposed Modules under Arid Conditions: O.S. Sastry, Rahul Chandel, R.K.Singh, Richie Brian Stephen, P.K. Dash, Rajesh Kumar, Bibek Bandyopadhyay, *26th EU PVSEC*, 5-9 September 2011, Hamburg, Germany.

14. Performance Evaluation of Solar Photovoltaic Lighting and Water pumping Systems in India: O.S. Sastry, Shreya Agarwal, D. Adiraju, Rajesh Kumar and Bibek Bandyopadhyay, *26th EU PVSEC*, 5-9 September 2011, Hamburg, Germany.

15. S. Das, A. Kundu, S. K. Datta, H. Saha, Influence of silver plasmonic nanoparticles on planar silicon solar cells, *International Congress on Renewable Energy (ICORE)*, 2011.

16. S. Das, A. Kundu, S. Maity, S. Dhar, B. Gupta, Novel compact CPW filter for MICs using metamaterial structures, *11th Microwave Mediterranean Microwave Symposium (MMS)*, 2011.

17. Amrita Chakraborty, Avra Kundu, Santanu Maity and Bhaskar Gupta, "Compact K-Band Distributed RF MEMS Phase Shifter Based on High-Speed Switched Capacitors", *proceedings of the 11th Mediterranean Microwave Symposium MMS* 2011.

18. Amrita Chakraborty, Avra Kundu, Sayan Chatterjee and Bhaskar Gupta, "Design of Miniaturized RF MEMS Based Single-Bit Phase Shifter", *Proceedings of the International COMSOL Conference,* 04th-05th November, 2011, Bangalore.

19. A. Datta¸ G. Bhattacharya, D. Mukherjee and H. Saha, "Towards Stable Grid Voltage Through Load Sharing In An Indian Grid Connected PV System", *Proc. 26th European Photovoltaic Solar Energy Conference(26th PVSEC)* Germany, 2011, pp.4205-4210.

20. "Effect of annealing on photoluminescence and Raman spectra of SiO_x thin films.", Sumita Mukhopadhyay and Swati Ray, *presented at E-MRS 2011 Spring and Bilateral meeting,* Nice, France, May 7 – 13, 2011.

21. "Wide bandgap silicon oxide films for application in solar cell, " Sumita Mukhopadhyay and Swati Ray, *presented at IWPSD 2011,* I.I.T. Kanpur, India, December 19 – 22, 2011.

National Conference

1. Photosynthetic Efficiency to Convert Solar Energy: lessons to learn from nature: Madhumita Banerjee, Bibek Bandyopadhyay, *National Conference on Science of Climate Change and Earth's Sustainability: Issues and Challenges,* September 12-14, 2011, Lucknow.

2. Emerging energy technologies: Madhumita Banerjee and Bibek Bandyopadhyay, *Proceedings of 7th Annual Session of Students' Chemical Engineering Congress 2011,* September, 2011, Kolkata.

3. Solar energy initiatives in India for sustainable development: Bibek   Bandyopadhyay, *Proceedings of International Conclave on Climate Change,* Hyderabad, October, 2011

ORGANISED

1. Dr. Bibek Bandopadhyay, Member, Advisory Committee, International Conference on Materials Science, Kolkata (2011).
2. Successfully organized the Teachers' Training Program on Solar Photovoltaics: Fundamentals, Technologies and Applications during 12th-22nd December, 2011 at BESU (Remote Centre).
3. The National workshop on "Plasmonic and Nano-structured solar Cells" was held on March 17, 2012 and was sponsored by DST, Govt. of India.

Journal papers:

1. "A study on the structural and mechanical properties of nanocrystalline CuS thin films grown by chemical bath deposition technique", Nillohit Mukherjee, Arijit Sinha, Gobinda Gopal Khan, Debraj Chandra, Asim Bhaumik and Anup Mondal, **Materials Research Bulletin** 46 (2011) 6**.**

2. Swarup Kumar Maji, Nillohit Mukherjee, Anup Mondal, Bibhutosh Adhikary, Basudeb Karmakar and Supriya Dutta, "Synthesis and characterization of nanocrystalline zinc sulphide via zinc thiobenzoate-   lutidine single-source precursor", **Iorganica Chimica Acta** 371 (2011) 20.

3. Swarup Kumar Maji, Nillohit Mukherjee, Anup Mondal, Bibhutosh Adhikary and Basudeb Karmakar, "Synthesis of nanocrystalline and mesoporous zinc sulphide from a single precursor $Zn(SOCCH_3)_2Lut_2$ complex", **Journal of Physics and Chemistry of Solids** 72 (2011) 784.

4. "Silicon rich silicon oxide films deposited by RF PECVD method: Optical and structural properties." Sumita Mukhopadhyay and Swati Ray, **Appl. Sur. Sci.** 257 (2011) 9717.

5. Photonic crystal slab waveguide-based infiltrated liquid sensors: design and analysis.Shruti, R.K Sinha**,** R.Bhattacharyya, **Journal of Nanophotonics**, 5 (2011) 053505.

6. Comparative Study based on Exergy Analysis of solar air heater collector using thermal energy storage, V.V. Tyagi, A.K. Pandey, G. Girdhar, B. Bandyopadhyay, S. R. Park, and S.K. Tyagi, **International Journal of Energy Research** February (2011).

7. Diffuse radiation models for Indian climatic conditions: Indira Karakoti, Prasun Kumar Das and Bibek Bandyopadhyay, **International Journal of Ambient Energy**, Available online: 04 Jan 2012.

8. A. Kundu, S. Das, S. Maity, B. Gupta, S. K. Lahiri, H. Saha, A tunable band-stop filter using a metamaterial structure and MEMS bridges on a silicon substrate, **Journal of Micromechanics and Microengineering**, 22 (2012) 45004.

9. Sunipa Roy, Tanusree Majhi, Avra Kundu, C. K. Sarkar and H.Saha Design, Fabrication and simulation of coplanar microheater using Nickel alloy for low temperature gas sensor applications, **Sensor Letters**, 9 (2011) 1.

10. A. Kundu, N C Mondal, B Gupta, S K Lahiri, H Saha, Performance Improvement of RF MEMS Switch with Two Movable Plates, International **Journal of Advances in Engineering Sciences and Applied Mathematics,** DOI: 10.1007/s12572-010-0010-y.

11. Sonali Das, Avra Kundu, Hiranmay Saha and Swapan K. Datta, "Role of metal and dielectric nanoparticles in the performance enhancement of silicon solar cells", **Journal of Modern Optics** (Accepted).

12. A . Datta¸ A . Ray, G. Bhattacharya   and   H. Saha, "Green Energy Selection Based on Multi-Criteria Analysis", **Emerald International Journal of Energy Sector Management**, Vol. 5 (2011)271.

13. A. Datta¸ G. Bhattacharya, D. Mukherjee and H. Saha, "Towards constant load voltage in Indian grid connected PV system using dsPIC controlled power conditioning unit"¸ **Elsivier Procedia Technology** 4 (2012) 661.

14. Himel Chakraborty, Arijit Sinha, Nillohit Mukherjee and Partha Protim Chattopadhyay **"**Exfoliated graphite reinforced PMMA composite: A study on nanoindentation and scratch behavior" **Journal of Nanotechnology** (on Invitation) Accepted

15. Gobinda Gopal Khan, Rajasree Das, Nillohit Mukherjee and Kalyan Mandal "Effect of metal doping on highly efficient photovoltaics and switchable photovoltage in bismuth ferrite nanotubes" **Physica Status Solidi: Rapid Research Letters** DOI: 10.1002/pssr.201206211

Centre for Healthcare Science and Technology

About the department: Centre for Healthcare Science and Technology (CHEST) was established by Bengal Engineering and Science University, Shibpur on 22.01.2010.

Faculty Position:

Name	Designation	Highest Qualification	Specialization/Research Area	Contact No. E-mail
Dr. Dipankar Chakroborty	Adjunct Professor	DCH	Paediatrics / Medical Instrumentation, Nanotechnology in medicine, Bio-mechanics, Medical Immunology	dc.ohnet@gmail.com
Dr. Chitrangada Das Mukhopadhyay	Assistant Professor	PhD	Host-pathogen interaction	chitrangadadas@yahoo.com.
Dr. Ananya Barui	Assistant Professor	PhD	Tissue Engineering and Regenerative Medicine	ananya.pariksha@gmail.com.

Research Area (only mention broad titles without description in details):

Dr. Dipankar Chakrabarti- Cardio-pulmonary instrumentation

Dr. Chitrangada Das Mukhopadhyay- Host-pathogen interaction

Dr. Ananya Barui- Tissue Engineering and regenerative medicine

Research Facilities: (name specific equipment/ picture etc.)

Cardio-pulmonary Laboratory:

Digital Signal & Image Processing

Medical equipments for validation of medical instrumentation

Name of the laboratories:

Cardio-pulmonary Instrumentation laboratory

Sponsored Research: (mentioned area)

Ongoing (Prof Value)	Sponsoring agency
Development of Smart Prognostic System for Early Indication of Cardiac Problem of a Patient: PI: Prof. Ajoy Kumar Ray (37.425 Lacs)	DST, Govt. of India
Computed Aided Design, Analysis and Development of Patient Specific Prosthesis for Different Human Joints, Specifically Hip Joint on Indian Perspective; PI: Prof. Amit Roy Chowdhary, (63.148 Lacs)	DBT, Govt. of India
Efficacy of Silicon Microchannel Cytosensor Platform for Electrical Profiling of Multiple Mammalian Cells Under Intervention Towards Diagnostic and Regenerative Applications; PI: Prof. Chirasree RoyChowdhuri, (54.600 Lacs)	SERB, Govt. of India

No. of Publications: (This year only)

<u>Journal</u>

- Ananya Barui, Provas Banerjee, Rusha Patra, Raunak Kumar Das, Santanu Dhara, P.K. Dutta, and Jyotirmoy Chatterjee. Swept-Source Optical Coherence Tomography of Lower Limb Wound Healing with Histo-pathological Correlation. Journal of Biomedical Optics. 16 (2), 2011.
- Ananya Barui, Provas Banerjee, Raunak Kumar Das, Shyamal Kumar Basu, S. Dhara and Jyotirmoy Chatterjee. Immunohistochemical Evaluation of p63, E-Cadherin, Collagen I and III Expression in Lower Limb Wound Healing under Honey. Evidence-Based Complementary and Alternative Medicine. 2011, Article ID 239864, 8 pages, doi:10.1155/2011/239864.
- Ananya Barui; Ritesh Khare; Provas Banerjee; Jyotirmoy Chatterjee. Ex vivo Bio-compatibility of Honey-Alginate Fibrous Matrix for HaCaT and 3T3 with Prime Molecular Expressions. Journal of Materials Science: Materials in Medicine. 2011, DOI 10.1007/s10856-011-4456-7.
- R.Dev Das, N.Mondal, C.RoyChaudhuri, "Optimized Electrode Geometry for an Improved Impedance based Macroporous Silicon Bacteria Detector", available online IEEE Sensors, 2012.
- D.Mondal, C.RoyChaudhuri, L.Das, J.Chatterjee, "Microtrap Electrode Devices for Single Cell Trapping and Impedance Measurement", accepted in Biomedical Microdevices (Springer), 2012.
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- A.Dutta Chowdhury, K.Bandyopadhyay, P.Sen, C.RoyChaudhuri, A.De, "Label Free Polyaniline Based Impedimetric Biosensor for Detection of E. coli O157:H7 Bacteria"Sensors and Actuators B, to be published 2012.
- C. Das Mukhopadhyay, H G Ozer, Terry Camerlengo, C. Cook, T Meulia, Kun Huang and Joanne Trgovcich. Cytomegalovirus Small RNAs Identified by Next Generation Sequencing Target the Tumor Suppressor, 1 DLC1 Jl of Virology, (2011), Vol. 24, pp 165-68.
- Amit Roy Chowdhury, Ajay Kashi, Subrata Saha. A comparison of stress distributions for different surgical procedures, screw dimensions and orientations for a Temporomandibular joint implant. Journal of Biomechanics, (2011) Vol. 44, pp 2584-2587
- Prasanna Kumar Lenka, Amit Roy Choudhury. Analysis of trans tibial prosthetic socket materials using finite element method. Journal of Biomedical Science and Engineering, (2011) Vol. 4.

<u>Conference</u>

- Dr. Amit Roy Chowdhary. Simulation of Response of Different Body Parts Under Impact Loading. Indo-US Symposium on 'Preventing Road Crash Injury through Vehicle Safety Design'. March 6-7, 2012, IISc Bangalore.
- Ananya Barui, Provas Banerjee, Raunak KumarDas, Santanu Dhara, Jyotirmoy Chatterjee. Honey Based Fibrous Scaffold for Tissue Engineering Application. IEEE/NIH Life Science Systems & Applications Workshop. April 7-8, 2011, Bethesda, Maryland, USA.

- Ananya Barui, S. Dhara, J. Chatterjee, N.Mondal, D.Mondal, C.RoyChaudhuri. A Simple and Sensitive Cytosensor Based Electrical Characterization of in vitro Wound Healing Assay for Keratinocytes. IEEE/NIH Life Science Systems & Applications Workshop. April 7-8, 2011, Bethesda, Maryland, USA.
- Ananya Barui, Provas Banerjee, Raunak Kumar Das, Santanu Dhara, Jyotirmoy Chatterjee, Honey-alginate fibrous matrix for tissue engineering application, Accepted for Oral Presentation for 3rd International Congress on Biohydrogels to be held in Gould Institute, Florence, Italy, during November 8-12, 2011.

Seminar/Workshop/Conference/Training Programme organized by the department (in last year)

- Seminar talk on 'Opportunities R & D Funding Govt. of India and DST initiatives in Health Research' by Dr. Rita Banerjee (Scientist F, DST, Govt. of India), June 13, 2011.
- Seminar talks on 'Bio-engineering and Interdisciplinary field of Study and its Future' by Prof. Subrata Pal (Founder Director, School of Bio-Science and Engineering, Jadavpur University), June 13, 2011.
- Co-sponsor in International Conference on Biomaterial and Implant. Prospect and Possibilities in the New Millennium. "BIO 2011". July 21-23, 2011, held at CSIR-CGCRI, Kolkata.
- Seminar talks on 'Load Bearing ImplantsChallenges and Prospects' by Prof. Amit Bandyopadhyay (Professor, School of Mechanical and Material Engineering, Washington State University, Pullam, WA 99164). 1st August, 2011.
- Seminar talks on 'Calcium Phosphate Ceramic in Bone graft and Drug Delivery' by Prof. Susmita Ghosh (Professor, School of Mechanical and Material Engineering, Washington State University, Pullam, WA 99164). 1st August, 2011.
- TEQIP II Sponsored Symposium on 'Recent Trends in Healthcare Science and Technology', in collaboration with Indo-US centre for research excellence on Fabrionics. 5-6th March, 2012.

Ongoing work on:
- Portable cardiac risk detector – sponsored by Dept. of Science & Technology, Govt. of India
- Multifunction electronic blood pressure machine,
- Non-invasive CVP measuring system
- Computerised auto-analysis of paper-based archived ECG
- Multi-point phonocardiography system
- Childhood malnutrition assessment equipment
- Prototypes developed
    - i) Portable electrical biosensor for bacteria detection
    - ii) Wireless sensor system for health monitoring of elderly people (field testing has started)

Others: Collaborative research work with Central Glass & Ceramic Research Institute, Jadavpur University and Variable Energy Cyclotron Centre, Kolkata.

LIBRARY

The University library has the distinction of being one of the oldest and largest resourceful technical library in the south-east Asia. The library not only caters to the basic information needs of faculty members, research scholars and students of this University but also provides information and documentation services to researchers of neighbouring universities and research institutes. The library provides open access services for books and journals to its members including students.

Collection

The total collection of books is 1,33,373 as on 31st March 2012. During this period 536 books were added to the library collection. It has a huge collection of non-book materials, such as patents, standards, technical reports and pamphlets. The library boasts of having a good collection of old and rare books and journals of the nineteenth century.

Computerization

The library has computerized its entire library housekeeping operations and services. The preparation of database of the library collection for books has been completed and charging and discharging of books to the members are made online through the integrated library management system – LibSys. The library is providing online search facilities (WebOPAC) of its database through the website of the university for benefit of its users.. Library introduced new system generated gate pass and issue slip from July 2011.

Services offered

- Access to electronic resources
- Lending facilities
- Reading Room facilities
- Reference Services
- Digital Question Papers Access Services
- Inter Library Co-operation
- Internet searching/web browsing
- Services to Alumni and other distinguished visitors

Electronic Resources

The facilities in the Library have been significantly improved by the way of introducing new scholarly electronic resources. The access of e-resources – *ASCE Journals, ASME Journals* and *IEL Online (single user)* available through the INDEST-AICTE consortium is continued. The access of *American Chemical Society (ACS), American Physical Society (APS) and Royal Society of Chemistry (RSC)* journals are available in addition to *Springer's LINK, JSTOR* and *Economic and Political Weekly* database through the UGC-INFONET Digital Library consortium. The Library has upgraded its access to *IEL Online* from *single* user to *five* simultaneous users. In addition, library is now subscribing seven subject collections (namely, Chemistry; Computer Science; Earth and Planetary Sciences; Engineering; Physics and Astronomy; Materials Science; and Mathematics) of Elsevier's *Science Direct* database.

BESU Book Fair 2012

The Library organized the 1st BESU Book Fair 2012, held during March 21-24, 2012. More than 30 leading national and international publishers and booksellers participated in the event and displayed their latest collections. The faculty members, research scholars and students of the university selected new books worth ₹ 50.00 lakhs from this fair with the aim of augmenting the overall collection of the library.

Seminars/Refresher courses attended by library staff members

Dr. H.P. Sharma, Deputy Librarian, has acted as a resource person in the 9th UGC Refresher Course on Resource Management in Academic Library, organized by the Academic Staff College, University of Calcutta during July 29 - August 19, 2011 and delivered a lecture titled 'Resource management in digital era: a librarian's perspectives'.

Publications

1. H.P. Sharma, Resource management in digital era: a librarian's perspectives. In, Resource Management in Academic Library: systems and tools, a collection of articles from 9th UGC Refresher Course, DLIS, University of Calcutta, July 29 - August 19, 2011 (Paul, D., Ed.), Kolkata, University of Calcutta, 2011, p.161-169.

2. H.P. Sharma, Moving beyond library websites: role of Library 2.0 in interactive library services, National Seminar on Information and Knowledge Dissemination: Present status and future direction (IKD-2011), Central Glass and Ceramic Research Institute, Kolkata, May 6-7, 2011.

EQUAL OPPORTUNITY CELL (EOC) (UNDER UGC SCHEME XIth PLAN)

EQUAL OPPORTUNITY CELL (EOC)
(UNDER UGC SCHEME XIth PLAN)

The Equal Opportunity Cell was setup by the decision taken in the meeting of the 6th Executive Council held on 17.09.2009(vide: Res.No.06.06.01) of the University. The works of Equal Opportunity Cell are conducted from October 2009. The main objective of Equal Opportunity Cell is to run specific schemes of coaching for Scheduled Caste, Scheduled Tribes, OBC (non-creamy layer) Minorities, students of economically and academically weaker sections of the society in order to enhance proper academic achievements for their employability and success. One time grant of RS.2.lakhs for establishing the office of Equal Opportunity Cell has been provided under the scheme in XIth Plan Period.

The three schemes adopted by BESUS under EOC as per UGC guidelines are:- (i) Remedial coaching at UG and PG level of courses, (ii) Coaching for Entry into the Services, (iii) Coaching for NET/SET/GATE for Scheduled Caste, Scheduled Tribes and Minority, Academically and Socio-Economically weaker section of the students.

An Advisory committee was formed for the smooth functioning of Equal Opportunity Cell and the Present members of the Advisory Committee are:

Prof. B.K. Guha (Chairman)-Dean of Faculty of Basic and Applied Sciences, nominated by Vice-Chancellor

Prof. Salil Halder (Member)-Aerospace Engg.& Applied Mechanics.

Prof. Abdur Rouf (Member)-Electrical Engg.

Prof. Ambarish Ghosh (Member)-Civil Engineering.

Prof. Sudip Roy(Member)-Civil Engineering.

Prof. Tapan Kumar Roy(Member)-Mathematics

Prof. P.K.Nandi(Invitee as Coordinator of NET/SET, etc)-Chemistry.

Prof. Rupen Basu Mallik(Invitee as Coordinator, Entry To Services)- Humanities &Social Sciences.

Prof. Sanjoy Sadhukhan(Invitee as Coordinator, Remedial Coaching)-Metallurgy & Materials Engg.

Dr. Biman Das(Invitee)-Development Officer.

Mr. Alok.Kumar Mitra (Invitee)-Assistant Proctor .

Mr. Bivore Das(Invitee)- Assistant Registrar.

UGC ONE TIME GRANT - Rs. 2,00,000/-

EXPENDITURE FOR THE YEAR (2011-12) - Rs. 38,665/-

The main items procured under this Scheme to set up the office of the 'Equal Opportunity Cell' are**:-**

1. Mini Laptop.
2. External Hard Disk.
3. External DVD Writer.
4. Different Stationary Items.

REMEDIAL COACHING SCHEME
UNDER
EQUAL OPPORTUNITY CELL
(UNDER UGC SCHEME XIth PLAN)

The coaching classes of Remedial Coaching Scheme have started from October 2009. At present the Remedial coaching Scheme at Undergraduate and Postgraduate Level for Scheduled Cast, Scheduled Tribes, Academically and financially weaker section and Minority Communities Student is running successfully. The registered students under this Scheme attend the classes which are taken by both internal and external faculties. Classes are held from Monday to Friday from 5 pm to 8 pm as per schedule in the allotted classroom. The coaching classes were discontinued at the time of examinations and vacations. The students also get classes of their regular subjects in which they find difficulties. Classes have been conducted on the following subjects:-
Communicative English, Mathematics, Physics, AutoCAD, Mechanics of Solids, Mat lab, Discreet Structure, Chemistry, Electronics, Dynamics Of Rigid Bodies, Structural Analysis, Fluid Mechanics, Mechanics, Electronics & Physics of Metallurgy, Electronic Design, Electrical (E1201), C-programming, Basic Electrical Engineering.
Number of registered students in 2011-12: **123**

UGC GRANT (RECURRING) – Rs. 5,00,000/-
UGC ONE TIME GRANT (NON-RECURRING) - Rs. 5,00,000/-

EXPENSE IN THE YEAR 2011-12
RECURRING - Rs. 1,53,972/-

PROGRESS REPORT (Financial Year 2011-12)

The coaching classes NET/SET have started from January 2010. At present NET/SET Coaching Scheme at Postgraduate(Basic and Applied Sciences) Level for Scheduled Cast, Scheduled Tribes, Academically and Financially weaker section and Minority Communities Student has been continuing successfully. The registered students under this Scheme attend the classes which are taken by both internal and external faculties. Classes are held from Monday to Friday from 5 pm to 8 pm as per schedule in respective departments and regular feedback is also taken from the students. The coaching classes remain closed during examination and vacation periods. Classes have been conducted on the following subjects:-

Chemistry, Mathematics, Food Processing and Nutrition Science, Physics and different Engineering subjects.

Number of registered students in 2011-12 : **77**

UGC GRANT (RECURRING) – Rs. 5, 00,000/-
UGC ONE TIME GRANT (NON-RECURRING) - Rs. 5, 00,000/-

EXPENSE IN THE YEAR 2011-12
RECURRING - Rs. 1, 40,522/-

ENTRY INTO THE SERVICES COACHING SCHEME
UNDER
EQUAL OPPORTUNITY CELL
(UNDER UGC SCHEME XIth PLAN)
BENGAL ENGINEERING AND SCIENCE UNIVERSITY, SHIBPUR, HOWRAH-
711103(W.B.)
PROGRESS REPORT (Financial Year 2011-12)

The coaching classes Entry into the Services have started from January 2010. At present Entry into the Services Scheme at Undergraduate and Postgraduate Level for Scheduled Cast, Scheduled Tribes, Academically and financially weaker section and Minority Communities Student is running successfully. The registered students under this Scheme attend the classes which are taken by both internal and external faculties. Classes are held from Monday to Friday from 5 pm to 8 pm as per schedule in respective departments and regular feedback is also taken from the students. The coaching classes were discontinued at the time of examinations and vacations. Coaching classes for this Scheme may be extended beyond our own students also. Classes have been conducted on the following subjects:-Chemistry, Mathematics, Food Processing, Nutrition Science, AutoCAD and Mat Lab.

From July 2011, IES (Indian Engineering Service) Exam's Coaching has been started for Civil and Electronics & Telecommunication Engineering students.

 Number of registered students in 2011-12: **112.**

UGC GRANT (RECURRING) – Rs. 5, 00,000/-
UGC ONE TIME GRANT (NON-RECURRING) - Rs. 5, 00,000/-

EXPENSE IN THE YEAR 2011-12
RECURRING - Rs. 88,172/-
NON–RECURRING - NIL.

Bengal Engineering and Science University, Shibpur

14TH ANNUAL CONVOCATION
(23rd February, 2012)

1.   DOCTOR OF LITERATURE (HONORIS CAUSA) AWARDED TO :

Shri Ganesh Pyne

2.   DOCTOR OF SCIENCE (HONORIS CAUSA) IN ENGINEERING AWARDED TO :

Prof. V. Rajaraman

3.   DOCTOR OF SCIENCE (HONORIS CAUSA) IN SCIENCE AWARDED TO :

Prof. Arun Kumar Sharma

4.   LIST OF RECIPIENTS OF 'DISTINGUISHED TEACHER' AWARD :

Sl. No.	Name of the Person
01.	Professor Chiranjib K. Sarkar
02.	Professor Dipten Dasgupta
03.	Late Professor Jamini Kanta Das
04.	Professor Prabhat Kumar Sinha Roy
05.	Professor Baidyanath Patra

5.   LIST OF RECIPIENTS OF 'DISTINGUISHED ALUMNUS' AWARD :

Sl. No.	Name of the Person
01.	Shri Amitabha Ghoshal
02.	Shri Amitabha Bhattacharya
03.	Shri Dulal Mukherjee
04.	Shri Arun Ghosh
05.	Dr. Swapan Saha
06.	Dr. Tridibesh Mukherjee

6.   Ph. D. AWARDED IN ENGINEERING :

Sl. No.	Name of the Candidate	Department	Viva Date
01.	Sutanu Samanta	Mechanical Engineering	07-12-2011
02.	Rama Debbarma	Civil Engineering	28-11-2011

03.	Manas Kumar Sanyal	Civil Engineering	28-09-2011
04.	Soumya Bhattacharya	Civil Engineering	27-05-2011
05.	Chanchal Majumder	Civil Engineering	25-11-2011
06.	Debabrata Ghosh	Civil Engineering	23-12-2011
07.	Suman Koner	Civil Engineering	07-02-2012
08.	Debdulal Das	Metallurgy and Materials Engineering	26-08-2011
09.	Arun Kumar Singh	Mining Engineering	12-09-2011
10.	Gopal Chandra Roy	Mining Engineering	30-08-2011
11.	Subrata Kumar Paul	Architecture, Town & Regional Planning	30-11-2011
12.	Arup Sarkar	Architecture, Town & Regional Planning	08-02-2012
13.	Prasun Ghosal	Information Technology	24-08-2011
14.	Amit Phadikar	Information Technology	25-10-2011
15.	Dipak Kumar Kole	Information Technology	08-02-2012
16.	Samrat Sen Chowdhury	School of Materials Science &Engineering	24-12-2011
17.	Arjun Dey	School of Materials Science &Engineering	02-08-2011
18.	Malay Kundu	School of Materials Science &Engineering	01-06-2011
19.	Arijit Sinha	School of Materials Science &Engineering	04-02-2012

7.   Ph. D. AWARDED IN SCIENCE :

Sl. No.	Name of the Candidate	Department	Viva Date
20.	Jhuma Bhowmick	Mathematics	18-08-2011
21.	Anup Kumar Singha	Mathematics	19-08-2011
22.	Sweta Pathak	Mathematics	24-06-2011
23.	Shuvendu Chakraborty	Mathematics	18-03-2011
24.	Kunal Chakraborty	Mathematics	15-03-2011
25.	Soumen Banerjee	Mathematics	16-01-2012
26.	Susmita Singh (Sur)	Chemistry	30-12-2011
27.	Nirmal Kumar Das	Chemistry	29-12-2011
28.	Debabarata Sen	Chemistry	29-12-2011
29.	Atanu Jana	Chemistry	30-09-2011
30.	P.Jaya Prakash Yadav	Chemistry	16-08-2011
31.	Soumita Mukherjee	Chemistry	18-08-2011
32.	Pradipta Ghosh	Chemistry	07-03-2011
33.	Satyabrata Bhattacharyya	Chemistry	07-03-2011

8.   Ph. D. AWARDED IN MANAGEMENT :

Sl. No.	Name of the Candidate	Department	Viva Date
34.	Anil Menon Radhakrishnan	School of Management Sciences	03-02-2012
35.	Sudipto Bhattacharya	School of Management Sciences	09-02-2012

LIST OF GOLD MEDALISTS

1. GANESH CHANDRA MITRA MEMORIAL MEDAL AWARDED TO :

Atreyee Kundu
(Master of Engineering in Electrical Engineering)
1ST In Post Graduate Examination, 2011
(Faculty of Engineering & Technology)

2. SINDHUBALA MITRA MEMORIAL MEDAL AWARDED TO :

Reshmi Ghosh
1ST In Master of Business Administration Examination, 2011
(Faculty of Social & Management Sciences)

3. ARUN CHANDRA MITRA MEMORIAL MEDAL AWARDED TO :

Sanhita Banerjee
(Master of Science in Applied Mathematics)
1ST In Master of Science Examination, 2011
(Faculty of Basic & Applied Sciences)

4. PRESIDENT'S GOLD MEDAL AWARDED TO :

Sanjib Sur
(Bachelor of Engineering in Computer Science & Technology)
1ST In Under Graduate Examination, 2011
(Faculty of Engineering & Technology)

5. Prof. S. C. DASGUPTA GOLD MEDAL AWARDED TO :

Sanhita Banerjee
1ST In Master of Science in Applied Mathematics Examination, 2011
(Faculty of Basic & Applied Sciences)

6. JAYA SMRITI PUROSKAR & CASH PRIZE Rs. 1000/- for Highest Score in Mineralogy in M. Sc. Applied Geology Examination, 2011 AWARDED TO :

(Faculty of Basic & Applied Sciences)

7. LIST OF STUDENTS WHO SECURED FIRST POSITION IN THEIR RESPECTIVE BRANCHES.

Branch	Name
1st in Master of Engineering in Civil Engineering	Subhadeep Metya
1st in Master of Engineering in Computer Science & Engineering	Ilora Maity
1st in Master of Engineering in Electrical Engineering	Atreyee Kundu
1st in Master of Engineering in Electronics & Telecommunication Engineering	Debapriyo Ghosh
1st in Master of Engineering in Information Technology	Amrita Agarwala
1st in Master of Engineering in Mechanical Engineering	Samiran Samanta
1st in Master of Engineering in Metallurgy & Materials Engineering	Gopinath T
1st in Master of Town & Regional Planning	Arijit Sett
1st in Master of Technology in Materials Engineering	Arun Kumar Mandal
1st in Master of Technology in Mechatronics	Mouli Dhar
1st in Master of Technology in VLSI Design	Arnab Hazra
1st in Master of Computer Applications	Sudeshna Rajak
1st in Master of Engineering in Geotechnical Engineering	**Kanchan Kumar Karak**
1st in Master of Engineering in Structural Engineering	**Mohua Bhattacharyya**
1st in Master of Engineering in Transportation Engineering	**Sovandev Chatterjee**
1st in Master of Technology in Safety & Occupational Health	**Partha Mukhopadhyay**
1st in Master of Technology in Information Technology	**Apurba Roy**
1st in Master of Business Administration	**Reshmi Ghosh**
1st in Master of Science in Applied Chemistry	Moumita Chatterjee
1st in Master of Science in Applied Mathematics	Sanhita Banerjee
1st in Master of Science in Applied Physics	Puspendu Guha
1st in Master of Science in Applied Geology	Rajesh Kundu
1st in Master of Food Processing & Nutrition Sciences	Priyadarshini Chakraborty

Branch	Name
1st in Bachelor of Engineering in Civil Engineering	Sudarshana Mukhopadhyay
1st in Bachelor of Engineering in Computer Science & Technology	Sanjib Sur
1st in Bachelor of Engineering in Electrical Engineering	Avijit Dey
1st in Bachelor of Engineering in Electronics & Telecommunication Engineering	Sandip Paul
1st in Bachelor of Engineering in Information Technology	Rajarshi Saha
1st in Bachelor of Engineering in Mechanical Engineering	Abhijit Chaudhuri
1st in Bachelor of Engineering in Metallurgy & Materials Engineering	Subrata Deb
1st in Bachelor of Engineering in Mining Engineering	Arka Jyoti Das
1st in Bachelor of Architecture	**Binita Mahato**
1st in Bachelor of Engineering in Civil Engineering	**Kaushik Bhattacharya**

(10 Semester Degree Course)	

Consultancy (2011 – 12)

Financial Year	Dept.	Name of Principal Investigator	Title of the Project	Funding Agency	Funding Agency	Duration	Total Amount Sanctioned (Rs. in lakh)	Year of Sanction
2011-2012	Civil	Saibal Kumar Ghosh	Design and Detailed Structural Drawing for Covering system at the top level of Married Hostel at Haldia	IOCL, Haldia	IOCL	1 Week	0.2427	2012
2011-2012	Civil	Sugato Pal	Consultancy Services for Health Monitoring of under construction residential building at Rajarhat	B.E. College Employees Housing Co-operative Society Ltd.	B.E. College Employees Housing Co-operative Society Ltd.	1 Month	0.2500	2012
2011-2012	Civil	Subrata Chakraborty	Consultancy Services for Health Monitoring of fire affected LIC building	LIC, Kolkata	LIC	1 Month	0.5515	2012
2011-2012	Metallurgy	Sanjoy Sadhukhan	Brand Ambassador of PMC Prestige brand TMt bars	Purulia Metal Casting (P) Ltd.	Purulia Metal Casting (P) Ltd.	3 Years	2.5000	2012
2011-2012	Civil	Saibal Kumar Ghosh	Vetting of Structural Design & Drawing of Launching Girder (For 31m span) For Rail Vikas Nigam Limited	M/S Simplex Infrastructure Ltd.	M/S Simplex Infrastructure Ltd.	1 Month	1.1030	2012
2011-2012	Civil	Ambarish Ghosh	Siol Exploration work at Plot no. 2647 & 2646, Mouza-Baidyabati	Agri-Irrigation, Govt. of West Bengal, Chinsurah Division	Agri-Irrigation, Govt. of West Bengal, Chinsurah Division	20 Days	0.7950	2012
2011-2012	Civil	Ambarish Ghosh	Design of PEB Super structure system of Rajib Gandhi Stadium, Aizwal	M/S Minakshi Sarkar	M/S Minakshi Sarkar	2 Months	1.5000	2012
2011-2012	Civil	Saibal Kumar Ghosh	Health Monitoring of Silo works at Durgapur Steel Plant, Durgapur	Hamon Shriram Cottrell Pvt. Ltd.	Hamon	Not specified	1.6545	2011
2011-2012	Civil	Ambarish Ghosh	Soil Exploration at 6 Sites of Howrah Improvement Trust	Howrah Improvement Trust	Howrah Improvement Trust	5 Months	5.3500	2011
2011-2012	Civil	Saibal Kumar Ghosh	Design & Detailed Structural Drawings for Construction of (G+3) storied Residential Building in Haldia Refinary Township	Indian Oil Corporation Ltd.	IOCL	1 Month	1.5994	2011
2011-2012	Civil	Pranab Kumar Lai	Vetting of the Estimates	Haldia Development Authority	Haldia Development Authority	Continuous Project	1.3132	2011
2011-2012	Civil	Ambarish Ghosh	Consultancy Services for Dyke on the Western Fringe of Sagar Island, KoPT	Kolkata Port Trust	Kolkata Port Trust	1 Year	3.0000	2011
2011-2012	Civil	Sudip Kumar Roy	Consultancy Service for Krishnapur Road	Rajarhat - Golpark Municipality	Rajarhat - Golpark Municipality	2 Months	0.9100	2011

2011-2012	Civil	Ambarish Ghosh	Vetting of Design & drawings prepared by consultant in connection with the Proposed Project "Design, Engineering, Construction of RCC Intake Jetty with pump House, Gangway, Substation and Allied Civil works for 10P10 KMDA Bally WTP Project	Traders & Engineers Private Ltd.	Traders & Engineers Private Ltd.	1 Week	0.5225	2011
2011-2012	Civil	Pranab Kumar Lai	Vetting of Plan and Estimate of New Building of Mahishadal Raj College, Mahishadal	Mahishadal Raj College	Mahishadal Raj College	50 Days	1.0000	2011
2011-2012	Civil	Saibal Kumar Ghosh	Inspection of Vidyasagar Setu alongwith Approach Viaducts & Interchanges	Hooghly River Bridge Commissioner, Kolkata	HRBC		257.0000	2011
2011-2012	Civil	Ambarish Ghosh	Vetting of Super Structure System of Rajib Gandhi Stadium, Aizwal	M/S Minakshi Sarkar	M/S Minakshi Sarkar	3 Months	1.7500	2011
2011-2012	Civil	Sudip Kumar Roy	State Technical Agency, Pradhan Mantri Gram Sadak Yojana	National Rural Road Development Agency	NRRDA	Till PMGSY Project Continue	2.9691	2010
2011-2012	Civil	Anirban Gupta	Technology & Design of Iron & Arsenic Removal Plant	Utpal Construction & Company	UC&C	2 Months	2.2000	2010
2011-2012	Civil	Ambarish Ghosh	Assessment of vibration from installation of Sheet Piles using a vibro-sinker at SPENCER's GALLERIA Site at 33 Syed Amir Ali Avenue, Kolkata - 700017	CESC Properties Limited	CESC	3 Months	1.2500	2011
2011-2012	Mining	Netai Chandra Dey and Pratik Datta	Technical consultancy on Geotechnical study of roof rock, floor and Coal & analysis for gassiness of coal of Muraidih UG Mine, BCCL	Minop Innovative Technologies Pvt. Ltd., Kolkata	Minop	6 Months	11.8000	2011
2011-2012	Civil	Sudip Kumar Roy	HRBC Reserved Price Assessment	Hooghly River Bridge Commissioner, Kolkata	HRBC	3 Months	0.3000	2011

299.5608

List of Ongoing Projects (2011 – 12)

Sl. No.	Sanction Order No.	Sanction Date	Project Code	Financial Year	Dept.	Name of Principal Investigator	Title of the Project	Funding Agency	Duration	Total Amount Sanctioned (Rs. in lakh)	Year of Sanction
1	SR/FTP/ETA-125/2010	22.02.2012	DRC/SERB/MET&MAT/SK/029/11-12	2011-2012	Met&Mat	Sukumar Kundu	Development of diffusion bonded joints between Titanium alloy and micro duplex stainless steel with intermediate materials	Science and Engineering Research Board (SERB)	3 Years	14.4000	2012
2	102/80/2010-NT	27.11.2011	DRC/MNRE/CHEM/JD/028/11-12	2011-2012	Chemistry	Jayati Datta	Polymer modified metal-matrix nano-composites as fuel cell catalyst: Performance screening in alkaline medium	Ministry of New and Renewable Energy	3 Years	30.5800	2011
3	1181-85/PC-I	24.10.2011	DRC/PHED-GOWB/CE/KKB/027/11-12	2011-2012	Civil	Kalyan Kumar Bhar	Detailed Hydrological study of Sub-Surface Water flow/storage water characteristics for creation of sustainable source of rain fade river for semi-arid and fluoride effected Blocks in connection with comprehensive water security plant under Purulia, Banku	Public Health Engineering Directorate, Govt. of West Bengal	6 Months	62.7000	2011
4	DST/TM/SERI/2K10/60(C)	30.12.2011	DRC/DST/CHEM/AM/026/11-12	2011-2012	Chemistry	Anup Mondal	Development of CdS/CdTe thin film solar cells by electrochemical technique using indigenously produced starting materials	DST (GOI)	3 Years	157.3980	2011
5	ID/Sensor-New/05/2010-11	13.09.2011	DRC/DST/CHEM/AM/025/11-12	2011-2012	Chemistry	Anup Mondal	Lab scale precision I-V and C-V real time analyzer for design and development of a selective gas for sensor	DST (GOI)	2 Years	19.8087	2011
6	SR/S3/EECE/0065/2011(C)	30.09.2011	DRC/DST-SERC/ETC/SKP/024/11-12	2011-2012	ETC	Susanta Kumar Parui	Design and Development of Substrate Integrated Wave-Guide (SIW) Based RF Circuits and Components Using Meta-Materials in Ku-Band Application	DST-SERC	3 Years	31.9060	2011
7	by e-mail	22.06.2011	DRC/COGNIZANT/IT/HR/023/11-12	2011-2012	IT	Hafizur Rahaman	Cloud Computing Laboratory	Cognizant	5 Years	12.9403	2011
8	23/KR/613	05.09.2011	DRC/SHH/SEIHSM/SR/022/11-12	2011-2012	SEIHSM	Souvanic Roy	Design and Development of green Building to Accommodate students Dormitory and Ancillary Infrastructure at Digha - Phase – II	Students Health Home, Kolkata, West Bengal.	6 Months	1.2500	2011
9	IDP/MED/03/2010 (General & Capital)	04.07.2011	DRC/DST-IDP/CHST/AKR/021/11-12	2011-2012	Centre for Healthcare Science & Technology	Ajoy Kumar Ray	Development of Smart Prognostic System for Early Indication of Cardiac Problem of a Patient	DST-IDP	3 Years	37.4250	2011

10	BT/PR13 944/MED /32/147/2 010	21.09.20 11	DRC/DB T/AE&A M/ARC/0 20/11-12	2011-2012	Aero &AM	Amit Roy Chowdhury	Computer Aided Design, Analysis and Development of Patient Specific Prosthesis for Different Human Joints, Specially Hip Joint on Indian Perspective	Dept. of Biotech nology (Govt. of India)	3 Years	63.1480	2011
11	SR/S1/PC -61/2009-II©	19.07.20 11	DRC/DS T/CHEM/ SKC/019/ 11-12	2011-2012	Chem istry	Sudip Kumar Chattopadh yay	Relativistic study of the excited/ionized states of heavy atoms using coupled cluster based linear response theory	DST	3 Years	13.9000	2011
12	IDP/IND/ 2010/25	17.08.20 11	DRC/DS T-IDP/EE/A S/018/11-12	2011-2012	Electr ical	Anindita Sengupta	Development of an efficient staple yarn characterization unit with multi sensor fusion and field programmable gate array (FPGA) based data reduction card	DST - IDP/IN D	3 Years	31.0940	2011
13	IEI/RDC/ RD 2011377	06.07.20 11	DRC/IEI/ IT/PG/01 7/11-12	2011-2012	IT	Prasun Ghosal	Development of Obstacle Aware Routing Tool for 3-D Integrated Circuits	The Instituti on of Engine ers (India)	1 Year	0.5000	2011
14	SR/WOS- 1/ET-03/2011(G)	01.07.20 11	DRC/DS T-WOS/ET C/KG/016 /11-12	2011-2012	ETC	Kasturi Ghosh	Testing and design of CMOS linear and non-linear analog VLSI circuit	Wome n Scientis t Schem e A (WOS-A), DST	3 Years	17.3400	2011
15	SR / BY / C-10 / 10	02.08.20 11	DRC/DS T-BOYSCA ST/ CHEM/C B/015/11-12	2011-2012	Chem istry	Chinmoy Bhattachary a	DST - BOYSCAST Project Fellow	DST (GOI)	1 Year	15.7200	2011
16	SCK/T-R & D/PG/RD 2011 219	03.08.20 11	DRC/IEI/ SM&R/S B/014/11-12	2011-2012	Schoo l of Mech atroni cs and Robot ics	Subhasis Bhaumik	Development of Autonommous Blimp for Aerial Surveillance	The Instituti on of Engine ers (India)	1 Year	0.4000	2011
17	F.3-43/2011 (SAP-II)	05.04.20 11	DRC/UG C-SAP-DRS/EE/ AS/013/1 1-12	2011-2012	Electr ical	Ashoke Sutradhar	UGC Assistance to EE Dept at the level DRS-1 for 2011-16 under SAP	UGC-SAP-DRS	5 Years	43.0500	2011
18	40-1/2011 (SR)	29.06.20 11	DRC/UG C/IT/CG/ 012/11-12	2011-2012	IT	Chandan Giri	Efficient test infrastucture design for 3D multi-core integrated circuits	UGC - Major	3 Years	8.6480	2011
19	40-42/2011 (SR)	29.06.20 11	DRC/UG C/CHEM/ JD/011/11 -12	2011-2012	Chem istry	Jayati Datta	A novel approach towards developing conducting polymer based composite semiconductor thin films for their use in liquid junction solar cells	UGC - Major	3 Years	7.1580	2011
20	SR/S3/M ERC-0045/201 0(G)	21.06.20 11	DRC/DS T/ME/SK S/010/11-12	2011-2012	Mech anical	Sujoy Kumar Saha	Flow and thermal characteristics of laminar and turbulent flow through a circular tube having spiral corrugations and twisted tape with oblique teeth	DST-SERC	3 Years	16.5000	2011

21	40-239/2011 (SR)	29.06.2011	DRC/UGC/MATH/TKK/009/11-12	2011-2012	Math	Tapan Kumar Kar	Incorporating ecosystem objectives into management of sustainable marine fisheries" ecological economic modeling with some case studies along the coastal side of West Bengal	UGC, Major	3 Years	7.0880	2011
22	01(2460)/11/EMR-II	16.05.2011	DRC/CSIR/CHEM/AKM/008/11-12	2011-2012	Chemistry	Ajit Kumar Mahapatra	Design and Synthesis of Artificial Photoresponsive Ionophores for Fluorogenic Probing of Cellular Components	CSIR, New Delhi	3 Years	20.0214	2011
23	01(2459)/11/EMR-II	16.05.2011	DRC/CSIR/CHEM/PB/007/11-12	2011-2012	Chemistry	Papu Biswas	Lanthanides-Based Metal Organic Frameworks (MOFs): Studies on Structure, Photoluminescence and Gas Storage Behavior	CSIR, New Delhi	3 Years	17.0000	2011
24	WB/2011/Fin/325	22.06.2011	DRC/UNICEF-TRG/CE/AG/001/11-12	2011-2012	Civil	Anirban Gupta	Training programme on regeneration of exhausted activated alumina	United Nations Children's Fund, Kolkata.	1 Month	0.6268	2011
25	31/40/2010-11/PVSE	27.05.2011	DRC/MNRE/CEGESS/HS/006/11-12	2011-2012	CEGESS	Hiranmoy Saha	Advanced Research on Thin Film Silicon Solar Cells and PV Systems	Ministry of New and Renewable Energy	4 Years	1476.6040	2011
26	MoEs/P.O.(Seismo)/1(60)/2009	04.03.2010	DRC/MoES/CE/AG/005/11-12	2011-2012	Civil	Ambarish Ghosh	Seismic Hazard Assessment, Microzonation, and Evaluation of Vulnerability, Risk & Socio-Economic Impacts for the City of Kolkata	Ministry of Earth Science	3 Years	7.4100	2010
27	RCI/DCMM/LP/LPD-I/CARS/0221	16.03.2011	DRC/RCI-CARS/CST/AM/004/11-12	2011-2012	CST	Abhik Mukherjee	Alignment Ejection and Trajectory Studies for PGM	DRDO (RCI), Hyderabad	18 Months	8.0000	2011
28	DST/TM/SERI/2K10/43	29.03.2011	DRC/DST-SERI/CHEM/JD/003/11-12	2011-2012	Chemistry	Jayati Datta	Enhancement of Functional Property of N3-based Dye-Sensitized Solar Cell by use of Conducting Polymers and Surface Plasmon Resonance of Metal Nano-particles	DST, GOI	3 Years	55.2900	2011
29	39-1006/2010 (SR)	12.01.2011	DRC/UGC-MINOR/CE/CM/002/11-12	2011-2012	Civil	Chanchal Majumder	A Factorial Design Approach to investigate the Model Parameters for Prediction of Arsenic removal by electrocoagnlation using Solar Energy	UGC, Minor	2 Years	2.2000	2011
30	Nil	11.02.2011	DRC/IIT-K/CE/AG/001/11-12	2011-2012	Civil	Anirban Gupta	Ganga River Basin Management Plan	IIT, Kanpur	-	4.0000	2011

Total 2184.1061

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Chartered Accountants
CA B.K.BASU, FCA

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Kolkata - 700 091, Ph. : 2334-7418
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E-mail : bidhan_basu@yahoo.co.in

BENGAL ENGINEERING & SCIENCE UNIVERSITY, SHIBPUR
(FORMERLY BENGAL ENGINEERING COLLEGE, D.U.)
HOWRAH - 711 103

RECEIPTS AND PAYMENTS ACCOUNT FOR THE YEAR ENDED 31ST MARCH, 2012

	SCHEDULE	CURRENT YEAR		PREVIOUS YEAR	
RECEIPTS :-		RS.	P.	RS.	P.
Cash And Bank Balances (Opening)	I	274,152,661.54		202,691,798.47	
Collection From Students	II	74,524,197.60		72,796,081.90	
Other Receipts	III	64,444,287.13		37,234,991.72	
Grant Received	IV	606,955,505.00		616,135,789.50	
Receipts From P.A.O.	V	30,990,415.00		23,625,491.00	
Receipts Of Scholarships	VI	41,914,117.00		9,252,014.00	
Deductions From Salaries	VII	63,506,169.00		58,700,014.50	
PRIOR PERIOD ADJUSTMENTS :-		**1,156,487,352.27**		**1,020,436,181.09**	
Howrah Treasury P. F. Account		14,886,612.00		33,329,144.00	
QIP Account (E/31293)		----		2,562.00	
Interest on Fixed Deposits		----		10,881,936.00	
General Fund A/c		----		36,629,195.00	
TOTAL :		**1,171,373,964.27**		**1,101,279,018.09**	
PAYMENTS :-					
Pay And Allowances	VIII	351,491,747.75		328,172,087.50	
Office Expenses	IX	40,179,570.12		43,418,708.70	
Department Expenses	X	35,544,770.00		54,498,236.00	
Building, Equipment ,Furniture, Elect. Fittings & Books	XI	73,706,195.00		38,516,949.00	
Other Expenses	XII	34,836,870.00		33,671,342.50	
Advances & Deposits	XIII	23,857,752.15		10,709,915.00	
Payment Made Against Projects	XIV	131,949,055.00		199,722,469.35	
Payment Made Against Receipts From P.A.O./Treasury	XV	30,157,586.00		2,804,787.00	
Disbursement Of Scholarships	XVI	42,943,543.00		25,990,331.00	
Deposits Of Deductions From Salaries	XVII	63,506,169.00		58,700,014.50	
Cash And Bank Balances (Closing)	XVIII	339,789,782.00		274,152,661.54	
PRIOR PERIOD ADJUSTMENTS :-		**1,167,963,040.02**		**1,070,357,502.09**	

Fixed Deposit with S.B.I.	----	20,760,494.00
Fixed Deposit with U.B.I.	----	10,121,442.00
Accrued Interest on Fixed Deposits reinvested	----	38,480.00
Security Deposit	----	1,100.00
G.P.F. Transferred from other Institution	3,330,924.25	
General Fund A/c	80,000.00	
TOTAL :	**1,171,373,964.27**	**1,101,279,018.09**
	-	-

Sd/-
FINANCE OFFICER

Sd/-
REGISTRAR

For B. Basu & Co.
Chartered
Accountants
Firm Registration No. 322609E

Place : KOLKATA
Date :

(B. K. BASU)
Propreitor
Membership No.
007967

BENGAL ENGINEERING & SCIENCE UNIVERSITY, SHIBPUR
<u>(FORMERLY BENGAL ENGINEERING COLLEGE, D.U.)</u>
<u>HOWRAH - 711 103</u>

<u>INCOME & EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31ST MARCH, 2012</u>

	SCHEDULE	CURRENT YEAR		PREVIOUS YEAR	
		RS.	P.	RS.	P.
INCOME:-					
Collection from students	A	74,524,197.60		72,846,761.90	
Other Receipts	B	34,745,928.00		7,713,507.88	
Grant Received	C	381,960,971.00		362,199,143.00	
Interest on Fixed Deposit	D	18,706,170.98		24,782,296.64	
Receipts from P.A.O.	E	14,053,149.00		436,380.00	
		523,990,416.58		**467,978,089.42**	
EXPENDITURE:-					
Pay & Allowances	F	366,587,861.75		335,177,187.50	
Other Expenses	G	36,042,592.00		34,313,325.50	
Office Expenses	H	40,179,570.12		43,418,708.70	
Departmental Expenses	I	35,544,770.00		54,498,236.00	
Payment made against Projects	J	941,731.00		1,545,322.00	
Depreciation on Fixed Assets	5	80,958,217.53		14,183,280.00	
	TOTAL	**560,254,742.40**		**483,136,059.70**	
Excess of Income over Expenditure for the year		(36,264,325.82)		(15,157,970.28)	
Add : Prior Period Adjustment :					
Interest on Fixed Deposits				10,881,935.43	
Excess of Income over Expenditure transferred to General Fund		**(36,264,325.82)**		**(4,276,034.85)**	

Sd/-   Sd/-
FINANCE OFFICER   **REGISTRAR**

  For B. Basu & Co.
  Chartered Accountants
  Firm Registration No. 322609E

Place : KOLKATA
Date : **(B. K. BASU)**
  Propreitor
  Membership No. 007967

BENGAL ENGINEERING & SCIENCE UNIVERSITY, SHIBPUR
(FORMERLY BENGAL ENGINEERING COLLEGE, D.U.)
HOWRAH - 711 103

BALANCE SHEET AS AT 31ST MARCH, 2012

PARTICULARS	SCHEDULE	AS AT 31.03.2012	AS AT 31.03.2011
		RS. P.	RS. P.
SOURCES OF FUNDS :-			
i) GENERAL FUND	1	865,958,964.39	906,581,249.21
ii) LOAN FUND (UBI)	2	5,999,935.00	8,618,976.00
iii) PROJECTS FUND	3	183,412,634.08	139,736,822.08
iv] DEVELOPMENT FUND	4	10,012,860.00	9,102,860.00
v) ENDOWMENT FUND	5	17,065,630.51	15,458,494.36
vi) PROVIDENT FUND (TREASURY)		69,475,969.00	----
TOTAL :		**1,151,925,992.98**	**1,079,498,401.65**
APPLICATION OF FUNDS :-			
A. FIXED ASSETS	6	590,026,136.90	597,278,159.43
TOTAL OF "A"		590,026,136.90	597,278,159.43
B. CURRENT ASSETS, LOANS & ADVANCES			
i) Cash & Bank Balances	7	351,133,414.44	283,944,669.98
ii) Fixed Deposits with U.B.I. & S.B.I.	8	220,435,284.07	214,529,771.92
iii) Advances	9	13,537,509.00	6,607,320.00
TOTAL OF "B"		585,106,207.51	505,081,761.90

Contd………

B. BASU & CO.
Chartered Accountants
CA B.K.BASU, FCA

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BENGAL ENGINEERING & SCIENCE UNIVERSITY, SHIBPUR
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HOWRAH - 711 103

BALANCE SHEET AS AT 31ST MARCH, 2012 (contd.)

PARTICULARS	SCHEDULE	AS AT 31.03.2012		AS AT 31.03.2011	
		RS.	P.	RS.	P.
C. LIABILITIES :-					
i) Amount Received for disbursement of Scholarship	10	(118,049.00)		396,853.00	
ii) Amount Received for disbursement for others	11	22,081,793.30		19,033,093.30	
iii) Other Liabilities	12	1,242,607.13		3,431,573.38	
TOTAL OF "C"		23,206,351.43		22,861,519.68	
D. NET CURRENT ASSETS (B - C)		561,899,856.08		482,220,242.22	
TOTAL :		**1,151,925,992.98**		**1,079,498,401.65**	
NOTES ON ACCOUNTS	13				

Sd/-
FINANCE OFFICER

Sd/-
REGISTRAR

For B. Basu & Co.
Chartered Accountants
Firm Registration No. 322609E

Place : KOLKATA
Date :

(B. K. BASU)
Propreitor
Membership No. 007967