

**ADULT, CONTINUING EDUCATION & EXTENSION**

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1 (A) **Courses Offered** : Details of the Courses offered during the period from December 2008 to December 2009 may be found in the Annexure 'A' attached herewith.

(B) **Number of Faculty Members** : Four (4)

2 (A) **Area of Research Activities** : Adult Education & Continuing Education.

(B) **Major Research Project** :

Dr. P. S. Chakraborty

'Capture and Analyze: The behavioural abnormalities of children with special need through skill development programme'. Minor Research Grant, Jadavpur University.

3 (A) **Invited Lectures Delivered / Session Chaired** :

<b>Name of the Teacher</b>	<b>Type of Participation</b>	<b>Name of the Seminar</b>	<b>Place / Duration</b>
Sri Santwan Chattopadhyay	Lecture delivered on 25.12.2008	Media and Terrorism	Panihati Mela
Sri Santwan Chattopadhyay	Lecture delivered on 25.1.2009	Media and Reality Show	Uttor Kolkata Utsav
Sri Santwan Chattopadhyay	Lecture delivered on 8.3.2009	Workshop on Importance of training for self help groups	Bangiya Saksharata Prasar Samiti
Sri Santwan Chattopadhyay	Lecture delivered on 13.4.2009	Journalism Education Theory & Practice	Department of Journalism & Mass Communication of Naihati Rishi Bankim College
Sri Santwan Chattopadhyay	Lecture delivered on 18.4.2009	Workshop on Self help group & sustainability	Bangiya Saksharata Prasar Samiti
Sri Santwan Chattopadhyay	Lecture delivered on 22.8.2009	Development Communication	Kolkata Information Centre, Govt. of West Bengal
Sri Santwan Chattopadhyay	Lecture delivered on 15.9.2009	Studies in Communication	Kolkata Information Centre, Govt. of West Bengal
Sri Santwan Chattopadhyay	Lecture delivered on 24.10.2009	Developmental stories in media	Kolkata Information Centre, Govt. of West Bengal

**3 (B) Seminar/Workshop/Conference/Symposium Attended :**

Name of the Teacher	Name of the Seminar	Place	Duration
Sri Santwan Chattopadhyay	International Workshop on Conflict Reporting	American Center	23.2.2009 & 24.2.2009
Dr. Partha Sarathi Chakraborty & Sri Santwan Chattopadhyay	National Seminar on Engineering Education under changing Global Scenario	TEQIP, Jadavpur University	24.3.2009
Dr. Partha Sarathi Chakraborty & Sri Santwan Chattopadhyay	Workshop on Pedagogical tools for Knowledge Management	Hyatt Regency organised by TEQIP, Jadavpur University	28.3.2009
Dr. Partha Sarathi Chakraborty	Seminar on Education, Swami Vivekananda and Technical and technical Development in India	Jadavpur University	11.9.2009

**3 (C) Seminar/Workshop/Conference/Symposium Organised :**

- (I) International Workshop on 'Change focus in Continuing Education in Canadian Universities under changing Global Scenario' was organized on 3<sup>rd</sup> February, 2009. Prof. Howard s. Davidson and other foreign delegates from University of Manitoba, Canada participated in the workshop.
- (II) International Workshop on 'Community Colleges and Mass Education' was organised on 6<sup>th</sup> February, 2009. Prof. Valerie Palamountain, Dean of Workforce Service, Piedmont Virginia Community College, USA and other foreign delegates from Virginia Community College System, USA, participated in the workshop.
- (III) Workshops entitled (i) 'Financial Management in Educational Institutions' and (ii) 'Knowledge Commission on Education' were organized on 28<sup>th</sup> February, 2009. Eminent speakers of the relevant field participated in the workshop.
- (IV) Workshops entitled (i) Human Relationship - Interpersonal relations and dialogue' and (ii) Role of Information Technology in Higher Education' were organized on 7<sup>th</sup> March, 2009. Eminent speakers of the relevant field participated in the workshop.
- (V) Workshops entitled (i) 'Financial Management in Educational Institutions' and (ii) 'Emerging Challenges in Education and new directions in the role of teachers' were organized on 14<sup>th</sup> March, 2009. Eminent speakers of the relevant field participated in the workshop.

**3 (D) Orientation Courses/Refresher Courses Attended :**

Name of the Teacher	Title of the Course	Duration	Place
Dr. Partha Sarathi Chakraborty	Reliability, Availability and Maintainability (RAM) Engineering in Industries	3 Weeks (From 22.06.2009 to 11.07.2009)	Department of Production Engineering, Jadavpur University

## 3 (E) Orientation Courses/Refresher Course/Project Organized:

## 4 (A) Books/Monographs etc. Published:

## 4 (B) Articles Published in Journals:

Name of the Teacher	Name of the Article	Name of the Journal	Volume / Year
Prof. Dr. Tandra Mitra	Lifelong learning - A changed Paradigm in Educational Order	<i>Lifelong Learning &amp; Development Journal,</i>	V 1, N 1, 2008 - 2009
Prof. Dr. Tandra Mitra	Continuing Education for Technocrats - Indian Perspective	Edited Volume on <i>Facets of Continuing Education,</i> Department of Adult, Continuing Education, Andhra University (Accepted)	May, 2009
Dr. P. S. Chakraborty, Dr. G. Majumder and Prof. B. Sarkar	Analytic Network Process Approach for the Supplier Selection Process of a Manufacturing Organisation	<i>Journal of Cost Management</i> (Accepted)	2009
Sri Santwan Chattopadhyay	Sanskritite Upanibesh (in Bengali)	<i>Ganamadhyam Barta,</i> Govt. of West Bengal	V 1, Issue 1, June, 2009 pp - 13 - 15

5 **Collaborative Programmes:** Virginia Community College Systems, USA. University of Manitoba, Canada. Courses organised in collaboration with different organisations have been shown in Annexure 'A'.

6 **Major Achievements:** Around 450 participants received Certificates after completion of different courses offered by the department. Around 470 rural and urban underprivileged women and street children were trained in vocational trades at 7 extension centres.

**Annexure- A**

**COURSES OFFERED FOR THE SESSION December, 2008 - December, 2009**

**GRADUATE LEVEL COURSES :**

**Title of the Course :**

- B.Ed. in Special Education (Locomotor Impairment and Neuro-Muscular Disorder) (Conducted in collaboration with Indian Institute of Cerebral Palsy)
- B.Ed. in Special Education (Mental Retardation) (Conducted in collaboration with Manovikash Kendra)

**Duration :** 1 Year • 1 Year

**No. of Students :** 28 • 28

**Target Group :** Students, NGO Workers • Students, NGO Workers

**POST - GRADUATE DIPLOMA LEVEL COURSES :**

**Title of the Course :**

- Post Graduate Diploma in Mass Communication
- Post Graduate Diploma in Software Engineering and Business Management (Conducted in collaboration with Globsyn Technologies)
- Post Graduate Diploma in Psychological Counselling (Conducted in collaboration with Samikhani)

**Duration :** 1 Year • 1 Year • 2 Years

**No. of Students :** 141 • 14 • 22

**Target Group :** • Students, Freelance Media Persons, Young Professionals  
• Engineering Graduates, Young IT Professionals & Managers  
• Students, NGO Workers, Medical Practitioners/ Professionals

**DIPLOMA LEVEL COURSE :**

**Title of the Course :** Diploma in Food Processing & Customised Management

**Duration :** 1 Year

**No. of Students :** 35

**Target Group :** Students, NGO Workers

**CERTIFICATE LEVEL COURSES :**

**Title of the Course :**

- Technician Training Course in Air-Conditioning and Refrigeration (conducted in collaboration with St. Thomas Technical Training Centre)
- Computer Hardware (conducted in collaboration with St. Thomas Technical Training Centre)
- Basic Networking (conducted in collaboration with St. Thomas Technical Training Centre)
- Risk Assessment and Safety in Chemical Process

- Capacity Building in Reproductive Child Management (conducted in collaboration with CINI)
- Waste Water Treatment in chemical Industry
- Basic Management of Cerebral Palsy Course for Medical Professionals (conducted in collaboration with Indian Institute of Cerebral Palsy)
- Community Management (in association with Indian Association)
- Offset Printing & Binding
- Acupuncture
- Educational Administration (in collaboration with Nopany Charitable Trust)
- Air Pollution Measurement & Abatement
- Human Rights : Theory & Practice

**Duration** : 1 year • 6 Months • 4 Months • 3 Weeks • 12 Weeks • 3 Weeks  
• 4 Weeks • 12 Weeks • 20 Weeks • 16 Weeks • 12 Weeks • 3 Weeks •  
4 Weeks

**No. of Students** : 14 • 11 • 12 • 09 • 12 • 16 • 11 • 12 • 07 • 17 • 18 •  
14

**Target Group**

- School Dropouts
- School Dropouts & Unemployed Youth
- School Dropouts & Unemployed Youth
- Engineering Graduates, Science Graduates, NGO Workers
- Students, NGO Workers
- Engineering Graduates, Science Graduates, NGO Workers
- Medical / Rehabilitation Professionals
- Unemployed Youths, NGO Workers
- Unemployed Youths
- Medical Practitioners (MBBS/BHMS/DMS/BAMS/BDS)
- Unemployed Youths and Persons engaged in Educational Institutions
- Engineering Graduates, Science Graduates, NGO Workers
- Unemployed Youths, NGO Workers

**COURSES FOR THE PERSONS WITH SPECIAL NEEDS :**

**Title of the Course :**

- Computer Operation Course for recovering mentally ill and chemical dependency patients (conducted in collaboration with Antara Psychiatric Centre)
- Computer Operation Course for the Deaf and Physically Challenged Persons (conducted in collaboration with Silence Training Institute)
- Art & Craft Course for the Deaf and Physically Challenged Persons (conducted in collaboration with Silence Training Institute)

- Desk Top Publishing (conducted in collaboration with Indian Institute of Cerebral Palsy)
- Web Designing & Publishing (conducted in collaboration with Indian Institute of Cerebral Palsy)
- Office Management (conducted in collaboration with Indian Institute of Cerebral Palsy)
- Database Management (conducted in collaboration with Indian Institute of Cerebral Palsy)

**Duration** : 12 Weeks • 1 Year • 1 Year • 24 Weeks • 24 Weeks • 16 Weeks • 8 Weeks

**No. of Students** : 05 • 15 • 04 • 04 • 04 • 04 • 05

**Target Group** : Recovering Mentally ill • Persons with disabilities • Persons with disabilities • Youth with Multiple Disabilities • Youth with Multiple Disabilities • Youth with Multiple Disabilities • Youth with Multiple Disabilities

**VOCATIONAL COURSES FOR THE MARGINALISED :**

**Title of the Course :**

- Computer Literacy Programme (conducted in collaboration with Bhola Basu Smriti Bhavan)
- Sewing and Tailoring (Kalikapur I No. Gram Panchyat)
- Sewing and Tailoring (Kalikapur II No. Gram Panchyat)
- Sewing and Tailoring (Pratapnagar Gram Panchyat)
- Sewing - Basic (Emmanuel Ministries at Ripon Street)
- Sewing - Advanced (Emmanuel Ministries at Ripon Street)
- Automobile Mechanic - Basic (Emmanuel Ministries at Ripon Street)
- Automobile Mechanic - Advanced (Emmanuel Ministries at Ripon Street)
- Sewing - Basic (Emmanuel Ministries at Lake Gardens)
- Sewing - Advanced (Emmanuel Ministries at Lake Gardens)
- Sewing (Kolkata Socio-Cultural Research Institute)
- Sewing and Tailoring (16 No. Ward) (BSPS)

**Duration** : 6 Weeks • 6 Months • 6 Months • 6 Months • 6 Months • 6 Months • 6 Months • 6 Months • 6 Months • 6 Months • 6 Months

**No. of Students** : 27 60 60 60 40 30 30 20 40 30 50 50

**Target Group** : Unemployed Youths, NGO Workers • Rural Women • Rural Women • Rural Women • Street Children • Street Children • Street Children • Street Children • Street Children • Street Children • Street Children • Urban Underprivileged/ Minority Women • Urban Underprivileged/ Minority Women.

**ARCHITECTURE**

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**1 A. Courses Offered**

Name of the course	Duration of course	No. of Students enrolled
Bachelor of Architecture	5 Years	31
Master of Architecture	2 Years	6

**B. Number of Faculty Members :** 9

**2 A. Area of Research Activities**

Prof. Shubhrajit Das:

- Exploring the 'In Between' in the Spatial Intervals of Tadao Ando.
- The study aims to inquire into the role of Light and Geometry that contributes to the 'In Between' character of spaces in the works of Tadao Ando
- Architectural and Urban Conservation
- Sustainable Development
- Urban design
- Urban hydrology and drainage
- Eco-City Planning
- Energy Efficient Architecture
- Town and Regional Planning
- Transportation Planning

**B. Major Research Project**

Departmental/Individual	Name of the Project	Funding	Agency
Tapas Kumar Bhattacharyya	"Strategic shelters for the Indian Defence in the hilly terrains of India" (Principal Investigator)	DRDO funded	
Jayita Guha Niyogi	Principal Investigator for Research project under PURSE, Jadavpur University titled Study to develop a land use cum stochastic transportation model for a better Kolkata	DST	
Dr. Shivashish Bose (Individual)	Doctoral Thesis titled "Conservation as an Element of Urban Design and a Tool for Sustainable Development in Asian Cities: Case Study Kolkata". Awarded Ph.D. (Engineering)	Degree on 12 <sup>th</sup> November 2008, None	

Dr. Shivashish Bose (Individual)

Post-Doctoral Research at the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM) founded by UNESCO, working as Visiting Fellow during May-June 2009; Title of Research- "Conservation as an Element of Urban Design and a Tool for Sustainable Development"  
ICCROM, Italy

Dr. Madhumita Roy

ON-LINE system for sanctioning building plans for West Bengal Housing Infrastructure Development Corporation (WBHIDCO) WBHIDCO

Dr. Madhumita Roy

ON-LINE system for sanctioning building plans for Howrah Zilla Parishad(HZP), West Bengal HZP, West Bengal

Dr. Madhumita Roy

ON-LINE system for sanctioning building plans for Kolkata Municipal Corporation(KMC) KMC

Dr. Madhumita Roy

Formulation of building rules & regulations for Kolkata Municipal Corporation (KMC) KMC

Dr. Madhumita Roy

R & D Project on The Feasibility Of Bamboo Structure For Possible Inclusion Into NBC & CPWD Schedule for NMBA, DST. NMBA, DST

Dr. Suchandra Bardhan

"Master Conservation Planning (Historic Landscape) of City Palace Complex, Udaipur- Ph II" Getty Foundation (through DRONAH)

Dr. Suchandra Bardhan

Environmental Impacts Of Contemporary Urban Multi-Storied Residential Buildings AICTE

Dr. Suchandra Bardhan

Resource consumption pattern in construction of High-rise Buildings DST

Sri Debashish Das

PhD on "Urban Development Model for developing countries from climate change perspective-An approach to Tomorrow's Low Carbon Cities" None

Sri Debashish Das

Urban Renewal in Kumartuli, approaches for preservation and rejuvenation of an old historic settlement in Kolkata, applying the principles of Town Planning of Sir Patrick Geddes, sponsored by Sanskriti Geddes Foundation, New Delhi, India, Aug,2007. Sanskriti Geddes Foundation, New Delhi, India

Sri Debashish Das

Sustainable Community Development Plan with special emphasis on cultural and economical sustainability, case study Kumartuli, Kolkata for Swedish International Development Cooperation Agency. None



Sri Debashish Das

"Strategic shelters for the Indian Defence in the hilly terrains of India" (Co - Coordinator ) DRDO funded

Sri Debashish Das

Principal Investigator for Research project under PURSE, Jadavpur University titled "Developing framework for an integrated approach to Ecocity planning for Megacities- Case Study of Kolkata", DST

**3 A. Invited Lectures Delivered (Session Chaired)**

<b>Name of the Teacher</b>	<b>Type of Participants</b>	<b>Name of the Seminar</b>
<b>Conference</b>	<b>Place</b>	<b>Duration</b>

Prof. Shubhrajit Das

Architects/ Engineers/ Construction Consultants IIA West Bengal Chapter Convention Kolkata 1 hour

Prof. Tapas Kumar Bhattacharyya

Lecture delivered Influence of ancient art on Contemporary Architecture Spain September 2009

Dr. Shivashish Bose Chaired one Session and also Presented two Papers

Conservationists, Archaeologists, Architects, Planners, Historians, Restorers, Administrators & Bureaucrats 6th International Conference on Science & Technology in Archaeology and Conservation Rome, Italy December 10-11, 2008

Dr, Shivashish Bose Delivered Guest Lecture

Faculty Members and PG-Students of Urban Design and Planning, and Researchers of Doctoral Degree of the University of Florence, Italy Guest Lecture Meeting Hall of Prof. R. Paloscia, HOD-Urban Planning, University of Florence, Italy December 12, 2008

Dr. Shivashish Bose Chaired the Session

Faculty Members and Students of Architecture from Eastern India ZONASA (Zonal Competition of National Association of Students of Architecture) 2008; Chaired One Session on "Interior Design" Indian Institute of Chemical Engineers Auditorium, Jadavpur University Duration two hours.October 2008.

Dr, Shivashish Bose delivered Guest Lecture

International Participants of International Training Programme by Swedish Institute Second Phase of International Training Programme on 'Integrated Urban Planning' imparted by the Hifab International on behalf of SIDA -Sweden Kenilworth Hotel in Kolkata October 21, 2008

**B. Seminar/Workshop/Conference/Symposium Attended**

<b>Name of the Teacher</b>	<b>Name of the Paper Presented</b>	
<b>Name of the Seminar/Conference</b>	<b>Place</b>	<b>Duration</b>

Dr. Suchandra Bardhan

"Role of Photovoltaic in Environmentally Sustainable Tourism: A Conceptual

Study" 18<sup>th</sup> International Photovoltaic Science & Engineering Conference (PVSEC 18) Science City, Kolkata 19<sup>th</sup>-23<sup>rd</sup> January, 2009

Dr. Suchandra Bardhan

"Sustainable Green Buildings" at the Special Session of Environment Sub-congress 7<sup>th</sup> All India Peoples' Technology Congress organized by Forum of Scientists, Engineers & Technologists (FOSET) Science City, Kolkata. 6<sup>th</sup>-7<sup>th</sup> February 2009

Dr. Suchandra Bardhan

"Kolkata- An Expanding Metropolis" Annual Conference of Indian Society of Landscape Architects (ISOLA) - ISOLA 2009 Delhi India Habitat Centre, New Delhi 20<sup>th</sup>-21<sup>st</sup> February 2009.

Dr. Suchandra Bardhan

"Environmental Impact Analysis of PV Systems" National Workshop on 'Solar Electricity: Technology to Energy Solutions' School of Energy Studies, JU, Kolkata, 1<sup>st</sup>-4<sup>th</sup> June 2009.

Dr. Suchandra Bardhan

"Analysis on the Integration of PV Power at Eco-Tourism Site" 24<sup>th</sup> European Photovoltaic & Solar Energy Conference, 2009 Hamburg, Germany 21<sup>st</sup> -25<sup>th</sup> September, 2009.

Sri Debashish Das

Where the land meets the Ocean: Environmental management plan for Tsunami affected Coastal areas The 4<sup>th</sup> Annual Canadian Risk and Hazards Network Symposium, Vancouver, Canada 6<sup>th</sup> Nov, 2007.

Sri Debashish Das

Sustainable Community Development Plan with special emphasis on cultural and economical sustainability, case study Kumartuli, Kolkata International Training Programme on "Integrated Urban Planning" Phase- I Karlskrona and Stockholm in Sweden 10<sup>th</sup> Mar, 2009 to 8<sup>th</sup> April, 2009

Sri Debashish Das

Sustainable Community Development Plan with special emphasis on cultural and economical sustainability, case study Kumartuli, Kolkata International Training Programme on " Integrated Urban Planning" Phase- II Maputo, Mozambique 2<sup>nd</sup> Nov, 2009 to 11<sup>th</sup> Nov, 2009

#### **C Seminar/Workshop/Conference/Symposium Organized**

**Name of the Teacher      Name of the Paper Presented**

**Name of the Seminar/ Conference      Place      Duration**

Dr Shivashish Bose

1) Durga Puja Festival in Kolkata: Traditional Cultural Heritage in Temporary Urban Art Form; & 2) Ganges & Varanasi- Relationship & Threat from Global Warming 6<sup>th</sup> International Conference on Science & Technology in Archaeology and Conservation Rome, Italy December 10-11, 2008

**D. Orientation Courses/Refresher Courses Attended**

Name of the Teacher	Title of the Course	Duration	Place
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Sri Debashish Das

International Training Programme on " Integrated Urban Planning" Phase- I	10 <sup>th</sup> Mar, 2009 to 8 <sup>th</sup> April,2009.	Karlskrona and Stockholm in Sweden	from
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Sri Debashish Das

International Training Programme on "Integrated Urban Planning" Phase- II	2 <sup>nd</sup> Nov, 2009 to 11 <sup>th</sup> Nov, 2009	Maputo, Mozambique	
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**E. Orientation Courses/Refresher Courses Organized**

Name of the Teacher	Title of the Course	Duration	Place
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**4 A. Books/Monographs etc. Published**

Name of the teacher	Name of the Book	Name of the Publisher
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**B. Articles Published in Journals**

Name of the teacher	Name of the Articles	Name of the Journal
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Date of Publication	Volume
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Prof. Shubhrajit Das

Architecture Education. Theory vs. Practice	Indian Inst. of Architects West Bengal Chapter Convention	May 2009
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Sri Debashish Das

Sustainable Planning in Kolkata in India Today	Buyer's Guide to Home in Kolkata	June-Nov,2008
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Sri Debashish Das

Urban Sustainability : Guidelines and approaches for Preservation, Rejuvenation and Renewal of an Old Historic Settlement of Kumartuli, Kolkata,	<i>Journal of Indian Institute of Town Planners,</i>	Jan-Mar,2009 Vol-6,Number-1,
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**5 Collaborative Programmes**

- Prof. Tapas Kumar Bhattacharyya organized Students exchange Programmes as Head of the Department with University at Milan, Italy under Erasmus Mundus scheme and with School of Art, Ourense, Spain.
- E-TV-Network** carried out shooting of Landscape Architecture classes including interviews of students and teachers (Dr. S.Bardhan and Sri D. Das) in the Dept. for its Career and Education Show 'Yuva Bharat'.

**6 Major Achievements:**

- Prof. Shubhrajit Das Organized a presentation by the Internationally famous Architect/Academician, Prof. B.V. Doshi, in the Department
- Prof. Shubhrajit Das organized a presentation on Design by eminent Designer/ Architect/Academician, Prof. Ravi Hazra, earlier Professor and Head, Industrial Design, IIT Bombay and Professor CEPT University. He is currently the Director, Goa College of Architecture.

- c Prof. Tapas Kumar Bhattacharyya acted as an expert in the Building Committee of the Bose Institute, Kolkata
- d Prof. Tapas Kumar Bhattacharyya acted as a member in the Jury Board for selection of Design entries for a resort in Havelock, A & N under the Andaman Public Works Department, The A & N
- e Prof. Tapas Kumar Bhattacharyya participated as a member in the process of selection of Design entries for the Students' Design competition: "Transparence" organized by Saint Gobain (a glass manufacturing co.) in Chennai
- f Prof. Tapas Kumar Bhattacharyya participated as a member in the process of selection of Design entries for the Students' Design competition conducted by INSDAG (a Govt. of India undertaking on research on Steel)
- g Prof. Tapas Kumar Bhattacharyya acted as an examiner for the Sikkim Public Service Commission, Sikkim
- h Prof. Tapas Kumar Bhattacharyya rendered consultancy service for construction of a Laboratory in Salt Lake under SAMEER (a Govt. unit under the Ministry of Defence, Govt. of India)
- i Dr. Suchandra Bardhan has been nominated member of the ENVIRONMENT & LANDSCAPE ARCHITECTURE Committee of Indian Institute of Architects for the term 2008-2010.
- j Dr. Suchandra Bardhan along-with Prof. B. Ghosh (First Author) has been awarded the Best Poster Award (Visual Presentation) for their paper at the 24<sup>th</sup> European Photovoltaic Solar Energy Conference and Exhibition (24EUPVSEC), 2009 held in Hamburg, Germany in September 2009.
- k Sri Debashis Das is the member of the team working for designing the demonstrative green building at Jadavpur University campus.
- l Sri Debashis Das is the member for reviewing the applications of the candidates for Paul Foundation Scholarship, Kolkata and the member of Board of Examinations for Indian Institute of Architects, Kolkata Chapter.
- m. Sri Debashis Das is the external thesis guide to students of Indian Institute of Architects.
- n Sri Debashis Das is the guide to the students of ETH Zurich while the students visited Kolkata to study various planning aspects in Kolkata.
- o Sri Debashis Das delivered lecture to the students of NIS, Singapore while their academic study visit to Kolkata
- p Sri Debashis Das is the joint Secretary of Centre for Built Environment, Kolkata a non-profit NGO working towards development of studies and research works on architecture, urban design and urban planning.
- q Sri Debashis Das is the member of the Souvenir Committee for Indian Institute of Architects, West Bengal Chapter for IIA Convention 2009.
- r Sri Debashis Das is the member of the Committee for the survey of trees, gardens and water bodies of Jadavpur University, which was formed for making

suggestions for planting of new trees, clearing of jungles and beautification of water bodies.

**Major Achievements of the Students:**

The students of Department of Architecture received an overall third place in the Zonal NASA convention, 2009 held in BIT, Mesra, behind IIT (KGP (1<sup>st</sup>) and CET Bhubaneswar (2<sup>nd</sup>). In the cultural events, the students got a close 3<sup>rd</sup> again.

Five students from the final year (session '08-'09) ranked within 1<sup>st</sup> to 10<sup>th</sup> position at the GATE Entrance Examination. Akash Karak of that batch has got the 1<sup>st</sup> rank in GATE.

Students of 5<sup>th</sup> year secured 1<sup>st</sup> position (Regional) and Jury commendation in Transparency 2009 Design Competition organized by Saint-Gobain Glass.

Students of 5<sup>th</sup> year secured 1<sup>st</sup> position (regional) in Archumen, Quiz competition organized by Ethos India

Students of 5<sup>th</sup> year got Jury commendation in IGBC design competition.

Arpan Dasgupta secured Third position in Birla White "Yuva Ratna" Competition 2009.

**CHEMICAL ENGINEERING**

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**1 A. Courses Offered : (Name of the course, duration of course, No. of students enrolled)**

	Total Number of Students	Gender		Region	
		Female	Male	W B	Outside
UG	268	33	235	90%	10%
PG	38	8	30	75%	25%

**B. Number of Faculty Members : 18 (sanctioned: 29)**

**2 A. Area of Research Activities :** (Broad Areas)

- Advanced chemical Engineering Kinetics
- Bioprocess Engineering
- Bioenergy
- Process intensification
- Nanotechnology
- CFD (Computational Fluid Dynamics)
- Environmental Engineering
- Non-conventional Energy

**B. Major Research Project :** (Departmental/Individual, Name of the Project/Funding Agency)

**List of Ongoing Projects**

- "Effect of surface characteristics on heat transfer in a rectangular cavity", Funded by CSIR (Duration 2007-2009) **Prof. Tapas K. Datta**
- "Studies on the removal of toxic hexavalent chromium from tannery waste using bioleaching technique", Funded by DST, (Duration 2005-2008) **Prof. Pinaki Bhattacharjee**
- "Bioremediation of soil using micro-organisms", Funded by West Bengal Pollution Control Board, (Duration 2007 - 2009), **Prof. Siddhartha Datta**
- "Studies on the Anaerobic Filter (AF) using Immobilized Cells for the Treatment of High Fat Effluent of Food Industries", Funded by UGC, (Duration 2005-2008), **Prof. Ranjana Chowdhury**
- "Biodetoxification of Mercury Laden Effluent Sludge of Chloralkali Industries", Funded by UGC, (Duration 2009-2012), **Prof. Ranjana Chowdhury**
- "Milk nutraceuticals: A biotechnology opportunity for Australian and Indian Dairy Producers", Funded by DBT, under Indo-Australian Biotechnology Fund (IABF), (Duration 2007 - 2010), **Prof. Chiranjib Bhattacharjee**
- "Hige Distillation", Funded by DRDO, (Duration: 2007 -2009), **Prof. Avijit Bhowal.**
- "Process Intensification in Wastewater treatment", Funded by AICTE, (Duration 2007 - 2009), **Prof. Avijit Bhowal**
- "Hollow Fiber Contained Liquid Membrane system with Strip Dispersion for Recovery of Metal values", DST, Govt of India, **A. Bhowal and S. Datta** (2009 -2011)
- "Heavy metal bioremediation of soil using micro-organism", West Bengal Pollution Control Board, **S. Datta and A. Bhowal** (2007 -2010)
- "Synthesis and Characterization of Nano-particle of Bismuth Telluride and its one dimensional composite with Conducting Polymer" funded by DST, **Prof. K. Kar Gupta** (2008 onwards)

- "Development of Phosphoric acid gel electrolyte Matrix and Study of its effect on Performance of Fuel Cell" funded by DST, **Prof. K. Kar Gupta** (2008 onwards)
- "Hollow Fibre contained Liquid Membrane system with Strip dispersion for Recovery of Metal Ions" funded by DST, **Prof. K. Kar Gupta** (2008 onwards)
- "Cost-effective techniques for mitigation of methane from paddy fields"-sponsored by the World Bank (Technical Education Quality Improvement Programme) (Duration: 2006-2008). Dr. Ujjaini Sarkar
- Ozone and its Precursors in the Surface Layer: Predictions using Eulerian Photochemistry Model Funded by ISRO (2009 onwards) **Dr. Ujjaini Sarkar**
- "Process Intensification, Optimization and Techno-economical Studies on Freeze-drying" funded by UGC. **Dr. R. Chakraborty**

### 3 A. Invited Lectures Delivered/Session Chaired :

(Name of the Teacher, Type of Participation, Name of the Seminar/Conference etc., Place, Duration)

Prof. P. Bhattacharya

- Chaired a technical session on "Environmental Science, Engineering and Management" in the National Conference on Frontiers in Chemical Engineering (**NCFCE-2007**) held at IIT, Guwahati during December 12 - 14, 2007.
- Chaired a technical session in 60<sup>th</sup> Chemical Engineering Congress (**Chemcon 2007**) of IChE held in December, 2007 at Heritage Institute of Technology, Kolkata.

Prof. R. Chowdhury

- Chaired a technical session in 60<sup>th</sup> Chemical Engineering Congress (**Chemcon 2007**) of IChE held in December, 2007 at Heritage Institute of Technology, Kolkata.
- Delivered invited lecture on "**Green Fuel**" in the conference on Environment organized by TITI, Kolkata and VIVEKANANDA Institute of Environment on 4<sup>th</sup> June, 2009

#### **Editing of Journal**

- Edited *International Journal of Environmental Engineering*, Vol.2, No.s 1/2/3 (Inderscience) along with Prof. S. De, Prof. S. Das Gupta and Prof. Yung Tse Hung.

Prof. C. Bhattacharjee

- Chaired a technical session (TS-9 on 14.12.2007) on "Environmental Science, Engineering and Management" in the National Conference on Frontiers in Chemical Engineering (**NCFCE-2007**) held at IIT, Guwahati during December 12 - 14, 2007. This session was chaired jointly with Dr. F. I. Khan, Memorial University, Canada.
- Chaired a technical session (TS-15 on 21.12.2007) on "Catalytic Membrane Contactor/Reactors" in the 8<sup>th</sup> International Conference on Catalytic Membrane Reactor (IIMR8) held at Central Glass and Ceramic Research Institute (CGCRI),

Kolkata, India during December 18 – 21, 2007. The keynote address was delivered by Dr. J.A. Dalmon of France and eminent speakers were Dr. V. V. Volkov of Russia and Dr. B. Chakroborty of Genesis Membrane, India.

- Chaired a technical session on "Chemical Reaction Engineering" (session code: R2E) on December 30, 2007 in the 60<sup>th</sup> Chemical Engineering Congress (Chemcon 2007) organized by Indian Institute of Chemical Engineers (IICHe) and held at Heritage Institute of Technology, Kolkata.

Dr. U. Sarkar

- Chaired two sessions at CHEMCON-2007.

**B. Seminar/Workshop/Conference/Symposium Attended :**

(Name of the Teacher, Name of the Paper Presented (if any), Name of the Seminar, Place, Duration)

Prof. P. Bhattacharya

- Chaired a technical session on "Environmental Science, Engineering and Management" in the National Conference on Frontiers in Chemical Engineering (NCFCE-2007) held at IIT, Guwahati during December 12 – 14, 2007.
- Chaired a technical session in 60<sup>th</sup> Chemical Engineering Congress (Chemcon 2007) of IICHe held in December, 2007 at Heritage Institute of Technology, Kolkata.

Prof. R. Chowdhury

- Chaired a technical session in 60<sup>th</sup> Chemical Engineering Congress (Chemcon 2007) of IICHe held in December, 2007 at Heritage Institute of Technology, Kolkata.

Prof. C. Bhattacharjee

- Chaired a technical session (TS-9 on 14.12.2007) on "Environmental Science, Engineering and Management" in the National Conference on Frontiers in Chemical Engineering (NCFCE-2007) held at IIT, Guwahati during December 12 – 14, 2007. This session was chaired jointly with Dr. F. I. Khan, Memorial University, Canada.
- Chaired a technical session (TS-15 on 21.12.2007) on "Catalytic Membrane Contactor/Reactors" in the 8<sup>th</sup> International Conference on Catalytic Membrane Reactor (IIMR8) held at Central Glass and Ceramic Research Institute (CGCRI), Kolkata, India during December 18 – 21, 2007. The keynote address was delivered by Dr. J.A. Dalmon of France and eminent speakers were Dr. V. V. Volkov of Russia and Dr. B. Chakroborty of Genesis Membrane, India.
- Chaired a technical session on "Chemical Reaction Engineering" (session code: R2E) on December 30, 2007 in the 60<sup>th</sup> Chemical Engineering Congress (Chemcon 2007) organized by Indian Institute of Chemical Engineers (IICHe) and held at Heritage Institute of Technology, Kolkata.

Dr. U. Sarkar

- Chaired two sessions at CHEMCON 2007.

**C. Seminar/Workshop/Conference/Symposium Organized :**

(Name of the Teacher, Name of the Paper Presented (if any), Name of the Seminar, Place, Duration)



Prof. P. Bhattacharya

- 1 Acted as a member of the organizing committee of Chemical Engineering Congress, 2007, held at Kolkata- Chemcon 2007.
- 2 Acted as a member of the organizing committee of International Seminar, organized by Indian Institute of Technology, Guwahati on December, 2007.  
Organized the following courses as a Joint Course Coordinator in collaboration with Department of Adult Continuing Educational and Extension, Jadavpur University.
  1. Risk assessment and safety in chemical process industry
  2. Wastewater Treatment in chemical industry
  3. Air pollution measurement and abatement

Prof. C. Bhattacharjee

- Organized a National Conference on "Zero Effluent Discharge - Latest Development in Recycling" as Organizing Secretary during December 22-23, 2007. The conference was organized on the behalf of "The Institution of Engineers (India), West Bengal State Center, Chemical Engineering Division. The collaborators of this conference were CSIR and DBT, New Delhi. The sponsor was Haldia Petrochemical Limited, Haldia, West Bengal, India.

**D. Orientation Courses/Refresher Courses Attended :**

(Name of the Teacher, Title of the Course, Place, Duration)

Dr. Rajat Chakraborty

Attended a Workshop on "Application of HYSIS for Simulation of Process Plants- Level-I" during October 20-24, 2008 at University of Calcutta.

**E. Orientation Courses/Refresher Course Organized :**

(Name of the Teacher, Title of the Course (if any), Place, Duration)

**4 A. Books/Monographs etc. Published :**

(Name of the Teacher, Name of the Book, Name of the Publisher)

Prof. C. Guha

- C. Guha and S.C. Roy Introduction to TRANSPORT PHENOMENA, 1st Edition, ,Dhanpat Rai & Co. (P) Ltd.1710, Nai Sarak, Delhi ,2007
- Mousumi Chakraborty, Chiranjib Bhattacharya, Siddhartha Datta: Chapter 4 - Emulsion Liquid Membranes: Definitions and Classification, Theories, Module Design, Applications, New Directions and Perspectives, Pages 141-199, in "Liquid Membranes: Principles and Applications in Chemical Separations and Wastewater Treatment", Copyright © 2010 Elsevier B.V. All rights reserved, edited by Vladimir S. Kislik (ISBN: 978-0-444-53218-3).

**B. Articles Published in Journals :**

(Name of the teacher, Name of the Article, Name of the Journal, Date of Publication, Volume)

(i) **International Journal:**

Prof. (Dr.) T.K.Datta

- 1 Chaudhuri, C. Guha, & T. K. Dutta, Finite Volume Simulation Of Supersonic To Hypersonic Gas Flow And Heat Transfer Through Micro-Channel, *Chemical Engineering And Technology (Wiley VHC)*, Vol. 30, No. 1, p41-45, 2007.
- 2 Chaudhuri, C. Guha, & T. K. Dutta, Numerical Study Of Fluid Flow And Heat Transfer In Partially Heated Micro-Channel Using Finite Volume Method, *Chemical Engineering And Technology (Wiley VHC)*, Vol. 30, No. 4, p425-430, 2007.
- 3 Chaudhuri, C. Guha, & T. K. Dutta, Numerical Study Of High Speed Combustion Of Acetylene-Air Mixture In Micro-Channels, *Chemical Engineering And Technology (Wiley VHC)*, Vol. 30, No. 5, p615-620, 2007.
- 4 R. Dutta, A. Atta, & T. K. Dutta, Numerical Study Of Heat Transfer In Horizontal Concentric Annulus Containing Phase Change Material, *Canadian Journal of Chem. Engg.* Vol. 86, p700-710, Aug 2008.
- 5 A. Mitra, T. K. Dutta, & D. N. Ghosh, Natural Convection Heat Transfer In Water Enclosed Between Pairs Of Differentially Heated Vertical Plates. Accepted For Publication, *Journal Of Heat And Mass Transfer*, Springer Verlag. DOI: 10.1007/S00231-008-0419-Z, 2008.

Prof. P. Bhattacharya

- 1 C. Das, R. Chowdhury and P. Bhattacharya, "Three Phase Bioreactor Model for the Removal of Styrene through the Microbial Route", *International Journal of Chemical Reactor Engineering*, Vol.6 (2008)
- 2 K. Samanta, P. Bhattacharya, and R. Chowdhury, "Mathematical Modeling and Experimental Studies on Biochemical Conversion of Cr<sup>6+</sup> of Tannery Effluent to Cr<sup>3+</sup> in a Chemostat" *Soil & Sediment Contamination: an International Journal (Taylor & Francis Publication)*, Vol.17 (2008)
- 3 Validations of Thermohydraulic Models for Geysering in a Natural Circulation Loop using Impedance Needle Probe, *I & EC (Research)*, 48, 4, pp. 2020-2035, (2009).
- 4 Bio-Detoxification of Arsenic Laden Ground Water Through a Packed Bed Column of a Continuous Flow Reactor Using Immobilized Cells, *Soil and Sediment Contamination*, Accepted for publication (2009).
- 5 A Moving Boundary Analysis for Startup Performance of a Nuclear Steam Generator, *ASME Journal of Fluid Engineering*, 130, issue 5, (2008)
- 6 Simulation of Oscillations of Boiling Flow in a Natural Circulation Evaporator, *Chemical Engineering Communication*, 196, issue 3, 362, (2008)
- 7 Moving Boundary Analysis of Net Vapor Generation Point in a Steam Generator, Accepted in *International Journal for Numerical Methods in Fluids*, (in press,2008)
- 8 Comparative Performance Study Of Polyethersulfone and Polysulfone Membranes for Trypsin Isolation from Goat Pancreas Using Affinity Ultrafiltration, *Separation and Purification Technology*, 60, 345-351 (2008).

- 9 Affinity Separation of Trypsin from Goat Pancreatic Extract Using a Polyethersulfone Ultrafiltration Membrane, *Separation Science and Technology*, 43, 1-18 (2008).
10. Simulation of Oscillations of Boiling Flow in a Natural Circulation Evaporator, *Chemical Engineering Communication, Separation. Science and Technology*, 43, pp. 1-18, (2008).

Prof. S.Datta

- 1 "Improvement of Wastewater Quality Parameters by Sedimentation Followed by Tertiary Treatments", *Desalination, Elsevier Science Publishers*, 212 (1-3), pp. 92-102, 2007.
- 2 "Parameter Estimation and Performance Study During UF of Kraft Black Liquor", *Separation and Purification Technology*, (in press).
- 3 "Artificial neural network modeling of fixed bed biosorption using radial basis approach", *European Journal of Mineral Processing* (in press).
- 4 "Continuous biosorption in rotating packed bed contactor", *Industrial & Engineering Chemistry Research, American Chemical Society* (in press).
- 5 "Removal of Metanil Yellow From its Aqueous Solution by Flyash and Activated Carbon Produced From Different Sources", *Separation Science and Technology*, Taylor and Francis Inc., (in press).
- 6 "Hazardous Waste Pollution Prevention Using Clay with Admixtures", *Clean*, Wiley - VSH Verlag FmbH & Co., 36(2), pp.230 - 238, 2008.
- 7 "Application of Mixtures of Red Sandal Wood and other Natural Dyes for Dyeing of Jute Fabric : Part-I : Studies on Colour Parameters and Colour Fastness Properties", *The Journal of the Textile Institute*, Taylor and Francis Publications, U.K. (in press).

Prof. A. Mukherjee

- 1 K Dutta, D Bhattacharyay, A Mukherjee, S J Setford, A P F Turner, P Sarkar, Detection of Pesticide by Polymeric Enzyme Electrodes, *Ecotoxicology and Environmental Safety*, 69(3), Pages 556-61, (2008)
- 2 P Pal, D Bhattacharyay, A Mukhopadhyay, P Sarkar, The Detection of Mercury, Cadmium and Arsenic by the Deactivation of Urease on Rhodinized Carbon, *Environmental Engineering Sciences*, Accepted (2008)

Prof. (Dr.) R. Chowdhury

- 1 C. Das, R. Chowdhury and P. Bhattacharya, "Three Phase Bioreactor Model for the Removal of Styrene through the Microbial Route", *International Journal of Chemical Reactor Engineering*, Vol.6 (2008)
- 2 K. Samanta, P. Bhattacharya, and R. Chowdhury, "Mathematical Modeling and Experimental Studies on Biochemical Conversion of Cr<sup>+6</sup> of Tannery Effluent to Cr<sup>+3</sup> in a Chemostat" *Soil & Sediment Contamination: an International Journal* (Taylor & Francis Publication), Vol.17 (2008)
- 3 C. Chakraborty, R. Chowdhury and P. Bhattacharya Erucic acid based Effluent

of Edible oil Refinery in an Anaerobic Filter –Experiments and Modeling (IFIS Publishing) (Accepted in 2009) (In press)

- 4 Bio-Detoxification of Arsenic Laden Ground Water Through a Packed Bed Column of a Continuous Flow Reactor Using Immobilized Cells, *Soil and Sediment Contamination* (Taylor & Francis Publication), Accepted for publication (2009).

Prof. (Dr.) C Bhattacharjee

- 1 Bidhan C. Bag, Krishnamurthy Sekhar, Devendra K. Dubey, Makireddi Sai, Rajendra S. Dangi, Mahavir P. Kaushik and **Chiranjib Bhattacharjee**, "An eco-friendly and separation efficient process involving water phase reaction for production of cc-2", *Chemical Engineering & Processing: Process Intensification*, (Elsevier Science Publishers), 47(8) (2008) pp 1333-1339 (DOI information: 10.1016/j.cep.2007.04.012).
- 2 Ayan Hore, Suman Dutta, Siddhartha Datta and **Chiranjib Bhattacharjee**, "Application of Artificial Neural Network in Wastewater Quality Monitoring: Prediction of Water Quality Index", *International Journal of Nuclear Governance, Economy and Ecology* (IJNGEE) (Inderscience Publishers), (in press).
- 3 Bidhan C. Bag, Krishnamurthy Sekhar, Devendra K. Dubey, Makireddi Sai, Rajendra S. Dangi, Mahavir P. Kaushik and **Chiranjib Bhattacharjee**, "Reaction Kinetics of N-chlorination of Bis(2,4,6-trichlorophenyl)urea to N,N'-dichlorobis(2,4,6-trichlorophenyl) urea by Hypochlorous Acid", *J. Chem. Eng. Japan*, (in press).
- 4 Debasish Sarkar and **Chiranjib Bhattacharjee**, "Modeling and Analytical Simulation of Rotating Disk Ultrafiltration module", *J. Membrane Science*, (Elsevier Science Publishers) (in press).
- 5 Bidhan C. Bag, Krishnamurthy Sekhar, Devendra K. Dubey, Makireddi Sai, Rajendra S. Dangi, Mahavir P. Kaushik and **Chiranjib Bhattacharjee**, "Pretreatment of wastewater containing a mixture of organic pollutants obtained from CC2 plant by coagulation", *Water Science and Technology*, (Elsevier Science Publishers) (in press).
- 6 Ranjana Das, **Chiranjib Bhattacharjee** and Santinath Ghosh, "Effects of operating parameters and nature of fouling behavior in ultrafiltration of sesame protein hydrolysate", *Desalination* (Elsevier Science Publishers), 237 (2009) pp. 268 - 276.
- 7 Ranjana Das, **Chiranjib Bhattacharjee** and Santinath Ghosh, "Studies on Membrane Processing on Sesame Protein Isolate and Sesame Protein Hydrolysate using Rotating Disk Module", *Separation Science & Technology* (Taylor & Francis), 44 (2009) pp. 131 - 150.
- 8 **Chiranjib Bhattacharjee**, Dwaipayan Sen, Projjwal Sarkar, S. Datta and P.K. Bhattacharya, Studies on the application of different ANNs in prediction of permeate flux in rotating disk membrane module: A case study with MATLAB™, *Desalination and Water Treatment*, (Elsevier Science Publishers), 2 (2009) pp. 170 - 184.

9. Diptendu Datta, Sangita Bhattacharjee, Arijit Nath, Ranjana Das, **Chiranjib Bhattacharjee**, Siddhartha Datta, "Separation of Ovalbumin from Chicken Egg White Using Two-Stage Ultrafiltration Technique", *Sep. Purif. Tech.* (Elsevier Science Publishers), 66 (2009) pp. 353 - 361.
  10. Ranjana Das, **Chiranjib Bhattacharjee** and Santinath Ghosh, "Preparation of Mustard (*Brassica juncea* L.) Protein Isolate and Recovery of Phenolic Compounds by Ultrafiltration", *Ind. Eng. Chem. Res. (ACS Journal)*, 2009, 48 (10), pp 4939-4947.
  11. Projjwal Sarkar, Subhasis Ghosh, Suman Dutta, **Chiranjib Bhattacharjee**, "Effect of different operating parameters on the recovery of proteins from casein whey using a rotating disc membrane ultrafiltration cell", *Desalination* (Elsevier Science Publishers), 249, (2009), pp 5 - 11.
  12. Bidhan C. Bag, Makireddi Sai, Krishnamurthy Sekhar and **Chiranjib Bhattacharjee**, "Treatment of wastewater containing pyridine released from N,N'-Dichlorobis (2,4,6-trichlorophenyl) urea (CC2) plant by advanced oxidation", *Journal of Environmental Protection Science*, 3 (2009) pp. 34 - 40.
  13. S. Dutta, S. A. Parsons, **C. Bhattacharjee**, P. Jarvis, S. Datta, S. Bandyopadhyay, "Kinetic study of adsorption and photo-decolorization of Reactive Red 198 on TiO<sub>2</sub> surface", *Chemical Engineering Journal* (Elsevier Science Publishers), (DOI information: 10.1016/j.cej.2009.08.026) (in press).
  14. Arunava Chowdhury, Siddhartha Sengupta, **Chiranjib Bhattacharjee**, Siddhartha Datta, "Extraction of Hexavalent Chromium from Aqueous Stream by Emulsion Liquid Membrane", *Separation Science & Technology* (Taylor & Francis), (in press).
- Prof. (Dr.) A. Bhowal
1. A. Das, A. Bhowal and S. Datta, 'Biosorption in Rotating Bed Contactor', *Ind. Eng. Chem. Res.* 47(2008), 4230-423.
  2. D. Bonam, G. Bhattacharya, **A. Bhowal** and S. Datta, Liquid-Liquid Extraction in a Rotating-Spray Column: Removal of Cr(VI) by Aliquat 336, *Ind. Eng. Chem. Res.* 48(16) (2009) 7687 - 7693.
  3. S. Bhattacharya, A. Mondal, **A. Bhowal**, S. Datta, "Evaporative Cooling of Water in Rotating Packed Bed (split packing)", *Industrial Engineering Chemistry Research* (accepted)
- Prof. Dr. K. Kargupta
1. Majumdar, S., Kargupta, K., Ganguly, S. Mathematical Modeling for the Ionic Inclusion Process Inside Conducting Polymer-Based Thin-Films, *Polymer Engineering & Science*, Article in Press.
  2. Suresh, A., Chakraborty, S. Kargupta, K., Ganguly, S. Low-dimensional Models for describing Mixing Effects in Reactive Extrusion of Polypropylene, *Chemical Engg. Science*, 63(2008)3788-3801.
  3. Manigandan, S., Jain, A., Majumdar, S., Ganguly, Kargupta, K. Formation of

nanorods and nanoparticles of polyaniline using Langmuir Blodgett technique: Performance study for ammonia sensor, *Sensors and Actuators Part B*, 133 (2008) 187-194.

- 4 Manigandan, S., S. Majumdar, S. Ganguly, K. Kargupta, Formation of nanorods and nanoparticles of polyaniline using Langmuir Blodgett technique, *Materials Letter*, 62 (2008) 2758-2761.
- 5 Roy, Subhasis, Kargupta, K., Chakraborty, S., Ganguly, S. Preparation of Polyaniline nanofibers and nano-particles via simultaneous doping and electrodeposition, *Materials Letter*, 62 (2008) 2535-2538.
- 6 Manigandan, S., Majumdar, S. Asaithambi, S. Ganguly, S. Kargupta, K. and Banerjee, D. Electric field Induced Dewetting and Pattern Formation in Thin Conducting Polymer Film, *Sensor and Actuators: B. Chemical*, Accepted for Publication
- 7 Chatterjee, K., Asaithambi, S., Ganguly, S., Kargupta. K. and Banerjee, D. Synthesis and Characterization of Electro-deposited Polyaniline-Bismuth Telluride Nanocomposite - A Novel Thermoelectric Material *Materials Characterization*, Accepted for publication.
- 8 Majumdar, S., Ray, P., Kargupta, K., Ganguly, S. Detailing Ionic Ingress and Charge Neutralization Phenomenon for Conducting Polymeric Film *Chem Phys Chem*, accepted for publication
- 9 Asai, S., Majumdar, S., Gupta. A., Kargupta, K., Ganguly, S. Dynamics and pattern formation in thermally induced phase separation of polymer-solvent system, *Computational Material Science*, Article in press.
10. Majumdar, S., Ray, P., Kargupta, K., Ganguly, S. On Electroneutrality Condition inside Solid Conducting Porous Film, *AIChE Journal*, 55 (2009) 3026-3029.
11. Asaithambi, S., Chatterjee, K., Sharma, V.K., Ganguly, S., Kargupta. K. and Banerjee, D. Effect of pH on Structural and Electrical Properties of Electrodeposited Bi<sub>2</sub>Te<sub>3</sub> Thin Films, *Journal of Electronic Materials* 38 (2009) 449-452.

Dr. U. Sarkar

- 1 Development of a micrometeorological model for the estimation of methane flux from paddy fields: Validation with standard direct measurements, *Environmental Modelling and Software* (Elsevier, I.F.=2.099) (2008), Volume 23, 2008, Pages 1229-1239, R. Mukherjee and U. Sarkar.
- 2 Control of the Methane Flux from Water-logged Paddy-Fields: Case studies in the Southern part of West-Bengal, India. *Journal of Greenhouse Gas Control* (Elsevier), In Press. A. Barua, R. Mukherjee and U. Sarkar.
- 3 Development of a micrometeorological model for the estimation of methane flux from paddy fields: Validation with standard direct measurements, *Environmental Modelling & Software*, Volume 23, Issues 10-11, October-November 2008, Pages 1229-1239 Ranjan Mukherjee, Ujjaini Sarkar



- 4 Role of Alternative Electron Acceptors (AEA) to control methane flux from waterlogged paddy fields: Case studies in the southern part of West Bengal, India *International Journal of Greenhouse Gas Control*, Volume 3, Issue 5, September 2009, Pages 664-672. Ranjan Mukherjee, Animita Barua, **Ujjaini Sarkar**, Bijay Kumar De, Alak Kumar Mandal
- 5 Adsorption of para chloro meta xyleneol (PCMX) in composite adsorbent beds: Parameter estimation using nonlinear least square technique *Chemical Engineering Journal*, Volume 152, Issues 2-3, 15 October 2009, Pages 361-366 Suvra Sadhukhan, Somdutta Singha, Ujjaini Sarkar
- 6 Evaluation of odour intensity from Activated Sludge Based Sewage Treatment Works *Desalination and Water Treatment* (Accepted, In Press) Baisali Rajbansi and Ujjaini Sarkar
- 7 Dynamic simulation of Activated Sludge based wastewater treatment processes: Case studies with Titagarh Sewage Treatment Plant, India. *Desalination Journal* (Accepted, In Press) Ujjaini Sarkar, Dwaipayan Das Gupta, Trina Bhattacharya, Sandip Pal and Tamaghna Chakraborty
- 8 Dynamic simulation of secondary treatment processes using Trickling Filters: A Case study with a sewage treatment works in the west bank of river Ganges in West Bengal, India *Desalination Journal* (Accepted, In Press) Sandip Pal and Ujjaini Sarkar

Dr. D. Roy

- 1 Comparative Performance Study Of Polyethersulfone and Polysulfone Membranes for Trypsin Isolation from Goat Pancreas Using Affinity Ultrafiltration, *Separation and Purification Technology*, 60, 345-351 (2008).
- 2 Affinity Separation of Trypsin from Goat Pancreatic Extract Using a Polyethersulfone Ultrafiltration Membrane, *Separation Science and Technology*, 43, 1-18 (2008).

Dr. R. Chakraborty

Arijit Banerjee and **Rajat Chakraborty**, Parametric sensitivity in transesterification of waste cooking oil for biodiesel production-A review. *Resources, Conservation and Recycling* (Elsevier), 2009; 53: 490-497.

#### **B. National Journal:**

Prof. P. Bhattacharya

- 1 K. Samanta, R Chowdhury, P. Bhattacharya, Effect of Substrate concentration on the Transient Dynamics of specific cell growth during Bioconversion of  $\text{Cr}^{+6}$  to  $\text{Cr}^{+3}$  using Polyculture Consortia, *Indian Journal of Chemical Technology*, Vol. 15, p. 209, 2008.
- 2 S. Dutta, **R. Chowdhury** and P. Bhattacharya, Stability and Response analyses of Phenol Degrading Biochemical Systems, *Indian Journal of Chemical Technology*, vol 16 (2009)
- 3 K. Samanta, R Chowdhury, P. Bhattacharya Response of Cell Growth Due to

Change in Chromium Concentration During Bioconversion of Hexavalent Chromium Using Mixed Culture System, *Indian Chemical Engineer*, 51, No.2 April - June, pp.101 - 110, (2009)

Prof. (Dr.) S.Datta

- 1 "Phytoremediation : An Approach to Eco-friendly Clean-up Process of Contaminated Environment and its Application on East Calcutta Wetlands" - *Leather Age* ( in press ).
- 2 'Physico-Chemical Studies on Dyeing of Jute and Cotton Fabrics Using Jackfruit Wood Extract: Part I - Effects of Different Mordanting and Dyeing Process Variables on Colour Yield and Colour Fastness Properties', *Indian J Fibre Text Res*, 32(4), 466 - 476, 2007.
- 3 "Physico-Chemical Studies on Dyeing of Jute and Cotton Fabrics Using Jackfruit Wood Extract: Part II - Dyeing Kinetics and Thermodynamic Studies', *Indian J Fibre Text Res*, 2007 (in press)
- 4 "Studies on Colour Parameters/Colour Fastness and Compatibility for Dyeing of Jute Fabric with Binary Mixtures of Jackfruit Wood and other Natural Dyes', *Indian J Fibre Text Res*, 2007 (in press)
- 5 "Assessment of Water Quality of Tolly's Nullah by Water Quality Index (WQI)", *The Institute of Engineers* (India) , Volume 88, September, 1-7, 2007.
- 6 "Water temperature during winter in the tropical tidal river waters of Sundarbans, India", *J. Indian, Soc. Coastal Agric. Res.*, 25 (1) pp.77-78, 2007.
- 7 "A Study on Comparison of Soil Quality of River Gang and River Matla in West Bengal, India", *Indian Science Cruiser*, Jan. 2008.
- 8 "Analysis of Seasonal Variation of Water Quality and Bottom Sediment Parameters of Stagnant Surface Water Body", *Journal of the Institution of Engineers* (India), Env. Engg. Division, vol.88, 7-13, March, 2008.
- 9 "Mass transfer characteristics in extraction by emulsion liquid membrane system in mobilized emulsion phase", *Indian Journal of Chemical Technology*, March, 2008.

Prof. (Dr.) R. Chowdhury

- 1 K. Samanta, Rchowdhury, P. Bhattacharya, Effect of Substrate concentration on the Transient Dynamics of specific cell growth during Bioconversion of  $Cr^{+6}$  to  $Cr^{+3}$  using Polyculture Consortia, *Indian Journal of Chemical Technology*, Vol. 15, p. 209, 2008
- 2 S. Dutta, **R. Chowdhury** and P. Bhattacharya, Stability and Response analyses of Phenol Degrading Biochemical Systems, *Indian Journal of Chemical Technology*, vol 16 (2009)
- 3 K. Samanta, Rchowdhury, P. Bhattacharya Response of Cell Growth Due to Change in Chromium Concentration During Bioconversion of Hexavalent Chromium Using Mixed Culture System, *Indian Chemical Engineer*, 51, No.2 April - June, pp.101 - 110, (2009).



Prof. C Bhattacharjee

- 1 Dipannita Mondal, Siddhartha Datta, **Chiranjib Bhattacharjee**, "A simplified model for simulation of plate reactive distillation column", *Chemical Engineering Division, Journal of the Institution of Engineers (India)*, 87(3) (2007) pp. 3 - 10.
- 2 Jaydip Datta, **Chiranjib Bhattacharjee**, T. K. Bhattacharyya, B. R. De, "Mathematical Analysis on Certain Physical Properties Applied on Random Coil Model", *Current Science*, 93 (2) (2007) pp. 231 - 233.
- 3 Ayan Hore, Projjwal Sarkar, Madhumita Sarkar, **Chiranjib Bhattacharjee**, Siddhartha Datta, "Membrane technology in recovery of protein from whey stream: A safe and economic route to whey disposal", *Indian Journal of Environmental Protection*, 27 (10) (2007) pp. 883 - 889.
- 4 Jaydip Datta, **Chiranjib Bhattacharjee**, R. Mukhopadhyay, T. K. Bhattacharyya, B. R. De, "Mathematical validation of helix coil transition in polypeptides: A modelling approach", *J. Indian Chem. Soc.*, 84 (12) (2007) pp. 1219 - 1222.
- 5 Jaydip Datta, T. K. Bhattacharyya, **Chiranjib Bhattacharjee**, B. R. De, "Mathematical validation of hydrodynamic properties of biomolecules: A regression approach", *J. Inst. Chemists (India)*, 79 (5) (2007) pp. 155 - 158.
- 6 **C. Bhattacharjee**, P. Sarkar, D. Sen, "Treatment of casein whey using polyether sulphone ultrafiltration membrane in cross-flow membrane module", *Journal of Institution of Engineers (India)*, 88 (2008).
- 7 Jaydip Datta, **Chiranjib Bhattacharjee** and B R De, "Statistical analysis on quencher in photobiological application", *Indian Journal of Chemistry*, Vol. 47A, May 2008.

Prof. A. Bhowal

- 1 D. Mondal, D. Saha, A. Bhowal\* and S. Datta, 'Mass transfer characteristics in extraction by emulsion liquid membrane system - immobilized emulsion phase' *Indian Journal of Chemical Technology* 15(2008) 113-117.

Prof. C. Guha

- 1 **C Guha**, Numerical Analysis of Solidification of Sulphur over a Moving Surface, *IE(I) Journal - CH*, Vol 87, March 2007, 22 to 27.
- 2 **C Guha**, A. Chaudhuri, Transient Analysis of Heat Exchanger Network, *IE(I) Journal - CH*, Vol 87, March 2007, 51 to 59.

#### 5. Collaborative Programmes :

- Collaborative work is going on with Australian university
- Collaborative project is as follows,
- "Milk nutraceuticals: A biotechnology opportunity for Australian and Indian Dairy Producers", Funded by DBT, under Indo-Australian Biotechnology Fund (IABF), (Duration 2007 - 2010), **Prof. Chiranjib Bhattacharjee**

- Collaborative project with Hadley Centre (United Kingdom), Title: Validation of NAME-II for trans-boundary pollution. Funding Agency: British Council, Kolkata. Dr. Ujjaini Sarkar.
- Research collaboration with Karlsruhe University regarding Pyrolysis of lignocellulosic Waste and spent engine oil is going on. A German student will work in the department from December, 2009 to March, 2010.

**6. Major Achievements :**

- Department has developed herbal "Drink, Abir and Candle" at Community Research Laboratory as a part of Outreach program.
- Department is being benchmarked by I. Chem E, UK.

**CIVIL ENGINEERING**

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**1 Area of Research Activities:**

- Treatment of Industrial Wastewater
- Plant removal of Organics & Inorganics from Wastewater.
- Surface water Quality Modelling.
- Environmental Consequence of Waste utilization in Agriculture
- Pricing of Industrial Water.
- Air pollution, Noise pollution.
- Geotechnics of Earthquake Engineering.
- Geotechnics of Highway Engineering.
- Geo-Environmental Engineering.
- Soil Structure Interaction.
- Shell Structure.
- Concrete Technology
- Advanced Numerical Analysis.
- Laminated Composite Plates & Shells.

**Major Research Project:**

- Name of project: Efficacy of Liner System for attenuation of toxic pollutants in an industrial waste landfill system.

Sponsor: DST, Govt. of West Bengal.

Faculty Member's Involved: S.N.Mukherji (PI), S.Ghosh (CO-PI).

- Name of project: "Assessment of Environmental Consequences for sustainability of waste recycling in present urban agricultural practices".

Sponsor: Department of Environment, Govt. of West Bengal.

Faculty Members Involved: A.Debsarkar (PI), A. Ganghopadhyay (CO-PI), S.N.Mukherji (CO-PI), S.K.Mukherjee (CO-PI)

- Name of project: Feasibility Studies for removal of heavy metals from water & waste water using a few low cost technologies.

Sponsor: DST, Govt. of West Bengal.

Faculty Member Involved: S. Chakrobarati (PI)

- Name of project : Study the strength and durability of fly ash based geopolymer concrete (Bacterial Concrete)

Sponsor: AICTE

Faculty Member's Involved Saroj Mandal (PI)

- Name of project: Evaluation of Mechanical, Durability and Micro Structural properties of high volume fly ash concrete (Geopolymer Concrete (Concrete without cement))

Sponsor: PURSE SCHEME, DST, WB GOVT.

Faculty Member's Involved: Saroj Mandal (PI), Kalyan Kr Mandal (CI)

- Name of project: Numerical and experimental study on active control of coupled structural acoustic problems involving laminated composite structures (Coupled Structural Acoustics, Composites, Econometric).

Sponsor: TEQIP, Jadavpur University..

Faculty Members Involved: Arup Guha Niyogi, Partha

Bhattacharya, .Gupinath Bhandary, . Subhashish Roy Chowdhuri,

Sreyashi Das, . Sibnath Chakraborti, Anupam DebSarkar,

Madhumita Roy, .Jayita Guha Niyogi

- Name of project: Numerical and experimental study on active control of coupled structural acoustic problems involving laminated composite structures (Finite element method to analyse folded plate problem).

Sponsor: PURSE PROGRAMME, JADAVPUR UNIVERSITY

Faculty Members Involved: . Arup Guha Niyogi, Partha Bhattacharya, Subhashish Roy Chowdhuri

**Seminar/Workshop/Conference/Symposium/Attended:**

- S.N.Mukherji & S. Ghosh attended Indian Geotechnical Conference, 2008 at Bangalore in December, 2008

**Papers Published in Journals/Conferences:**

- S.Chakroborti (2008)"Application of natural geo-textile in civil construction - An economic & ecofriendly prospect" *Proc. of Conference of Institute of Engineers, Agartala, Dec 2008*
- S.Chakroborti(2009)"Preloading in combination with vertical drain" *Proc.of TEQIP Programme held at BESU, 2009*
- S.N.Chakroborty (2008),"Correction Factors of Caline-4: A Study of Automobile Pollution in Kolkata". *Indian Journal of Air Pollution Control.*
- S.N.Chakroborty (2008-09)"Horizontal profile of PM<sub>10</sub> along a busy roadside in Kolkata". *Journal of the Institution of Public Health Engineers, India Volume2008-09,No.4.*
- S.N.Chakroborty(2009-10)"Green Building" *Journal of the Institution of Public Health Engineers, India Volume2009-10,No.1*
- S.N.Chakroborty(2009) "Acid Rain- a step Forward to Nature General Awareness" *Proc. of Seventh All India People's Technology Congress, Organized By FOSET, 2009*
- S.N.Chakroborty (2009) "Energy Consumption in Building & Construction sector- the present scenerio." *Proc. of Seventh All India People's Technology Congress ,Organized By FOSET, 2009*
- S.N.Chakroborty(2009)" Operational Energy Consumption & Associated CO2 Emission of a Typical Institutional Building in Kolkata- A Case Study". *Proc.of Seventh All India People's Technology Congress, Organized By FOSET, 2009.*
- A. Gangopadhyay (2008)" Appraisal of Heavy Metal Contamination of Surface Water & sediment in a waste farming area". *Journal of IAEM, Vol-35 (2) ,104-106(2008) .*
- A.Gangopadhyay (2009)"Study on Material loss in a Batch Process in Kolkata based Mechanically Operated Textile Dyeing Agency". *Journal of IPHE, India ,Vol-2009-10,No:3, 23-30.*
- S.N.Mukherji & S Ghosh(2008)"Chromium adsorption dynamics through fine grained soil". *Proceedings of Indian Geotechnical Conference, Bangalore, 2008,493-496.*
- S.N.Mukherji & . S Ghosh(2009)" Chromium & nickel migration through fine grained soil". *Journal of Hazardous Materials, USA,170, 2009,1192-1196.*
- S.N.Mukherji(2009)"Simplified Kinetic Analysis for composting of Municipal Solid Waste " *Journal of Hazardous, Toxic & Waste Management, ASCE Vol-13, No.3 , July, 179-186*
- A.Debsarkar, A.Bandopadhyay& A.K.Chowdhury(2009)"Rice husk ash as a low cost Absorbent for the Removal of Methylene Blue & Congo red in Aqueous phase". *International Journal" Clean Soil, Air, Water" of Wiley Interscience, Vol-37, No. - 7 July-2009, -581-591*

- A.Debsarkar,A.Bandopadhyay, N.Deysarkar& D.Dutta (2009)" Adsorptive Removal of Phenol Utilising Flyash" *Chemical Engineering Journal of IET*, Vol-8.
- D.Chakravorty, (2008), "Free vibration characteristics of point supported hypar shells- a finite element approach" *Advances in Vibration Engineering - An International Journal*, 2008, 7(2), 197-205
- D.Chakravorty, (2008), "Bending of composite stiffened hypar shell roofs under point load." *ASCE Journal of Engineering Mechanics*, 2008, 134(6), 441-454
- D. Chakravorty (2009) , "Bending characteristics of delaminated composite cylindrical shells - A finite element approach", *Journal of Reinforced Plastic and Composites*, 2009, 28(8), 965-978
- D. Chakravorty (2009,) "Natural vibrations of delaminated composite clamped cylindrical shell roofs." *Advances in Vibration Engineering - An International Journal*, 2009, 8 (3) , tbd-tbd.
- D. Chakravorty (2008) " Natural frequencies and mode shapes of composite conoids with complicated boundary conditions", *Journal of Reinforced Plastic and Composites*. 2008, 27(13), 1397-1415
- D. Chakravorty , (2008)"Bending characteristics of delaminated composite cylindrical shells with complicated boundary condition ", *International Journal of Material Research, Electronics and Electrical System*. 2008, 1(1), 11-23
- D. Chakravorty "Natural frequencies and mode shapes of composite cylindrical delaminated shells by finite element". *Journal of Reinforced Plastic and Composites*. Accepted in press.
- D. Chakravorty (2008)" Free vibration of stiffened composite conoidal shell roofs with complicated boundary conditions - a finite element study", *International Journal of Mechanical Engineering and Material Sciences*. 2008, 1(2), 143-150
- D.Chakravorty, (2008) "Root cause failure analysis of stacker-cum-reclaimer in ore handling plant", *Journal of Failure Analysis and Prevention*. 2008,8, 564-571
- D. Chakravorty (2009)" Composite full conoidal shell roofs under free vibration". *Advances in Vibration Engineering - An International Journal*. 2009, 8 (4) , 303-310.
- D. Chakravorty (2009)" Study of fundamental frequency of stiffened composite conoidal shell roofs" *The Sixth Structural Engineering Convention (SEC 2008)*. 18-20 , December, 2008, SERC, Chennai
- D. Chakravorty (2009) "Free vibration study of stiffened composite conoidal shell roofs". *International Conference on Vibration Problems - 2009*, IIT, Kharagpur, 2009 , January
- D.Chakravorty, (2009) "Recent advances on low velocity impact response of laminated composite plates and shells - A review ", *International Conference on Vibration Problems - 2009*, IIT, Kharagpur, 2009 , January

- D.Chakravorty (2009) "Bending characteristics of damaged composite conoidal shells under uniform loading", 3rd International Congress on Computational Mechanical and Simulation. IIT, Mumbai 2009 , December
- D.Chakravorty (2009) "Static analysis of delaminated composite conoidal shells using finite element method". 54th Congress of Indian Society of Theoretical and Applied Mechanics (ISTAM). Netaji Subhash Institute of Technology, New Delhi Dec 18-21, 2009.
- R.B.Sahu (2009)"Time Dependent Settlement Of Piled Raft"Proc. of ISSMGE.TC18 International Conference On DEEP FOUNDATION CPRF & Energy Piles, Frankfurt, Germany, 2009.
- R.B.Sahu (2009) 'Optimum Design of Piled Raft in Soft Clay-A Model Study" Proc.of Indian Geotechnical Conference 2009, Guntur, India.

**Additional Informations:**

- S.Chakraborti, Head, Civil Engineering Department chaired the technical session on "Integrated water and Waste Water Management" held at Jadavpur University ,Kolkata by School of Water Resource Engineering, Jadavpur University(2008-09).
- S.Chakraborti, Head,Civil Engineering Department chaired in National Seminar on "Material Management & Infrasrtructure Development" held in Jadavpur University & organized by Civil Engineering Department (JU) & Society of Civil Engineers(2008-09) .
- R.B.Sahu,Professor, CE Dept co-chaired in a technical session(National Seminar) on "Emerging Trends in Ground Improvement", in Kolkata, May 22-23, 2009.

**COMPUTER SCIENCE & ENGINEERING**

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**1. A. Courses Offered**

Name of the Course	Duration	No of Students
Bachelor of Computer Science & Engineering	4 Years	60
Master of Computer Science & Engineering	2 Years	31

Master of Computer Applications	3 Years	44
M. Tech in Computer Technology	3 Years	33

**B. Number of Faculty Members:**

Professor	16
Reader	9
Senior Lecturer	1
Lecturer	6

**2 A. Area of Research Activities ( Broad Areas):**

AI, Pattern Recognition & Image Processing, High Performance Computing, Soft Computing, Bio-Medical Image Processing, Multimedia Technology Development, Cryptography, Data Compression, OCR of Handwritten Bengali Text, Bioinformatics.

**3 A. Invited Lectures Delivered by Faculty Members**

Prof. Nandini Mukherjee

- "Free Software Concepts", at the National Workshop on Free and Open Source Software, Burdwan University, 2009.

Dr. Debotosh Bhattacharjee:

- Special talk on "Machine Learning and its applications in Computer Vision", at TEQIP Sponsored Staff Program Organized by Netaji Subhash Engineering College, Kolkata on March 2009.
- Special talk on "Computer Vision", at AICTE Sponsored Staff Development Program (SDP) Organized by RCC Institute of Information Technology, Kolkata on 6<sup>th</sup> March 2009.

Dr. Subhadip Basu

- "Optical Character Recognition: *Research trends and potential applications*", at MCKV Institute of Engineering, Howrah, 31<sup>st</sup> October, 2009.
- "Optical Character Recognition: *Current state-of-the-art and future research directions*", at the School of Cultural Texts and Records, Jadavpur University, 2<sup>nd</sup> September, 2009.
- "Some Techniques on different *Pattern Recognition Applications*", at the Interdisciplinary Centre for Computational and Mathematical Modelling (ICM), University of Warsaw, Poland, 25<sup>th</sup> August, 2009.
- "Some Techniques on *Computer Vision Applications*", at the one-day workshop on Recent Advances in Computer Vision and Applications, Calcutta Club, Kolkata, 12<sup>th</sup> April, 2009.
- "Some Techniques on *Handwritten Text Recognition and Computer Vision Applications*", at the 3-day workshop on *Pattern Recognition using Machine Learning Techniques*, Netaji Subhash Engineering College, Kolkata, 27<sup>th</sup> March 2009.
- "Retrieval of handwritten textual annotations using Tesseract open source OCR engine", at a special lecture organized by the GOLD affinity group, IEEE Calcutta section, 26<sup>th</sup> December, 2008.

Dr. Susmita Ghosh

- "Genetic Algorithms and Their Applications" in National Conference on Secured Adhoc Network, October 10-11, 2009, College of Engineering, Bhubaneswar, India.
- "Protein Structure Prediction " in National Level Workshop on Algorithm for Bio-Informatics (NWAB 2008) ITER, Siksha O Anushandhan University, March 28-30, 2008, Bhubaneswar, India.
- "Rule Mining using Genetic Algorithms" in National Conference on Data Mining & its Applications (NCDMA 2008) March 23-24, 2008, Trident Academy of Technology, Bhubaneswar, India.
- "Information Processing and Information Technology" in a Seminar on Recent Trends in IT, Its Challenges & Opportunities, March 9, 2008, BUJE, Bankura, India.
- "Artificial Intelligence : Search Strategies" in National Workshop on Artificial Intelligence (NWA I 2008), February 22-24, 2008, EAST, Bhubaneswar, India

**B. Seminar/Workshop/Conference/Symposium Attended:**

- 1 A. F. Mollah, S. Basu, N. Das, R. Sarkar, M. Nasipuri, M. Kundu, "A Fast Skew Correction Technique for Camera Captured Business Card Images," accepted for presentation at IEEE INDICON-2009, 18-20 December, Gandhinagar, Gujarat.
- 2 S. Basu, N. Das, R. Sarkar M. Kundu, M. Nasipuri, D. K. Basu, "Recognition of Numeric Postal Codes from Multi-script Postal Address Blocks," accepted for presentation at 3<sup>rd</sup> International conference on Pattern Recognition and Machine Intelligence (PREMI), 16-21 December 2009, IIT-Delhi.
- 3 A. Khandelwal, P. Choudhury, R. Sarkar, S. Basu, M. Nasipuri, N. Das, "Text Line Segmentation for Unconstrained Handwritten Document Images using Neighborhood Connected Component Analysis," accepted for presentation at 3<sup>rd</sup> International conference on Pattern Recognition and Machine Intelligence (PREMI), 16-21 December 2009, IIT-Delhi.
- 4 S. Thakur, J. K. Sing, D. K. Basu, M. Nasipuri, "Face recognition using posterior distance model based radial basis function neural networks", accepted in PREMI'09 to be held at IIT, Delhi during Dec. 16-20, 2009
- 5 Mrinal Kanti Bhowmik, Debotosh Bhattacharjee, Mita Nasipuri, Dipak Kumar Basu, and Mahantapas Kundu, "Classification of Fused Images using Radial Basis Function Neural Network for Human Face Recognition", accepted for NaBIC, Dec 9-11, Coimbatore, India
- 6 R. Sarkar, S. Basu, N. Das, A. F. Mollah, M. Kundu, M. Nasipuri, "Line Extraction from Unconstraint Handwritten Document Pages using Piece-wise Water-flow Technique", accepted for publication in proceedings of IICAI -2009, December 2009.



- 7 N. Das, S. Basu, R. Sarkar, M. Kundu , M. Nasipuri, "Handwritten Bangla Compound Character Recognition: Potential Challenges and Probable Solution", accepted for publication in proceedings of IICAI-2009, December 2009.
- 8 A. F. Mollah, S. Basu, N. Das, R. Sarkar, M. Nasipuri, M. Kundu, "Binarizing Business Card Images for Mobile Devices", accepted for publication in proceedings of ACVIT, 2009.
- 9 N. Das, B. Mondal, S. Basu, R. Sarkar, M. Kundu , M. Nasipuri, "An SVM-MLP Classifier Combination Scheme for Recognition of Handwritten Bangla Digits", accepted for publication in proceedings of ACVIT-09, December 2009,India
10. S. Rakshit, A. Kundu, M. Maity, S. Mandal, S. Sarkar, S. Basu, "Recognition of handwritten Roman Numerals using Tesseract open source OCR engine" Accepted for International Conference on Advances in Computer Vision and Information Technology (ACVIT 2009) .
11. A. F. Mollah, S. Basu, N. Das, R. Sarkar, M. Nasipuri, M. Kundu, "Text Region Extraction from Business Card Images for Mobile Devices," *Trends in Information Technology and Business Intelligence*, R. K. Jena (Ed.), ITBI-2009, pp. 117-125, ISBN:93-80043-37-6.
12. S. Rakshit, S. Basu, Hisashi Ikeda, "Development of a multi-user handwritten character recognition engine for information Just in Time (iJIT)," *Trends in Information Technology and Business Intelligence*, R. K. Jena (Ed.), ITBI-2009, pp. 227-235, ISBN:93-80043-37-6.
13. S. Rakshit, D. Ghosal, T. Das, S. Dutta, S. Basu, "Development of a multi-user recognition engine for handwritten bangla basic characters," in proc. (CD) International Conference on Information Technology and Business Intelligence (ITBI-2009) .
14. N. Das, S. Basu, R. Sarkar, M. Kundu, M. Nasipuri, D. K. Basu, "An Improved Feature Descriptor for Recognition of Handwritten Bangla Alphabet", in proceedings of ICSIP-2009, pp. 451-454, August 2009, Mysore, India.
15. A. F. Mollah, S. Basu, M. Nasipuri and D. K. Basu, "Text/Graphics Separation for Business Card Images for Mobile Devices", Proceedings of the Eighth IAPR International Workshop on Graphics Recognition (GREC), pp. 263-270, July 2009, France.
16. N. Das, S. Pramanik, S. Basu, P. K. Saha, R. Sarkar, M. Kundu, M. Nasipuri, "Recognition of Handwritten Bangla Basic Characters and Digits using Convex Hull based Feature Set", in proceedings of AIPR-09, July, 2009, Orlando, USA.
17. Debotosh Bhattacharjee, "Sixth Sense", Newsletter of Kolkata Chapter, May-June 2009 vol. 96.
18. N. Das, S. Pramanik, S. Basu, P. K. Saha, R. Sarkar, M. Kundu, "Design of a novel convex hull based feature set for recognition of isolated handwritten Roman numerals", in proceedings (CD) of UB-NE ASEE 2009 conference, University of Bridgeport, USA.

19. N. Das, S. Basu, P. K. Saha, R. Sarkar, M. Kundu, M. Nasipuri, "A GA Based approach for selection of local features for recognition of handwritten Bangla numerals", in proceedings (CD) of UB-NE ASEE 2009 conference, University of Bridgeport, USA.
20. S. Thakur, J. K. Sing, D. K. Basu and M. Nasipuri, "Face Recognition Using Fisher Linear Discriminant Analysis and Support Vector Machine", Proc. Int'l. Conf. in Contemporary Computing (IC3), CCIS, Springer, vol. 40, pp. 318-326, 2009.
21. D. R. Kisku, J. K. Sing, M. Tistarelli, and P. Gupta, "Multisensor Biometric Evidence Fusion for Person Authentication using Wavelet Decomposition and Monotonic Decreasing Graph", Proc. 7<sup>th</sup> Int'l. Conf. on Advances in Pattern Recognition, 2009 (ICAPR' 09), ISI, Kolkata, pp. 205-208.
22. S. Saha, S. Basu, M. Nasipuri, D. K. Basu, "A novel scheme for binarization of vehicle images using hierarchical histogram equalization technique", Proceedings of 1st International Conference on Computer, Communication, Control and Information Technology (C3IT 2009), pp. 270-275, Academy of Technology, Adisaptagram, February 06-07, 2009.
23. S. Thakur, J. K. Sing, D. K. Basu and M. Nasipuri, "Face recognition by integrating RBF neural networks and a distance measure", Proc. of 1st Int'l. Conf. on Computer, Communication, Control and Information Technology (C3IT-2009), Academy of Technology, Adisaptagram, Hoogly, West Bengal, pp. 264-268.
24. S. Rakshit, S. Basu, "Development of a multi-user handwriting recognition system using Tesseract open source OCR engine", Proceedings of 1st International Conference on Computer, Communication, Control and Information Technology (C3IT 2009), pp. 240-247, Academy of Technology, Adisaptagram, February 06-07, 2009.
25. Mrinal Kanti Bhowmik, Debotosh Bhattacharjee, Mita Nasipuri, Dipak Kumar Basu and Mahantapas Kundu, "Human face recognition using line features", Proceedings of National Seminar on Recent Advances on Information Technology (RAIT-2009), ISM, Dhanbad, INDIA, February 2009.
26. Santanu Halder, Debotosh Bhattacharjee, Mita Nasipuri, Dipak Kumar Basu and Mahantapas Kundu, "Face Synthesis (FASY) System for Determining the Characteristics of a Face Image", Proceedings of National Seminar on Recent Advances on Information Technology (RAIT-2009), ISM, Dhanbad, INDIA, February 2009.
27. S. Saha, S. Basu, M. Nasipuri, D. K. Basu, "An Offline Technique for Localization of License Plates for Indian Commercial Vehicles", Proceedings of IEEE National Conference on Computing and Communication Systems (COCOSYS-09), UIT, Burdwan, pp. 206-211, January 02-04, 2009.
28. S. Saha, S. Basu, M. Nasipuri, D. K. Basu, "Development of an automated Red Light Violation Detection System (RLVDS) for Indian vehicles",

- Proceedings of IEEE National Conference on Computing and Communication Systems (COCOSYS-09), UIT, Burdwan, pp. 59-64, January 02-04, 2009.
29. S.K. Saha, "Semantic Grouping of Shots in a Video using Modified K-Means Clustering International Conference on Advances in Pattern Recognition", Feb. 2009, Kolkata, India
  30. S.K. Saha, "Generation of Size Constrained Video Storyboard using Spanning Tree", ACM International Conference on Internet Multimedia Computing and Service, Nov. 2009, Nanchang, China
  31. S. K. Saha, "Speech/Music Classification using Occurrence Pattern of ZCR and STEEEEEE", International Conference on Intelligent Information Technology Application, Nov. 2009, Kunming, China
  32. Riddhipratim Basu, Subhamoy Maitra, **Goutam Paul** and Tanmoy Talukdar, "On Some Sequences of the Secret Pseudo-random Index  $j$  in RC4 Key Scheduling", In *Applied Algebra, Algebraic Algorithms and Error Correcting Codes (AAECC)*, June 8-12, 2009, Tarragona, Spain, pages 137-148, vol. 5527, Lecture Notes in Computer Science, Springer.
  33. Subhamoy Maitra, **Goutam Paul** and Shashwat Raizada, "Some Observations on HC-128", In *Proceedings of the International Workshop on Coding and Cryptography (WCC)*, May 10-15, 2009, Ullensvang, Norway, pages 527-539
  34. Shashwat Raizada, **Goutam Paul** and Vineet Pandey, "Nearby-Friend Discovery Protocol for Multiple Users", In *Proceedings of the 2009 IEEE International Conference on Computational Science and Engineering (CSE)*, vol. 3, Track: International Symposium on Secure Computing (SecureCom 2009) held in conjunction with the 2009 IEEE International Conference on Privacy, Security, Risk, and Trust (PASSAT 2009), August 29-31, 2009, Vancouver, Canada, pages 238-243, IEEE Computer Society Press.
  35. Sayan Bhattacharya, **Goutam Paul**, Swagato Sanyal, "On Necessary and Sufficient Number of Cops in the Game of Cops and Robber in Multidimensional Grids", CoRR abs/0909.1381: (2009).
  36. Sounak Gupta and **Goutam Paul**, "Revisiting Fermat's Factorization for the RSA Modulus", CoRR abs/0910.4179: (2009).
  37. Niladri S. Mishra, Susmita Ghosh, and Ashish Ghosh, 'Fuzzy clustering algorithms incorporating local information for change detection in remotely sensed images', *12th International Conference on Information Technology, ICIT-2009*, Bhubaneswar, India, 2009.
  38. Anindya Halder, Susmita Ghosh, and Ashish Ghosh, 'Ant based supervised and unsupervised land use map generation from remotely sensed images', *World Congress on Nature and Biologically Inspired Computing*, Coimbatore, India, 2009.
  39. Susmita Ghosh, Niladri S. Mishra, and Ashish Ghosh, 'Unsupervised change detection of remotely sensed images using fuzzy clustering', *7th International Conference on Advances in Pattern Recognition, ICAPR 2009*, Kolkata, India, pp. 385-388, 2009.

40. Anindya Halder, Susmita Ghosh, and Ashish Ghosh, 'Aggregation pheromone density based classification', *11th International Conference on Information Technology, ICIT-2008*, Bhubaneswar, India, pp. 100-105, 2008.
41. S. Thakur, J. K. Sing, D. K. Basu, M. Nasipuri, "Face recognition using posterior distance model based radial basis function neural networks", accepted in PREMI'09 to be held at IIT, Delhi during Dec. 16-20, 2009.
42. S. Thakur, J. K. Sing, D. K. Basu and M. Nasipuri, "Face Recognition Using Fisher Linear Discriminant Analysis and Support Vector Machine", Proc. Int'l. Conf. in Contemporary Computing (IC3), CCIS, Springer, vol. 40, 318-326, 2009.
43. D. R. Kisku, J. K. Sing, M. Tistarelli, and P. Gupta, "Multisensor Biometric Evidence Fusion for Person Authentication Using Wavelet Decomposition and Monotonic-Decreasing Graph", Proc. 7th Int'l. Conf. on Advances in Pattern Recognition, 2009 (ICAPR' 09), ISI, Kolkata, pp. 205-208.
44. S. Thakur, J. K. Sing, D. K. Basu and M. Nasipuri, "Face recognition by integrating RBF neural networks and a distance measure", Proc. of 1st Int'l. Conf. on Computer, Communication, Control and Information Technology (C3IT-2009), Academy of Technology, Adisaptagram, Hoogly, West Bengal, 264-268.
45. A.Mukhopadhyay, U. Maulik and S. Bandyopadhyay, "Unsupervised cancer classification through SVM-boosted multiobjective fuzzy clustering with majority voting ensemble", IEEE Congress on Evolutionary Computation (IEEE CEC 2009), pp. 255-261, Trondheim, Norway, May 2009.
46. A.Mukhopadhyay, S. Bandyopadhyay and U. Maulik, "Analysis of Microarray Data using Multiobjective Variable String Length Genetic Fuzzy Clustering", IEEE Congress on Evolutionary Computation (IEEE CEC 2009), 1313-1319, Trondheim, Norway, May 2009.
47. A.Mukhopadhyay, U. Maulik and S. Bandyopadhyay, "Refining Genetic Algorithm based Fuzzy Clustering through Supervised Learning for Unsupervised Cancer Classification", Proceedings of the 7th European Conference on Evolutionary Computation, Machine Learning and Data Mining in Bioinformatics, Proc. EvoBIO 2009, Tübingen, Germany, Lecture Notes in Computer Science; Vol. 5483, 191-202, Springer-Verlag, April 2009.
48. A.Sarkar and U. Maulik, "Parallel Point Symmetry Based Clustering for Gene Microarray Data", Proc. 7th Int. Conf. on Advances in Pattern Recognition (ICAPR), pp.351-354, Kolkata, India, 2009.
49. A.Mukhopadhyay and U. Maulik, "Unsupervised Satellite Image Segmentation by Combining SA based Fuzzy Clustering with Support Vector Machine", Proc. 7th Int. Conf. on Advances in Pattern Recognition (ICAPR), pp. 381-384, Kolkata, India, 2009.
50. A.Mukhopadhyay, U. Maulik and S. Bandyopadhyay, "Multi-objective Genetic Clustering with Ensemble Among Pareto Front Solutions: Application to MRI

Brain Image Segmentation", Proc. 7th Int. Conf. on Advances in Pattern Recognition (ICAPR), pp.236-239, Kolkata, India, 2009.

51. U.Maulik and I. Saha, "Dierential Evolution based Fuzzy Clustering Technique: Application to Satellite Image Segmentation", Proc. Int. Conf. ICSCI, Hyderabad, India, Vol. 1, No. CI-2.5, 360-366, January 2009.
52. I.Saha, A. Mukhopadhyay and U. Maulik, "Unsupervised Pattern Classification for Categorical Data : A Two Stage Fuzzy Clustering Approach", Proc. Nat. Conf. CoCoSYS, Bardwan, India, 125-130, January 2009.
  - Dr. Debotosh Bhattacharjee presented a paper entitled "Face Recognition from Facial Montage", at the Humboldt Kolleg, Dec. 11-13 2008, PURI, India.
  - Dr. Subhadip Basu presented a paper entitled "Some Techniques on *Handwritten Text Recognition* and *Computer Vision Applications*", at the Humboldt Kolleg, Dec. 11-13 2008, PURI, India.
  - Dr. Subhadip Basu presented a paper entitled "Text/Graphics Separation for Business Card Images for Mobile Devices", at the Eighth IAPR International Workshop on Graphics Recognition (GREC), July 21-23 2009, France.
  - **Dr. Goutam Paul** attended the Indo-Japan Workshop on Cryptography, Dec 12, 2009, New Delhi, India.
  - **Dr. Goutam Paul** attended the 10th International Conference on Cryptology in India (INDOCRYPT), December 13-16, 2009, New Delhi, India.

**C. Seminar/Workshop/Conference/Symposium Organized:**

- A one day Workshop entitled "**Recent Advances on Computer Vision and Applications**" in collaboration with IEEE GOLD Affinity Group and IEEE Computer Chapter of IEEE Calcutta section at Calcutta Club on April 16,2009.About 114 persons including speakers, students, research workers and industry personnel participated in the said workshop.

**D. Orientation Courses/Refresher Courses Attended:**

- Dr. Debotosh Bhattacharjee, "Summer School on Multimedia Semantics" from 23.08.2009 to 28.08.2009 at Universitat Koblenz-Landau, Germany.

**E. Orientation Courses/Refresher Courses Organized:**

Prof Shovonlal Kundu and Prof Mita Nasipuri organized UGC Refresher course "*Theoretical Aspects of Computer Science*" during 21<sup>st</sup> January 2009 to 12<sup>th</sup> February 2009.

**4. A. Books/Monographs etc Published:**

- 1 Carlos A. Coello Coello, S. Dehuri, and Susmita Ghosh (eds.), "Swarm Intelligence for Multi-objective Problems in Data Mining," Springer, Germany, 2009.
- 2 Ashish Ghosh, S. Dehuri, and Susmita Ghosh (eds.), "Multiojective Evolutionary Algorithms for Knowledge Discovery from Databases," Springer, Germany, 2008.

**B. Articles Published in Journals:**

- 1 S.Basu, N.Das, R.Sarkar M.Kundu, M.Nasipuri, D.K.Basu, "A Hierarchical Approach to Recognition of Handwritten Bangla Characters", *Pattern Recognition, Elsevier*, vol. 42, no. 7, pp. 1467-1484, 2009.
- 2 Sarbani Roy, Nandini Mukherjee, "Adaptive Execution of Jobs in Computational Grid Environment", *Journal of Computer Science and Technology*, 2009, 24(5), 925-938, Springer.
- 3 Ajanta De Sarkar, Sarbani Roy, Dibyajyoti Ghosh, Rupam Mukhopadhyay and Nandini Mukherjee, "An Adaptive Execution Scheme for Achieving Guaranteed Performance in Computational Grids ", *Journal of Grid Computing*, Springer, 28 May 2009.
- 4 S. Saha, S. Basu, M. Nasipuri and D. K. Basu, "License Plate localization from vehicle images: An edge based multi-stage approach", *International Journal on Recent Trends in Computer Engineering*, Academy Publisher, Finland, vol. 1, no. 1, pp. 284-288, 2009.
- 5 N. Das, A. Murmu, S. Roy, R. Sarkar, S. Basu, "A Novel Scheme for Editing and Inter Conversion between ASCII / ISCII / Unicode Encoded Multilingual Documents", *Language Forum*, vol. 35, no. 2, July-Dec 2009.
- 6 Santanu Halder, Debotosh Bhattacharjee, Mita Nasipuri, Dipak Kumar Basu, Mahantapas Kundu, "FPGA Based Assembling of Facial Components for Human Face Construction", *International Journal of Recent Trends in Engineering*, Issue 1, Volume 1, pp. 540-554, May 2009 [ISSN: 1797-9617] by the Academy Publishers, Finland.
- 7 J. K. Sing, S. Thakur, D. K. Basu, M. Nasipuri, M. Kundu, "High-speed face recognition using self-adaptive radial basis function neural networks", *Neural Computing and Applications*, Springer-Verlag London, vol. 18, no. 8, 2009, pp. 979-990.
- 8 S. Thakur, J. K. Sing, D. K. Basu, M. Nasipuri, M. Kundu, "Face Recognition Using Principal Component Analysis and RBF Neural Networks", Accepted in *International Journal of Simulation: Systems, Science and Technology*, vol.10, no.3.
- 9 M. Tarafder, I. Chatteraj, M. Nasipuri, A. Mitra, "Magnetic Characterization of HSLA Steel by Power-law Decay Exponent of Barkhausen Emission Signal", *Journal of Magnetism and Magnetic Materials*, 321(8), Apr 2009, 1034-1038.
10. M. Tarafder, I. Chatteraj, S. Tarafder, M. Nasipuri, "Self-similar and Self-affine Characteristics of Microstructural Images of HSLA Steel", *Material Science and Technology*, vol. 25, no 4, pp 542-548.
11. M. Tarafder, I. Chatteraj, S. Tarafder, M. Nasipuri, "Fractal Analysis to Determine self-similar Characteristics in Microstructures of HSLA Steel", *International Journal of Materials and Manufacturing Processes*, vol. 24, issue 2, Feb.2009, pp 145-149.



12. Debotosh Bhattacharjee, Mita Nasipuri, Dipak Kumar Basu, Mahantapas Kundu, "Human Face Recognition using Fuzzy Multilayer Perceptron", to appear in the *Journal of Soft Computing*, Springer, ( DOI 10.1007/s00500-900-0426-0).
13. Debarati Mukherjee, Amlan Chakrabarti, and Debotosh Bhattacharjee, "Optimization and Synthesis of Quantum Circuit Using Genetic Algorithm", to appear in the *International Journal of Recent Trends in Engineering* [ISSN: 1797-9617] by the Academy Publishers, Finland.
14. Arindam Kar, Debotosh Bhattacharjee, Mita Nasipuri, Dipak Kumar Basu, and Mahantapas Kundu, "Classification of high-energized Gabor responses using Bayesian PCA for Human Face Recognition", to appear in the *International Journal of Recent Trends in Engineering* [ISSN: 1797-9617] by the Academy Publishers, Finland.
15. Debotosh Bhattacharjee, Santanu Halder, Mita Nasipuri, Dipak Kumar Basu, Mahantapas Kundu, "Construction of Human Faces from Textual Descriptions," to appear in the Special Issue on *Soft Computing for Digital Information Forensics*, Springer.
16. Tamojy Deb, Debotosh Bhattacharjee, Mita Nasipuri, Dipak Kumar Basu and Mahantapas Kundu, "An enhanced face recognition technique based on Overlapped Modular PCA approach for cropped log-polar images", to appear in the *International Journal of Recent Trends in Engineering* [ISSN: 1797-9617] by the Academy Publishers, Finland.
17. Santanu Halder, Debotosh Bhattacharjee, Mita Nasipuri, Dipak Kumar Basu and Mahantapas Kundu, "Fuzzy Classification of Facial Components for Face Construction", to appear in the *International Journal of Recent Trends in Engineering* [ISSN: 1797-9617] by the Academy Publishers, Finland.
18. Hiramoy Roy, Debotosh Bhattacharjee, Mita Nasipuri, Dipak Kumar Basu, and Mahantapas Kundu, "Construction of Frontal Face from Side-view Images using Face Mosaicing", to appear in the *International Journal of Recent Trends in Engineering* [ISSN: 1797-9617] by the Academy Publishers, Finland.
19. Mrinal Kanti Bhowmik, Debotosh Bhattacharjee, Mita Nasipuri, Dipak Kumar Basu, and Mahantapas Kundu, "Image Pixel Fusion for Human Face Recognition", to appear in the *International Journal of Recent Trends in Engineering* [ISSN: 1797-9617] by the Academy Publishers, Finland.
20. Soma Datta, Debotosh Bhattacharjee, "Path Detection of a Moving Object", to appear in the *International Journal of Recent Trends in Engineering* [ISSN: 1797-9617] by the Academy Publishers, Finland.
21. Sandhya Arora, Debotosh Bhattacharjee, Mita Nasipuri, Dipak Kumar Basu, Mahantapas Kundu, "Application of Statistical Features in Handwritten Devnagari Character Recognition", to appear in the *International Journal of Recent Trends in Engineering* [ISSN: 1797-9617] by the Academy Publishers, Finland.
22. P. Chatterjee, S. Basu, M. Kundu, M. Nasipuri, D. K. Basu, "Improved prediction of Multi-domains in protein chains using a Support Vector Machine,"

- accepted in *International Journal on Recent Trends in Computer Engineering*, Academy Publisher, Finland.
23. P. Banerjee, D. K. Basu, M. Nasipuri, "Mitigation of RFI in AdHoc Wireless Receiver Nodes," accepted in *International Journal on Recent Trends in Computer Engineering*, Academy Publisher, Finland.
  24. R. Sarkar, S. Malakar, N. Das, S. Basu, M. Nasipuri, "A Script Independent Technique for Extraction of Characters from Handwritten Word Images", accepted for publication in the *International Journal on Futuristic Computer Applications (IJFCA)* and presentation at the ACM International on Futuristic Computer Applications (ACM- ICFCA), March 20-21, 2010, Bangalore, India.
  25. S. Saha, S. Basu, M. Nasipuri, D. K. Basu, "Localization of License Plates from Surveillance Camera Images: A Color Feature Based ANN Approach", accepted for publication in the *International Journal on Futuristic Computer Applications (IJFCA)* and presentation at the ACM International on Futuristic Computer Applications (ACM- ICFCA), March 20-21, 2010, Bangalore, India.
  26. D. K. Sil, S. Basu, M. Nasipuri, "An adaptive fuzzy technique for real-time detection of multiple faces against a complex background," accepted for publication in the *International Journal on Futuristic Computer Applications (IJFCA)* and presentation at the ACM International on Futuristic Computer Applications (ACM- ICFCA), March 20-21, 2010, Bangalore, India.
  27. N. Das, S. Pramanik, R. Sarkar, S. Basu, P.K.Saha, "Recognition of Isolated Multi-Oriented Handwritten/Printed Characters using a Novel Convex-Hull Based Alignment Technique," accepted for publication in the *International Journal on Futuristic Computer Applications (IJFCA)* and presentation at the ACM International on Futuristic Computer Applications (ACM-ICFCA), March 20-21, 2010, Bangalore, India.
  28. U. Maulik, "Medical Image Segmentation using Genetic Algorithms", *IEEE Transactions on Information Technology in BioMedicine*, vol. 13, no. 2, pp. 166-173, 2009.
  29. Mukhopadhyay and U. Maulik, "Towards Improving Fuzzy Clustering using Support Vector Machine: Application to Gene Expression Data", *Pattern Recognition*, Vol. 42, No. 11, pp. 2744-2763, 2009.
  30. Mukhopadhyay and U. Maulik, "Unsupervised Pixel Classification in Satellite Imagery using Multiobjective Fuzzy Clustering Combined with SVM Classifier", *IEEE Transactions on Geoscience and Remote Sensing*, vol. 47, no. 4, pp. 1132 - 1138, 2009.
  31. U. Maulik, A. Mukhopadhyay and S. Bandyopadhyay, "Combining Pareto-Optimal Clusters using Supervised Learning for Identifying Co-expressed Genes", *BMC Bioinformatics*, 10:27, 2009.
  32. U. Biswas, U. Maulik, A. Mukhopadhyay and M. K. Naskar, "Multiobjective Evolutionary Approach to Cost-Effective Trac Grooming in Unidirectional SONET/WDM Rings", *Photonic Network Communication*, Vol. 18, No. 1, 105-115, 2009.



33. U. Maulik and I. Saha, "Modified Differential Evolution based Fuzzy Clustering for Pixel Classification in Remote Sensing Imagery", *Pattern Recognition*, vol. 42, pp. 2135-2149, 2009.
34. S. Bhattacharyya, U. Maulik and P. Dutta, "High Speed Target Tracking by Fuzzy Hostility Induced Segmentation of Optical Flow Field", *Applied Soft Computing*, vol. 9, pp. 126-134, 2009.
35. U. Maulik, S. Bandyopadhyay and I. Saha, "Integrating Clustering and Supervised learning for Categorical Data Analysis" *IEEE Transactions on Systems, Man and Cybernetics \* Part A* (accepted).
36. U. Maulik, A. Mukhopadhyay and S. Bandyopadhyay, "Finding Multiple Coherent Biclusters in Microarray Data using Variable String Length Multiobjective Genetic Algorithm", *IEEE Transactions on Information Technology in BioMedicine* (accepted).
37. U. Maulik and A. Mukhopadhyay, "Simulated Annealing based Automatic Fuzzy Clustering combined with ANN Classification for Analyzing Microarray Data", *Computers and Operations Research* (accepted).
38. A. Mukhopadhyay, U. Maulik and S. Bandyopadhyay, "Multiobjective Genetic Algorithm based Fuzzy Clustering of Categorical Attributes", *IEEE Transactions on Evolutionary Computation* (accepted).
39. Mukhopadhyay, U. Maulik and S. Bandyopadhyay, "A Novel Coherence Measure for Discovering Scaling Biclusters from Gene Expression Data", *Journal of Bioinformatics and Computational Biology* (accepted).
40. **Goutam Paul** and Subhamoy Maitra, "On Biases of Permutation and Keystream Bytes of RC4 towards the Secret Key", In *Cryptography and Communications*, pages 225-268, vol. 1, no. 2, September, 2009.
41. S. Thakur, J. K. Sing, D. K. Basu, M. Nasipuri, M. Kundu, "Face Recognition Using Principal Component Analysis and RBF Neural Networks", Accepted in *International Journal of Simulation: Systems, Science and Technology*, vol. 10, no. 3.
42. J. K. Sing, S. Thakur, D. K. Basu, M. Nasipuri, M. Kundu, "High-speed face recognition using self-adaptive radial basis function neural networks", *Neural Computing and Applications*, Springer-Verlag London, vol. 18, no. 8, 2009, pp. 979-990.
43. Giribabu Gundala, "Optimal Cost Effective Design Of Standby Systems Subject To Imperfect Fault-Coverage", *International Journal of Recent Trends in Engineering*, November 2009
44. Sarmistha Neogy, Chandreyee Chowdhury, "Checkpointing Using Mobile Agents for Mobile Computing System" *International Journal of Recent Trends in Engineering*, May 2009, Volume 1, No. 2
45. Anindya Halder, Ashish Ghosh, and Susmita Ghosh, 'Aggregation pheromone density based pattern classification', *Fundamenta Informaticae*, vol. 92, no. 4, pp 345-362, 2009.

46. Susmita Ghosh, Megha Kothari, Aindya Halder, and Ashish Ghosh, 'Use of aggregation pheromone density for image segmentation,' *Pattern Recognition Letters*, vol. 30, pp. 939-949, 2009.
47. Susmita Ghosh, Swarnajyoti Patra, and Ashish Ghosh, 'An unsupervised context-sensitive change detection technique based on modified self-organizing feature map neural network', *International Journal of Approximate Reasoning*, vol. 50, pp. 37-50, 2009.
48. Ashish Ghosh, Anindya Halder, Megha Kothari, and Susmita Ghosh, 'Aggregation Pheromone Density based Data Clustering,' *Information Sciences*, vol. 178, no. 13, pp. 2816-2831, 2008.
49. Swarnajyoti Patra, Susmita Ghosh, and Ashish Ghosh, 'Change Detection of Remote Sensing Images with Semi-supervised Multilayer Perceptron,' *Fundamenta Informaticae*, vol. 84, pp. 429-442, 2008.

#### 5 Collaborative Programmes:

- Title of the Project: **Collaborative Program: India-Trento Program for Advanced Research (ITPAR)** Project entitled "Advanced Techniques for Remote Sensing Image Processing & Recognition".  
Institute of Technology (Bombay), Indian Statistical Institute (Kolkata), Jadavpur University (Kolkata) and University of Trento (Italy) are the collaborators of this joint research project.
- Collaborator as Technical Expert for the project entitled, "Development of Techniques for Human face Based online Authentication System"- Phase I, (Total funding Rs. 42.81 lakh, No. 12(14)/08-ESD) funded by Department of Information Technology, Ministry of Communications and Information Technology, Gov. of India at Dept. of Computer Sc. & Engg, Tripura University.

#### 6 Major Achievements:

##### A. Patents Filed:

- a) **Debotosh Bhattacharjee** and Santanu Halder, "System and Method to Identify a Median Value", Application Number 1274/KOL/2009.
- b) **Debotosh Bhattacharjee** and Santanu Halder, "Method and System to Determine a Quotient Value", Application Number 1275/KOL/2009.
- c) Satadal Saha, **Subhadip Basu**, **Mita Nasipuri**, **Dipak K. Basu**, "IMAGE BINARIZATION SYSTEM AND METHOD", US patent filed, Ref. no# IN-700953.

##### B. Committee Member of International Conferences:

Sl. No.	Name of the Teacher	Type of Participation
	Name of the Seminar/Conference	Place
		Year
1	Prof. Nandini Mukherjee	Program Committee Member International Workshop on Scheduling and Resource Management for Parallel and Distributed Systems 2009 Vienna, Austria, 2009

**Dr. Goutam Paul** is serving as an Invited Expert Member of the Project entitled "Security Evaluation and Design of Components and Cryptographic Primitives for RFID and Sensor Networks" under the DST (Govt. of India)-JST (Japan Science & Technology) Strategic Indian-Japan Cooperative Program, 2009-2011.

**CONSTRUCTION ENGINEERING  
(SALT LAKE)**

Phone : + 91-33-2335-5211  
It. : 116/121  
H.O.D. : Dr. Debasish Bandyopadhyay  
E-mail : hod@const.jusl.ac.in

**1 A. Course Offered:**

Name of the course : Bachelor of Construction Engineering  
Duration of course : 4 years  
No of students enrolled : 35

**B. Number of Faculty Members : 09**

Head of the Department : Dr. Debasish Bandyopadhyay

**2 A. Area of Research Activities (Broad Areas):**

Structural Health Monitoring  
Concrete Technology  
Highway Engineering  
Geo-Environmental Engineering.

**B. Major Research Project:**

Department : Construction Engineering  
Coordinator : **Prof. P. P. Biswas & S. Saraswati**  
Name of the Project : High Performance Concrete with Blended Cement  
Funding Agency : AERB

**3 A. Invited Lectures Delivered**

Name of the Teacher / Type of Participants / Name of the Seminar/Conference  
Place Duration

Dr. Debasish Bandyopadhyay

Invited Lecture : Structural Engineering Convention - An International Meet.  
Structural Engg. Research Centre (SERC), Chennai. Three days

Prof. P. P. Biswas

Invited Lecture            Technology Adaptation in India.            Academic Staff  
College, JU, Salt Lake            One Day

Prof. T. Roy

Invited Lecture            Sustainable Development of Infrastructural System of  
Kolkata Metropolis.            EZCC, Salt Lake            One day

Dr. Debasish Bandyopadhyay

Invited Lecture            Corrosion & Protection of Industrial & Civil Assets  
HIT, Haldia            One day

**B. Seminar/Workshop/Conference/Symposium Attended:**

**C. Seminar/Workshop/Conference/Symposium Organized**

Name of the Teacher as Organiser    Name of the Seminar/ Workshop  
Place    Duration

Dr. Debasish Bandyopadhyay,

Coordinator    Workshop on "Earthquake Engineering & Risk Management  
(EERM 2009)".            Jadavpur University, Saltlake One Day

Dr. Debasish Bandyopadhyay,

Coordinator    Workshop on "Sustainable Development of Infrastructural  
System of Kolkata Metropolis (SDISKM 09)"            EZCC, Salt Lake  
One Day

D. Orientation Courses/Refresher Courses Attended: (Name of the Teachers, Title  
of the Course, Duration, Place)

E. Orientation Courses/Refresher Courses Organized (Name of the Teachers, title  
of the Course, if any, Duration, Place)

**4. A. Books/Monographs etc. Published**

*Construction Engineering* by **S. Saraswati** & S. Sarkar, Oxford University  
Press

**B. Articles Published in Journals in the Year 2009**

- 1 **D. Bandyopadhyay** and & S. K. Bhattacharyya : "A Bayesian Approach of  
Structural Health Monitoring Based on Identified Parameter from Non-  
destructive Test", *International Journal of Structural Engineering*, Vol. 36,  
No.1, Apr-May, 2009, 1-6.
- 2 S. Chaudhury, **P. P. Biswas** et. al. : "Impact of Aggregate Sizes on Fresh  
and Hardened States of Concrete, *Indian Concrete Journal*, 2009.
- 3 B. Bhatta, **S. Saraswati** and **D. Bandyopadhyay** : "Quantifying the Degree  
of Freedom, Degree of Sprawl and Degree of Goodness of Urban Growth  
from Remote Sensing Data", *Applied Geology*, Vol XXX (2009), 1-16.
- 4 **Debasish Bandyopadhyay** & S. K. Bhattacharyya : "Structural Vulnerability  
Assessment of Old Metropolitan Cities in Earthquake Disaster Mitigation",  
14<sup>th</sup> World Congress of Earthquake Engineering, at Beijing, China.

- 5 **Debasish Bandyopadhyay** and Sriman Kumar Bhattacharyya : "An Inverse Dynamic Approach of Statistical Health Monitoring of Structure from Limited Noisy Data", XXII International Congress of Theoretical and Applied Mechanics at the University of Adelaide, Australia.
- 6 **Bandyopadhyay K.**, Bhattacharjee S., and Mitra S.K. 2009 : "Sub-Soil Profile Along a Section of Calcutta East-West Metro Alignment", *Proc. National Seminar on Emerging Trends in Ground Improvement*, Kolkata, India, 56-60.
- 7 **Bandyopadhyay K.**, Majumder A., Misra A.K., Goswami C., and Chaudhuri D., 2009 : "Comparative Study of Removal of Lead by Fly Ash and Seashell", *Proc. 7<sup>th</sup> All India Peoples' Technology Congress*, Kolkata, India, 304-308.
- 8 S Thokchom, **P. Ghosh** and S. Ghosh, : Acid Resistance of Fly Ash-based Geopolymer Mortars, *International Journal of Recent Trends in Engineering*, Vol.1 No.6, May 2009.
- 9 S Thokchom, **P. Ghosh** and S. Ghosh : Resistance of Fly-Ash Based Geopolymer Mortar in Sulphuric Acid, *ARPJ Journal of Engineering and Applied Science*, Vol. 4, No.1, Feb-09.
10. S Thokchom, **P. Ghosh** and S. Ghosh : Effect of Na<sub>2</sub>O Content on Durability of Geopolymer Mortars in Sulphuric Acid, *International Journal of Natural Science and Engineering*, Vol.2, Feb 2009.
11. S Thokchom, **P. Ghosh** and S. Ghosh : Effect of Na<sub>2</sub>O Content on Durability of Geopolymer Mortars in Sulphuric Acid, *International Journal of Applied Engineering Research*, ISSN0973-4562, Vol. 4, No. 11(2009), 1969-1977.
12. S Thokchom, **P. Ghosh** and S. Ghosh : " Effect of Water Absorption, Porosity and Sorptivity on Durability of Geopolymer Mortar, *ARPJ Journal of Engineering and Applied Science*, Vol. 4, No.7, Sept-09, 28-32.

#### 5 Collaborative Programmes:

Collaborated with Association of Corrosion Engineers for Research and Training of Industrial People.

#### 6 Major Achievements:

**Debasish Bandyopadhyay** was awarded National Programme on Earthquake Engineering Education (NPEEE) Fellowship by MHRD, Govt. of India during his doctorate program 2005-2009 for advanced research at the University of Arizona, USA and also awarded the PhD degree in Civil Engineering with Specialization in Structural Engineering from Indian Institute of Technology, Kharagpur, 2009.

**Partha Pratim Biswas** was awarded Erasmus Mundus European Union Visiting Fellowship to University of Sophia Antipolis, Nice, France.

**Gokul Chandra Mondal** also visited the University of Sophia Antipolis, Nice, France

**Subhajit Saraswati** has authored a book on Construction Engineering published by Oxford University Press. He was also awarded the PhD (Engg) by Jadavpur University.

**ELECTRICAL ENGINEERING**

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 Fax : + 91-33-2414-6168  
 It. : 2539/2908  
 H.O.D. : Prof. Abhijit Mukherjee  
 E-mail : hod@ee.jdvu.ac.in

**1 A. Courses Offered:**

Name of the Course	Duration of the Course	No. of Students Enrolled
B.E.E. Four years	102	
B.E.E. (PT)	Four years	44
M.E.E.	Two years	25
M.C.S.E.	Two years	15
M.E. Illumination Engineering	Two years	18

**CONTROL SYSTEM SECTION**

**1 B. Number of Faculty Members: 7**

**2 A. Area of Research Activities:**

- Estimation and filtering techniques, Robust Control, Design review and audit of aero engine control system, Aircraft stabilization, Fault detection and Identification.
- Mechatronics and Robotics
- Mobile Computing
- Real-time and Embedded Systems

**B. Major Research Projects**

- S.Sadhu (PI), T.K.Ghoshal, K.Datta, A. Acharya, Fault Detection and Identification for Nonlinear Hybrid Plants, funded by Advanced Systems Laboratory, DRDO, Hyderabad.
- S.Sadhu (PI), T.K.Ghoshal, S.Goswami, K.Datta, S.Bhattacharyya, K Majumdar, Design Review and Audit of Control Law of Kaveri Engine(Phase-II), funded by GIRE, Bangalore.
- T.K.Ghoshal, K.Datta, S.Bhattacharyya, S.Sadhu, Software Audit Project for HBL SSI, funded by HBL, Hyderabad

**3 A. Invited Lectures Delivered (Session Chaired) : Nil**

**B. Seminar/Workshop Conference/Symposium Attended : Nil**

**C Seminar/Workshop Conference/Symposium Organized :**

Dr. Smita Sadhu was a member of the Technical Program Committee for the 12th IEEE International Conference on Information Fusion, FUSION '09, at Seattle, Washington USA, held during 6-9 July 2009.

**D. Orientation Courses/ Refresher Courses Attended :**

- Prof. Tapan Kumar Ghoshal delivered a lecture on "Actuators" in UGC Sponsored Refresher Course "Art and Science of Mechatronics and its Application in Robotics" during 1st June to 20th June 2009.
- Prof. Samar Bhattacharyya delivered a series of lectures on "Control Philosophy in Mechatronics" and "Real-time System" in UGC Sponsored Refresher Course "Art and Science of Mechatronics and its Application in Robotics" during 1st June to 20th June 2009.
- Dr. Madhubanti Maitra delivered a series of lectures on "Real-time Systems" and "Software Design for Mechatronic Application" in UGC Sponsored Refresher Course "Art and Science of Mechatronics and its Application in Robotics" during 1st June to 20th June 2009.
- Dr. Smita Sadhu delivered a lecture on "Estimation and Filtering" in UGC Sponsored Refresher Course "Art and Science of Mechatronics and its Application in Robotics" during 1st June to 20th June 2009.
- Dr. Ranjit Kumar Barai delivered a series of lectures on "Application of Mechatronics in Robotics" in UGC Sponsored Refresher Course "Art and Science of Mechatronics and its Application in Robotics" during 1st June to 20th June 2009.

**E. Orientation Courses/ Refresher Courses Organized:**

- Dr. Ranjit Kumar Barai organized UGC Sponsored Refresher Course "Art and Science of Mechatronics and its Application in Robotics" during 1st June to 20th June 2009 as Joint Coordinator.

**4 A. Books/Monographs etc. Published : Nil****B. Articles Published****International Journals**

- 1 Shovan Bhaumik, M. Srinivasan, Smita Sadhu and T.K. Ghoshal, 'Adaptive grid risk-sensitive filter for nonlinear problems', accepted for publication in *IET Signal Processing* on 28-Jul-2009.
- 2 Shovan Bhaumik, Smita Sadhu, and T.K. Ghoshal, 'Risk-sensitive formulation of unscented Kalman filter', *IET Control Theory & Applications*, Volume 3, Issue 4, April 2009, pp. 375-382.
- 3 Smita Sadhu, Shovan Bhaumik, Arnaud Doucet, and T.K. Ghoshal, 'Particle method based formulation of risk-sensitive filter', *Elsevier Signal Processing*, Volume 89, Issue 3, March 2009, pp. 314-319.

- 4 A. Paul, M. Maitra, S. Mandal, S.K. Sadhukhan, "Handoff Cost Minimization and Planning of Next Generation Heterogeneous Integrated Overlay Networks: Meta Heuristics Based Approach," Accepted for publication in *International Journal for Business Data Communication and Network*.
- 5 M. Maitra, A. Mukherjee, D. Saha, "Integrated Inter-Switch Cable and Handoff Cost Minimizing Heuristics for Call-to-Switch Assignment in Wireless Cellular Networks," Accepted for publication in *IEEE Trans. on Vehicular Technology*.

#### **International Conferences**

- 1 A. Acharya, S. Sadhu, T.K. Ghoshal, 'Improving self-alignment of strapdown INS using measurement augmentation', 12th *IEEE International Conference on Information Fusion, FUSION '09*, on 6-9 July 2009, pp. 1783 - 178.

#### **5 Collaborative Programmes : Nil**

#### **6 Major Achievements :**

- Dr. Smita Sadhu received a Certificate of Merit awarded by the Institution of Engineers (India) on 27.01.2009 for the paper entitled "Response acceleration of an aircraft" published in the *Journal of the Institution of Engineers (India)* in 2007-2008.
- Ph.D. thesis guidance by Prof.T.K.Ghoshal and Dr. Smita Sadhu led to the award of Ph.D. Degree to Shovan Bhaumik in July 2009 for thesis entitled "Improved Filtering and Estimation Methods for Aerospace Problems".
- Ph.D. thesis guidance by Prof.T.K.Ghoshal and Dr. Smita Sadhu led to the award of Ph.D. Degree to M.Srinivasan for thesis entitled "Application of Post Kalman Filtering Techniques to Tracking Problems". The degree was awarded at the Annual Convocation of Jadavpur University held in December 2008.
- Dr. Smita Sadhu is a reviewer for *IEEE Transactions on Aerospace and Electronic Systems*.
- Dr. Ranjit Kumar Barai organized UGC Sponsored Refresher Course "Art and Science of Mechatronics and its Application in Robotics" during 1st June to 20th June 2009 as Joint Coordinator.
- Dr. Ranjit Kumar Barai acted as reviewer for *Asian Journal of Control* and also for the International Conference on Recent Advancements in Electrical Sciences (ICRAES'10)

#### **ELECTRICAL MACHINE AND DRIVE SECTION**

#### **1 B. Number of Faculty Members : 9**

#### **2 A. Area of Research Activities :**

- Electrical Machine Design,
- Modelling and Simulation of Electrical Machines and Drives System.
- Power Electronics and Drives.



**B. Major Reaearch Project: Nil**

**3 A. Invited Lectures Delivered/ Session Chaired:**

- **Dr. S K Biswas** delivered a lecture in the refresher course entitled " Art and Science of Mechatronics and its Application in Robotics" organised by Department of Electrical Engineering, Jadavpur University, Kolkata, in June 2009.
- **Prof. N.K Deb** delivered a lecture in the refresher course entitled " Art and Science of Mechatronics and its Application in Robotics" organised by Department of Electrical Engineering, Jadavpur University, Kolkata, in June 2009.
- **Dr. S Kar Chowdhury** delivered a lecture on "Thermal Characteristics of Induction Motor" on 16<sup>th</sup> June 2009 in the refresher course entitled "Frontiers in Power Engineering and Energy Sustainability" organised by Department of Power Engineering, Jadavpur University, Kolkata.
- **Dr. S Kar Chowdhury** delivered a lecture on "Thermal Characteristics of Induction Motor " in the refresher course entitled " Art and Science of Mechatronics and its Application in Robotics" organised by Department of Electrical Engineering, Jadavpur University, Kolkata, in June 2009.
- **M Roy** delivered a lecture in the refresher course entitled " Art and Science of Mechatronics and its Application in Robotics" organised by Department of Electrical Engineering, Jadavpur University, Kolkata, in June 2009.
- **Prof. A. K.Ganguli** delivered an Invited lecture on "**Recent advances in Electric Drives**" at NSEC, Kolkata in July 2009, under TEQIP scheme.
- **Dr. Debashis Chatterjee** delivered an Invited lecture on "**Modern techniques in Induction machine control**" at NSEC, Kolkata in July 2009, under TEQIP scheme.

**B. Seminar/Workshop/Conference/Symposium Attended:**

- **Arindam Kr. Sil** attended The International Conference on Energy and Environment, March 19-21, 2009.
- **Dr. Arabinda Das** attended The 1<sup>st</sup> International Conference on Computer, Communication, Control and Information Technology, 2009 ( C3IT-2009), organised by Academy of Technology, Hoogly, West Bengal, India, 6-7 February 2009.
- **Dr. S. Kar Chowdhury** attended Workshop on "Pedagogical Tools for Knowledge Management", 28<sup>th</sup> March 2009, Hyatt Regency, Kolkata, arranged by Jadavpur University, Kolkata.

**C. Seminar/Workshop/Conference/Symposium Organised:**

**D. Orientation Courses/ Refresher Courses Attended:**

**E. Orientation Courses/ Refresher Courses Organised:**

**4 A. Books/Monographs etc. Published : Nil**

**B. Articles Published Published in Journals:**

- 1 **Arindam Kr. Sil, Prof. N.K. Deb, Dr. Ashok Kr. Maitra**, " Chopping OFF Peak Load Between Similar Group States- Using DLS Technique", Proc. of the International Conference on Energy and Environment, March 19-21, 2009, ISSN:2070-3740.
- 2 **Dr. S. Kar Chowdhury** and Ms. S Maulik, 'Estimation of Speed and Equivalent Circuit parameters of a Three-Phase Induction Motor from Voltage and Current' , Journal of Institution of Engineers (India), EL. Vol. 90, June 18, 2009, 18 - 21.
- 3 T.K. Sengupta, **Arabinda Das**, A.K. Mukhopadhyay, "Simulation Technique for Finding the SVC Model Performance Combined with Power System to Dampen Frequency in Case of Wide Fluctuation", Proc. of the 1<sup>st</sup> International Conference on Computer, Communication, Control and Information Technology, 2009 ( C3IT-2009), organised by Academy of Technology, Hoogly, West Bengal, India, 6-7 February 2009.
- 4 **D. Chatterjee**, S. S. Bharatkar, **A.K.Ganguli** R.N.Chakrabarti," A Modified Non-dissipative LC Snubber Circuit for MOSFET Based Fly-back Converters", International Journal of Power Electronics, Inder Science, 2009.
- 5 R.N.ray, **D. Chatterjee**, S. Goswami, "An application of PSO technique for harmonic elimination in a PWM inverter" Applied Soft Computing, Elsevier, Vol. 9 (2009) 1315-1320.
- 6 R.Yanamshetti, S.S.Bharatkar, **D. Chatterjee, A. K.Ganguli**, "A Hybrid Fuzzy Based Loss Minimization Technique for fast Efficiency Optimization for Variable Speed Induction Machine," in Proc. 6th IEEE Int. Conf. on Elect. Engg/Ecn., Computer, Telecom., and Info. Technology, ECTI-CON, Pattaya, Thailand, May 6-9, 2009, 318-321.
- 7 R.Yanamshetti, S.S.Bharatkar, **D. Chatterjee, A. K.Ganguli**, "A Dynamic search technique for Efficiency Optimization for Variable Speed Induction Machine," in Proc. 4<sup>th</sup> IEEE Int. Conf. on Industrial Electronics and Applications, ICIEA, Xian, China, May 25-27, 2009, 1038-1042.
- 8 S.S.Bharatkar, R.Yanamshetti, **D. Chatterjee, A. K.Ganguli**, " Performance comparison of PWM inverter fed Induction motor drive and BLDC drive for vehicular applications", IEEE Int. Conf. on Vehicular Electronics and safety, Pune, (accepted), 10-12 Nov, 2009.
- 9 Madhab Roy & Chinmay Kanti Roy, "A Study on Ferroresonance with a varying Initial Conditions using a Nonlinear Model of Transformer" , accepted in 2009- Third International Conference on Power Systems, Kharagpur, INDIA December 27-29.
- 10 Madhab Roy & Chinmay Kanti Roy, "A Study on Ferroresonance and Its Depedence on Instant of Switching Angle of the Source Voltage " , accepted in 2009- Third International Conference on Power Systems, Kharagpur, INDIA December 27-29.

5 Collaborative Programmes:

6 Major Achievements:

- D. Chatterjee, A. K. Ganguli received **Best Paper award**, in International Conference ICEE SPEEE '09 held in Chennai during April 15-17, 2009, for their paper entitled "A Permanent magnet Linear Oscillating Motor Suitable for Short Strokes"

MEASUREMENT AND INSTRUMENTATION SECTION

1 B. Number of Faculty Members: 8

2 A Area of Research Activities:

- Sensors and transducers
- Process Instrumentation
- Intelligent Instrumentation and Control
- Signal Processing
- Image Processing
- Robotics and Artificial Intelligence
- Embedded Systems
- Condition Monitoring

B. Major Research Project:

Name of the Project	Sponsor	Faculty Members Involved	Project Status
Modeling and simulation: Electrical Capacitance Tomography	Jadavpur University, Kolkata	Sri. G. Sarkar (PI)	On-going

3 A. Invited Lectures Delivered/Session Chaired

- **Prof. Sugata Munshi** delivered an invited lecture on "Fourier Analysis", in the Short-term course On "Advanced Computing Techniques In Engineering" organized by Netaji Subhash Engineering College, Kolkata, 28<sup>th</sup> February to 6<sup>th</sup> March, 2009.
- **Prof. Anjan Rakshit** acted as a resource person for UGC-Academic Staff College sponsored Refresher Course On "Art and Science of Mechatronics and its Application in Robotics" organized by Electrical Engineering Department, Jadavpur University from 1<sup>st</sup> June to 20<sup>th</sup> June, 2009.
- **Prof. Sugata Munshi** acted as a resource person for UGC-Academic Staff College sponsored Refresher Course On "Art and Science of Mechatronics and its Application in Robotics" organized by Electrical Engineering Department, Jadavpur University from 1<sup>st</sup> June to 20<sup>th</sup> June, 2009.
- **Sri. Palash Kumar Kundu** acted as a resource person for UGC-Academic Staff College sponsored Refresher Course On "Art and Science of Mechatronics and its Application in Robotics" organized by Electrical Engineering Department, Jadavpur University from 1<sup>st</sup> June to 20<sup>th</sup> June, 2009.

- **Prof. Sugata Munshi** delivered an invited lecture on "Piezoelectric Transducers: Fundamentals, Signal Conditioning & Applications" at B.P. Poddar Institute of Technology, organized by Power and Energy Chapter of IEEE Calcutta section on 28<sup>th</sup> July, 2009.
  - B. Seminar/Workshop/Conference/Symposium Attended:**
    - M. Dutta has attended and Presented a paper entitled "Design , Fabrication and Mico-mechanical Characteristics of MEMS based Micro-mirror" at IMEKO WORLD CONGRESS held at Lisbon, Portugal on 6-11 September, 2009.
  - C Seminar/Workshop/Conference/Symposium Organized:**
  - D. Orientation Courses/Refresher Courses Attended:**
    - **Sri Biswajit Bhattacharyya** attended a three week UGC – ASC sponsored refresher course on "Art and Science of Mechatronics and its Application in Robotics", held from 1<sup>st</sup> June to 20<sup>th</sup> June, 2009 in Electrical Engineering Department, Jadavpur University.
  - E. Orientation Courses/Refresher Courses Organized:**
    - **Sri Gautam Sarkar** acted as a Joint Coordinator for a three week UGC – ASC sponsored refresher course on "Art and Science of Mechatronics and its Application in Robotics", held from 1<sup>st</sup> June to 20<sup>th</sup> June, 2009 in Electrical Engineering Department, Jadavpur University.
- 4 A. Books/Monographs etc. Published:**
- B. Articles Published/Accepted in Journals (since December, 2008):**
- International Journals:**
- **Debangshu Dey**, Biswendu Chatterjee, Sivaji Chakravorti, and **Sugata Munshi**, "Cross-Wavelet Transform as a New Paradigm for Feature Extraction from Noisy Partial Discharge Pulses," *IEEE Transactions on Dielectrics and Electrical Insulation*, Accepted for publication, 2009.
  - **Debangshu Dey**, Biswendu Chatterjee, Sivaji Chakravorti, and **Sugata Munshi**, "Importance of denoising in dielectric response measurements of transformer insulation: An uncertainty analysis based approach," *Measurement*, Elsevier Publishers, In Press, Corrected Proof available online on 27 June 2009.
  - Biswendu Chatterjee, **Debangshu Dey**, and Sivaji Chakravorti, "Implementation of integrated, portable transformer condition monitoring instrument in the classroom and on site", *IEEE Trans. on Education*, Accepted for publication, Paper No. TE-2009-000056, 2009.
  - P. Rajamani, **Debangshu Dey**, and Sivaji Chakravorti, "Classification of impulse fault response patterns in transformers using cascaded wavelet network", *International Journal of Power and Energy Conversion*, Inderscience Publishers, Accepted for publication, Paper No. 6202, 2009.

- Nikhil Mondal, A. Abudhahir, Sourav Kanti Jana, **Sugata Munshi**, and D. P. Bhattacharya, "A Log Amplifier Based Linearization Scheme for Thermocouples", *Sensors and Transducers*, pp. 1-10, January 2009.
- S. Chandaka, **A. Chatterjee**, and **S. Munshi**, "Support Vector Machines employing Cross-Correlation for Emotional Speech Recognition", *Measurement*, Elsevier Publishers, vol. 42, issue 4, pp. 611-618, May 2009.
- S. Dutta, **A. Chatterjee** and **S. Munshi**, "An Automated Hierarchical Gait Pattern Identification Tool Employing Cross-Correlation Based Feature Extraction and Recurrent Neural Network Based Classification", *Expert Systems: The Journal of Knowledge Engineering*, Blackwell publishing, vol. 26, no. 2, pp. 202-217, May 2009.
- S. Chandaka, **A. Chatterjee** and **S. Munshi**, "Cross-correlation aided support vector machine for classification of EEG signals", *Expert Systems with Applications*, Elsevier Publishers, vol. 36, pp. 1329-1336, 2009.

#### Conference Papers:

- **P. Kundu**, **G. Sarkar**, and P.C.Panchariya, "Qualitative assessment of drinking water using an Electronic Tongue", presented and published in Proceedings of National Conference on Emerging Trends and Recent Advances in Electrical Engineering and Renewable Energy (NCEEERE 2008), organized by Sikkim Manipal Institute of Technology, Majitar, Sikkim, December 22-24, 2008.
- P. Rajamani, **D. Dey**, B. Chatterjee, S. Chakravorti, "Wavelet Network for estimation of non-linear functions in high voltage systems", IEEE Third International Conference on Industrial and Information Systems, Kharagpur, Dec 8-10, 2009.
- Rambabu, M.Dutta, "Design, Fabrication and Electro-mechanical Characteristics of MEMS based Micromirror", IMEKO WORLD CONGRESS, September 6-11, 2009.

#### 5 Collaborative Programmes:

- Prof. **A. Rakshit** is serving as a member of the advisory committee for R&D Unit of Megatherm Electronics Pvt. Limited from April, 2005.

### ELECTRICAL POWER SYSTEM SECTION

1 B. Number of Faculty Members : 5

2 A. Area of Research Activities:

- Power System Deregulation,
- Power System Dynamics and Control,
- Flexible Ac Transmission System,
- Voltage Stability, Application of soft computing techniques in power system,
- Distributed generation, Restructuring of power system.

**B. Major Research Project:**

- Exploring the Potential of FACTS Controllers for the Enhancement of Power System Dynamic Performance. (An AICTE sponsored project)

**3 A. Invited Lectures Delivered/Session Chaired:**

- Prof S. K. Goswami delivered an invited lecture on 'Power system optimizations' at NIT, Durgapur.
- Prof S. K. Goswami delivered an invited lecture on 'Application of GA in power system' at Netaji Subhas Engineering College.
- Prof S. K. Goswami delivered an invited lecture during a refresher course organized by Power Engineering Dept JU.

**B. Seminar/Workshop/Conference/Symposium Attended:**

**C. Seminar/Workshop/Conference/Symposium Organized :**

**D. Orientation Courses/Refresher Courses Attended:**

**Dr. Sunita Halder nee Dey** attended the refresher course 'Art and Science of Mechatronics and its Application in Robotics', 1<sup>st</sup> June to 20<sup>th</sup> June, 2009, **Arranged by** the Academic Staff College Programme of UGC, Department of Electrical Engineering, Jadavpur University

**E. Orientation Courses/Refresher Courses Organized:**

**4 A. Books/Monographs etc. Published :**

**B. Articles Published in Journals:**

- 1 Rup Narayan Ray, Debashis Chatterjee, Swapan Kumar Goswami, 'An application of PSO technique for harmonic elimination in a PWM inverter', Journal of Applied Soft Computing, ELSEVIER, Vol.9, 2009, 1315-1320.
- 2 P.Acharjee, S.K.Goswami, 'Expert algorithm based on adaptive particle swarm optimization for power flow analysis', "Expert Systems with Applications", Volume 36, Issue 3, Part 1, 2009, 5151-5156.
- 3 B.Bhattacharyya, S.K.Goswami, R.C.Bansal, 'Sensitivity Approach in Evolutionary Algorithms for Reactive Power Planning', International Journal of Electric Power Components & System, Taylor and Francis Group, Vol. 37, Issue 3, 2009.
- 4 P.Acharjee, S.K.Goswami, 'Chaotic Particle Swarm Optimization Based Robust Load Flow', "International Journal of Electrical Power and Energy Systems", Article in Press, available on line 9<sup>th</sup> July, 2009.
- 5 P.Acharjee, S.K.Goswami, 'Multiple Low Voltage Power Flow Solutions Using Hybrid PSO and Optimal Multiplier Method', "Expert Systems with Applications", article in press, available online 31<sup>st</sup> August 2009
- 6 P.Acharjee, S.K.Goswami, 'A Decoupled Power Flow Algorithm Using Particle Swarm Optimization Technique', "Energy Conversion and Management", Vol. 50, September 2009, pp. 2351-2360.

- 7 B.Bhattacharyya, S.K.Goswami, R.C.Bansal, 'Hybrid Fuzzy Particle Swarm Optimization approach for Reactive Power optimization', International Journal of Electrical Systems, Vol. 5, Issue 3, September 2009 IISN 1112-5209.
- 8 A. Bhattacharya, P.K. Chattopadhyay, 'Solving Complex Economic Load Dispatch Problems using Biogeography-Based Optimization', Expert Systems & Applications (Elsevier), (Accepted), Available online:- <http://dx.doi.org/10.1016/j.eswa.2009.10.031>.
- 9 Rup Narayan Ray, Debashis Chatterjee, Swapan Kumar Gowami, 'Harmonics Elimination in a Multilevel Inverter Using PSO Technique' IET, Power Electronics, 2009. (Accepted, ID: PEL-2008-0180)
10. Rup Narayan Ray, Debashis Chatterjee, Swapan Kumar Gowami, 'Reduction of Voltage Harmonics Using Optimisation Based Combined Approach', IET, Power Electronics, 2009 (Accepted, ID: PEL-2008-0299)
11. A. Bhattacharya, P.K. Chattopadhyay, 'Biogeography-Based Optimization for Different Economic Load Dispatch Problems', IEEE Transaction on Power System, (Accepted).
12. A. Bhattacharya, P.K. Chattopadhyay, 'Application of Biogeography-Based Optimization for Solving Multi-objective Economic Emission Load Dispatch Problem', Electric Power Components & Systems (Taylor & Francis) (Accepted).
13. B.Bhattacharyya, S.K.Goswami, 'Genetic Algorithm Based Optimum Allocation of Facts Devices in an Interconnected Power System', International Journal of Electric Power Components & System, Taylor and Francis Group, (Communicated)
14. A. Bhattacharya, P.K. Chattopadhyay, 'Solution of Economic Power Dispatch Problems using Oppositional Biogeography-Based Optimization', Electric Power Components & Systems (Taylor & Francis), (Communicated).
15. A. Bhattacharya, P.K. Chattopadhyay, "Application of Oppositional Biogeography-Based Optimization for Solution of Economic Load Dispatch", IEEE Transaction on Power System, (Communicated).

#### **International Conference:**

- 1 P.Acharjee, S. K. Goswami, 'Chaotic Particle Swarm Optimization based reliable algorithm to overcome the limitations of conventional power flow methods', Power Systems Conference and Exposition, 2009. PES apos;09. IEEE/PES, 15-18 March 2009, pp.1-7
- 2 A. Bhattacharya, P.K. Chattopadhyay, 'A Modified Particle Swarm Optimization with Roulette Selection Operator For Solving Economic Dispatch Considering Generator Constraints', IEEE sponsored International Conference on Electrical Energy Systems & Power Electronics in Emerging Economies ICEESPEEE-2009, SRM University, Chennai, India, Vol.1, 16-17 April 2009, pp.720-726.



- 3 A. Bhattacharya, P.K. Chattopadhyay, 'A Modified Particle Swarm Optimization for Solving the Non-Convex Economic Dispatch', 6th International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology, 2009. ECTI-CON 2009, Pattaya, Thailand, Vol. 01, 6-9 May 2009, pp.78 - 81.
  - 4 T.K.Gangopadhyay, Amitava Sil, Subrata Paul, 'Design Of Robust UPFC Controller For Damping Power System Oscillations Using H<sup>∞</sup> Mixed Sensitivity Technique', Proceeding of International Conference, APSCOM 2009, 8-11 November, 2009, Hong Kong (Accepted).
  - 5 Amitava Sil, T. K. Gangopadhyay, S. Paul, A. K. Maitra, 'Design of Robust Power System Stabilizer Using D-K Iteration', Proceeding of International Conference, APSCOM 2009, 8-11 November, 2009, Hong Kong (Accepted).
  - 6 T.K.Gangopadhyay, Amitava Sil, Subrata Paul, 'Design Of Robust UPFC Controller For Damping Power System Oscillations Using D-K Iteration Technique' , Proceeding of International Conference, TENCON 2009, 23-26 November, 2009, Singapore (Accepted).
  - 7 S. Halder nee Dey, P. Nagendra, Subrata Paul, 'OPF based voltage stability assessment of a multi-bus power system using network equivalencing technique', Proceeding of Third International Conference on Power Systems (ICPS-2009), 27-29 December, 2009, IIT Kharagpur (Accepted)
  - 8 S. Halder nee Dey, Ranjita Chowdhury, Priyanath Das, 'A novel method to assess global voltage stability of a multi-bus power system', Proceeding of Third International Conference on Power Systems (ICPS-2009), 27-29 December, 2009, IIT Kharagpur (Accepted).
  - 9 Amitava Sil, T. K. Gangopadhyay, S. Paul, A. K. Maitra, 'Design Of Robust Power System Stabilizer Using H<sup>∞</sup> Mixed Sensitivity Technique', Proceeding of Third International Conference on Power Systems (ICPS-2009), 27-29 December, 2009, IIT Kharagpur (Accepted).
- 5 Collaborative Programmes : NIL
- 6 Major Achievements : NIL

#### HIGH VOLTAGE ENGINEERING SECTION

- 1 B. Number of Faculty Members : 6
- 2 A. Area of Research Activities :
  - Numerical field computation.
  - Surge propagation in electrical machine.
  - Computer aided design and optimisation of insulation system.
  - Application of artificial intelligence in high voltage systems.
  - Application of artificial intelligence in power system.
  - Condition monitoring of large electrical equipment and electromagnetic compatibility.



- High voltage pulse generation.
- Partial discharge signal analysis.
- Real-time data analysis in high voltage systems.
- Material development.
- Non-Linear Dynamics.

**B. Major Research Project:**

Prof. (Dr.) Sivaji Chakravorti.

Name of the Project    Sponsor    Worked as    Project Status

Development of an Embedded System for Multi-Sensor Data Acquisition and Analysis of Partial Discharge Signals    AICTE    Principal Investigator    On-going

Development of an Intelligent, Low-Cost Partial Discharge (PD) Detection System DST, GOI    Principal Investigator    On-going

Sri. P.Rajamani

Name of the Project    Sponsor    Worked as    Project Status

Automated Condition monitoring system for power Transformers  
Jadavpur University    Principal Investigator    On-going

**3 A. Invited Lectures Delivered/Session Chaired:**

Prof. Sivaji Chakravorti.

Sl. No.	Topic	Date	Venue
1	Condition Monitoring of Oil-Paper Composite Insulation System of Transformers	14.08.2009	CV Raman College of Engineering, Bhubaneswar
2	Fundamentals of Wavelet Transform and Its Application in Power Engineering	14.08.2009	CV Raman College of Engineering, Bhubaneswar
3	Electrical Safety Issues	28.05.2009	CEEC Ltd, Kolkata
4	Partial Discharge Phenomenon	31.03.2009	Electrical Engineering Department, NIT Durgapur
5	Gas Insulated Substation and Transmission Line	25.03.2009	Electrical Engineering Department, IIT Kanpur
6	Condition Monitoring of Oil-Paper Composite Insulation System of Transformers	25.03.2009	The Institution of Engineers (India), Kanpur Local Center
7	Condition Monitoring of Oil-Paper Composite Insulation System of Transformers	15.03.2009	NIT Hamirpur, Himachal Pradesh
8	Fundamentals of Artificial Neural Network	03.03.2009	Netaji Subhash Engg College, Kolkata
9	Condition Monitoring of Oil-Paper Composite Insulation System of Transformers	22.01.2009	Seminar Room, EE Dept, NIT Durgapur

- 10 Gas Insulated Substation and Transmission Line 22.01.2009 Seminar Room, EE Dept, NIT Durgapur

**B. Seminar/Workshop/Conference/Symposium Attended:**

- S.Dalai has attended the one day seminar on "Smart Grid & Alternative Energy Technologies for Promotion of Lighting System" at Jadavpur University on 30<sup>th</sup> April, 2009 organized by IEEE Calcutta Section Power Engineering Society.
- B.Chatterjee has attended the one day seminar on "Smart Grid & Alternative Energy Technologies for Promotion of Lighting System" at Jadavpur University on 30<sup>th</sup> April, 2009 organized by IEEE Calcutta Section Power Engineering Society.
- P.Rajamani has attended the one day seminar on "Smart Grid & Alternative Energy Technologies for Promotion of Lighting System" at Jadavpur University on 30<sup>th</sup> April, 2009 organized by IEEE Calcutta Section Power Engineering Society.

**C Seminar/Workshop/Conference/Symposium Organized:**

**D. Orientation Courses/Refresher Courses Attended:**

- **S.Dalai has attended one refresher course on "Art and Science of Mechatronics and its Application in Robotics",** at Jadavpur University on 1<sup>st</sup> June-20<sup>th</sup> June, 2009 organized by Electrical Engineering department, Jadavpur University.
- **B.Chatterjee has attended one refresher course on "Art and Science of Mechatronics and its Application in Robotics",** at Jadavpur University on 1<sup>st</sup> June-20<sup>th</sup> June, 2009 organized by Electrical Engineering department, Jadavpur University.

**4 A. Books/Monographs etc. Published:**

**B. Articles Published in Journals/Conference:**

**International:**

- 1 B. Chatterjee, D.Dey, S.Chakraborti, "Implementation of integrated, portable transformer condition monitoring instrument in the classroom and on site", *IEEE Trans. on Education*, Accepted for publication, Paper No. TE-2009-000056, 2009.
- 2 D.Dey, B. Chatterjee, S.Chakraborti, S.Munshi, "Cross-Wavelet Transform as a New Paradigm for Feature Extraction from Noisy Partial Discharge Pulses", *IEEE Trans. on Dielectr. and Electr. Insul.*, Accepted for publication, Paper No. 2250, 2009.
- 3 D.Dey, B. Chatterjee, S.Chakraborti, S.Munshi, "Importance of Denoising in Dielectric Response Measurements of Transformer Insulation: an Uncertainty Analysis based Approach", *Measurement*, Elsevier, Accepted for publication, Paper No. MEAS-D-09-00061, 2009.

- 4 P.Das, S. Chakraborti, "Simulation of PD Patterns Due to Narrow Void in Different E-Field Distribution", *Journal of Electrostatics, Elsevier*, Accepted for publication, 2009.
- 5 P. Rajamani, S. Chakraborti, "Classification of impulse fault response patterns in transformers using cascaded wavelet network", *Int. Journal of Power and Energy Conversion, Inderscience Pub*, Accepted for publication, Paper No.6202, 2009.
- 6 P. Rajamani, S. Chakraborti, K.Karthikeyan, "A comparative study on the performance of modern function estimation tools for estimation of non-linear functions in high voltage system," *Journal of Electrical Systems, ESR Publishers*, Vol. 5, No. 3, September 2009.
- 7 P.Das, S. Chakraborti, "Studies on Partial Discharge Simulation based on a stochastic model considering the variation of discharge area and temperature of the void surface", *International Journal for Computational Methods in Engineering Science & Mechanics*, Taylor & Francis, Vol. 10, No. 5, 393-405, 2009.
- 8 B. Chatterjee, D.Dey, S.Chakraborti, "A new instrument for the measurement of peak value of non-sinusoidal asymmetric voltage over wide range of frequency measurement", *Measurement, Elsevier*, Vol.42, Jan, pp 71-77, 2009.
- 9 K. Bhattacharyya, A.K.Mehta, D.Roy, "Application of reliability in expansion of transmission system *Measurement, Elsevier*, Vol.31, June, pp 213-219, 2009.K. Bhattacharyya, P.Bhowmick
10. K. Bhattacharyya, P. Bhowmick, P.Purkait, "A novel wavelet transform aided neural network based transmission line fault analysis method *Measurement, Elsevier*, Vol.31, June, pp 213-219, 2009.
11. K. Bhattacharyya, N. Roy, "A novel approach for the study of complex electrical signals using S-transform IJRTE( in press), 2009.
12. B. Chatterjee, D.Dey, S.Chakraborti, "Implementation of integrated, portable transformer condition monitoring instrument in the classroom and on site", *Transaction on Education (in press)*, 2009.

#### **National**

- 1 S. Chakravorti, "Non-Invasive Condition Monitoring of Transformer Insulation using Dielectric Response Technique *Annals of the INAE*, Vol. VI, pp 119-126, April, 2009.
- 2 P. Rajamani, D.Dey, S.Chakraborti, "Investigations on the effect of dynamic fault on impulse current waveforms of transformer Accepted for presentation in International Conference on Power Systems (ICPS-2009) scheduled to be held on 27-29<sup>th</sup> December, 2009 at IIT Kharagpur, India, 2009.
- 3 K. Bhattacharyya, M.Ghosh, D. Roy, "A self organising fuzzy inference system for load frequency control, 23<sup>rd</sup> Indian Engg. Congress, Warangal, 11-14<sup>th</sup> December, 2008.

## **5 Major Achievements:**

### **Patent Filled:**

- 1 An Integrated Portable System and Process for detecting the condition of Oil-Paper Composite Insulation in Electrical Equipment", S. Chakravorti, B. Chatterjee, D. Dey and S Munshi, File No. 743/KOL/08, CBR No. 2515 dated 22nd of April, 2008.
- 2 A Process and a System for Detecting the Partial Discharge in Electrical Insulation of Power Appliances Operating at High Voltage", S. Chakravorti, B. Chatterjee, D. Dey and S Munshi, File No. 2070/KOL/2008, CBR No. 7004, dated 28th of Nov., 2008.

### **ILLUMINATION ENGINEERING SECTION**

#### **1 B. Number of Faculty Members: 3**

#### **2. A. Area of Research of Research Activities:**

- Ballast- Lamp characteristics
- Lamp-life estimation
- Performances of different lighting system,
- Development of energy efficient low-cost lighting control system,
- Optimized lighting system design,
- Human powered Battery charger for LED based Lighting System
- Daylight integrated artificial lighting]
- Design of Energy Efficient Road Lighting System

#### **B. Major Research Projects - N.A.**

#### **3 A. Invited Lectures Delivered/Session Chaired**

- Delivered lecture on "The experience of Visiting Lighting Research Centre, Albany, U.S.A." in the technical seminar organized by ISLE, Bangalore, on 22/11/2008.
- Technical Talk by Mrs. Kamalika Ghosh about "Light & Living Being" at Seminar room of E.E. Dept., Jadavpur University on 19/12/2008.
- Delivered Lecture by Mr. Suddhasatwa Chakraborty on "Energy Efficient Lighting" at Eastern Railway Head office, Kolkata on 19.12.2008.
- Technical Talk by Mr. Aniruddha Mukherjee about "Energy Efficient Lighting" at Seminar room of E.E. Dept., Jadavpur University on 15/01/2009.
- Delivered Lectures on two days Lighting course on 13<sup>th</sup> & 14<sup>th</sup> February 2009 at K.P.Basu memorial hall organized by SISED-JU & ISLE jointly by]
- Prof. K.Goswami on LIGHTING FUNDAMENTALS
- Prof.(Dr.) S. Mazumdar on LIGHTING CONTROL GEAR

- Mr. S. Chakraborty on INDOOR LIGHTING
- Mr. A. Mukherjee on LIGHT SOURCES & LUMINAIRES
- Mr . K. Naveen on APPLICATION OF ENERGY EFFICIENT LIGHTING
- Mr. S. Ganguly on LIGHTING SYSTEM MANAGEMENT
- Dr. B. Roy on OUTDOOR LIGHTING & PHOTOMETRY
- Mrs. K. Ghosh on ENERGY & LIGHTING ECONOMICS
- Mr. O. Mitra on LIGHTING PROJECT ENGINEERING\
- Delivered presentation on the "Operational aspects of DIALux Software in case of outdoor lighting design" at Bengal Science & Engineering College on 27/03/2009.
- Delivered lecture on "A Report on a Beacon to the future: India's path towards low carbon lighting -USAID International Conference held on 1 -3<sup>rd</sup> April, 2009 at Delhi" in the technical seminar organized by ISLE on 11.04.09 at Chennai..
- Airport Lighting of Vision 2010,the International Conference organized by ISLE, Karnataka was co - chaired by Prof. Saswati Mazumdar on 21/11/2008.
- Aesthetic Designing of Energy Efficient Technology, Lighting session on 15/09/2009 at Kolkata.

#### **B. Seminars /Workshops / Conference /Symposium Attended**

Prof. Saswati Mazumdar, Director, School of Illumination Science, Engineering & Design attended:

- A seminar on "Green Building and GRIHA National Rating System" on 20.08.09, organized by CPWD, at Kolkata.
- A technical presentation on Energy conservation in Building Lighting Systems was organized jointly with ISLE on 05/07/2008 at Kolkata.
- A technical presentation on "Indoor and Outdoor Lighting Concepts for Govt. Offices" on 25/09/2008 at Kolkata, organized by ISLE.
- The Exhibition, -Lii - 2009 & International Conference on Lighting, organized jointly with IIID& ISLE on 20/02/2009 at Mumbai.
- A technical lecture by Mr. P. Chandra Sekhar, on "To Create the Architectural Appeal and Reflect the Human Emotion" on 15/11/2008 at Chennai, organized by ISLE.
- Prof. (Dr.) S. Mazumdar, Dr. B. Roy, Ms. Kamalika Ghosh, Mr. S. Chakraborty attended the following Workshop on "Solar Building & Motion "on 14.09.09, organized by Goethe Institut,Humboldt Club in collaboration with IEEE Power & Energy chapter.
- Mr. S. Chakraborty attended the Seminar on "Art of Entrepreneurship " on 18/08/09 organized by IEEE Power & Energy chapter.

- Mr. S. Chakroborty attended the Seminar on "The Triumph of AC over DC" on 05/03/09 organized by IEEE Power & Energy chapter.
- Mr. S. Chakroborty attended the Seminar on "Roadmap of Power Sector in India" on 14/11/08 organized by IEEE Power & Energy chapter.
- Mr. S. Chakroborty attended the Seminar on "Advance in Electro technology" organized by IEEE Power & Energy chapter.
- Mr. S. Chakroborty attended the Workshop on "Train the trainer" 19.01.2009 to 23.01.2009 organized by Coa-NIASA in association with USAID and APP at Pune.

**C Seminar/Workshop/Conference/Symposium Organized :NIL**

**D. Orientation Courses / Refresher Courses Attended:**

- **Mr. S. Chakroborty** attended one refresher course on "Art and Science of Mechatronics and its Application in Robotics", at **Jadavpur University** on **1<sup>st</sup> June-20<sup>th</sup> June, 2009** organized by Electrical Engineering department, Jadavpur University.

**3 E Orientation Courses / Refresher Courses Organized : N.A.**

**4 A. Books Of Monographs Etc. Published: N.A.**

**4 B. Articles Published In Journals:**

- 1 S.Mazumdar, S.Chakroborty "Application of Computers in the field of Lighting" *Journal of the Association of Engineers, India* vol.79, June, 2009.
- 2 S.Mazumdar, R.S.Mondal, A.K. Sur, A. Mukherjee "Power factor and harmonic analysis of self ballasted compact fluorescent lamps" accepted for publication in the *Journals Svetotekhnika & Light and Engineering, Mosco, Russia.*
- 3 B. Roy, S. Pal, S.Neogi "Illuminance Prediction with Indian Daylight data by scales Model Study" *SESI Journal* vol.18, No. 2, July - Dec.2008, pp - 41 - 49.
- 4 B.Roy, S.Pal, S. Neogi "Heat transfer modeling on windows and glazing under exposure of solar radiation" *Energy and Buildings*, vol. 41, No-68 June, 2009, pp- 654- 661.
- 5 B.Roy, S.Pal, S. Neogi "Simulation and performance analysis of Daylight linked Artificial lighting system" *Light & Engineering*, vol. 17, No-2, 2009, pp - 34- 42.

**5 Major Achievements**

- Prof.(Dr.) S. Mazumdar, Ms. Kamalika Ghosh, Mr. S. Chakroborty selected as Technical Jury members for "Finolex Alok Surkasha Samman" for the selection of best durga puja pandel for creativity in lighting & electrical safety in 2009.

**Consultancy :**

- Survey and redesigning of Security lighting system at Budge Budge Generating Station, CESC Ltd. (ongoing) April, 2009, Rs. 50,000/-.

**ELECTRONICS & TELECOMMUNICATION ENGINEERING**

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**Courses Offered:**

- **B.E. Tel.E.** :4 years (60X4)
- **M.E. Tel.E.** :2 years (25X2)
- **Part Time M. Tech.** :1. VLSI and Microelectronics, 3 years (18 X 3) Evening  
2. Intelligent Automation and Robotics. 3 years (18 X 3)

**Number of Faculty Members :** 23

**Area(s) of Research Activities:**

- 1 Adaptive antennas
- 2 Ad hoc wireless networks
- 3 Analog and Digital Signal Processing
- 4 Antennas and Microwaves
- 5 Artificial Intelligence & Soft Computing,
- 6 Bio-informatics and Computational Biology
- 7 Biomedical Image Processing
- 8 Broadband Wireless Communications
- 9 Call admission control in cellular and WiMAX Networks
10. CMOS MEMS integration and signal conditioning of gas sensor
11. Coding
12. Computer Networking
13. Computer Vision.
14. Cybernetics Sciences,
15. Digital Communication
16. Development of embedded systems for medical diagnostic applications
17. Embedded Systems
18. EMI/EMC
19. Fiber Optic Communication
20. Mobility management for 3G/WLAN Integrated Architecture
21. Mobile Wireless Communication
22. Multi-agent Robotics

23. Optimization techniques
24. Optical Sensor Network
25. Packet Scheduling in WiMAX
26. Pattern Recognition
27. Photonics
28. Porous Silicon formation by Alumina template
29. RFID
30. Robotics & Computer Vision.
31. Semiconductor device
32. Signal and Image Processing,
33. Simulations of nanodevice models
34. Single electron & spintronics devices and their applications in VLSI circuits
35. Soft Computing
36. Swarm and Evolutionary Algorithms
37. WiMAX handoff and Call Admission
38. VLSI Circuit Design
39. VoIP over WiFi and WiMAX
40. MEMS based metal oxide gas sensors
41. Design and Simulation of RF MEMS based capacitive switch
42. CMOS MEMS integration and signal conditioning of gas sensor
43. Development of embedded systems for medical diagnostic applications
44. MEMS based Pressure Sensors
45. Power Optimisation of VLSI Circuits
46. Study of Nanocrystalline Silicon, Zinc Oxide and its application on Solar Cells and Gas Sensors
47. Porous Silicon Low Pressure Sensors
48. Porous silicon formation by Alumina template

**Major Research Project(s) as PI or Co-PI Completed or Ongoing During 2009:**

Name of the Faculty	Title of the Project	Funding Agency	Amount (Rs.)	Duration	Status (Project Completed on..... / Ongoing)
Prof. Amit Konar	Emotion Research	Perception Engineering Project,	DIT	Rs. 1.25 Crores	Ongoing
Prof. B. Gupta	Design, Development and Supply of Ku Band Ultra Low Side Lobe Level Microstrip Antenna	RCI / DRDO	10.0 lakhs		Ongoing



Development of Multiband Cylindrical Wrap Around Antenna	DRDL	5.0 lakhs	Ongoing
Feasibility Study for Compact Foldable Type Trans / Receive Antenna Design in 2-3 GHz Band	ISRO	6.00 lakhs	Completed in 2009
Development of RF MEMS Capacitive Shunt Switch in Application as Phase Shifters for Satellite Communication Systems	ISRO		Ongoing
Infrastructural Communication Technologies Supporting Fully Ubiquitous Information Society	Govt. of Japan (Indo - Jap Collaborative Project)	Jap Yen 30 millions/year	Completed in 2009
Study and Optimization of Microstrip Antenna System to Receive Satellite Link from Moving Trains	ISRO	10.93 lakhs	Ongoing

Prof. Iti Saha Misra

Associated with DST FIST at ETCE Dept.

Prof. H. Saha

Design, Fabrication and  
Testing of Porous Silicon  
based integrated smart  
temperature and pressure  
sensor (STF/DIF)

ISROBangalore

Development of smart  
MEMS gas sensor for  
improvement of the safety  
of mines.

AICTE, Govt. of India  
(Nationally Coordinated  
Project)

Design of MEMS based  
sensor for continuous  
monitoring of gases  
underground coal mines

Department of Science  
& Technology,  
Govt. of India.

Development of Nanocrystalline  
Silicon MEMS Pressure  
Sensor for Vacuum and  
Low Pressure Applications

Ministry of Communications  
& Information Technology,  
Dept. of Information  
Technology

Mobile Communication in Mining Environment	Centre for Mobile Computing and Communication, Jadavpur University				
Special Manpower Development Programme for VLSI Design and Related Software (SMDP-II).	Ministry of Communications and Information Technology, Govt. of India.				
Prof. H. Saha and Prof. B. Gupta	Performance and Process Design, Modelling and Simulation of a MEMS Capacitive Switch and Phase Shifter at Ku- Band.	Defence Research & Development Organization (DRDO). Govt. of India.			
Mr. P. Venkateswaran	FPGA Based Interface Model for Scale-free Computer Network.	UGC - MRP	5.73 lakhs	3 years	Ongoing
Prof. R. Nandi	Efficient Routing Algorithm with Improved QoS Model for MANETS.	UGC - MRP	9.00 lakhs.	3 years	Ongoing
Prof. Salil Kumar Sanyal	FIST - 2007 (Departmental) with Improved QoS Model for MANETS.	DST, Govt. of India	90.00 lakhs	5 years	Ongoing
Prof. Subir Kumar Sarkar	Modeling of low power Completed consuming ultradence VLSI chip using Narrow and single electron devices for space vehicules and defence application	DRDO , Govt of India	10.00 lakhs	3 years	on 31.03.2009
Prof. Subir Kumar Sarkar	Development of highly secured and authenticated algorithm and it's low power ASIC-VLSI implementation suitable for defence application	DRDO , Govt of India	14.98 lakhs	3 years	Ongoing

Development of an ASIC-VLSI multi chip zigbee RFID network processor for the realization of power efficient smart industries/homes	UGC	9.66 lakhs	2 years	Ongoing
Low Power Consuming And High Frequency Nanodevice Based Vlsi Circuits For Medical And Space Applications	AICTE	3.8 lakhs	3 Years	Ongoing

#### Invited Lectures Delivered/ Tutorial/Session Chaired in the Year 2009:

- 1 **Prof. Amit Konar** delivered a invited lecture for 3 hours on *Cooperation in Distributed Motion Planning of Multiple Mobile Robots* in RCC College of Engineering on the occasion of a 15-days' Workshop on Soft Computing, March 2009.
- 2 **Prof. Amit Konar** delivered a invited lecture for 2 hours on *Emotional Intelligence* in RCC College of Engineering on the occasion of a 15-days' Workshop on Soft Computing, March 2009.
- 3 **Prof. Amit Konar** gave a invited presentation on *Emotion Recognition from Facial Expression and Its Control Using Fuzzy Logic* on the occasion of 1<sup>st</sup> Indo-Japan Conf. on Science and Technology on *Facial Expression Analysis*, Organized by CDAC, Calcutta, March 12, 2009.
- 4 **Prof. Amit Konar** gave a one hour invited talk on *Species Identification from DNA Sequence Analysis by Soft Computing Algorithms* in a One-week Workshop on *Data Mining*, organized by BESU, March 27, 2009.
- 5 **Prof. Amit Konar** gave two-hours' invited presentation on *Knowledge Extraction from Gene Regulatory Network* in a One-week Workshop on *Data Mining*, organized by BESU, March 27, 2009.
- 6 **Prof. Amit Konar** delivered a invited lecture on *Gene Microarray Data Clustering* in a Workshop on *Engineering Applications of Computational Intelligence*, Organized by St. Thomas' College of Engg. and Tech., Kolkata on April 3, 2009.
- 7 **Prof. Amit Konar** presented a invited lecture on *Target Tracking by Mobile Robots* in a Workshop on *Engineering Applications of Computational Intelligence*, Organized by St. Thomas' College of Engg. and Tech., Kolkata on April 4, 2009.
- 8 **Prof. Amit Konar** gave a one hour invited presentation on *Emotion Recognition from Facial Expression and its Control Using Fuzzy Logic* in a One-day Workshop on *Recent Advances in Computer Vision and Their Applications*, Organized by IEEE GOLD Affinity Group and Computer Chapter of IEEE Calcutta Section, April 16, 2009.
- 9 **Prof. Amit Konar** gave 10 hours' presentation in a Two-days' Workshop on *Emotion Modeling, Recognition and Control- A Computational Intelligence Approach*, Organized by Jaya Engineering College, Chennai on June 8-9, 2009.

10. **Prof. Amit Konar** delivered two hours' presentation on *Swarm and Evolutionary Computation* in P.S.G. College of Engineering and Technology, Coimbatore on June 10, 2009.
11. **Prof. Amit Konar** gave an invited presentation on *Gene Microarray Data Clustering* in a Workshop on Data Mining Organized by R.C.C. College of Engg., Kolkata, Aug. 2009.
12. **Prof. Amit Konar** presented a invited lecture on *Gene Regulatory Network Modeling* in a *Workshop on Data Mining* Organized by R.C.C. College of Engg., Kolkata, Aug. 2009.
13. **Prof. Amit Konar** gave a lecture on *DNA-data clustering* in a Workshop on *Data Mining* organized by RCC College of Engineering, Aug. 2009.
14. **Prof. Amit Konar** delivered a lecture on *Swarm and Evolutionary Computation Applied to Wireless Communications* in a *Refresher Course on Wireless Communication*, Coordinated by Prof. Iti Saha Mishra of ETCE Dept., JU, in Aug., 2009.
15. **Dr. A.S. Chowdhury** presented a talk on Computer Vision for Biomedical Applications, at Bengal Institute of Technology, Calcutta, India, September 2009.
16. **Prof. Bhaskar Gupta** delivered an invited talk at the International Conference on Computer, Communication, Control and Information Technology [C<sup>3</sup> IT - 2009], Academy of Technology, West Bengal.
17. **Prof. Bhaskar Gupta** presented a lecture at the seminar on "Trends In Wireless Network Technology And Applications" in NIT Agartala
18. **Prof. Bhaskar Gupta** presented a lecture at the seminar on "Advances In Information & Communication Technology And Mobile Applications" at NIT Silchar
19. **Prof. Bhaskar Gupta** presented a lecture on "Antenna Fundamentals" at WB State University.
20. **Prof. Bhaskar Gupta** presented a lecture on "Vector Genetic Algorithms" at Silicon Institute of Technology, Bhubaneswar.
21. **Prof. Bhaskar Gupta** presented a lecture on "Vector Genetic Algorithms" at NIT, Rourkela.
22. **Prof. Bhaskar Gupta** presented a lecture on "Engineering Education in Twenty First Century" at National Technical Manpower Information System Forum, Kolkata.
23. **Prof. Bhaskar Gupta** Chaired a Session in an International Conference on *Computer, Communication, Control and Information Technology [C<sup>3</sup> IT - 2009]*, Academy of Technology, West Bengal.
24. **Prof. Bhaskar Gupta** Chaired a Session in the 4<sup>th</sup> International Conference on *Near Field Characterization and Imaging ICONIC 2009*, Taipei, Taiwan.
25. **Prof. Iti Saha Misra** delivered an invited lecture on "4G Cellular: Where we stand" at Govt. College of Ceramic Technology, Kolkata, Feb 27, 2009.

26. **Prof. Iti Saha Misra** delivered an invited lecture on "4G cellular: Technology and Challenges", National Conference, CoCoSys-2009, at Burdwan Engineering College, Jan 3, 2009.
27. **Prof. H. Saha** delivered an invited talk "Solar Photovoltaic Systems - An Indian Overview", 18<sup>th</sup> Photovoltaic Science Exhibition and Conference, PVSEC 18, Kolkata, January 19-23, 2009.
28. **Prof. H. Saha** delivered an invited talk "MEMS based nanocrystalline ZnO gas sensors", International Workshop on Tailor-Made Nanomaterials and Applications for Chemical and Biosensors, 2-3 March 2009, India.
29. **Prof. H. Saha** delivered an invited talk "Solar Cells and Systems", at Techno India, April 24, 2009.
30. **Prof. H. Saha** delivered an invited talk "MEMS based sensors and systems", at JIS College of Engineering, Kalyani, June 5, 2009.
31. **Prof. Salil Kumar Sanyal** Chaired a Session in the National Conference on Communication & Computing System ( CoCoSyS'09 ) organized by the University Institute of Technology, Burdwan University, January 2009
32. **Prof. Salil Kumar Sanyal** delivered an Invited Lecture on "Some aspects of CMOS VLSI Circuit Design" in a seminar jointly organized by Power & Energy Chapter of IEEE Calcutta Section & Calcutta Institute of Engineering & Management, September 2009.
33. **Prof. Salil Kumar Sanyal** delivered an invited Lecture on "Review of DFT& FFT" in the National Workshop on DSP: Concept and Application organized by the Department of Electronics & Telecommunication Engineering, Purushottam Institute of Engineering & Technology, Rourkela, October, 2009.
34. **Prof. Subir Kumar Sarkar** delivered an Invited Talk on RFID "An Electronic Identity to Objects" at Department of Electronics & Communication Engineering National Institute of Technology, Durgapur, West Bengal- 700013 on 19/01/2009
35. **Prof. Subir Kumar Sarkar** delivered an Invited talk entitled "Design Issues for Low Power VLSI circuits", at Department of Electronics & Communication Engineering National Institute of Technology, Durgapur, West Bengal-700013 on 19/01/2009
36. **Prof. Subir Kumar Sarkar** delivered an Invited talk on Spintronics at One day Workshop on Nano Technology (Nano-forum'09) organized by Dr. M.G.R. Educational and Research Institute University, Chennai on 15th April 2009.
37. **Prof. Subir Kumar Sarkar** delivered a talk on RFID and its Applications, UGC Sponsored Refresher Course On Broadband Wireless Communication on 17 June 2009 at Department of Electronics and Telecommunication Engineering, Jadavpur University, Kolkata 700 032.
38. **Prof. Subir Kumar Sarkar** delivered an Invited talk on Microelectronics VLSI Design for Engineers & Scientists at NIST, Palur Hills, Berhampur, Orissa on 27 July to 08 August 2009.

39. **Prof. Subir Kumar Sarkar** Chaired a session for Information & Communication Technology session I in the 7<sup>th</sup> All India People's Technology Congress at Science City & Energy Education Park, Kolkata on 7<sup>th</sup> February - 2009.
40. **Dr. Swagatam Das** delivered an Invited Lecture on "Differential Evolution: Algorithm, Analysis, and Applications to Pattern Clustering Problems", in School of Electrical and Electronics Engineering, Nanyang Technological University (NTU), Singapore. Organized by IEEE, NTU and IEEE Computational Intelligence Chapter, Singapore.
41. **Dr. Swagatam Das** delivered an Invited Lecture on "Computational Swarm Intelligence: A Conceptual Journey from Insects to Robots", in Graduate School of Computer Science, Chung Ang University, Seoul, Republic of Korea.
42. **Dr. Swagatam Das** delivered an Invited Lecture in National Conference in Computational Intelligence Applications in Power, Control and Telecom, Silicon Institute of Technology, Bhubaneswar, during March 20 - 22<sup>nd</sup>, 2009.
43. **Dr. Swagatam Das** delivered an Invited Talk in Machine Intelligence Research Day (MIR Day), International Workshop, January 24 - 26, 2009, Nagpur, India.
44. **Dr. Swagatam Das** will be Co-chairing a Program of International Symposium on Biologically Inspired Computing and Applications (BICA-2009) Bhubaneswar, India December 21-22, 2009.

#### **Seminar/ Workshop/ Conference Attended in the Year 2009:**

- 1 **Prof. Bhaskar Gupta** attended a Conference on Computer, Communication, Control and Information Technology [C<sup>6</sup> IT - 2009], Academy of Technology, West Bengal.
- 2 **Prof. Bhaskar Gupta** attended a Seminar on "Trends In Wireless Network Technology And Applications" in NIT Agartala
- 3 **Prof. Bhaskar Gupta** attended a Seminar on "Advances In Information & Communication Technology And Mobile Applications" at NIT Silchar
- 4 **Prof. Bhaskar Gupta** attended the 4<sup>th</sup> International Conference on Near Field Characterization and Imaging ICONIC 2009, Taipei, Taiwan
- 5 **Prof. H. Saha** attended a Refresher Course on "Analog and Digital IC Flow using Cadence" at NIT Tinuchirapalli on June 16-21, 2009.
- 6 **Prof. H. Saha** attended a Refresher Course on "Indian Nanoelectronics Users Programme" at IIT Bombay on May 30-31, 2009
- 7 **Prof. Iti Saha Misra** attended as organizing member of One-Day Seminar for 30 years celebration IEEE Calcutta Section CALCON 08 on 24 Nov 2008.
- 8 **Prof. Iti Saha Misra** attended as organizing member of One-Day IEEE ComSoc workshop at Govt. College of Ceramic Technology, Kolkata on 7 March 2009.
- 9 **Mr. P. Venkateswaran** has participated in the AICTE - QIP Short Term Course on "Embedded System Design" during Feb. 02-06, 2009, Organized by the E&ECE Dept. at IIT Kharagpur.

45. **Prof. Subir Kumar Sarkar** attended a One day Workshop as CHIEF GUEST on Nano Technology (Nano-forum'09) organized by Dr. M.G.R. Educational and Research Institute University, Chennai on 15th April 2009.
46. **Prof. Subir Kumar Sarkar** attended Information & Communication Technology session I in the 7<sup>th</sup> All India People's Technology Congress at Science City & Energy Education Park, Kolkata on 7<sup>th</sup> February - 2009.
  - 1 **Mrs. Sudipta Chattopadhyay** attended a refresher course on "Broadband Wireless Communication" from 15-6-2009 to 4-7-2009 at Dept. of ETCE, Jadavpur University.

**Seminar / Workshop / Symposium Organized in the Year 2009:**

- 1 **Prof. R. Nandi & Mr. P. Venkateswaran** successfully organized
  - (i) Name of the Program: **IEEE CASCOM'09 Educational Program**  
 Theme: **Advances on Nano Electronics & Communication Systems**  
 Duration & Date: 2 Days, March 20 & 21, 2009  
 Venue: Day 1: Dr. K. P. Basu Memorial Hall, Jadavpur University Campus  
 Day 2: TCS, Sector V, Salt Lake, Kolkata  
 Jointly Organized by: Calcutta Chapters of IEEE Circuits And Systems (CAS) Society & Communications Society (ComSoc)
  - (ii) Name of the Program: **IEEE Students Professional Awareness Conference (SPAC)**  
 Theme: **Academic Career Opportunities for Higher Education - In India & Abroad**  
 Duration & Date: Half-Day, May 25, 2009  
 Venue: Hall No.: T-3-7, Dept. of ETCE, JU  
 Jointly Organized by: Dept. of ETCE, JU & IEEE CAS Calcutta Chapter
  - (iii) Name of the Program: **IEEE SPAC**, Theme: **Corporate Opportunities In India**  
 Duration & Date: Half-Day, May 25, 2009  
 Venue: Hall No.: T-3-7, Dept. of ETCE, JU  
 Jointly Organized by: Dept. of ETCE, JU & IEEE ComSoc Calcutta Chapter
  - (iv) Name of the Program: **Tutorial on VLSI Techniques**  
 Conducted by: Mr. R. Senrayaperumal, Vi Microsystems Pvt. Ltd., Chennai - 600 096.  
 Duration & Date: Half-day, October 31, 2009  
 Venue: NetLab, Room #: T-3-16A, ETCE Dept., JU.  
 Organized by: IEEE CAS Calcutta Chapter.
- 2 **Prof. H. Saha** successfully organized a summer training course programme on "Microelectronics Technology and VLSI Design" during the period June 21 to August 07, 2009 for B.Tech Final/Pre-Final year students. The course was attended by 66 participants from different colleges in West Bengal.



- 3 **Prof. Iti Saha Misra** successfully organized a 3 weeks UGC sponsored refresher course on "Broadband Wireless Communications" at EITCE Department, Jadavpur University. There were 49 participants from various parts of India.

**Books/ Monographs Published in the Year 2009:**

- 1 Chakraborty, A. and **Konar, A.**, "*Emotional Intelligence: A Cybernetic Approach*", Springer, Heidelberg, October, 2009.
- 2 **Das, S.**, Abraham, A., and **Konar, A.**, "*Metaheuristic Clustering, Studies in Computational Intelligence Series*", Springer, May 2009.
- 3 **Konar, A.**, Talukdar, V. and Datta, A., "*The Art of Problem Solving in Bioinformatics and Computational Biology*", Springer, Dec. 2009.
- 4 **Konar, A.** and Bhattacharya. A., "*Embedded Systems: Principles, Techniques and Applications*", Pearson, 2009 (accepted).
- 5 **Prof. Iti Saha Misra** published a book entitled: "**Wireless Communications and Networks: 3G and Beyond**" McGraw Hill India, June 2009.
- 6 **Dr. A.S. Chowdhury** and S.M. Bhandarkar: "*Computer Vision-guided Virtual Craniofacial Surgery: An Algorithmic and Combinatorial Perspective, Advances in Pattern Recognition Series,*" Springer. (2009) (accepted).
- 7 B. K. Panigrahi, Ajith Abraham, and **Swagatam Das** (Eds.), "*Computational Intelligence in Power Systems*", Springer Verlag, Germany, (to appear in early 2010).

**Peer Reviewed/ Book Chapters:**

- 1 **Prof. Salil Kumar Sanyal** Contributed a Chapter on "Architecture of Embedded Tunable Circular Microstrip Antenna" jointly with Dr. T.Chakravarty & Prof. A.De in the book entitled " Large Scale Computations, Embedded Systems and Computer Security " edited by F.Komarov & M. Bestuzhev and published by Nova Publishers, USA under editorial production in 4<sup>th</sup> Quarter 2009.
- 2 **Swagatam Das**, Ajith Abraham, and B. K. Panigrahi, contributed a Chapter on "An Introduction to Computational Intelligence", in U. Maulik, S. Bandyopadhyay and J. T. L. Wang (Eds.) *Computational Intelligence and Pattern Analysis in Biological Informatics*, John Wiley, 2009.
- 3 B. K. Panigrahi, V. Ravikumar Pandi, **Swagatam Das**, and Ajith Abraham, contributed a Chapter on "A Bandwidth-Adaptive Harmony Search Algorithm to Solve Optimal power Flow Problems with Non-smooth Cost Functions", in Z. W. Geem (Ed.), *Recent Advances in Harmony Search Algorithm*, Studies in Computational Intelligence, Springer.
- 4 **Prof. Subir Kumar Sarkar** contributed a book chapter entitled "Analysis of Overhead Control Mechanisms in Mobile Ad-hoc Networks" in the book "Lecturer Notes in Electrical Engineering. Advances in Electrical Engineering and Computational Science", , published by Springer Publications.
- 5 **Prof. Subir Kumar Sarkar** contributed a book chapter entitled, "Biomedical Watermarking" in the book, *Intelligent Medical Technologies and Biomedical Engineering: Tools and Applications* published by IGI Global, USA.

**Articles Published in Journal in the Year 2009:****Publication List of Prof. A K Bandyopadhyay**

- 1 Malay Bhattacharyya and **Anup Kumar Bandyopadhyay**, Comparative Study of Some Solution Methods for Traveling Salesman Problem using Genetic Algorithms, *Cybernetics and Systems*, Volume 40, Issue 1, pp 1 - 24, January 2009.
- 2 **Anup Kumar Bandyopadhyay**, Fairness and Conspiracy Concepts in Concurrent Systems, *ACM SIGSOFT Software Engineering Notes*, Volume 34 Number 2, March 2009.

**Publication List of Prof. A K Bandyopadhyay and Prof. Bhaskar Gupta**

- 1 Indrajit Bhattacharyya, **Anup Kumar Bandyopadhyay**, **Bhaskar Gupta**, Aloknath Chattopadhyay, Rajeswari Chattopadhyay and Kiyotoshi Yasumoto "Vector GA - A novel enhancement of genetic algorithms for efficient multi-variable or multi-dimensional search" to be published in *ACM Software Engineering Notes*, November 2009.

**Publication List of Prof. Amit Konar**

- 1 Samal, N. R., **Konar, A.**, and Nagar, A., "A Decision Theoretic Approach to Parameter Selection of a Particle Swarm Optimization Algorithm in a Dynamic Environment," *Special Issue on Non-convex Optimization, Int. J. of Optimization*, 2009.
- 2 Chakraborty, S., **Konar, A.** and Jain, L. C., "An Efficient Algorithm for Computing Max-in Inverse Fuzzy Relation for Approximate Reasoning," *IEEE Trans. on Systems, Man and Cybernetics, Part -A*, Dec. 2009 (to appear).
- 3 Chakraborty, **A.**, **Konar, A.**, Chakraborty, U. K., and Chatterjee, A., "Emotion Recognition from facial Expression and Its Control Using Fuzzy Logic," *IEEE Trans. on Systems, Man and Cybernetics, Part -A*, pp. 726-743, 2009.
- 4 Chakraborty, J., Konar, A., Jain, L. C., and Chakraborty, U. K., "Cooperative Multi-Robot Path Planning Using Differential Evolution," *J. of Intelligent and Fuzzy Systems: Application in Engineering and Technology*, vol. 20, no. 1 & 2, pp. 13-28, 2009.
- 5 Ghosh, M., **Konar, A.**, Jain, L. C., and Chakraborty, U. K., "Behavioral Analysis of Cooperative/Competitive Antibody Dynamics," *J. of Intelligent and Fuzzy Systems: Application in Engineering and Technology*, vol. 20, no. 1 & 2, pp. 45-60, 2009.
- 6 Datta, A., Talukdar, V., **Konar, A.** and Jain, L. C., "A neural network based approach for protein structural class prediction," *J. of Intelligent and Fuzzy Systems: Application in Engineering and Technology*, vol. 20, no. 1 & 2, pp. 61-72, 2009.
- 7 Acharya, A., Banerjee, A., **Konar, A.**, and Lakhmi, C. Jain, "Extension of Ant System algorithms with exponential pheromone deposition rule for improved performance," *Int. J. of Intelligent Defence Support Systems*, vol. 1, no. 4, May 2009, pp. 319-354.
- 8 Acharya, A., Chattopadhyay, K., Banerjee, **A.**, **Konar, A.**, "Novel and improved

- methods of regular geometric shape recognition from digital image using artificial ants," *Int. J. of Intelligent Defence Support Systems*, vol. 1, no. 4, May 2009.
- 9 Maiti, D., Chakraborty, M., Acharya, A., **Konar, A.**, "A partly deterministic and partly stochastic scheme for the identification of fractional processes," *Int. J. of Advanced Intelligence Paradigms*, vol. 1, no.3, pp. 332-357, 2009.
  10. Bhattacharya, K., Chatterjee, S., and **Konar, A.**, "An improved clustering of Gene Microarray data using Genetic Algorithm," *Int. J. of Soft Computing and Bioinformatics*, vol. 1, no. 1, pp.1-7, 2009.
  11. Bhattacharya, K., Chatterjee, S., and **Konar, A.**, "A novel approach to A Simple and Robust Algorithm for Microarray Data Clustering Based on Gene Population-Variance Ratio Metric," *Int. J. of Biotechnology*, Wiley, 2009.
  12. Chakraborty, J., **Konar, A.**, Chakraborty, A., Multi-robot Cooperation by Swarm and Evolutionary Algorithms, In *Computational Intelligence, Control and Computer Vision in Robotics and Automation*, Ed. B. Subudhi, Narosa, New Delhi, 2009.
  13. Ghosh, M. Chakraborty, **A., Konar, A.** and Nagar, A.K., Detection of Chaos and Limit Cycles in Emotional Dynamics from the Facial Expressions of the Stimulated Subjects, In *Computational Intelligence, Control and Computer Vision in Robotics and Automation*, Ed. B. Subudhi, Narosa, New Delhi, 2009.
  14. Dutta, D., and **Konar, A.**, *Knowledge Extraction from Gene Regulatory Network Using Particle Swarm Optimization Algorithm*, In *Swarm Intelligence*, Eds. Shy, J. and Panigrahi, B. K., Springer, 2009.
  15. Acharya, A., and **Konar, A.**, Stability Analysis for Extended Ant Dynamics to Improve Speed and Accuracy, In *Swarm Intelligence*, Eds. Shy, J. and Panigrahi, B. K., Springer, 2009.
  16. **Konar, A.**, and Chakraborty, A., Stability, Chaos and Limit Cycles in Recurrent Cognitive Reasoning Systems, In *Handbook of Reasoning Based Intelligent Systems*, World Scientific, 2009.
  17. Talukdar, V., **Konar, A.**, Datta, A., and Roy Chowdhury, A., "Changing from computing grid to knowledge grid in life-science grid," *Biotechnology Journal*, vol. 4, no. 9, pp. 1229-1364, Willey-Blackwell, Sept. 2009.

#### Publication List of Prof. Amit Konar and Dr. Swagatam Das

- 1 **Das, S.**, Abraham, A., Chakraborty, U. K., and **Konar, A.**, "Differential Evolution with a Neighborhood based Mutation Operator," *IEEE Transactions on Evolutionary Computing*, vol. 13, no. 3, pp. 526-553, June 2009.
- 2 **Das, S.**, Dasgupta, S., Biswas, A., Abraham, A. and **Konar, A.**, "On Stability of Chemotactic Dynamics in Bacterial Foraging Optimization Algorithm," *IEEE Transactions on Systems, man and Cybernetics, Part A: Systems and Humans*, vol. 39, no. 3, pp. 670-679, May 2009.
- 3 **Das, S.**, **Konar, A.**, "Automatic Image Pixel Clustering with an Improved Differential Evolution," *Applied Soft Computing*, vol. 9, no. 1, pp. 226-236, 2009.

**Publication List of Dr. A. S. Chowdhury**

- 1 **A.S. Chowdhury**, S.M. Bhandarkar, R.W. Robinson and J.C. Yu: Virtual Craniofacial Reconstruction using Computer Vision, Graph Theory and Geometric Constraints, *Pattern Recognition Letters*, Elsevier Science, 30(10) (2009), 931-938.
- 2 **A.S. Chowdhury**, S.M. Bhandarkar, R.W. Robinson and J.C. Yu: Virtual Multi-fracture Craniofacial Reconstruction using Computer Vision and Graph Matching, *Computerized Medical Imaging and Graphics*, Elsevier Science, 33(5) (2009), 333-342.
- 3 **A.S. Chowdhury**, S. Tan, J. Yao and R.M. Summers: Colonic Fold Detection from Computed Tomographic Colonography Images using Diffusion-FCM and Level Sets, *Pattern Recognition Letters*, Elsevier Science (submitted)
- 4 **A.S. Chowdhury**, S.M. Bhandarkar, G. S. Datta and J.C. Yu: Stable Mandibular Fracture Point Detection in Computed Tomography Image Sequences using Bayesian Inference, *Pattern Analysis and Applications*, Springer (submitted)

**Publication List of Prof. Bhaskar Gupta**

- 1 S. Sankaralingam and Bhaskar Gupta "A novel technique for determination of dielectric constant of fabric materials suitable for wearable antennas" accepted (subject to revisions) *IEEE Transactions on Instrumentation and Measurements*.
- 2 Samik Chakraborty, Ayona Sarkar and Bhaskar Gupta "Novel dual polarized high gain planar antenna for GSM base station applications" *Asian Journal of Physics*, Vol 18, No 2, 2009.
- 3 L. Lolit Kumar Singh, Bhaskar Gupta, K. Yoshitomi and K. Yasumoto "New single layer wideband rectangular patch antenna" *Asian Journal of Physics*, Vol 18, No 2, 2009.
- 4 P.Mukherjee and B.Gupta "Radio frequency properties of carbon nanotubes and antenna behaviour-a brief overview" *International Review of Aerospace Engineering*, April 2009.
- 5 M.G.Tiary, A.K.Aditya and **Bhaskar Gupta** "Impedance and loss analysis of Cu interconnections on non conventional dielectrics for VLSI application" *Asian Journal of Physics*, Vol 18, No 2, 2009.
- 6 M.G.Tiary, A.K.Aditya and **Bhaskar Gupta** "Dispersion characteristics of Cu interconnections on non conventional dielectric for VLSI application" *International Journal on Microwave and Optical Technology*, Vol. 4, No. 5, pp. 293-301, September 2009.
- 7 S. Sankaralingam, **Bhaskar Gupta** and S.Raghavan, "Dielectric constant and loss tangent measurement of fabric materials suitable for wearable antennas" *The ICFAI University Journal of Electrical & Electronics Engineering*, Vol. II, No.3, pp.25-35, July 2009.
- 8 Vakhtang Jandieri, Kiyotoshi Yasumoto and **Bhaskar Gupta**, "Directivity of radiation from a localized source coupled to electromagnetic crystals" *International Journal of Infrared, Terahertz and Millimeter Waves*, pp. 1102-1112, (2009):

**Publication List of Dr. (Mrs.) Chayanika Bose**

- 1 A. Chandra and **C. Bose**, "Error probability for coherent modulations in Rician fading channel", *International Journal of Interdisciplinary Telecommunications and Networking (IGI Global)*, vol. 1, no. 2, pp. 16-27, Jan.-Mar. 2009.
- 2 A. Chandra and **C. Bose**, "Performance of single and multichannel coherent reception under Rician fading", *International Journal of Wireless Information Networks (Springer)*, vol. 16, no. 1-2, pp. 81-90., Jun. 2009,
- 3 A. Chandra, **C. Bose**, and M. K. Bose, "Wireless relays for next generation broadband networks", *IEEE Potentials*, Accepted for Publication.
- 4 A. Chandra, **C. Bose**, and M. K. Bose, "Unified BER and optimum threshold analysis of switched combining in Rayleigh channels", *International Journal of Communication Systems (Wiley)*, Under Revision.
- 5 A. Chandra, S. R. Poram, and **C. Bose**, "SEP calculations for coherent *M*-ary FSK in different fading channels with MRC diversity", *International Journal of Communication Systems (Wiley)*, Under Revision.

**Publication List of Prof. D R Poddar**

- 1 Rowdra Ghatak, **Dipak R. Poddar** and Rabindra K Mishra, "A Moment-Method Characterization of V-Koch Fractal Dipole Antenna," *Elsevier International Journal of Electronics and Communication*, vol.63 pp.279-286, 2009.
- 2 R Ghatak, **D R Poddar**, R K Mishra, "Design of Sierpinski Gasket Fractal Microstrip Antenna Using Real Coded Genetic Algorithm," *IET Microwaves, Antennas and Propagation*, vol.3, no.7, pp. 1133-1140, October 2009.

**Publication List of Prof. H. Saha**

- 1 J. Kanungo, C. Pramanik, S. Bandopadhyay, U. Gangopadhyay, L. Das, **H. Saha** and Robert T.T. Gettens., "Improve contacts on a porous Silicon layer by electroless nickel plating and copper thickening", *Semiconductor Science Technology* 21(2006) , 964 - 970.
- 2 J.Kanungo, S.Maji, **H.Saha** and S.Basu, "Stable Aluminium Ohmic Contact to Surface Modified Porous Silicon", *Solid-State Electronics* 53 (2009) 663-668.
- 3 J.Kanungo, **H.Saha** and S.Basu, "Room temperature Metal-Insulator - Semiconductor (MIS) Hydrogen Sensors Based On Chemically Surface Modified Porous Silicon", *Sensors and Actuators B* 140 (2009) 65-72.
- 4 J.Kanungo, **H.Saha** and S.Basu, "Porous Silicon Hydrogen Sensor at Room Temperature: The Effect of Surface Modification and Noble Metal Contacts", *Sensors & Transducers Journal*, 103 (2009) 102-108.
- 5 J.Kanungo, **H.Saha** and S.Basu, "Effect of non-catalytic and catalytic electrode contacts on Pd modified porous silicon for hydrogen sensing", *Sensors Letters*, 7 (2009) 185-190.
- 6 J Kanungo, L Selegård, C Vahlberg, K Uvdal, **H Saha** and S Basu, "XPS study of palladium sensitized nano porous silicon thin film", Accepted in *Bulletin of Materials Science*.

- 7 S. Roy Chowdhury, D. Chakrabarti, **H. Saha**, "Development of an FPGA based smart diagnostic system for spirometric data processing applications", *International Journal of Smart Sensing and Intelligent Systems*, Vol. 1, No. 4, 985-1018, 2008.
- 8 R. Dev Das, C. RoyChaudhuri, S. Maji, S. Das, **H. Saha**, "Macroporous silicon based simple and efficient trapping platform for electrical detection of *Salmonella typhimurium* pathogens", *Biosensors and Bioelectronics*, Volume 24, Issue 11, 3215-3222, 15 July 2009.
- 9 C.Roy Chaudhuri, S.K.Datta and **H.Saha**, "Thermal Effects in Design of Integrated CMOS MEMS High Resolution Pressure Sensor", *International Journal of Smart Sensing and Intelligent Systems*, Vol. 2, No. 3, 432-447, 2009
10. S. Roy Chowdhury, A. Roy, **H. Saha**, "ASIC Design of a Digital Fuzzy System on Chip for Medical Diagnostic Applications", *Journal of Medical Systems*, Accepted for publication, 2009.
11. N.P. Futane, S. Roy Chowdhury, C. Roychoudhuri, **H. Saha**, "ANN based CMOS ASIC design for improved temperature drift compensation of piezoresistive micro-machined high resolution pressure sensor", *Microelectronics Reliability*, Accepted for publication. 2009.

#### **Publication List of Prof. Iti Saha Misra**

- 1 Tanumay Datta, **Iti Saha Misra** , "Comparative Study of Optimization Techniques in Adaptive Antenna Array Processing: Bacteria Foraging Algorithm and Particle Swarm Optimization", *IEEE Antenna and Propagation Magazine*, to be published in Dec 2009.
- 2 Sibaram Khara, **Iti Saha Misra** and Debashis Saha, "Global Gateway based UMIS/WLAN Integration for Improved Delay Performance," *International Journal of Parallel, Emergent and Distributed Systems (IJPEDS)*, to be published in Nov-Dec issue 2009.
- 3 Sibaram Khara, **Iti Saha Misra** and Debashis Saha, "Analyzing Performance of a UMIS Cell with Embedded Tunnel WLANs," Under review - *Journal of High Speed Network*.
- 4 Kalpana Saha (Roy), **Iti Saha Misra**, "An Adaptive Call Admission Control Protocol for Cellular Networks", *Advances in Wireless and Mobile Communications*, Vol 2, 2009, 21-28.
- 5 Kalpana Saha (Roy), **Iti Saha Misra**, " A Brief Review of Call Admission Control Protocols in Mobile Cellular Networks", *International Journal of Emerging Technologies and Applications in Engineering Technology and Sciences*, Vol 2, 2009, 540-545.

#### **Publication List of Prof. R. Nandi and Mr. P.Venkateswaran**

- 1 **P. Venkateswaran**, P. Som, R. Ghosh, A. Das, S. Hansda and **R. Nandi**, "Smart Gate : A MAC Protocol for Gateway Discovery in Clustered Ad-Hoc Networks", *Journal of Networks*, Academy Publisher, Finland, Vol.4, No.3, pp. 208-215, May 2009.
- 2 P. Venkateswaran, A. Kumar, P. Mondal, S. Dhabal and R. Nandi, "A Novel



Opto-isolation Technique for the I2C Bus for Glitch Elimination in an Industrial Environment", International Joint Journal Conferences in Computer, Electronics and Electrical 2009 – CEE 2009, Proc. International Journal of Recent Trends in Engineering [ISSN:1797-9617], Academy Publisher, Finland, Nov. 2009.

**Publication List of Prof. Salil Kumar Sanyal,**

- 1 Q. Md. Alfred, N. Chopra, T. Chakravarty, G. Singh and **S.K.Sanyal** "Programmable Phased Array using Time-Delay units and its applications" International Journal of Wireless Information Networks ( Springer ) , Vol.16, Nos. 1-2, pp. 59-67, June 2009.
- 2 B.K.Upadhyay and **S.K.Sanyal** "VHDL Modeling of Convolutional Interleaver -Deinterleaver for Efficient FPGA Implementation" International Journal of Recent Trends in Engineering, Academy Publishers, Finland (Accepted).

**Publication List of Prof. Salil Kumar Sanyal and Prof. R. Nandi**

- 1 **R. Nandi**, T.K.Bandyopadhyay, **S.K.Sanyal** & S. Das, " Selective Filters and Sinusoidal Oscillators using CFA Transimpedance Pole " -Circuits Syst Signal Process, Vol. 28, pp. 349-359, 2009.
- 2 **R. Nandi**, **S.K.Sanyal** and T.K.Bandyopadhyay "Single CFA-Based Integrator, Differentiator, Filter and Sinusoid Oscillator", IEEE Transactions on Instrumentation and Measurement, Vol. 58, No. 8, pp. 2557-2564, August 2009.

**Publication List of Prof. Salil Kumar Sanyal, Prof. R. Nandi and Mr. P. Venkateswaran**

- 1 **P. Venkateswaran**, A. Sanyal, S. Das, **R. Nandi** and **S. K. Sanyal**, "An Efficient Time Domain Speech Compression Algorithm Based on LPC and Sub-band Coding Techniques", Journal of Communications, Academy Publisher, Finland, Vol. 4, No.6, 423-428, July 2009.

**Publication List of Prof. Salil Kumar Sanyal and Mrs. Sudipta Chattopadhyay**

- 1 **S. Chattopadhyay** and **S.K.Sanyal**, " The Effect of Gaussian Pulse-Shaping Filter Roll-off Factor on the Performance of QPSK Modulated System" -IEEE International Symposium on Signals,Circuits & Systems (ISSCS 2009 ) , Romania, July 2009.

**Publication List of Prof. Samir Kumar Sarkar**

- 1 Ankush Ghosh, Souvik Sarkar, C. J. Clement Singh, Biplab Roy, Susanta Palit and **Samir Kumar Sarkar**, "Single Spin Logic Circuits for Traffic Control System: Design and Implementation", International Journal of Nano Electronics, Circuits and Systems, vol 1, no. 1, 29-37, 2009.

**Publication List of Prof. Subir Kumar Sarkar**

- 1 Sudip Dogra, Ritwik Ray, Saustav Ghosh, Debharshi Bhattacharya, **Subir Kr. Sarkar**, "A Cost Effective RFID Based Customized DVD-ROM to Thwart Software Piracy" International Journal of Computer Science and Information Security, (Vol. 6 No.1), 2009.



- 2 **S. K. Sarkar** and G C Manna, "Performance Evaluation of IEEE 802.16d based system in sub-urban area", *Telecommunications Journal* Vol 59 Issue 2, March-April 2009.
- 3 **Subir Kumar Sarkar**, T G Basavaraju, Puttamadappa C, Adhoc mobile wireless network, (Review), *IEEE Communication Magazine*, May 2009, pp. 12-14.
- 4 N Basanta Singh, Sanjoy Deb, **Subir Kumar Sarkar**, "Effects of Electronics State modulation on the high frequency response characteristics of GaAs quantum wells" *Physica B*, Elsevier, 404 (2009) 3727-3731.
- 5 N. Basanta Singh, Sanjoy Deb, G. P Mishra and **Subir Kumar Sarkar**, "Microwave and Millimetre Wave Response Characteristics of Two-Dimensional hot Electrons in PbTe Quantum Wells", *International Journal of Electronics, Circuits and Systems* 3:1 2009, pp.32-39.
- 6 G. P. S Mishra, S. S Mahato and **S. K Sarkar**, " Performance improvement for Silicon Solar Cells using better Antireflection coating materials", *International Journal of Photonic material* (Accepted).
- 7 Ankush Ghosh, A. Basu, T. S. Das, V. H. Mankar, D. Samanta, **S. K. Sarkar**, "Single Spin Logic Realization of a Robust Spatial Domain Image Watermarking", *Advance Science Letters*, Vol. 2, 1-11, 2009.
- 8 Kaushik Majumder, **Subir Kumar Sarkar**, "Circular Quadrant Routing Protocol (CQRP) For Mobile Ad Hoc Network", *Journal of Advanced Research in Computer Engineering*, Vol. 3, No. I, January-June 2009, pp. 69-78.
- 9 Souvik Sarkar, Anup Kumar Biswas, Ankush Ghosh and **Subir Kumar Sarkar**, "Single electron based binary multipliers and overflow detection", *International Journal of Engineering, Science and Technology*, Vol. 1, No. 1, 2009, pp. 61-73.
10. Ankush Ghosh, Souvik Sarkar, Susanta Palit, Goutham MA and **Subir Kumar Sarkar** "Spintronics Device based Low Power RFID System: Design and Implementation", *International Journal of Nanoscience and NanoTechnology* (Accepted).
11. Sanjoy Deb N. Basanta Singh, Rajanna K.M, G.P.S. Mishra, Ankush Ghosh and **Subir Kumar Sarkar**; "Genetic approach towards the size-effects optimization in CdS/ZnSe polar semiconductor quantum wells under hot-electron condition", *International Journal of Nano Electronics, Circuits and Systems*, 1(1), 2009, pp.19-24.
12. Ankush Ghosh, Souvik Sarkar, D. Ray Chaudhuri, and **Subir Kumar Sarkar**. "A Power Efficient Binary Multiplier Circuit with overflow Detection Using single Spin Logic Circuit: Design and Implementation", *Advanced Science Letter*, Vol. 2, 86-96, 2009.

**Publication List of Prof. Samir Kumar Sarkar and Prof. Subir Kumar Sarkar**

- 1 S. Basu, J. Gope, A Karmakar, K.S.Kumar, **Samir Kumar Sarkar**, **Subir Kumar Sarkar**. "Influence of Mixed oxide Interfacial Layer on the response Characteristics

of Submicron AlGaAs Practical MESFET" International Journal of Engineering Research and Industrial Application, vol. 2, no. IV, 2009, pp.173-184.

- 2 **Subir Kumar Sarkar**, G.C.Manna, S.S.Sing, T.Dutta, **Samir Kumar Sarkar** and P. K. Naskar, "CDMA Technology Based Wireless Mobile Communication System on a single VLSI chip", Journal of Engineering, computing & Architecture, vol.2 issue-1, 2008.

#### Publication List of Dr. Swagatam Das

- 1 **Swagatam Das** and Sudeshna Sil, "Kernel-induced Fuzzy Clustering of Image Pixels with an Improved Differential Evolution Algorithm", to appear in *Information Sciences*, Elsevier.
- 2 Arijit Biswas, Sambarta Dasgupta, B K Panigrahi, V R Pandi, and **Swagatam Das**, "A Hybrid Bacterial Foraging and Differential Evolution Algorithm for Economic Load Dispatch", *International Journal of Innovative Computing, Information and Control*.
- 3 Abhishek Sinha, **Swagatam Das**, and B. K. Panigrahi, "On some properties of the island biogeography system", to appear in *IEEE Transactions on Systems, Man, and Cybernetics, Part - A*.
- 4 Kaushik Suresh, Debarati Kundu, Sayan Ghosh, **Swagatam Das**, and Youakim Badr, An Improved Invasive Weed Algorithm for Global Optimization in Noisy Environments, to appear in *Fundamenta Informaticae*, IOS Press, 2009.
- 5 Prithwish Chakraborty, Gourab Ghosh Roy, **Swagatam Das**, and B. K. Panigrahi, Analysis of the explorative power of invasive weed optimization algorithm, to appear in *Journal of Algorithms in Cognition, Informatics and Logic*(ISSN: 0196-6774), Elsevier Science.
- 6 **Swagatam Das**, Arpan Mukhopadhyay, Ajith Abraham, and B. K. Panigrahi, A bandwidth adaptive harmony search algorithm for improved global optimization, to appear in *ACM Transactions on Adaptive and Autonomous Systems*, 2009.
- 7 Arijit Biswas, Sambarta Dasgupta, **Swagatam Das**, and Ajith Abraham, "Dynamics of reproduction in artificial bacterial foraging system: modeling and stability analysis", *Theoretical Computer Science*, Elsevier Science (Accepted, 2009).
- 8 Prithwish Chakraborty, Gourab Ghosh Roy, **Swagatam Das**, Dhaval Jain, and Ajith Abraham, An improved harmony search algorithm with differential mutation operator, *Fundamenta Informaticae*, IOS Press (Accepted, 2009).
- 9 Arijit Biswas, Sambarta Dasgupta, **Swagatam Das**, and Ajith Abraham, Analysis of the Reproduction Operator in an Artificial Bacterial Foraging System, *Applied Mathematics and Computation*, Elsevier Science (Accepted, 2009).
10. Kaushik Suresh, Debarati Kundu, Sayan Ghosh, **Swagatam Das**, Ajith Abraham, and Sang Yong Han, Multi-Objective Differential Evolution for Automatic Clustering with Application to Micro-Array Data Analysis, *Sensors*, 9(5), 3981 - 4004, 2009, doi:10.3390/s90503981.
11. B. K. Panigrahi, V. Ravikumar Pandi, **Swagatam Das**, and Zhihua Cui, "Dynamic

economic load dispatch with wind energy using modified harmony search", *International Journal of Bio-Inspired Computing*, Inderscience Publications (Accepted, 2009).

12. Sambarta Dasgupta, Arijit Biswas, **Swagatam Das** and Ajith Abraham, "Modeling and analysis of the population dynamics of differential evolution algorithm", *AI Communications - The European Journal on Artificial Intelligence*, IOS Press, Netherlands, Vol. 22(1), pp. 1 - 20, 2009.
13. Sambarta Dasgupta, **Swagatam Das**, Ajith Abraham, and Arijit Biswas, "Adaptive computational chemotaxis in bacterial foraging optimization: an analysis", *IEEE Transactions on Evolutionary Computing*, Vol. 13, Issue 4, Page(s): 919 - 941, 2009.

#### Articles Published in Conferences in the Year 2009:

##### Publication List of Prof. Amit Konar

- 1 M. Ghosh, A. Chakraborty, A. Acharya, **A. Konar** and A. K. Nagar, "A Recurrent Neural Model for Parameter Estimation of Mixed Emotions from Facial Expressions of the Subjects," *Int. Joint Conf. on Neural Networks (IJCNN)*, Atlanta, 2009.
- 2 A. Chakraborty, **A. Konar**, P. Bhowmik and A. K. Nagar, "A Machine Learning Approach to the Stabilization of Emotional Dynamics in Emotion-Logic Encounter," *IEEE Sponsored Int. Conf. on Developments in systems Engineering (DeSE'09)*, Abu Dhabi, UAE, 14-16 December, 2009.
- 3 Datta, D., **Konar, A.**, Janarthanan, R., "Extraction of Interaction Information from among Genes from Gene Expression time series data," *IEEE NABIC 2009 international Conference*, Coimbatore. India. Dec. 2009.
- 4 **S. Das**, A. Halder, P. Bhowmik, A. Chakraborty, **A. Konar**, R. Janarthanan, "A Support Vector Machine Classifier of Emotion from Voice and Facial Expression Data," *CISIM 2009*.
- 5 **S. Das**, A. Halder, P. Bhowmik, A. Chakraborty, **A. Konar**, A. K. Nagar, "Voice and Facial Expression Based Classification of Emotion Using Linear Support Vector Machine," *IEEE Sponsored Int. Conf. on Developments in systems Engineering (DeSE'09)*, Abu Dhabi, UAE, 14-16 December 2009.
- 6 P. Bhowmik, **S. Das**, A. Halder, A. Chakraborty, **A. Konar**, R. Janarthanan, "Emotion Classifier from Stimulated EEG Signals by Support Vector Machine," *NCIICT 2009*.
- 7 A. Chakraborty, P. Bhowmik, **S. Das**, A. Halder, **A. Konar** and A. K. Nagar, "Correlation between Stimulated Emotion Extracted from EEG and its Manifestation on Facial Expression," *IEEE Systems, Man and Cybernetics Conf.*, USA, 2009.
- 8 Datta, D., **Konar, A.**, Bisoyi, A., Jana, R. K., "Gene Regulatory Network Prediction Using Recurrent Neural Net with Improved Differential Evolution Algorithm and Local search", *2<sup>nd</sup> International Conference on Recent Advances in Mathematics and Management* Santiniketan, Dist- Birbhum, 2009.

**Publication List of Prof. Amit Konar and Dr. Swagatam Das**

- 1 D. Datta, **A. Konar**, A.S. Chowdhury, **S. Das** and A. K. Nagar, "Abductive Reasoning with Type 2 Fuzzy Sets," *Fuzz-IEEE Int. Conf.*, Korea, 2009.
- 2 Chakraborty, J., Konar, **A.**, Nagar, A., and **Das, S.**, "Rotation and Translation Selective Pareto Optimal Solution to the Box-Pushing Problem by Mobile Robots Using NSGAI, *Congress in Evolutionary Computation (CEC '09)*, Norway, 2009.
- 3 Jayasree Chakraborty, **Amit Konar**, Atulya Nagar, and **Swagatam Das**, "Rotation and Translation Selective Pareto Optimal Solution to the Box-Pushing Problem by Mobile Robots Using NSGA-II", *IEEE Congress on Evolutionary Computation (CEC 2009)*, Trondheim, Norway, IEEE Press, 2009.

**Publication List of Prof. Amit Konar and Dr. S. Sinha Choudhuri**

- 1 Datta, D., **Sinha Choudhuri, S.**, **Konar, A.** and Nagar, A. K. and **Das, S.**, "A Recurrent Fuzzy Neural Model of a Gene Regulatory Network for Knowledge Extraction Using Differential Evolution," *Congress in Evolutionary Computation (CEC '09)*, Norway, 2009.
- 2 M. Sen, **S. Sinha Choudhuri, A. Konar**, R. Janarthanan, "An Evolutionary Gene Expression Microarray Clustering Algorithm based on Optimized Experimental Conditions," *IEEE NABIC 2009 international Conference*, Coimbatore, India, Dec. 2009.
- 3 Datta, D., **Choudhuri, S. S.**, **Konar, A.**, Bisoyi, A., Mishra, B. P., "Gene regulatory network detection using recurrent neural network with improved differential evolution algorithm". *National Conference on Current Trends in Advanced Computing and E-learning (MAMI CTACE - 2009)*, February, 2009, Pune.

**Publication List of Prof. Amit Konar, Dr. S. Sinha Choudhuri and Dr. Swagatam Das**

- 1 Debasish Datta, **Sheli Sinha Choudhuri, Amit konar**, Atulya Nagar, and **Swagatam Das**, "A Recurrent Fuzzy Neural Model of a Gene Regulatory Network for Knowledge Extraction Using Differential Evolution", *IEEE Congress on Evolutionary Computation (CEC 2009)*, Trondheim, Norway, IEEE Press, 2009.

**Publication List of Dr. A.S. Chowdhury**

- 1 **A.S. Chowdhury**, S. Tan, J. Yao, M.G. Linguraru and R.M. Summers: Two Methods of Haustal Fold Detection from Computed Tomographic Virtual Colonoscopy Images, In *Medical Imaging 2009: Computer-Aided Diagnosis*, N. Karssmeijer and M.L. Giger (Ed.), *Proc. SPIE* Volume 7260, Orlando, FL, USA (2009), 72602U-1 - 72602U-8.
- 2 D. Datta, A. Konar, **A.S. Chowdhury**, S. Das and A. Nagar: Abductive Reasoning with Type II Fuzzy Sets, *Proc. Eighteenth IEEE Int. Conf. on Fuzzy Systems (FUZZ-IEEE)*, ICC Jeju, Jeju Island, Korea (2009), 2148 - 2153.
- 3 J. Yao, **A.S. Chowdhury** and R.M. Summers: Realistic Colon Simulation in CT Colonography Using Mesh Skinning, *SPIE Medical Imaging*, San Diego, CA, USA (2010). (submitted)

- 4 **A.S. Chowdhury**, A.K. Rudra, M. Sen, A. Elnakib and A. El-Baz: Fibrous Brain Tissue Segmentation With Probabilistic Graph Cuts and Geometric Constraints, *Seventh IEEE Int. Symp. on Biomedical Imaging (ISBI)*; Rotterdam, The Netherlands (2010). (submitted)
- 5 M.G. Linguraru, **A.S. Chowdhury**, J.A. Pura and R.M. Summers: 4D Graph Cuts For Automated Multi-Organ Segmentation From Contrast-Enhanced CT, *Seventh IEEE Int. Symp. on Biomedical Imaging (ISBI)*; Rotterdam, The Netherlands (2010). (submitted)

**Publication List of Prof. Bhaskar Gupta and Prof. A K Bandyopadhyay**

- 1 I. Bhattacharyya, **B. Gupta**, **A.K. Bandyopadhyay**, R. Chattopadhyay and A. Chattopadhyay "Vector genetic algorithms - a novel approach to a multivariate or multidimensional search", *Proc. International Conference on Computer, Communication, Control and Information Technology [C<sup>3</sup> IT - 2009]*, Academy of Technology, West Bengal, 35-41 (Invited Talk).

**Publication List of Prof. Bhaskar Gupta**

- 1 **Rajendra Prosad Ghosh and Bhaskar Gupta**, "Broadband and dual frequency printed dipole antennas with shaped ground plane" *Proc. 4<sup>th</sup> International Conference on Electromagnetic Near Field Characterization and Imaging*, Taipei, 2009, pp. 173-176 (NOMINATED FOR COMPETITION TO BEST PAPER AWARD) .
- 2 **S. Sankaralingam and Bhaskar Gupta**, "A novel technique for determination of dielectric constant of fabric materials suitable for wearable antennas" *Proc. 4<sup>th</sup> International Conference on Electromagnetic Near Field Characterization and Imaging*, Taipei, 2009, pp.247-250 (NOMINATED FOR COMPETITION TO BEST PAPER AWARD) .
- 3 **S.Sankaralingam and Bhaskar Gupta**, "Use of fabric materials as substrates for antennas for ISM applications" *Proc. Silver Jubilee Conference on Communication Technologies and VLSI Design, VIT University, Tamilnadu, India*, pp.108-109.
- 4 **B. Nagavel and Bhaskar Gupta**, "Compact Broadband Microstrip Patch Antenna with Probe Feeding", *Proc. Silver Jubilee Conference on Communication Technologies and VLSI Design, VIT University, Tamilnadu, India*, 73-76.
- 5 Samik Chakraborty, **Bhaskar Gupta**, Ayona Sarkar and Uttam Kumar Dey, "Dual frequency broadband microstrip antenna for wireless communication systems" *Proc. 2009 Symposium and Summer School on Wireless Communications*, Virginia Tech. University, Blacksburg, USA (CD-ROM) .
- 6 L. Lolit Kumar Singh and **Bhaskar Gupta**, "Multifrequency cross slot patch antennas" *Proc. International Conference on Computer, Communication, Control and Information Technology [C<sup>3</sup> IT - 2009]*, Academy of Technology, West Bengal, pp.385-391.
- 7 S. Sankaralingam, **Bhaskar Gupta**, "Determination of dielectric properties of fabric materials suitable for smart antennas for wearable systems" *Proc. International Conference on Computer, Communication, Control and Information Technology [C<sup>3</sup> IT - 2009]*, Academy of Technology, West Bengal, pp.380-384.

- 8 L. Lolit Kumar Singh, Bhaskar Gupta, Partha P Sarkar, Kuniaki Yoshitomi, Kiyotoshi Yasumoto "Slotted single layer broadband rectangular patch antennas" to be published in *Proc. IEEE Applied Electro Magnetics Conference 2009*, Kolkata.
- 9 S.Sankaralingam, Bhaskar Gupta, Samik Chakraborty, Sayantan Dhar and Ayona Sarkar "Preliminary investigations on hyperlan antenna for wearable applications" to be published in *Proc. IEEE Applied Electro Magnetics Conference 2009*, Kolkata.
10. Malay Gangopadhyaya, Pinaki Mukherjee and Bhaskar Gupta "The resonant frequency optimization of aperture-coupled microstrip antenna" to be published in *Proc. IEEE Applied Electro Magnetics Conference 2009*, Kolkata.
11. Manidipa Nath and Bhaskar Gupta "Neural network model for determination of S parameters of rectangular waveguides with multiple dielectric posts" to be published in *Proc. IEEE Applied Electro Magnetics Conference 2009*, Kolkata.
12. Malay Gangopadhyaya, Pinaki Mukherjee and Bhaskar Gupta "Resonant frequency optimization of probe fed rectangular microstrip antenna using particle swarm optimization" to be published in *Proc. ICMARS 2009, Jodhpur, India*.
13. S. Sankaralingam and B. Gupta "Performance study of a Bluetooth antenna for wearable applications" *Proc. International Symposium on Antennas and Propagation (ISAP 2009)*, Bangkok, Thailand.
14. Ayona Sarkar Chakraborty Samik Chakraborty and Bhaskar Gupta "UWB shorting pin loaded linearly polarized microstrip square patch antenna for satellite and wireless applications" to be published in *Proc. ISMOT 2009, Delhi*.
15. Kiyotoshi Yasumoto, Vakhtang Jandieri and Bhaskar Gupta "Guidance and Scattering of Electromagnetic Waves by Layered Cylindrical Arrays of Circular Rods" to be published in *Proc. IEEE Applied Electro Magnetics Conference 2009*, Kolkata (Invited paper).
16. L. Lolit Kumar Singh, Bhaskar Gupta, Kiyotoshi Yasumoto and Kuniaki Yoshitomi "New single layer wideband rectangular patch antennas" to be published in *Proc. ISMOT 2009, Delhi*.
17. L. Lolit Kumar Singh, Bhaskar Gupta, Kiyotoshi Yasumoto and Kuniaki Yoshitomi "L-shaped slot broadband single layer rectangular patch antennas" to be published in *Proc. ISMOT 2009, Delhi*.
18. Kiyotoshi Yasumoto, Vakhtang Jandieri and Bhaskar Gupta "Electromagnetic scattering by cylindrical arrays of circular rods" *Proc. ICMICE 2009, Beijing, China*.
19. Rajeev Wakodkar, Bhaskar Gupta and Samik Chakraborty "Analysis of Square Patch Antennas for Resonant Frequency, Return Loss, Gain and Bandwidth Using ANN" to be published in *Proc. ELECCRO 2009, Varanasi*.
20. S. Sankaralingam & Bhaskar Gupta "Triangular microstrip patch radiators for wearable application" to be published in *Proc. International Conference on Microwaves, Antenna, Propagation & Remote Sensing ICMARS-2009*.



21. S. Sankaralingam and Bhaskar Gupta "A circular disk microstrip WLAN antenna for wearable applications" to be published in Proc. IEEE Indicon 2009, Ahmedabad.
22. S. Sankaralingam and Bhaskar Gupta "A textile antenna for WLAN applications" to be published in ELECCRO 2009, Varanasi.

**Publication List of Prof. Bhaskar Gupta and Prof. H. Saha**

- 1 "A. Kundu, S. Sethi, N.C. Mondal, **B. Gupta**, S.K. Lahiri and **H. Saha**, Performance improvement of RF MEMS switch with two movable plates" *Proc. ICMEMS 2009*, IIT Madras (ISBN 978-81908468-0-6: 2009) [OBTAINED THE BEST PAPER AWARD IN ORAL SECTION].

**Publication List of Dr. (Mrs.) Chayanika Bose**

- 1 S. Dasgupta and **C. Bose**, Dielectric material based band gap tailoring for 1D photonic crystal, Proc. ICTOPON 2009, University of Allahabad, India, Jan. 2009. *Published in Conference Proceedings of AIP.*
- 2 A. Chandra, **C. Bose**, and M. K. Bose, Unified BER and optimum threshold analysis of switched combining in Rayleigh channels, Proc. IEEE INDICON 2009, Ahmadabad, Dec. 2009, Accepted for Publication.
- 3 S. Dasgupta and **C. Bose**, 2-channel MUX-DEMUX for CWDM systems using phase shifted photonic crystals, *Proc. CODEC 2009*, IRPE, Kolkata, Dec. 2009, Accepted for Publication.
- 4 S. Dasgupta and **C. Bose**, Phase shifted photonic crystal based filter with flat-top response, Proc. ELECTRO-2009, BHU, Varanasi, Dec. 2009, Accepted for Publication. *This paper will be available in IEEE Xplore.*
- 5 A. Chandra, D. Biswas, and **C. Bose**, BER performance of coherent PSK in Rayleigh fading channel with imperfect phase estimation, Proc. IEEE ITC 2010, Kochi, Mar. 2010, Accepted for Publication.

**Publication List of Prof. D.R.Poddar**

- 1 Dipali Soren, Rowdra Ghatak, R K Mishra and **D R Poddar**, "Sierpinski Carpet Fractal Pattern Embedded Multisegment Rectangular Dielectric Resonator Antenna for Wi-Max and WLAN Application," International Symposium on Microwaves and Millimeterwaves: Basics and Technology, IScMM 09, January 14-16, 2009, Bose Institute, Kolkata, India.
- 2 Dipali Soren, Rowdra Ghatak, **D R Poddar** and R K Mishra, "An X-band Sierpinski Carpet Patterned Fractal Dielectric Resonator Antenna," Published in the Proceedings of COMMV-09, Vellore Institute of Technology, Tamil Nadu, INDIA, October 2009.
- 3 Rowdra Ghatak, R Debnath, **D R Poddar**, R K Mishra and S R Bhadra Chaudhuri, "A CPW Fed Planar Monopole Band Notched UWB Antenna with Embedded Split Ring Resonators," *Accepted in LAPC 09*, England, United Kingdom, November 2009.
- 4 D P Karmakar, Dipali Soren, Rowdra Ghatak, Rabindra K. Mishra and **Dipak R. Poddar**, "A Wideband Sierpinski Carpet Fractal Cylindrical Dielectric



Resonator Antenna for X-Band Application," Accepted in *IEEE Applied Electromagnetics Conference*, December 14-16, 2009, Kolkata, India.

- 5 Anirban Kamakar, Rowdra Ghatak, R K Mishra and **D R Poddar**, "A Sierpinski Carpet Fractal Based Design of Thinned Rectangular Microstrip Antenna Array," Accepted in *IEEE Applied Electromagnetics Conference*, December 14-16, 2009, Kolkata, India.

**Publication List of Prof. H. Saha**

- 1 J.Kanungo, A.K.Mandal, S.Sen, **H.Saha** and S.Basu., "Stabilization of Nanoporous Silicon Surface by Noble Metals", Accepted for poster presentation in First International Conference on Multifunctional, Hybrid and Nanomaterials Hybrid material 2009, 15-19 March 2009, Tours, France.
- 2 J.Kanungo, **H. Saha**, S.Basu, "Porous silicon hydrogen sensors at room temperature -effect of surface modification", International Workshop on Tailor-Made Nanomaterials and Applications for Chemical and Biosensors, 2-3 March 2009, India.
- 3 J.Kanungo, K.Uvdal, **H. Saha** and S.Basu, "High performance MIS hydrogen sensor at room temperature based on surface treated nano porous silicon", Accepted for oral presentation in 8<sup>th</sup> Asian Conference on Chemical Sensor; November 11-14 2009; EXCO, Daegu, Korea.
- 4 S. Roy Chowdhury, **H. Saha**, "FPGA based Fuzzy Processing System for advance detection of Obstructive and Restrictive Pulmonary Disorders", *IEEE VLSI Design and Test Symposium*, Bangalore, July 8-10, 2009.
- 5 N.P. Futane, S. Roy Chowdhury, C. Roychoudhuri, **H. Saha**, "CMOS Analog ASIC Design of Inverse Delayed function model of a neuron for ANN", *IEEE VLSI Design and Test Symposium*, Bangalore, July 8-10, 2009.
- 6 S. Roy Chowdhury, **H. Saha**, "Maximum Powerpoint Tracking of Solar Photovoltaic Arrays using Adaptive Perceptive Particle Swarm Optimization Technique", 18<sup>th</sup> Photovoltaic Science Exhibition and Conference, PVSEC 18, Kolkata, January 19-23, 2009.
- 7 N.P. Futane, S. Roy Chowdhury, P. Bhattacharyya, S. Pahari, **H. Saha**, "CMOS linearized ASIC for nanocrystalline ZnO based MEMS gas sensors", International Workshop on Tailor-Made Nanomaterials and Applications for Chemical and Biosensors, 2-3 March 2009, India.
- 8 P.K. Basu, **H. Saha**, S. Basu, "Nanocrystalline ZnO Schottky devices for low temperature methane sensors", International Workshop on Tailor-Made Nanomaterials and Applications for Chemical and Biosensors, 2-3 March 2009, India.
- 9 **P. Bhattacharyya**, V. Sreeramamurthy and **H.Saha**, "Electrothermal and Structural Design of a Microheater using Nickel and Dilver P1 for MEMS Gas Sensor Platform: a Comparative Analysis", International Workshop on Tailor-Made Nanomaterials and Applications for Chemical and Biosensors, 2-3 March 2009, India.

**Publication List of Prof. Iti Saha Misra**

- 1 Sibaram Khara, **Iti Saha Misra** and Debashis Saha, "Improving Delay Performance in UMTS/WLAN Integrated Networks with Global Gateway Router", Proc. In IEEE Advanced Computing and Communication (ADCOM' 2008), Jan 2009, pp 374-381. (Obtained the Best Paper and Best Presentation Award).
- 2 Sibaram Khara, **Iti Saha Misra** and Debashis Saha, "An Improved WLAN-First Access Scheme for UMTS/WLAN Inter-working," Accepted ACM-SAC-2010, Switzerland.
- 3 Sibaram Khara, **Iti Saha Misra** and Debashis Saha, "Data Traffic Analysis in a UMTS Cell with Underlying Tunnel-WLANs," Proc. of ICDCN 2009, Springer-Verlag, Vol. LNCS 5408, pp 389-394, 2009.
- 4 Chandi Pani and **Iti Saha Misra**, "Handoff mechanism in MPLS Enabled Wireless Networks", IEEE Proc. COMSNET -2009, Bangalore, Jan 5-10, 2009.
- 5 Prasun Chowdhury, **Iti Saha Misra** "Throughput and Delay Guaranteed Quality of Service Scheduling for 802.16 Broadband Wireless Access Systems", IEEE IAMCOM workshop in Bangalore, January 2009.
- 6 Kalpana Saha (Roy) and **Iti Saha Misra**, " A comparative study between LFGC and GC Schemes with QoS guarantees in different models using Call Admission Control protocol in cellular networks", Proc. Int. Conf. On Communication and Mobile Computing, CMC-2009, IEEE Computer Society Press, IEEE Xplore, Kuming, China, Jan 6-8, 2009.
- 7 Chandi Pani and **Iti Saha Misra**, "Evaluation of QoS in Layered MPLS based Wireless Access Network", 2009 Symposium and Summer School on Wireless Communication, June 3-5, 2009, Virginia Tech, USA.
- 8 Kalpana Saha (Roy) and **Iti Saha Misra**, "An Adaptive Call Admission Protocol for cellular networks", Proc Int conf. C<sup>3</sup>IT-2009, 685-692.
- 9 Nitul Dutta, **Iti Saha Misra**, "Handoff latency and packet dropping probability in layered MIPv6: a mathematical analysis", International Conference on Computer and Network Technology (ICCNT 2009), Chennai, July 2009.
10. Prasun Chowdhury, **Iti Saha Misra**, "A Comparative Study of Different Packet Scheduling Algorithms with Varied Network Service Load In IEEE 802.16 Broadband Wireless Access System", Accepted in ADCOM 2009, Bangalore.

**Publication List of Prof. Salil Kumar Sanyal and Mrs. Sudipta Chattopadhyay**

- 1 **S. Chattopadhyay, S. K.Sanyal**, "The Effect of Gaussian Pulse-Shaping Filter Roll-off Factor on the Performance of QPSK Modulated System," in Proceeding of *IEEE International Symposium on Signals, Circuits & Systems (ISSCS 2009)*, Iasi, Romania, July 9-10, 2009.
- 2 **S. Chattopadhyay, S. K.Sanyal**, "Evaluation of Performance Metrics for QPSK Modulated Mobile Communication System Using Root Raised Cosine & Raised Cosine Pulse-shaping Filters," *IEEE INDICCN-2009*, Ahmedabad, India, December 18-20, 2009. (Communicated)

**Publication List of Mrs. Sudipta Chattopadhyay**

- 1 A.Chandra, **S. Chattopadhyay**," Small Set Orthogonal Kasami Codes for CDMA System," in Proceeding of *International Conference on Computers & Devices for Communication (CODEC-2009)*, Kolkata, India, December 14-16, 2009. (Accepted)
- 2 **S. Chattopadhyay**, S.K. Sanyal, "The Effect of Gaussian Pulse-Shaping Filter Roll-off Factor on the Performance of QPSK Modulated System," in Proceeding of *IEEE International Symposium on Signals, Circuits & Systems (ISSCS 2009)*, Iasi, Romania, July 9-10, 2009
- 3 **Sudipta Chattopadhyay**, Salil Kumar Sanyal, "Comparison of Performance Metrics for QPSK and OQPSK Transmission Using Root Raised Cosine & Raised Cosine Pulse-shaping Filters for Applications in Mobile Communication," *International Journal of Computer Science and Information Security*, Vol.6, No.2, November 2009, pp.106-112.

Publication List of Prof. Samir Kumar Sarkar

- 1 Ankush Ghosh, **Samir Kumar Sarkar**, Souvik Sarkar, Puttamadappa C and D. Nayak, "Single Spin Logic Based ASIC Design: An Alluring Pattern Generation", 2<sup>nd</sup> National Conference on Recent Trends in Electronics and Communication (NCRTEC-2008) held on 2008 at SJB Institute of Technology, Bangalore.
- 2 Anup Kumar Biswas, Nurul Islam, Souvik Sarkar, Sandip Gharami and **Samir Kumar Sarkar**, "Power efficient integer multiplication overflow detection circuit using single electron device based threshold logic gates" 2<sup>nd</sup> National Conference on Recent Trends in Information Systems (ReTIS-08) held at Jadavpur University, Kolkata, during, 2008.

**Publication List of Prof. Subir Kumar Sarkar**

- 1 T. S. Das, and **S. K. Sarkar**, An Angle QIM Watermarking in STDM Framework Robust Against Amplitude Scaling Distortions, International Conf. on Contemporary Computing, organized jointly by Jaypee Institute of Information Technology University & University of Florida, IC3 2009.
- 2 Rabindranath Bera, Sanjib Sil, Dipak Mondal, Debdutta Kandar, Samarendra Sur, Sourav Dhar and **Subir K. Sarkar**, Vehicular Communication and Safety in Realization of Intelligent Transport System" "CODEC-09", to be held in December 2009 at Hyaat Regency, Kolkata.
- 3 Rabindranath Bera, Sanjib Sil, Sourav Dhar and **Subir K. Sarkar**, "Wireless Embedded System for ITS application with SDR based Central Processing and Co-ordination" "SDR'09 Technical Conference and Product Exposition", to be held on 1-4 December 2009 at Washington ,DC.
- 4 Sudip Dogra , Samrat Manna, Aritra Banik, Somnath Maiti and **Subir Kumar Sarkar**, A novel approach for RFID based fire protection, International Conference ELECTRO-2009, during December 22-24, 2009, BHU, Varanasi, India.
- 5 Swanirbhar Majumder, Tirtha Shankar Das, Vijay H. Mankar, **Subir K. Sarkar**, "SVD and Neural Network based Watermarking Scheme", LNCS (Springer) for IEEE IHCI 2010.

- 6 S. Majumder, T. S. Das, and **S. K. Sarkar**, "SVD and Error Control Coding based Digital Image Watermarking" International Conference on Advances in Computing, Control, and Telecommunication Technologies, ACT 2009
- 7 S. Basu, G.P.S. Mishra, **S.K. Sarkar**, Nurul Islam and M.A. Gautam, Influence of High K insulating Layer on the Response Characteristics of Submicron Double Gate MOSFET Silver Jubilee Conference on Communication Technologies & VLSI Design (CommV'09), VIT University, Vellore, India. Oct. 8-10, 2009. pp. 145-148.
- 8 Gowrishankar .S, Basavaraju T.G., **Subir Kumar Sarkar**, An Effort to Understand the Traffic Effect on the Performance of Wireless Sensor Networks, accepted for SENNET-09
- 9 S. R. Biradar, Hiran K D Sarma, Kalpana Sarma, Puttamadappa C., **Subir Kumar Sarkar**, "Analysis QoS Parameters for MANETs Reactive Routing Protocols: Under Group Mobility Model", Fourth Innovative Conference on Embedded Systems, Mobile Communication and Computing, (ICEMC2 2009) July 27-29, 2009, PESSE, Hosur Road, Bangalore
10. S. R. Biradar, Hiren H D Sarma, Kalpana Sharma, **Subir Kumar Sarkar**, Puttamadappa C, "Performance Comparison of Reactive Routing Protocols of MANETs using Group Mobility Model", International Conference on Signal Processing Systems (ICSPS 2009), 15-17 May 2009, Singapore.
11. S. R. Biradar, Hiren H D Sarma, Kalpana Sharma, Puttamadappa C, **Subir Kumar Sarkar**, "Analysis QoS Parameters for Mobile Ad-Hoc Network Routing Protocols: Under Group Mobility Model", ISBN 978-1-84626-xxx-x Proceedings of 2009 International Conference on Computer Engineering and Applications Manila, Philippine, 6-8 June, 2009,
12. N. Basanta Singh, Sanjoy Deb, G. P Mishra and **Subir Kumar Sarkar** , "Influence of Double  $\delta$ -doping on High Frequency Response of Two-Dimensional Hot Electrons in PbTe Quantum Well "2<sup>nd</sup> Int. workshop on Electron Devices & Semiconductor Technology (IEDST 2009), IITB.
13. N. Basanta Singh, Sanjoy Deb, G.P. Mishra, Samir Kumar Sarkar and **Subir Kumar Sarkar**, "Application of Particle Swarm Optimization Algorithm for better Nano-devices" 2<sup>nd</sup> Int. Conf. on Contemporary Computing (IC3), Noida .
14. Susanta Palit , Somnath Pal , **Subir Kumar Sarkar**, "Design of A RFID Network Processor To Be Used To Set Up Fully Automated Home/Office Network", International Conference on Arts, Science, Management and Engineering 23-25 April, 2009.
15. Gowrishankar .S, Basavaraju T.G., **Subir Kumar Sarkar**, "Effect of IEEE 802.15.4/ Zigbee on the Performance of Wireless Sensor Networks", IEEE International Conference on future Networks (ICFN 2009), Bangkok, Thailand, March 7-9, 2009.
16. Gowrishankar .S, T.G. Basavaraju , **Subir Kumar Sarkar**: "Scenario Based Simulation study of adhoc Routing Protocols Behavior in wireless Sensor Networks " . Proc. of 3<sup>rd</sup> International conference on Intelligent System and

- Networks, Institute of Science and Technology Klawad, India 2009(accepted)
17. Gowrishankar.S, **Subir Kumar Sarkar** and T.G. Basavaraju, "Performance Analysis of AODV, AODVUU, AOMDV and RAODV over IEEE 802.15.4 in Wireless Sensor Networks". Education, Information Technology Applications, 8-11, August 2009, Beijing, China.
  18. Rabindranath Bera, Sanjib Sil, Sourav Dhar and **Subir K. Sarkar**, "Wi-Fi, WiMax and WCDMA-A comparative study based on Channel Impairments and Equalization method used", "IEEE-International Symposium on Microwaves - 2008 (ISM- 08)", held on 3-6 December '08 in NIMHANS Convention Centre, Bangalore.
  19. D. Samanta, A. Basu, T. S. Das, V. H. Mankar, Ankush Ghosh, Manish Das and **Subir K Sarkar**, "SET Based Logic Realization of a Robust Spatial Domain Image Watermarking", ICECE 2008, Department of EEE, BUET, Dhaka-1000, BANGLADESH, ) held on Dec 20-22, 2008.
  20. A. Ghosh, A. Basu, T. S. Das, V. H. Mankar, D. Samanta, **S. K. Sarkar**, "Single Spin Logic Realization of Robust Image Watermarking in Spatial Domain" 2008 IEEE Region 10 Colloquium and the Third ICIIS, IIT Kharagpur, INDIA December 8-10.
  21. N. Basanta Singh, Sanjoy Deb, Susanta Palit, S. Maity and **Subir Kumar Sarkar**, "Application of Single Electron Device based Threshold Logic - A case study", 2<sup>nd</sup> National Conf. on LSI, Embedded System, Signal processing & Commn. Technology (NCVESCO 09), AVIT, Chennai
  22. N. Basanta Singh, Sanjoy Deb, G. P. Mishra and **Subir Kumar Sarkar**, "Application of Single Electron Device based Threshold Logic - A case study", National Conf. on Micro/Nano Devices, structures & systems (MiNDSS-2009), Rasipuram, Tamil Nadu.
  23. Sayanendra Narayan Bardhan, Ali Rawshan Shaikh, .Ankush Ghosh, Suman Basu and **Subir Kumar Sarkar**, "CMOS Circuit Based Integration of MEMS Sensor and Its Application in Ethanol Detection", National Conf. on Micro/Nano Devices, structures & systems (MiNDSS-2009), Rasipuram, Tamil Nadu.
  24. Souvik Sarkar, S Chatterjee, N Basanta Singh and **Subir Kumar Sarkar**, "Single electron threshold logic based signature identification system", 2<sup>nd</sup> National conference on computing, comm., electronica & management (NCCCEM-09), Jalgaon, Maharashtra.
  25. Sudip Dogra, Ritwik Ray, Saustav Ghosh, Debharshi Bhattacharya, **Subir Kr. Sarkar**, "A Smart Algorithm for Collision free Robot Navigation using RFID" 3<sup>rd</sup> National Conference on Recent Trends in Electronics & Communication, 2009.
  26. Atanu Kundu, S. Chattopadhyay, S. Palit, V.H. Mankar and **Subir Kumar Sarkar**, "Cellular Automata based secured and authenticated data communication architecture towards the VLSI realization." 3<sup>rd</sup> National Conference on Recent Trends in Electronics & Communication, 2009.

27. Pranay Mandal, Abhishek Das, Somnath Maiti and **Subir Kumar Sarkar**, "Estimation of Number Of Animals in an Forest Eco-System Using Kalman Filter" 3rd National Conference on Recent Trends in Electronics & Communication, 2009.
28. Sanjoy Deb, N. Basanta Sing, Souvik Sarkar and **Subir Kumar Sarkar**, "Particle Swarm Approach for Better Modeling of Quantum well Nano-structure" 3rd National Conference on Recent Trends in Electronics & Communication, 2009.
29. G. P. S Mishra, K. M Rajana, S. Maity, Puttammadappa. C and **Subir Kumar Sarkar**, "Spintronic Devices for Real Life Applications: A Case Study" 3rd National Conference on Recent Trends in Electronics & Communication, 2009.
30. S. DAS, V. H. MANKAR, T. S. DAS and **S. K. SARKAR**, "Robust Image Watermarking Adaptive to Host Image in SVD Framework" 3rd National Conference on Recent Trends in Electronics & Communication, 2009.

**Publication List of Prof. Subir Kumar Sarkar and Prof. Samir Kumar Sarkar**

- 1 Debasis Samanta, **Samir Kumar Sarkar**, Sova Rani A, J. C. Singh, Goutham MA and **Subir Kumar Sarkar**, "Single Electron Logic Based ASIC Design: An Alluring Pattern Generation" National Conference On Device, Intelligent Systems and Communication & Networking (AEC - DISC 2008) at Asansol Engineering College, Asansol, W.B. on 1ST & 2ND 2008.
- 2 N. Basanta Singh, Sanjoy Deb, G.P. Mishra, **Samir Kumar Sarkar** and **Subir Kumar Sarkar**, "Application of Particle Swarm Optimization Algorithm for better Nano-devices" 2<sup>nd</sup> Int. Conf. on Contemporary Computing (IC3), Noida , 2009.
- 3 Debasis Samanta, **Samir Kumar Sarkar**, Sova Rani A, J. C. Singh, Suman Basu, P.C. Pradhan and **Subir Kumar Sarkar**, "Single Electron Logic Based ASIC Design: An Alluring Pattern Generation", National Conference on Device, Intelligent System and Communication & Networking (AEC-DISC 2008) pp. 266-268 (held in Asansol Engineering College).

**Publication List of Dr. Sheli Sinha Chaudhuri**

- 1 **Sheli Sinha Chaudhuri**, "A recurrent fuzzy neural model of a gene regulatory network for knowledge extraction using differential evolution" communicated to CEC, 2009.

**Publication List of Dr. Swagatam Das**

- 1 Siddharth Pal, Anniruddha Basak, **Swagatam Das**, and Ajith Abraham, "Linear antenna array synthesis with invasive weed optimization algorithm", International Conference on Soft Computing and Pattern Recognition (SoCPaR 2009), Dec. 4<sup>th</sup> - 7<sup>th</sup>, Malacca, Malaysia.
- 2 Sayan Ghosh, Debarati Kundu, Kaushik Suresh, **Swagatam Das**, and Ajith Abraham, "Design of optimal digital IIR filters by using a bandwidth adaptive harmony search algorithm", accepted in Proc. of World Congress on Nature and Biologically Inspired Computing (NaBIC 2009), Coimbatore, India, Dec. 9 - 11, 2009.



- 3 Kaushik Suresh, Debarati Kundu, Sayan Ghosh, **Swagatam Das**, and Ajith Abraham, "IWO with Increased Deviation and Stochastic Selection (IWO-ID-SS) for global optimization of noisy fitness functions", accepted in Proc. of World Congress on Nature and Biologically Inspired Computing (NaBIC 2009), Coimbatore, India, Dec. 9 - 11, 2009.
- 4 Prithwish Chakraborty, Gourab Ghosh Roy, **Swagatam Das**, and B. K. Panigrahi, "On population variance and explorative power of the invasive weed optimization algorithm", accepted in Proc. of World Congress on Nature and Biologically Inspired Computing (NaBIC 2009), Coimbatore, India, Dec. 9 - 11, 2009.
- 5 Debasish Datta, Amit Konar, Ananda Sankar Chowdhury, **Swagatam Das** and Atulya Nagar, "Abductive Reasoning with Type II Fuzzy Sets", 2009 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE), IEEE Press (Accepted, 2009).
- 6 Joydeb Roy choudhury, Tribeni Prasad Banerjee, **Swagatam Das**, Ajith Abraham and Vaclav Snasel, "Fuzzy Rule based Intelligent Security and Fire Detector System", 2nd International Workshop on Computational Intelligence in Security for Information Systems (CISIS'09), Burgos, Spain, Springer Verlag, Germany, ISBN 978-3-642-04090-0, pp. 45-51, 2009.
- 7 Sayan Ghosh, Debarati Kundu, Kaushik Suresh, **Swagatam Das**, Ajith Abraham and B. K. Panigrahi, "An Analysis of the Agent Communication in *Ibest* Particle Swarm Optimizers", in 9th International Conference on Hybrid Intelligent Systems (HIS 2009), IEEE Computer Society Press, Shenyang Liaoning, China, August 12-14th, 2009.
- 8 Arijit Biswas, Sambarta Dasgupta, Bijaya K Panigrahi, V. Ravikumar Pandi, **Swagatam Das**, Ajith Abraham and Youakim Badr, "Economic Load Dispatch Using a Chemotactic Differential Evolution Algorithm", 4th International Conference on Hybrid Artificial Intelligent Systems, Salamanca, Spain, Lecture Notes in Artificial Intelligence, Springer Verlag Germany, 2009.
- 9 Debarati Kundu, Kaushik Suresh, Sayan Ghosh, **Swagatam Das**, Ajith Abraham and Youakim Badr, "Automatic Clustering Using a Synergy of Genetic Algorithm and Multi-objective Differential Evolution", 4th International Conference on Hybrid Artificial Intelligent Systems, Salamanca, Spain, Lecture Notes in Artificial Intelligence, Springer Verlag Germany, 2009.
10. Kaushik Suresh, Debarati Kundu, Sayan Ghosh, **Swagatam Das** and Ajith Abraham, "Automatic Clustering with Multi-objective Differential Evolution Algorithms", IEEE Congress on Evolutionary Computation (CEC 2009), Trondheim, Norway, IEEE Press, 2009.
11. Sambarta Dasgupta, Arijit Biswas, **Swagatam Das**, Bijaya Ketan Panigrahi and Ajith Abraham, "A Micro-Bacterial Foraging Algorithm for High-Dimensional Optimization", IEEE Congress on Evolutionary Computation (CEC 2009), Trondheim, Norway, IEEE Press, 2009.
12. **Swagatam Das**, Archana Chowdhury and Ajith Abraham, "A Bacterial Evolutionary Algorithm for Automatic Data Clustering", IEEE Congress on Evolutionary Computation (CEC 2009), Trondheim, Norway, IEEE Press, 2009.



13. Prithwish Chakraborty, Gourab Ghosh Roy, Spandan Sinha, Soumya Bose , Ankur Mondal, and **Swagatam Das**, Automatic Shape Independent Clustering Inspired by Ant Dynamics, International Workshop on Machine Intelligence Research, MIR Day 2009, G. H. Rasoni College of Engineering, Nagpur, India, 24 - 26 January, 2009.
14. Tribeni Prasad Banerjee, Joydeb Roychoudhury, and **Swagatam Das**, Real Time State of Charge Prediction Using Kalman Filter, Accepted in IEEE sponsored International Symposium on Bio-inspired Computing and Applications 2009 (BiCA-2009), Bhubaneswar, India, Dec. 20 - 22, 2009.
15. Siddharth Pal, Amirudha Basak, and **Swagatam Das**, Constrained Real Parameter Optimization with an Ecologically Inspired Algorithm, Accepted in IEEE sponsored International Symposium on Bio-inspired Computing and Applications 2009 (BiCA-2009), Bhubaneswar, India, Dec. 20 - 22, 2009.
16. Sanjoy Das, B. K. Panigrahi, and **Swagatam Das**, Multi-objective Optimization with Uncertainty: Probabilistic and Fuzzy Approaches, Accepted in IEEE sponsored International Symposium on Bio-inspired Computing and Applications 2009 (BiCA-2009), Bhubaneswar, India, Dec. 20 - 22, 2009.
17. Debarati Kundu, Kaushik Suresh, and **Swagatam Das**, Designing Fractional-order  $PI^{\alpha}D^{\beta}$  Controller Using a modified Invasive Weed Optimization Algorithm, Accepted in IEEE sponsored International Symposium on Bio-inspired Computing and Applications 2009 (BiCA-2009), Bhubaneswar, India, Dec. 20 - 22, 2009

#### **Major Achievements in the Year 2009:**

##### **Ph.D Awarded or Submitted:**

**Name of the Research Scholar** : Samik Chakraborty

**Name of the Guide** : Prof. Bhaskar Gupta & Prof. D.R. Poddar

**Title of the Ph.D Thesis** : Investigation on Dielectric Antennas

**Present Status** : Awarded

**Name of the Research Scholar** : Sunandan Bhunia

**Name of the Guide** : Prof. Bhaskar Gupta & Dr. P.P. Sarkar

**Title of the Ph.D Thesis** : Some Studies on Compact Microstrip Patch Antennas

**Present Status** : Awarded

**Name of the Research Scholar** : Indrajit Bhattacharyya

**Name of the Guide** : Prof. Bhaskar Gupta & Prof. A.K. Bandyopadhyay

**Title of the Ph.D Thesis** : Use of Genetic algorithm to Find Irregularities on the Surface of a Parabolic Reflector from Its Radiation Patterns

**Present Status** : Submitted

**Name of the Research Scholar** : Madan Gopal Tiary

**Name of the Guide** : Prof. Bhaskar Gupta & Prof. A.K. Aditya

**Title of the Ph.D Thesis** : Some Investigations on Interconnects in VLSI

**Present Status** : Submitted

- Name of the Research Scholar** : Shubhajit Roy Chowdhury  
**Name of the Guide** : Prof. H. Saha  
**Title of the Ph.D Thesis** : A high performance FPGA based Medical Diagnostic decision making Embedded System  
**Present Status** : Submitted
- Name of the Research Scholar** : Palash Kumar Basu  
**Name of the Guide** : Prof. H. Saha  
**Title of the Ph.D Thesis** : Anodically grown nanocrystalline nanoporous Zinc Oxide Thin Films and Devices for Gas Sensors  
**Present Status** : Submitted
- Name of the Research Scholar** : Niteen P. Futane  
**Name of the Guide** : Prof. H. Saha  
**Title of the Ph.D Thesis** : CMOS Analog Signal Processing for MEMS based pressure and gas sensors  
**Present Status** : Submitted
- Name of the Research Scholar** : Jayita Kanungo  
**Name of the Guide** : Prof. H. Saha  
**Title of the Ph.D Thesis** : Studies on Stability and Electrical Contacts on Porous Silicon for Sensor devices  
**Present Status** : Submitted
- Name of the Research Scholar** : Sibaram Khara  
**Name of the Guide** : Prof. Iti Saha Misra  
**Title of the Ph.D Thesis** : Some Studies on 3G/WLAN Integration Architecture for Next Generation Wireless Networks  
**Present Status** : Awarded in Dec 2009
- Name of the Research Scholar** : Surendra Kumar Shri Krishna Rao Dalu  
**Name of the Guide** : Prof. C. K. Sarkar and Dr. M. K. Naskar  
**Title of the Ph.D Thesis** : Design and Implementation of Topology Management Algorithms for Mobile Ad-Hoc Network  
**Present Status** : Submitted
- Name of the Research Scholar** : Gopal Chandra Manna  
**Name of the Guide** : Prof. Samir Kumar Sarkar  
**Title of the Ph.D Thesis** : Propagation Studies for GSM and CDMA Technology Based Wireless Communication.  
**Present Status** : To be submitted in December 2009
- Name of the Research Scholar** : Satya Sopan Mahato  
**Name of the Guide** : Prof. Subir Kumar Sarkar  
**Title of the Ph.D Thesis** : Modeling of Silicon heterostructure Field-Effect Transistors for RF Applications  
**Present Status** : Awarded April 2009

**Name of the Research Scholar** : Tirtha Sankar Das

**Name of the Guide** : Prof. Subir Kumar Sarkar

**Title of the Ph.D Thesis** : Study on Data Hiding & Data Communication including Multimedia Communication

**Present Status** : Awarded July 2009

**Foreign Assignment(s)**

- 1 **Prof. Bhaskar Gupta** Visited Kyushu University, Fukuoka, Japan for collaborative research and antenna measurements.

**Achievement of the Faculty**

- 1 **Prof. Amit Konar** has been appointed as the **Editor-in-Chief of IJAISC, 2009**.
- 2 **Prof. Amit Konar** has been appointed as an Editor of Neurocomputing, Elsevier, Journal of Intelligent Decision Technologies, IOS Press, The Netherlands.
- 3 **Prof. Bhaskar Gupta's** name has been Included in Marquis 2009 Edition of **Who's Who in the World**.
- 4 **Prof. Bhaskar Gupta** organized IEEE *Applied Electro Magnetics Conference 2009*, Kolkata in the capacity of Chair, IEEE AP-MIT Calcutta Chapter
- 5 **Prof. Bhaskar Gupta** obtained the **Best Paper** award in oral section for the paper "Performance improvement of RF MEMS switch with two movable plates" at *International Conference ICMEMS 2009* at IIT Madras, Chennai which was received by co-author Sri A. Kundu.
- 6 **Prof. Bhaskar Gupta** acted as **Judge** for the Best Paper award in 4<sup>th</sup> *International Conference on Electromagnetic Near Field Characterization and Imaging* at Taipei.
- 7 S. Roy Chowdhury, S. Pahari and **Prof. H. Saha** sent three project proposals on Maximum powerpoint tracking of solar photovoltaic arrays, Foetal ECG extraction using Independent Component Analysis, Signal Conditioning of MEMS based low pressure sensors to M/S Texas Instruments and Jadavpur University was selected amongst the top ten institutions in India based on the proposals.
- 8 **Prof. Iti Saha Misra** obtained IEEE ADCOM 2008 best paper award.
- 9 **Prof. Iti Saha Misra** has been elected as a **TPC Member:** AICT -2009, Greece
- 10 **Prof. Iti Saha Misra** has been elected as a Reviewer of Journal paper: COMNET - Elsevier, WINNET - Springer, International conf. IEEE ICC 2009.
- 11 **Prof. Iti Saha Misra** Implemented VoIP Laboratory over wireless LAN, Developed OPNET and Qualnet Laboratory for DST project at the Dept. of EITCE, JU.
- 12 **Prof. Salil Kumar Sanyal** has been elected as Co-ordinator, Central Selection Committee ( Engineering & Technology )
- 13 **Prof. Salil Kumar Sanyal** has been elected as Member of the Technical Committee for the installation of DSA System at Bangur Institute of Neurosciences, Govt. of West Bengal.

14. **Prof. Salil Kumar Sanyal** has been elected as Member of the International Program Committee of 12<sup>th</sup> International Conference on Computer and Information Technology ( ICCIT 2009 ) organized by Independent University, Bangladesh and Military Institute of Science & Technology, Bangladesh , December, 2009.
15. **Prof. Subir Kumar Sarkar** has been nominated as **Editor-In-Chief** of the Journal International Journal of Nano Electronics, Circuits and Systems
16. **Prof. Subir Kumar Sarkar** has been nominated as **Editorial Board Member** of the Journal of Engineering, computing & Architecture
17. **Dr. Swagatam Das** has been selected as the Guest Editor, Special Issue of IEEE Transactions on Evolutionary Computation on Differential Evolution, 2009.
18. **Dr. Swagatam Das** has been selected as the Guest Editor, Special Issue of ACM Transactions on Autonomous and Adaptive Systems (TAAS) on Foraging Theory based Optimization Techniques, 2009.
19. **Dr. Swagatam Das** has been selected as the Guest Editor, Special Issue of International Journal of Swarm Intelligence Research (IJSIR), IGI Global on Application of Foraging Theory Based Optimization Algorithms to Power Systems Engineering, 2009.
20. **Dr. Swagatam Das** has been selected as the Technical Committee Member for Task Force on Memetic Computing, IEEE Computational Intelligence Society.
21. **Dr. Swagatam Das** has been selected as the International Program Committee member of IEEE Congress on Evolutionary Computation (CEC), Trondheim, Norway during May 18-21 (Monday - Thursday), 2009.
22. **Dr. Swagatam Das** has been selected as the International Program Committee member of 2009 IEEE/WIC/ACM International Joint Conference on Web Intelligence and Intelligent Agent Technology, Milano, Italy, September 15-18, 2009.
23. **Dr. Swagatam Das** has been selected as the International Program Committee member of 8th International Conference on Computer Information Systems and Industrial Management Applications (CISIM 2009) during December 09-11, 2009 in Coimbatore, India.
24. **Dr. Swagatam Das** has been selected as the International Program Committee member of International Conference on Soft Computing and Pattern Recognition (SoCPaR 2009) during December 04-07, 2009 in Malacca, Malaysia.
25. **Dr. Swagatam Das** has been selected as the International Program Committee member of IEEE World Congress on Nature & Biologically Inspired Computing (NaBIC 2009), December 9-11, 2009, Coimbatore, INDIA.
26. **Dr. Swagatam Das** has been selected as the International Program Committee member of International Workshop on Advances in Peer to Peer Technology (IWAP2PT'09), December 9-11, 2009, Bangalore, India.
27. **Dr. Swagatam Das** has been selected as the International Program Committee member of ANIS 2010, Seventh International Conference on Swarm Intelligence, Brussels, Belgium, 2010.

### Products Developed

- 1 **Prof. H. Saha** completed schematic and layout of Chopper Stabilized low noise instrumentation amplifier, 7:3 Compressor using 8T full adder and schematic of Analog ASIC design of inverse delayed function model of neuron. The INA is designed in collaboration with IIT Kharagpur and the Compressor and neuron circuits are designed in collaboration with IISc Bangalore. The layout of the IC chips will be shortly sent to Europractice, Belgium for subsequent tapeout.

### Collaborative Programmes

- 1 **Prof. Amit Konar** started a Research Collaboration with Prof. Lakhmi Jain of Univ. of South Australia, Adelaide for Joint research on Type 2 Fuzzy Sets.
- 2 **Prof. Amit Konar** started a Research Collaboration with Prof. Atulya K. Nagra of Hope University, Liverpool on Multi-agent and Swarm Robotics.
- 3 **Dr. A.S. Chowdhury** started collaboration with Dr. A. El-Baz, Department of Bioengineering, University of Louisville, Louisville, KY, USA.
- 4 **Dr. A.S. Chowdhury** started collaboration with Dr. S. M. Bhandarkar, Department of Computer Science, University of Georgia, Athens, GA, USA.
- 5 **Dr. A.S. Chowdhury** started collaboration with Dr. N. Ray, Department of Computer Science, University of Alberta, Canada.
- 6 **Dr. A.S. Chowdhury** started collaboration with Dr. R.M. Summers, Department of Radiology and Imaging Sciences, National Institutes of Health, Bethesda, MD, USA.
- 7 **Dr. A.S. Chowdhury** started collaboration with Dr. J.C. Yu, Department of Plastic Surgery, Medical College of Georgia, Augusta, GA, USA.
- 8 **Prof. Bhaskar Gupta** Visited Kyushu University, Fukuoka, Japan for collaborative research and antenna measurements.
- 9 **Prof. Bhaskar Gupta** initiated collaboration with Virginia Tech University, USA for research on Cognitive Radio.
- 10 **Prof Subir Kumar Sarkar** initiated collaboration with Prof. Supriyo Bandyopadhyay of Virginia Tech University, USA for research in Spintronics

**FOOD TECHNOLOGY & BIO-CHEMICAL ENGINEERING**

Phone : +91-33-2414-6822  
It. : 2241/2675  
H.O.D. : Dr. Uma Ghosh  
E-mail : hod@ftbe.jdvu.ac.in

**1 A. Courses Offered**

• **B. Tech - F.T.B.E**

Duration - 3 years , Intake : 20

• **M. Tech - F.T.B.E**

Duration - 2 years , Intake : 08

**B. Number of Faculty Members : 10**

**2 A. Area of Research Activities :**

Food Technology, Waste Management, Microbial Technology, Fruit and Vegetable Technology, Biochemical Engineering, Food Biotechnology, Bakery and Cereal Technology, Natural Colour and Herbal Food, Dairy Technology, Extruded Food.

**B. Major Research Projects :**

Prof. U. Roy Chaudhuri

- Survey for Sweetmeat of West Bengal, Sponsored by Dept. of Food Processing Industries & Horticulture, Govt. of W.B

Prof. P. Chattopadhyay and Dr ( Mrs ) Lalitagauri Ray

- Nutraceuticals production by food grade microorganisms; Sponsored by UGC, G.O.I.

Prof. (Mrs) Lalitagauri Ray

- Studies on fermentative production, purification and immobilization of a thermostable lipase - Sponsored by CSIR.
- Survey on potentially toxic elements in fruits and vegetables. Sponsored by Min. of F.P.I & H, Govt. of W.B.
- Production, Purification and Immobilization of beta - galactosidase enzyme from isolated strain - Sponsored by F.P.I & H, Govt. of W.B
- Studies on biosorption of heavy metal and textile dye from their aqueous solution by microbial biomass - Sponsored by UGC. 'Rajiv Gandhi National fellowship for SC - Candidates (individual)'.  
'
- Studies on biosorption of Cadmium by microbial biomass, CAS,UGC

(Departmental) Project.

- Studies on the biosorption of heavy metals by waste materials. CAS, UGC (Departmental) Project.

Prof Pratap Chakraborty

- Development of Quality Control Laboratory for Food Processing Industries, funded by MFPI & H, Govt. of West Bengal in the Dept. of Food Technology & Biochemical Engg., JU.
- Development of R & D on Food Irradiation assisting (i) Industries (ii) R & D in New Areas & (iii) Training Centre ; sponsored by MFPI, Govt. of India.
- Studies on Radiation Processing of Food ( Potato & Marine Products ) for extension of shelf life sponsored by UGC, New Delhi.
- Studies on Radiation Processing of Food (Different Varieties of Mango, Potato and Marine Fishes), Role of dosimetry Involved & Chemical & Biological Effects of Different Radiation Doses of Foods Studied. sponsored by CSIR.

Prof. Amit Kumar Ghosh

- R & D Project on "Ultra high temperature processing of liquid beverages and semisolid food products by microwave & electrical energy heating" sponsored by FPI, GOI; & FPI & H , Govt. of WB

Dr. Uma Ghosh

- Studies on microbial production of Pectin methyl esterase. UGC, State Fellowship.
- Studies on production & application of industrially important food enzyme, CAS, UGC (Departmental).
- Studies on fermentative production of phytase and its application in food and feed, CAS, UGC (Departmental).

### **3 A. Invited Lectures Delivered/ Session Chaired :**

Prof. U. Roy Chaudhuri

- Invited to act as a member of the judge panel in Mango Mahotsava and also delivered a lecture on Mango processing during the event which was held on June, 12-14, 2009 organized by Indian Chamber of Commerce.
- Invited to deliver a lecture on Food safety on August 20, 2009 by Indian Institute of packaging, Kolkata.
- Delivered lecture on Health Foods in MPS Food Industries on 12<sup>th</sup> October, 2009
- Invited as Guest of honour to deliver lecture on 26<sup>th</sup> August, 2009 in the Merchant's Chamber of Commerce, Kolkata on Growth Potential of Food Processing Industries
- Delivered a lecture as guest speaker on Food Processing & Biotechnology



in the seminar of Shilpa Banijsya Mela, Baruipur in January, 2009

Prof. Hiranmy Gangopadhyay

- Delivered special lecture on "appropriate rural food technology" in the state level awareness programme organized by KVIC & JU on 19.03.09 at IICHE, Kolkata
- Delivered invited lecture on "post harvest technology" on 10.02.09 at Bagan II, Howrah organized by Agri-Marketing Dept. Govt. of WB
- Delivered Lecture on Sensitisation programme on Food Processing & Entrepreneurship development, organized by Resurrection, a public charitable trust in Kulberia, 24 Pgs ( S ) On 25.04.09
- Delivered special lecture on "process Technology on sweetmeat Industry" on 26.03.09 organized by PBMS at Subhas Mukherjee memorial Research Centre, Behala, Kolkata
- Delivered series lectures as guest Faculty on Food preservation for M.Sc Students of Food Sc. & Nutrition, BESU Shibpur during the academic session of 08-09
- Delivered series of Lectures to one year diploma course in Food processing & Entrepreneurship Management organized by AfST ( I ) ( Kol Chap ) & FTBE Dept, JU
- Delivered Lecture as resources person in EDP organized by baranagar Baghajatin Social Welfare Organization on 14<sup>th</sup> October, 2009 in Kolkata

Dipankar Halder:

- Delivered series of lecture in the B.Tech ( Biotechnology )-sixth semester classes of BIT, Bantala

**B. Seminar / Workshop / Conference/ Symposium Attended:**

Prof Pratap Chakraborty

- International conference on Irradiation, July 30-31, Delhi.

Prof. P. Chattopadhyay & Prof. Lalitagauri Ray

- Nutraceutical potential of fermented foods, National conference on Future of Food Technology in India, held at NIT, Durgapur. January 8-9, 2009.

Dr. Lalitagauri Ray

- National conference on Future of Food Technology in India, held at NIT, Durgapur, January 8-9, 2009.
- Studies on the effectiveness of Cu (II) desorption with acid, alkaline and chelating agents from the immobilized biomass of *Bacillus cereus* M<sup>1</sup><sub>16</sub>.
- Removal of Pb(II) by *Aspergillus* sp. Awarded with first prize in the poster session

- Fermented foods of the Orient: International conference on Emerging trends in Biotechnology. ETBT – 2009. Dec 4-6, 2009, at BHU.

Dr. Paromita Bhattacharya

- Fermentative production and downstream processing of 1,3 propanediol: International conference on Emerging Trends in Biotechnology. Dec 4-6, 2009 at BHU, India.

Prof. Hiranmay Gangopadhyay & Dr. Uma Ghosh

- Partial purification of fungal alpha amylase and amyloglucosidase produced by solid state fermentation utilizing agricultural wastes- National conference on 'Future of Food Biotechnology in India' held at NIT, Durgapur, Jan 8-9, 2009.

Dr. Uma Ghosh

- Waste management by solid substrate fermentation for the production of commercially important enzymes National conference on 'Future of Food Biotechnology in India' held at NIT, Durgapur, Jan 8-9, 2009.
- Production of pectinase from agroindustrial waste using *Aspergillus niger*. National conference on 'Future of Food Biotechnology in India' held at NIT, Durgapur, Jan 8-9, 2009.

Mr. Dipankar Haldar

- 'Synthesis and Characterization of Silver-Gelatin Composite - Prospective Applicant for Food Packaging and Medical Products' - National conference on 'Future of Food Biotechnology in India', held at NIT, Durgapur, Jan 8-9, 2009.
- "Train-The-Trainer programme" held in New Delhi during July 27-29, 2009 jointly organized by ASA-IM & USB, USA

**C Seminar/Workshop/Conference/Symposium Organized**

Prof. Amit Kr Ghosh & Dipankar Halder

- "National Conference on Rural Food Processing and Entrepreneurship in the Coming Age of Consumerism" held in the IICHE Auditorium, JU on 17<sup>th</sup> & 18<sup>th</sup> January, 2009

Prof. Amit Kumar Ghosh

- Vice Chairman of the organizing committee of the International Conference on Solid Waste Management held in Kolkata during November 4-6, 2009

Prof. U. Roy Chaudhuri

- Acted as the Chief advisor of the organizing committee of the National Conference on Future of Food Biotechnology in India, NIT, Durgapur, January 2009
- One year Diploma in Food Processing & Customized management of Adult Continuing Education Dept., JU, in July, 2009

- Six month's Certificate Course for Cryogenic & Rural Development, JU under State Council of Govt. of W.B, 2009
- One day workshop organized with Khadi & Village Industries Commission on Rural Food Processing, March 2009

**D. Orientation Courses / Refresher Courses Attended:**

Dr. Paramita Bhattacharya

- Refresher Course - Water Resources and Management, School of Water Resources, JU. Dec 1 - Dec 21, 2009.

**E. Orientation Courses / Refresher Courses Organized**

4 A. Books / Monographs etc. Published

Prof .H. Gangopadhyay

- Book on Post Harvest Management of Plant Foods. Everest Publishing House, Pune. 2009. In Press.

Prof. Lalitagauri Ray

- Book Chapter on Oriental Fermented foods in Food Biotechnology. Edited by C. Larroche, C. R. Socco, A. Pandey. Asiatech Publishers, New Delhi. 2009. In Press.

Dr. Paramita Bhattacharya

- Book chapter on Effects of irradiation on food texture and rheology in Novel Food Processing: Effects on Rheological Properties. Edited by J. Ahmed, H.S. Ramaswamy S. Kasapis, J.I. Boyce. Taylor & Francis, CRC Press, Chapter 8, Pg. 103-125. 2009.

**B. Articles Published in Journals**

Prof . P. Chattopadhyay & Dr ( Mrs) Lalitagauri Ray

- Determination of kinetic parameters in the biosorption of Cr(VI) on immobilized *Bacillus cereus* M<sup>16</sup> in a continuous packed bed column reactor Appl. Biochem Biotech, 159 (2), 488. 2009.

Prof. Lalitagauri Ray

- Production and characterization of an alkaline thermostable crude lipase from an isolated strain of *Bacillus cereus* C<sub>7</sub>, Applied Biochemistry and Biotech, 159 (1) 2009.
- Uptake and recovery of lead by agarose gel polymers. Am. J of Biochem & Biotechnol, 5(!): 14 - 20, 2009.
- Biosorption of copper (II) ions by *Bacillus cereus* M<sup>16</sup> from aqueous solution. Ind Chemical Engg. Accepted.
- Statistical optimization of fermentation process parameters for the production of an alkaline thermostable lipase from an isolated strain of *Bacillus cereus* C<sub>7</sub>. Ind. Chemical Engg, 2009. Accepted.

Prof. U. Roy Chaudhuri & Prof. R. Chakraborty

- Influence of preservative, thermal treatment and storage time on the carotenoid content of Mangoes. *J. Fresh Products*, 3(1)55, Global Science books.
- The effect of turmeric, lime and lemon on the colour and rheological characteristics of tomato puree. *Int. J. Culinary Sc. & Tech.* Accepted. Publisher Francis & Taylor.

Prof.. U. Roy Chaudhuri

- Comparison of the protective effects of steamed and cooked Broccoli on ischemia reperfusion induced cardiac injury ; *NS British Journal of Nutrition*, 2009
- Food Entrepreneurship in the University Education ; *The Journal of Technical Education & Practical Training*, (4), 2009, AICTE.

Prof. Pratap Chakraborty

- Optimisation of Extrusion Process. *J. Scientific and Industrial Research*, 68,140,2009.

Prof Hiranmay Gangopadhyay

- Effect of addition of fruit pulp / juice and soyachhana on fatty acid composition in Ghee, *J Food Sc. & Technology*, 2009 ( Communicated )
- Rheology of ghee as effected by fruit pulp, *J. Food Sc. & Techn*, 2009 (communicated )
- Comparison of the protective effects of steamed and cooked broccoli in ischemic reperfusion induced cardiac injury : *British J of Nutrition*, 2009 ( in press )
- Broccoli protects heart through the activation of genes of thyroxin superfamily, national Conference proceeding, NIT Durgapur, Jan 6-7, 2009
- Production of Bio-alcohol utilizing jack fruit wastes, *J. Mycopathol. Res.* (communicated), 2009

Prof Hiranmay Gangopadhyay & Dr. Uma Ghosh

- Production of Extra cellular alpha amylase from *Aspergillus oryzae* by solid state fermentation utilizing Agricultural wastes- *J. of Mycopathological Res*, 47 ( 1 ) ,2009
- Effect of Metal salts on production of Fungal alpha Amylase from *Aspergillus oryzae* by solid state fermentation - *J. of Mycopathological Res.*, 47 ( 2 ), 2009
- Effect of different carbohydrates and amino acids on production of fungal amyloglucosidase by solid state fermentation utilizing agricultural wastes. *J. Mycopathol. Res.* (communicated), 2009
- Effect of different carbohydrates and amino acids on production of fungal amylase by solid state fermentation utilizing agricultural wastes. Abstract

accepted for National symposium to be organized by IMS, Kolkata. Dec3-5, 2009

## **5 Collaborative Programme**

## **6 Major Achievements**

Prof. U.Roychaudhury & Prof. Runu Chakraborty

- (a) The Dept. has been awarded a Grant of Rs. 94 lakhs by the UGC under CAS-I ( during 2007-2012 ) to carry out research in the field of Nutraceuticals & Herbal Food processing, Food Biosensors and Bioremediation.

Coordinators : Prof Utpal Ray Chaudhuri & Prof (Mrs) Runu Chakraborty

- (b) The Dept. has been identified by the Dept. of food Processing Industries & Horticulture, Govt. of West Bengal as the technical resource centre of the state to conduct training and short courses for Entrepreneurship Development & Food Quality Management in Food Processing & Preservation.

Coordinators Prof. Utpal Raychaudhuri and Prof. (Mrs) Runu Chakraborty.

Prof Pratap Chakraborty

- Creation of Food Irradiation Laboratory (NIL Campus) in JU.
- Process of installation of Food Irradiation Unit at Chinsurah, Hooghly

Prof. D K Chatteraj ( INSA HON. Scientist )

- Awarded with "B C Guha Memorial Lecture" in 96<sup>th</sup> Indian Science Congress held in Meghalaya, during January, 2009
- Invited to inaugurate and deliver plenary lecture in the National Conference on Frontiers of colloidal, surfaces and nanostructured systems during 18-20 February, 2009
- Invited for keynote address in NATCOSEB held in Srinagar during 28-30<sup>th</sup> July, 2009

**INFORMATION TECHNOLOGY  
(SALT LAKE)**

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H.O.D. : Prof. Samiran Chattopadhyay  
E-mail : hod@it.jusl.ac.in

**Courses Offered**

Name of the Course	Duration of the Course	Annual Intake	Year of Inception
B.E (Information Technology)	4 years degree course	60	2000
M.E (Software Engineering)	2 year degree course	40	2002

**Number of Faculty Members:**

- Professor : 01
- Lecturer : 04
- Lecturers on Contractual Basis : 04 (Sanctioned 05)
- Reader on Contractual Basis : 01

**Area of Research Activities: (Broad Area):**

All teachers are actively engaged in research activities. The thrust areas of the department may be classified as follows.

- (i) Image processing, Video Compression, Pattern Recognition
- (ii) Distributed Object Computing, Middleware
- (iii) Middleware in Mobile Computing, Mobile Ad hoc Networks
- (iv) Artificial Intelligence, Machine Learning
- (v) Network Architecture, Routing Protocols
- (vi) Parallel Processing, Cryptography

**Major Research Project/Consultancy**

Name of the Project	Principal Investigator	Funded by	Duration
Content Based Video Indexing and Retrieval using Rectilinear Motion	Bibhas Dhara	ISI	2007 - 2011
Studies in Wireless and Mobile Networks: Aspects of Multicasting, Optimization and Security	Samiran Chattopadhyay	Interra Systems (I) Pvt. Ltd.	2009 - 2010

- Professor Samiran Chattopadhyay has served as a Part Time Technical Consultant to Interra Systems India Pvt. Ltd., Kolkata.

- Professor Samiran Chattopadhyay has served as a member of the Technical Committee for West Bengal State Data Centre formed by Department of Information, Government of West Bengal.
- Professor Samiran Chattopadhyay has served as a member for several committees in connection with State e-Governance Mission under National e-Governance Plan.
- Professor Samiran Chattopadhyay has served as a member of several committees in connection with e-Governance of the Directorate of Forests, Government of West Bengal.
- Professor Samiran Chattopadhyay has served as a member of the expert committee to review the functioning of the ABV Indian Institute of Information Technology and Management, Gwalior.

#### **Invited Lectures Delivered/Session Chaired**

- Professor Samiran Chattopadhyay has served as one Organizing Chair of the ICISS 2009.
- Professor Samiran Chattopadhyay has served as a member of the Organizing Committee of the International Conference on Communications and Distributed Processing (ICDCN), 2010.
- Professor Samiran Chattopadhyay has served as a member of the Technical Program Committee of IEEE Conference on IP Multimedia Subsystem Architecture and Applications -2009 (IMSAA-2009)

#### **Seminar/Workshop/Conference/Symposium Attended**

- Prof. Samiran Chattopadhyay presented his paper at the IEEE VTC Spring 2008 held at Singapore during May 11 - 14, 2008 to present his paper entitled "Energy-Efficient Broadcasting in Wireless Ad Hoc Networks Using Directional Antennas".
- Mr. Debarshi Kumar Sanyal, a Ph.D student, presented his paper at IEEE Tencon held at Hyderabad, during November 18 - 21, 2008 to present his paper "Improved Performance with Novel Utility Functions in a Game-Theoretic Model of Medium Access Control in Wireless Networks".
- Dr. Bibhas Chandra Dhara presented his paper at the International Conference on Advances in Pattern Recognition held at Kolkata, India during February, 2009.
- Mr. Bhaskar Sardar, Dr. Uttam Kumar Roy, Ms. Parama Bhaumik, Ms. Asmita Nag and Ms. Mumun Das will be attending the International Conference on Communications and Distributed Processing (ICDCN), January 3 - 7, 2010.
- Mr. Utpal Kumar Ray, Ms. Deblina saha, Ms. Tulika Bhattacharya attended ICISS held at Kolkata during December 14 - 18, 2009.
- Dr. Uttam Kumar Roy and Ms Parama Bhaumik attended a workshop on



"Pedagogical tools for knowledge " organized by TEQUIP, JU, on March 26, 2009.

- Ms. Parama Bhaumik attended a Workshop "Mission 10x: Excellence in Engineering Education" through innovation organized by Wipro held at Kolkata during August 10 - 14, 2009.
- Prof. Samiran Chattopadhyay attended a seminar on "Confidence-Based Learning Solutions For Engineering Curriculum" held at Kolkata on October 8, 2009.

#### **Orientation Courses/Refresher Courses Organized**

- A 60 hour Certificate Course on "J2EE and Introductory J2ME" has been conducted by the department in collaboration with Project IMPACT during January, 2009 -April, 2009.

#### **Articles Published in Journals/Conferences**

- 1 Sukhendu Kanrar, Samiran Chattopadhyay, Nabendu Chaki, A Priority based Fair Mutual Exclusion Algorithm for Distributed Systems with Cycles and Link Failure, accepted in *International Journal on Futuristic Computer Applications*, ACM Press.
- 2 Tamaghna Acharya, Samiran Chattopadhyay, Rajarshi Roy, Maximum Lifetime Broadcasting in Cooperative Multi-hop Wireless Ad Hoc Networks, accepted in *International Journal of Ad hoc and Ubiquitous Computing* (IJAHUC).
- 3 Debarshi Kumar Sanyal, Matangini Chattopadhyay, Samiran Chattopadhyay, "Game-Theoretic Modeling for System-wide Performance Optimization at the MAC layer in Ad-hoc Wireless Networks", *Advances in Electrical Engineering and Computational Science*, 207 - 218, Springer (ISSN No. 1876 - 1100).
- 4 Debarshi Kumar Sanyal, Matangini Chattopadhyay, Samiran Chattopadhyay, "Tuning Holdoff Exponents for Performance Optimization in IEEE802.16 Mesh Distributed Co-ordinated Scheduler", accepted for publication in the *Proceedings of ICCAE 2010*, Singapore, February 26 - 28, 2009, IEEE Computer Society Press.
- 5 Debarshi Kumar Sanyal, Matangini Chattopadhyay, Samiran Chattopadhyay, "Game-Theoretic Modeling and Optimization of Contention-prone Medium Access Phase in IEEE 802.16/WiMAX Networks" published in the proceedings of 3rd International Conference on Broadband Communications, Information Technology & Biomedical Applications (BroadCom '08), South Africa, November 23-26, 2008, IEEE Computer Society Press.
- 6 Chandra Das, Pradipta Majhi, Samiran Chattopadhyay, "Supervised Gene Clustering for Extraction of Discriminative Features from Microarray Data", accepted for publication in the proceedings of 17<sup>th</sup> International Conference on Advanced Computing and Communication, ADCOM 2009, Bangalore, India, December 14 - December 17, 2009.
- 7 A. Ghosal, R. Chakrabarty, S. Haty, B. C. Dhara, and S.K. Saha, Speech/Music classification using occurrence pattern of ZCR and STE, accepted for

publication in Proceedings of the International Conference on Intelligent Information Technology Application, China, 2009.

- 8 S. Mandal and B. C. Dhara, A Hybrid Face Recognition Method based on Structural and Holistic features, in the Proceedings of International Conference on Advances in Pattern Recognition, Kolkata, India, February, 2009, pp 441 - 444.
- 9 S. Nagamalla, B. C. Dhara, a Novel Face Recognition Method using Facial Landmarks, Proceedings of International Conference on Advances in Pattern Recognition, Kolkata, India, February, 2009, pp 445 - 448.
10. B. Sardar, M. Nasipuri, D. Saha, M. Hassan, "Improving Uploading Performance of TCP in Network Mobility", IEEE ANTS, December 2008.
11. A. Sircar, B. Sardar, D. Saha, "ROTIO+ : A Modified ROTIO for Nested Network Mobility", accepted in ICDCN 2010.
12. B. Sardar, M. Nasipuri, D. Saha, "Co-existence of Network and Terminal Mobility in the Context of TCP Performance", accepted in NIMS December, 2008.
13. Parama Bhaumik, Mounita Bandyopadhyay, Zone Based Ant Colony Routing for Mobile Ad Hoc Networks, accepted for publication in COMSNET 2010.

#### **Collaborative Programmes:**

- Professor Samiran Chattopadhyay works with Indian Institute of Technology, Kharagpur and Indian Statistical Institute and with Bengal Science and Engineering University for joint research work leading to a Ph.D. r.
- Dr. Bibhas Chandra Dhara is an investigator of a research project jointly supervised and funded by Indian Statistical Institute, Calcutta.
- Mrs. Parama Bhaumik and Dr. Uttam Kumar Roy works with faculty of Indian Institute of Management, Calcutta on joint research projects.

#### **Major Achievements**

- Dr. Bibhas Chandra Dhara has proceeded to pursue his post doctoral studies at Alcorn State University, Mississippi, USA as a visiting Research Scholar/Scientist for a period of one year.
- A new floor has been constructed as an additional facility for the department at the second floor of the Building of the Centre of Mobile Computing and Communications.
- Amrita Saha, Rajiv Berlia and Sandipan Bhattacharyya reached the final of Intel Scholars Program, 2008 for their project entitled "An Intelligent Network using Automated Power Control System to ensure cautious driving" under the guidance of Mrs. Parama Bhaumik.
- Victor Chakraborty worked as a summer intern at Microsoft India Development Center, Hyderabad, during 19th May 2008 - 15th Aug 2008 in a project entitled "Office Mobile 14 (To be shipped with Windows Mobile Seven OS)

- Sankalan Sarkar, Agniva De Sarkar, Subhadip Halder and Ayush Khemka, secured the First rank in "FRAMED 9211" even in "KSHITIJ '09" organized by Indian Institute of Technology, Kaharagpur.

**INSTRUMENTATION & ELECTRONICS ENGINEERING  
(SALT LAKE)**

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**1 A) Courses Offered:**

Name of the Course	Duration	Year from Which the Course Started	Total Intake	No. of Students Enrolled
Bachelor of Instrumentation & Electronics Engineering	4 Years	1989	41	41
Bachelor of Technology in Instrumentation and Electronics Engineering	3 Years	1966	22	22
Master of Technology in Instrumentation and Electronics Engineering	2 Years	2001	8	8

**B) Number of Faculty Members:**

Professor (s)	Reader (s)	Lecturer (s)
Kalyankumar Ray	Kalyan Majumdar	Runu Banerjee
Subhankar Bandyopadhyay	Rajanikanta Mudi	Proloy Sharma
Ardhendu Ghosal	Kumardeb Banerjee	
Rajib Bandyopadhyay	Bhaswati Goswami	
Bivas Dam	Ratna Ghosh	
Bipan Tudu		

**2 A) Area of Research Activities:**

- |                          |                           |
|--------------------------|---------------------------|
| i) Signal Processing     | ii) Digital System Design |
| iii) Intelligent Control | iv) Electronic Olfaction  |
| v) Embedded Systems      | vi) Sensor Design         |

**B) Major Research Projects:**

Name of the Project	Funding Agency
FIST-2008	DST, Govt. of India
Digital Controller for Electro-mechanical actuator	RCI, DRDO, Govt. of India
Development of Electronic Nose for Agro Products	DST, Govt. of India
Development of an Explosive Detection HEMRL, System using NQR technique	DRDO, Govt. of India
Non Classical Estimation Techniques for Homing Interceptor Guidance	DRDO, Govt. of India
Development of Constant Phase Element (CPE) based sensor for detecting adulterated milk	DST, W.B.
Development of Electronic Tongue for quality Assessment of Black tea	SERC, DST Govt. of India

**3 A) Invited Lectures Delivered/ Sessions Chaired :** 1. Prof. R. Bandyopadhyay was invited to deliver a talk on "Feature extraction with sensor arrays for non-destructive quality evaluation methods" at the annual workshop on Nondestructive methods for quality evaluation of food materials organized by CIPHET, Ludhiana on the 7th February, 2009. 2. Prof. R. Bandyopadhyay was invited to deliver a talk on "Classification Method with Sensor Arrays- Applicability in Electronic Nose and Tongue" at the International Workshop on Tailor-Made Nanomaterials and Applications for Chemical and Bio-Sensors held on 2-3 March 2009 at CGCRI, Kolkata. Prof. R. Bandyopadhyay organized International Workshop and Industry Visit on "Electronic Nose and Tongue" jointly with CDAC, Kolkata on 30<sup>th</sup> October, 2009 at Manikanchan, Salt Lake, Kolkata.

**B) Seminar/ Workshop/ Conference/Symposium Attended :** 1. R.K. Mudi and C. Dey, "An Augmented Ziegler-Nichols Tuned PI Controller," *Proc. Int. Conf. on Computers and Devices for Communication - CODEC-2004*, Calcutta (India), January 1-3, 2004. 2. R.K. Mudi and C. Dey, "An Improved Fuzzy PI Controller," *Proc. Int. Conf. on Communication, Devices and Intelligent Systems - CODIS-2004*, Calcutta (India), 516-519, January 8-10, 2004. 3. N. Bhattacharyya, B. Tudu, R. Bandyopadhyay, M. Bhuyan and R.K. Mudi, "Aroma Characterization of Orthodox Black Tea with Electronic Nose," *Proc. IEEE TENCON*, (Analog and Digital Techniques in Electrical Engineering), Chiang Mai (Thailand), 427-430, November 21-24, 2004. 4. C. Dey and R.K. Mudi, "A Conventional PD Controller with Self-tuning Feature," *Proc. IEE Int. Conf. on Energy, Information Technology and Power Sector - IEE -PEITTSICON 2005*, Calcutta (India), 219-223, January 28-29, 2005. 5. R. Bandyopadhyay, N. Bhattacharyya, M. Bhuyan, A. Ghosh

and R.K. Mudi, "Correlation of Multi-sensor Array Data with "Tasters" Panel evaluation for Objective Assessment of Black Tea Flavour," *Proc. 11<sup>th</sup> Int. Symposium on Olfaction and Electronics Nose - ISOEN 2005*, Barcelona (Spain), April 13-15, 2005. 6. C. Dey and R.K. Mudi, "Design of a PI-Type Fuzzy Controller with on-line Membership Function Tuning," *Proc. 12<sup>th</sup> Int. Conf. on Neural Information Processing - ICONIP-2005*, Taipei (Taiwan), Oct 30 - Nov 2, 2005.

**C) Seminar/ Workshop/ Conference/Symposium Organized:**

None

**D) Orientation Course/ Refreshers Course Attended:**

None

**E) Orientation Course/ Refreshers Course Organized:**

None

**4 A) Books/Monographs Published:**

**Book Chapter** K.Biswas, S.Sen and P.K. Dutta, ": Design of MEMS Capacitive Accelerometer" *Measurement and Instrumentation - Trends and Applications*, pp.267-282, edited by M.K. Ghosh, S.Sen and S. Mukhopadhyay, Publisher: Ane Books, New Delhi, 2008. N.R. Pal, N. Kasabov, R.K. Mudi, S. Pal and S.K. Parui, *Neural Information Processing*, (Lecture Notes in Computer Sciences- LNCS, No 3316), Springer, Germany, 2004.

**4 B) Articles Published in Journals:**

- 1 Karabi Biswas, Siddhartha Sen, Pranab Kumar Dutta, "MEMS Capacitive Accelerometers: A Review", *Sensor Letters* 5, 471-484 (2007)
- 2 Sourabh Chowdhury, Karabi Biswas and Siddhartha Sen, "A Microporous PMMA-Film coated 'Constant Phase Element Sensor' for Chemical and Bio-Chemical Sensing, *Proceedings of the 2<sup>nd</sup> International conference on Sensing Technology*, Palmerston North, NEW ZEALAND, November, 2007.
- 3 R. Mudi, C. Dey, and T. T. Lee, "An improved auto-tuning scheme for PI controllers," *ISA Transactions*, vol. 47, no. 1, 45-52, 2008.
- 4 R. Mudi, C. Dey, and T. T. Lee, "Neuro-fuzzy implementation of a self-tuning fuzzy controller," *Proc. IEEE Int. Conf. on Syst., Man, Cybern. - SMC- 2006*, Taipei (Taiwan), 5065-5070, October 8 - 11, 2006.
- 5 C. Dey, R. Mudi, and T. T. Lee, "A PID controller with dynamic set point weighting," *Proc. IEEE Int. Conf. on Industrial Technology - ICIT- 2006*, IIT Bombay (India), pp. 1071-1076, December 15-17, 2006.
- 6 C. Dey and R. Mudi, "A Ziegler-Nichols PID Controller with Auto-tuning Feature," *Proc. Int. Conf. on Modelling and Simulation - MS'07*, Kolkata (India), December 3-5, 2007.
- 7 E. Sunil, A. Chakraborty, R. Ghosh and B. Goswami Design of Transducers for Resonance Frequency Measurement to assess the Dental Implant Stability in vitro. *IEEE Industrial Electronics Society (IECON'07)*, held in Taipei, Taiwan, R.O.C., Nov. 5-8, 2007

- 8 M. Saha, R.Ghosh and B.Goswami, " Performance Comparison of Nonlinear filters in 2D ballistic Target Tracking Problem" , Accepted for publication in ICAS-2008, International Conference on avionics System, RCI, Hyderabad(India) .
- 9 Nabarun Bhattacharyya, Rajib Bandyopadhyay, Manabendra Bhuyan, Bipan Tudu, Devdulal Ghosh, Arun Jana, "Electronic Nose for Black Tea Classification and Correlation of Measurements with Tea Taster Marks," Accepted for the publication in IEEE Transaction on Instrumentation and Measurement,2007.
10. Nath, B.Tudu, B.Das, N. Bhattacharyya, R. Bandyopadhyay, "Fuzzy and neural network algorithms for black tea grade classification using electronic nose," Proceedings of the NSI-32, (National Symposium on Instrumentation), K S Rangasamy College of Technology (CNST & ECE) K S R Kalvi Nagar, Tiruchengode - 637 209, Tamil Nadu, 24-26th October 2007.
11. Dibyendu Bhattacharyya, Anil Kumar Bag, Bipan Tudu, Nabarun Bhattacharyya, Rajib Bandhopadhyaya, "Fuzzy ARTMAP technique for quality evaluation of tea using electronic nose," International Conference on Modeling and Simulation (MS'07), Department of Applied Physics, University of Calcutta, December 3-5, 2007 Kolkata, India (Accepted for Oral Presentation) .
12. Bipan Tudu, Nabarun Bhattacharya, Arun Jana, Devdulal Ghosh, Rajib Bandhopadhyaya, "Self-Organizing Map (SOM) Based Classification of Smell Stages of Black Tea Fermentation Process Using Electronic Nose," 3rd Indian International Conference on Artificial Intelligence, 2007 (IICAI-2007), December 17-19, 2007, Pune, India (Accepted for Oral Presentation) .
13. Bipan Tudu, Nabarun Bhattacharya, Arun Jana, Devdulal Ghosh, Barun Das, Rajib Bandhopadhyaya, "Evaluation of Quality of Freshwater Fish using Electronic Nose with Time-Delay Neural Network," Proceedings of the International Symposium on Olfaction and Electronic Nose (ISOEN 2007), St. Petersburg, Russia, 3-5 May, 2007, 182-183.
14. Nabarun Bhattacharya, Bipan Tudu, Arun Jana, Devdulal Ghosh, Rajib Bandhopadhyaya, Manabendra Bhuyan, "Preemptive Identification of Optimum Fermentation Time for Black Tea Using Electronic Nose," Proceedings of the International Symposium on Olfaction and Electronic Nose (ISOEN 2007), St. Petersburg, Russia, 3-5 May, 2007, 123-124.
15. Nabarun Bhattacharya, Bipan Tudu, Arun Jana, Devdulal Ghosh, Rajib Bandhopadhyaya, Amiya Baran Saha, "Illumination Heating and Physical Raking for Increasing Sensitivity of Electronic Nose Measurements with Black Tea," Proceedings of the International Symposium on Olfaction and Electronic Nose (ISOEN 2007), St. Petersburg, Russia, 3-5 May,2007, 89-90.
16. Bipan Tudu, Barun Das, Nabarun Bhattacharyya, Arun Jana, Devdulal Ghosh, Rajib Bandyopadhyay, "Smell Peak Prediction during Black Tea Fermentation

Process using Time-Delay Neural Network on Electronic Nose Data," Proceedings of the International Conference on Computing: Theory and Application-ICCTA-2007, Indian Statistical Institute, Kolkata, India, March 5-7, 257-260,2007.

17. Mousumi Palit, Bipan Tudu, Nabarun Bhattacharyya and Rajib Bandyopadhyay, "Taste sensors and Electronic Tongue," Proceedings of the International Conference on "Emerging Trends in Electrical Engineering", Jadavpur University, Kolkata, India, January 12-14,2007.
18. Nabarun Bhattacharya, Devdulal Ghosh, Arun Jana, Bipan Tudu, Rajib Bandhopadhyaya, "Fish Smell Classification Using Electronic Nose," Proceedings of the International Conference on Computer and Devices for Communication -CODEC-06,Hyatt Regency, Kolkata ,India, December 18-20, 2006.
19. Nabarun Bhattacharya, Bipan Tudu, Rajib Bandhopadhyaya, Sohan Seth, Arun Jana, "Fish Freshness Determination Using Electronic Nose," Proceeding of the National Workshop Cum training on Bioinformatics on aquaculture Research, Central Institute of Freshwater Aquaculture, Bhubaneswar, India, 62-72, Februry 7-10, 2006.
20. N.R. Pal, R.K. Mudi, K. Pal and D. Patranabis, "Rule Extraction for Self-Tuning Fuzzy Controllers," *International Journal of Fuzzy Systems*, vol. 6, no. 2, 71-80, 2004.
21. R.K. Mudi, C. Dey, and T.T. Lee, "An improved auto-tuning scheme for PI controllers," *ISA Transactions*, vol. 47, no. 1, pp. 45-52, 2008.
22. A.K. Pal and R.K. Mudi, "Self-tuning fuzzy PI controller and its application to HVAC systems, *International Journal of Computational Cognition*, vol. 6, no. 1, 25-30, 2008.
23. C. Dey, R.K. Mudi, and T.T. Lee, "Dynamic set-point weighted PID controllers," *Control and Intelligent Systems*, vol. 37, 1-8, 2009.
24. C. Dey and R.K. Mudi, "An improved auto-tuning scheme for PID controllers," *ISA Transactions*, vol. 48, no. 4, 396-409, 2009.

**a) List of Referred Research Publication**

- 1 Mousumi Palit, **Bipan Tudu**, Pallab Kumar Dutta, Ankur Dutta, Arun Jana, Jayanta Kumar Roy, Nabarun Bhattacharyya, Rajib Bandyopadhyay, Anutosh Chatterjee, "Classification of Black TeaTaste and Correlation With Tea Taster's Mark Using Voltammetric Electronic Tongue, " Accepted for publication in *IEEE Transaction on Instrumentation and Measurement*, 2009
- 2 **Bipan Tudu**, Arun Jana, Animesh Metla, Devdulal Ghosh, Nabarun Bhattacharyya, Rajib Bandyopadhyay, "Electronic nose for black tea quality evaluation by an incremental RBF network," *Sensors and Actuators B*, vol. 138, no. 1, pp.90-95, 2009.
- 3 **Bipan Tudu**, Animesh Metla, Barun Das, Nabarun Bhattacharyya, Arun Jana, Devdulal Ghosh, Rajib Bandyopadhyay, "Towards Versatile Electronic Nose



Pattern Classifier for Black Tea Quality Evaluation: An Incremental Fuzzy Approach," *IEEE Transaction on Instrumentation and Measurement*, vol.58, no.9, 3069-3078, 2009.

- 4 **Bipan Tudu**, Bikram Kow, Nabarun Bhattacharyya, Rajib Bandyopadhyay, "Normalization techniques for gas sensor array as applied to classification for black tea," *Int. J. Smart Sensing and Intelligent Systems*, vol. 2, no. 1, 176-189, 2009.
- 5 Nabarun Bhattacharyya, Rajib Bandyopadhyay, Manabendra Bhuyan, **Bipan Tudu**, Devdulal Ghosh, Arun Jana, "Electronic Nose for Black Tea Classification and Correlation of Measurements with Tea Taster Marks," *IEEE Transaction on Instrumentation and Measurement*, vol.57, no.7, pp.1313-1321, 2008.
- 6 Nabarun Bhattacharya, **Bipan Tudu**, Arun Jana, Devdulal Ghosh, Rajib Bandhopadhyaya, Manabendra Bhuyan, "Preemptive Identification of Optimum Fermentation Time for Black Tea Using Electronic Nose," *Sensors and Actuators B*, vol. 131, no. 1, 110-116, 2008.
- 7 Nabarun Bhattacharya, **Bipan Tudu**, Arun Jana, Devdulal Ghosh, Rajib Bandhopadhyaya, Amiya Baran Saha, "Illumination Heating and Physical Raking for Increasing Sensitivity of Electronic Nose Measurements with Black Tea," *Sensors and Actuators B*, vol. 131, no. 1, 37-42, 2008.

**b) Book Chapter**

**Title of the Book:** *Applied Bioinformatics Statistics and Economics in Fisheries Research*

**Title of the Chapter:** *Non-Invasive Methods of Fish Freshness Determination by Electronic Olfaction*, New India Publishing Agency, February, 2008, P. 233-245 By Nabarun Bhattacharya, Bipan Tudu, Rajib Bandhopadhyaya, Devdulal Ghosh, Arun Jana.

**c) List of Paper Published/Accepted in Seminars/Conference proceedings:**

- 1 A. Tripathy, A. Dutta, D. Majumder, D. Choudhury, **B. Tudu**, N. Bhattacharyya, "Electronic nose for black tea quality evaluation based on KPCA," *International Conference on Instrumentation(ICI-2009) and National Symposium on Instrumentation (NSI-33)*, Cummins College of Engineering for Women, Karvenagar, Pune - 411052, Maharashtra, INDIA, 21-23 January 2010 (Accepted for oral presentation).
- 2 **B. Tudu**, S. Ghosh, A. Jana, N. Bhattacharyya, R. Bandyopadhyay, "Prediction of optimum fermentation time for black tea processing by means of electronic nose and recurrent neural network," *National Symposium on Instrumentation (NSI-33)*, AU College of Engineering (Autonomous), Andhra University, Visakhapatnam - 530 003, Andhra Pradesh, 08 - 10 December 2008.
- 3 Santi Sankar Chowdhury, **Bipan Tudu**, Nabarun Bhattacharyya, Rajib Bandyopadhyay, "Portable Electronic Nose System for Aroma Classification

of Black Tea," *IEEE Region Colloquium and 3<sup>rd</sup> International Conference on Industrial and Information Systems (ICIIS 2008)*, 8-10 December 2008, IIT Kharagpur, India.

- 4 Mousumi Palit, Nabarun Bhattacharyya, Ankur Dutta, Pallab Kumar Dutta, Subrata Sarkar, **Bipan Tudu**, Rajib Bandyopadhyay, "Virtual Instrumentation Based Voltammetric Electronic Tongue for Classification of Black Tea," *IEEE Region Colloquium and 3<sup>rd</sup> International Conference on Industrial and Information Systems (ICIIS 2008)*, 8-10 December 2008, IIT Kharagpur, India.
- 5 Nabarun Bhattacharyya, **Bipan Tudu**, Animesh Metla, Arun Jana, Rajib Bandyopadhyay, "Incremental PNN Classifier for a Versatile Electronic Nose," *IEEE International Conference on Sensing Technology (ICST 2008)*, 30 Nov.-3 Dec. 2008, Tainan, Taiwan, pp. 242-247.
- 6 **Bipan Tudu**, Nabarun Bhattacharyya, Bikram Kow, Rajib Bandyopadhyay, "Comparison of Multivariate Normalization Techniques as Applied to Electronic Nose Based Pattern Classification for Black Tea," *IEEE International Conference on Sensing Technology (ICST 2008)*, 30 Nov.-3 Dec. 2008, Tainan, Taiwan, pp. 254-258.

**5 Collaborative Programmes:**

None

**6 Major Achievements:**

Bipan Tudu received the SERC Fast Track Proposal for Young Scientists-Engineering Sciences scheme.

**MECHANICAL ENGINEERING**

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**1 (A) Courses Offered:**

Name of the Courses	Course Intake	Duration	Capacity
Bachelor's Degree in Mechanical Engineering		4 Years	105
Bachelor's Degree in Mechanical Engineering (Evening)		4 Years	40
Master's Degree in Mechanical Engineering		2 Years	25
Master's Degree in Automobile Engineering		2 years	05

**1 (B) Number of Faculty Members:**

(Sanctioned Strength : (79+1)

- Professors: 22
- Readers: 28
- Lecturers: 17

**2 (A) Departmental Research Activities (Broad Areas) :**

- Hydraulic and Combustion control
- Experimental and Computational fluid dynamics and heat transfer including problems on multi-phase flow.
- Fluid Power and control.
- Heat transfer analysis of various production process.
- Combustion modeling and simulation.
- Pollution and its control
- Alternative fuels
- IC engine
- Vibration analysis.
- Vibration control in machine foundations.
- Laser machining process.
- Fracture Mechanics.
- Dynamic instability of machine structures
- Synthesis and analysis of machine components.
- Experimental stress and deformation analysis.
- Composite structure.
- Computer Aided Design & Manufacturing (CAD/CAM)
- Energy and Exergy analyses of advanced power and cogeneration systems. Clean coal technology. Combined cycles. Energy conservation. Fuel cell technology.
- I.C. Engine & Combustion, Alternative Fuels (i.e. Bio-diesel, Hydrogen, ethanol, methanol and vegetable oils) Air Pollution and Noise Pollution, Materials.
- Tribology
- Welding Technology
- Surface Engineering
- Machining processes including non-traditional
- Waste Managemenet
- Total Quality Management

**2 (B) Major Research Projects :**

<b>Sponsor</b>	<b>Description</b>	<b>Amount</b>	<b>Remarks</b>
BARC, 2009-12	Master curve generation for fracture toughness of the material 20 Mn Mo Ni 55 from lower shelf to upper shelf	44 00 000	PI: Prof. S. Acharyya
BARC, 2009-12	Code development for numerical simulation of premixing phase of fuel-coolant interaction in Indian pressurized heavy-water reactors	13 57 000	PI : Prof. N. K. Manna
BARC, 2009-12	Large-scale molten fuel-coolant interaction	9500000	PI: Prof.: S. Sen
BARC, 2009-12	Clad behaviour under accident condition	35 90 000	PI: Prof.: K. Ghosh
BARC, 2009-12	Thermal-hydraulic study for PHWR channel blowdown	1 80 000 00	PI: Prof. S. Das
CSIR, 2009-12	Fuel effects on performance and emission characteristics of thermal pulsed combustor	6 42 000	PI: Prof. A. Mukhopadhyay
ERIPR, 2009-12	Dynamic characterization of model gas-turbine combustors for early detection of thermo-acoustic instability and lean blowout	14 95 000	PI: Prof. A. Mukhopadhyay
BARC, 2009-12	Thermal hydraulic study for PHWR channel blowdown	1,86,05,555	PI: Profs. S. Das, D. Mishra, S. Simlandi
BRNS, 2009-12	Experimental investigation on critical flow behaviour for a pipe crack under bending moment	24,36,680	PI: Prof. S. Das, D. Mishra
UGC, 2007-10	Prediction of Forgeability of Aluminium Silicon Carbide Metal Matrix Composites by response surface method	10,00,000	PI: Prof.: G. Sutradhar
Indian National Science Academy	History of Technical Education in India:1900-2005	3,00,000	PI: Prof. S. Saha:
The Jute Corporation of India	Development of High Speed Jute Ribboner	31,00,000	PI: Prof. S.K. Ghosh
West Bengal Pollution Control Board	Inventorisation of Plastics Recycling and processing units in West Bengal	5,84,000	PI: Prof. S.K. Ghosh
Dept of Environment, Govt. of W.B.	Waste to wealth -ER2	Surendra 12,37,000	PI: Prof. S.K. Ghosh

**3 (A) Invited Lecturers Delivered/Session Chaired :**

**Faculties of this Department have delivered lectures as indicated below:**

Prof. Gautam Sutradhar

1. "Casting Solidification & Simulation- Few Case Studies" -11<sup>th</sup> Dec, 2008 at Rotary Club, Howrah..
2. "Casting Defects and Remedies" on 8.9.2009 at CEO Premises, Dasnagar, Howrah. Program was organized by Directorate of Micro & Small Scale Enterprise, Howrah.
3. "Production of Clean Steel Casting through Simulation Technique" on 9<sup>th</sup> Sept,

2009 at National Workshop on CDM and Cleaner Production at Bhubaneswar, Orissa.

Prof. Samir K. Saha

- 1 "Jadavpur University : Latest developments & future outlook". Lecture delivered on 24th May, 2009 at NCE & Jadavpur University Alumni Association, Mumbai.
- 2 "Introduction to Clean Development Mechanism". Lecture delivered on 24th June, 2009 in the UGC-Academic Staff College Refresher Course of Department of Power Engineering, Jadavpur University, Kolkata.
- 3 "The Dynamic Curriculum in Mechanical Engineering". At the Seminar on Mechanical Engineering Education at Crossroads organised by Mechanical Engineering Department, Jadavpur University on 10th & 11th July, 2009, Kolkata.
- 4 "Introduction to Renewable Energy". Lecture delivered on 17th January, 2009 at the 24th National Convention on "Energy Security through Renewable Energy Sources", 17th -18th January, 2009, the Institution of Engineers (India), Raipur.
- 5 Panel Member, at discussion at the national seminar on "Energy Security & Nuclear Power -An Indian Perspective", organised by NCE & Jadavpur University Alumni Association in collaboration with Jadavpur University, 20<sup>th</sup> June, 2009, Jadavpur University, Kolkata.

Prof. Swarnendu Sen

- 1 Flame Synthesis Technique for Carbon Nano-structures; Swarnendu Sen, Aerospace Engineering Departmental Seminar, IIT Madras, May 1, 2009.

Prof. Achintya Mukhopadhyay

- 1 Transport Phenomena in Radial Flow through Gap between two Parallel Disks, Aerospace Engineering Departmental Seminar, IIT Madras, May 1, 2009.
- 2 Nonlinear Dynamics of Thermal Pulse Combustors, Aerospace Engineering Departmental Seminar, IIT Kanpur, October 9, 2009.
- 3 Modelling of Droplet Evaporation and Combustion, UGC ASC Course in Dept of Power Engg., 10<sup>th</sup> June 2009, Jadavpur University

Prof. D. Nag

Name of the Organisation	Place	Subject	Date
Development Consultants Private Limited	Kolkata	An Introduction to Mechanics of Piping Stress Analysis	01 <sup>st</sup> June-05 <sup>th</sup> June, 2009
Indian Oil Corporation Limited	Haldia	Basics of Mechanics	14th July, 2009-18th August, 2009
National Institute of Technical Teachers' Training and Research	Kolkata	Particle Kinematics	02nd Sept., 2009-03rd Sept., 2009

Dr. Himadri Chattopadhyay

"Application of CFD in Power Plants", UGC ASC Course in Dept of Power Engg., July 2009, Jadavpur University

Prof. Sudipta De

- 1 "Artificial Neural Network (ANN): Is it useful for an energy manager? A case study", on 29<sup>th</sup> April 2009, Indian Institute for Social Welfare and Business Management (IISWBM), Kolkata.
- 2 "Combining power and process plants for improved performance", Refresher Course organized by the Department of Power Engineering, Jadavpur University, Kolkata, 10<sup>th</sup> June 2009.
- 3 "Development and multi-utility of an ANN model for an industrial gas turbine: a demonstration project", Refresher Course organized by the Department of Power Engineering, Jadavpur University, Kolkata, 10<sup>th</sup> June 2009.
- 4 "Assessing environmental impact of industrial development looking through the windows of second law of thermodynamics", in International Symposium on Environmental Pollution, Ecology and Human Health (ISEPEHH-2009) Organized by S. V. University, Tirupati in collaboration with United States Environmental Protection Agency (US EPA) during July 25-27, 2009.

Prof. Ashis Bandyopadhyay

- 1 Delivered one invited talk on ADVANCES IN WELDING at NIT Agartala .
- 2 Delivered one talk on Welding Technology for the teachers' training programme at NITTR., Kolkata.

Prof. Sadhan K. Ghosh

- 1 18.07.2009 Jute Corp of India Purchase Planning delivered invited lecture to JCI officers.
- 2 22.06.2009 Indian Maritime University, IIPM, Kolkata Life Cycle of Equipment and Economics delivered invited lecture to senior officers of ports.
- 3 16.06.2009 Max Muller Bhawan, Kolkata Problems in Vehicular Pollution in cities delivered invited lecture
- 4 28.04.2009 Rotary Club of Calcutta Plastics Waste Management delivered invited lecture
- 5 17.04.2009 National Seminar on Hazardous Waste Management by Indian Institute of Chemical Engineers, Jadavpur PWM in India and Other Countries-Problems and Prospects delivered invited lecture
- 6 17.03.2009 CIPET, at IPF Seminar Room Rapid Prototyping and Reverse Engineering delivered invited lecture
- 7 16.03.2009 IIPM, Kolkata TPM in port management delivered invited lecture to senior officers of ports.
- 8 27.02.2009 CESC Ltd., CESC House, Kolkata Safety Audit in Power distribution, transmission and installation delivered invited lecture to senior officers CESC Ltd., CESC House, Kolkata
- 9 20.02.2009 Environment Partnership Summit by India Chamber of Commerce

- at Hyat Regency, Kolkata Feb 19-21,2009 Air Pollution Control Techniques  
Vis-à-vis Climate Change delivered invited lecture
10. 03.02.2009 WBSETCL, at Zeerat 400 KV O&M S/S. TQM on  
Power Transmission delivered invited lecture to senior officers
  11. 18.01.2009 National Conf on Rural Food Processing & Entrepreneurship  
in coming age of consumerisation, FIBE, JU & AFST (I). Entrepreneurship  
and Rural Business opportunity delivered invited lecture
  12. 23 th & 24th Dec, 2008 Gobardanga Municipality Inauguration of  
Exhibition on Environment Inaugurated & delivered lecture
  13. 29.12.2008 WBSETCL, Vidyut Bhawan, Saltlake TQM on Electricity  
Transmission Project delivered invited lecture to senior officers

**Session Chaired**

Dr. Tarun Naskar

Chaired Session in Computer Aided Modelling and Simulation in Computational  
Mechanics (CAMSCM 2009), Nirjuli-791109, Arunachal Pradesh, India, 13-14  
March 2009.

Prof. Sudipta De

Chaired session in Environment Management Session of International Symposium  
on Environmental Pollution, Ecology and Human Health (ISEPEHH-2009)  
Organized by S. V. University, Tirupati in collaboration with United States  
Environmental Protection Agency (US EPA) during July 25-27, 2009.

Prof. Pradip K. Pal

Chaired a technical session in the International Conference: AMPT - 2009, to  
be held at Kula-Lumpur, Malaysia during 26-29 Oct., 2009

Prof. Ashis Bandyopadhyay

Chaired a technical session at AMPT Conference, 2009

Prof. Sadhan K. Ghosh

Chairman, Panel Discussion on Plastics Waste Management, IPF Golden Jubilee  
Celebration Seminar at Grand Hotel, Kolkata on 15.05.2009.

**3 (B) Seminar/Workshop/Conference/Symposium/Training Attended:**

Prof. Prasanta Sahoo

National Conference on Computer aided Modelling and Simulation in  
Computational Mechanics at NERIST, Nirjuli during March 13-14, 2009.

Dr. Tarun Naskar

- 1 Computer Aided Modelling and Simulation in Computational Mechanics  
(CAMSCM 2009), Nirjuli-791109, Arunachal Pradesh, India, 13-14 March 2009.
- 2 14<sup>th</sup> National Conference on Machines and Mechanisms (NaCoMM-09), NIT,  
Durgapur, India 17-18 December 2009

Prof. Gautam Sutradhar

- 1 Aluminium metal foam a Potential material in Automotive & Aerospace



"Presented in a National Conference in Applied Mathematical Science on 20-22 February, 2009.

- 2 "Low Cost High Quality Casting Production By Solidification Simulation Technique" presented in Look East Conference in Jamshedpur, Jharkhand on 12-13<sup>th</sup> March' 2009.
- 3 "Aluminium Metal Matrix Composite: A Potential Material for Future" presented in Look East Conference in Jamshedpur, Jharkhand on 12-13<sup>th</sup> march' 2009. .(By Ph.D. Scholar)

Prof. Ashis Bandyopadhyay

- 1 Attended 2<sup>nd</sup> International and 23<sup>rd</sup> AIMIDR Conference 2008, IIT Madras and presented a paper there.
- 2 Attended AMPT2009 Conference at Kuala Lumpur and presented a paper there.

Prof. Pradip K. Pal

- 1 Attended 2<sup>nd</sup> International and 23<sup>rd</sup> AIMIDR Conference 2008, IIT Madras and presented a paper there.
- 3 Attended AMPT2009 Conference at Kuala Lumpur and presented a paper there.

Prof. Samir K. Saha

Attended 5th Indo-German Theme Meeting on 'Structural Integrity of Pressure Retaining Components' jointly organised by Jadavpur University & BARC, 18th February, 2009, Jadavpur University, Kolkata.

Prof. Achintya Mukhopadhyay

7<sup>th</sup> Asia-Pacific Conference on Combustion, May 24 - 27, 2009, Taipei, Taiwan

Prof. Sadhan K. Ghosh

- 1 Meeting on Climate Change, Invited by British High Commission, Kolkata, 20.01.2009.
- 2 Seminar on Solid Waste Management at Hotel Oberoi Grand, Invited by British High Commission, Kolkata, 05.03.2009.
- 3 International Conference on Plastics Recycling and the Exhibition organized by Plastindia Foundation at Pragati Maidan, on 5th - 6th February, 2009.
- 4 ISO TC 61 Briefing meeting at BIS, New Delhi as a team member of Indian Delegation to Rome, Italy in September 2009.

Dr. Nilkanta Barman

**International Conference Attended and Presented a Poster Paper:**

- **N. Barman** and P. Dutta, "Studies on Transport phenomena on Rheocasting in Presence of Electromagnetic Stirring", International Conference on Solidification Science and Processing on 19-23 November, 2009, IIT Chennai.

**Workshop Attended:**

- Two day workshop on "Mechanical Engineering Education at Crossroads" on 10-11 July, 2009 held in the Department of Mechanical Engineering, Jadavpur University, Kolkata.

- One day workshop on "Casting Simulation and Optimization: Benefits, Bottlenecks and Best Practices" on 28<sup>th</sup> August, 2009 held in the Department of Mechanical Engineering, Jadavpur University, Kolkata

**3 (D) Orientation/Refresher Course Attended:**

Dr. Nilkanta Barman

**Refresher Course Attended:**

- "Art and Science of Mechatronics and Its Application in Robotics" on 1-20 June, 2009 held in the Department of Electrical Engineering, Jadavpur University, Kolkata.

**3 (E) Orientation Course/ Refresher Course Organized:**

Name of the Programme	Convenor and Joint Convenor	Venue	Date
5 <sup>th</sup> Indo-German Theme Meeting on Structural Integrity of Pressure Retaining Components	Dr. S.K. Acharya	Jadavpur University	February 18, 2009
Two-Day Workshop on Mechanical Engineering Education at Cross-Roads	Dr. Abhijit Chanda Dr. Debabrata Nag	Dept of Mechanical Engg, Jadavpur University	10-11 July, 2009
Casting Simulation and Optimisation: Benefits, Bottlenecks, and Best Practices"	Prof. Gautam Sutradhar	Jadavpur University	28 <sup>th</sup> August, 2009

**4 (A) Books/Monographs etc. Published:**

- 1 Prof. Prasanta Sahoo has authored a book chapter in "Tribology Research Advances" (ed. J. Paulo Davim) published by Nova Science, USA, 2009.
- 2 Prof. Prasanta Sahoo has co-authored an article in the book "Modelling and Simulation in Computational Mechanics: Engineering Applications" (ed. S K Panigrahi) published by LAP Lambert Academic Publishing, Germany, 2009.
- 3 Prof. Prasanta Sahoo has been invited to author Chapter 1 (on Surface Topography) of the book "Tribology for Engineers" to be published by Woodhead Publishing, Oxford.
- 4 Prof.s D. Nag and A. Chanda has authored a book "Fundamentals of Engineering Mechanics", Scholar Books,, Kolkata
- 5 Prof.s D. Nag and A. Chanda has the following book in press, "Fundamentals of Strength of Materials", Wiley India, New Delhi
- 6 Prof. Sadhan K Ghosh. Waste Management" - Proceedings of 1st International Conference on Solid Waste Management in 2009 November, OPH, Kolkata.- Edited -
- 7 Prof. Sadhan K. Ghosh, Report on Inventorisation of Plastics Recycling and processing units in West Bengal, by CQMS, JU & WBPCB.

**4 (B) Articles Published in Journals:**

- 1 Sahoo, P, Mitra, A and Saha, K N, Elastic-plastic adhesive contact of rough surfaces using n-point asperity model, Journal of Physics D: Applied Physics, 2009, 42, 065302 (1-13)

2. Das, D, Sahoo, P and Saha K N, Free vibration analysis of rotating annular disk under uniform pressure loading, *Journal of Mechanical Engineering Science, Proc. IMech E Part C*, 2009 (in press).
3. Das, D, Sahoo, P and Saha K N, A variational analysis for large deflection of skew plates under uniformly distributed load through domain mapping technique, *International Journal of Engineering Science and Technology*, 2009, 1 (1), 16-32.
4. Barman, T K and Sahoo, P, ANN modeling of fractal dimension in electrical discharge machining and comparison with RSM models, *Journal of Modern Manufacturing Technology*, 2009 (in press)
5. Sahoo, P and Ali, S M, Adhesive friction for elastic-plastic contacting rough surfaces based on plastic asperity concept, *Journal of Tribology and Surface Engineering*, 2009 (in press)
6. Sahoo, P, Adhikary, D and Saha, K N, Finite element based elastic-plastic contact of fractal surfaces considering strain hardening, *Journal of Tribology and Surface Engineering*, 2009 (in press)
7. Barman, T K and Sahoo, P, Artificial neural network modelling of fractal dimension in CNC turning and comparison with response surface model, *Journal of Machining and Forming Technologies*, 2009, 1(3-4), tbd-tbd.
8. Sahoo, P, Barman, T K and Routara, B C, Taguchi based fractal dimension modeling of surface profile and optimization in cylindrical grinding, *Journal of Manufacturing Technology Research*, 2009 (in press)
9. Das, D, Sahoo, P and Saha, K N, Dynamic analysis of non-uniform taper bars in post-elastic regime under body force loading, *Applied Mathematical Modelling*, 2009, 33(11), 4163-4183.
10. Das, D, Sahoo, P and Saha, K N, An experimental study on transverse vibration of tapered bars in elastic-plastic regime, *Journal of Sound and Vibration*, 2009, 324, 74-90.
11. Sahoo, P, Barman, T K and Routara, B C, Fractal characterization of surface profile and optimization in EDM using Taguchi method, *International Journal of Surface Science and Engineering*, 2009, 3(4), 328-346.
12. Sahoo, P, Wear behaviour of electroless Ni-P coatings and optimization of process parameters using Taguchi method, *Materials and Design*, 2009, 30(4), 1341-1349
13. Das, D, Sahoo, P and Saha, K N, Out-of-plane free vibration analysis of rotating tapered beams in post-elastic regime, *Materials and Design*, 2009, 30(8), 2875-2894.
14. Das, D, Sahoo, P and Saha, K N, Dynamic analysis of non-uniform taper bars in post-elastic regime under uniform axial loading, *Materials and Design*, 2009, 30(6), 2113-2127.
15. Sahoo P, Routara, B C, Barman T K and Bandyopadhyay, A, Grey-based Taguchi analysis for optimization of CNC turning parameters with multiple roughness characteristics, *Journal of Manufacturing Technology Research*, 2009, 1 (1-2), 137-157.

16. Sahoo, P, Routara, B C and Bandyopadhyay, A., Roughness modeling and optimization in EDM using response surface method for different workpiece materials, *International Journal of Machining and Machinability of Materials*, 2009, 5 (2-3), 321-346.
17. Das, D, Sahoo, P and Saha, K N, Nonlinear vibration analysis of clamped skew plates by a variational method, *Journal of Vibration and Control*, 2009, 15(7), 985-1017.
18. Sahoo, P and Ali, S M, Scale effects in elastic-plastic adhesive contact of rough surfaces, *Journal of Tribology and Surface Engineering*, 2009 (in press)
19. Routara, B C, Bandyopadhyay, A. and Sahoo, P, Roughness modeling and optimization in CNC end milling using response surface method: effect of workpiece material variation, *International Journal of Advanced Manufacturing Technology* 2009, 40 (11-12), 1166-1180.
20. S. Datta, A. Bandyopadhyay and P. K. Pal, 2008, "*Mathematical modeling of process behavior of Submerged Arc Welding using reclaimed slag*", For *International Journal of Manufacturing Science and Production*, Volume 9, Numbers 3-4, pp. 159-170, Freund Publishing House, Israel.
21. G. Nandi, S. Datta, A. Bandyopadhyay and P. K. Pal, "*Application of PCA based hybrid Taguchi method for multi-criteria optimization of submerged arc weld: A case study*", For *International Journal of Advanced Manufacturing Technology*, Springer-Verlag London Limited. (Accepted)
22. G. Nandi, S. Datta, A. Bandyopadhyay and P. K. Pal, "*Use of desirability function approach in grey based Taguchi method for solving correlated multi-response optimization problem: Case study in submerged arc welding*", For *International Journal of Advanced Manufacturing Technology*, Springer-Verlag London Limited. (Accepted)
23. S. Datta, A. Bandyopadhyay and P. K. Pal, July 2008, "*Reclaiming of submerged arc welding slag: Comparison between SAW processes with and without slag-mix*", *Indian Welding Journal*, Indian Institute of Welding, Volume 41, Number 3, 22-31.
24. S. Datta, A. Bandyopadhyay and P. K. Pal, "*Effect of Slag Reclaiming on Weld Microstructure in Submerged Arc Welding process*", For *Indian Welding Journal*, Indian Institute of Welding. (In Press)
25. Sutradhar, G., "Non Linear Modeling using Central Composite Design to Predict the Density and Relative Density of Sintered iron Powder" paper has been published in *Manufacturing Technology & Research*, Vol. 4 No.3 & 4, July-Dec, 2008.
26. Sutradhar, G., "Computer Aided Simulation and optimization of casting: - A Case Study" accepted in *Indian Foundry journal* for the publication in November, 2009 issue.
27. Kundu, B., "A new methodology for determination of an optimum fin shape under dehumidifying conditions", *Int. J. Refrigeration*, 2009 (Accepted).

28. Kundu, B., Barman, D., "Analytical study on design analysis of annular fins under dehumidifying conditions with a polynomial relationship between humidity ratio and saturation temperature", *Int. J. Heat Fluid Flow*, 2009 (Accepted).
29. Kundu, B., Ehanja, D., "Performance and optimization analysis of a constructal T- shaped fin subject to variable thermal conductivity and convective heat transfer coefficient", *Int. J. Heat Mass Transfer*, 2009 (in press).
30. Kundu, B., "Approximate analytic solution for performances of wet fins with a polynomial relationship between humidity ratio and temperature", *Int. J. Thermal Science*, Vol. 48, No. 11, 2108-2118, November 2009.
31. Kundu, B., "Approximate analytical method for prediction of performance and optimum dimensions of pin fins subject to condensation of quiescent vapor", *Int. J. Refrigeration*, Vol. 32, No. 7, 1657-1671, November 2009.
32. Kundu, B., Ghosh, G.K., "An approximate analytical prediction about thermal performance and optimum design of pin fins subject to condensation of saturated steam flowing under forced convection", *Int. J. Refrigeration*, Vol. 32, No. 5, pp. 809-825, August 2009.
33. Kundu, B., Das, P.K., "Performance and optimum dimensions of flat fins for tube-and-fin heat exchangers: A generalized analysis", *Int. J. Heat Fluid Flow*, Vol. 30, No. 4, pp. 658-668, August 2009.
34. Kundu, B., Das, P.K., "Performance and optimum design analysis of convective fin arrays attached to flat and curved primary surfaces", *Int. J. Refrigeration*, Vol. 32, No. 3, pp. 430-443, May 2009.
35. Kundu, B., "Analysis of thermal performance and optimization of concentric circular fins under dehumidifying conditions", *Int. J. Heat Mass Transfer*, Vol. 52, No. 11-12, pp. 2646-2659, May 2009.
36. Kundu, B., Miyara, A., "An analytical method for determination of the performance of a fin assembly under dehumidifying conditions: A comparative study", *Int. J. Refrigeration*, Vol. 32, No. 2, 369-380, March 2009.
37. Naskar, T.K. and Acharyya, S., *Measuring cam-follower performance, Mechanism and Machine Theory* (Accepted)
38. K.B. Sahu, A. Datta, S. Sen, A. Sarkar; *Concentration Distributions of Intermediate Hydrocarbons and Soot in Propane/Air Triple Flames*; J. Energy Institute (In Press)
39. Banerjee, S. , Mukhopadhyay, A., Sen, S. Ganguly, r., *Thermomagnetic Convection in Square and Shallow Enclosures for Electronic Cooling;; Numerical Heat Transfer: Part-A; Vol-21, 931-951, 2009*
40. .Ghosh, K., Mukhopadhyay, A., Sen, S., Sanyal, D., *An Integral Approach for Simulation of Vapour Film Dynamics around a Spherical Surface;; International Journal of Thermal Sciences, Vol-48, 1327-1337, 2009.*
41. Santra, A.K., Sen, S. , Chakraborty, N, *Prediction of Heat Transfer due to Presence of Copper-Water Nanofluid Using Resilient-propagation Neural Network; International Journal of Thermal Sciences, Vol-48, 1311-1318, 2009.*

42. Santra, A.K., Sen, S., Chakraborty, N., Effect of Particle Size on Heat Transfer in a Differentially Heated Square Cavity Using Copper-Water Nanofluid;; *Journal of Energy, Heat and Mass Transfer* (In Press).
43. Datta, S., Mondal, S., Mukhopadhyay, A., Sanyal, D. and Sen, S., An investigation of nonlinear dynamics of a thermal pulse combustor; *Combustion Theory and Modelling*, Vol-13, 17-38, 2009.
44. Study of Heat Transfer due to Laminar Flow of Copper-Water Nanofluid through Isothermally Heated Parallel Plates, A.K. Santra, S. Sen, N. Chakraborty, *International Journal of Thermal Sciences*; Vol-48, 391-400, 2009.
45. Modak, N, Kejriwal, D, Nandy, K, Datta, A, Ganguly, R, "Experimental and numerical characterization of magnetophoretic separation for MEMS-based biosensor applications" *Journal of Biomedical Microdevices*, 1-12, Article in Press, 2009.
46. Modak, N, Datta, A, Ganguly, R, "Cell separation in a microfluidic channel using magnetic microspheres", *Journal of Microfluidics and Nanofluidics* 6 (5), pp. 647-660, 2009.
47. Banerjee, A, Mukhopadhyay, S, Sen and R, Ganguly, Thermomagnetic Convection in Square and Shallow Enclosures for Electronics Cooling, *Numerical Heat Transfer Part A: Applications*, Vol. 55, 931-951, 2009.
48. S. Chaudhuri, A. Mukhopadhyay, M.S. Biswas, B.M. Cetegen and S. Basu, Control of Combustion in a Thermally Stabilized Burner, *Proceedings of the Institution of Mechanical Engineers -Journal of Power and Energy*, Vol. 223 127 - 139, 2009.
49. A. Briones, A. Mukhopadhyay and S.K. Aggarwal, Analysis of Entropy Generation in Hydrogen-Enriched Methane-Air Propagating Triple Flames, *International Journal of Hydrogen Energy*, Vol. 34, 1074 - 1083, 2009.
50. A. Mukhopadhyay, Analytical Solutions of Nusselt Number for Thermally Developing Radial Flow through Small Gap between Two Parallel Disks, *Transactions of ASME Journal of Heat Transfer*, Vol. 131 054502-1-054502-4, 2009.
51. A. Mukhopadhyay, S. Banerjee and C. Gupta, Fully Developed Hydrodynamic and Thermal Transport in Combined Pressure and Electrokinetically Driven Flow in a Microchannel with Asymmetric Boundary Conditions, *Communicated to International Journal of Heat and Mass Transfer*, Vol. 52, 2145 - 2154, 2009.
52. A. K. Singha, A. Sarkar and P. K. De, "Numerical study on heat transfer and fluid flow past a circular cylinder in the vicinity of a plane wall", *Numerical Heat Transfer, Part-A*, 53, 641 - 666, 2008.
53. B.K. Mondal, A. Sarkar and A, Datta, "Transient development of flame and soot distribution in laminar diffusion flame with preheated air", *ASME J1. Engg. Gas Turbines and Power*, Vol. 131, 031501 - 09, Vol. 131, 2009.
54. R. K. Mallik, S. K. Mahapatra and A. Sarkar, "Neural finite difference method (NFDM) in development of improved differential approximation (IDA) and its

application for coupled conduction and radiation heat transfer in a square enclosure: An experimental validation", *International Journal of heat and Mass Transfer*, vol. 52, 504- 515, 2009.

55. S. Datta, A. Biswas, G. Majumdar, 2009, "Sensitivity analysis for relative importance of different weld quality indicators influencing optimal process condition of submerged arc welding using grey based Taguchi method", *International Journal of Manufacturing Science and Production*, Volume 10, Number 2, 109-122, Freund Publishing House, Israel.
56. Datta, A. Biswas, G. Majumdar, "Identification of significant process parameters influencing overall quality indicator of submerged arc weld using Principal Component Analysis (PCA) and Analysis of Variance (ANOVA)", *International Journal of Manufacturing Science and Production*, Freund Publishing House, Israel. (Accepted)
57. S. Datta, A. Biswas, G. Majumdar, "Utility theory for evaluation of optimal process condition of SAW: A multi-response optimization approach", *Journal of Applied Sciences Research*, INSINET Publication. (Accepted) (Manuscript ID: 1736-R-JAS)
58. B. Sen Choudhury, S. Datta, R. S. Sen, B. Oraon, G. Majumdar, "Parametric Optimization of Electroless Ni-P Coating Using Weighted Principal Component Analysis (WPCA) And Taguchi Method" For *International Journal of Applied Engineering Research*, Research India Publication (Accepted) .
59. Banerjee, Simul, Prasad, BSSS, Numerical evaluation of transient thermal loads on a weld wire electrode under spatially random multiple discharge conditions with and without clustering of sparks, *Int J. Advanced Manufacturing Technology* (available online), 2009
60. Sundar M., Nath, A. K, Bandyopadhyay, D. K. Chaudhuri,, S. P., Dey, P. K., & Misra, D., Effect Of Process Parameters On The Cutting Quality In Laser Cutting Of Mild Steel *Int. J Adv. Manufacturing Technology* (2009) 40:865-874
61. Singha, A.K., Sarkar, A., Dey, P.K., Wall Effect on Heat Transfer and Fluid Flow for Incompressible Viscous Flows Past a Circular Cylinder, *J. of Energy, Heat and Mass Transfer*, 2009.
62. Acharya, S.K. and Mandal M., Performance of EAs for four-bar linkage synthesis, *Mechanism and Machine Theory* 44 (2009) 1784-1794
63. N. Barman, P. Kumar and P. Dutta, "Studies on Transport Phenomena during Solidification of an aluminium alloy in Presence of Electromagnetic Stirring", *Journal of Materials Processing Technology*, Vol. 209 (18-19), 2009, P.5912-5923.
64. N. Barman and P. Dutta, "Effect of process parameters on transport phenomena during solidification in the presence of electromagnetic stirring", *Transactions of the ....*



### Conference Proceedings

- 1 Barman, T. K. and Sahoo, P., Fractal dimension modelling in aluminium grinding using artificial neural network, Proc. Nat. Conf. Optimization Techniques and Its Application in Engineering (NCOTAE) Chennai 2009.
- 2 Mitra, A., Sahoo, P. and Saha K. N., Free and forced vibration experiments on a crossbeam structure, International Conference in Mechanical Engineering (ICME) Dhaka 2009 (accepted).
- 3 Sahoo, P. and Das, S. K., Friction behaviour of electroless Ni-B coatings, International Conference in Mechanical Engineering (ICME) Dhaka 2009 (accepted).
- 4 Das, S. K. and Sahoo, P., Optimization of electroless Ni-B coatings based on multiple roughness characteristics, International Conference in Mechanical Engineering (ICME) Dhaka 2009 (accepted).
- 5 Routara, B. C., Sahoo, P. and Bandyopadhyay, A., Multi-objective optimization of cutting parameters for surface roughness in cylindrical grinding using response surface method, International Conference in Mechanical Engineering (ICME) Dhaka 2009 (accepted).
- 6 Chatterjee, B. and Sahoo, P., A finite element study of elastic-plastic hemispherical contact behavior against a rigid flat under varying modulus of elasticity and sphere radius, International Conference in Mechanical Engineering (ICME) Dhaka 2009 (accepted).
- 7 Chatterjee, B., Adhikary, D. and Sahoo, P., Effect of strain hardening on elastic-plastic contact behaviour of a sphere against a rigid flat - a finite element study, International Conference in Mechanical Engineering (ICME) Dhaka 2009 (accepted).
- 8 Barman, T. K. and Sahoo, P., Fractal dimension modeling in grinding using artificial neural network, Proc. International Conference on Advances in Mechanical Engineering (ICAME) Surat 2009, 1078-1082.
- 9 Barman, T. K. and Sahoo, P., Response surface modeling of fractal dimension in CNC turning, International Conference in Mechanical Engineering (ICME) Dhaka 2009 (accepted).
10. Barman, T. K. and Sahoo, P., Fractal dimension modeling in CNC milling using Taguchi method, International conference in Mechanical Engineering (ICME) Dhaka 2009 (accepted).
11. Das, D., Sahoo P. and Saha, K. N., Nonlinear vibration analysis of rotating thin disk through a numerical domain mapping technique, Proc. International Conference on Vibration Problems (ICoVP) Kharagpur 2009, 9-16 (session IVB).
12. Das, D., Sahoo P. and Saha, K. N., Out-of-plane vibration of rotating annular disk: a theoretical and experimental study, Proc. Nat. Conf. Computer Aided Modelling and Simulation in Computational Mechanics (CAMSCM 09) Nirjuli, 2009, 135-145.

13. Biswas, S., Barman, T. K. and Sahoo, P., Analysis of surface roughness in mild steel turning using response surface methodology, Proc. Nat Conf. Emerging Trends in Mechanical Engineering (ETME 09) Vallabh Vidyanagar, 2009, MS03, pp.1-6.
14. Sharma, A. K., Barman, T. K. and Sahoo, P., Modeling of surface roughness in EDM of mild steel using ANN, Proc. Nat. Conf. Emerging Trends in Mechanical Engineering (ETME 09) Vallabh Vidyanagar, 2009, PE08, 1-6.
15. De, A., Barman, T. K. and Sahoo, P., Prediction of surface roughness in CNC milling of mild steel using ANN, Proc. Nat. Conf. Emerging Trends in Mechanical Engineering (ETME 09) Vallabh Vidyanagar, 2009, PE07, 1-6.
16. Barua, K. S., Barman, T. K. and Sahoo, P., Response surface modeling of surface roughness in mild steel grinding, Proc. Nat. conf. Emerging Trends in Mechanical Engineering (ETME 09) Vallabh Vidyanagar, 2009, MS04, 1-6.
17. Sharma, A. K., Barman, T. K. and Sahoo, P., Artificial neural network modeling of surface roughness in EDM of brass material, Proc. Nat. Conf. Recent Trends in Manufacturing Technology (RIMT 09) Chennai, 2009, Session 4B, 1-6.
18. Barua, K. S., Barman, T. K. and Sahoo, P., Modeling of surface roughness in grinding of brass using RSM, Proc. Nat. Conf. Recent Trends in Manufacturing Technology (RIMT 09) Chennai, 2009, Session 4B, 1-6.
19. De, A., Barman, T. K. and Sahoo, P., Surface roughness modeling in CNC milling of brass using artificial neural network, Proc. Nat. Conf. Recent Trends in Manufacturing Technology (RIMT 09) Chennai, 2009, Session 4B, 1-6.
20. Biswas, S, Barman, T. K. and Sahoo, P., Surface roughness modeling in turning of brass using response surface methodology, Proc. Nat. Conf. Recent Trends in Manufacturing Technology (RIMT 09) Chennai, 2009, Session 4B, 1-6.
21. S. Moshat, A, Bandyopadhyay , P. K. Pal : *Optimization of cutting process parameters for CNC end milling Operations with multiple performance characteristics by using Grey-Taguchi method: Competitive Manufacturing - Vol. 2 : Proceedings of 2<sup>nd</sup> International and 23<sup>rd</sup> All India Manufacturing Technology Design and Research Conference (23<sup>rd</sup> AIMDR) held during 21<sup>st</sup> -23<sup>rd</sup> December 15 - 17, 2008, IIT Madras, 873-878.*
22. P. K. Pal , A, Bandyopadhyay , N. Chakrabarty :*Investigation of surface roughness in cylindrical grinding process* : Published in the *Proceedings of Poster Presentations of 2<sup>nd</sup> International and 23<sup>rd</sup> All India Manufacturing Technology Design and Research Conference (23<sup>rd</sup> AIMDR) held during 21<sup>st</sup> -23<sup>rd</sup> December 15 - 17, 2008, IIT Madras, 97 - 102..*
23. Pradip Kumar Pal, Asih Bandyopadhyay and Ramesh Rudrapati, "*Effects of process parameters on surface finish in cylindrical grinding*", accepted for presentation and publication in the Int. Conf. on Advances in material and Processing Technologies - AMPITP 2009, to be held during 26 - 29 Oct., 2009
24. Pradip Kumar Pal, Asih Bandyopadhyay and Ramesh Rudrapati, "*Vibration in traverse cut cylindrical grinding - experiments and analysis* ", accepted for

- presentation and publication in the Int. Conf. on Advances in material and Processing Technologies – AMPTP 2009, to be held during 26 – 29 Oct., 2009
25. S. Moshat, S. Datta, A. Bandyopadhyay and P. K. Pal, "Application of VIKOR method for evaluating best process environment of CNC end milling operation", For Proceedings of National Conference on Optimization Techniques and its Applications in Engineering, (NCOTAE' 2009) to be held on August 6-7, 2009, at Rajalakshmi Engineering College, Thandalam, Chennai-602 105, Tamil Nadu. (Accepted)
  26. Dhargupta, S and Naskar, T. K., Comparative study of multi-bar linkages based on path generation, Proc. of the Computer Aided Modelling and Simulation in Computational Mechanics (CAMSCM 2009), Nirjuli-791109, Arunachal Pradesh, India.
  27. Pramanik, N and Naskar, T. K., Determining link parameters using GA and comparing 4-bar mechanisms with and without clearance, Proc. of the International Conference on Emerging Research and Advances in Mechanical Engineering, ERA 2009, Velammal Engineering College, Chennai – 600 066, Tamil Nadu, India.
  28. Pramanik, N and Naskar, T. K., Synthesis of kinematics chains with and without clearance using GA, Proc. of 14<sup>th</sup> National Conference on Machines and Mechanisms (NaCoMM-09), NIT, Durgapur, India.
  29. Dhargupta, S and Naskar, T. K., Comparative study of multi-bar linkages based on path generation, Proc. of the Computer Aided Modelling and Simulation in Computational Mechanics (CAMSCM 2009), Nirjuli-791109, Arunachal Pradesh, India
  30. Pramanik, N and Naskar, T. K., Determining link parameters using GA and comparing 4-bar mechanisms with and without clearance, Proc. of the International Conference on Emerging Research and Advances in Mechanical Engineering, ERA 2009, Velammal Engineering College, Chennai – 600 066, Tamil Nadu, India.
  31. Pramanik, N and Naskar, T. K., Synthesis of kinematics chains with and without clearance using GA, Proc. of 14<sup>th</sup> National Conference on Machines and Mechanisms (NaCoMM-09), NIT, Durgapur, India.
  32. Bit, A., Chattopadhyay, H., Tibarewala, D. N., Nag, D., 2008, Biomechanical modeling of human respiratory system, Proc. Conference on National Workshop on Scientific Computing in Biomedical Engineering. Hindustan College of Science Technology, Agra, July, 2008.
  33. Bit., A., Chattopadhyay, H., Nag, D., 2009, Study of airflow in the trachea of a bronchopulmonary patient using CT Data, Proc. conference on Biomechanics IIT Roorkee, 7-8 March, 2009
  34. Saha, S.K., 'Introduction to Renewable Energy'. 24th National Convention on "Energy Security through Renewable Energy Sources", the Institution of Engineers (India), January, 2009, pp 5-10.

35. Das S, Mishra D., Saha, S.K., Ghosh S., Ghosh B., Mukhopadhyay D., Lele H.G., Ghosh A.K., Kushwaha H.S. "Leak Rate Modeling and Experimentation Program". 5th Indo-German Theme Meeting on 'Structural Integrity of Pressure Retaining Components' jointly organised by Jadavpur University & BARC, 18th February, 2009, Jadavpur University, Kolkata.
36. Mukhopadhyay, S., Bandyopadhyay, B., Saha, S.K.. "Thermodynamic Optimization of the performance of a Flat Plate Collector". Paper accepted in International Conference on Issues and Challenges in Energy Conversion and Management. 18th - 20th Dec., 2009, BHU.
37. Mukhopadhyay, S., Bandyopadhyay, B., Saha, S.K., "Entropy Generation in Flat Plate Collector as a function of Plate Temperature". Paper accepted in International Conference on Emerging Technologies in Environmental Sc. And Engg. AMU in conjunction with University of Toledo, Ohio, USA, Oct 26-28, 2009.
38. Ghosh S., Saha, S.K., Mukhopadhyay D., Mondal S. "Experimental Investigation of Subcooled Critical Flow through Slits". Paper accepted for the ISHMT - ASME Heat and Mass Transfer Conference to be held on January, 2010, Mumbai.
39. S. Datta, A. Biswas, and G. Majumdar, "Principal Component Analysis, Utility theory and Taguchi based integrated approach for multi-response optimization and offline quality control of SAW", proceedings of 6th International Conference and 13th Annual Paper Meet of Mechanical Engineering Division, The Institution of Engineers, Bangladesh, to be held during 30-31 December, 2009, Dhaka. (Accepted) (Manuscript ID: 138)
40. B. Sen Choudhury, S. Datta, R. S. Sen, B. Oraon, G. Majumdar and S. S. Mahapatra, "Evaluation of Optimal Process Environment in Electroless Ni-P Coating", proceedings of 6th International Conference and 13th Annual Paper Meet of Mechanical Engineering Division, The Institution of Engineers, Bangladesh, to be held during 30-31 December, 2009, Dhaka. (Accepted) (Manuscript ID: 139)
41. A. Biswas, S. Datta, S. Bhawmik, G. Majumdar, "Application of Taguchi Based Weighted Principal Component Analysis (WPCA) for Multi-Criteria Optimization of Submerged Arc Weld", For the Proceedings of National Conference on Optimization Techniques and its Applications in Engineering, (NCOITAE' 2009) held on August 6-7, 2009, at Rajalakshmi Engineering College, Thandalam, Chennai-602 105, Tamil Nadu.
42. S. D. Mohanty, S. Datta, S. S. Mahapatra and G. Majumdar, "Application of an Integrated Multi-Objective Optimization Methodology in Flux Core Arc Welding (FCAW)", For Weld India 2009-10, National Welding Seminar NWS 2009-10, Organized by Indian Institute of Welding, Kolkata to be held on 10<sup>th</sup> -13<sup>th</sup> December 2009. (Accepted)
43. Majumdar, G., Bhattacharya, A. and Oraon, B., Prediction of weld bead geometry for submerged arc welding process using rule-based inference system, Proceedings of National Conference on "Recent Advances in Mechanical Engineering"

(RAIME-08), March 20-21, 2008, National Engineering College, Kovilpatti, Tamil Nadu, India.

44. Sutradhar, G., Thomas, S. and Oraon, B., *Development of an fuzzy-logic intelligent system for the selection of most viable and economic casting method*, Proceedings of 68<sup>th</sup> World Foundry Congress (WFC), February 7 - 10, 2008, Chennai, India.
45. Balida, P., Datta, S. S. Mahapatra. Bandyopadhyay A. "Benchmarking of technical Institutes using grey relational analysis", , Proceedings of International Conference on Operations Research Applications in Engineering Research and Management, (ICOREM), to be organized by Anna University, Tiruchirappalli-620024, held on 27-29 May 2009.
46. Bandyopadhyay A., Datta, S., "Application of Taguchi method and entropy measurement technique for multi-criteria optimization of submerged arc weld", Proceedings of the International Conference on Advances in Materials and Processing Technologies, AMPT 2009, organized by Faculty of Engineering, International Islamic University, Malaysia, Gombak, Kuala Lumpur, Malaysia, to be held on 26-29 October, 2009.
47. Saha, Manas Kumar , Santanu Das, Asish Bandyopadhyay "Characterization of CO<sub>2</sub> shielded GMAW process for welding low carbon steel specimens", Srikanta Bandyopadhyay, National Seminar on Welding, organized by IIW, during 10-12 December, 2009. (Accepted)
48. Ghosh, Sadhan and Heart, S., "Electronic waste (E-waste): An emerging global waste stream", Waste Management - Proceedings of International Conf on SWM 2009, OPH, pp 193-198, 2009.
49. Ghosh, Sadhan T Banerjee, KK Singh," An overview of Waste to Energy facilities in Europe", Waste Management - Proceedings of International Conf on SWM 2009, OPH, pp 7-11, 2009
50. Ghosh, Sadhan & Asit Aich, "Quantative and qualitative analysis of leachate from waste dupms in urban dumping sites", Waste Management - Proceedings of International Conf on SWM 2009, OPH, 85-93, 2009.
51. Ghosh, Sadhan, T Banerjee, KK Singh, N Kumar, "Study of different types of Waste Collection bins", Waste Management - Proceedings of International Conf on SWM 2009, OPH, 114-122, 2009.

##### **5 Major Achievements of the Department:**

Prof. Samir Saha

- Nominated as an Expert member in the UGC Advisory Committee for Mechanical Engineering Group DRS support project in BITS, Pilani.
- NBA Accreditor for AICTE
- Advisor to the UPSC to interview candidates on 7 & 8.10.2009.
- Advisor to PSC, Government of West Bengal & Government of Tripura.
- Member of the Executive committee of Birla Industrial & Technological Museum, Kolkata.

- Member of the Governing Body of MCKV Institute of Engineering, Howrah.
- Member, Syllabus Committee, WBUT.
- Note on '**Teaching & Research**' published in Current Science Journal, 25 October, 2009 issue.

Prof. Sadhan K Ghosh

- Appointed by ISO TC 61 Secretariat as the convener of Working Group, ISO TC 61 WG2 since August 2009 and offered to Chair the ISO TC 61 WG 2 meeting at Rome, Italy.
- Selected as the member of Indian Delegation team to ISO TC 61 WG 2 meeting at Rome, Italy.
- Selected as the member of PCD 12 of BIS.
- Received the appointment as the Director of CBWE, Ministry of Labour & Employment, Govt of India.
- Invited to act as the Non Executive Director and Chief of Advisory Board, KRL Recyclers Ltd, a new private initiative on automatic recycling of e-waste by imported technology in the state of West Bengal.
- Dept of Sports, Govt of West Bengal has invited to act as the member of jury board for science models in the science exhibition in 150th Anniversary of Sir Jagadish Ch Bose on 30.12.2008.
- Invited to act as the member of Cluster Development Coordination Committee ( CDDC) and District Level Committee for the Silver Filigree Cluster Development Programme at Mograhat II, under micro and small enterprise cluster development programme, Govt of West Bengal, Directorate of Micro and Small Scale enterprise.
- Acted as the International Project Team Leader in ISO TC 61 for developing a guideline standard on chemical management in Plastics products and processes.

Prof. Prasanta Sahoo

Prof. Prasanta Sahoo has been appointed **Guest Editor** for a special issue on Computational Mechanics in International Journal of Engineering, Science and Technology (Multicraft)

Prof. Sahoo is Editorial Board Member of Materials and Design (Elsevier), International Journal of Engineering, Science and Technology (Multicraft), Journal of Tribology Research (Serials), Journal of Tribology & Surface Engineering (Nova Science).

Dr. Himadri Chattoopadhyay

Awardeed Guest Researchship for two months during 17.11.2009-14.01.2009 at the Dusseldofr University by DAAD, Germany

Nominated. as member of International Advisory Committee for the Intl. Conference on Investment Casting, organized by Society for Investment Casting, 24-26 Januray, 2010.

Dr. Balaram Kundu

Offered Research-Associateship for 2010-11 at the Dept. of Mechanical Engineering, HANYANG University, Korea

Dr. Kaushik Ghosh

Received Post Doctoral Fellowship for one year to carry out collaborative research in 'INSTITUT DE RADIOPROTECTION ET DE SURETE NUCLEAIRE' to carry research work on 'Heat and Mass Transfer under film boiling configuration'

**Peer Review**

Faculties of this department have been involved in the following peer review activities:

Prof. Simul Banerjee

Int. J. Advanced manufacturing Technology (Springer)

Prof. Prasanta Sahoo :

- Journal of Physics D: Applied Physics (IOP),
- Materials & Design (Elsevier),
- Tribology International (Elsevier),
- Journal of Machining and Forming Technologies (Nova),
- Journal of Tribology and Surface Engineering (Nova),
- International Journal of Engg Science & Technology (MultiCraft),
- Tribology Transactions (STLE),
- Materials Characterization (Elsevier),
- International Journal of Surface Science and Engineering (Inderscience),
- Arabian Journal for Science and Engineering B: Engineering (Kfupm),
- International Journal of Solids and Structures (Elsevier)

Prof. Achintya Mukhopadhyay

- Experimental Heat Transfer,
- Applied Thermal Engineering,
- Atomization and Sprays, International Journal of Multiphase Flow,
- Transactions of ASME Journal of Heat Transfer,
- International Journal of Spray and Combustion Dynamics

Prof. Sudipta De

- Energy - the Int. Journal,
- International Journal of Energy Research

Dr. Himadri Chattopadhyay

- International Journal of Heat mass Transfer



- ASME J. Heat Transfer
- Int. J. Thermal Sciences
- Materials Processing Technology
- Chemical Engineerin Sciences
- Enhanced Heat Transfer
- Int J Heat Fluid Flow

Dr. Balaram Kundu

- ASME Trans. J. Heat Transfer
- Heat Transfer Engineering
- Applied Thermal Engineering
- Int. J. Thermal Science
- J. Enhanced Heat Transfer

#### **METALLURGICAL & MATERIAL ENGINEERING**

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It. : 2325/2178

H.O.D : Dr. Pravash Ch. Chakraborty

E-mail : hod@metal.jdvu.ac.in

#### **Courses Offered:**

- 4 - Year Bachelor in Metallurgical Engg.
- 2 - Year Master of Metallurgical Engg in Industrial Metallurgy
- 2 - Year Master of Material Engineering

**Number of Faculty Members:** 12

#### **Area of Research Activity**

- Fatigue & fracture of materials,
- Corrosion behavior of metal & material and there protection methodology,
- Welding Technology.
- Melting & Solidification,
- Composite Materials
- Nano Materials,
- Archaeo Materials

- Biological Fuel Cell
- Biomaterial Implant

#### Main Achievement

Department is happy to receive the order for "Creation of Ministry **Steel Chair Professor** in Department of Metallurgical Engineering and five scholarships to undergraduates students pursuing study in Ferrous Metallurgy." Vide order no. : F.No.11(23)/2005-TW dt. 31<sup>st</sup>. October, 2008.

Department is also happy to receive the order for "Approval cum Sanction letter for the award of **Research Fellowship in Sciences to Meritorious students under the UGC scheme** of Research Fellowship in Science for Meritorious students to promote quality research in Universities/Departments" Vide order no. : F4-3/2006(BSR)/5-49/2007(BSR) dt. 22 October, 2008.

Department has been identified by Department of Science & Technology, GOI New Delhi, in its **FIST** Programme.

#### METALLIX 2008

Metallix 2008 was the second major project undertaken by the IIM, Kolkata chapter. Three - day long technical feat involving students from various parts of the country as well as industrial houses was organized.

#### Research Projects

Title of the Project	Supervising Agency	Period	
		From	To
Zn-Al cast metal corrosion study	Electro-steel casting	2009	2010
Tribal & Rural Arts Centre	TEQIP-SC &E	2006	2008
Investigation of Coal based Methane as a clean energy source and utilizations there on	CSIR	2005	2009
Corrosion and wear of hard materials, welds and composites	UGC - DSA	2004	2009
Study on Corrosion Fatigue behaviour of high strength steel weldments in 3.5% NaCl solution with and without cathodic potential	Naval Research Board	2007	2010
Fatigue behavoiur analysis of spot welded, laser welded and adhesive bonded high strength steel sheet joints	Ministry of Steel and Tata Steel	2007	2010
A recirculation loop test facility and study the crack initiation	BARC	2008	2012

and its precursor phenomenon leading to stress corrosion cracking in austenitic stainless steels in simulated nuclear reactor environment.

Development procedure for friction stir spot Welding of Formable qualify, High Strength Steel Joints	Ministry of Steel	2008	2011
Processing of Vanadium Magnetite Ores of Eastern India	Ministry of Steel	2009	2012
Investigation of deformation and Damage mechanism in Bare and Coated Automotive Steels through In-situ Scanning electron Microscopy	Ministry of Steel (GOI) and TATA Steel, Rs.3.60 Crore	2009	2012
Low Cycle Fatigue, Ratcheting and their interaction in two different automotive grade sheet steels	TATA Steel, Rs.14.95 lakh	2009	2011

#### **Seminar/Workshop/Conference/Symposium Attended**

- 1 R.Dey Metallix 2008 National Symposium on "Indian Steel Industries Technology and Prospects & National Metallurgical Students' Congress", Metallurgical & Material Engg. Dept. J.U., 2008.
- 2 Invited lecture delivered on "Effect of Welding parameters on microstructure and properties of high strength weld metal" at the National Symposium on Advances in Steel Metallurgy (ASM 2009) at Toshali Sands, Puri, Orissa, on 21<sup>st</sup> and 22<sup>nd</sup> March 2009.
- 3 International Conference on "Joining of Materials" (SQJM 2008), Tinuchirapalli, India, Jan, 2009.

#### **Seminar/Workshop/Conference/Symposium Organized**

- 1 Metallix 2009, National Symposium on "Design & Engineering of Steel Plants & National Metallurgical Technology and Prospects & National Metallurgical Students' Congress" 20-21 Feb, 2009

**National Seminar on Advances in Forging Technology, 27<sup>th</sup> March, 2009.**

#### **PUBLICATION LIST**

- 1 **Dinabandhu Ghosh:** "The Removal of Tin and Copper from Liquid Iron by Al<sub>2</sub>O<sub>3</sub>-Saturated Ca-CaCl<sub>2</sub> Slags at 1448 to 1648 K"; Metall. Mater. Trans. B, 2009 (in press).

- 2 **D. Ghosh** et al.: "Development of Fluxed Iron Oxide Pellets Strengthened by CO<sub>2</sub>- Treatment for Use in Basic Oxygen Steel Making": ISIJ International, 2009, vol. 49, No. 2, 210-219.
- 3 S.Nandy, **M.K.Mitra** and K.K.Chattopadhyay, 'Effect of oxygen partial pressure on the electrical and optical properties of highly (200) oriented p-type Ni<sub>1-x</sub>O films by DC sputtering', , Journal of Materials Science (In Press).
- 4 "Impedance spectroscopic studies of nickel nanocluster in silica matrix synthesized by sol-gel method", S. Nandy, S. Mallick, P. K. Ghosh, **G. C. Das, S. Mukherjee, M. K. Mitra** and K. K. Chattopadhyay., Journal of Alloys and Compounds, (2008), vol. 453, p. 1.
- 5 A novel method for synthesis of Si<sub>3</sub>N<sub>4</sub> nanowires by sol-gel route **Mahua Ghosh Choudhury, R Dey, M.K.Mitra, G.C.Das, S.Mukherjee** Science & Technology of Advanced Materials Science & Technology of Advanced Materials. 2009.
- 6 **Novel low temperature synthesis of ZnO nanostructures and its efficient field emission property**, Maiti, U.N., Ahmed, Sk.F., **Mitra, M.K.**, Chattopadhyay, K.K., Materials Research Bulletin 44 (1), 134-139, 2009.
- 7 Mechanical and deformation behaviour of titanium diboride thin films deposited by magnetron sputtering: P.K.P Rupa, **P.C.Chakraborti** and S.K.Mishra: Journal of Thin Solid Films, Vol. 517, Issue 9, March 2009, Pages 2912 - 2818.
- 8 S.Mukhopodhyay, **T.K.Pal** and P.K.Das Poddar, "Improvement of corrosion resistance of Spinal-bonded castable to converter slag, "Ceramics International, 2009, No.35, 373-380.
- 9 J.Maity, **T.K.Pal** and R.Maity, "Transient Liquid Phase bonding of 6061-15wt% SiCp in argon environment using Cu powder interlayer," Materials Science and Technology, 2009. (available on-line)
- 10 Gopa Banerjee,**T.K.Pal** and Goutam Das. "Performance Evaluation of Resistance Spot welded Interstitial free steel under cryogenic condition", Journal of Testing and Evaluation, 2009, vol.37 No.6, 1-7.
11. S.M. Shariff, **T.K. Pal** , G. Padmanabham and S.V. Joshi, "Sliding Wear behaviour of laser surface modified pearlitic rail steel", Surface Engineering, 2009 (available on-line)
12. **T. K. Pal**, K. Chottopadhyay and K. Bhumick, "Fatigue characteristics of spot welded DP780 and M190 advanced high strength steel sheets",Proc. of Int. Conf. on "Joining of Materials"( SOJOM 2008), Tiruchirapalli, India, Jan. 2009
13. "Effect of few heat treatment parameters on 0.25 percent Manganese austempered ductile iron" by Malay Kumar Choudhury, Ahish Kumar Choudhury and **P K Mitra**, Transactions of 57<sup>th</sup> Indian Foundry Congress, February, 2009-03-05
14. "Corrosion Resistance property of Graded Austempered Ductile Iron", Shampa Dhar, Malay Kumar Choudhury, Ahish Kumar Choudhury and **P K Mitra**, Transactions of 57<sup>th</sup> Indian Foundry Congress, February, 2009-03-05.
15. Fabrication and Characterization of Bioelectrochemical fuel cell with pyrolysed

- produced bio oil and hydrolysed biomass by fermentation **Subir Paul** and Prakash Mondal Journal Institution of Engineers, Interdisciplinary, in press 2009.
16. G. Banerjee, T. K. Pal, N. Bandhyapadhyay and D. Bhattacharjee, "Effect of welding conditions on corrosion behaviors of spot welded coated steel sheets," Corrosion Engineering, Science and Technology, available on-line, 2009.
  17. J. Maity, T. K. Pal and R. Maiti, "Transient Liquids phase diffusion bonding of 6061-15 at% SiCp in argon environment, Journal of material Processing Technology, 2009, No.209, 3568-3580
  18. Bio-functionalization of quantum dots for detection of bacteria Sonal Mazunder, Jhimli Sarkar, R. Dey, M. K. Mitra, S. Mukherjee, G. C. Das 95th Indian Science Congress, Vishakapatnam, 2008.
  19. Bio-functionalized quantum dots for single bacteria detection Sonal Mazunder, Jhimli Sarkar, R. Dey, M. K. Mitra, S. Mukherjee, G. C. Das International Symposium on Nano Manufacturing 2008, Singapore 2008.
  20. Barnali Mandal, Pranab K. Chattopadhyay, Prasanta K. Datta, "Characterization of a Pala-Sena High -Tin Bronze Bowl from Bengal, India", Society for Archaeological Studies, (SAS) Bulletin, University of South Florida, USA, Vol.31 No.3, 1217, 2008.
  21. Prasanta K. Datta, Pranab K. Chattopadhyay, **Barnali Mandal**, "Technological Investigations of Ancient High-Tin Bronze Excavated in Lower Bengal Region of Tilpi" Indian Journal of History of Science, Indian National Science Academy, New Delhi, 2008, 43.3 381 - 410.
  22. **Arunava Sengupta, Soumen Hazra, and P K Mitra**, "Age hardening characteristics of a cast Al-Mg-Si alloy", Indian Foundry Journal, Vol. 54, January, 2008.
  23. Optical study on the stabilization of Chlorophyll molecule within silica gel, **J. Sarkar, S. Basu, M. K. Mitra, S. Mukherjee, G. C. Das**, Accepted in 5<sup>th</sup> International Symposium on Nanomanufacturing At Singapore, Jan-2008.
  24. Biofunctional quantum dots for single bacteria detection, **Sonal Mazunder, Jhimli Sarkar, R. Dey, M. K. Mitra, S. Mukherjee, G. C. Das** Accepted in 5<sup>th</sup> International Symposium on Nanomanufacturing At Singapore, Jan-2008.
  25. Biofunctionalisation of Quantum Dots for detection of bacteria, **Sonal Mazunder, Jhimli Sarkar, R. Dey, M. K. Mitra, S. Mukherjee, G. C. Das**, Accepted in Indian Science Congress-2008. Study of the effect of time at different pH on the biostability of chlorophyll molecule enclosed in silica matrix, **Jhimli Sarkar, M. K. Mitra, S. Mukherjee, G. C. Das**, Accepted in Indian science Congress-2008.
  26. Study of the effect of time at different pH on the biostability of chlorophyll molecule enclosed in silica matrix, **Jhimli Sarkar, M. K. Mitra, S. Mukherjee, G. C. Das** Accepted in Indian science Congress-2008.
  27. A comparative study of SiCN films on different substrates grown by RF Magnetron sputtering, **S. Mukherjee, G. C. Das, A. Bhattacharya, S. Mishra**. Accepted for publications in the Journals of Alloys & Compounds, 2008.
  28. The microstructure and mechanical properties of SiC reinforced Mg based

- composites by Rheo Casting process, **S. Mukherjee**, P. Poddar, K. L. Shahoo, *Journal of Materials Engineering and Performance*, 2008 (Accepted).
29. "Lattice Resistance to Dislocation Motion at the Nanoscale", A. Dutta, M. Bhattacharya, P. Barat, P. Mukherjee, N. Gayathri & **G. C. Das**, *Physical Review Letters*, PRL 101, 115506 (2008).
  30. "Hot Corrosion of Glass coating on Nickel Base Super Alloys", S. Das, S. Datta, D. Basu, **G. C. Das**, *Ceramic International*, 34 (2008) 1215 - 1222.
  31. "Study on the Biostability of Chlorophyll A Entrapped in Silica Gel Nanomatrix", J. Sarkar, **G. C. Das**, **S. Mukherjee**, **M. K. Mitra** & S. Basu, *J. Mat. Sc. Materials in Electronics*, In press (2008).
  32. "Comparative Corrosion studies on a few coated biocompatible materials" by **Shampa Dhar**, **S Paul** & **P K Mitra**, Accepted for publication in *Steel Tech*.
  33. Impedance spectroscopic studies of nickel nanocluster in silica matrix synthesized by sol-gel method", S. Nandy, S. Mallick, P. K. Ghosh, **G. C. Das**, **S. Mukherjee**, **M. K. Mitra** and K. K. Chattopadhyay., *Journal of Alloys and Compounds*, (2008), vol. 453, 1.
  34. **D. Ghosh** et al.: "Development of Fluxed Iron Oxide Pellets Strengthened by CO<sub>2</sub>-Treatment for Use in Basic Oxygen Steel Making": Accepted for publication in *ISIJ International*.
  35. **Dinabandhu Ghosh and Samudra Dasgupta**: "Synthesis of Submicron Silver Powder by the Hydrometallurgical Reduction of Silver Nitrate with Hydrazine Hydrate and a Thermodynamic Analysis of the System"; *Metall. Mater. Trans. B*, 2008, vol. 39B, 35-45.
  36. Fabrication and Characterization of Bioelectrochemical fuel cell with pyrolysed produced bio oil and hydrolysed biomass by fermentation Subir Paul and Prakash Mondal *Journal Institution of Engineers, Interdisciplinary*, in press 2008.
  37. Morphologies and characteristics of deformation induced martensite during tensile deformation of 304 LN stainless steel: Arpan Das, S. Sivaprasad, M. Ghosh, P.C. Chakraborti and S. Tarafder, *Materials Science and Engineering: A*, vol. 486, 1-2 2008, 283.
  38. Correspondance of fracture surface features with mechanical properties in 304LN stainless steel: A. Das, S. Sivaprasad, **P.C. Chakraborti** and S. Tarafder, *Materials Science and Engineering: A*, vol. 496, 1-2, 2008, 98.
  39. **J. Maity**, **T.K.Pal** and R. Maiti, "Microstructural evaluation and ultrasonic characterization of TLP bonded 6061 SiCp composite" , accepted for publication in *ISIJ*
  40. **T.K. Pal**, "Welding characteristics of high strength steel used for armour application", *Proc. of International Welding Congress held at Chennai during 8-10, January, 2008*.
  41. **J. Maity and T. K. Pal**, "Study on mechanism during TLP bonding of Al-Based metal matrix composite", *Proc. of International Welding Symposium (IWS 2k8) held at New Delhi during 13-15 Feb 2008*.

42. **J. Maity, T. K. Pal** and R. Maity "Microstructural Characterization of TiP bonded 6062-SiCp Composite", Accepted for publication in journal of Material Engineering and Performance, USA.
43. S. Samanta , S. K. Mitra and **T. K. Pal** : "Microstructure and Oxidation Characteristics of Laser and TIG weldments in Austenitic Stainless steels", Accepted for publication in journal of Material Processing and performance, USA.
44. **Synthesis and optical characterization of polymer-capped nanocrystalline ZnS thin films by chemical process**, Maity, R., Maiti, U.N., **Mitra, M.K.**, Chattopadhyay, K.K., Physica E: Low-Dimensional Systems and Nanostructures 33 (1), 104-109
45. **Low-macroscopic field emission from carbon fibers synthesized by direct current plasma enhanced chemical vapour deposition**, Ahmed, Sk.F., Das, S., **Mitra, M.K.**, Chattopadhyay, K.K., Indian Journal of Pure and Applied Physics 44 (9), 700-704
46. "Effect of radio frequency and direct current modes of deposition on protective metallurgical hard silicon carbon nitride coatings by magnetron sputtering", A.S. Bhattacharya, **G.C.Das, S.Mukherjee**, S.K.Mishra. (2009) Vacuum, 83(12), 1464-1469.
47. "A comparative study of Si-C-N film on different substraten by RF Magnetron sputtering" A.S.Bhattacharya, **G.C.Das, S.Mukherjee**, S.K.Mishra. (2009) journal of alloys and compounds, 478(1-2), pp-474-478.
48. "Sintering behaviour of spinel-alumina composites" S.Pal, A.Bandyopadhyay, P.G.Pal, **S.Mukherjee**, B.N.Sammaddar, (2009), Bull. Of Material Science, 32, (2), pp-169-176.
49. "A Novel Method for Synthesis of Si<sub>3</sub>N<sub>4</sub> Nanowires through Sol-Gel Route" **M.Ghosh Chaudhuri, R.Dey, S.Mukherjee, G.C.Das & M.K.Mitra**, Science & Technology of Advanced Materials, 9(2008), art no:015002.
50. The microstructure and mechanical properties of SiC reinforced Mg based composites by Rheocasting process, **S.Mukherjee**, P.Podder, K.L.Shahoo, Journal of Materials Engineering and Performance, (2008), 1-7(Article in press).
51. "Review: Bio functionalized quantum dots in Biology and medicines" S.Mazumder, **R.Dey, M.K.Mitra, S.Mukherjee and G.C.Das**, J. of Nano Materials (Accepted for publication in 2003).
52. "Lattice Resistance to Dislocation Motion at the nanoscale" A.Dutta, M.Bhattacharya, P.Barat, P.Mukherjee, N.Gayathri & **G.C.Das**, Physical Review Letters, PRL 101, 115506 (2008).
53. "Hot Corrosion of glass coating on Nickel Base Super Alloys", S.Das, S.Datta, D.Basu, **G.C.Das**, Ceramic International, 34 (2008) 1215-1222.
54. "Study on the Biostability of Chlorophyll a Entrapped in Silica Gel Nanomatrix" J.Sarkar, **G.C.Das, S.Mukherjee, M.K.Mitra & S.Basu**, J. Mat. Sc. Materials in Electronics, (2009) 20: 1068-1072.



55. "Synthesis of  $\text{Si}_3\text{N}_4$  in the Nanopores of Silica Gel Matrix By In-Situ Generation of Nitrogen" D.K.Mondal, **S.Mukherjee**, **G.C.Das**, K.K.Chattopadhyay, **M.K.Mitra**, TSI Journals in Nano Science & Nano Technology, Vol. 2(2-3) **December, 2008**.
56. "Function of magnesium aluminate hydrate (MAH) and magnesium nitrate (MN) as MgO addition in crystal structure and grain size control of  $\alpha\text{-Al}_2\text{O}_3$  during sintering", S.Pal, A.Bandyopadhyay, P.G.Pal, **S.Mukherjee**, B.N.Sammaddar" Accepted in Bull, Materi. Sci., **2009**.
57. "Effect of agglomeration during coprecipitation: Delayed spinelization of magnesium Aluminate hydrate" S.Pal. A.Bandyopadhyay. P.G.Pal, **S.Mukherjee**, B.N.Sammaddar, Accepted in Bull. Mater. Sci., **2009**.
58. "Fabrication and Characterization of Bioelectrochemical fuel cell with pyrolysed produced bio oil and hydrolysed biomass by fermentation, **Subir Paul** and Prakash Mondal, Journal Institution of Engineers, Interdisciplinary, in press **2009**.
59. "Estimation of Corrosion Rate of Mild Steel in Seawater and Application of Genetic Algorithms to Find Minimum Corrosion Rate, **Subir Paul**, **Canadian Metallurgical Quarterly**, **2009** in press."
60. "Correspondence of fracture surface features with mechanical properties in **304LN stainless steel**: Arpan Das, S.Sivaprasad, **P.C.Chakraborti**, S.Tarafder, Materials Science and Engineering: A, Volume 496, issues 1-2, 2008, Pages 98-105.
61. "Morphologies and Characteristics of deformation induced martensite during tensile deformation of **304 LN stainless steels**: Arpan Das, S.Sivaprasad, M.Ghosh, **P.C.Chakraborti**, S.Tarafder, Materials Science and Engineering: A, Volume 486, issues 1-2, 2008, pages 283-286.
62. "Mechanical and deformation behaviour of titanium diboride thin films deposited by magnetron sputtering Thin Solid Films, P.K.P. Rupa, **P.C.Chakraborti**, S.K.Mishra, Volume 517, issues 9, 2009. Pages 2912 -2919.
63. **Effect of ferrite grain size on cycle ratcheting behaviour of low carbon niobium bearing microalloyed steel**: Proc. Int. Conf. "Thermomechanical Simulation and processing of steels", RDCIS, Ranchi, India, Pages 267-277, 2008.

**PHARMACEUTICAL TECHNOLOGY**

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 It. : 2274/2495  
 H.O.D. : Prof. Tarun Kr. Jha  
 E-mail : hod@pharma.jdvu.ac.in

**1. A. Courses Offered:**

Name of the Course	Duration of the Course (in year)	No. of Students Enrolled
B.Pharm.	4	70
M.Pharm.	2	25+QIP
Ph.D.	—	10
M.Pharm. in Clinical Pharmacy & Pharmacy Practice	2	8

**B. No. of Faculty Members:**

Professor	13
Readers	8
Sr. lecturer/Lecturer	4

**2. A. Departmental Research Activities: (Broad Areas)****Research Areas**

1. Separation techniques, Particle Engineering
2. Antisense technology, chemoprevention by gene manipulation and gene delivery
3. Drug-lipid interaction
4. Adsorptive bubble separation method
5. PhytoChemistry and Synthetic Chemistry
6. QSAR and Molecular Modeling; Cheminformatics; Drug Design; Ecotoxicological Modeling
7. Novel and Controlled Drug Delivery systems
8. Cell Biology
9. Pharmaceutics with special reference to Drug Delivery Systems, Dosage Form Design and Evaluations. Biopharmaceutics and Pharmacokinetics
10. Antibiotic production by immobilization. Antibiotic biosynthesis and biosynthetic enzymes. Enzymes isolation and purification. Semisynthesis of penicillins
11. Anticancer Drug Design
12. Synthesis of Coordination Compounds as anticancer agents.
13. Bio equivalence study toxicity study and clinical trial

**B. Major Research Project:**

**Name of the Teacher/Name of the Project/Funding Agency/Sanctioned/Date**

Dr. Biswajit Mukherjee Production of antisense h-ras oligomer by antisense technology and study the impact of it as a new drug against liver cancer. UGC 2009

Dr. Biswajit Mukherjee jointly with Dr. (Mrs.) B. Hazra Studies on indigenous plant product..parasites. DRDO 2009

Dr. Biswajit Mukherjee Targeting of breast cancer cells with immunoliposomes containing anticancer drug. ICMR 2009

Dr. Kunal Roy Predictive..Cheminformatics Tools ICMR October 2009  
Tuhianndri Sen Bioactivity guided... Mollusk DRDO 2008

**3 A. Invited Lectures Delivered/Session Chaired:**

**Name of the Teacher/Type of Participation/Name of the Seminar/Conference etc. Place/Duration**

Dr. Subhash C. Mandal Invited lecture on "Role of stress and its impact on the formation of lead molecules in the medicinal plants *invivo* and *invitro* condition" International seminar on current status and future perspectives - Pharmaceutical Sciences Bangalore, India 19-21 Nov, 2009

Dr Subhash C Mandal Invited lecture Drug Discovery from Indian Traditional System of Medicines Centre of Biomedical, Molecular and Chemical Sciences, University of Canberra, Australia 24<sup>th</sup> June 2009.

Dr Subhash C Mandal Invited lecture Role of Stress for the Production of Lead molecules in Medicinal plants. Forensic Laboratory, University of Canberra, Australia June 2009.

Dr Subhash C Mandal Session chair scientific session on "Pharmacognosy, Phytochemistry, Indigenous drugs and Herbal formulations" during 61st Indian Pharmaceutical Ahmedabad 11th to 13th December 2009

Dr. Biswajit Mukherjee Invited lectures in Quality Improvement Programme 1.Antisense technology and therapeutics 2.Logistics of temperature sensitive drugs Manipal College of Pharmaceutical Sciences, Manipal University, Karnataka 6<sup>th</sup>-8<sup>th</sup> February 2009

Dr. Biswajit Mukherjee Invited lectures Seminar on Drug Delivery Technologies IMT Pharmacy College, Puri, Orissa 21<sup>st</sup>, 23<sup>rd</sup> and 24<sup>th</sup> March 2009

Dr. Biswajit Mukherjee Guest Speaker National Seminar on: Advance Approaches in Drug Designing and Drug Targeting G R Y Institute of Pharmacy, Borawan, Indore, MP 30-31<sup>st</sup> March 2009

Dr. Biswajit Mukherjee Invited lectures in Quality Improvement Programme 1. Transdermal drug delivery systems based on Pressure Sensitive Adhesive Polymers 2. Drug Targeting by direct approach Birla Institute of Technology, Mesra, Ranchi 10<sup>th</sup> June 2009

Dr. Biswajit Mukherjee Invited lectures Pharmacokinetic approaches  
Indira Ganthi College of Pharmaceutical Sciences, Bhubaneswar, Orissa  
10<sup>th</sup>-11<sup>th</sup> July, 2009

Dr. Biswajit Mukherjee Invited lectures Biopharmaceutics and  
Pharmacokinetics National Institute of Pharmaceutical Education and  
Research (NIPER), Hazipur, Patna 27<sup>th</sup> -29<sup>th</sup> August, 2009

Dr. Biswajit Mukherjee Invited lecture Antisense therapeutics: an  
approach to target gene specifically in cancer Department of  
Pharmaceutical Sciences, Dibrugarh, Assam 21<sup>st</sup> October 2009

Kunal Roy Indo-German Symposium on Modeling Chemical and  
Biological (Re)activity Wildbad Krueth, Germany 4-7 October 2009

Tuhinadri SenGuest Lecture Katholieke University, Leuven, Belgium,  
2009 01

Guest Lecture JBNSTS Programme for School Children (Kolkata), 2009 01

Do 1st National Seminar on Herbal Drug Development - Trends and  
Future Prospects in Sikkim Himalayan Region Sikkim, 2008

Do IPS (PHARMACON) Ranchi, 2008

**B. Seminar/Workshop/Conference/Symposium Attended:**

**Name of the Teacher Name of the Paper Presented Name of the Seminar Place  
Duration**

Dr. Subhash C. Mandal Dereplication and pharmacognostic studies of two  
important fig species most commonly used in west bengal for better  
commercialization 2009 AAiPS annual meeting and exposition Los Angeles,  
USA 8-12 Nov, 2009

Dr. Subhash C. Mandal Workshop on complementary medicine NICM National  
Symposium 2009 - *Supporting health priorities and industry growth* Brisbane,  
Australia 19 June, 2009

Dr. Biswajit Mukherjee Advance Approaches in Drug Designing and Drug  
Targeting Drug Targeting Borawan, Indore 30-31<sup>st</sup> March 2009

Tuhinadri Sen Zebra Fish Core Facility Katholieke University, Leuven May,  
2009 (One day Symposium)

A study on the hemolytic activity of *Telescopium telescopium*- a marine mollusk  
from the Mangrove regions 1<sup>st</sup> Euro Mediterreanean Confernece on Natural  
Product from Marine Source - EMCMP, Egypt 2008

**C. Seminar/Workshop/Conference/Symposium )rganized:**

Nil Nil Nil Nil

Nil Nil Nil Nil

**D. Orientation Courses/Refresher Courses Attended:**

**Name of the teacher Title of the course Duration Place**

Dr. Subhash C. Mandal NICM National Symposium Networking  
2009 - *Supporting health priorities and industry growth*.NICM is an

Australian Government initiative, supported by the New South Wales Government and hosted by the University of Western Sydney 18<sup>th</sup> June, 2009 Brisbane, Australia

Dr. Subhash C. Mandal Endeavour awards professional development workshops and networking function 2009 1<sup>st</sup> June, 2009 Melbourne Cricket Ground (MCG), Australia

Dr. Subhash C. Mandal Endeavour awards networking function 15<sup>th</sup> June, 2009 Canberra, Australia

**E. Orientation Courses/Refresher Courses Organized:**

**Name of the Teacher/Title of the Course/Duration/Place**

Dr. Biswajit Mukherjee AICTE sponsored QIP refresher course on "Progress in Pharmaceutical Biotechnology for Pharmaceutical Industry in India" 2 weeks, 9<sup>th</sup> -22<sup>nd</sup> January, 2009 Department of Pharmaceutical Technology, Jadavpur University, Kolkata

Dr. Biswajit Mukherjee AICTE sponsored QIP refresher course on "New Pharmacy Era: quality initiatives and new technologies" One month, July 9<sup>th</sup> 2009-August 7<sup>th</sup> 2009 Department of Pharmaceutical Technology, Jadavpur University, Kolkata

**4 A. Books/Monographs etc. Published:**

**Name of the Teacher/Name of the Book Published/Date of the Publication/Name of the Publisher**

Dr. Biswajit Mukherjee Book chapter titled: Ethnomedicines and Pharmacogenomics in Ethnomedicine: a source of complementary therapeutics 2009-10 Research Signpost

**B. Articles Published in Journals:**

Name of the teacher Name of the Article Name of the Journal Date of Publication Volume

Dr. Subhash C Mandal Swietenin: a potential oral hypoglycemic from *Swietenia macrophylla* seed. Fitoterapia. Fitoterapia 2009 80(4)

Dr. Subhash C Mandal Anti-inflammatory activity of a polyphenolic enriched extract of *Schima wallichii* bark. Natural Natural Product Research 2009 Inpress

Dr. Subhash C Mandal Study of anti-inflammatory and antinociceptive activity of hydroalcoholic extract of *Schima wallichii* bark. Pharmaceutical Biology 2009 47

Dr. Subhash C Mandal Evaluation of Antidiabetic Activity of Methanol Extract of the Seeds of *Swietenia macrophylla* (Meliaceae) in Diabetic Rats. Pharmaceutical Biology 2009 47(2)

Dr. Subhash C Mandal Antidiabetic and Antioxidant Activity of the Methanol Extract of *Diospyros peregrina* (Ebenaceae) Fruit on Type I Diabetic rats. Pharmaceutical Biology. Pharmaceutical Biology 2009 Inpress

- Dr. Subhash C Mandal Nilanjan Ghosh, Subhash C Mandal, *In vitro* antioxidant study of livosyp: a polyherbal formulation Pharmacologyonline 2009 01
- Dr. Subhash C Mandal Nilanjan Ghosh, Subhash C Mandal, COX-2 as a target for cancer chemotherapy Pharmacological reports. 2009 Inpress
- Dr. Subhash C Mandal Mechanisms and Efficacy of Immunobiologic therapies for Inflammatory Bowel Diseases, International Reviews of Immunology 2009 Inpress
- Dr. Subhash C Mandal CNS depressant activity of *Annona reticulata* bark Pharmacologyonline 2009 01
- Dr. Subhash C Mandal Antibacterial activity of *Delonix regia* wood Pharmacologyonline 2009 02
- Dr. Subhash C Mandal Pharmacognostic Study of Aerial Parts of *Celosia argentea* Linn. Research J. Pharmacognosy and Phytochemistry 2009 01
- Dr. Subhash C Mandal Antinociceptive activity of *Sesbania sesban* Wood Natural Product Research 2009 Inpress
- Dr. Subhash C Mandal In vitro studies of antistress and antiallergic effects of *Semecarpus anacardium* fruit in asthma Latin American Journal of Pharmacy 2009 Inpress
- Dr. Subhash C Mandal Pharmacognostic study of bark of *Tectona grandis* linn. Herbal Heritage 2009 Inpress
- Dr. Subhash C Mandal Antihistaminic effect of various extracts of *Punica granatum* Linn. flower buds Journal of Young Pharmacists 2009 Inpress
- Dr. Subhash C Mandal Bioactive Components from Gynandropsis gynandra Leaves for Antinociceptive Activity Latin American Journal of Pharmacy 2009 Accepted
- Dr. Subhash C Mandal Anthelmintic Potential of *Dendrophthoe falcata* Etting. Leaf International Journal of Pharmaceutical Research and Development (IJPRD) 2009 Inpress
- Dr. Subhash C Mandal Microwave-assisted extraction of total bioactive saponin fraction from *Gymnema sylvestre* with reference to gymnemagenin: a potential biomarker Phytochemical analysis 2009 Inpress
- Dr. Subhash C Mandal Role of modifier in microwave assisted extraction of oleanolic acid from *Gymnema sylvestre*: application of green extraction technology for botanicals. Natural product communications 2009 Inpress
- Biswajit Mukherjee**, Kousik Santra, Gurudutt Pattnaik, Soma Ghosh Preparation, characterization and in-vitro evaluation of sustained release protein-loaded nanoparticles based on biodegradable polymers **International Journal of Nanomedicine**, 20083(4): 487-496. 2008-December 3(4): 487-496.
- Subas C Dinda, **Biswajit Mukherjee**, N Damodharan, Bhakti B. Barik

Annatto seed color as natural coloring agent in oral dosage forms. **Int. J. Pharm. Sci. Tech.** **2008, 1(1):** 10-14. 2008-December **1(1):** 10-14

**Biswajit Mukherjee**, Gopa Roy, Soma Ghosh Development of Denticap, a matrix based sustained release formulation for treatment of toothache, dental infection and other gum problem. *Current Drug Delivery* 2009, **6(2):** 199-207 2009 **6(2):** 199-207

Pintu Kumar Dey, N. Damodharan, Subrata Mullick, **Biswajit Mukherjee** Permeation and Plasma Level of Diclofenac Diethylamine in Human Volunteers from Transdermal Matrix Type Patches based on Polyvinylpyrrolidone (PVP) and Ethylcellulose (EC) Polymers PDA Journal of Pharmaceutical Science and Technology (USA), 2009, (accepted and in press) 2009

Soma Ghosh, Gopa Roy and **Biswajit Mukherjee** Dental mold: a novel formulation to treat common dental disorders. **AAPS Pharm Sci Tech. (USA), 2009, (accepted), 2009**

Tanushree Das, Falguni Patra, **Biswajit Mukherjee** Effect of antisense oligomer in controlling c-raf.1 overexpression during diethylnitrosamine-induced hepatocarcinogenesis in rats. **Cancer Chemotherapy Pharmacol., 2009, (Accepted and published ahead of printing in PubMed). 2009**

N. Damodharan, Gopa Roy, Soma Ghosh, **Biswajit Mukherjee** Skin-permeation of Rosiglitazone from transdermal matrix patches based on pressure sensitive adhesive Polymers: in vitro and in vivo study. **Pharmaceutical Technology (USA), 2009, (accepted) 2009**

Kousik Santra and **Biswajit Mukherjee** Liposomes and their applications- an overview **Int. J. Pharm. Sci. Tech. 2009, 2(1):** 2-13. 2009 **2(1):** 2-13.

Subas C. Dinda and **Biswajit Mukherjee** Formulation and evaluation of gum cordia as an enteric resistant sustained release material in microencapsulated matrix tablet formulations *Int. J. Pharm. Sci. Tech.* 2009, **2(1):** 37-41. 2009 **2(1):** 37-41.

Subas C. Dinda and **Biswajit Mukherjee** Gum cordia- a new tablet binder and emulsifier *Acta Pharmaceutica Scientia*, 2009, **51:** 189-198 2009 **51:** 189-198

**Roy K** & Roy PP Exploring QSAR and QAAR for Inhibitors of Cytochrome P450 2A6 and 2A5 Enzymes Using GFA and G/PLS Techniques. <http://dx.doi.org/10.1016/j.ejmech.2008.11.010> *Eur J Med Chem*, **44**, 2009, 1941-1951

**Roy K** & Paul S Exploring 2D and 3D QSARs of 2,4-diphenyl-1,3-oxazolines for ovicidal activity against *Tetranychus urticae*. <http://dx.doi.org/10.1002/qsar.200810130> *QSAR Comb Sci*, **28**, 2009, 406-425

**Roy K** & Roy PP Comparative chemometric modeling of cytochrome 3A4 inhibitory activity of structurally diverse compounds using stepwise MLR, FA-MLR, PLS, GFA, G/PLS and ANN techniques. <http://>



dx.doi.org/10.1016/j.ejmech.2008.12.004 *Eur J Med Chem*, 44, 2009, 2913-2922

**Roy K**, Ghosh G QSTR with extended topochemical atom (ETA) indices. 11. Comparative QSAR of acute NSAID cytotoxicity in rat hepatocytes using chemometric tools. <http://dx.doi.org/10.1080/08927020902744664> *Molecular Simulation*, 35, 2009, 648-659

Roy P P & **Roy K** QSAR studies of CYP2D6 inhibitor aryloxypropanolamines using 2D and 3D descriptors. <http://dx.doi.org/10.1111/j.1747-0285.2009.00791.x> *Chem Biol Drug Des*, 73, 2009, 442-455

Mitra I, Saha A, **Roy K** QSAR modeling of antioxidant activities of hydroxybenzalacetones using quantum chemical, physicochemical and spatial descriptors. <http://dx.doi.org/10.1111/j.1747-0285.2009.00801.x> *Chem Biol Drug Des*, 73, 2009, 526-536,

Mitra I, **Roy K**, Saha A QSAR of anti-lipid peroxidative activity of substituted benzodioxoles using chemometric tools. <http://dx.doi.org/10.1002/jcc.21298> *J Comput Chem*, 30, 2009, 2712-2722

Roy PP, Paul S, Mitra I, **Roy K** On two novel parameters for validation of predictive QSAR models. <http://dx.doi.org/10.3390/molecules14051660> *Molecules*, 14, 2009, 1660-1701

**Roy K**, Ghosh G QSTR with extended topochemical atom (ETA) Indices. 13. Modeling of hERG K<sup>+</sup> channel blocking activity of diverse functional drugs using different chemometric tools. <http://dx.doi.org/10.1080/08927020903015379> *Molecular Simulation*, 15, 2009, 1256-1268

**Tuhinadri Sen** Isolation of an unusual metabolite, 2-allyloxyphenol from a marine lactic bacterium, its biological activities and applications *Applied Microbiology and Biotechnology* 2009 **In press**

**Tuhinadri Sen** Involvement of glucocorticoids receptor and peroxisome proliferator activated receptor-g in pioglitazone mediated chronic gastric ulcer healing in rats *Eur. J. Pharmacol.*, 2009 **609(1-3):118-125**

An insight on the neuropharmacological activity of Telescopium telescopium—a mollusc from the Sunderban mangrove *Fundam Clin Pharmacol.* 2008 Dec;22 **(6):683-91**

Anti-inflammatory activity of *Acanthus ilicifolius* *J Ethnopharmacol.* 2008 Oct 30 **120(1):7-12**

##### 5 Collaborative Programme:

Tuhinadri Sen :

Awarded the **Erasmus Mundus Visiting Fellowship** (Katholieke University, Leuven, Belgium), 2009

##### 6 Major Achievements:

- Endeavour Research Fellowship 2009 from Government of Australia for carrying out postdoctoral research work in the University of Canberra, Australia February to August 2009.

- Distinguished Educator and Researcher Award USA, 2009 by American Association of Indian Pharmaceutical Scientist (AAiPS) for outstanding contribution to Pharmacy profession.

a) Dr. Biswajit Mukherjee is the recipient of **UGC Research Award 2009** (awarded by University Grants Commission, Government of India)

Prof. (Dr.) Tapan Kr. Maity,

Dept. of Pharmaceutical Technology, Jadavpur University.

(Academic Report from 24<sup>th</sup> December 2008 to 24<sup>th</sup> December 2009)

#### **Publication**

1. "A new synthesis of 5-furfural pyrimidines", Published in *Asian Journal of Chemistry*, Dec' 2009.
2. "Antidiabetic and *in vivo* Antioxidant Activity of Ethanolic Extract of *Bacopa monieri* Linn. Aerial part, a possible mechanism of action" has been published in *Iranian Journal of Pharmaceutical Research*, December 2008.
3. "Evaluation of Antibacterial and Antifungal activity of some 1, 3, 4-Oxadiazole derivatives" *Irian Journal of Pharmaceutical Research* (accepted) 2009.
4. "Synthesis, Anticancer Activity of 1, 3, 4-Oxadiazole derivatives" communicated in *Europian Journal of Medicinal chemistry*. (communicated).2009
5. Anticancer activity... 1, 3, 4-Oxadiazole derivatives in *Asian Journal of chemistry* (In press).
6. In-vitro antioxidant activity of the roots of *Melothria heterophylla* (lour.) cognhave been published in *Pharmacologyonline*.2009

#### **Delivered Guest Lecture**

1. Delivered Lecture as Resource person in **AICTE** sponsored **QIP** short term course held at Dept of Pharmaceutical technology, Jadavpur University, Twice.
2. Delivered Lecture as Resource person in **UGC** sponsored refresher's course for teacher held at school of **Natural Product Studies**, Dept of Pharmaceutical technology, Jadavpur University 2 times.
3. Delivered Guest Lecture at Kanak Manjari Institute of Pharmaceutical Sciences, Rourkela, Twice.
4. Delivered Prof. P. C. Dutta memorial Lecture as **Key speaker** held at University College of Science & Technology, University of Calcutta, Organized by **Botanical Society of Bengal**.
5. Delivered Guest Lecture at Institute of Pharmacy & Technology, Salipur, Cuttack under Biju Pattnaik University of Technology, Orissa

**Conference Proceeding/Presentation**

1. A research paper entitle "Free radical Scavenging activity of ..... has been accepted for presentation in "2<sup>nd</sup> **International Conference on Drug Discovery & Therapy**" to be held at Dubai, Feb 2010.
2. A research paper entitle "Synthesis, anticancer.....1, 3, 4-Oxadiazole derivatives" has been accepted for presentation in "2<sup>nd</sup> **International Conference on Drug Discovery & Therapy**"Dubai in Feb 2010.

**Ongoing Projects:**

- 1 **UGC**- ( Major Research project)-01
- 2 **AICTE**- RPS-01

**POWER ENGINEERING  
( SALT LAKE )**

Phone :+ 91-33-2335-5813  
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It. :159/162  
H.O.D. : Prof.Niladri Chakraborty  
E-mail : hod@power.jusl.ac.in

1. A. **Courses Offered :**

(Name of the course, Duration of course, No. of students enrolled)

Bachelor of Power Engineering: 4years, 40 students in each batch

Master of Power Engineering: 4 semesters, 18 students in each batch

PhD(Engg.): Presently 16 registered research scholars

B. **Number of Faculty Members** : 12 *full-term*, 24 *visiting*

2. A. **Area of Research Activities** : (Broad Areas)

Combustion modeling and diagnostics, energy, atomization, computational and experimental fluid dynamics and heat transfer, microfluidics, biological fluid flow, energy studies, heat transfer using nanofluid, experimental aerodynamics, hydro power, wind power, applied superconductivity, power system optimization, power economics, application of nanofluids in power engineering, economic power generation, pollution engineering, real-time & embedded systems, alternative energy from biomass, optimization of nonconventional energy sources.

B. **Major Research Project** : (Departmental/Individual, Name of the Project/  
Agency-ongoing)

- DST-FIST program for development of a Power Plant Simulator (DST.)
- Development of a Tool for De-coupling Control of Multi-variable Processes using Message Passing Across Embedded Controllers (BRNS, DAE) Principal Investigator- Prof. Amitava Gupta
- On-line Measurement of Green House Gas Emissions from Thermal Power Plants in India, UNDP/MOEF/WII - Principal Investigator, Prof. Niladri Chakraborty.
- Numerical and experimental investigation of field-induced aggregation of magnetic microspheres for MEMS applications (DAE-Young Scientist Research Award), Dr. Ranjan Ganguly.
- Design and characterization of thermomagnetic pump for microfluidic applications, BRNS (DAE) - Dr. Ranjan Ganguly, Prof. Amitava Datta.
- Experimental and numerical investigation of various types of delta wings at different flow and maneuvering conditions (ERIPR, DRDO) Principal Investigator – Prof. Bireswar Majumdar
- Development of PI<sup>λ</sup>D<sup>μ</sup> Controllers for Process Control Applications, BRNS (DAE) - Prof. Amitava Gupta (PI).
- Application of WCAN Technology for Control of Tennessee Eastman Reactor, DST (Indo-Tunisian Bi-lateral Exchange)- Prof. Amitava Gupta (PI).
- Development of Discrete PID Controller for Networked Control Applications with Packet Dropout and Data Loss-BRNS (DAE) -Prof. Amitava Gupta (PI).

### 3 A. Invited Lectures Delivered/Session Chaired

Amitava Datta

Modeling of Reacting Flows Invited Speaker: Short term course on Computational Thermal and Fluid Science & its Engineering Applications Department of Mechanical Engineering, Institute of Technology, Banaras Hindu University 25-30 May, 2009.

Bireswar Majumdar

Prospect of small hydro in present energy scenario TEQIP Jalpaiguri Govt. Engg. College, W.B. 27-28 March, 2009

Bireswar Majumdar

Hydro Power Invited class lecture (B.Tech level) NPTI, Durgapur November 18, 2009

Amitava Gupta

Courses on *Distributed Real-time Systems, Cluster Computing* Visiting Professor (DAAD) Technical University, Munich-Germany November 01, 2009 to January 31, 2010

Niladri Chakraborty

*Estimation and On-line Measurement of Emission from Thermal Power*

*Plants Invited Lecture, Group Consultative Meeting Second National Communication to UNFCCC, New Delhi 8th March 2008*

Niladri Chakraborty

*Scheduling and Sizing of Distributed Generation Invited Lecture, Electrical Engineering Department Kolaghat Engineering College 17th February 2009*

Niladri Chakraborty

*Constrained Economic Generation using Particle Swarm Optimization (PSO) and Differential Evolution (DE) Techniques Invited Lecture, Electrical Engineering Department Assam Government Engineering College, Guwahati 24<sup>th</sup> February 2009*

Niladri Chakraborty

*Numerical Investigations of Heat Transfer Augmentation using Nanofluid Invited Lecture, Mechanical Engineering Department Assam Government Engineering College, Guwahati 24<sup>th</sup> February 2009*

Niladri Chakraborty

*On-line Measurement of Emission from Thermal Power Plants in India: A NATCOM Experience Invited Lecture, Hoogly Institute of Technology Hoogly West Bengal 7<sup>th</sup> March 2009*

Niladri Chakraborty

*Scheduling and Sizing of Distributed Generation by Particle Swarm Optimization International Seminar on Renewable Energy, Energy Security and Sustainable Development Jalpaiguri Government Engineering College, Jalpaiguri, West Bengal 20<sup>th</sup> March 2009*

Niladri Chakraborty

*Emission Constrained Economic Dispatch National Institute of Technology Durgapur, West Bengal 26<sup>th</sup> March 2009*

**B. Seminar/Workshop/Conference/Symposium Organized :**

**Name of the Teacher/Name of the Seminar/Workshop/Conference/Symposium/Place/Duration**

Prof. Niladri Chakraborty.

*Engineering Education under Changing Global Scenario: National Seminar Jadavpur University One day*

**C. Seminar/Workshop/Conference/Symposium Attended**

**Name of the Teacher/Name of the Paper Presented/Name of the Seminar/Place/Duration**

K. K. Mandal

*Differential Evolution based Environmentally Constrained Economic Dispatch (K.K. Mandal, N. Chakraborty) IEEE Conference & Exhibition on Control, Communication and Automation, Indian Institute*

of Technology, Kanpur December 11-13, 2008, IEEE INDICON 2008, IIT, Kanpur 11-13 December, 2008

R. Ganguly

In-situ immunochemical binding on magnetic beads in a flow-through microfluidic separator (**R. Ganguly**, T. Hahn, S. Hardt) 2009 Gordon Research Conference on the Physics and Chemistry of Microfluidics Il Ciocco, Italy June 28-July 3, 2009

G. Konar

Simulation of AC loss in High Temperature Superconducting Cable using COMSOL Multiphysics (**G. Konar**, R. K. Mandal, J. Das, A. Chakraborty, **N. Chakraborty**) COMSOL Conference 2009 Bangalore Bangalore 13-14 November, 2009

B. Tudu, G. Konar and D. Palit

'*Advances in Electro technology*' organized by IEEE Calcutta section Salt Lake. 24th Nov., 2008.

B. Tudu and G. Konar

Workshop on "*Pedagogical tools for knowledge management*" organized under TEQIP-JU. Hyatt Regency, Kolkata. March 28, 2009

B. Tudu

Two day educational program on March 20 & 21, 2009 on "*Advances on Nano Electronics & Communication systems*" organized under IEEE CASCOM '09, IEEE Calcutta Section. Jadavpur University & TCS Seminar on "*Engineering Education under changing global scenario*" organized under TEQIP-JU. Jadavpur University Campus

NATCOM workshop on "*Review of the Implementation of Work Programme for India's Second National Communication To the UNFCCC*" & "*National Workshop On Climate Change*". India Habitat Centre & Ashok Hotel, New Delhi. 13<sup>th</sup> & 14<sup>th</sup> Oct, 2009 organized by MoEF, India

Prof. Niladri Chakraborty

NATCOM workshop on "*Review of the Implementation of Work Programme for India's Second National Communication To the UNFCCC*" & "*National Workshop On Climate Change*". India Habitat Centre & Ashok Hotel, New Delhi. 13<sup>th</sup> & 14<sup>th</sup> Oct, 2009 organized by MoEF, India

D. **Short Term Courses Attended**

G. Konar

Attended ASC Refresher course entitled Frontiers in Power Engineering and Energy Sustainability, Department of Power Engineering, from 8<sup>th</sup> June to 27<sup>th</sup> June, 2009.

#### E. Orientation Courses/Refresher Course Organized

##### A. Datta, A.K. Santra

Refresher course entitled "Frontiers in Power Engineering and Energy Sustainability" organized under the aegis of UGC Academic Staff College in the Department of Power Engineering 8<sup>th</sup> June to 27<sup>th</sup> June, 2009.

#### 4 A. Books/Monographs etc. Published :

Book Chapter on "Entropy Generation and Exergy Destruction in Combustion" pp. 55-77, in *Combustion Science and Technology: Recent Trends* (eds. A.K. Agarwal et al.), Narosa Publishers, New Delhi, 2009.

##### B. Articles Published in Journals :

- 1 Sahu, K.B., **Datta, A.**, Sen, S., and Sarkar, A., "Concentration Distributions of Intermediate Hydrocarbons and Soot in Propane/Air Triple Flames," *Journal of the Energy Institute*, 82(4), 185-196, 2009.
- 2 Paul, B., **Datta, A.**, Datta, A., and Saha, A., "Occurrence and Characterization of Carbon Nanoparticles below the Soot Laden Zone of a Partially Premixed Flame," *Combustion and Flame*, 156(12), 2319-2327, 2009.
- 3 Mandal, B.K., Sarkar, A., and **Datta, A.**, Transient Development of Flame and Soot Distribution in Laminar Diffusion Flame with Preheated Air, *Journal of Gas Turbine and Power*, Trans. ASME, 131 (3), 031501, 2009.
- 4 Roy, P.C., **Datta A.**, and **Chakraborty, N.**, "Assessment of cow dung as a supplementary fuel in a downdraft biomass gasifier," *Renewable Energy*, 35 (2), 379-386, 2010.
- 5 Roy, P.C., **Datta A.**, and **Chakraborty, N.**, "Modeling of a Down-Draft Biomass Gasifier with Finite Rate Kinetics in the Reduction Zone," *International Journal of Energy Research*, 33 (9), 833-851, 2009.
- 6 Santra, A., **Chakraborty, N.**, and **Ganguly, R.**, "Analytical evaluation of magnetic field by planar micro-electromagnet spirals for MEMS applications," *Journal of Micromechanics and Microengineering*, 19, pp. 085018(1-10), 2009.
- 7 Sahu, K.B., Kundu, A., **Ganguly, R.**, and **Datta, A.**, "Effects of fuel type and equivalence ratios on the flickering of triple flames," *Combustion and Flame*, 156, pp. 484-493, 2009.
- 8 **Ganguly, R.**, Hahn, T., Hardt, S., "Magnetophoretic mixing for in-situ immunochemical binding on magnetic beads in a microfluidic channel," *Microfluidics and Nanofluidics*, Article in Press, DOI: 10.1007/s10404-009-0504-8, 2009.
- 9 **Datta, A.**, **Ganguly, R.**, Sarkar, L., "Energy and Exergy Analyses of an Externally Fired Gas Turbine (EFGT) Cycle Integrated with Biomass Gasifier for Distributed Power Generation," *Energy*, Article in Press, 2009.
10. Modak, N., Kejriwal, D., Nandy, K., **Datta, A.**, and **Ganguly, R.**, "Experimental and Numerical Characterization of Magnetophoretic



- Separation for MEMS-based Biosensor Applications," *Biomedical Microdevices*, Article in Press, DOI 10.1007/s10544-009-9354-0, 2009.
11. Banerjee, M., **Ganguly, R., and Datta, A.**, "Study on pressure drop and center line velocity distribution across cosine shaped stenotic model," *International Journal of Fluid Mechanics Research*, 36, pp. 319-342, 2009.
  12. Banerjee, M., **Ganguly, R., and Datta, A.**, "Effect of restriction and flow Reynolds number to study the variation of hemodynamic parameters across cosine shaped stenotic model," *International Journal of Computational Methods*, 6, pp. 199-228, 2009.
  13. Banerjee, S., Mukhopadhyay, A., Sen, S., and **Ganguly, R.**, "Thermomagnetic convection in square and shallow enclosures for electronics cooling," *Numerical Heat Transfer: Part A*, 55, pp. 931-951, 2009.
  14. Sinha, A., **Ganguly, R.**, Puri, I.K., "Magnetic separation from superparamagnetic particle suspensions," *Journal of Magnetism and Magnetic Materials*, 321, pp. 2251-2256, 2009.
  15. Roy, T., Sinha, A., Chakraborty, S., **Ganguly, R.**, and Puri, I.K., "Magnetic microsphere-based mixers for micro-droplets," *Physics of Fluids*, 21, pp. 027101(1-7), 2009.
  16. Modak, N., **Datta, A.**, and **Ganguly, R.**, "Cell separation in a microfluidic channel using magnetic microspheres," *Microfluidics and Nanofluidics*, 6, pp. 647-660, 2009.
  17. **Santra, A. K., Chakraborty, N.**, and Sen, S., "Prediction of Heat Transfer due to Presence of Copper-Water Nanofluid Using Resilient-propagation Neural Network", *International Journal of Thermal Sciences*, 48, 1311-1318, 2009.
  18. **Santra, A. K.**, Sen, S., and **Chakraborty, N.**, "Study of Heat Transfer due to Laminar Flow of Copper-Water Nanofluid Through Two Isothermally Heated Parallel Plates", *International Journal of Thermal Sciences*, 48, 391-400, 2009.
  19. Mukherjee, I., **Chakraborty, N.**, Sarkar, A. D., Mandal., T. K., "Observation on particulate matter over a period of three years at Kaikhali (22.022°N & 88.614°E) inside a special mangrove ecosystem: the Sundarbans", *Journal of Environmental Engineering, American Society of Civil Engineers*, Vol 136, No 1, January 1, 2010
  20. Mukherjee, I., **Chakraborty., N.**, Mandal., T. K., "Measurement of Ozone (O<sub>3</sub>) and Nitrogen-Di-Oxide (NO<sub>2</sub>) in the Winter Period of 2007 at Kaikhali (22.022°N, 88.614°E) inside a special mangrove ecosystem - the Sundarbans" , Accepted for publication in the *Indian Journal for Air Pollution Control (IJAPC)*, 2009, New Delhi Chapter.
  21. **Basu, M.**, "Hybridization of artificial immune systems and sequential quadratic programming for dynamic economic dispatch", *Electric Power Components and Systems*, 37(9) pp. 1036 - 1045, 2009.

22. S. G. Sahu, P. Sarkar, **N. Chakraborty** and A.K. Adak, Thermogravimetric assessment of combustion characteristics of blends of a coal with different biomass chars" *Fuel Processing Technology*, Accepted (2009)

#### 5 Collaborative Programmes :

- Collaborated with Chemistry Division of UGC-DAE Consortium for Scientific Research, Kolkata Centre for research carried out on Carbon Nanoparticles in Flames - **Prof. Amitava Datta**.
- Collaborative program with AHEC (IIT Roorkee) on testing of small hydro plants - **Prof. Niladri Chakraborty, Prof. Bireswar Majumdar**.
- Collaboration with CMFRI, Dhanbad on Power from Biomass blended Coal - **Prof. Niladri Chakraborty**.
- Collaborative research with Professor I.K. Puri (Virginia Polytechnic Institute and State University) in the area of Microfluidics - **Dr. Ranjan Ganguly**.
- Collaborative research with the Radio and Atmospheric Science Division, National Physical Laboratory, New Delhi, on atmospheric measurement - **Prof. Niladri Chakraborty**.
- Collaborative research with the Mechanical Engineering Department, IIT Kharagpur, on AC loss modeling of high-temperature superconducting tapes - **Prof. Niladri Chakraborty, Smt. Gargi Konar**.
- Collaborative research with the Electrical and Electronics Department, Imperial College, London on scheduling of nonconventional sources - **Prof. Niladri Chakraborty**.

#### 6 Consultancy and Testing

- (i) Calibration of industrial venturimeter (Client: M/s ALSTOM Power) - **Prof. Bireswar Majumdar, 2009**
- (ii) Calibration of thermal anemometer (Client: M/s ALSTOM Power) - **Prof. Bireswar Majumdar, 2009**
- (iii) Flow model test for ESP for JP Himachal (Client: M/s ALSTOM Power) - **Prof. Bireswar Majumdar, 2009**
- (iv) Flow model test for ESP for Sail Bokaro (Client: M/s ALSTOM Power) - **Prof. Bireswar Majumdar, 2009**
- (v) Testing of 2x250 +1x500 kW Serlui A SHP at Aizwal, Mizoram, collaboratively with AHEC, IIT, Roorkee, 4-6 August 2009 - **Prof. B Majumdar and Prof. Niladri Chakraborty**
- (vi) Electrical Design Vetting of State Data Centre, Ministry of Information Technology, Govt. of West Bengal- **Prof. Niladri Chakraborty**
- (vii) System Vetting of State Data Center, Ministry of Information Technology, Govt. of West Bengal- **Prof. Niladri Chakraborty**

**7 Major Achievements :**

- 1 Member in the Executive Committee of the Combustion Institute, Indian Section – **Prof. A. Datta.**
- 2 Editorial Advisory Board Member of the journal Recent Patents on Mechanical Engineering, published by Bentham Science Publishers – Prof. Amitava Datta.
- 3 Member, DRPC, Dept. of Mechanical Engg., NIT Durgapur – **Prof. B. Majumdar**
- 4 Member, Governing Body and Syllabus Committee, NPTI, Durgapur – **Prof. B. Majumdar.**
- 5 International Examiner for PhD Thesis Evaluation at Tribhuban University, Nepal – **Prof. B. Majumdar.**
- 6 Reviewer of book on fluid Mechanics, Tata McGraw Hill, India, 2009 – **Prof. B. Majumdar.**
- 7 External Member, Faculty Council of Engineering and Technology, Bengal Engineering and Science University – **Prof. Niladri Chakraborty.**
- 8 Member, West Bengal State Council of Technical Education, Govt. of West Bengal – **Prof. Niladri Chakraborty.**
- 9 Member, Energy Panel, Confederation of Indian Industry, Eastern Region – **Prof. Niladri Chakraborty.**

**PRINTING ENGINEERING  
(SALT LAKE)**

Phone :+ 91-33-2335-0408  
It. : 186/188  
H.O.D. : Prof. Arun Kiran Pal  
E-mail : hod@print.jusl.ac.in

**1 A. Courses Offered:**

BE (Printing), 4 years, intake 25

M E in Printing Engineering & Graphic Communication (to be started shortly)

Ph. D. (Engineering), presently 4 students registered

**Other Courses** Certificate course on "Screen Printing" under Adult Continuing Education, co-ordinated by Dr. K.C.Paul and Sri S. Basak.

- B. No. of Faculty Members** 7 full time, 5 visiting
- 2 A. Area of Research Activities**  
Surface Coating, Material Science, Digital Imaging, Colour Science, Security Printing, Digital image processing, Digital Halftoning, non-impact printing, Packaging, Ink Technology etc.
- B. Major Research Project:**
- i) Two UGC sponsored research projects co-ordinated by Sri Arpitam Chatterjee and Sm. Shilpi Naskar.
  - ii) Research/Consultancy project co-ordinated by Prof.A.K.Pal & Dr.K.C.Paul sponsored by Department of Commerce & Industries, Govt. of West Bengal.
- 3 A. Invited Lectures Delivered/ Session Chaired**
- B. Seminar/Workshop/Conference/Symposium Attended:**
- Name of the Conference: 16<sup>th</sup> West Bengal State Science and Technology Congress
- Paper presented: "Grayscale image dithering with random distribution" (Oral presentation)
- Date and place: 28<sup>th</sup> February - 1<sup>st</sup> March, 2009, The University of Burdwan, Burdwan, India. (by Arpitam Chatterjee)
- Name of the conference: 2<sup>nd</sup> International Conference on Digital Image Processing
- Paper accepted and to be presented: An approach for ordered dither using artificial neural network (Oral presentation)
- Date and place: 26<sup>th</sup> February - 28<sup>th</sup> February, 2010, The Nanyang Executive Centre, Nanyang Technological University, Singapore. (by Arpitam Chatterjee)
- C. Seminar/Workshop/Conference/Symposium Organized**
- Name of the seminar: Printvizon' 09 'A national level seminar on "Recent Advancements in Printing".
- Date and place: 10<sup>th</sup> and 11<sup>th</sup> January, 2009. Department of Printing Engineering, Jadavpur University, Salt Lake Campus, Kolkata, India
- D. Orientation courses/Refresher Courses Attended**
- Two refresher courses attended by Sri Arpitam Chatterjee and Sm. Shilpi Naskar.
- 4 Publications (during 2008-09) in International Journals and Conferences:**
- a) **International Journals**
    - i) **Paul, K.C., Pal, A.K.,** "Measurements of mechanical and thermal properties of free film of gravure ink used as coating", *Journal of Coating Technology and Research*, Accepted for publication, 2008 (in press, revised sent).

**b) International Conferences**

- i) Kundu, Pradeep and Pal, Arun Kiran, "**Some Methods of Digital Halftoning**", Taga Conference 2009, March 15-18, The Hotel Monteleone, New Orleans, Louisiana, USA.
- ii) Kundu, Pradeep and Pal, Arun Kiran, "**A Color Prediction Model for Additive and Subtractive Mixing of Colors**", Taga Conference 2009, March 15-18, The Hotel Monteleone, New Orleans, Louisiana, USA.
- iii) Chatterjee, A; Tudu, B., Paul, K.C.; : "**An approach for ordered dither using artificial neural network** , 2<sup>nd</sup> International Conference on Digital Image Processing, 26<sup>th</sup> February - 28<sup>th</sup> February, 2010, The Nanyang Executive Centre, Nanyang Technological University, Singapore. Paper accepted and to be presented
- iv) Chatterjee, A; Tudu, B., Paul, K.C.; : "**Grayscale image dithering with random distribution**" Proc. of 16<sup>th</sup> West Bengal State Science and Technology Congress, 28<sup>th</sup> February - 1<sup>st</sup> March, 2009, The University of Burdwan, Burdwan, India.

**5 Collaborative Programmes**

- i) Collaborative Programme of KMC for Modernisation of printing presses under the co-ordinatorship of Dr. K.C.Paul
- ii) Collaborative Programme of Modernisation of WB Govt. presses under the co-ordinatorship of Dr. K.C.Paul & Dr. A.K.Pal

**6 Major Achievements**

- Two final year students have been offered Golden Jubilee Award and Scholarships by **All India Master Printers' Association**.
- Research activities by the faculties of the department in the field of Coating technology, Paper technology, Ink technology, Material Sciences, Electronic Publishing, Colour Sciences, Rheology, Non-impact printing etc published several research papers in the field.
- Research papers published by UG students at National Level Conference organized by Anna University and Jadavpur University.
- Organized a programme for competition of Students Paper presentation at the department sponsored by IFRA.
- Prof. Dr. Arun Kiran Pal is acting as Technical Expert in Standing Working Committee of Ministry of Finance, Department of Economic Affairs, Govt. of India.
- Prof. Dr. Arun Kiran Pal is acting as expert member of Curriculum & Syllabus Committee for "Diploma in Packaging Technology" by Govt. of West Bengal. Also acting as member of different committees of Govt. of West Bengal.
- Dr. K.C.Paul is acting as a expert member of Technical Expert Committee of KMC, Govt. of West Bengal

**PRODUCTION ENGINEERING**

Phone : +91-33-2414-6153  
It : 2319/2863  
H.O.D. : Dr. Souren Mitra  
E-mail : hod@production.jdvu.ac.in

1. A. **Courses Offered** : Bachelor of Production Engineering, Master of Production Engineering
- B. **Number of Faculty Members** : 15
2. A. **Area of Research Activities** :  
Advanced Manufacturing Technology, Production Management, Micro Machining, Non Traditional Machining, Quality & Reliability Engg. Robotics, FMS, ERP.
- B. **Major Research Project** :
  - 1 AICTE sponsored RPS project "Development of Intelligent Electrochemical Deburring (ECD) System for Enhanced Finishing Characteristics of Advanced Engineering Materials" (New Project)
  2. UGC Special Assistance Programme (SAP Ph III 4th year), Theme of Research : Micro Machining and Nano Technology
  - 3 CSIR sponsored project "Micro-machining Of Advanced Ceramics by Pulsed Nd:YAG Laser" (Second year)
3. A. **Invited Lectures Delivered/Session Chaired** :  
**Session Chaired** :
  1. Dr. S.Mitra chaired the first Technical session on "Material removal Processes" at the international conference on 'Advances in Material Processing Technologies (AMPT 2009), organized by International Islamic University Malaysia, IIUM, during 16 - 29<sup>th</sup> October, 2009 at Kuala Lumpur, Malaysia.**Invited Lectures Delivered**
  1. Dr.S.Mitra delivered an invited lecture on " Emerging Trends & Future Scope In Non Conventional Machining" on 27<sup>th</sup> March at Haldia Institute of Technology, Haldia, under its TEQIP programme.
  2. Dr.S.Mitra delivered an invited lecture on "EDM Technology & Its Applications" on 30<sup>th</sup> April 2009 at Central Tool Room & Training Centre, Bonhoogly, Kolkata, .
  3. Prof. Bijan Sarkar delivered two lectures on "Teaching-Learning process" and "Leadership Management" at Kalyani Government Engineering College, Kalyani on March 23, 2009.
  4. Prof. Bijan Sarkar delivered a talk on "Sri Ramakrishna's Message for the Modern World" on 8<sup>th</sup> March, 2009 at Ramakrishna Mission Sikshan

Mandir, Belur Math. This national level seminar was sponsored by the University Grants Commission.

- 5 Prof. Bijan Sarkar delivered two lectures on "Leadership Management" and "Student Motivation" at Asansol Engineering College, Asansol on April 12 2009.
- 6 Prof. Bijan Sarkar has been invited by National Institute of Technology, Agartala to deliver expert lectures during AICTE sponsored "Induction Training Programme" on 6<sup>th</sup> and 7<sup>th</sup> May , 2009
- 7 Prof. B.Bhattacharyya delivered an invited lecture on "Electrochemical Micro-machining" in the DST sponsored SERC School on 'Micro-machining' organized by IIT Kanpur on 20<sup>th</sup> July 2009.
- 8 Prof. B.Bhattacharyya delivered a Keynote address in the National Conference on "Recent Trends in Manufacturing Technology (RTMT '09)" at Anna University, Chennai, organized by the Department of Manufacturing Engineering during 6<sup>th</sup> & 7<sup>th</sup> March 2009.
- 9 Prof. B.Bhattacharyya delivered an invited lecture in the seminar on "Nano-technology-a multi - disciplinary tool for future "organized by the Mahatma Gandhi Mission (MGM), Aurangabad , Maharashtra held at Aurangabad on 28<sup>th</sup> and 29<sup>th</sup> January 2009.
10. Prof. Balendra Nath Lahiri delivered an invited Speech in Int Conf HWWE 09, Dec 12-14, 2009 CU, organized by ISE and IEA
11. Dr. B.Doloi delivered an invited lecture on "Non-Conventional Energy" at the Foundation day celebration programme of Indian Institution of Industrial Engineering, Kolkata on Jan.27, 2009
12. Dr. B.Doloi delivered an lecture on "Reliability Economics and Management" at UGC Refresher Course on Reliability, Availability and Maintainability (RAM) Engineering in Industries, organized by Production Engineering Department, Jadavpur University from 22.06.2009 to 11.07.2009

**B. Seminar/Workshop/Conference/Symposium Attended**

**Sl. No./Name of the Faculty Member/Title/Type of Seminar (International / National) Year/Place/Attended / Organised with Role**

1. Dr.S.Mitra, Dr. A. S. Kuar, Dr. D. Banerjee, & Mr. B. R. Sarkar  
2nd International and 23rd All India Manufacturing Technology, Design and Research (AIMTDR) Conference International Dec. 2008  
Indian Institute of Technology Madras, Chennai Attended and presented a paper
2. Dr.S.Mitra International Conference 'Advances in Material Processing Technologies (AMPT 2009) International Oct. 2009 International  
Islamic University Malaysia, IIUM, Kuala Lumpur Chaired Technical sessions & Presented research papers



- 3 Dr.S.Mitra, Dr.B.Doloi, Dr. A. S. Kuar International Conference on Precision Engineering, COPEN-2009 International Dec.11-12, 2009 PSG Tech, Coimbatore Invited for paper presentation
- DR.B.Doloi One day INDO-US Seminar on Micro-fluidics and Fabrionics National Jan.08,2009 Mechanical Engg. Dept, BESU, Howrah Attended
- DR.B.Doloi International conference, ICMB 2009 Mechanical and Building Engineering International Dec. 14-15, 2009 VIT, Vellore Invited for paper presentation
- C. **Seminar/Workshop/Conference/Symposium Organized :**
- The Department is going to organize a National conference on "Recent Advances in Manufacturing Technology and Management (RAMTM 2010) during 19 - 20 th February 2010.
- D. **Orientation Courses/Refresher Courses Attended :**
1. Dr. A. S. Kuar attended the UGC-ASC JU sponsored 3 weeks refresher course on "Reliability, Availability & Maintainability Engineering in Industries" from June 22 to July 11, 2009.
  2. Mr. B.R. Sarkar attended the UGC-ASC JU sponsored 3 weeks refresher course on "Reliability, Availability & Maintainability Engineering in Industries" from June 22 to July 11, 2009.
  3. Dr.B.Doloi attended AICTE sponsored one week short term training program on 'Supply Chain Management: Issues and Challenges' organized by Department of Industrial & Production Engineering at Dr. B R Ambedkar National Institute from 13-7-09 to 17-7-09.
- E. **Orientation Courses/Refresher Courses Organized :**
1. Prof. Bijan Sarkar organized a UGC-ASC JU sponsored 3 weeks refresher course on "Reliability, Availability & Maintainability Engineering in Industries" from June 22 to July 11, 2009. 35 participants attended the programme. Faculties from IIT- Kharagpur, IIM-Calcutta, ISI, NITTTR & JU enlightened the course. Prof. Goutam Biswas, Director, CMERI, Durgapur delivered a keynote address in the valedictory session of the programme.
- 4 A. **Books/Monographs etc. Published :** Nil
- B. **Articles Published in International Referred Journals :**
1. S. Mitra, S.Sarkar,S.Biswas,D.Bhaduri,"Experimental investigation on Electro discharge machining of Titanium Nitride- Aluminium Oxide composite material for Optimum Process Criterial Yield" *International J. of Materials and Manufacturing Processes*Vol.24 No.10, 2009
  2. S. Mitra, S.Sarkar,G.Paul "Experimental Investigation on electrolytic in-process dressing (ELID) grinding of die steel" *International J. of Materials and Structural Integrity*, Vol.2,No.3 2009,pp 242 - 254,
  3. S. Mitra, S.Sarkar,G.Bose, "Analysis of cutting forces on

- electrochemical grinding process" *International J. of Computational Materials Science and Surface Engineering*, Vol.3, No.1
- 4 S. Mitra, B. Acherjee, A. S. Kuar, D. Misra; "The Use Of Taguchi Quality Loss Function To Optimize Multiple Quality Characteristics In Laser Transmission Welding Process Of Thermoplastics", *ASME Early Career Technical Journal*, 2009 ASME Early Career Technical Conference, ASME ECTC, October 2-3, 2009, Tuscaloosa, Alabama, USA. Volume 8, Number 1, 28.1-28.6.
  - 5 A. S. Kuar, R. Biswas, S. Mitra; "Artificial Neural Network Modeling Of Nd:Yag Laser Microdrilling On Titanium Nitride - Alumina Composite", *Proceedings of the Institution of Mechanical Engineers, Part B Journal of Engineering Manufacture*. In Press, Available online after 18 Aug 2009.
  - 6 S. Mitra, R. Biswas, A. S. Kuar, S. Sarkar; "Parametric Study On Pulsed Nd:Yag Laser Micro-Drilling Of Gamma-Titanium Aluminide" *Optics & Laser Technology*, Volume 42, Issue 1, February 2010, 23-3.
  - 7 A. S. Kuar, R. Biswas, S. Mitra; "Parametric Study Of Hole Circularity In Nd:Yag Laser Microdrilling Of Alumina-Aluminium ( $Al_2O_3$ -Al) Interpenetrating Phase Composite", *Special issue on "Advanced Manufacturing Technologies" of International Journal of Manufacturing Research (IJMR)*. Vol. 4, No. 2, 2009, 252-264.
  - 8 Bijan Sarkar, Surojit Ghosh, Subir Sanyal, Jyotirmoy Saha "Automated Maintenance Approach for Industrial Machineries by Soft Computing Techniques at Office Monitoring Process". *Jordan Journal of Mechanical and Industrial Engineering*, Volume 3, Number 1, March 2009.
  - 9 Bijan Sarkar, P.J. Nikumbh.; S.K. Mukhopadhyay,.; A.K. Datta. "Solving Product-Mix problem - A holistic method under unstructured environment " 39<sup>th</sup> *International on Computers and Industrial Engineering* , July 6-8 ,2009 France.
  10. Bijan Sarkar, P.J. Nikumbh.; S.K. Mukhopadhyay,.; A.K. Datta," Product-Mix optimization through soft computing" *Ibid*
  11. Bijan Sarkar, Krishendu Mukherjee, Ardhendu Bhattacharjya, "Supplier's Selection strategy for Mass Customization ." *Ibid*
  12. Bijan Sarkar, Subir Kumar Sanyal and Amitava Ray, "The TOC-Based Algorithm for Solving Multiple Constraint Resources." *IEEE Transactions on Engineering Management (Available Online)*, 2009
  13. Ranjan Bhattacharya , Arindam Sen , "Analysis of fitment and conceptualization of its substitute in small - a strategic approach"; *Business Strategy* ; Vol . 10 No .1, 2009; 1751-5637.
  14. Rajan Bhattacharya , Susmita Bandyopadhyay ; "An improved strategy to solve Shop deadlock problem based on the study

on existing benchmark recovery Strategies"; *International Journal of Advanced Manufacturing Technology* (2009); DOI: 10. 1007/s00170-009-2200-y; (Available Online).

15. Ranjan Bhattacharya; Sudip Kumar Deb, Abhijit Chakraborty, "Internal Obstacles of Productivity Improvement within Small Manufacturing Enterprises"; *Industrial Engineering Journal*; Vol. 1, No.03, 13- 18. September 2008.
  16. Ranjan Bhattacharya, Asim Gopal Barman, Sudip Kumar Deb; "Emerging Trends of Ant Colony System in Solving Decision problems under Industrial Engineering"; *Industrial Engineering Journal*; Vol. 1 . No. 04, 5-8. October 2008.
  17. B.B. Pradhan, M. Masanta, B. R. Sarkar, B. Bhattacharyya. Investigation of electro- discharge micro- machining of titanium super alloy"; *International J. of Advanced Manufacturing Technology* 2009, Volume-41 (11), 1094-1106.
  18. B.R. Sarkar, B.Doloi, B. Bhattacharyya Investigation into the influences of the power circuit on the micro-electrochemical discharge machining process I.Mech. E, Part B: *Journal Engineering Manufacture, (2009)*, Volume-223, 133-144.
  19. B.B. Pradhan, G. Kibria, B.R. Sarkar, B. Bhattacharyya EDM with rotational electrode for machining micro holes in Ti-6Al-4V *Journal of The Institution of Engineers (India)*. Division: Production Engg., Volume-89, March 2009
  20. B.B. Pradhan, B. Bhattacharyya " Modeling of Micro-EDM during machining of Titanium Alloy, Ti-6Al-4V using RSM and ANN Algorithm I. Mech.E, Part B:*Journal of Engineering Manufacture* (2009) Volume-233, 683-693.
  21. D. Dhupal, B.Doloi, B.Bhattacharyya "Modeling and Optimization on Nd:YAG Laser Turned Micro- grooving of Cylindrical Ceramic Material *Int.J. Optics and Lasers in Engineering*, Volume -47, (2009), 917-925.
  22. G. Kibria, B. Doloi, B. Bhattacharyya" Present Status of Nd: YAG Laser Beam Micromachining of Engineering Ceramics" *Manufacturing Technology Today*, Vol. -8, Issue-7, July-2009, 3-11.
5. **Collaborative Programmes** : Nil
6. **Major Achievements** :
- (1) Dr.S.Mitra has been elected a member of the Governing Council of the Central Tool Room & Training Centre, Kolkata, of Ministry of Micro, Small & Medium Enterprises, Government of India.
  - (2) Dr.S.Mitra was awarded a research project titled "Development of Intelligent Electrochemical Deburring (ECD) System for Enhanced Finishing Characteristics of Advanced Engineering Materials" by AICTE, New Delhi under the research Promotion Scheme (RPS), of Rs. 16.5 lakhs.

- (3) Prof. Bijan Sarkar has been invited by NSS, JU to deliver a lecture on **Swami Vivekananda's philosophy** on 12<sup>th</sup> January, 2009 at Vivekananda Hall, JU.
- (4) Prof. Bijan Sarkar has been invited by Haldia Institute of Technology, Haldia to deliver lecture under TEQIP during January 21-22, 2009.
- (5) Prof. Bijan Sarkar has been invited by BMS College of Engineering, Bangalore-560019 to chair a session on "**Supply Chain Management**" and to deliver a keynote address on "**Constraint Management**" during February 27-28, 2009 respectively.
- (6) Prof. Bijan Sarkar has been invited by Birla Industrial & Technological Museum, Kolkata to act as chairman of a selection committee on 25<sup>th</sup> March, 2009.
- (7) Prof. Bijan Sarkar has been invited by Dumkal Institute of Engineering & Technology, Murshidabad to deliver lectures in 2 days seminar during March, 28-29, 2009.
- (8) Prof. Bijan Sarkar acted as an **External Examiner** for evaluation of project dissertation at PG level in IEM Dept. IIT, Kharagpur on May 12, 2009.
- (9) Prof. Bijan Sarkar has acted as **visiting faculty** at Netaji Subhas Engineering College during January 15 to May 15, 2009.
- (10) Prof. Bijan Sarkar has also acted as **guest faculty** at IBM, NCE Bengal for the session 2009-2010.
- (11) Prof. Bijan Sarkar has been invited by the Principal, Calcutta Institute of Engineering & Management, Tollygunge to deliver an expert lecture in the DST-sponsored Entrepreneurship awareness camp at their institute on 3<sup>rd</sup> September, 2009.
- (12) Prof. Bijan Sarkar has been invited by NIT, Agartala to deliver expert lectures in the Staff Development Programme sponsored by AICTE during December 10-11, 2009.
- (13) Prof. Bijan Sarkar has been invited by the Principal, Jalpaiguri Government Engineering College to act as a visiting professor for their PG course on "**Production Technology & Management**" opening on 2009-2010.
- (14) Like the previous year, Prof. Bijan Sarkar has acted as reviewer for IE(I) and IJPR, IJPE etc.
- (15) Dr. S.Mitra acted as reviewer of various international journals like IJAMT, IJMTM etc and journals of IE(I) .
- (16) Prof. B. Bhattacharyya and B. R. Sarkar got "Certificate of Achievement" from Indian Society for Technical Education, New Delhi for Supervising best M. Tech Thesis in the year 2008.