

CHEMISTRY

Phone : + 91-33-2414 6223

Fax : + 91-33- 2414 6223

Int. : 2457-2267/2765

2457-2147(Inorganic)/ 2104 (Organic)/

2458(Physical)/2453 (Radiochemistry)

H.O.D. : Prof. Subhash Chandra Bhattacharya

E-mail : hodjuchemistry@gmail.com

hod@chemistry.jdvu.ac.in

1. A. Coursed Offered:

Name of the Course	Duration of the Course	No. of Students
B.Sc.	3 years	55 × 3
M.Sc. (Day)	2 years	40 × 2
M.Sc. (Evening)	3 years	35 × 2

B. Number of Faculty Members:

Professor	Reader/Associate Professor	Assistant
18	9	16

2. A. Area Research Activities:

Prof. Chittaranjan Sinha

Studies on the coordination chemistry, characterisation and the application potential of the transition and nontransition metal complexes. Design of azo and imine functionalised molecules of N-heterocycles (pyridine, pyrimidine, pyrazole, imidazole), sulphonamide antibiotics such as sulfamethoxazole; the structural studies, exploration of chemical, biochemical, photophysical, mesogenic activity and redox properties of the compounds are main target of our group. Metallo-organic, organometallics, supramolecular chemistry, photovoltaic activity and photochromism, antimicrobial activity and cytotoxicity of molecules are broad field of study. Theoretical computation and *in-silico* study of the compounds are our objective.

Prof. Nitin Chattopadhyay

Photochemistry; Biophysical Chemistry; Surface Chemistry; Fluorescence sensing; Polymer photophysics; Nanoparticle research; Steady-state and time-resolved fluorometric study of the photophysical and photochemical processes (ESPT, ICT, electron transfer, charge transfer and energy transfer) in homogeneous as well as microheterogeneous environments; Binding of drugs with proteins and DNA; Theoretical modeling and simulations of photophysical and/or photochemical observations; Laser induced optoacoustic spectroscopy (LIOAS).

Prof. Subhas Chandra Bhattacharya

1. Photophysical and Photochemical processes in organised interfaces.
2. Material chemistry.

B. Major Research Project:

Prof. Chittaranjan Sinha

- (a) "Photochromic Liquid Crystals and Metallomesogens of Azoimidazoles" sanctioned by DST, New Delhi
- (b) "Studies on coumarin appended azo (-N=N-) and imine (-C=N-) functionalized fluorescent molecules and their metal complexes" sanctioned by CSIR, New Delhi
- (c) "Azo (-N=N-) and imine (-C=N-) functionalized sulfamethoxazole and their metal complexes: Spectral, structural, photophysical, redox characterization and biochemical activities" sanctioned by UGC, New Delhi
- (d) "Exploration of bio-medical potentiality of thiosemicarbazone functionalised sulfonamides, their metal complexes and *In Silico* approach to correlate the drug-likeness" sanctioned by West Bengal DST, Bikasbhaban, Kolkata

Dr. Sanjay Bhar

"Cyclopropane ring as the scaffold for the construction of important molecular frameworks" – funded by CSIR; Duration: Thirty six months, Date of Commencement: August 02, 2010; Amount sanctioned: Rs. 3,00,000/= per year (Contingency) and Rs. 3,00,000/= (lumpsum) (Equipments).

Prof. Mahammad Ali

Polyoxometallate... magnetic studies	7 lac	UGC, New Delhi	February 1, 2011
Synthesis of Metal assembled supramolecular solid: structure and magnetism	~20 lac	CSIR, New Delhi	September 1, 2011

Dr. Souvik Chattopadhyay

Title of the Project	Funding Agency	Amount (INR)	Date of Commencement
1. Tetrazolato Schiff base complexeschemical studies	DST	21,65,000/-	13.03.12

Dr. Sujoy Baitalik

CSIR 12 lakhs

Prof. Samaresh Bhattacharya

Title of the Project	Funding Agency	Amount (INR)	Date of Commencement
Platinum metal complexes of selected organic ligands, synthesis, characterization, and exploration of catalytic properties SR/S1/IC-29/2009	DST	Rs.79.0 lakhs (approx)	08/2010
Platinum metal complexes of selected organic ligands. Synthesis, characterization and, DNA-binding and cytotoxic properties 01(2384)/10/EMR-II	CSIR	Rs.15.0 lakhs (approx)	08/2010
Platinum Metal Mediated C-H, C-C and C-X (X = Cl, Br, I) Bond Activations: Formation of organometallic Complexes and Application in Organic Transformations SR/S1/RFIC-01/2009	DST-Ramanna	Rs.35.0 lakhs (approx)	07/2010

Prof. Subhash Chandra Bhattacharya

1. Spectroscopic Investigation of Pharmaceutically Significant Pyrazoline Derivatives in Organized Media, CSIR, 18 lakhs
2. Physicochemical studies of cationic surfactants and synthesis of nano particles, DST, 62 lakhs
3. Interaction of Biomolecules with nanoparticles synthesized by gamma radiation, DAE, 9 lakhs

Dr. Tapan Kr. Mondal

1. **"Structure, Electrochemical Properties and Exploration of Potential Catalytic Activity of Platinum Metal Complexes with Heterocyclic Ligands"**, Funding Agency: DST, Project Amounts (Rs.): 20,80,000/-
2. **"Novel Transition Metal Complexes with Redox Noninnocent Ligands: Spectroelectrochemistry, Electron Distribution and Reactivity"**, Funding Agency: DST, Project Amounts (Rs. In Lakhs): 46,60,000/-

Prof. Samiran Mitra

01. CSIR, 01(2491)/11/EMR-II dated 05. 05. 11. Synthesis, characterization, structural aspects and magneto-structural correlation of some transition metal complexes, 2011-2014, Fund: 19,72000

Dr. Kausikankar Pramanik

"Design of Polyazo Aromatic Chelates. Exploration of coordination and Organometallic chemistry and search for reactivity"(Project No: **SR/S1/IC-75/2010**)Date of Commencement: 29-08-2011 Ongoing, 48,77,000.00

Prof. Kalyan Kumar Mukherjea

1 (UGC, New Delhi), Rs. ~13.00 Lakhs

Dr. Subrata Koner

Grant agency	Title of the project	Reference No.	Duration	Time devoted	Amount in lakh
--------------	----------------------	---------------	----------	--------------	----------------

(Rs)

(mm)

CSIR, Transition metal containing reaction, 01(2542)/11/EMR-II Mar.1, 2012 – Feb. 2015, time-36, 8.7 + man power (one)

DST, Heterogeneous catalytic reaction..... metal-inorganic frameworks, SR/S1/IC-01/2009 23/02/10-22/05/13, time 39, 35.93 lakhs(approx.)

Dr. Jnan Prakash Naskar

01 (DST, Govt. of India) Rs. 17,000,00/- (Excluding Overhead)

Dr. Debajyoti Ghoshal

One (CSIR) 11.5

Prof. Nitin Chattopadhyay

1. *Investigation and characterization of macromolecular and biomimicking systems: A photophysical approach for prospective drug distribution and delivery*, D.S.T., New Delhi, 22.05.12 – ongoing, Rs. 23,10,800/-.

3. A. Invited Lectures Delivered/ Session Chaired:**Dr. Soumen Ghosh**

- i) Invited Speaker and **Chairperson** in National Symposium on Recent Palestrae in Photosciences, 3-4 September, 2012 organized by Dept. of Zoology, Banaras Hindu University, Varanasi-221005, Uttar Pradesh under the aegis of Indian Photobiology Society, J. U., Kolkata.
- ii) Invited Speaker in National Seminar on 'Recent Advances in Polymer Science and Technology' (POLY – 2012), November 2-4, 2012 organized by Prof. Sukumar Maiti Polymer Award Foundation, Kolkata in collaboration with Department of Chemistry, North Bengal University and Siliguri Institute of Technology, Siliguri, West Bengal.

Prof. Somnath Ghosh

1. Concluding ceremony of **International Year of Chemistry** organised by **Merck Millipore, India** on 28.4.2012 in Piccadilly Hall, Golden Park Hotel, Kolkata 700071.
2. UGC sponsored (CPE) **Shanti Swarup Bhatnagar Memorial Lecture** in the Department of Chemistry, A.B.N. Seal Govt. College, COOCHBEHAR, Govt. of West Bengal on 13.8.2012,

Prof. Chittaranjan Sinha

- (a) Invited talk in Acharya Prafull Chandra Ray Memorial Symposium on Chemistry & Industry (2012) (In Commemoration of the 151st Birth Anniversary of Acharya Prafulla Chandra Ray) held in August 02-03, 2012,
- (b) Chaired Inorganic Chemistry Section in 49th Annual Convention of Chemists held in National Institute of Technical Teachers' Training and Research, Shanti Marg, Shamlia Hills, Bhopal, Madhya Pradesh, during December 12-15, 2012.

- (c) Invited Talk in 49th Annual Convention of Chemists held in National Institute of Technical Teachers' Training and Research, Shanti Marg, Shamlia Hills, Bhopal, Madhya Pradesh, during December 12-15, 2012 on "PHOTOCHROMIC LIQUID CRYSTALS : THE COMPLEXES OF ARYLAZOIMIDAZOLES" by C. Sinha
- (d) Poster presented in 15th CRSI National Symposium in Chemistry & 7th RSC-CRSI Symposium in Chemistry held in 31 January 31 – 3 February, 2013 at Department of Chemistry, Banaras Hindu University, Varanasi – 221005 Abstract Title: The C-H activation and the C-N fusion of Rh(III) complexes of 1-alkyl-2-(naphthyl-a-azo)imidazoles" by Chittaranjan Sinha, Book of Abstracts, Poster P352, Page 400,

Prof. Rina Ghosh

"Highly optically pure medicinally potent heterocyclic scaffolds derived from Carbohydrates" in the BIT's 3rd Annual "World Congress of Catalytic Asymmetric Synthesis-2012" (WCCAS-2012) at Beijing, China during May 12-14, 2012.

Dr. Sanjay Bhar

1. "49th Annual Convention of Chemists" organized by Indian Chemical Society at the Department of Applied Sciences, National Institute of Technical Teachers' Training and Research, Bhopal – 462002 during December 12-15, 2012.
2. "Two-day National Workshop on Green Chemistry – a Way to Sustainable Development" organized by the Department of Chemistry, Sripat Singh College, Jiaganj, during December 27-28, 2012.
3. One lecture entitled "Green Chemistry" on August 24, 2012 at the UGC- Academic Staff College, University of Calcutta.
4. One lecture entitled "A look around Stereochemistry" on August 27, 2012 at the UGC-Academic Staff College, University of Calcutta.
5. One lecture entitled "Teaching Stereochemistry" on January 10, 2013 at the UGC-Academic Staff College, Jadavpur University.

Prof. Subhash Chandra Bhattacharya

- 1) National Symposium On RECENT PALESTRAE IN PHOTOSCIENCES, September 3-4, 2012
- 2) Refresher course in Chemistry, Jadavpur University January, 2013
- 3) Refresher course in Instrumentation Science March, 2013
- 4) Invited talk at TSSRA Seminar in July, 2012
- 5) Refresher course in Nanoscience & Technology August, 2012
- 6) Refresher course in Chemistry, Calcutta University August, 2013

Dr. Subratanath Koner

1. Delivered Invited Talk, Heterogeneous Catalysis over Porous Solids, National Seminar on Frontiers in Chemical Sciences-2013, Vidyasagar University, Midnapore
2. Delivered Invited Talk, Heterogeneous Catalysis over Inorganic Porous Solids, Trends in Surface Science and Related Areas (2012), Indian Society for Surface Science and Technology (ISSST), Scottish Church College, Kolkata

Prof. Chittaranjan Sinha

1. Deliver lecture in a Refresher Courses organised by Department of Chemistry, Jadavpur University, Kolkata, on January 2013
2. Deliver a lecture and demonstrated experiments in a DST Sponsored Science Communicator forum for upgradation of Secondary and Higher Secondary School Teachers of Purba Medinipur District on 22.03.2013 at Contai Model School, Purba Medinipur

Prof. Nitin Chattopadhyay

1. Resource Person in the "Current Trends in Chemistry Teaching – Communicating the Excitement of Chemistry" Organized by JBNSTS, Kolkata and Vigyan Prasar, Noida at JB Center of Excellence, Kolkata during June 05-07, 2012.
2. Resource Person in the Teachers' Training program organized jointly by JBNSTS and West Bengal Academy of Science and Technology, Malda, June 27-30, 2012.
3. Resource Person in the Special Summer School entitled "Principles and Applications of the Basic Sciences" Organized by Department of Physics, Jadavpur University, during July 09-28, 2012.
4. Invited talk in Department of Chemistry, University of North Bengal, August 22, 2012.
5. Resource person in the Science Workshop organized by JBNSTS in Taldi Surabala Sikshayatan for Girls' South 24 Parganas during August 28-31, 2012.
6. *Invited talk in Fluorescence Correlation Spectroscopy (FCS-2012) Workshop: Fluorescence Methods in Single Molecule Spectroscopy, Organized by Saha Institute of Nuclear Physics, Indian Institute of Chemical Biology and Tata Institute of Fundamental Research during December 03-07, 2012.*
7. Resource Person in the INSPIRE program in Visva-Bharati University, Santiniketan, December 10-14, 2012.
8. Resource person at Refresher Course on Modern Chemical Sciences: Theories and Applications; organized by the UGC-Academic Staff College, Jadavpur University; January 02 – 22, 2013.
9. Invited Bronze Medal Lecture in the 15th National Symposium in Chemistry (NSC-15) organized by Banaras Hindu University (BHU), Varanasi, during February 01-03, 2013.
10. Invited talk in International Conference on Material Science (ICMS-2013), Organized by Department of Physics, Tripura University, February 21-23, 2013.

B. Seminar/ Workshop / Conference/ Symposium Attended:

Dr. Jnan Prakash Naskar

1. Seminar on "Understanding Physical Chemistry: Role of Teachers and Students", Jadavpur University, Jadavpur Campus, Saturday, July 28, 2012
2. International Symposium on 'Molecular Organization and Complexity: A Chemical Perspective', Saha Institute of Nuclear Physics (SINP); AF Block, Salt Lake City, Sector-1; Kolkata: 700 064, India, February 06-08, 2013

Dr. Saubhik Chattopadhyay

1. Attended 7th RSC-CRSI and 15th CRSI-NSC at BHU, Varanasi, Presented a poster entitled " Unique insitu reduction Cu₂S₂ Core " in CRSI-2013 scheduled at Banaras Hindu University, Varanasi during Jan. 31 and Feb. 1-3, 2013
2. Participated in Science Academies' lecture workshop on "Recent Development in Chemistry" on 29 Nov. -1 Dec, 2012 at the Department of Chemistry, Visva-Bharati, Shantiniketan.

Dr. Partha Roy

1. Poster Presentation on "Copper(II) and Nickel(II) incorporated functionalized mesoporous silica as catalysts for epoxidation of olefins" Partha Roy, 15th Chemical Research Society of India National Symposium in Chemistry, 2010 (CRSI-NSC-12) and 7th Chemical Research Society of India-Royal Society of Chemistry (CRSI-RSC) Joint Symposium in Chemistry, Benaras Hindu University, Varanasi, India, *January 31-February 3, 2013*

Dr. Chandan Kumar Mondal

1. Seminar on UNDERSTANDING PHYSICAL CHEMISTRY: ROLE OF EACHERS AND STUDENTS. Physical Chemistry Section, Department of Chemistry, Jadavpur University, July 28, 2012.
2. International Symposium on molecular organization and complexity: A Chemical perspective Department of Chemistry, University of Calcutta, February 06-08,2013

Prof. Nitin Chattopadhyay

1. Fluorescence Correlation Spectroscopy (FCS-2012) Workshop: Fluorescence Methods in Single Molecule Spectroscopy, Organized by Saha Institute of Nuclear Physics, Indian Institute of Chemical Biology, December 03-07, 2012.
2. International Conference on Material Science (ICMS-2013), Organized by Department of Physics, Tripura University, February 21-23, 2013.

Prof. Asok Kumar Mallik

1. 49th Annual Convention of Chemists, 2012, Department of Applied Sciences, National Institute of Technical Teachers' Training and Research, Shamla Hills, Bhopal, Madhya Pradesh during December 12-15, 2012.[Participated and acted as Scientist-in-Charge, Organic Chemistry and Biochemistry Section].
2. Acharya Prafulla Chandra Ray Memorial Symposium on Chemistry & Industry (2012), Indian Chemical Society, Kolkata-700 009, August 02&03, 2012.
3. National Seminar on Recent Advances in Chemistry: NSRAC-2012, Department of Chemistry, Jadavpur University, Kolkata-700 032, February 10-11, 2012.

DR. GOURHARI MAITI

01. "International Symposium on Molecular Organization and Complexity: A Chemical Perspective (ISMOC-2013), Dept. of Chemistry, Calcutta University,, February 06-08, 2013, **presented a Poster.**

Dr. Umesh Chandra Halder

"National Conference on Sustainable Development through Innovative Research and Technology" organized by Jadavpur University, Kolkata – 700032 on September 28-29, 2012 - Participant as Registered Delegate.

Dr. Umasish Jana:

International symposium on molecular organization and complexity: A chemical perspective, Department of Chemistry, University of Calcutta (February 6-8, 2013), P-80, "An efficient strategy for the synthesis of highly functionalized pyrrolo[1,2-a]quinoline," S. Sarkar, K. Bera and U. Jana. Presented poster.

Dr. Tanurima Bhaumik

International symposium on Molecular Organisation and Complexity: A Chemical Perspective; February 6 – 8, 2013 organized by Department of Chemistry, University of Calcutta.

Prof. Chittaranjan Sinha

- (a)(i) Contributory Paper published in Book of Abstract – (i) Paper 10, p-71 entitled, "Photochromism of Arylazoimidazoles in Presence of Micelle and Reverse Micelle" by Pallab Gayen and Chittaranjan Sinha;
 - (ii) Paper 12, p-73 "Synthesis, Structure, Photochromism and Metallomesogenic Properties of Iodo-Cadmium(II) Compounds of Long Chain Alkyl Group Substituted at N(1)-Imidazole Containing Arylazoimidazoles" by C. Sen, R. K. Sinha and C. Sinha;
 - (iii) Paper 11, p-93, "Synthesis, Structure and Photochromism of Zinc(II) Complexes of Alkylthioarylazo-imidazoles" by S. Saha (Halder) and C. Sinha;
 - (iv) Paper 16, p-99, "Docking Studies of Arylazoimidazolium Derivatives towards the Design of Chemical Analogues of Tuberculosis (an In silico approach)" by S. Mandal, S. Pradhan, T. K. Mondal and C. Sinha; (v) Paper 12, p-94, "Synthesis, Structure, UV-Visible, Fluorescence and Electrochemical Properties of Pd^{II} and Pt^{II} Complexes with ——" by S. Roy and C. Sinha.
- (b) Award paper, ING(AP)-01 "Structure, photochromism and liquid crystal properties of halide bridging lead(II) complexes of 1-alkyl-2-(arylazo)imidazoles" by D. Mallik & C. Sinha*, Abstracts, Page A1; (Book of Abstracts, -2012).

Dr. Soumen Ghosh

- i) One day Seminar on "Understanding Physical Chemistry: Role of Teachers and Students", July 28, 2012 organized by Physical Chemistry Section, Dept. of Chemistry, J. U., Kolkata, W. B.
- ii) Two days National Conference on 'Sustainable Development through Innovative Research in Science and Technology' held on September 28 & 29 at Jadavpur University, Calcutta, W. B.

Prof. Kalyan K. Mukherjee

1. "National Seminar on Recent Advances in Chemistry-2012" organized by Department of Chemistry, Jadavpur University, Kolkata, 2012.
2. "National Seminar on ETBG, Allahabad-2012 invited lecture on "DEVELOPMENT OF NEW PLATINUM BASED ANTICANCER AGENT".
3. "An International Conference on Green Chemistry for Sustainable Development"-2012 organized by Jessore Science and Technology University, Jessore, Bangladesh, Keynote lecture entitled: "Role of Transition metal complexes in Biology.

Dr. Saurabh Das

1. International Symposium on Molecular Organization and Complexity: A Chemical Perspective held in January, 2013 by the Department of Chemistry, Calcutta University at the Saha Institute of Nuclear Physics, Kolkata. **Participated and three posters were presented by my Ph. D. students.**
2. Current Trends in Drug Discovery Research - 2013, 5th International Symposium on Drug Development for Orphan/Neglected Diseases held February 26th - 28th, 2013 at the Central Drug Research Institute (C S I R), Lucknow. **Participated and two posters were presented by Ph. D. students.**

Prof. Samiran Mitra

1. RSC & CRSI conference, Banaras Hindu University, Varanasi, Jan., 2013
2. International Conference on Chemistry, Calcutta Univ., Feb., 2013
3. National Seminar on Recent Trends in Chemical Sciences, Manipur Univ., Imphal, March, 2013
4. National Seminar on 150th Birth Anniversary of Acharya P.C. Ray, Indian Chemical Society, 2013

Dr. Kajal Krishna Rajak

1. Iso-valence Co(II) and mixed-valence Co(II/III) Tetranuclear Complexes: Synthesis, Structure, Magnetic Properties and DFT Study, 12th CRSI National Symposium in Chemistry (2013), Banaras Hindu university, Varanasi
2. Mononuclear and dinuclear Re(I) complexes incorporating 1-(2-pyridylazo)-2-naphthol: synthesis, structure, spectral, DFT and TDDFT study, Current Trends in Chemistry (2012), IISER, Kolkata

Dr. Sujoy Baitalik

1. Seminar on "Understanding Physical Chemistry: Role of Teachers and Students", Jadavpur University, Jadavpur Campus, Saturday, July 28, 2012
2. The 7th RSC-CRSI Symposium in Chemistry and 15th National Symposium in Chemistry (NSC-15), Department of Chemistry, Faculty of Science, Banaras Hindu University, Varanasi, January 31 to February 03, 2013 under the auspices of the Chemical Research Society of India.
3. During CRSI-NSC, a special mini symposium on "*Co-ordination Chemistry*" to mark the 100th year of Alfred Werner's Nobel Prize (Delivered an invited lecture)
4. International Symposium on 'Molecular Organization and Complexity: A Chemical Perspective', Saha Institute of Nuclear Physics (SINP); AF Block, Salt Lake City, Sector-1; Kolkata: 700 064, India, February 06-08, 2013

Dr. Debajyoti Ghoshal

CRSI 2012

Poster Presented in the Symposium:

C. Seminar/ Workshop Conference / Symposium Organized:

Dr. Soumen Ghosh

- i) Acting as a **Treasurer** in one day Seminar on "Trends in Surface Science and Related Areas" (TSSRA – IX) held on July 25, 2012 at Scottish Church College, Kolkata - 700006, W. B.
- ii) Acting as a **Treasurer** in one day Seminar on "Trends in Surface Science and Related Areas" (TSSRA – X) held on May 03, 2013 at Dept. of Pharmaceutical Technology, J. U., Kolkata W. B.

Prof. Chittaranjan Sinha

1. Organised the celebration of "World Environment Day and a Workshop on Transit of Venus" in Jadavpur University Campus sanctioned by NSS, Jadavpur University on 5th and 6th June, 2012
2. Celebrated Sadbhabna Divas in JU Campus on 07th August, 2012
3. Organised one day Seminar to Celebrate 150th Birth Anniversary of Swami Vivekananda and 125th Birth Anniversary of Srinivasa Ramanujan on 22.12.2012 supported by Jadavpur University and NSS at Gitanjali Park as Off campus activity of NSS, JU. Prof. Bijan Sarkar, Prof. Subinoy Chakraborty, Swami Purnatmananda.

4. A. Books/ Monographs etc. Published:

B. Articles Published in Journals:

Prof. Somnath Ghosh

1. A new synthesis of 2-aryl/alkylbenzofurans by visible light stimulated intermolecular Sonogashira coupling and cyclization reaction in water. **S. N. Ghosh**, J. Das, F. Saikh, *Tetrahedron Lett.* **2012**, *53*, 5883.
2. Hantzsch 1, 4-dihydropyridine synthesis in aqueous ethanol by visible light. **S. N. Ghosh**, F. Saikh, J. Das, A. K. Pramanik, *Tetrahedron Lett.* **2013**, *54*, 58.

Dr. Soumen Ghosh

- i) "Shear- and Temperature-Dependent Viscosity Behavior of Two Phosphonium-based Ionic Liquids and Surfactant Triton X-100, and Their Biocidal Activities", Indrajyoti Mukherjee, Kaushik Manna, Gargi Dinda, **Soumen Ghosh** and Satya P. Moulik, *J. Chemical & Engineering Data* **57** (2012) 1376-1386.
- ii) "Revisiting the Self-aggregation Behavior of Cetyltrimethylammonium Bromide in Aqueous Sodium Salt Solution with Varied Anions", Bappaditya Naskar, Abhijit Dan, **Soumen Ghosh**, V. K. Aswal and Satya P. Moulik, *J. Molecular Liquids* **170** (2012) 1-10.
- iii) "Solution Behavior of Normal and Reverse Triblock Copolymers (Pluronic L44 and 10R5) individually and in Binary Mixture", Bappaditya Naskar, **Soumen Ghosh**, and Satya P. Moulik, *Langmuir* **28** (2012) 7134-7146.
- iv) "Synthesis, characterization and applications of microheterogeneous templated CdS nano dispersions", Indrajyoti Mukherjee, Gargi Dinda, **Soumen Ghosh** and Satya P. Moulik, *J. Nanoparticle Research* **14** (2012) 997-1011.
- v) "Role of Curcumin on the Determination of the Critical Micellar Concentration by Absorbance, Fluorescence and Fluorescence Anisotropy Techniques", Satyajit Mondal and **Soumen Ghosh**, *J. Photochemistry and Photobiology B: Biology* **115** (2012) 9-15.
- vi) "Spectroscopic Investigation of Interaction between Crystal Violet and Various Surfactants (Cationic, Anionic, Nonionic and Gemini) in Aqueous Solution", **Soumen Ghosh**, Satyajit Mondal, Sibani Das and Rathin Biswas, *Fluid Phase Equilibria* **332** (2012) 1-6.
- vii) "Physicochemistry of Interaction of Polyvinylpyrrolidone (PVP) with Sodium dodecyl Sulfate (SDS) in salt solution", Bithika Mandal, Satya P. Moulik and **Soumen Ghosh**, *J. Surfaces and Interfaces of Materials* **1** (2012) 83-92.
- viii) "Spectroscopic Study on the Interaction of Medicinal Pigment, Curcumin with Various Surfactants: An Overview", **Soumen Ghosh** and Satyajit Mondal, *J. Surface Science and Technology* **28** (2012) 179-195.
- ix) "Amphiphilic Behavior of Two Phosphonium Based Ionic Liquids", Indrajyoti Mukherjee, Suvasree Mukherjee, Bappaditya Naskar, **Soumen Ghosh** and Satya P. Moulik, *J. Colloid and Interface Science* **395** (2013) 135-144.
- x) "Interaction Between Cationic Gemini and Monomeric Surfactants: Micellar and Surface Properties", Deepti Tikariha, Birendra Kumar, **Soumen Ghosh**, Amit K. Tiwari, N. Barbero, P. Quagliotto, Kallol K. Ghosh, *J. Nanofluids* **2** (2013) 316-324.

- xi) "Physicochemical Studies on the Micellization of Cationic, Anionic and Nonionic Surfactants in Water-Polar Organic Solvent Mixtures", Sibani Das, Satyajit Mondal and **Soumen Ghosh, J. Chemical & Engineering Data** (in web).

Prof. Subrata Mukhopadhyay

1. Monojit Mitra, Prankrishna Manna, Amrita Das, Saikat Kumar Seth, Madeleine Helliwell, Antonio Bauzá, Somnath Ray Choudhury, Antonio Frontera and Subrata Mukhopadhyay; *J. Phys. Chem. A*, 2013, accepted for publication.
2. Monojit Mitra, Saikat Kumar Seth, Somnath Ray Choudhury, Prankrishna Manna, Amrita Das, Madeleine Helliwell, Antonio Bauzá, Antonio Frontera and Subrata Mukhopadhyay; *Eur. J. Inorg. Chem.*, 2013, accepted for publication.
3. Md. Maidul Islam, Maharudra Chakraborty, Prateek Pandya, Abdulla Al Masum, Neelima Gupta and Subrata Mukhopadhyay; *Dyes & Pigments*, 2013, accepted for publication.
4. Ranendu Sekhar Das, Bula Singh, Rupendranath Banerjee and Subrata Mukhopadhyay *Inorg. Chim. Acta*, 2013, in the press.
5. Maharudra Chakraborty, Pulak Mandal and Subrata Mukhopadhyay *Inorg. Chim. Acta*, 2013, 398, 77 – 82.
6. Ranendu Sekhar Das, Bula Singh, Rupendranath Banerjee and Subrata Mukhopadhyay *Dalton Trans.*, 2013, 42, 4068 – 4080.
7. *Monojit Mitra, Prankrishna Manna, Saikat Kumar Seth, Amrita Das, Joanne, Madeleine Helliwell, Antonio Bauzá, Somnath Ray Choudhury, Antonio Frontera and Subrata Mukhopadhyay CrystEngComm*, 2013, 15, 686 – 696.
8. Saikat Kumar Seth, Prankrishna Manna, N. Jiten Singh, Monojit Mitra, Atish Dipankar Jana, Amrita Das, Somnath Ray Choudhury, Tanusree Kar, Subrata Mukhopadhyay and Kwang S. Kim *CrystEngComm*, 2013, 15, 1285 – 1288 (Communication).
9. Kaustab Mandal, Rupendranath Banerjee and Subrata Mukhopadhyay *Inorg. Chim. Acta*, 2013, 394, 691 – 695.
10. Ritu Mishra, Rupendranath Banerjee and Subrata Mukhopadhyay; *J. Phys. Org. Chem.*, 2012, 25, 1193 – 1197.
11. Maharudra Chakraborty, Pulak Chandra Mandal and Subrata Mukhopadhyay, *Polyhedron*, 2012, 45, 213 – 220.
12. Ritu Mishra, Subrata Mukhopadhyay and Rupendranath Banerjee, *Inorg. Chim. Acta*, 2012, 392, 137 – 140.
13. Sekhar Gain, Subrata Mukhopadhyay and Rupendranath Banerjee, *Ind. J. Chem. A*, 2012, 51, 949 – 953.
14. P. K. Jana, I. Saha, Subrata Mukhopadhyay and D. Sarkar, *Indian J. Phys.*, 2011, 85, 1569 – 1580.
15. Prankrishna Manna, Saikat Seth, Amrita Das, Joanna Hemming, Richard Prendergast, Madeleine Helliwell, Somnath Ray Choudhury, Antonio Frontera and Subrata Mukhopadhyay; *Inorg. Chem.*, 2012, 51, 3557 – 3571.
16. Ranendu Sekhar Das, Bula Singh, Subrata Mukhopadhyay and Rupendranath Banerjee, *Dalton Trans.*, 2012, 41, 4641 – 4648.

Prof. Samiran Mitra

1. Shit, S., Nandy, M., Rosair, G., Gómez-García, C.J., Borrás Almenar, J.J., Mitra, S. *Polyhedron* 2013, 61, 73-79
2. Shit, S., Nandy, M., Rosair, G., Salah El Fallah, M., Ribas, J., Garribba, E., Mitra, S. *Polyhedron* 2013, 52, 963- 969
3. Maiti, M., Sadhukhan, D., Thakurta, S., Sen, S., Zangrando, E., Butcher, R.J., Deka, R.C., Mitra, S. *European Journal of Inorganic Chemistry* 2013, 527-536
4. M. Maiti, D. Sadhukhan, S. Thakurta, S. Roy, G. Pilet, R. J. Butcher, A. Nonat, L. J. Charbonnière, S. Mitra, *Inorg. Chem.* 51 (2012) 12176"12187.
5. D. Sadhukhan, C. Rizzoli, E. Garribba, C. J. Gómez-García, A. Yahia-Ammar, L. J. Charbonnière, S. Mitra, *Dalton Trans. (communication)* 41 (2012) 11565-11568.
6. A. Sasmal, S. Shit, C. Rizzoli, H. Wang, C. Desplanches, S. Mitra, *Inorg. Chem.* 51 (2012) 10148"10157.

Dr. Subratanath Koner

1. D. Saha, R. Sen, T. Maity, S. Koner, *Langmuir*, 29, 3140"3151 (2013).
2. D. Saha, T. Maity, R. Bera and S. Koner, *Polyhedron*, 56, 230-236 (2013).
2. D. K. Hazra, M. Mukherjee, R. Sen, D. Saha, S. Koner and A. K. Mukherjee, *J. Mol. Struct.*, 1033, 137-144 (2013).
3. S. Halidar and S. Koner *Beilstein J. Org. Chem.*, 9, 49–55 (2013).
4. R. Sen, D. Saha and S. Koner, *Chem. Eur. J.*, 18, 5979 – 5986 (2012).
5. T. Maity, D. Saha, S. Das and S. Koner, *Eur. J. Inorg. Chem.* 4914 – 4920 (2012).
6. D. Saha, R. Sen, T. Maity and S. Koner, *Dalton Trans.*, 41, 7399–7408 (2012).
7. R. Sen, D. Saha and S. Koner *Catal. Lett.* 142, 124-130 (2012).
8. D. Saha, T. Maity, T. Dey and S. Koner, *Polyhedron*, 35, 55-61(2012).
9. R. Bera and S. Koner, *Inorg. Chim. Acta* 384, 233–238 (2012).
10. D. Mal, R. Sen, E. Rentschler, K.-I. Okamoto, Y. Miyashita and S. Koner *Inorg. Chim. Acta*, 385, 27-30 (2012).

Prof. Chittaranjan Sinha

- (i) Synthesis, spectra, structure, redox properties and DFT computation of copper(I)–triphenylphosphine–pyridyl Schiff bases" by Gunomoni Saha, Kamal Krishna Sarkar, Tapan Kumar Mondal, Chittaranjan Sinha, *Inorganica Chimica Acta* 387 (2012) 240–247.
- (ii) "End-to-End Thiocyanato-Bridged Helical Chain Polymer and Dichlorido-Bridged Copper(II) Complexes with a Hydrazone Ligand: Synthesis, Characterisation by Electron Paramagnetic Resonance and Variable Temperature Magnetic Studies, and Inhibitory Effects on Human Colorectal Carcinoma Cells", Kuheli Das, Amitabha Datta, Chittaranjan Sinha, Jui-Hsien Huang, Eugenio Garribba, Ching-Sheng Hsiao, and Chin-Lin Hsu, *ChemistryOpen* 2012, 1,80–89
- (iii) "Photo-Isomerization Dynamics of N-1-Methyl-2-(Tolylazo)imidazole and the Effect of Complexation with Cu(II)", Jahur A. Mondal, Gunomoni Saha, Chittaranjan Sinha, Dipak K. Palit, *Phys. Chem. Chem. Phys.*, 2012, 14, 13027–13034.

- (iv) "Effect of PEG-200 and Tween-20 on photoisomerisation of 1-alkyl-2-(arylazo)imidazoles in toluene" by Pallab Gayen and Chittaranjan Sinha*, *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy* 98 (2012) 116–121
- (v) "The C–H activation of pendant naphthyl group of 1-alkyl-2-(naphthyl- α -azo)imidazole by rhodium(III). Spectral, structural characterization and, DFT computation" by Dibakar Sardar, Papia Datta, Rajat Saha, Pallepogu Raghavaiah, Chittaranjan Sinha, *Journal of Organometallic Chemistry*, 2013, 732, 109-115
- (vi) "Use of Ru/Os-CO-diiodide precursor to synthesise heteroleptic 1-alkyl-2-(arylazo)imidazole complexes: the structural characterization, electrochemistry and catalytic activity " by Shyamal Kumar Sarkar, Mahendra Sekhar Jana, Tapan Kumar Mondal and Chittaranjan Sinha, *Polyhedron*, 2013, 50, 246-254.
- (vii) "The photochromism of 1-alkyl-2-(arylazo)imidazoles embedded in micelles" by Pallab Gayen, Kamal Krishna Sarker and Chittaranjan Sinha*, *Colloids and Surfaces A: Physicochem. Eng. Aspects* 429 (2013) 60 – 66.
- (viii) "Copper(I)/Silver(I)-phosphine-N-((2-pyridyl)methylidene)-6-coumarin complexes : Syntheses, structures, redox activities, photophysical properties and DFT computation" by Suman Roy, Tapan Kumar Mondal, Partha Mitra and Chittaranjan Sinha*, *Polyhedron*, 2013, 51, 27-40.
- (ix) "Intercalated Iodobismuthate in the Layers of Azoimidazoles. Structure, Photochromism and DFT Computation" by Debashis Mallick, Kamal Krishna Sarker, Rajat Saha Tapan Kumar Mondal, and Chittaranjan Sinha* *Polyhedron*, 2013, 54, 147 – 157.
- (x) "Structure, photophysics, electrochemistry and DFT calculations of [RuH(CO) (PPh₃)₂(coumarinyl-azo-imidazole)]" by Papia Datta, Dibakar Sardar, Rajat Saha, Tapan Kumar Mondal,, Chittaranjan Sinha, *Polyhedron* 53 (2013) 193–201
- (xi) Kinetics and mechanism of chelative decarbonylation of [W(CO)₅(α -NaiR-N)] to [W(CO)₄(α -NaiR-N,N')] (α -NaiR = 1-alkyl-2-(naphthyl- α -azo)imidazole; N = N(imidazole); N' = N(azo)) by Papia Datta, Chittaranjan Sinha, *International J. Chem*, 2013 (accepted).
- (xii) "Transducer influence of polycyclic aromatic hydrocarbons (PAHs) on photoisomerisation of 1-alkyl-2-(arylazo)imidazoles" by Pallab Gayen and Chittaranjan Sinha*, *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy* 104 (2013) 477–485
- (xiii) "Structure and DNA Interaction Study of [Rh^{III}(1-alkyl-2-(arylazo)imidazole)₂(X)₂](ClO₄) (X = Cl, N₃)" by Dibakar Sardar, Papia Datta, Sanju Das, Chung-De Chen, Chun-Jung Chen, Biswarup Saha, Saheli Samanta, Debalina Bhattacharya, Parimal Karmakar, Chittaranjan Sinha*, *Inorganica Chimica Acta*, 394 (2013) 98 -106.
- (xiv) "The photochromism of 1-alkyl-2-(arylazo)imidazoles trapped in water pool by AOT-heptane reverse micelle' by Pallab Gayen and Chittaranjan Sinha*, *Journal of Indian Chem. Soc.*, 2013, 90, 751 - 762.
- (xv) 1-Alkyl-2-((*o*-thioalkyl)phenylazo)imidazole complexes of Pb(II) and their photochromic property" S. Saha (Halder), S. Roy, T. K. Mondal, R. Saha, and C. Sinha*, *Z. Anorg. Alleg. Chem.* 2013, 639, 1861 – 1870.
- (xvi) "Structure, Photochromism and Liquid Crystal Properties of 1-Alkyl-2-(Arylazo)Imidazoles (Raai-CnH_{2n+1}, n (Even) = 10 - 22)" by Avijit Nandi, Chandana Sen, Debashis Mallick, Randhir K. Sinha, Chittaranjan Sinha*, *Advances in Materials Physics and Chemistry*, 2013, 3, 133-145

Prof. Rina Ghosh

1. Bio-assay guided isolation of α -glucosidase inhibitory constituents from *Eclipta alba* (L.) Hassk. D. Kumar, R. H. Gaonkar, **R. Ghosh**, B. C. Pal, *Nat. Prod. Comm.* **2012**, 7, 989.
2. Trichloroisocyanuric acid (TCCA) – TMSOTf: An efficient activator system for glycosylation reactions based on thioglycosides. N. Basu, S. K. Maity, **R. Ghosh**, *RSC Adv.* **2012**, 2, 12661.
3. K_2CO_3 mediated one-pot multicomponent synthesis of medicinally potent pyridine and chromeno[2,3-b]pyridine scaffolds. S. Mishra, **R. Ghosh**, *Syn. Commun.* **2012**, 42, 2229.
4. Efficient activation of thioglycosides with *N*-(*p*-Methylphenylthio)- ϵ -caprolactam-TMSOTf. S. K. Maity, N. Basu, **R. Ghosh**, *Carbohydr. Res.* **2012**, 354, 40.
5. A three-component one-pot sequential synthesis of a common tetrasaccharide block related to the lipopolysaccharide of the *Escherichia Coli* O9, *Klebsiella pneumonia* O3 and *Hafnia alvei* PCM 1223. S. K. Maity, **R. Ghosh**, *Synlett* **2012**, 23, 1919.
6. CuCl catalyzed green and efficient one-pot synthesis of aminoindolizine frameworks via three component reactions of aldehydes, secondary amines and terminal alkynes in PEG. S. Mishra, B. Naskar, **R. Ghosh**, *Tetrahedron Lett.* **2012**, 53, 5483.
7. A new triterpenoid saponin from *Glinus oppositifolius* with α -glucosidase inhibitory activity. D. Kumar, V. Shah, **R. Ghosh**, B. Pal, *Nat. Prod. Res.* **2013**, 27, 624.
8. α -Glycosidase and α -amylase inhibitory constituents of *Carex baccans*: Bioassay guided isolation and quantification by validated RP-HPLC-DAD. D. Kumar, N. Gupta, **R. Ghosh**, R. H. Goankar, B. C. Pal, *J. Functional Food* **2013**, 5, 211.
9. Trichloroisocyanuric acid (TCCA): An efficient reagent for green activation of thioglycosides towards hydrolysis. N. Basu, S. K. Maity, A. Chaudhury, **R. Ghosh**, *Carbohydr. Res.* **2013**, 369, 10.
10. Bioactivity guided isolation and quantification of anti-diabetic principle in vitro from *Holarrhena antidysenterica* L. (Wall). D. Kumar, S. Datta, S. S. Roy, R. H. Gaonkar, J. R. Vedasiromoni, **R. Ghosh**, B. C. Pal, *J. Herbs Spices Med. Plants* **2013**, 20, 54

Dr. Umesh Chandra Halder

1. Tryptophan dynamics in the exploration of micro-conformational changes of refolded b-lactoglobulin after thermal exposure: A steady state and time-resolved fluorescence approach. **U. C. Halder**, J. Chakraborty, N. Das, S. Bose, *J. Photochem. Photobiol. B: Biol.* **2012**, 109, 50.
2. The "Cross Talk" between the receptors of insulin, estrogen and progesterone in neutrophils in the synthesis of maspin through nitric oxide in breast cancer. K. Ganguly (Bhattacharjee), M. Bhattacharyya, **U. C. Halder**, P. Jana, A. K. Sinha, *Int J Biomed Sci.* **2012**, 8, 129.
3. Characterization of trichoderma reesei endoglucanase II expressed heterologously in *Pichia pastoris* for better biofinishing and biostoning. S. Samanta, A. Basu, **U. C. Halder**, S. K. Sen, *J. of Microbiol.* **2012**, 50, 518.
4. The role of neutrophil estrogen receptor status on maspin synthesis via nitric oxide production in human breast cancer. K. Ganguly Bhattacharjee, M. Bhattacharyya, **U. C. Halder**, P. Jana, A. K. Sinha, *J. Breast Cancer* **2012**, 15, 181.
5. Effect of Progesterone Receptor Status on Maspin Synthesis Via Nitric Oxide Production In Neutrophils In Human Breast Cancer. K. Ganguly Bhattacharjee, M. Bhattacharyya, **U. C. Halder**, P. Jana, A. K. Sinha, *Breast Cancer* **2012**, DOI 10.1007/s12282-012-0422-6.

- Promotion and suppression of thermal aggregation of β -lactoglobulin by arginine: A concentration dependent mechanism, J. Chakraborty, **U. C. Halder**, *Computer Sc. Inform. Tech. (CS & IT)* **2013**, 445.

Prof. Subhash Chandra Bhattacharya

- Probing the Spectral Response of a New Class of Bio-Active Pyrazoline Derivative in Homogeneous Solvents and Cyclodextrin Nanocavities: A Spectroscopic Exploration Appended by Quantum Chemical Calculation and Molecular Docking Analysis; S.S. Mati, S. Sarkar, S. Rakshit, A. Sarkar and **S.C. Bhattacharya**; *RSC Advances*; 3, **2013**, 8071-8082.
- Effect of bovine serum albumin on the functionality and structure of cationic surfactant at air-buffer interface; Maiti, K., **Bhattacharya, S.C.**, Moulik, S.P., Panda, A.K. *Materials Science and Engineering C*, 33, **2013**, 836-843.
- Morphology control of nickel oxalate by soft chemistry and conversion to nickel oxide for application in photocatalysis; RSC Advances; S. Rakshit, S. Chall, S.S. Mati, A. Roychowdhury, S.P. Moulik and **S. C. Bhattacharya**; *RSC Advances*; 3, **2013**, 6106-6116.
- Fluorescence turn-ON of a naphthalimide derivative by anions in cationic micellar network: An overture towards a simple chemosensing platform; S. Dhar, D. K. Rana, **S. C. Bhattacharya**; *Sensors and Actuators B: Chemical*, 176, **2013**, 467-474.
- Explicit Spectral Response of the Geometrical Isomers of a Bio-Active Pyrazoline Derivative Encapsulated in α -Cyclodextrin Nanocavity: A Photophysical and Quantum Chemical Analysis; S.S. Mati, S. Sarkar, P. Sarkar and **S.C. Bhattacharya**; *J. Phys. Chem A*; 116, **2012**, 10371-10382.
- Single step aqueous synthesis of pure rare earth nanoparticles in biocompatible polymer matrices; S. Chall, A. Saha, S. K. Biswas, A. Datta and **S. C. Bhattacharya**, *J. Mater. Chem.* 22, **2012**, 12538-12546.
- Selective Fluorescence Resonance Energy Transfer from Serum Albumins to a bio-active 3-pyrazolyl-2-pyrazoline derivative: A Spectroscopic Analysis; A. Sarkar and **S. C. Bhattacharya**, *J. Luminescence*, 132, **2012**, 2612-2618.
- Amphiphile behavior in mixed solvent media I: Self-aggregation and ion association of sodium dodecylsulfate in 1,4-dioxane-water and methanol-water media; Pan, A., Naskar, B., Prameela, G.K.S., Kumar, B.V.N.P., Mandal, A.B., **Bhattacharya, S.C.**, Moulik, S.P. *Langmuir* 28, **2012**, 13830-13843
- Aqueous synthesis of ZnTe/dendrimer nanocomposites and their antimicrobial activity: implications in therapeutics; S. Ghosh, D. Ghosh, P.K. Bag, **S.C. Bhattacharya**, A. Saha, *Nanoscale*, 3, **2012**, 1139-1148.
- Differential contribution of Igepal and CnTAB micelles on the photophysics of nonsteroidal drug Naproxen; S. S. Mati, T.K. Mandal, **S.C. Bhattacharya**, *Spectrochim. Acta Part A*, 92, **2012**, 122-130.
- Facile room temperature synthesis of Lanthanum Oxalate nanorods and their interaction with antioxidative Naphthalimide derivative; S. Chall, S. Pramanik, S. Dhar, A. Saha and **S.C. Bhattacharya**; *J. Nanosci. Nanotech*, 11, **2012**, 1-10.
- Effect of solvent environment on the Photophysics of a newly synthesized bioactive 7-oxy (5-selenocyanato-pentyl)-2H-1-benzopyran-2-one; S. Dhar, D.K. Rana, S.S. Roy, S. Roy, S. Bhattacharya, **S.C. Bhattacharya**, *J. Luminescence*, 132, **2012**, 957-964.

13. Interaction of ZnS nanoparticles with flavins and glucose oxidase: A fluorimetric investigation; Chatterjee, A., Priyam, A., Ghosh, D., Mondal, S., **Bhattacharya, S.C.**, Saha, A., *J. Luminescence*, 132, **2012**, 545-549
14. Dual Intramolecular Hydrogen Bond as a Switch for Inducing Ground and Excited State Intramolecular Double Proton Transfer in Doxorubicin: An Excitation Wavelength Dependence Study; D.K. Rana, S.Dhar, A. Sarkar, **S.C. Bhattacharya**, *J. Phys. Chem. A*, 115, **2012**, 9169-9179.

Prof. Nitin Chattopadhyay

1. D. Ghosh, N. Chattopadhyay*, **2013**, *Equilibrium and dynamic effects on ligand binding to biomacromolecules and biomimetic model systems*, *Int. Rev. Phys. Chem.*, 32, 435-466.
2. B. Jana, S. Ghosh, N. Chattopadhyay*, **2013**, *Competitive binding of nile red between lipids and β -cyclodextrin*, *J. Photochem. Photobiol. B: Biol.*, 126, 1-10.
3. S. Ghosh, N. Chattopadhyay*, **2013**, *Determination of Dissociation Constants of Weak Acids and Bases Using Indicators*, *Chem. Educator*, 18, 80-84.
4. D. Ghosh, N. Chattopadhyay*, **2013**, *Gold Nanoparticles: Acceptors for Efficient Energy Transfer from the Photoexcited Fluorophores*, *Opt. Photonics J.*, 3, 18-26.
5. S. Mitra, N. Chattopadhyay, P. Chattopadhyay, **2013**, *Expeditious Synthetic Approach and Photophysical Properties of Fluorescent Benzimidazo[1,2-d]dibenzo[b,f][1,4]diazepine derivatives*, *RSC Adv.*, 3, 1862-1870.
6. B. Jana, N. Chattopadhyay*, **2012**, *Multiple Emissions of α -Naphthil: Fluorescence from S_2 State*, *J. Phys. Chem. A*, 116, 7836-7841.
7. D. Ghosh, N. Nandi, N. Chattopadhyay*, **2012**, *Differential Förster resonance energy transfer from the excimers of poly(N-vinylcarbazole) to coumarin-153*, *J. Phys. Chem. B*, 116, 4693-4701.
8. P. Das, D. Sarkar, N. Chattopadhyay*, **2012**, *Dramatic enhancement in the cation sensing efficiency in anionic micelles: A simple and efficient approach towards improving the sensor efficiency*, in **Recent Trends in Surface and Colloid Science**, Statistical Science and Interdisciplinary Research Series, Volume 12, Ed. B. K. Paul, World Scientific, Singapore, Chapter 19 (pp. 299-308).
9. D. Ghosh, A. Girigoswami, N. Chattopadhyay*, **2012**, *Superquenching of coumarin 153 by gold nanoparticles*, *J. Photochem. Photobiol. A: Chem.*, 242, 44-50.
10. D. Ghosh, N. Chattopadhyay*, **2012**, *Hyper-efficient quenching of non-conjugated pendant polymer by silver nanoparticles: A demonstration and versatile mechanistic proposition*, *Chem Phys. Lett.*, 532, 52-56.
11. B. Jana, S. Senapati, D. Ghosh, D. Bose, N. Chattopadhyay*, **2012**, *Spectroscopic Exploration of mode of Binding of ctDNA with 3-Hydroxyflavone: A Contrast to the mode of Binding with Flavonoids Having Additional Hydroxyl Groups*, *J. Phys. Chem. B*, 116, 639-645.

Dr. Tapan Kumar Mondal

1. Kinsuk Das, Atanu Jana, Saugata Konar, Sudipta Chatterjee, **Tapan Kumar Mondal**, Anil Kumar Barik, Susanta Kumar Kar, *J. Mol. Struct.* 1048 (2013) 98.
2. Mrinal Kanti Paira, Paramita Dutta, **Tapan Kumar Mondal**, Chittaranjan Sinha, *Indian Chemical Society* 90 (2013) 423.

3. Mahendra Sekhar Jana, Sudipto Dey, José L. Priego, Reyes Jiménez-Aparicio, **Tapan Kumar Mondal** and Partha Roy, *Polyhedron* 59 (2013) 101.
4. Mahendra Sekhar Jana, Ajoy Kumar Pramanik, Deblina Sarkar, Sujan Biswas and **Tapan Kumar Mondal**, *J. Mol. Struc.*, 1047 (2013) 73.
5. Averi Guha, Ria Sanyal, Tanmay Chattopadhyay, YounGyu Han, Tapan Kumar Mondal, Debasis Das, *J. Mol. Struc.*, 1042 (2013) 104.
6. Sathi Sinha, Manashi Chakraborty, Nikhil Ranjan Pramanik, Tapas Kumar Raychaudhuri, **Tapan Kumar Mondal**, Deblina Sarkar, Michael G.B Drew, Saktiprosad Ghosh, Sudhanshu Sekhar Mandal, *Polyhedron* 55 (2013) 192.
7. Mahendra Sekhar Jana, Ajoy Kumar Pramanik, Subhankar Kundu, Deblina Sarkar, **Tapan Kumar Mondal**, *Inorg. Chim. Acta* 399 (2013) 138.
8. Suman Roy, **Tapan Kumar Mondal**, Partha Mitra, Chittaranjan Sinha, *Polyhedron* 51 (2013) 27.
9. Papia Datta, Dibakar Sardar, Rajat Saha, **Tapan Kumar Mondal**, Chittaranjan Sinha, *Polyhedron* 53 (2013) 193.
10. Manashi Chakraborty, Sathi Roychowdhury, Nikhil Ranjan Pramanik, Tapas Kumar Raychaudhuri, Tapan Kumar Mondal, Subhankar Kundu, Michael G.B. Drew, Saktiprosad Ghosh, Sudhanshu Sekhar Mandal, *Polyhedron* 50 (2013) 602.
11. Debashis Mallick, Kamal Krishna Sarkar, Rajat Saha, **Tapan Kumar Mondal**, Chittaranjan Sinha, *Polyhedron* 54 (2013) 147.
12. Shyamal Kumar Sarkar, Mahendra Sekhar Jana, **Tapan Kumar Mondal**, Chittaranjan Sinha, *Polyhedron* 50 (2013) 246.
13. Sangita Ray, Saugata Konar, Atanu Jana, Kinsuk Das, Ray J. Butcher, **Tapan Kumar Mondal**, Susanta Kumar Kar, *Polyhedron* 50 (2013) 51.
14. Shyamal Kumar Sarkar, Mahendra Sekhar Jana, **Tapan Kumar Mondal**, Chittaranjan Sinha, *J. Mol. Struc.* 1036 (2013) 28.
15. Subhankar Kundu, Deblina Sarkar, Mahendra Sekhar Jana, Ajoy Kumar Pramanik, Subrata Jana, **Tapan Kumar Mondal**, *J. Mol. Struc.* 1035 (2013) 277.
16. Mahendra Sekhar Jana, Ajoy Kumar Pramanik, Subhankar Kundu, Deblina Sarkar, Subrata Jana, **Tapan Kumar Mondal**, *Inorg. Chim. Acta* 394 (2013) 583.
17. Averi Guha, Tanmay Chattopadhyay, Nanda Dulal Paul, Madhuparna Mukherjee, Somen Goswami, **Tapan Kumar Mondal**, Ennio Zangrando and Debasis Das, *Inorg. Chem.* 51(2012)8750.
18. Debashis Mallick, Avijit Nandi, Shilpi Datta, Kamal Krishna Sarker, **Tapan Kumar Mondal**, Chittaranjan Sinha, *Polyhedron* 31 (2012) 506.
19. Sucheta Joy, Prabir Pal, **Tapan Kumar Mondal**, G. B. Talapatra, and Sreebrata Goswami, *Chem. Eur. J.* 18 (2012) 1761.
20. Ajoy Kumar Pramanik, Mahendra Sekhar Jana, Subhankar Kundu, **Tapan Kumar Mondal**, *J. Mol. Struc.* 1017 (2012) 19.
21. Nanda D. Paul, Utpal Rana, Sreetosh Goswami, **Tapan K. Mondal**, and Sreebrata Goswami, *J. Am. Chem. Soc.* 134 (2012) 6520.

22. Atanu Jana, Saugata Konar, Kinsuk Das, Sangita Ray, James A. Golen, Arnold L. Rheingold, Luca M. Carrella, Eva Rentschler, **Tapan Kumar Mondal**, Susanta Kumar Kar, *Polyhedron* 38 (2012) 258.
23. Hemlata Agarwala, Thomas Michael Scherer, Somnath Maji, **Tapan Kumar Mondal**, Shaikh M. Mobin, Jan Fiedler, Francisco A. Urbanos, Reyes Jiménez-Aparicio, Wolfgang Kaim, Goutam Kumar Lahiri, *Chem. Eur. J.* 18 (2012) 5667.
24. Gunomoni Saha, Kamal Krishna Sarkar, **Tapan Kumar Mondal**, Chittaranjan Sinha, *Inorg. Chim. Acta* 387 (2012) 240.
25. Mahendra Sekhar Jana, Ajoy Kumar Pramanik, Subhankar Kundu, **Tapan Kumar Mondal**, *Polyhedron* 40 (2012) 46.
26. D. Mallick, A. Nandi, K.K. Sarker, P. Datta, **T.K. Mondal**, C. Sinha, *Inorg. Chim. Acta* 387 (2012) 352.
27. Shyamal Kumar Sarkar, Mahendra Sekhar Jana, **Tapan Kumar Mondal**, Chittaranjan Sinha, *J. Organomet. Chem.* 716 (2012) 129.
28. Debasis Das, Averi Guha, Sudhanshu Das, Prateeti Chakraborty, **Tapan Kumar Mondal**, Somen Goswami, Ennio Zangrando, *Inorg. Chem. Commun.* 23 (2012) 113.
29. Sutanuva Mandal, Subhas Samanta, **Tapan K. Mondal**, and Sreebrata Goswami, *Organometallics* 31 (2012) 5282.
30. Dipanwita Das, Thomas Michael Scherer, Amit Das, **Tapan Kumar Mondal**, Shaikh M. Mobin, Jan Fiedler, José Luis Priego, Reyes Jiménez-Aparicio, Wolfgang Kaim and Goutam Kumar Lahiri, *Dalton Trans.* 41 (2012) 11675.
31. Tanaya Kundu, David Schweinfurth, Biprajit Sarkar, **Tapan Kumar Mondal**, Jan Fiedler, Shaikh M. Mobin, Vedavati G. Puranik, Wolfgang Kaim and Goutam Kumar Lahiri, *Dalton Trans.* 41 (2012) 13429.

Dr. Umasish Jana

1. Highly efficient synthesis of polysubstituted fluorene via iron-catalyzed intramolecular Friedel–Crafts alkylation of biaryl alcohols. S. Sarkar, S. Maiti, K. Bera, S. Jalal, **U. Jana**, *Tetrahedron Lett.* **2012**, 53, 5544.
2. Synthesis of Substituted Phenanthrene by Iron(III)-Catalyzed Intramolecular Alkyne–Carbonyl Metathesis. K. Bera, S. Sarkar, S. Jalal, **U. Jana**, *J. Org. Chem.* **2012**, 77, 8780.
3. Three-Component coupling synthesis of diversely substituted N-Aryl pyrroles catalyzed by Iron(III) chloride. S. Sarkar, K. Bera, S. Maiti, S. Biswas, **U. Jana**, *Synth. Commun.* **2013**, 43, 1563.
5. Nitroalkenes synthesis using a cooperative catalytic reaction of iron (III) and piperidine: An one-pot synthetic strategy of 3-alkylindoles, 2H-chromenes and N-arylpyrrole. S. Jalal, S. Sarkar, K. Bera, S. Maiti, **U. Jana**, *Eur. J. Org. Chem.* **2013**, *Accepted*.

Dr. Gourhari Maiti

1. Antimony trichloride: A mild and efficient reagent for chemoselective ring opening of oxiranes. **G. Maiti**, R. Karmakar, R. N. Bhattacharya, *Indian J. of Chem.* **2012**, 51B, 302.

2. Terminal alkynes as keto-methyl equivalent toward one pot synthesis of 1,5-benzodiazepine derivatives under catalysis of $\text{Hg}(\text{OTf})_2$. **G. Maiti**, U. Kayal, R. Karmakar, R. N. Bhattacharya, *Tetrahedron Lett.* **2012**, *53*, 1460.
3. An efficient route to coumarin derivatives under dual catalysis, an organo- and a Lewis acid catalyst. **G. Maiti**, R. Karmakar, U. Kayal, R. Nath Bhattacharya, *Tetrahedron* **2012**, *68*, 8817.
4. An efficient one pot conversion of alkynes to bis(indolyl) and bis(pyrrolyl)alkanes in aqueous medium. **G. Maiti**, U. Kayal, R. Karmakar, R. N. Bhattacharya, *Indian J. Chem.* **2013**, *52B*, 122.
5. One pot imino Diels–Alder reaction for the synthesis of 3-aryl-3,4-dihydrobenzo[f]quinoline derivatives catalyzed by antimony trichloride. **G. Maiti**, R. Karmakar, U. Kayal, *Tetrahedron Lett.* **2013**, *54*, 2920.

Dr. Saurabh Das

01. Partha Sarathi Guin, Parikshit C Mandal, Saurabh Das*, *Rad. Phys. Chem.*, 2013 *published on line*, <http://dx.doi.org/10.1016/j.radphyschem.2013.04.002>.
02. Partha Sarathi Guin, Parikshit C Mandal, Saurabh Das*, *ChemPlusChem*, Vol 77, 361-369, 2012.
03. Partha Sarathi Guin, Parikshit C Mandal, Saurabh Das*, *Journal of Coordination Chemistry*, Vol 65, No. 4, 705-721, 2012
04. Sayantani Mukherjee, Piyal Das, Saurabh Das*. *Journal of Physical Organic Chemistry*, Vol 25, No. 5, 385-393, 2012.

Prof. Asok Kumar Mallik

1. A convenient, eco-friendly and efficient method for synthesis of bis(3-indolyl)methanes "on-water". **A. K. Mallik**, R. Pal, C. Guha, H. Mallik, *Green Chem. Lett. Rev.* **2012**, *5*, 321.
2. An expeditious synthesis of *cis*-2-(Aroylmethyl)-4-phenylthiochromans by iodine catalyzed combination of thiophenol with cinnamylideneacetophenones. **A. K. Mallik**, T. K. Mandal, R. Pal, D. Ghosal, A. Patra, *Synlett.* **2012**, *23*, 2459.
3. An efficient and highly diastereoselective synthesis of *cis*-2,4-diarylthiochromans. C. Guha, R. Pal, **A. K. Mallik**, *Arkivoc*, **2012**, (ix), 85.
4. Simple synthesis of a new family of 22- to 28-membered macrocycles containing two chalcone moieties. R. Mondal, T. K. Mandal, A. K. Mallik, *Arkivoc.* **2012**, (ix), 95.
5. A convenient, eco-friendly, and efficient method for synthesis of 3,3'-arylmethylene-bis-4-hydroxycoumarins "On-water". A. Das Gupta, S. Samanta, R. Mondal, **A. K. Mallik**, *Bull Korean Chem Soc.* **2012**, *33*, 4239.
6. Facile iodine-catalyzed Michael addition of indoles to α,α -bis(arylmethylene)cyclopentanones: An efficient synthesis of *E*-2-(3-indolylphenylmethyl)-5-phenylmethylene-cyclopentanones. R. Pal, A. Das Gupta, **A. K. Mallik**, *ISRN Org. Chem. International* **2012**, Volume 2012, Article ID 674629, 6 pages, doi:10.5402/2012/674629.
7. An expeditious and safe synthesis of some exocyclic α,β -unsaturated ketones by microwave assisted condensation of cyclic ketones with aromatic aldehydes over anhydrous potassium carbonate. R. Mondal, T. K. Mandal, **A. K. Mallik**, *Org. Chem. International* **2012**, Volume 2012, Article ID 456097, 8 pages, doi:10.1155/2012/456097.

8. A rapid, efficient and green method for synthesis of 3,3'-Arylmethylene-bis-4-hydroxycoumarin without use of any solvent, catalyst or solid surface. A. Das Gupta, S. Samanta, R. Mondal, **A. K. Mallik**, *Chem. Sci. Trans.* **2013**, *2*, 524.
9. Efficient and rapid solvent-free synthesis of 1,8-dioxo-octahydroxanthenes and 2,2'-(phenylmethylene)bis(3-hydroxy-5,5-dimethyl-cyclohex-2-en-1-ones) under microwave irradiation condition. S. Samanta, A. Das Gupta, R. Mondal, **A. K. Mallik**, *J. Indian Chem. Soc.* **2013**, *In Press*.
10. Amberlyst-15 catalysed cyclocondensation of α,α' -diarylidene-cycloalkanones with cyclohexane-1,3-diones: A simple synthesis of *E*-9-aryl-5-arylidene-1-oxo-1,2,3,4,5,6,7,8-octahydroxanthenes and their lower analogues. S. Samanta, A. Das Gupta, R. Mondal, **A. K. Mallik**, *J. Chem. Sci.* **Accepted**.

Dr. Sanjay Bhar

1. "Alumina-sulfuric acid catalyzed eco-friendly synthesis of xanthenediones" – Pramanik, A.; Bhar, S. *Catal. Commun.* 2012, *20*, 17 – 24.
2. "Dioxane dibromide mediated bromination of substituted coumarins under solvent-free conditions" – Chaudhuri, S. K.; Roy, S.; Bhar, S. *Beilstein J. Org. Chem.* 2012, *8*, 323–329.
3. "On-Water" Catalyst-Free Ecofriendly Synthesis of the Hantzsch Dihydropyridines – Pramanik, A.; Saha, M.; Bhar, S. *International Scholarly Research Network, ISRN Organic Chemistry*, 2012, Article ID 342738, 7 pages (Invited Article).

Professor Pratik Kumar Sen

"Effects of microheterogeneous environments of SDS, TX-100 and Tween 20 on the electron transfer reaction between L-Leucine and $\text{AuCl}_4^- / \text{AuCl}_3(\text{OH})^-$ " - P.K.Sen, N.Gani and B.Pal : *Ind.Eng.Chem.Res.*, *52*,2803-2813 (2013).

Professor Ambikesh Mahapatra

1. Pd(II)- N-Heterocyclic Carbene Complexes of 2,6-bis{N-methyl-(imidazolium /benzimidazolium)} pyrazinechloride; Synthesis, Structure, Catalysis and Theoretical Studies, G Roymahapatra, S Giri, A A Danopoulos, P K Chattaraj, A Mahapatra, V Bertolasi and J Dinda*, *Inorganica Chimica Acta*, **383**, 2012, p. 83 – 90.
2. Synthetic Strategy of Difluorophosphate-bridged Bimetallic N- Heterocyclic Carbene Complexes; Synthesis, Structures and Photoluminescence of Picoly- Substituted alkylbenzimidazolylidene ligands, S Das Adhikary, L Jhulki, S Seth, A Kundu, V Bertolasi, P Mitra, A Mahapatra, and J Dinda*, *Inorganica Chimica Acta*, **384**, 2012, p. 236 – 246.
3. Kinetic investigation on the oxidation of tris(1,10-phenanthroline)iron(II) by oxone: The effect of BSA–SDS interaction, H K Mandal, A Kundu, S Balti, and A Mahapatra*, *J Colloid Interface Sc*, **378**, 2012, p. 110 - 117.
4. Effect of anionic biocompatible amino acid surfactant and sodium dodecyl sulfate on the rate of alkaline hydrolysis of tris(2,2'-bipyridine)iron(II) complex: A comparative study, A Kundu, S Dasmandal, T Majumdar, and A Mahapatra", *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, **419**, 2013, p. 216 - 222.
5. Carbazole functionalized luminescent silver(I), gold(I) and gold(III)–N-heterocyclic carbene complexes: a new synthetic disproportionation approach towards Au(I)–NHC to provide Au(III)–NHC, J Dinda*, S Das Adhikary, S K Seth and A Mahapatra, *New J Chem*, **37**, 2013, p. 431-438.

Dr. Chandan Kr. Mondal

- i) Modeling Photo-dissociation Dynamics of HBr⁺ by Vibrational Wave-packet Formalism **Chandan Kumar Mondal** and Bikram Nath Chinese Journal of Chemical Physics **25** 269-276(2012)
- ii) Optimal control theory in adaptive simulated annealing technique: optimisation of laser pulse for selective vibrational excitations and photo-dissociation of HBr⁺ **Chandan Kumar Mondal** and Bikram Nath Molecular Physics: Published online, DOI:10.1080/00268976.2013.775515.
- iii) Design and optimize a combined laser pulse using optimal control theory based a daptive simulated annealing technique for selective vibrational excitations and photo dissociation Bikram Nath and **Chandan Kumar Mondal** Chemical physics (communicated)

Prof. Swapan Kumar Bhattacharya

01. The size-dependent anode-catalytic activity of nickel-supported palladium nanoparticles for ethanol alkaline fuel cells, **Partha Sarathi Roy**, Joyeeta Bagchi and Swapan Kumar Bhattacharya, *Catal. Sci. Technol(RSC)*. 2 (2012) 2302–2310.
02. Size-controlled synthesis and characterization of polyvinyl alcohol-coated platinum nanoparticles: role of particle size and capping polymer on the electrocatalytic activity, **Partha Sarathi Roy** and Swapan Kumar Bhattacharya, *Catal. Sci. Technol(RSC)*. 3 (2013) 1314–1323.
03. High electro-catalytic activities of glucose oxidase embedded one dimensional ZnO nanostructures Nirmal K Sarkar, Swapan K. Bhattacharya, *Nanotechnology(IOP)* 24 (2013) 225502.

Dr. Saubhik Haldar

01. Effect of peptide architecture on the self-assembly properties of tripeptide based anionic surfactants issued from two different peptide sequences: Ala-Ala-Val and Ala-Pro-Val in aqueous media (pH 7.4). S. K. Maji, **S. Haldar**, *Colloids Surf. A: Physicochem. Eng. Asp.* **2012**, 414, 422.
02. Role of non-covalent interactions in the molecular organization of N-*n*-hexadecanoyl amino acid amphiphiles with hydrophobic C_a-side chains in Tris buffer (pH 9.3). **S. Haldar**, S. K. Maji, *Colloids Surf. A: Physicochem. Eng. Asp.* **2013**, 420, 10.
03. Spontaneous physical gelation from functionally modified tripeptides [C16-Ser(OBz)-X-Ser(OBz)-C16] via supramolecularly assisted polarophobic association in diverse organic media. **S. Haldar**, S. K. Maji, *Colloids Surfa. A: Physicochem. Eng. Asp.* **2013**, 430, 65.

Prof. Mahammad Ali

1. R. Chatterjee, D. K. Hazra, M. Mukherjee, M. Nethaji and M. Ali; *Ind. J. Chem*, accepted Ms.
2. M. Dolai, T. Mistri, I. Bhowmick, R. Herchel, Z. Trávníček and M. Ali; *J. Molecular Structure*, accepted Ms.
3. I. Banerjee, A. Jana, S. Singh, J. Marek, E. del Barco and M. Ali, *Polyhedron* [dx.doi.org/10.1016/j.poly.2013.03.037](https://doi.org/10.1016/j.poly.2013.03.037).
4. M. Dolai, T. Mistri, A. Panja and M. Ali *Inorganica Chimica Acta* 399 (2013) 95–104.
5. S. Gangopadhyay, T. Mistri, M. Dolai, R. Alam and M. Ali, *Dalton Trans.* 2013, 42, 567.
6. I. Banerjee, P. N. Samanta, K. K. Das, R. Ababei, M. Kalisz, A. Girard, C. Mathonière, M. Nethaji, R. Clérac and M. Ali *Dalton Trans.* 2013, 42, 1879.

7. T. Mistri, R. Alam, M. Dolai, S. K. Mandal, A.R. Khuda-Bukhsh and M. Ali; *Org. Biomol. Chem.*, 2013, 11, 1563.
8. I. Banerjee, M. Dolai, A. D. Jana, K. K. Das and M. Ali; *CrystEngComm*. 2012, 14, 4972–4975.
9. A. Jana, A. D. Jana, T. Mistri, M. Dolai, I. Bhoumick, K. K. Das and M. Ali, *Inorganic Chemistry Communications* 24 (2012) 157–161.
10. T. Mistri, M. Dolai, D. Chakraborty, A. R. Khuda-Bukhsh, K. K. Das and M. Ali, *Org. Biomol. Chem.*, 2012, 10, 2380.

Dr. Kajal Krishna Rajak

01. P. Mondal, A. Hens and K. K. Rajak*, *Polyhedron* 2013, 54, 228
02. P. Mondal, A. Hens, S. Basak and K. K. Rajak* *Dalton Trans.* 2013, 42, 1536

Dr. Sujay Baitalik

01. Maity, D; Das, S.; Mardanya S.; Baitalik, S. *Inorg. Chem.* 2013, 52, 6820-6838
02. Das, S.; Karmakar, S.; Saha D.; Baitalik, S. *Inorg. Chem.* 2013, 52, 6860-6879
03. Maity, D; Bhowmick C.; Karmakar, S; Baitalik, S; *Inorg. Chem.* 2013, 52, 0000
04. Bhaumik, C.; Das, S.; Maity, D.; Baitalik, S.* *Dalton Trans*, 2012, 41, 2427-2438.
05. Bhaumik, C.; Maity, D.; Das, S.; Baitalik, S.* *RSC Advances*, 2012, 2, 2581-2594.
06. Das, S.; Saha, D.; Karmakar, S.; Baitalik, S.* *J. Phys. Chem. A*, 2012, 116, 5216-5226.
07. Saha, D.; Das, S.; Mardanya, S.; Baitalik, S.* *Dalton Trans*, 2012, 41, 8886-8898.
08. Das, S.; Saha, D.; Mardanya, S.; Baitalik, S.* *Dalton Trans*, 2012, 41, 12296-12310.

Dr. Jnan Prakash Naskar

01. J. P. Naskar, C. Biswas, B. Guhathakurta, L. Lu and M. Zhu; *Polyhedron* 42 (2012) 276-281
02. J. P. Naskar, B. Guhathakurta, L. Lu and M. Zhu; *Polyhedron* 43 (2012) 89-96
03. Averi Guha, Tanmay Chattopadhyay, Nanda Dulal Paul, Madhuparna Mukherjee, Somen Goswami, Tapan Kumar Mondal, Ennio Zangrando and Debasis Das, *Inorg. Chem.* 51(2012)8750.

Dr. Debajyoti Ghoshal

01. Rajdip Dey and Debajyoti Ghoshal; *Polyhedron*, 34 (2012) 24-30
02. Rajdip Dey, Debalina Bhattacharya, Parimal Karmakar and Debajyoti Ghoshal, *Polyhedron*, 48 (2012) 157-166

Prof. Samaresh Bhattacharya

1. N-(Aryl)picolinamide complexes of rhodium : Synthesis, structure and, spectral and electrochemical properties
 — I. Bhattacharya, M. Dasgupta, M. G. B. Drew and S. Bhattacharya, *J. Indian Chem. Sec.* 2012, 89, 205-216.
2. Mononuclear palladium and heterodinuclear palladium-ruthenium complexes of semicarbazone ligands. Synthesis, characterization, and application in C-C cross-coupling reactions

- S. Datta, D. K. Seth, S. Halder, W. S. Sheldrick, H. Mayer-Figge, M. G. B. Drew and **S. Bhattacharya**, **RSC Adv.** 2012, **2**, 5254-5264.
- Iridium mediated N-H and C-H bond activation of N-(aryl)pyrrole-2-aldimines. Synthesis, structure and, spectral and electrochemical properties
— P. Paul and **S. Bhattacharya**, **J. Organomet. Chem.** 2012, **713**, 72-79.
 - Benzaldehyde thiosemicarbazone complexes of platinum: Syntheses, structures and cytotoxic properties
— S. Halder, P. Paul, S. M. Peng, G. H. Lee, A. Mukherjee, S. Dutta, U. Sanyal and **S. Bhattacharya**, **Polyhedron** 2012, **45**, 177-184.
 - Nickel complexes of some thiosemicarbazones: Synthesis, structure, catalytic properties and cytotoxicity studies
— S. Datta, D. K. Seth, R. J. Butcher, S. Gangopadhyay, P. Karmakar and **S. Bhattacharya** **Inorg. Chim. Acta** 2012, **392**, 118-130.
 - Mixed-ligand benzaldehyde thiosemicarbazone complexes of palladium containing N,O-donor ancillary ligands. Syntheses, structures and, catalytic application in C-C and C-N coupling reactions
— J. Dutta, S. Datta, D. K. Seth and **S. Bhattacharya**, **RSC Adv.** 2012, **2**, 11751-11763.
 - Organometallic complexes of the platinum metals: Synthesis, structure, and catalytic application
— P. Paul and **S. Bhattacharya**, **J. Chem. Sci.** 2012, **124**, 1165-1173.
 - Tris(quinolin-8-olato)ruthenium(III) complex : Synthesis, isomerization and, spectral and electrochemical properties
— P. Paul and **S. Bhattacharya**, **J. Indian Chem. Sec.** 2012, **89**, 1633-1640.
 - Palladium mediated C-H bond activation of thiosemicarbazones: Catalytic application of organopalladium complexes in C-C and C-N coupling reactions
— P. Paul, P. Sengupta and **S. Bhattacharya**, **J. Organomet. Chem.** 2013, **724**, 281-288.
 - Rhodium complexes of 3,5-di-*tert*-butylcatechol : synthesis, structure and, spectral and electrochemical properties
— P. Sengupta and **S. Bhattacharya**, **J. Indian Chem. Sec.** 2013, **90**, 169-179.
 - Formation of organopalladium complexes via C-Br and C-C bond activation. Application in C-C and C-N coupling reactions
— P. Majumder, P. Paul, P. Sengupta and **S. Bhattacharya**, **J. Organomet. Chem.** 2013, **736**, 1-8.
 - Cytotoxic properties of two families of benzaldehyde thiosemicarbazone complexes of palladium
— S. Halder, P. Paul, R. Acharyya, F. Basuli, A. Mukherjee, U. Sanyal and **S. Bhattacharya** **J. Indian Chem. Sec.** 2013, in press.
 - Controlled interaction of benzaldehyde thiosemicarbazones with palladium: Formation of bis-complexes with *cis*-geometry and organopalladium complexes, and their catalytic application in C-C and C-N coupling

- J. Dutta and **S. Bhattacharya**, *RSC Adv.* 2013, **3**, 10707-10721.
14. Cytotoxic properties of two families of benzaldehyde thiosemicarbazone complexes of palladium
— S. Halder, P. Paul, R. Acharyya, F. Basuli, A. Mukherjee, U. Sanyal and **S. Bhattacharya**
J. Indian Chem. Soc. 2013, **90**, 771-776.
15. Mixed-ligand 1,3-diaryltriazene complexes of ruthenium: Synthesis, structure and catalytic properties
— N. Saha Chowdhury, C. GuhaRoy, R. J. Butcher and **S. Bhattacharya**, *Inorg. Chim. Acta* 2013, **406**, 20-26.
16. Iridium-mediated N-H and methyl C-H bond activations in N-(2',6'-dimethylphenyl)pyrrole-2-alimine. Synthesis, characterization and catalytic applications
— P. Paul, M. G. Richmond and **S. Bhattacharya**, *J. Organomet. Chem.* 2013, in press.
17. A mononuclear organoruthenium complex of a polydentate thiosemicarbazone ligand and its utilization as a building block for the synthesis of heterodinuclear Ru-Pd and Ru-Pt complexes
— B. K. Dey, P. Paul and **S. Bhattacharya**, *J. Indian Chem. Soc.* 2013, **90**, in press.

5. Collaborative Programmes:

Prof. Chittaranjan Sinha

- (i) Prof. Elena Lopez, University of Madrid, Spain – Collaboration on Single Crystal X-ray Structure determination.
- (ii) Dr. T. Akitsu, Tokyo Institute of Technology, Japan – Collaboration on Magnetic measurements

Prof. Nitin Chattopadhyay

Acted as a member of the International Advisory Committee in organizing the IUPAC conference on Photochemistry in Coimbra University, Portugal in 2012

6. Major Achievements:

Prof. Chittaranjan Sinha

- a) Ph. D Degree awarded by three students and submission of two theses under my supervision.
- b) Received Best Chemistry Teacher Award – 2012 judged by Association of Chemistry Teachers and Tata Chemicals Ltd., and supported by Confederation of Indian Industries.
- c) Hon. Editor, J. Indian Chemical Society, Kolkata

Dr. Soumen Ghosh

- i) Editorial Board Member of Journal of Nanofluids (American Scientific Publishers) (2012-continuing).
- ii) Professor B. N. Ghosh 80th Birthday Commemoration Award for the year 2012 from the Council of Indian Chemical Society, Kolkata – 700009 in 2013.

Prof. Nitin Chattopadhyay

1. Associate Editor of Journal of Luminescence (2013).
2. Bronze Medal of Chemical Research Society of India (2013).

3. Affiliate Member of the Royal Society of Chemistry, London (2013).
4. Member of the Executive Council of the West Bengal Academy of Science and Technology (2013).
5. Member of the Editorial Board of Journal of Photochemistry & Photobiology B: Biology (2012).
6. Member of the Editorial Board of Journal of Chemical Sciences (2012).

GEOLOGICAL SCIENCES

Phone : + 91-33-2414-6214
Int. : 2457-2268/2719
H.O.D. : Prof. Subir Mukherjee
E-mail : hod@geology.jdvu.ac.in

Awards / Recognitions Received at the National and International Level by

- **Faculty**

- Prof. Pulak Sengupta**

Pulak Sengupta is continuing as a member of the research committee on Earth and Environmental Sciences, CSIR, New Delhi. He is serving as an expert of UGC in a committee formed by Chairman, UGC. He has also served as an external expert of UGC to monitor the progress of CAS Department in other states. Jadavpur University has a MOU with the DAE, Govt. of India. As a part of that program Prof. Sengupta supervised M.Tech thesis of an officer from AMD, Govt. of India. Prof. Sengupta is the associate editor, Journal of Earth System Science (Spinger-Verlag). Prof. Sengupta is a member, CGPB National Committee on Fundamental and Multidisciplinary Geoscience. Geological Survey of India. Delivered lecture before the meritorious school students under the INSPIRE program funded by the Department of Science and Technology, Govt. of India

Member, Expert committee (for SAP program), University Grants Commission

Member, Expert committee NERO, University Grants Commission

- Prof. Sisir Kanti Nag**

Member, Expert panel, UPSC, Govt. of India

Member, Expert panel, CSIR, Govt. of India

Chaired a Technical session in the Section Earth System Sciences in the 100th Indian Science Congress held at Kolkata,

Elected as Sectional Committee Member of Earth System Science Section , 100th Indian Science Congress to be held at Kolkata, 2013.

Editorial Board Member :Journal of Environmental Chemistry and Ecotoxicology.

- Prof. Subir Mukherjee**

Member, CAS Committee, UGC

Prof. Nibir Mandal

Membership, Science Education Panel, I.A.Sc

Membership, PAC, DST

Subject Convener, Inter-Academy Panel, DST INSPIRE Programme

Member, Organizing Committee, GEOMOD, Lisbon

Member, Sectional committee 4, INSA

Member, Sectional committee 4, IASC

Membership, Research Advisory Committee, CSIR

Associate Editor, JESS

Prof. Subhendu Bardhan

Member, of the editorial board in Palaeontological Society of India

Member, IUGS's Stratigraphy Commission on Jurassic-Cretaceous boundary

Member of National Advisory Committee of "XXIV Indian Colloquium on Micropaleontology and Stratigraphy" in WIGH, Dehradun, 2013.

Member of National Advisory Committee of "9th International Congress on the Jurassic System – 2014" in Department of Geology, University of Rajasthan, Jaipur.

Member of *International Commission on Stratigraphy*, The Global Boundary Stratotype Section and Point (GSSP) for base of the Bathonian Stage (Middle Jurassic)

Organized and chaired a session in the International Conference on Electron Microscopy July, 2013.

Guided students from outstation Institute as summer trainee, delivered several lectures to the school kids under the program DST-INSPIRE, acted as resource person in officer training program Geological Survey of India.

Reviewer of *Acta Geologica*, Spain, *Current Science*, Geological Society of India, *Journal of the Palaeontological society of India*, *Palaeoworld*, *Journal of Earth System Science*

Palaeontological Society of India has selected paper entitled, "Record of intense predatory drilling from Upper Jurassic bivalves of Kutch, India: Implications for the history of biotic interaction" as best Indian paper published in the year 2012. For this he will be awarded Sharda Chandra Gold Medal by the Society.

Dr. Subir Sarkar

Awarded INSA-JSPS Fellowship, 2011-2012

Member, Editorial Board, *Journal of Palaeogeography*

Council Member, Indian Association of Sedimentologists

Visiting Scientist, Pretoria University (South Africa)

Supervised M.Tech thesis of an officer from AMD, Govt. of India (MOU with the DAE, Govt. of India and Jadavpur University)

Chaired session "Sedimentary process and Geomorphology" Indian Association of Sedimentologist held at Pondicherry University, 20-21 December, 2012

Delivered special lecture on " Gondwana sediments of Cauvery Basin", Department of Geosciences, Osaka City University, Japan.

Resource Person, Geological Survey of India for training programme for trainee geologist in Kolkata and Aizwal.

Dr. Sisir Kanti Mondal

'2013-2016: Secretary, Commission on Ore Deposits in Mafic and Ultramafic Rocks (CODMUR) under the umbrella of the International Association on the Genesis of Ore Deposits (IAGOD)

2013-2016: Regional Councilor for India of the International Association of the Genesis of Ore Deposits.

2013: Chair, Session 13f 'Crust-Mantle Evolution and Changing Patterns of Ore Deposits in the Early Earth', Goldschmidt 2013, Florence, August 25-30.

2012-2013: JSPS Invitation Fellowship in Japan; Short Term (58 days) under the category 'Overseas Researchers with an Excellent Record of Research Achievements' at Kanazawa University, Japan.

2012-2014: Research Associate (Adjunct Faculty), American Museum of Natural History, New York City.

2012: Chair, Session 'Ore Deposits', National Seminar on 'Recent advances & future challenges in Geochemistry & Geophysics: the Indian scenario', Banaras Hindu University, India, 22-24 February.

2012: Scientific article by Mondal & Mathez 2007 (Journal of Petrology 48: 495-510) listed in the 'Most Read 50 Articles' of Journal Petrology.

2011-2014: Global Leader, 'Ore Deposits' work group, IGCP-SIDA-599 on 'The Changing Early Earth'.

Dr. Dipak Chandra Pal

Supervised M.Tech thesis of an officer from AMD, Govt. of India (MOU with the DAE, Govt. of India and Jadavpur University)

Served as reviewer for scientific articles submitted in :1) Mineralium Deposita; 2) Journal of the Geological Society of London; 3) Neues Jahrbuch for Mineralogie; 4) Journal of the Geological Society of India; 5) Journal of Earth System Science; 6) Current Science, India

Delivered a talk in the Institute on "The Singhbhum uranium mineralization, India: mineral alteration controlled by irradiation damage?"

Dr. Anupam Ghosh

Received **FORMAS Strong Research Environment Postdoctoral Fellowship** at Department of Geology, Lund University, Sweden for 2 years (1st March 2012 – 28th February 2014)

Received **Per Westlings Minnesfond and K& A Wallenberg Foundation Grant, Lund University** to participate and present my research at 4th PAGES Open Sciences Meeting, Goa (12th – 16th February, 2013)

Received **Per Westlings Minnesfond and K& A Wallenberg Foundation Grant, Lund University** to participate and present my research at 4th PAGES Open Sciences Meeting, Goa (12th – 16th February, 2013)

• Doctoral / Postdoctoral Fellows:

Ria Mukherjee (Ph.D Research Scholar)

2013: Goldschmidt travel grant award 2011 (Florence, Italy), Geochemical Society (USA) and DST (New Delhi).

Students (Give details):

- 50 students from UG. and PG. have been awarded INSPIRE Fellowship by DST, Govt. of INDIA
- Abu Sayeed Baidya stood second in the GATE Examination-2012
- Priyadarshi Choudhury awarded a doctoral research fellowship through a global competition conducted by DAAD Germany.
- Rajkrishna Dutta awarded a doctoral fellowship from Princeton University, USA
- Anindyta Dey stood First and received the prestigious Shyamaprasad Mukherjee Award given by CSIR, Govt. of India.
- Avik Purkait stood Second and received the prestigious Shyamaprasad Mukherjee Award given by CSIR, Govt. of India.
- Somnath Bandyopadhyay stood Third and received the prestigious Shyamaprasad Mukherjee Award given by CSIR, Govt. of India.
- Sri Gopal Paul (M.Sc. 2012) received Best presentation award of Geo Youth – 2011 held in Udaipur University, Rajasthan.
- Through a global competition **Mr. Shubranil Mondal, Ms. Shreya Karmakar and Ms. Sukanya Sengupta** have been awarded doctoral **Fellowship by the DAAD, Germany**. **Mr. Shubhronil Mondal** also obtained a research fellowship and carrying out his Ph.D. work in the University of south Florida, U.S.A.
- **Ms. Sriparna Saha** has been awarded International Section's Subaru Minority Scholarship Award 2011-2012 of the Geological Society of America (GSA) for her continuing geoscience studies and micropalaeontological research work.

List of Publications (2012-2013),

- Acharya, T. Nag S. K. and Basumallik, S. 2012 Hydraulic Significance of Fracture Correlated Lineaments in Precambrian Rocks in Purulia District, West Bengal.. Jour. Geol. Soc. Ind. 80 (5), pp.723 – 730.
- Bardhan, S., Chattopadhyay, D., Mondal, S., Das, S., Mallick, S., Roy, A. and Chanda, P. 2012. Record of intense predatory drilling from Upper Jurassic bivalves of Kutch, India: Implications for the history of biotic interaction. Palaeogeography Palaeoclimatology Palaeoecology, Volume 317 – 318, 153 – 161.
- Bardhan, S., Dutta, R., Chanda, P. and Mallick, S. 2012. Systematic revision and sexual dimorphism in Choffatia (Ammonoidea: Perisphinctoidea) from the Callovian of Kutch, India. Palaeoworld, Volume 21 (1), 29 – 49.
- Baruah, A., Gupta, A.K., Mandal, N., Singh, R.N. 2013. Rapid ascent conditions of diamond-bearing kimberlitic magmas: findings from high pressure-temperature experiments and finite element modeling. Tectonophysics, 594, 13-26.

- Bose, P.K., Eriksson, P.G., Sarkar, S., Wright, D., Samanta, P., Mukhopadhyay, S., Mandal, S., Banerjee, S. and Altermann, W. 2012. Sedimentation patterns during the Precambrian: a unique record. *Marine and Petroleum Geology* 33, 34-68.
- Chakraborty, P.P., Sarkar, S. and Patranabis-Deb, S. 2012. Tectonics and Sedimentation of Proterozoic Basins of Peninsular India. *Proc Indian natn. Sci. Acad* 78 No. 3 p. 393-400
- Chattopadhyay, N.; Mukhopadhyay, D.; Sengupta, P. 2012. Reactivation of basement: example from the Anasagar Granite Gneiss Complex, Rajasthan, western India, Geological Society, London, Special Publications, vol. 365, issue 1, pp. 219-245
- Das, K., Bose, S., Karmakar, S., Chakraborty, S., 2012. Petrotectonic framework of granulites from northern part of Chilka Lake area, Eastern Ghats Belt, India: Compressional vis-à-vis transpressional tectonics *Journal of Earth System Science*. 121, No. 1, 1-17.
- Dinelli, E., Ghosh, A., Rossi, V. and Vaiani, S.C., 2012. Multiproxy reconstruction of Late Pleistocene-Holocene environmental changes in coastal successions: microfossil and geochemical evidences from the Po Plain (Northern Italy) *Stratigraphy*, 9(2), 153-157
- Dutta, R. & Mandal, N. 2012. Effects of Fe²⁺ and Zn²⁺ substitution on the structure and high-pressure stability of MgAl₂O₄ spinel from DFT calculations Original Research Article
- *Journal of Physics and Chemistry of Solids*, Volume 73, Issue 9, September 2012, Pages 1099-1105
- Dutta, R. & Mandal, N. 2012. Effects of pressure on the elasticity and stability of zircon (ZrSiO₄): First-principle investigations. *Computational Materials Science*, Volume 54, March 2012, Pages 157-164
- Dutta, R. & Mandal, N. 2012. Structure, elasticity and stability of reidite (ZrSiO₄) under hydrostatic pressure: A density functional study, *Materials Chemistry and Physics*, Volume 135, Issues 2–3, 15 August 2012, Pages 322-329
- Dutta, R. and Mandal N. 2012. Mg doping in wurtzite ZnO coupled with native point defects: A mechanism for enhanced n-type conductivity and photoluminescence. *Appl. Phys. Lett.* 101, 042106
- Dutta, U., Sarkar, S. and Mandal, N. 2013. Ballooning vs curling of mantle plumes. *Current Science* (in press).
- Eriksson, P. G., Banerjee, S., Catuneanu, O., Corcoran, P. L., Eriksson, K. A., Hiatt, E. E., Laflamme, M., Lenhardt, N., Long, D. G., Miall, A. D., Mints, M. V., Pufahl, P. K., Sarkar, S., Simpson, E. L., Williams, G. E. 2013, Secular changes in sedimentation systems and sequence stratigraphy. *Gondwana Research*, 24, 468–489.
- Ghosh, A. E. (2012)... stuarine Foraminifera along the Gulf of Cambay *Journal Geological Society of India*, 80(1), 65-74.
- Ghosh, D., Dutta, T., Samanta, S.K., and Pal, D.C. 2013. Texture, microstructure and geochemistry of magnetite from the Banduhurang uranium mine, Singhbhum shear zone, India-implications for physico-chemical evolution of magnetite mineralization. *Journal of the Geological Society of India*, vol. 81. P 101-112.
- **Mandal**, Nibir; Krishna Hara Chakravarty; Kajaljyoti Borah; S. S. Rai, 2012. Is a **cation ordering** transition of the Mg-Fe olivine phase in the mantle responsible ... *Journal of Geophysical Research*. Vol 117 Issue B12.
- Mondal, S.K., Griffin, W.L., Maier, W.G. (2013): Ore Deposits and the Role of the Lithospheric Mantle. *Lithos* 164–167: 1

- Mukherjee, R., Mondal, S.K., Frei, R., Rosing, M.T., Waight, T.D., Zhong, H., Ravindra Kumar, G.R. (2012). The 3.1 Ga Nuggihalli chromite deposits, Western Dharwar Craton (India): geochemical and isotopic constraints on mantle sources, crustal evolution and implications for supercontinent formation and ore mineralization. *Lithos* 155, 392–409
- Nag, S. K. and Lahiri, A. 2012 Hydrochemical Characteristics of Groundwater for Domestic and Irrigation Purposes in Dwarakeswar Watershed area, India. *American Journal of Climate Change*, 1, 217-230 doi:10.4236/ajcc.2012.14019 Published Online December (http://www.SciRP.org/journal/ajcc).
- Nag, S.K. and Ghosh, P. 2012 Delineation of groundwater potential zone in Chhatna Block, Bankura District, West Bengal, India using remote sensing and GIS techniques. *Int. Jour. of Env. Earth Sciences*, DOI: 10.1007/s12665-012-1713-0
- Nag, S.K. and Ghosh, P. 2013. Variation in Groundwater Levels and Water Quality in Chhatna Block, Bankura District, West Bengal - A GIS Approach. (Accepted in *Jour. of the Geological Society of India*.)
- Naskar, D.C.; Das, L.K.; Roy, K.K.; Majumdar, R.K. and Choudhury, K.: 2012, A re-examination of the crustal structure across Narmada-Son-lineament (NSL), Madhya Pradesh, Central India using Magnetotelluric and Gravity Modeling, *Journal of Geophysics*, v.33, no.3, p69-77.
- Sanyal, S, Sengupta, P. (2012), Metamorphic evolution of the Chotanagpur Granite Gneiss Complex of the East Indian Shield: current status Geological Society, London, Special Publications, vol. 365, issue 1, p. 117-145
- Saha, P. Bose, S., Mandal, N. 2013. Varying frontal thrust spacing in monovergent wedges: an insight from analogue experiments. *Journal of Earth system Science* (in press).
- Saha, S., Das, K., Chakraborty, P. P., Das, P., Karmakar, S., Mamatani, M. A., 2012 Tectono-magmatic evolution of the Mesoproterozoic Singhora basin, central India: Evidence for compressional tectonics from structural data, AMS study and geochemistry of basic rocks). *Precambrian Research*. doi:10.1016/j.precamres.2012.03.004
- Sarkar, S. Samanta, P., Mukhopadhyay, S. and Bose, P.K. 2012. Stratigraphic architecture of the Sonia Fluvial interval, India in its Precambrian Context. *Precambrian Research*. *Precambrian Research* 214– 215 (2012) 210– 226.
- Talukdar, M., Chattopadhyay, N., Sanyal S. 2012 Shear controlled Fe-mineralization from parts of South Purulia Shear Zone, *Journal of Applied Geochemistry*, v. 14, No. 4, 496-508

List of Publication in Conference Volumes

- Bardhan, S., Das, S. S., Mallick, S., Mondal, S. and Dutta, R. 2012. The record of oldest naticid gastropod from the Oxfordian (Upper Jurassic) of Kutch, India: Palaeoecological implications. (Abstract) GSA Annual Meeting – 2012. Charlotte, North Carolina, USA.
- Bardhan, S., Mallick, S., Das, S. S., Mondal, S. and Dutta, R. 2012. Oldest naticid (Gastropoda) predation from the Oxfordian (Upper Jurassic) of Kutch, Gujarat and its Palaeoecological significance (Abstract). National Conference on Sustainable Development through Innovative Research in Science and Technology, Jadavpur University, Kolkata, India. p. 117 – 118.
- Baruah, A., Mandal, N. 2012. Problems of magma ascent: findings from finite element models: RDS II conference, University, Lucknow, p.12

- Bhowmick T, Pal DC. 2012. Fluid inclusion studies of apatite from the Turamdih uranium deposit, Singhbhum shear zone, India. National seminar on "Recent developments in the geology of Bihar and Jharkhand", held in Patna October, 2012.
- Chakraborty, N. Sarkar, S., Maejima, W., Abdelhameed, H., Nagendra, R. 2012. Physico-chemical traits of the Barremian-Aptian Nonmarine sediments, Trichinopoly, India and their implications. National seminar on "Sediments and Sedimentary rocks: Resource potential, depositional processes, implication to ecosystem and environmental changes", 20-22nd Dec., 2012, Pondicherry University, Pondicherry. P.7
- Choudhury, P., Talukder, M. and Sengupta, P. 2012. Textural modeling of pseudomorph: A tool for determining the behavior of elements during metamorphic process. Recent Advances and Future challenges in Geochemistry and Geophysics: The Indian Scenario, National Conference, 22-24 February, BHU, UP. (Abstract)
- Das, A., Paul, G., Mondal, S., Bardhan, S. and Mallick, S. 2012. Subaerial hunting by *Natica tigrina* in the intertidal flat of Chandipur, Orissa. (Abstract) Young Ecologists Talk and Interact, India.
- Dasgupta, S. Mandal, N. 2012. Mechanism of Kink band formation: an analogue modelling approach. RDS II conference, University, Lucknow, p.38
- Døssing, L.N., Dideriksen, K., Crowe, S.A., Mondal, S.K., Bovet, N., Frei, R. (2012): Chromium isotope fractionation during mobilization and transport in Sukinda Valley, India. GOLDSCHMIDT 2012-Montreal, Canada: Abstract with programs. Abstract 01153, June 24-29, 2012. Mineralogical Magazine, 1655
- Dutta, U., Sarkar, S. 2012. Thermal structures of mantle plumes in numerical models: effects of its viscosity contrast and influx rate. RDS II conference, University, Lucknow, p.45
- Dutta A, Pal DC, 2012. Mineralogy and whole rock geochemistry of Turamdih uranium ore, Singhbhum shear zone, India. National seminar on "Recent developments in the geology of Bihar and Jharkhand", held in Patna October, 2012.
- Dutta, R. Mandal, N. 2012. Elasticity of silicates and its anisotropy under high pressure: a quantum mechanical approach. RDS II conference, University, Lucknow, p.44
- Mahato, S. Roychaudhuri, M. 2012. Microstructural study of Phulad shear zone: evidence of high temperature deformation mechanism. RDS II conference, University, Lucknow, p.75.
- Mallick, S., Bardhan, S., Goswami, P. and Paul, S. 2012. Naticid drilling predation on cerithid gastropods from below the K-T boundary in Rajahmundry, Andhra Pradesh (Abstract). National Conference on Sustainable Development through Innovative Research in Science and Technology, Jadavpur University, Kolkata, India. p. 121 – 122.
- Mallick, S., Bardhan, S., Paul, S., Mukherjee, S. and Das, S.S. 2012. Intense naticid drilling predation on turritelline gastropods from the Latest Cretaceous India. (Abstract) GSA Annual Meeting – 2012. Charlotte, North Carolina, USA.
- Mandal M, Mondal S, Pal, DC, Samanta SK, Patnaik JK, Pachamuthu J, 2012. Ore mineralogy and geochemistry of Bangurdih uranium occurrence, Singhbhum shear zone, Jharkhand, India with special emphasis on U-bearing minerals. National seminar on "Recent developments in the geology of Bihar and Jharkhand", held in Patna October, 2012.
- Mandal, N. 2012; Approximation in strain analysis: a root of complexity. RDS II conference, University, Lucknow, p.85.

- Mandal,A.,Bhakta,S.Sarkar,S., Bose,P.K.2012,Course of events that constrained evolution of the fluvial dominated Bhuj Formation,Kutch, India on top of marine shelf. National seminar on "Sediments and Sedimentary rocks: Resource potential, depositional processes, implication to ecosystem and environmental changes", 20-22nd Dec., 2012, Pondicherry University, Pondicherry. p.3-4
- Mandal,S. Sarkar,S.,Bose,P.K., 2012. Response of the river Chel to Himalayan Neotectonics. National seminar on "Sediments and Sedimentary rocks: Resource potential, depositional processes, implication to ecosystem and environmental changes", 20-22nd Dec., 2012, Pondicherry University, Pondicherry, p.24-25
- Nagendra,R.Sathiyamoorthy,P. Gayathri,R.Reddy, A.N., Sarkar,S., Venkateshwarlu,M. 2012. A journey to Cretaceous outcrops of Ariyalur area, Cauvery basin,South India. National seminar on "Sediments and Sedimentary rocks: Resource potential, depositional processes, implication to ecosystem and environmental changes", 20-22nd Dec., 2012, Pondicherry University, Pondicherry,166-170 (Extended abstract)
- Pal, DC, Dalal S, Mandal M, Samanta SK, Patnaik JK, Pachamuthu J, 2012. Radiation damage-controlled localization of alteration haloes in tourmaline and apatite surrounding radioactive minerals-Examples from the Singhbhum shear zone, India. National seminar on "Recent developments in the geology of Bihar and Jharkhand", held in Patna October, 2012.
- Participated, co-chaired a session and presented invited talk in National Seminar on 'Recent advances and future challenges in Geochemistry and Geophysics: the Indian scenario', organized by Banaras Hindu University, India.
- Paul, G., Das, A., Bardhan, S. and Mondal, S. 2012 (Abstract). Predation on Recent Turritelline gastropods from Indian subcontinent and comparison with revised global database. National Conference on Sustainable Development through Innovative Research in Science and Technology, Jadavpur University, Kolkata, India. p. 119 – 120.
- Ray, S., Biswas, S. Chakraborti, M., Sanyal, S. and Sengupta, P. 2012. Mass transport during fennitization of granite at the contact of carbonatite at Beldihi, Purulia, West Bengal Recent Advances and Future challenges in Geochemistry and Geophysics: The Indian Scenario, National Conference, 22-24 February, BHU, UP.(Abstract)
- Saha P., Barua A., Bose S. Mandal,N. 2012 Selective reactivation of Normal faults in inversion tectonics: insights from analogue experiments: National workshop on" Geology of Kachchh basin, western India, KSKV Kuchchh University, Bhuj, p. 10
- Sarkar, M. and Das ,S. 2012. A study of lithounits of Dirang Formation..... RDS II conference, University, Lucknow, p.112
- Sengupta, N. Sengupta, P. and Sanyal, S.2012, Origin of fluorite in the Palaeoproterozoic Madan Mahal Granite and its Environmental Significance Recent Advances and Future challenges in Geochemistry and Geophysics: The Indian Scenario, National Conference, 22-24 February, BHU, UP.(Abstract)
- Sengupta, S., Mahato,S. das, S. 2012. An analysis of tectonic clasts from mylonites of Phulad shear zone, Rajasthan. RDS II conference, University, Lucknow, p.114.

INSTRUMENTATION SCIENCE

Phone : + 91-33-2414-6321
Int. : 2457-2379
H.O.D. : Prof. Radhaballabh Bhar
E-mail : hod@isc.jdvu.ac.in

1. A. Courses Offered:

Name of the Course : M.Sc.(Instrumentation)

Duration of the Course : 2 years (4 semesters)

Intake strength : 15

B. Number of Faculty Members: 2 (In position) (Professor – 1 , Assistant Professor –1)

(i) Prof. Radhaballabh Bhar – Professor

(ii) Dr Anup Kr Ghosh - Assistant Professor

Prof Manoranjan Khan, UGC Emeritus Fellow from 21.11.2011

Prof Arun K. Pal, PI & Ex-Emeritus Professor

2. A. Area of Research Activities: (Board Areas)

Analytical Instrumentation, Plasma Science & Technology, Laser Ablated Plasma, Plasma Fusion Energy, Biochemical studies of Medicinal plants, Nanomedicinal materials, Nanocrystalline materials, R.F. Plasma CVD for c-BN, GaN based photoluminescent devices, Carbon nanofibre/tubes, Gas sensors, Solar Cell, Nanocrystalline materials, Nano-Carbon based PV, Plasmonics in PV

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

Sl.No	Title	Title	Funding Agency	Period	Sanctioned Amount in Rs
1.	Prof. M. Khan (PI)	Prof. R. Bhar (Co-PI), Prof Raychaudhury,	Investigation of interfacial fluid instabilities under the combined action of compressibility, magnetic field and velocity shear	FA-DST(SERB), P-2013-16,	Amount : 23.88 Lakhs
2.	Prof R. Bhar(PI)	Prof A.K. Pal(Co-PI)	, Studies on grain growth in CdTe thin films by Pulsed Laser Deposition Technique and realizing a ZnO/CdS/CdTe Solar Cell Structure.	FA-UGC-DAE-CSRKalpakkam node, P-2012-15,	Amount : 6.09 Lakhs
3.	Prof A.K. Pal	Prof R. Bhar,	Plasmonics for improved photovoltaic devices: Realizations and Characterization of n-ZnO/ nAg-ZnO/n-Si(100) Solar cell,	FA-DST, Govt. of India, P-2011-14	Amount : 62.928 Lakhs

4. Prof. M. Khan (PI) Prof. M.R. Gupta (Co-PI) Prof. R. Bhar (Co-PI), Dr. Samiran Ghosh (CU, Co-PI), Studies of Effects of Dust charge variations on nonlinear collective phenomena in a dissipative dusty Plasma, FA-CSIR, P-2009-13, Amount : 15 Lakhs

5. Prof. M. Khan (PI) Prof. R. Bhar (Co-PI) Prof. M.R. Gupta (Co-PI) Prof. S. Sarkar (CU, Co-PI) Prof. N. Chakraborty (SINP, Co-PI), Investigation of the characteristics of wave propagation and Jeans instability in a complex plasma in presence of secondary electron emission from dust grains, FA-DAE Govt. of India duration P-2009-2013, Amount : 18 Lakhs

3. A. Invited Lectures Delivered/Session Chaired: (Name of the Teacher, Type of the Seminar/Conference etc., Place, Duration)

Name of the Teacher	Type of Seminar/ Workshop/Conference	Organizer/Place
Duration	No of days/Week	

Prof Manoranjan Khan

- Invited lecture delivered on "Nonconventional Energy" . Bongaon College, Duration : January 17, 2012, One day
- Chaired a Session on Micro-seminar on Nonlinear Phenomena. Bethune College, Duration : September 2012, One day
- Chaired a Session on Micro-seminar on Nonlinear Phenomena. Place : Dibrugarh University, Assam. Duration : March, 2012, One day

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

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

Prof R. Bhar

Conference/Workshop/Place/Duration

- 15th European Microscopy Congress' held at Manchester Central, UK, during September 16-21, 2012.
- National Conference on Sustainable Development through Innovative Research in Science and Technology

Paper/Invited Talk

- Hydroxy Urea attenuates Sildenafil citrate (Viagra) induced haemolysis in vitro: Atomic Force Microscopic study.
- (a) Growth of CdTe films by Pulsed Laser Deposition Technique. (b) Growth of ZnTe films by Pulsed Laser Deposition Technique.

Prof Manoranjan Khan

- 13th International Workshop on the Physics of Compressible and Turbulent Mixing (IWPCTM-13) Organized by Cranfield University, UK. **July 16- 20, 2012.**
Combined effect of viscosity, surface tension and compressibility on the R-T instability between two fluids.
- International Conference on complex processes in Plasmas and nonlinear dynamical system. Organized by the Institute of Plasma Research, Ahmedabad. Nov. 6-9, 2012.
Dissipative bright and dark soliton in electro negative dusty plasma.

- (iii) 100th Indian National Science Congress Organized by Calcutta University. Jan. 3-7, 2013.
- (iv) Seminar on Laser and its application. Organized by Dept. of Instrumentation Sc. and Centre for Plasma Studies. Jan. 31, 2013.

Prof Arun Kr. Pal

1. Plasmonics for improved photovoltaic devices : Solar Asia 2011: International Conference on Solar Energy Materials, Solar Cells and Solar Energy Applications. Institute of Fundamental Studies, Kandy, Sri Lanka. 28th to 30th July 2011.
 - (i) Plasmonics for improved photovoltaic devices; Realization of n-ZnO/nAg-ZnO/n-Si(100) Solar Cells.
 2. Improved performance of photovoltaic devices by light trapping with surface plasmonic layer : National conference on Recent Trends in Materials Science (RTMS-2011) Jaypee University of Information Technology, Waknaghat, Solan, from 08-10, October 2011.
 - (ii) Improved performance of photovoltaic devices by light trapping with surface plasmonic layer.
 3. International Multidisciplinary Conference on Solar Energy, Meenakshi Sundararajan Engineering College, Chennai, February 1-3, 2012
 - (iii) Plasmonic for improved photovoltaic devices performances.
- 3. C. Seminar/Workshop/Conference/Symposium Organized:(Name of the Teacher, Name of, the Paper Presented (if any) Name of the Seminar, Place, Duration)**

Name of the Teacher Acted as Co-ordinator /convenor /Sponsored by/Name of Workshop/Training Programme/Organized by/Duration

Convener : Prof R. Bhar , Jadavpur University

- (i) National Seminar on '**Laser and Its Applications**', Department of Instrumentation Science. February, 6, 2013
- (ii) Seminar on '**Nonlinear Phenomena**', Department of Instrumentation Sc. in collaboration with Centre for Plasma Studies, J.U. January, 31, 2013

Convener : Prof. Manoranjan Khan, Jadavpur University

- (i) Micro-seminar on nonlinear phenomena. Department of Instrumentation Sc. in collaboration with Centre for Plasma Studies, J.U. June 30, 2011
- (ii) 80th Birth Anniversary of Prof. M.R. Gupta. Visiting Professor. Department of Instrumentation Sc. in collaboration with Centre for Plasma Studies, J.U. August 4, 2011

3. D. Award / Honour, etc. :

Prof. Manoranjan Khan awarded UGC Emeritus Fellowship 2011-2013.

3. E. Orientation Courses/Refresher Course Organized:

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

Name of the Teacher Acted as Co-ordinator /Convenor/Sponsored By/Name of Refresher Course/Organized by/Duration

Co-ordinator: Prof R. Bhar

- (i) UGC-ASC, JU, XI th Plan Refresher Course. Analytical Instruments: Techniques and Applications , Department of Instrumentation Science in collaboration with Academic Staff College, JU, February 23 to March 16, 2013

List of Publications in Referred Journals from the Department During 2012- 13

1. Small amplitude nonlinear electron acoustic solitary waves in weakly magnetized plasma., M. Dutta, S. Ghosh, R. Roychoudhury, **Manoranjan Khan** and N. Chakrabarti. *Physics of Plasmas*, 20, 012113 (2013).
2. Synthesis of carbon nano-fibers on p-Si having improved temperature sensing capability, S. Hussain, D. Ghosh, B. Ghosh, Subhajyoti Chaudhuri, **R. Bhar and A.K. Pal**, *Materials Science and Engineering B* 178 (2013) 83– 88.
3. Ultrastructure and Chemical Composition of Elephant Hair in the Context of Chemical Signals in the Asian Elephant *Elephas maximus*, P Raha, M Poddar-Sarkar, UK Nag, **R Bhar**, RL Brahmachary, *Chemical Signals in Vertebrates* 12, 227-234(2013)
4. Classification of yarn interlacement pattern in fabrics using least square support vector machines, A Ghosh, T Guha, **RB Bhar**. *Fibers and Polymers* 14 (7), 1215-1219(2013)
5. Luminescent S-doped carbon dots: an emergent architecture for multimodal applications S Chandra, P Patra, SH Pathan, S Roy, S Mitra, A Layek, **R Bhar**, P Pramanik ... *J. Mater. Chem. B* 1 (18), 2375-2382(2013).
6. Banerjee R., **Ghosh A. K.**, Ghosh B., Mondal AC.(2013). Chronic administration of Fluoxetine ameliorates depression: Enhanced BDNF and its receptor TrkB expressions with down stream signaling cascades ERK1/2 and Akt pathways. *J Pharm Biomed Sci.*, 30(30): 975-985.
7. Banerjee R., Hazra S., Kumar S., **Ghosh A. K.**, Mondal AC.(2013) Behavioral consequences of chronic stress and effects of antidepressant treatment on animal models of depression. *American J Psychiatry and Neuro Sci.*, 1(1): 5-13.
8. Ray, S. S., Das, D., Ghosh, T., & **Ghosh, A. K.** (2012). The Levels of Zinc and Molybdenum in Hair and Food Grain in Areas of High and Low Incidence of Esophageal Cancer: A Comparative Study. *Global Journal of Health Science*, 4(4):168-175. doi:10.5539/gjhs.v4n4p16.
9. Hazra S, Banerjee R, Das B K, **Ghosh A. K.**, Banerjee T K, Hazra U S, Biswas S K, Mondal A C (2012)Evaluation of Antidepressant activity of Bacopa monnieri in rat: A study in Animal Model of Depression. *Drug discovery*, 2(4):8-13. <http://www.discovery.org.in/dd.htm>
10. Banerjee R., **Ghosh A. K.**, Ghosh B., Batabyal S., Mondal AC. (2012). Effect of chronic effect of chronic mild stress on brain derived neurotrophic factor and nerve growth factor in the rat hippocampus. *Neurosci Res Lett.*, 3 (1): 29-34.
11. Banerjee R., **Ghosh A. K.**, Ghosh B., Mondal AC.(2012), Effect of Chronic Inescapable Footshock and Antidepressant Treatment on BDNF/TrkB Levels in Rat Hippocampus *Res and Rev: J Neurosci.*, 2(2): 12-21.
12. Banerjee R., **Ghosh A. K.**, Ghosh B., Bhattacharya S., Mondal AC. (2012) Reduced Expression Profile of Neurotrophins and their Cognitive Receptors in the Hippocampal Region of Postmortem Suicidal Brain. *Nerve*, 1(1): 13-17.
13. Hazra S, Banerjee R, Das B K, **Ghosh A. K.**, Banerjee T K, Hazra U S, Biswas S K, Mondal A C (2012) Evaluation of Antidepressant activity of Bacopa monnieri in rat: A study in Animal Model of Depression.*Drug discovery*, 2(4):8-13, <http://www.discovery.org.in/dd.htm>

14. Synthesis and characterization of Indium Phosphide films prepared by co-evaporation technique, R. N. Gayen, S. Hussain, **R. Bhar and A. K. Pal**, Vacuum 86 (2012) 1240
15. Ferromagnetism in nanocrystalline nickel incorporated diamond-like carbon thin films, R. Paul,, M.K. Sharma, R. Chatterjee, S. Hussain, **R. Bhar, A.K. Pal**, Appl. Surf. Sci., 258 (2012) 5850
16. Modulation of mechanical properties of diamond-like carbon films with the incorporation of nanocrystalline silver, R. Paul, Arjun Dey, A. K. Mukherjee, S. N. Sarangi and **A K Pal**, Ind. J. Pure & Appl. Phys., 50 (2012) 252
17. Synthesis and characterization of Indium Phosphide films prepared by co-evaporation technique, R. N. Gayen, S. Hussain, **R. Bhar and A. K. Pal**, Vacuum 86 (2012) 1240
18. Growth of CdTe films by pulsed laser deposition technique, B. Ghosh, S. Hussain, D. Ghosh, R. Bhar and A. K. Pal, Physica B, 407 (2012) 4214–4220
19. Growth of ZnTe films by pulsed laser deposition technique, B. Ghosh, D. Ghosh, S. Hussain, R. Bhar and A. K. Pal, J. Alloys & Comp, 541 (2012) 104–110
20. Novel BN/Pd composite films for stable Liquid Petroleum Gas sensor, D. Ghosh, B. Ghosh, S. Hussain, Subhajyoti Chaudhuri, **R. Bhar and A.K. Pal**, Appl. Surf. Sci. 263 (2012) 788–794.
21. Surface modification of GaAs induced by Argon ion implantation, S. Hussain, R. N. Gayen, M. B. Dutt and **A.K.Pal**, Ind. J. Pure Appl. Phys. 50 (2012) 650 .
22. Effect of viscosity and shear flow on the nonlinear two fluid interfacial structures. R. Banerjee, L.K. Mandal, **Manoranjan Khan**, M.R. Gupta. Phys. Plasmas 19, 122105 (2012).
23. Effect of viscosity and surface Tension on the growth of R-T. instability and R-M instability induced two fluid interfacial nonlinear structure., M.R. Gupta, R. Banerjee, L.K. Mandal, R. Bhar, H.C. Pant, **Manoranjan Khan** and M.K. Srivastava., Ind. J. Phys. 86, 471-479 (2012).
24. Therapeutic immunization with radio-attenuated Leishmania parasites through im route revealed protection against the experimental murine visceral leishmaniasis S Datta, M Manna, S Khanra, M Ghosh, **R Bhar**, A Chakraborty, S Roy Parasitology research 111 (1), 361-369(2012)

Collaborative Programmes (Ongoing):

Name of the Teacher/Collaborating Institute & Name of Scientist /Area of Research/ Objective

Prof. Manoranjan Khan

An agreement signed between Jadavpur University, Kolkata (India) & University degli Studi di Milano – Bicocca (Italy) in Feb/March, 2009. Agreement is valid for 3 years **Objectives:** Promote and to strengthen scientific and academic cooperation by means of exchanging Professors, researchers, as well as student and other staff. ii) Strengthen relationship in different thematic research areas and to undertake joint research activities, organize conferences and symposia on topics of common interest.

Prof R. Bhar

UGC-DAE –CSR, Indore Centre, A Collaborative Scientific Research Dr V. Ganesan Title of the ongoing project :‘Atomic Force Microscopic Investigations of some important drugs on red blood cells in Physiological condition and hemoglobinopathy like sickle cell anaemia’2010-13.

LIFE SCIENCE & BIO-TECHNOLOGY

Phone : + 91-33-2414-6710
Int : 2457-2195/2466
H.O.D. : Dr. Parimal Karmakar
E-mail : hod@lifescience.jdvu.ac.in

1. A. Courses Offered:

Name of the Course	Duration of the course	No. of students enrolled
M.Sc.(Biotechnology)	2 Years	38

B. Number of Faculty Members :

Professors	Associate Professor/ Readers	Assistant Professor/Lecturer
3	1	0

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

1. Microbial Biodiversity & Microbial Biotechnology
2. Molecular Biology & Gene Technology
3. Cell biology of cancer, aging, Nanobiotechnology
4. Messenger RNA biogenesis and surveillance, Regulation of Eukaryotic gene Expression, Quality Control of Eukaryotic gene expression.

B. Major Research Project :

Investigators	Name of Project	Funding Agency
---------------	-----------------	----------------

Prof. Subrata Pal

Molecular biological and biophysical studies on the mechanism(s) of electron transfer by a gram-positive thermophilic bacterium *Thermoanaerobacter indiensis* BSB 33 to metal oxides and electrodes". CSIR-OngoingProject Cost 24 lakhs

Prof. Parimal Karmakar

Antiproliferative activity of some copper based nanoparticle. DBT – OngoingProject Cost 63 Lakhs

Prof. Parimal Karmakar

Role of RecQ Helicases associated with premature aging in autophagy. CSIR – Ongoing Project Cost 22 Lakhs

Prof. Parimal Karmakar and Prof. Uma Das Gupta

Molecular studies of wound healing properties of *Calendula officinallis*. UGC – Ongoing Project Cost 12 Lakhs

Prof. Parimal Karmakar

To explore the connection between post translational modulation of PTEN and DAN repair. DST – OngoingProject Cost 37.9 Lakhs

Prof. Ratan Gachhui

Molecular characterization of nitrogen fixing *Acetobacters* isolated from Kombucha Tea. [38(1097)/04/EMR-II]. CSIR- Ongoing Project Cost 15 lakhs

Prof. Ratan Gachhui

Biochemical and genetic characterization of nitrogen fixing Acetobacter isolates from fruits and flowers. [BT/PR5111/BCE/08/340/2004]. DBT- Completed Project Cost 15 lakhs

Prof. Ratan Gachhui

Biochemical and biophysical characterization of levansucrase secreted by Acetobacter nitrogenifigens. SR/SO/BB-68/2006 dated 30.4.2007. DST – Completed Project Cost 20 lakhs

Prof. Ratan Gachhui

Culture independent exploration of Kombucha tea and its application 37(1329)/08/EMR-II dated 02/04/2008. CSIR-Completed Project Cost 15 Lakhs

Dr. Biswadip Das

Establishing the relationships between the nuclear mRNA surveillance pathways in *Saccharomyces cerevisiae* [38(1280) /11/EMR-II dated 26.04.11]. CSIR -Ongoing, Project Cost 24 Lakhs

Dr. Satarupa Das & Dr. Biswadip Das

Uncovering new components of DRN (Decay of RNA in the Nucleus) pathway in *Saccharomyces cerevisiae* [SR/WOS-A/LS-258/2010]. DST-Ongoing, Project Cost 23 Lakhs Ongoing

Dr. Biswadip Das

Dissecting the mechanism of regulation of expression of genes via decay of their mRNAs in nucleus of *Saccharomyces cerevisiae* [SR/SO/BB-066/2012]. DST -Ongoing, Project Cost 51.4 Lakhs-Ongoing

3. A. Invited Lectures Delivered/Session Chaired:

Name of the Teacher/Type of Participation/Name of the Seminar/Conf/Place/Duration

Prof. P. Karmakar

Invited Speaker, Frontiers in Biological Researches, Organized by Department of human physiology with community health. Vidyasagar University, Medinipur, February 26-27, 2012.

Prof. Ratan Gachhui

Invited Speaker, Biodiversity of nitrogen fixing bacteria. One day National Seminar on “Botanical Products in Human Welfare” at Rahara RKM College. January 11, 2013

Prof. Ratan Gachhui

Invited Keynote speech. Food security, GM Crops, GMO and Biosafety. One day workshop of ENVIS Centre on Environmental Biotechnology (Supported by Ministry of Environment & Forests, Govt. of India) at University of Kalyani, March 19, 2013

Dr. Biswadip Das

Lecture Delivered - Invited, RNA in health and Diseases. Department of Biotechnology, West Bengal University of technology, April 21, 2012

B. Seminar/Workshop/Conference/Symposium Attended:

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

Prof. Subrata Pal

Biochemical and Proteomic analysis of induction of Chromate Reduction Activity in an *Anoxybacillus* Strain under Heat Stress. 112th Annual General Meeting of American Society of Microbiology, San Francisco, USA. 4 days, June 16-19, 2012

Prof. P. Karmakar

Antibacterial Activities of Polyethylene Glycol, Tween 80 and Sodium Dodecyl Sulphate Coated Silver Nanoparticles in Normal and Multi-Drug Resistant Bacteria. International Conference and Workshop on Nanostructured Ceramics and other Nanomaterials (ICWNCN). Department of Physics and Astrophysics, University of Delhi, March 13-16th, 2012.

Prof. P. Karmakar

Stress Adaptive response and Genome integrity. Bhabha Atomic Research Centre, Mumbai, October 17-19, 2012

Dr. Biswadip Das

Role of DRN (Decay of RNA in the Nucleus) in the regulation of Unfolded Protein Response (UPR) in *Saccharomyces cerevisiae*. 81st Annual meeting of The Society of Biological Chemists (India) and Symposium on Chemistry and Biology: Two Weapon against Diseases, Kolkata. November 8-10, 2012

C. Seminar/Workshop/ Conference/Symposium Organized:

Name of the Teacher/Role/Name of the Seminar/Place/Duration

Dr. Biswadip Das, Profs. Subrata Pal and Parimal Karmakar, Prof. Ratan Gachhui Organizer
Convener, Organizing Secretary, Treasurer, One Day National Seminar On "Emerging trends in cell And molecular biology". Department of Life Science and Biotechnology, Jadavpur University, Kolkata
14th December, 2012

Dr. Biswadip Das

Organizer, 2nd to 7th RNA Meeting Kolkata, Local chapter Bose Institute, Jadavpur University, Indian Institute of Chemical Biology, IISER-K, University of Calcutta. September, November, 2012 and January, March, May, July, 2013

4. A. Articles Published in Journals:

Authors/Title/Name of the Journal/Date of Publication/Volume

Prof. Subrata Pal with Nag, P

Fe protein overexpression can enhance the nitrogenase activity in *Azotobacter vinelandii* **J Basic Microbiol (Impact Factor=1.19)**. 2013 V. 53(2):156-162, 331: 70-80

Prof. Parimal Karmakar with Arindam Pramanik, Dipranjan Laha and Panchanan Pramanik

A novel drug "Copper acetylacetonate" loaded in folic acid tagged chitosan nanoparticle for efficient cancer cell targeting. **Journal of Drug Targeting (Impact factor= 2.78)**, 2013 V. In Press

Prof. Parimal Karmakar with Dipranjan Laha, Arindam Pramanik, Jyotirindra Maity, Ananda Mukherjee, Panchanan Pramanik, Aparna Laskar

Interplay between autophagy and apoptosis mediated by Copper oxide nanoparticles in human breast cancer cells MCF7. **Biochim Biophys Acta - General Subject (Impact Factor=3.84)**. 2013 V. In Press

Prof. Parimal Karmakar with Ananda Mukherjee, Sandip Misra, Niall G. Howlett

Multinucleation Regulated by the Akt/PTEN Signaling Pathway is a Survival Strategy for HepG2 Cells. **Mutat Res (Impact factor=2.22)**, 2012 V. 755(2):135-40

Prof. Parimal Karmakar with Debalina Bhattacharya, Chitta Ranjan Santra, Amar N. Ghosh

Differential toxicity of rod and spherical zinc oxide nanoparticles on human peripheral blood mononuclear cells. **J of Biomed. Nanotechnology (Impact factor: 5.25)** 2013, V. *In press*

Prof. Parimal Karmakar with Rajdip Dey, Debalina Bhattacharya, Debajyoti Ghoshal

Syntheses, characterizations and biophysical studies of Cu(II) diphenylphosphate complexes: effect of co-ligands on their biological properties. **Polyhedron (Impact factor: 2.05)**, 2012 V. 48 (1) Pages 157-166(2012)

Prof. Parimal Karmakar with Sardar D, Datta P, Das S, Saha B, Samanta S, Bhattacharya D, Chen C, Chen C, Sinha C

Synthesis, Spectra, Structure, DFT computation, DNA binding and nuclease activity of [Rh III(1-alkyl-2-(p-tolylazo)imidazole)2(X)2](ClO4) (X = Cl, N3), **Inorganica Chimica Acta, Elsevier. (Impact Factor: 1.899)**. 2013 V. 394, 98–106

Prof. Parimal Karmakar with Biswarup Saha, Ananda Mukherjee, Saheli Samanta, Susmita Paul, Debalina Bhattacharya, Chitta Ranjan Santra

A novel Cu(II)-mal-picoline complex induces mitotic catastrophe mediated by deacetylation of histones and α -tubulin leading to apoptosis in human cell lines. **Med. Chem. Com. (Impact Factor: 2.8)**. 2012, V. 3 (11), 1393 – 1405.

Prof. Parimal Karmakar with Sayanti Datta , Dipravath Kumar Seth , Sudeshna Gangopadhyay and Samaresh Bhattacharya

Nickel complexes of some thiosemicarbazones: Synthesis, structure, catalytic properties and cytotoxicity studies. **Inorganica Chimica Acta (Impact Factor:1.9)**. 2012, Volume 392, 30 September 2012, Pages 118-130

Prof. Parimal Karmakar With Saheli Samanta

Recruitment of HRDC domain of WRN and BLM to the sites of DNA damage induced by mytomycin C and methyl methanesulfonate. **Molecular Carcinogenesis Cell Biology International, (Impact Factor: 1.747)**, 2012. V. 36(10):873-81

Prof. Parimal Karmakar with Venkateswarlu Popuri, Mahesh Ramamoorthy, Takashi Tadokoro, Dharmendra Kumar Singh, Deborah L. Croteau & Vilhelm A. Bohr.

Recruitment and retention of RECQL5 at double strand break sites and its functional interplay with BLM and WRN **DNA repair, (Impact factor 4.303)**, 2012. V. 11, 624-35.

Prof. Parimal Karmakar with Arindam Pramanik

A novel study of antibacterial activity of copper iodide nanoparticle mediated by DNA and membrane damage.* **Colloids and Surfaces B: Biointerfaces. (Impact factor 3.354)**. 2012 V. 96, 50–55

Prof. Parimal Karmakar with Fred E. Indig, Ivana Rybanska, Chakravarty Devulapalli, Haiqing Fu, France Carrier and Vilhelm A. Bohr

Nucleolin inhibits G4 oligonucleotide unwinding by Werner Helicase. **PLOS One (Impact factor 4.14). 2012 V.7(6):e35229..**

Prof. Parimal Karmakar with Dipranjan Laha, Debalina Bhattacharya, Arindam Pramanik, Chitta Ranjan Santra, Panchanan Pramanik

Evaluation of copper iodide and copper phosphate nanoparticles for their potential cytotoxic effect. **Toxicology Research (RSC) (Impact Factor =3.66). 2012. V.1(2), 131-136.**

Prof. Parimal Karmakar with Mukherjee A

Attenuation of PTEN perturbs genomic stability via activation of Akt and down-regulation of Rad 51 in human embryonic kidney cells. **Molecular Carcinogenesis (Impact factor 3.26). 2012 V.** (In Press),

Prof. Parimal Karmakar with Debalina Bhattacharya, Biswarup Saha, Ananda Mukherjee, and Chitta Ranjan Santra

Gold Nanoparticles Conjugated Antibiotics: Stability and Functional Evaluation. **Nanoscience and Nanotechnology, 2012. V. 2 (2): 14 -21**

Prof. Ratan Gacchui with Sayani Mitra, Arnab Pramanik, Srijoni Banerjee, Saubhik Haldar, Ratan Gachhui, and Joydeep Mukherjee

Enhanced biotransformation of fluoranthene by intertidally-derived *Cunninghamella elegans* through biofilm-based and niche-mimic cultivations. **(Paper #AEM02129-13R1). 2013, V. (In Press)**

Prof. Ratan Gacchui with Bhattacharya S, Gachhui R, Sil PC.

Effect of Kombucha, a fermented black tea in attenuating oxidative stress mediated tissue damage in alloxan induced diabetic rats. **Food Chem Toxicol. 2013, Jul 29. V. doi:pii: S0278-6915(13)005061.10.1016/j.fct.2013.07.051. [Epub ahead of print]**

Prof. Ratan Gacchui with Bhattacharya S, Manna P

D-saccharic acid 1,4-lactone protects diabetic rat kidney by ameliorating hyperglycemia-mediated oxidative stress and renal inflammatory cytokines via NF- κ B and PKC signaling. **Toxicol Appl Pharmacol. 2013 V. Feb 15;267(1) :16-29. doi: 10.1016/j.taap.2012.12.005. Epub 2012 Dec 19.**

Prof. Ratan Gacchui with Bhattacharya S, Sil PC.

The prophylactic role of D-saccharic acid-1,4-lactone against hyperglycemia-induced hepatic apoptosis via inhibition of both extrinsic and intrinsic pathways in diabetic rats. **Food Funct. 2013, V. Feb;4(2):283-96. doi: 10.1039/c2fo30145h**

Prof. Ratan Gacchui with Mitra S, Thawrani D, Banerjee P, Mukherjee J.

Induced biofilm cultivation enhances riboflavin production by an intertidally derived *Candida famata*. **Appl Biochem Biotechnol. 2012, V. Apr;166(8):1991-2006. doi: 10.1007/s12010-012-9626-7. Epub 2012 Mar 21**

Prof. Ratan Gacchui with Chakraborty I, Mishra R, Kar M.

Distortion of β -globin chain of hemoglobin alters the pathway of erythrocytic glucose metabolism through band 3 protein. **Arch Med Res. 2012, V. Feb;43(2):112-6. doi: 10.1016/j.arcmed.2012.02.003. Epub 2012 Feb 26.**

Prof. Ratan Gachhui Sayani Mitra, Dheeraj Thawrani, Priyam Banerjee, Ratan Gachhui, Joydeep Mukherjee

Induced Biofilm Cultivation Enhances Riboflavin Production by an Intertidally Derived *Candida famata*. **Appl Biochem Biotechnol.** 2012, V. DOI 10.1007/s12010-012-9626-7

Dr. Biswadip Das, Biswadip Das, Melanie N. Cash, Bently Robinson, Christopher S. Kuhns, Lisa R. Latchney, Margaret A. Fallon, Rosemary W. Elliott, Arthur R. Hand, and David J. Culp

The *slc* Genetic Defect: Two intronic CA repeats promote insertion of the subsequent intron and mRNA decay. **Journal of Biological Chemistry (Impact factor= 4.8)**, 2013, Volume 288 Number 21 14742-55

Dr. Biswadip Das, Satarupa Das and Biswadip Das mRNA quality control pathways in *Saccharomyces cerevisiae*. **Journal of Biosciences (Impact factor= 1.76)**, 2013, Volume 38 Number 3 615-40

5. Collaborative Programme:

Prof. Parimal Karmakar:

Collaboration with Dr. V.A. Bohr, National Institute of health, NIA, Baltimore, MD, USA in Werner syndrome project.

Dr. Biswadip Das

Collaboration with Dr. Subhas Ch. Jana, Bidhannagar Collage, West Bengal State University: Title of the Project "Studies on the application of bacteriocin in different combination with biopesticides for the management of betel vine disease" Funding Authority: West Bengal DST

6. Major Achievements:

Student Accomplishments

- One Student have selected to receive Summer Research Fellowship (SRF) from Indian Academy of Science, Bangalore in national competition for carrying out their her Summer Training Programme in 2012 summer.
- One Student has qualified CSIR-NET
- Nine Students Have Qualified GATE

MATHEMATICS

Phone : +91-33-2414-6717

Int. : 2457-2465/2518
H.O.D. : Prof. Prabir Kr. Kundu
E-mail : hod@math.jdvu.ac.in

1. A. Courses Offered:

Name of the Course	Duration of Course	No. of Students
B. Sc. (Hons.)	6 semesters (3 years)	233 (Excluding casual students)
M. Sc. (Day)	4 semesters (2 years)	116 (Excluding casual students)
M. Sc. (Evening)	6 semesters (3 years)	89 (Excluding casual students)
Ph.D. Course work	1 Semester (6 months)	40

1. B. Number of Faculty Members : Total - 32

(Professor - 08, Associate Professor – 17, Assistant Professor - 07)

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

Algebra, Algebraic Geometry, Fuzzy Algebra, Graph Theory, Real Analysis, Topology & Functional Analysis, Differential Geometry, Operations Research, Computer Science, Statistics, Industrial Mathematics, Mathematical Physics, Bio-Mathematics, Fluid Mechanics, Solid Mechanics, Graph Theory, Cosmology & Astrophysics, Dynamical Systems, Bio-Fluid Mechanics, Plasma Dynamics, Dynamical Oceanology & Meteorology.

2. B. Major Research Projects:

Name of the P.I.	Title of the Project	Duration	Funding Agency	Amount Rs.
Dr. S.C. Mandal Prof. S. Banerjea Prof. S. Chakraborty Dr. A. Das	Computational Fluid and Elasto Dynamics.	2012 - 2014	UGC-UPE II	7 Lakhs
Dr. G.C. Shit	Numerical simulation Magnetic environment.	2013 - 2016	DST	4.56 Lakhs
Prof. S. Banerjea	Water wave propagation in presence of obstacles	2009 - 2013	DST	14.66 Lakhs
Dr. P.K. Roy	Biodynamical model theoretical approach	2009 - 2013	DST	12 Lakhs
Dr. P.K. Roy	Cytokine regulatory mathematical study	2012 - 2015	CSIR	9.92 Lakhs
Dr. P.K. Roy	Study on nonlinear from Jatrofa oil	2012 - 2015	UGC	8.51 Lakhs
Name of the P.I.	Title of the Project	Duration	Funding Agency	Amount Rs.

Dr. F. Rahaman	Study of some..... conformal motion	2012 - 2014	UGC	20.66 Lakhs
Dr. S. Sinha	Semi-Markov algorithms	2012 - 2015	DST	9.60 Lakhs
Dr. P. Das	An in depth study their implications	2011 - 2014	CSIR	10.50 Lakhs
Prof. S. Chakraborty	Cosmological studies world scenario.	2009 - 2012	CSIR	9.51 Lakhs
Dr. N. Bairagi	Dynamics of human and correlation	2010 - 2012	UGC	1.55 Lakh
Dr. B.C. Giri	Study of stochastic inventory models under risk aversion	2010-2013	DST	9.41 Lakhs
Prof. S. Ghosh	Probe interval graphs mapping of DNA	2009-2012	DST PURSE	
Dr. G.C. Shit	Numerical investigation to physiological system	2009-2012	DST PURSE	
Dr. P.K. Roy	Mathematical modeling..... of the deceases	2009-2012	DST PURSE	
Dr. A. Lahiri	Studies in generalized thermoelasticity	2009-2012	DST PURSE	
Prof. S. Banerjea Prof.S.Chakraborty Dr. A.Das	Computational Fluid Dynamics	2009-2012	DST PURSE	
Dr. S. C. Mandal	Waves in elastic media	2009 -2012	DST PURSE	
Dr. S.K. Sardar	Study of fuzzy algebra of gamma semigroup	2009 -2012	DST PURSE	
Dr. P. Das	Study of certain types..... double sequences	2009 -2012	DST PURSE	
Dr. K. Paul	Min-Max inequality operator trigonometry	2009 -2012	DST PURSE	
Dr. A. Bhattacharyya, Dr. F. Rahaman, Prof.S. Chakraborty Prof. P.K. Sen	Geometry, Physics, Biology	2009-2012	DST PURSE	
Dr. A. Bandyopadhyay	Nonlinear wave processescomplex plasmas	2009 -2012	DST PURSE	
Dr. S. Debnath	Study of non Hermitian real spectrum	2009 -2012	DST PURSE	
Name of the P.I.	Title of the Project	Duration	Funding	Amount Rs.

				Agency
Prof. M. Gupta Prof. G.K. Sen	Designing Coupler in parallel machine	2009 -2012	DST PURSE	
Prof. P.C. Mali	Morphological study of multi- dimensional signals	2009 -2012	DST PURSE	
Dr. B.C. Giri	Development of supply chain	2009-2012	DST PURSE	
Prof. A.K. Sarkar, Dr.N.C. Majee, Dr. D. Kesh, Dr. N. Bairagi	Mathematical model..... and ecoepidemiology	2009-2012	DST PURSE	
Dr. G.C. Shit	Peristaltic transport..... computational approach	2011-2013	JU	0.50
Smt. M. Mandal	Study of gamma..... Fuzzy subsets	2011-2013	JU	0.50
Mr. S. Biswas		2011-2013	JU	0.50
Dr. S. Kar	Some aspects of Semirings	2010-2012	JU	0.50

3. A. Invited Lectures Delivered/Sessions Chaired:

Name of the Teacher	Type of Participation	Name of the Seminar/Conferences	Place	Duration
----------------------------	------------------------------	--	--------------	-----------------

Prof. S. Chakraborty

Invited Talk, National Seminar on Mathematics and Mathematical Sciences. Dept. of Pure & Applied Mathematics, CU. 27th & 28th December, 2012

Prof. S. Chakraborty

Invited talk, NSS- Programme, JU, 22nd December, 2012

Prof. S. Chakraborty

Invited Talk, IUCAA- Resource Centre, NBU, 22nd January, 2013

Prof. S. Chakraborty

Invited Talk, NIT-Sikkim, 24th January, 2013

Dr. G. C. Shit

Chaired a Session, World Congress of Engineering, London, UK. 4th – 6th July, 2012

Dr. G. C. Shit

Delivered an Invited Talk & Chaired a Session, National Conference of high performance computing & simulation, NIST, Berhampur, Orissa. 19th – 20th January, 2013

Dr. P. K. Roy

Invited Talk, International Conference on Mathematical Science & Application, New Delhi. 15th – 16th December, 2012

Dr. P. K. Roy

Chaired a Session, India Biodiversity Meet-2013 ISI, Kolkata. 14th- 16th March, 2013

Dr. P. K. Roy

Delivered an Invited Talk & Chaired a Session, 5th Podlasie Conference on Mathematics Bialystok University of Technology, Poland. 25th-28th June, 2012

Dr. P. K. Roy

Invited Talk, International Conference on Mathematical Methods & Models BIOMATH-2012 Sofia, Bulgaria. 17th-22nd June, 2012

Dr. P. K. Roy

Invited Talk, Department of Mathematics, BUT & E, Hungary. 22nd June, 2012

Dr. F. Rahaman

Delivered an Invited Talk & Chaired a Session, International Conference on Mathematical Sciences (ICMS- 2012). Science College, Nagpur

Dr. F. Rahaman

Invited Talk, 12th International Conference of Tensor Society, Japan. Calcutta University, kolkata, December, 2012

Dr. N. Bairagi

Invited Talk, National Conference on Recent Advances of Mathematics & Its Applications ISM, Dhanbad. 16th- 18th February, 2013

Dr. N. Bairagi

Invited Talk, Department of Mathematics, University of Stirling, Scotland. 1st July, 2012

Dr. P. Das

Invited Talk, IVth Workshop on Coverings, Selection Principles and Games in Topology Seconda University of Napoli, Caserta, Italy. 25th- 30th June, 2012

Dr. P. Das

Invited Talk, International Conference on Topology & Related Fields, Nanjing University, Nanjing, China. 22nd- 25th September, 2012

Dr. A. Lahiri

Invited Talk, National Conference on Frontiers of Mathematics Science College, Nagpur. 22nd March, 2013

Dr. S. Kar

Delivered an Invited Talk & Chaired a Session, National Conference on Current Practices In Mathematics, Statistics and Actuarial Science, North Maharashtra University, Jalgaon. 7th- 8th March, 2013

Prof. S. Banerjea

Invited Talk, Emerging trends in Mathematics, Department of Mathematics, Vidyasagar University. 19th-20th January, 2013

Dr. K. Paul

Invited Talk, National Seminar on Advances In Mathematics & Applications, University of Burdwan. 6th- 7th March, 2013

Dr. K. Paul

Invited Talk, National seminar on Advances in Research in Physical Sciences, Cachar College, Silchar, Assam. 25th-26th March, 2013

Dr. K. Paul

Invited Talk, National Conference entitled Recent trends in Mathematical & Computational Sciences IASST, Guwahati. 28th- 30th November, 2012

Dr. B. Sau

Invited Talk, JUIT, Solan . 9th- 10th July, 2012

Dr. A. Das

Invited Talk, Workshop on Nonlinear Waves: Theory & Simulation, NIT, Durgapur

B. Seminar/Workshop Conference/Symposium Attended:

Name of the Teacher Duration	Type of Participation	Name of the Seminar/Conferences	Place
---	------------------------------	--	--------------

Dr. B. C. Giri

Contributory Talk, XVI Annual International Conference of the Society of Operations Management, IIT, Delhi. 21-23 December, 2012

Dr. G. C. Shit

Contributory Talk, World Congress of Engineering London, UK. 4-6 July, 2012

Dr. A. Bhattacharyya

Contributory talk, International Conference on Differential Geometry & Relativity, AMU, Aligarh. 20-22 November, 2012

Dr. N. Bairagi

Contributory talk, International Conference on System Biology & Bioengineering, IAENG Conference, London. 4-6 July, 2012

Dr. A. Lahiri

Contributory talk, World Congress of Engineering Imperial College, London. 4-6 July, 2012

Dr. S. Sinha

Contributory talk, International Symposium on Applied Optimization & Game Theoretic Models, ISI, New Delhi. January-2013

Prof. S. Chakraborty

Invited Lecture, Summer School, Faculty of Science, JU. July, 2012

Prof. S. Chakraborty

Invited Lecture, Rerepsher Course On Algebra, Analysis, Discrete Mathematics & Its Applications, JU. 27th- August- 15th September, 2012

Prof. S. Chakraborty

Invited Lecture, Refresher Course In Mathematics & Physics, NBU. January 2013

Dr. K. Paul

Invited Lecture, Refresher Course on Algebra, Analysis, Discrete Mathematics & Its Applications, JU. 27th August-15th September, 2012

Miss. N. Mahata

Attended National Conference on Emerging Trends in Physics of Fluids & Solids Jadavpur University. 27- 28 February, 2013

Miss. N. Mahata

Attended IUCAA sponsored Work Shop on Cosmology, University of Delhi. 28th January- 01st February, 2013

Dr. A. Das

Attended Work Shop on Social Network, IMSc., Chennai. 2012

Mrs. M. Mandal

Attended National Conference on Sustainable Development Through Innovative Research in Science & Technology, Jadavpur University. 28- 29 September, 2012

C. Seminar/Workshop/Conference/Symposium Organized:**Name of the Seminar / Conference Organized by Place/Duration**

National Conference on Emerging Trends in Physics of Fluids & Solids, Prof. P. K. Kundu, Organizing Secretary, Dr. S. C. Mandal & Dr. A. Bandyopadhyay, Joint Conveners, TEQUIP Hall, Jadavpur University. 27-28 February, 2013

One day workshop on The Role of Mathematics In Theoretical Physics, Prof. Subenoy Chakraborty, Convener, Mathematics Department. 11 January, 2013

National Conference on Number Theory, Dr. I. Sengupta & Dr. K. Paul, Joint Conveners, TEQUIP Hall, Jadavpur University. 12- 14 December, 2012

12th International Conference on Differential Geometry & Relativity, Dr. A. Bhattacharyya, Joint Secretary, RK Mission Institute of Culture, Kolkata. 17- 21 December, 2012

International Conference India Biodiversity Meet-2013, Dr. N. Bairagi, Executive Secretary & Dr. P. K. Roy, Joint Secretary. ISI, Kolkata. 11- 14 January, 2013

D. Orientation /Refresher Courses Attended:**Participant of the Course Title of the Course/Place/Duration****Mrs. M. Mandal**

Refresher Course on Algebra, Analysis, Discrete Mathematics & Applications Department of Mathematics, Jadavpur University 27th August -15th September, 2012

E. Orientation Courses/ Refresher Courses Organized:

Organized the Refresher Course on Algebra, Analysis, Discrete Mathematics & Applications during 27th August- 15th September, 2012 (Dr. A. Lahiri & Dr. S. K. Sardar acted as Joint Co-ordinators)

4. A. Books/Monographs etc. Published:

Finsler Geometry of Hadrons and Lyra Geometry: Cosmological Aspects: Prof. S.S.De and Dr. F. Rahaman, Lambert Academic Publishing, Germany, 2012

B. Articles Published in Journals:

1. S. Basu and S. C. Mandal : P-Wave interaction a circular Dish in a infinite Cylinder, *Int. J. App. Math & Mech.*,1: 15-25(2012)
2. H. Dhillon, S. Banerjee and B. N. Mondal : Oblique wave scattering by a semi-infinite rigid dock in the presence of bottom undulations, *Indian J. Pure & Appl. Math.*, 44(2): 167-184(2013)
3. B. C. Giri and T. Maiti : Supply chain model for a deteriorating product with time –varying demand and production rate, *J. Operational Res. Soc.*, 63(5): 665-673(2012)
4. B. C. Giri and S. Bardhan : Supply chain coordination for a deteriorating item with stock and price dependent demand under revenue sharing contact, *Int. Transactions in Operational Res.*, 19(5): 753-768(2012)
5. B. C. Giri and T. Maiti : Note on effects of joint replenishment and channel coordination for managing multiple deteriorating products in a supply chain, *J. Operational Res. Soc.*, 63(6): 861-863(2012)
6. T. Chakraborty and B. C. Giri: Joint determination of optimal safety stocks and production policy for an imperfect production system, *Appl. Mathematical Model.*, 36(2): 712-722(2012)
7. B. C. Giri and B. Roy: Supply chain coordination with price-sensitive demand under risks of demand and supply disruptions, *Technology Operations Management*, 2(1): 29-38(2012)
8. B. C. Giri and A. Chakraborty : An integrated multi-supplier, multi-buyer and dual vendors inventory model with stochastic demand, *Int. J. Services and Operations Management* ,13(2): 208-225(2012)
9. B. C. Giri and R. Bhattacharjee: An optimal policy for a single-vendor single –buyer integrated inventory system based on Vendor's strategy of shipments to buyer, *Int. J. Services and Operations Management*, 13(2): 267-278(2012)
10. S. Pramanik, D. Banerjee and B. C. Giri: Chance constrained linear plus linear fraction bilevel programming problem, *Int. J. Computer Applic.*, 56(16) :34-39(2012)
11. B. C. Giri and B. Roy: A vendor-buyer integrated production-inventory model with quantity discount and unequal sized shipments, *Int. J. Operational Res.*, 16(1): 1-13(2013)
12. G. C. Shit, R. Halder and A. Sinha: Unsteady flow and heat transfer of a MHD micropolar fluid over a porous stretching sheet in the presence of thermal radiation, *J. Mech.*, 29(3): 559-568(2013)
13. S. Sen Roy, S. B. Saha, H. Fatima, S. K. Roy Bhowmik and P. K. Kundu: Evaluation of short- period rain fall estimates from Kalpana- 1 satellite using MET software, *J. earth Syst. Sci.*, 121(5): 1113-1123(2012)
14. G. C. Shit and R. Halder: Thermal radiation effect on MHD viscoelastic fluid flow over a stretching sheet with variable viscosity, *Int. J. Appl. Maths. & Mech.*, 14(14): 14-36(2012)
15. G. C. Shit and R. Halder : Combined effects of thermal radiation and hall current on MHD free-convective flow and mass transfer over a stretching sheet with variable viscosity, *J. Appl. Fluid Mech.*, 5(2): 113-121(2012)
16. G. C. Shit and S. Ghosh: Mixed convection MHD flow of visco-elastic fluid in a porous medium past a hot vertical plate, *World J. Mech.*, 2: 262-271(2012)
17. G. C. Shit and M. Roy : Hydromagnetic pulsating flow of blood in a constricted porous channel, *Proc. of World Congress on Engineering*: 83-89(2012)

18. P. K. Roy and A. N. Chatterjee: Recovery of infected *Jatropha curcas* plant cells: A control based theoretical approach, *Int. J. Math. Sci. & Applics.*, 2(1): 145-153(2012)
19. P. K. Roy , N. Sil and S. Bhattacharya: On the estimation of expected time to extinction in a dynamical model of HIV, *Int. J. Math. Sci. & Applics.*, 2(1): 213-221(2012)
20. A. N. Chatterjee , P. K. Roy: Anti-Viral drug treatment along with immune activator IL-2: A control based mathematical approach for HIV infection, *Int. J. Control*, 85(2): 220-237(2012)
21. P. K. Roy, S. Chowdhury, A. N. Chatterjee and S. BiswasMajee : Mathematical modeling of IL-2 based immune therapy on T cell homeostasis in HIV, *Insight and control of Infectious Disease in Global Scenario*, In Tech Publisher , Chapter 5: 79-96(2012)
22. S. Chowdhury, P. K. Roy : CTL response suppression in chronic phase of infection : A Mathematical Study, *Act Analysis Func. Applic.*, 14(1): 46-54(2012)
23. P. K. Roy and A. Dutta : Negative feedback control may regulate cytokines effect during growth of keratinocytes in the chronic plaque of psoriasis: A mathematical study, *Int. J. Appl. Maths.*, 25(2): 233-254(2012)
24. P. K. Roy, A. N. Chatterjee and S. BiswasMajee; Effect of chemokine analog through perfect adherence in HIV treatment: A model based study, *Int. J. Appl. Maths. & Applic.*, 4(2): 121-145(2012)
25. P. K. Roy, S. Nandi, N. Sil and S. Bhattacharya : Insight of T cell proliferation in the estimation of expected time to extinction of the disease HIV/AIDS, *Int. J. Appl. Maths.*, 25(6): 779-792(2012)
26. J. Mondal, P. K. Roy, S. BiswasMajee and R. Bhattacharya: Mathematical model of Impact for antigenic simulation on T-Cell homeostasis during primary HIV infection, *Bull. Cal. Math. Soc.*, 104(5): 393-408(2012)
27. J. Mondal, S. BiswasMajee and P. K. Roy: Feedback effect in bidirectional disease transmission in cutaneous leishmaniasis, *Am. J. Maths. & Sci.*, 2(1): 85-92(2013)
28. P. K. Roy and S. Chowdhury: Mathematical modeling of enfuvirtide-IL-2 administration in impulse mode for HIV-1 treatment, *Am. J. Maths. & Sci.*, 2(1): 93-103(2013)
29. A. N. Chatterjee, P. K. Roy and J. Mondal: Mathematical model for suppression of sand flies through IRS with DDT in visceral leishmaniasis, *Am. J. Maths. & Sci.*, 2(1): 105-112(2013)
30. P. K. Roy and A. Dutta : Mathematical study on T-cell proliferation in the chronic plaque of psoriasis, *Am. J. Maths. & Sci.*, 2(1): 133-140(2013)
31. S. Nandi, M. K. Ghosh and P. K. Roy: Analysis of enzyme kinetics by mathematical study, *Am. J. Maths. & Sci.*, 2(1): 113-121(2013)
32. P. K. Roy, N. Sil, A. Dutta, S. Rana and S. Nandi: A fractional order differential equation model of psoriasis in presence of suppression non dendritic cell, *Am. J. Maths. & Sci.*, 2(1): 123-131(2013)
33. P. K. Roy, R. Bhattacharya, A. N. Chatterjee, M. K. Ghosh and S. Nandi: Optimisation of enzymatic product by mathematical control approach, *Am. J. Maths. & Sci.*, 2(1): 141-149(2013)
34. P. K. Roy , A. N. Chatterjee , D. Greenhalgh and Q. J. A. Khan : Long term dynamics in a mathematical model of HIV-1 infection with delay in different variants of basic drug therapy model, *Non-linear analysis :Real world Applics.*, 14(3): 1621-1633(2013)
35. P. K. Roy, A. N. Chatterjee and S. BiswasMajee ; Immune cell response to negative feedback effect on HIV, *Biomedical Engng. Res.*, 2(1): 37-47(2013)

36. P. K. Roy and A. Dutta: Impact of cytokine release in psoriasis : A control based mathematical approach, *J. Non linear Evolution Equations & Applics.*, 2013(3): 23-42(2013)
37. P. K. Roy and A. Dutta: Impact of perfect drug adherence on immunopathogenic mechanism for dynamical system of psoriasis, *Biomath*, 2: 1-6(2013)
38. P. K. Roy, J. Bhadra and A. Dutta: Comparative study of the suppression on T-cells and dendritic cells in a mathematical model of psoriasis: control therapeutic approach, *Research on Evolution Equations Compendiam*, Nova science Publishers, 2: 321-343(2013)
39. S. Debnath and A. Bhattacharya: Second order parallel tensor in trans-Sasakian manifolds and connection with Ricci soliton, *Lobachevskii J. Math.*, 33(4): 312-316(2012)
40. A. Bhattacharya and S. Debnath: A type of generalized Ricci flow, *J. Rajasthan Acad. Phys. Sci.*, 11(2): 117-124(2012)
41. S. Panda, A. Bhattacharya and T. De : Ricci flow as a gradient flow on some quasi Einstein manifolds, *Int. Math. Forum*, 7: 33-36, 1621-1630(2012)
42. M. Tarafdar, B. Das and A. Bhattacharya: On indefinite 5-Einstein Sasakian manifold; *Lobachevskii J. Math*, 33(1): 28-32(2012)
43. T. De and A. Bhattacharya: On Contravaiant almost analytic and strictly almost analytic vector field, *J. Tensor Soc.*, 6(1): 43-49(2012)
44. F. Rahaman, S. Ray and S. Islam: Wormholes supported by two non-interacting fluids, *Astrophys. Space Sci.*, 346: 245-252(2013)
45. A. Banerjee, F. Rahaman, S. Chattopadhyay and S. Banerjee: Stability of Non-asymptotically flat thin-shell wormholes in generalized dilaton-axion gravity, *Int. J. Theo. Phys.*, 5: 3188-3198(2013)
46. M. Kalam, A. A. Usmani, F. Rahaman, Sk. M. Hossein, I. Karar and R. Sharma: A relativistic model for strange quark star, *Int. J. Theo. Phys.*, 52: 3319-3328(2013)
47. F. Rahaman, K. F. Kuhfitting, B. C. Bhui, M. Rahaman, S. Ray and U. F. Mandal: BTZ black holes inspired by non commutative geometry, *Phys. Rev. D*, 87.084014 (2013)
48. M. Kalam, F. Rahaman, Sk. M. Hossein and S. Ray: Central density dependent anisotropic compact stars, *Eur. Phys. J. C*, 73: 2409(2013)
49. A. Banerjee, F. Rahaman, K. Jotania, R. Sharma and I. Karar: Finch-Skea star in (2+1) dimensions, *Gen. Rel. Grav.*, 45: 717(2013)
50. I. Radinschi, F. Rahaman and U. F. Mondal: Energy distribution for non-commutative radiating schwazschild black holes; *Int. J. Theo. Phys.*, 52: 96(2013)
51. F. Rahaman, A. Banerjee, I. Radinschi, S. Banerjee and S. Ruz.: Singularity free stars in (2+1) dimensions; *Int. J. Theo. Phys.*, 52: 932(2013)
52. M. E. Rodrigues, M. J. S. Houndjo, D. Saez-Gomez and F. Rahaman: Anisotropic universe models in $f(T)$ gravity, *Phys. Rev. D*, 86: 104059(2012)
53. F. Rahaman, P. K. F. Kuhfitting, S. Ray and S. Islam: Searching for higher dimensional wormhole with non commutative geometry, *Phys. Rev. D*, 86 : 106010(2012)
54. F. Rahaman, A. A. Usmani, S. Ray, and S. Islam: The (2+1)-dimensional charged gravastars, *Phys. Lett. B*, 717: 1(2012)

55. F. Rahaman, A. A. Usmani, S. Ray and S. Islam: The (2+1)-dimensional gravastars, *Phys. Lett. B*, 707: 319(2012)
56. M. Hossein, F. Rahaman, J. Naskar, M. Kalam and S. Ray: Anisotropic compact stars with variable cosmological constant, *Int. J. Mod. Phys. D*, 21: 1250088(2012)
57. R. Sharma, F. Rahaman and I. Karar: A class of interior solutions corresponding to a (2+1) dimensional asymptotically anti de-Sitter space time; *Phys. Lett. B*, 704:1(2012)
58. F. Rahaman, R. Sharma, S. Ray, R. Maulick and I. Karar: Strange stars in Krori –Barua space-time, *Eur. Phys. J. C*, 72: 2071(2012)
59. M. Kalam, F. Rahaman, S. Ray, Sk. M. Hossein, I. Karar and J. Naskar: Anisotropic strange star with de Sitter space time, *Eur. Phys. J. C*, 72: 2248(2012)
60. F. Rahaman, R. Maulick, A. K. Yadav, S. Ray and R. Sharma: Singularity –free dark energy star, *Gen. Rel. Grav.*, 44: 107(2012)
61. A. K. Yadav, F. Rahaman, S. Ray and G. K. Goswami: Magnetized dark energy and the late time acceleration, *The European Physical J. Plus*, 127: 127(2012)
62. I. Radinschi, F. Rahaman and A. Banerjee: The energy distribution of Horava- Lifshitz black hole solutions, *Int. J. Theo. Phys.*, 51: 1425(2012)
63. F. Rahaman, I. Radinschi and A. Banerjee: A new class of stable (2+1) dimensional thin wormhole, *Int. J. Theo. Phys.*, 51: 1680(2012)
64. F. Rahaman and A. Banerjee: Thin-shell wormholes from black holes with dilaton and monopole fields, *Int. J. Theo. Phys.*, 51: 901(2012)
65. F. Rahaman, P. K. F. Kuhfitting, R. Amin, G. Mandal and N. Islam: Quark matter as dark matter in modeling galactic halo, *Phys. Lett. B*, 714: 131(2012)
66. B. Das, P. C. Ray, I. Radinschi, F. Rahaman and S. Ray: Isotropic cases of static charged fluid spheres in General Relativity, *Int. J. Mod. Phys. D*, 20: 1675(2012)
67. F. Rahaman, P. K. F. Kuhfittig, A. A. Usmani, S. Roy and K. Chakraborty: Galactic rotation curves inspired by a noncommutative-geometry background, *Gen. Rel. Grav.*, 44: 905(2012)
68. N. Bairagi and D. Adak: How self proliferation of CD4+T cells affect the HIV dynamics in a in-host target-cell limited HIV model with saturation infection rate: A quasi-steady state approximation analysis, *Int. J. Biomaths.*, 6(2): 60-104(2013)
69. D. Jana and N. Bairagi: Habitate complexity, stochasticity and the stability of predator-prey interactions, *J. Control Engng. & Technol.*, 3(2): 76-83(2013)
70. S. Chaudhuri and N. Bairagi: Study of ecological model of two symbionts under different biological aspects, *The J. Ecology, Photon*, 107: 190-199(2013)
71. D. Jana, S. Chakraborty and N. Bairagi: Stability, Nonlinear oscillations and bifurcation in a delay-induced predator-prey system with harvesting, *Engng. Letts.*, 20(3): 238-246(2012)
72. N. Bairagi and D. Jana: Age-structured predator-prey model with habitat complexity: oscillations and control, *Dynamical Systems*, 27(4): 475-499(2012)
73. S. Chatterjee, D. Kesh and N. Bairagi: How population dynamics change in presence of migratory prey and predator's preference, *Ecological Complexity*, 11: 53-66(2012)

74. N. Bairagi, S. Chakraborty and S. Pal: Heteroclinic bifurcation and multistability in a ratio-dependent predator-prey system with Michaelis-Menten type harvesting rate, *IEEE Lecture Notes on Engineering*, 1:578 -583(2012)
75. S. Chakraborty , S. Pal and N. Bairagi: Management and analysis of predator-prey fishery model, *Nonlinear Studies*, 19(2): 241-263(2012)
76. S. Chakraborty , S. Pal and N. Bairagi: Predator- prey interaction with harvesting mathematical study with biological ramifications, *Appl. Math. Model.*, 36: 4044-4059(2012)
77. P. Das, S. Pal and S. Ghosh: Extending asymmetric convergence and Cauchy condition using ideals, *Mathematica Slovaca*, 63(3): 545-562(2013)
78. P. Das and S. Dutta: On some types of convergence of sequences of functions in ideal context, *Filomat*, 27(1): 147-154(2013)
79. P. Das: Certain types of selection principles and open covers using ideals, *Houston J. Maths.*, 39(2): 637-650(2013)
80. P. Das and D. Chandra: Spaces not distinguishing pointwise and I-Quasinormal convergence, *Comment. Math. Univ. Carolinae*, 54(1): 83-96(2013)
81. P. Das and E. Savas: On I-convergence of nets in locally solid Riesz spaces, *Filomat*, 27(1): 84-89(2013)
82. P. Das: Some further results on ideal convergence in topological spaces, *Topology and its Applics.*, 159(10-11): 2621-2626(2012)
83. A. Boccuto, P. Das, X. Dimitriou and N. Papanastassiou: Ideal exhaustiveness, weak convergence and weak compactness in Banach spaces, *Real Analysis Exchange*, 37(2): 389-410(2012)
84. P. Das and D. Chandra: Some further investigations of open covers and selection principles using ideals, *Topology Proc.*, 39: 281-291(2012)
85. P. Das, E. Savas: Double uniform density and corresponding convergence of double sequences, *Studia Scientiarum Mathematicum Hungarica* , 49(4): 419-435(2012)
86. E. Savas, P. Das and S. Dutta: A note on strong matrix summability via ideals; *Appl. Math. Letts.*, 25(4): 733-738(2012)
87. P. Das, S. Pal and S. Bhunia: Restricting Statistical convergence, *Acta Math. Hungarica*, 134(1-2): 153-161(2012)
88. M. B. Bera, A. Lahiri and N. C. Das: Symmetric and antisymmetric two parameter generalized thermoelastic vibrations of an infinite plate, *Bull. Cal. Math. Soc.*, 104(5): 423-434(2012)
89. N. Sarkar and A. Lahiri: Effect of fractional parameter on plane waves in a rotating elastic medium under fractional order generalized thermoelasticity, *Internat. J. Appl. Mech.*, 4(3): 1250030(2012)
90. N. Sarkar and A. Lahiri: Electromagneto-Thermoelastic Interactions in an Orthotropic slab with two relaxation times, *Computational Math. & Model.*, 23(4): 461-477(2012)
91. N. Sarkar and A. Lahiri: The effect of fractional parameter on a perfect conducting elastic half-space in generalized magneto-thermoelasticity, *An Int. J. Theo. & Appl. Mech.*, 4(6): 231-245(2012)
92. N. Sarkar and A. Lahiri: Eigenvalue approach to two-temperature magneto-thermoelasticity, *Vietnam J. Maths.*, 40(1): 13-30(2012)

93. B. Das and A. Lahiri: One dimensional generalized magnetothermoelastic problem:for a half-space, Proc. of World Congress Engineering, 3: 119-124(2012)
94. A. Lahiri and B.Das: Eigenvalue approach to two dimensional problem of generalized thermoelasticity for a half- space with body force, Int. Jour. Mech. & Engng., 17(2): 419-437(2012)
95. N. Sarkar and A. Lahiri: A three-dimentional thermoelastic problem for a half-space without energy dissipation, Int. J. Engng. Sci., 51 (2012)
96. S. Samadder, K. Ghosh and T. Basu: Fractal analysis of plndian stock market indices: Fractals, 21(1):2013
97. S. Samaddar, K. Ghosh and T. Basu: Phase wise scaling and trend pattern analysis of prime Indian stock market indices during last decade, UJMBR, 1(2): 44-55(2012)
98. S. Samadder, K. Ghosh and T. Basu: Scaling analysis of prime stock exchange indices of the emerging seven (E7) countries, IJACSM, 2 (1): 11-22(2012)
99. T. K. Dutta, S. Kar and S. Purkait: Interval valued fuzzy k-indices and k-regularity of semirings, Fuzzy Inf. Engng., 5 (2): 235-251(2013)
100. S. Kar and P. Sarkar: Interval- valued fuzzy completely regular sub-semigroups of semigroups, Annals of Fuzzy Math. & Informatics, 5 (3): 583-595(2013)
101. S. Kar, K. P. Shum and P. Sarkar: On interval-valued prime fuzzy ideals of a semi group, Lobachevskii J. Math., 34 (1): 11-19(2013)
102. T. K. Datta, S. Kar and S. Purkait: On interval-valued fuzzy prime ideals of a, semiring, European J. Math. Sci., 1 (1): 1-16(2012)
103. S. Kar and P. Sarkar: Fuzzy quasi-ideals and fuzzy bi-ideals of ternary semigroups, Annals of Fuzzy Math. & Informatics, 4 (2): 407-423(2012)
104. S. Kar and P. Sarkar: Fuzzy ideals of ternary semigroups, Fuzzy Inf. & Engng., 4 (2): 181-193(2012)
105. S. Kar and K. Das: On k-regular ternary semirings - Advances of Algebraic structures, Proc. Inter. Con. In Algebra- 2010, World Sci. Pub., Hackensack, NJ, 356-368(2012)
106. K. Paul and S. Bag: Estimation of bounds for the zeros of a polynomial using numerical radius, Appl. Math. Computation, 222: 231-243(2013)
107. K. Paul and D. Sain: Orthogonality of operators on $(R, || \cdot ||)$, Novi Sad. J. Math., 13(1): 121-129(2013)
108. K. Paul and G. Das: Cosine of angle of an operator center of mass of an operator, Math. Slovaca, 62 (1): 109-122(2012)
109. K. Paul and S. Bag: On operator inequalities involving numerical radius and operator norm, Int. Math. Forum, 7 (35): 1699-1704(2012)
110. K. Paul and S. Bag: A conjecture of upper bound of the numerical radius of a bounded linear operator, Int. J. Math. Anal., 6 (31): 1539-1544(2012)
111. S. K. Majumder and M. Mandal: Fuzzy generalized bi-ideals of gamma-semigroups, Fuzzy Inf. Engg., 4: 389-399(2012)
112. S. K. Sardar, B. Davvaz, S. K. Majumder and M. Mandal: Characteristic ideals and fuzzy characteristic ideals of gamma-semigroups, Mathematica Aeterna, 2 (3):189-201(2012)

113. S. Guha and S. Chakraborty: Five dimensional warped product space-time with time dependent warp factor and cosmology of the four dimensional universe, *Int. J. Theo. Phys.*, 51:55-68(2012)
114. N. Majumdar and S. Chakraborty: Generalized second law of thermodynamics on the event horizon for interacting dark energy, *Int. J. Theo. Phys.*, 51: 124-132(2012)
115. S. Mukerji, R. Biswas, N. Majumdar and S. Chakraborty: How does inflation depend upon the nature of fluids filling up the universe in brane world scenario?, *Astrophys. Space Sc.*, 337: 425-437(2012)
116. R. Biswas, N. Majumdar and S. Chakraborty: Lemaitre-Tolman-Bondi model of the universe and hawking radiation from a dynamical horizon, *Int. J. Theo. Phys.*, 51: 101-109(2012)
117. R. Biswas, N. Majumdar and S. Chakraborty: FRW cosmological model with modified chaplygin gas and dynamical system, *Int. J. Theo. Phys.*, 51: 2754-2758(2012)
118. N. Majumdar, R. Biswas and S. Chakraborty: Evolution of horizons for dark energy universe, *Int. J. Theo. Phys.*, 51: 3526-3535(2012)
119. S. Guha, P. Bhattacharya and S. Chakraborty: Particle motion in the field of a five dimensional charged black hole, *Astrophys. Space Sc.*, 341: 445-455(2012)
120. S. Saha and S. Chakraborty: A redefinition of Hawking temperature on event horizon: Thermodynamical equilibrium, *Phys. Letts. B*, 717: 319-322(2012)
121. S. Chakraborty: Is thermodynamics of the universe bounded by event horizon a Bekenstein system?, *Phys. Letts. B*, 718: 276-278(2012)
122. S. Chakraborty and A. Biswas: Universe bounded by event horizon: An irreversible thermodynamics prescription, *Astrophys. Space Sc.*, 343: 791-794(2013)
123. S. Chakraborty and A. Biswas: Universe bounded by apparent horizon: An irreversible thermodynamics prescription, *Astrophys. Space Sc.*, 343: 395-399(2013)
124. H. R. Biswas, P. K. Kundu and D. Pradhan: A case study for cyclone 'Aila' for forecasting rainfall using satellite derived rain rate data, *MAUSAM*, 64(1): 77-82(2013)

5. Collaborative Programmes:

The Department has collaborative research works with other national as well as international institutions like ISI, CCMB- Hyderabad, University of Kalyani, Burdwan University, University of Calcutta, University of North Bengal, IUCAA- Pune, Andhra University. Indian Institute of Science-Bangalore, University of Missouri Columbia - U.S.A, University of Valladolid- Spain

PHYSICS

Phone	:	+ 91-33-2413-8917
Int.	:	2457-2477
H.O.D.	:	Prof. Tapas Ranjan Middy
E-mail	:	hod@juphysics.jdvu.ac.in

1. A. Courses Offered:

- (i) B. Sc in Physics (Honours)
- (ii) M. Sc in Physics

- (iii) M. Sc in Electronic Science
- (iv) Post M. Sc. Diploma in Medical Physics
- (v) PhD
- (vi)

B. Number of Faculty Members: 36

2. A. Area of Research Activity:

Sl No.	Name	Designation	Specialization
1	Dr. S. K. Roy	Professor	Liquid Crystal & Statistical Mechanics
2	Dr. A. K. Mukherjee	Professor	X ray & Crystallography
3	Dr. Sujata Tarafdar	Professor	Condensed Matter Physics
4	Dr. T. R. Middy	Professor	Condensed Matter Physics
5	Dr. Anuradha Mukhopadhyay	Professor	Liquid Crystals
6	Dr. Aparajita Bhattacharya	Professor	Nuclear Physics, Particle Physics
7	Dr. Argha Deb	Professor	Nuclear & High Energy Physics
8	Dr. Mridul Bose	Associate Professor	Atmospheric Physics
9	Dr. Ashim Ghosh	Associate Professor	Theoretical Condensed Matter Physics
10	Dr. Sulava Bhattacharya	Associate Professor	Condensed Matter Physics
11	Dr. Sukhen Das Physics	Associate Professor	Bio- Physics & Atomic and molecular
12	Dr. Basudev Ghosh	Associate Professor	Plasma Physics
13	Dr. T. K. Ballabh Physics	Associate Professor	Electronics & Condensed Matter
14	Dr. Debashis Lohar	Associate Professor	Atmospheric Physics
15	Dr. K. K. Chattopadhyay Science	Associate Professor	Condensed Matter Physics & Material
16	Dr. N. B. Manik Science	Associate Professor	Condensed Matter Physics, Electronics Optical Communications & Material

Sl No.	Name	Designation	Specialization
17	Dr. B. D. Chattopadhyay	Associate Professor	Bio-Physics
18	Dr. Subhankar Roy	Associate Professor	Nuclear Physics, Computational Physics
19	Dr. Avijit Mukherjee	Associate Professor	Field Theory
20	Dr. Ruma Ray	Associate Professor	Experimental Condensed Matter Physics, Magnetism
21	Dr. Debasish Biswas Physics	Associate Professor	Atomic & Molecular Physics, Laser

22	Dr. A.K. Ghosh	Associate Professor	Low temperature Physics, Vortex Dynamics, Condensed Matter Physics
23	Dr. P. P. Roy	Assistant Professor	Renewable Sources of Energy, Solar Energy, Material Science
24	Dr. Sanjay Kumar	Assistant Professor	Material Science, Nano magnetism, Mössbauer Spectroscopy, Electronics
25	Dr. Jayoti Das	Assistant Professor	Material Science
26	Dr. Sanat Karmakar Physics	Assistant Professor	Laser Physics & Soft Cond. Matter
27	Dr. Sarmishtha Mondal	Assistant Professor	Condensed Matter Physics
28	Dr. S. Mukhopadhyay Physics	Assistant Professor	Electronics & Condensed Matter
29	Mr. S. Sarkar	Assistant Professor	Material Science
30	Dr. P. Sahoo	Assistant Professor	Material Science
31	Dr. D. Mandal	Assistant Professor	Material Science
32	Dr. B. Tudu	Assistant Professor	Experimental Condensed Matter Physics
33	Dr. Pabitra Kr. Paul	Assistant Professor	Material Science
34	Mr. Abiral Tamang	Assistant Professor	Bio-Physics
35	Dr. Dhruba Banerjee	Assistant Professor	Theoretical Physics
36	Dr. S. Ali	Assistant Professor	Relativity & Cosmology

B. Major Research Project:

Details of the ongoing projects and project completed during the last five years:

Sl.No./Name of the Investigators/Title of Project/Duration/Amount (Rs.)/Funding Agency/Collaboration

1 Dr. N. B. Manik

Study on the effect of Different Nanoparticles on crystal violet dye based organic photovoltaic cell, Ongoing 2012-2015, 12 Lakhs, CSIR

2 Dr. N. B. Manik

Study on the effect of Carbon Nanotubes on organic solar cell, Ongoing 2012-2015, 11.24 Lakhs, UGC

3 Dr. Subhadipto Mukhopadhyay

Computation of surface structure from (LEED) low energy electron diffraction patterns, Ongoing 2013-2015, Rs. 1.75 Lakh, UGC

4 Dr. S. Kumar

Molecular biological and biophysical studies on the, mechanism(s) of electron transfer by a gram-positive thermophilic bacterium, *Thermoanaerobacter indiensis* BSB-33 to metal oxides and electrodes, Ongoing 2013-2016, RS. 12.58 Lakhs, CSIR. Co-investigator with Prof. Subrata Pal, Department of Life Science & Biotechnology, JU

5 **Dr. Ruma Ray**

Synthesis and characterization of magnetic nanoparticles, PI- Ruma Ray, JU. 2012- 2014, 2 lakhs, UGC

6 **Dr. Sanat Karmakar**

Preparation of Unilamellar vesicles and study their interaction with ions: A bio-mimetic system, 2013-2015, 11.58Lakhs, UGC

7 Dr. Sanat Karmakar

Study of Visco-elasticity in Biopolymers through Experiments on Spreading and Adhesion, 2013-2015. 25.53 Lakhs, DST, CI

3. A. Invited Lectures Delivered/ Session Chaired:

Dr. Dipankar Mandal

1. *Polymer Nanogenerator: An Energy Harvesting Device*, Organized by Materials Science Centre, IIT Kharagpur (2012).
2. *The Preparation of Electrospun Nanofiber Membranes and its Applications*, Haldia Regional Centre, Indian Institute of Chemical Engineers and Dept of Chemical Eng, HIT (2013).

Dr. K.K. Chattopadhyay:

1. Delivered invited lectures in the UGC Refreshers Course organized by the Department of Food Technology, JU entitled 'Interdisciplinary approach for food technology Research' on 15th July, 2013.
2. Delivered invited lectures in the UGC Refreshers Course organized by the Department of Physics, University of Calcutta, entitled '21st Refresher Course in Physics for university and college teachers during June 18 – July 09, 2013' on 26th June, 2013.
3. Delivered invited lectures in the UGC Refreshers Course organized by the Department of Instrumentation Science, JU on 13th March, 2013.
4. Delivered invited lectures in the UGC Refreshers Course organized by the Department of Physics, Burdwan University during June 28 to July 18, entitled '1st Refreshers course in Materials Science' on 4th July, 2013.
5. Delivered invited lectures in the UGC Refreshers Course organized by the Department of Physics Jadavpur University, entitled 'Interdisciplinary approach for food technology Research' on 14th July, 2013.
6. Delivered invited lecture on the 'paradigms in materials research' in a meeting organized by Indian Institute of Metals, JU on 3.8.13.
7. Delivered Invited talk in the National Seminar entitled " Nanotechnology, Lithography and nanotubes' JIS College of Engineering, 19th July, (2013)
8. Delivered Invited talk at Two days workshop entitled 'Nanotechnology for Industry', JU, 25th, July, 2013.
9. Delivered Keynote lecture at the Annual meeting of Elico Ltd.; Hyderabad, 20th April, 2013.
10. Delivered Invited talk at National Seminar on Nanotechnology at IEM, Kolkata, 14th March, 2013
11. Delivered Invited talk at One day seminar on 'Experimental Techniques in Condensed Matter Physics, Department of Physics, Jadavpur University, 21st March, (2013).

12. Delivered Invited talk at International Conference on Materials Science (ICMS), Tripura University, 22nd February (3013)
13. Chaired a session at International Conference on Materials Science (ICMS), Tripura University, 22nd February (3013)
14. Delivered an Invited talk at International Conference entitled "India-Singapore meeting on Advanced Nanotechnology", IIT Kharagpur, 25-26th February, (2013)
15. Delivered Invited talk at Second International Symposium on Semiconductor Materials and Devices (ISSMD-2), 31 Jan – 2 Feb, 2013, Jammu University
16. Chaired a session in Second International Symposium on Semiconductor Materials and Devices (ISSMD-2), 31 Jan – 2 Feb, 2013, Jammu University
17. Delivered invited talk at UGC-CPE program seminar at Midnapore College, Department of Physics, 28 January, 2013
18. Invitation to deliver invited talk at India-Moscow symposium in 22-23 January, 2013, at S.N Bose National Centre for Basic Sciences
19. Delivered invited talk at National conference entitled "Advanced and Functional Materials' (To celebrate 60th Birthday of Prof. A.K. Raychaudhuri) at S.N Bose National Centre for Basic Sciences, 1-2 March, 2013
20. Delivered Keynote Lecture at 2nd National Conference on Electronics, Communication and Signal Processing (NCECS-2012) September 19, 2012 at Siliguri Institute of Technology.
21. Delivered Invited talk at National Workshop on Physics of Quantum Nano Systems from 27th to 29th March 2012 at Jhargram, Midnapore.
22. Invited talk at National Seminar on Advancement in Modern Physics, August 23&24, 2013; Dept. of Physics, R.K. Mission Residential College; Narendrapur, Kolkata.
23. Invited talk at CMDAYS-13, NIT Rourkella, August 29-31, 2013.
24. Invited at National short-term course on Modern Methods in Materials Processing & Characterization (M3PAC2013) NIT Durgapur, September 17-21, 2013.
25. Invited talk at the Refreshers course entitled "Recent development on Nanoscience and Technology, Sept. 10 – 30, (2013) at Jadavpur University

B. Seminar/Workshop/Conference/ Symposium Attended:

Dr. Ajay Kumar Ghosh

1. Critical current around lower matching fields in patterned YBCO thin film, Correlated Electron System, Gordon Research Conference (GRC), Organiser: Stanford University and Rutgers University, USA 24-29 June 2012.
2. London Penetration Depth Measurements in Irradiated BaKFeAs Single Crystals, Correlated Electron System, Gordon Research Conference (GRC), Organiser: Stanford University and Rutgers University, USA 24-29 June 2012.
3. Transport properties of $\text{Ru}_1\text{Sr}_2\text{Gd}_{2-x}\text{Ce}_x\text{Cu}_2\text{O}_{10}$ and related compounds, P-82, 3-5 March, 2012, 3rd. National Conference on Condensed Matter and Materials Physics (CMMP) 2012, Dept. of Physics, Sardar Patel University, India.

4. Latent change in annealing controlled normal state resistivity and superconductivity in $\text{RuSr}_2\text{GdCu}_2\text{O}_y$ and $\text{RuSr}_2\text{NdCu}_2\text{O}_y$, International conference on materials science and technology (ICMST) 10-14 June 2012, St. Thomas College, India.
5. Magnetic penetration depth in $\text{Ba}_{0.6}\text{K}_{0.4}\text{Fe}_2\text{As}_2$ superconducting crystals, Materials and Mechanisms of Superconductivity Conference (M2S-2012) July 29 – August 3, 2012, Washington DC, USA.
6. London penetration depth studies in pnictide superconductors, Invited Poster Presentation, A. K. Ghosh N. Salovich, R. W. Giannetta et al., First Indo-US Research Fellows conclave, 15-17 March, 2013, J. W. Marriot Hotel, Pune, Organised by Indo-US Science and Technology Forum (IUSSTF), Fulbright House, NewDelhi.
7. London penetration depth studies by using tunnel diode oscillator technique by Ajay Kr. Ghosh, N. W. Salovich and R. W. Giannetta, Global R & D Summit 2013, 25-26 August, 2013; The Ashok, New Delhi, Regn. No. 23695, Organised by FICCI.
8. Superconductivity and normal state transport in Ce substituted ruthenocuprates by A. Roy, T. A. Jamadar and Ajay Kumar Ghosh, Contributory poster presentation, Condensed Matter Days; NIT, Rourkela 29-31 August, 2013.
9. Suppression of superconductivity in 3d element substituted Nd-123 cuprate superconductors, T. A. Jamadar, A. Roy and Ajay Kumar Ghosh, Contributory poster presentation, Condensed Matter Days; NIT, Rourkela 29-31 August, 2013.
10. Low temperature London penetration depth in pnictide superconductors, Ajay Kumar Ghosh, N. W. Salovich and R. W. Giannetta, Oral presentation, Condensed Matter Days; NIT, Rourkela 29-31 August, 2013.
11. 2012 Advanced Materials Characterization Workshop, June 6-7, 2012, MRL, University of Illinois at Urbana-Champaign, Illinois, USA.

Dr. Sukhen Das:

1. Studies on antimicrobial effects of the anticancer drug oxaliplatin and its interaction with ZnS Nanoparticles, Sutapa Ganguly, **Sukhen Das**, Sujata Ghosh Dastidar, 8th IAMM State conference 2013, R.G.Kar Medical College, 22nd September.
2. Distinct antimicrobial effects of anticancer drug gemcitabine and its synergistic effects with synthesized ZnS Nanoparticles, Sutapa Ganguly, **Sukhen Das**, Sujata Ghosh Dastidar, 1st International Workshop on Nanomaterials (IWON): Engineering Photon and Phonon Transport, 14 – 15 December 2012, Jadavpur University, Kolkata 700032 India
3. Antimicrobial effects of an anticancer drug oxaliplatin against ten pathogenic bacterial strains and its synergism with synthesized ZnS Nanoparticles, Sutapa Ganguly, **Sukhen Das**, Sujata Ghosh Dastidar, National Conference on Sustainable Development through Innovative Research in Science and Technology, 28 – 29th September 2012, Venue: Jadavpur University, Kolkata 700032 India
4. Study of optical properties of synthesized ZnS nanoparticles and its antimicrobial activity against twelve pathogenic bacterial strains., Sutapa Ganguly, Subhajit Ghosh, **Sukhen Das**, Sujata G.Dastidar, National Symposium on Recent Palestrae in Photosciences, 3-4 September, 2012, Dept. of Zoology, BHU, Varanasi.

Dr. Dipankar Mandal:

1. 3rd International Conference on Materials and Applications for Sensors and Transducers, 2013, Organized by University of Athens & University of Peloponnese, Greece.
2. Workshop on Quartz Crystal Microbalance (QCM) and Surface Acoustic Wave (SAW) Sensors: 13-14 May, 2013. Organized by: IEE, JU.
3. Fourth Int. Conf. on Recent Advances in Composite Materials (ICRACM-2013), Organized by IIT-BHU.
4. Trends in Surface Science & Related Areas, 2013, Organized by Indian Society for Surface Science & Technology (JU).
5. National Conf. on Sustainable Development through Innovative Research in Science & Technology, 2012, JU.
6. 2nd International Conf. on Electrospinning 2012, Organized by Hyatt Regency, Jeju, South Korea.
7. AFM-2012, Organized by SN Bose Centre For Basic Sciences, Kolkata
8. Frontiers in Electronic Materials: Correlation Effects and Memristive Phenomena - Fundamentals and Application (2012), Organized by JARA, Nature Materials, Aachen, Germany.
9. 4th International Conference on Smart Materials Structures Systems (2012), Organized by Tuscany, Italy.
10. 1st International Workshop on Nanomaterials (IWON):2012, Engineering Photon & Phonon Transport, Organized by School of Materials Sc & nanotechnology, JU.

Dr. Brajadulal Chattopadhyay

1. **B. D. Chattopadhyay** and Satyam Banerjee. Protein Management Cell Proliferation and Apoptosis of Nicotine Induced Hepatic Cells under Curcumin Treated Condition. 2nd International Conference on "Pharmaceutics and Novel Drug Delivery Systems – Pharmaceutica 2012". 20 – 22 February 2012. **San Francisco, USA.**

Prof. Argha Deb

1. DAE Symposium on Nuclear Physics held during 3-7 December, 2012 at University of Delhi
2. 20th. West Bengal State Science and Technology Congress, during 28th February-2nd March, 2013 at BESU, Shibpur, Howrah .

Dr. Sanat Karmakar

1. Sanat Karmakar, *Zeta potential and dynamic light scattering measurements of phospholipids vesicles*. Proceedings of National conference on Laser and Advanced Materials, ISBN No: 978-81-922256-6-1 (2012).

Dr. Pabitra Kumar Paul:

1. "Preparation of alternate Layer-by-Layer Self-Assembled Films of Chromotrope-2R and a Polycation onto Solid Substrate"

Pabitra Kr. Paul, Chaitali Hansda, Syed Arshad Hussain and Debajyoti Bhattacharjee ICMS-2013 (Feb. 21-23, 2013), Department of Physics, Tripura University

2. "Miscibility studies of non-amphiphilic pyrene and stearic acid at the air-water interface - formation of mixed Langmuir monolayer", **Pabitra Kr. Paul** and Chaitali Hansda NCSDT-2012, Organised by DST-PURSE programme committee, Jadavpur University

3. "Investigations on the adsorption of DNA onto charged cationic surfactant monolayer at the air-water interface", Pabitra Kr. Paul, *National Conference on Recent trends of research in physics*; (2012), Organised by Department of Physics, Tripura University, India

Dr. SANJAY KUMAR:

1. Structural and Magnetic Properties of Mechanically Milled Nanosized $Ni_{0.5}Zn_{0.5}Fe_2O_4$ by S. Dey, S. K. Dey and **S. Kumar**, 1ST International Workshop on Nanomaterials (IWON): Engineering Photon and Phonon Transport, Venue: Jadavpur University, Kolkata, 14th – 15th December, **2012**, **Page No. 155** of book of abstract.
2. Study on Magnetic Properties of Nanonized $Ni_{0.35}Zn_{0.65}Fe_2O_4$ by S. Dey, **S. Kumar**, National Conference on Sustainable Development Through Innovative Research in Science and Technology, Venue: Jadavpur University, Kolkata, 28th – 29th September, 2012, **Page No. 18** of book of abstract.
3. From Molecules to Functional Materials: A crystal Engineering Approach by R. Saha and **S. Kumar**, National Conference on Sustainable Development Through Innovative Research in Science and Technology, Venue: Jadavpur University, Kolkata, 28th – 29th September, 2012, **Page No. 22** of book of abstract.

4. A. Book/ Monograph etc. Published

Dr. Dipankar Mandal

- (1) Ultra-thin Films of a Ferroelectric Copolymer: P(VDF-TrFE), LAP LAMBERT Academic Publishing (2012), ISBN:978-3-659-14195-9.
- (2) *Ch8 in 'Soft Fibrillar Materials: Fabrication and Applications': Flexible Nanogenerator and Nano-Pressure Sensor Based on Nanofiber Web of PVDF and its Copolymers.* WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim (2013), ISBN: 9783527331628.

B. Articles Published in Journals

Dr. Ajay Kumar Ghosh

1. N. W. Salovich, H. Kim, **Ajay K. Ghosh**, R.W. Giannetta, W. Kwok, U. Welp, B. Shen, S. Zhu, H.-H. Wen, M. A. Tanatar, R. Prozorov (2013), Effect of heavy-ion irradiation on superconductivity in $Ba_{0.6}K_{0.4}Fe_2As_2$, Phys. Rev. B87, 180502 (Rapid Communications).
2. A. Roy and **Ajay Kumar Ghosh** (2013): On the possibility of the removal of charge localization by reduced disorder level in $Nd_{1-x}Ca_xBa_2Cu_3O_{7-y}$ Physica B: Condensed Matter in press
3. T. A. Jamadar, A. Roy and **Ajay Kumar Ghosh** (2013): Suppression of critical temperature and charge localization in $NdBa_2Cu_{3-x}Zn_xO_{7-y}$ Physica C492 pp 59-63
4. A. Roy, T. A. Jamadar and **Ajay Kumar Ghosh** (2013): Study on the transport properties of $RuSr_2RECu_2O_y$, $RuSr_2(RE)_2Cu_2O_y$ (RE=Gd, Nd) and $RuSr_2Gd_{1.4}Ce_{0.6}Cu_2O_{10}$: possibility of variable range hopping, Physica C488, pp 9-13.
5. A. Roy, T. A. Jamadar, **Ajay Kumar Ghosh**, (2013): Transport properties of $Ru_1Sr_2Gd_{2-x}Ce_xCu_2O_{10}$ compounds, Advanced Materials Research 665, pp 347-352
6. **A. K. Ghosh**, T. A. Jamadar, and A. Roy (2012): Upper critical field and coefficient of magnetoresistance in $NdBa_2Cu_3O_{7-y}$ and $NdBa_2Cu_{2.9}Mn_{0.1}O_{7-y}$ Physica C483, 144-148.

Dr. Ruma Ray:

1. Iron nanoparticles from an electrochemical route, **Ruma Ray**, S. Das, M. Patra and M. Thakur, Vol. 1 (2012) 1–8.
2. Magnetic properties of sol-gel derived Gd₂O₃ nanoparticles, **R. Ray**, Sumita Biswas, S. Das, and M. Patra, AIP Conf. Proc. 1447(2012)319.
3. Magnetic memory effects in Fe / γ-Fe₂O₃ nanostructures, S. Biswas, Sk. Sabyasachi, A. Bhaumik and **R. Ray**, IEEE T. Magnetism (**accepted, 2013**)

Dr. Sukhen Das:

1. Sol-gel derived nanoparticles of Zn-substituted lithium ferrite (Li_{0.32}Zn_{0.36}Fe_{2.32}O₄): magnetic and Mossbauer effect measurements and their theoretical analysis, S. Sutradhar, S. Pati, S. Acharya, **S. Das**, D. Das, P.K. Chakrabarti, Journal of Magnetism and Magnetic Materials 324 (2012) 1317–1325
2. Magnetic and enhanced microwave absorption properties of nanoparticles of Li_{0.32}Zn_{0.26}Cu_{0.1}Fe_{2.32}O₄ encapsulated in carbon nanotubes
S. Sutradhar, **S. Das**, P.K. Chakrabarti, Materials Letters 95 (2013) 145–148
3. Modulated magnetic property, enhanced microwave absorption and Mössbauer spectroscopy of Ni_{0.40}Zn_{0.40}Cu_{0.20}Fe₂O₄ nanoparticles embedded in carbon nanotubes S. Sutradhar, K. Mukhopadhyay, S. Pati, **S. Das**, D. Das, P.K. Chakrabarti, Journal of Alloys and Compounds 576 (2013) 126–133
4. CHARACTERIZATION OF NEWLY SYNTHESIZED ZINC SULPHIDE NANOPARTICLES BY A SIMPLE AQUEOUS CHEMICAL METHOD AND DETERMINATION OF ITS ANTIMICROBIAL ACTIVITY AGAINST VARIOUS PATHOGENIC BACTERIAL STRAINS, Sutapa Ganguly, Parveen Sultana, **Sukhen Das**, Sujata G Dastidar, International Journal of Biological & Pharmaceutical Research. 2013; 4(5): 377-381.
5. A STUDY ON STRUCTURAL, MORPHOLOGICAL AND CHEMICAL COMPOSITION OF ZINC SULPHIDE NANOPARTICLES SYNTHESIZED BY A SIMPLE CHEMICAL TECHNIQUE, Sutapa Ganguly, **Sukhen Das**, Sujata G Dastidar, International journal of Scientific Research ,vol-2,issue-7,july 2013.
6. Distinct Antimicrobial Effects of Synthesized ZnS Nanoparticles Against Twelve Pathogenic Bacterial Strains, Sutapa Ganguly, **Sukhen Das**, Sujata Ghosh Dastidar. Open science repository chemistry doi: dx.doi.org/10.7392/Chemistry.70081948
7. EVALUATION OF ANTIMICROBIAL EFFECTS OF SYNTHESIZED ZINC SULPHIDE NANOPARTICLES AND THEIR POTENTIATION BY THE ANTICANCER DRUG IMATINIB, Sutapa Ganguly, Subhajit Ghosh, Sukhen Das, Sujata G. Dastidar, International Journal of Phytopharmacology, 4(4), 2013, 266-271.
8. Cushioning effect, enhanced localized plastic flow and thermal transport in SWCNT–lead silicate glass composite, S. Ghosh, A. Ghosh, T. Kar, **S. Das**, P.K. Das, R. Banerjee, Chemical Physics Letters, 547 (2012) 58-62
9. Single walled carbon nanotube–borosilicate glass composite as broadband near infrared emitter for multifunctional photonic applications, Arnab Ghosh, Sujana Ghosh, **Sukhen Das**, Probal K. Das, Rajat Banerjee, Chemical Physics Letters, 570 (2013) 113-117.
10. Antimicrobial efficacy and biocompatibility study of copper nanoparticle adsorbed mullite aggregates, Biswajoy Bagchi, Sumit Dey, Suman Bhandary, **Sukhen Das**, Alakananda Bhattacharya, Ruma Basu, Papiya Nandy, Materials Science and Engineering C, doi:10.1016/j.msec.2012.05.011
11. In situ synthesis and antibacterial activity of copper nanoparticle loaded natural montmorillonite clay based on contact inhibition and ion release, Biswajoy Bagchi, Subrata Kar, Sumit Kr. Dey,

- Suman Bhandary, Debasis Roy, Tapas Kr. Mukhopadhyay, **Sukhen Das**, Papiya Nandy, Colloids and Surfaces B: Biointerfaces 108 (2013) 358– 365
12. Dielectric and magnetic properties of sol–gel derived mullite-iron nanocomposite Debasis Roy, Biswajoy Bagchi, **Sukhen Das**, Papiya Nandy, J Electroceram (2012) 28:261–267
 13. Electrical and dielectric properties of solegel derived mullite doped with transition metals, Debasis Roy, Biswajoy Bagchi, **Sukhen Das**, Papiya Nandy, Materials Chemistry and Physics 138 (2013) 375e383
 14. The Influence of Cobalt Acetate on Sol-gel Derived Mullite Densification Behavior, Debasis Roy, Biswajoy Bagchi, Alakananda Bhattacharya, **Sukhen Das**, Papiya Nandy, DOI 10.1007/s11595-012-0558-4
 15. ELECTRICAL RESISTIVITY AND ACTIVATION ENERGY OF COBALT ACETATE TETRAHYDRATE DOPED MULLITE, DEBASIS ROY, BISWAJOY BAGCHI, **SUKHEN DAS**, PAPIYA NANDY, Ceramics – Silikáty 56 (3) 222-228 (2012)

Dr. Dipankar Mandal:

- (1) **Dipankar Mandal**, Kap Jin Kim, Jong Soon Lee, “Simple Synthesis of Palladium Nanoparticles, β -Phase Formation, and the Control of Chain and Dipole Orientations in Palladium-Doped Poly(vinylidene fluoride) Thin Films”, *Langmuir*, **2012**, 28, 10310-10317.
- (2) **Dipankar Mandal***, Karsten Henkel, Dieter Schmeißer, “The electroactive β -phase formation in Poly(vinylidene fluoride) by gold nanoparticles doping”, *Materials Letters*, **2012**, 73, 123-125.
- (3) **Dipankar Mandal***, Klaus Müller, Karsten Henkel, Dieter Schmeißer, “The effect of X-ray photoelectron spectroscopy measurement on P(VDF-TrFE) copolymer thin films”, *Applied Surface Science*, **2012**, 261, 209-213.

Dr. Partha Pratim Ray:

1. Layek, A., Middy, S., Ray, P.P., (2013). Increase in open circuit voltage by the incorporation of band gap engineered FeS₂ nanoparticle within MEHPPV solar cell, Journal of Materials Science: Materials in Electronics , 1-7
2. Layek, A., Middy, S., Ray, P.P. , (2012). Deposition of device quality amorphous silicon and solar cell from argon dilution of silane, Journal of Physics and Chemistry of Solids 73 (11) , 1358-1361
3. Middy, S., Layek, A., Ray, P.P., (2012). Development of indium tin oxide by pulsed RF sputtering method for solar cell application, Journal of Applied Sciences 12 (16) ,1676-1680
4. Layek, A., Middy, S., Ray, P.P., (2013). Improvement in open circuit voltage of MEHPPV-FeS₂ nanoparticle based organic inorganic hybrid solar cell, AIP Conference Proceedings 1512, 704-705
5. Layek, A., Middy, S., Pratim Ray, P., (2013). Synthesis and incorporation of high quality FeS₂ nanoparticles within poly(3-hexylthiophene):Phenyl-C60-butyrac acid methyl ester to increase the photosensitivity of composite material, Journal of Renewable and Sustainable Energy 5 (3) , art. no. 031601
6. Middy, S., Layek, A., Dey, A., Ray, P.P., (2013). Morphological impact of ZnO nanoparticle on MEHPPV:ZnO based hybrid solar cell, Journal of Materials Science: Materials in Electronics, 1-9

Dr. Brajadulal Chattopadhyay

1. Jasmeet Kaur Chhabra, **Brajadulal Chattopadhyay** and Bhola Nath Paul. (2013). SOCS3 dictates the transition of divergent time-phased events in granulocyte TNF- α signaling. *Cellular & Molecular Immunology*. 1-12. **Impact factor: 2.31**
2. Sudipta Majumdar, Manas Sarkar, Trinath Chowdhury, **Brajadulal Chattopadhyay*** and Saroj Mandal (2012). Use of bacterial protein powder in commercial fly ash Pozzolana cements for high performance construction materials. **Open Journal of Civil Engineering**. 2, 218-228.
3. M. Verma, **B. D. Chattopadhyay**, B. N. Paul (2012). Epigenetic regulation of DNMT1 gene in mouse model of asthma disease. **Molecular Biology Report**. 40(3): 2357-2368. **Impact factor: 2.506**.
4. S. Sahoo, S. Das, **B. D. Chattopadhyay (2012)**. Analyzing gene expression and codon usage bias in diverse genomes using variety of models. **Current Bioinformatics**. (In Press). **Impact factor: 2.017**.
5. Krishna Chattopadhyay, Moumita Maiti, Satyam Banerjee and **Brajadulal Chattopadhyay*** (2012). Ameliorative role of dietary supplemented conjugated linolenic acid against nicotine-induced toxicity in rats. **Pharmaceutica Analytica Acta**. 3(8), 182-190. **Impact factor: 2.218**.
6. Satyam Banerjee, Krishna Chattopadhyay, Jasmeet Kaur Chhabra and **Brajadulal Chattopadhyay*** (2012). Protein dependent fate of hepatic cells under nicotine induced stress and curcumin ameliorated condition. **European Journal of Pharmacology**. 684: 132-145. **2.592**.
7. Surojit Sinha, Moumita Maiti, Krishna Chattopadhyay and **Brajadulal Chattopadhyay*** (2012). Potential amelioration of curcumin against nicotine-induced toxicity of protein malnourished female rats. **Journal of Pharmacology and Toxicology**. 7(4): 166-180.
8. Shibsankar Das, Uttam Roymondal, **Brajadulal Chattopadhyay**, Satyabrata Sahoo (2012). Gene expression profile of the cyanobacterium *Synechocystis* genome. **Gene**. 497: 344-352. **Impact factor: 2.341**.

Prof. Argha Deb

1. Levy index analysis and phase transition study with target protons at SPS energies Ghosh, D., Deb, A., Saha, R., Das, R., Alam, N., *Indian Journal of Physics* 87 (1) ,2013, 71-76
2. Ghosh, D., Deb, A., Biswas, S., Sarkar, R., (2013). Multiplicity dependent pion azimuthal fluctuation study with factorial correlator, *Indian Journal of Pure and Applied Physics* 51 (3) ,156-163
3. Assessment of erratic fluctuations of pions and protons in hadron-nucleus interactions Ghosh, D., Deb, A., Pal, S., Mondal, M., Mondal, A., Alam, N., *Indian Journal of Physics* 86 (10) ,2012, 925-930
- 3.
4. Genuine pion-pion correlations in heavy-ion collisions, Ghosh, D., Bhattacharyya, S., Datta, U. *Journal of Physics G: Nuclear and Particle Physics* 39 (10) ,2012, 105101
5. Characteristics of pion production in ring-like events using entropy index Ghosh, D., Deb, A., Mondal, M., Biswas, S., *Indian Journal of Pure and Applied Physics* 50 (9) ,2012, 617-622
6. Multiplicity dependence of entropy in different rapidity bins in high-energy nucleus nucleus interactions, Ghosh, D., Deb, A., Bhattacharyya, S., Datta, U., *Physica Scripta* 85 (6) , 2012, 065205
7. Ghosh, D., Deb, A., Dutta, S., Sengupta, R., Samanta, S., (2012). Multifractality of radon concentration fluctuation in earthquake related signal, *Fractals* 20 (1) , pp. 33-39
8. Ghosh, D., Deb, A., Kar, A., Harh, S., (2012)., Alpha radioactivity study in sea water of East India - A preliminary report, *Indian Journal of Environmental Protection* 32 (1) , 34-36

9. Ghosh, D., Deb, A., Saha, R., Das, R., Alam, N., (2012). Anomalous fractal dimension and Ginzburg-Landau phase transition study in high energy nuclear interaction Chaos, Solitons and Fractals 45 (2) , 181-187
10. Ghosh, D., Deb, A., Bhattacharyya, S., Datta, U., (2012). Multiplicity scaling of target protons in high-energy nucleus-nucleus and hadron-nucleus interactions, Journal of Physics G: Nuclear and Particle Physics 39 (3), art. no. 035101
11. Deb, A., Sarkar, G., Ganguly, A., Biswas, A., (2012). Approximation, integration and differentiation of time functions using a set of orthogonal hybrid functions (HF) and their application to solution of first order differential equations, Applied Mathematics and Computation 218 (9) , 4731-4759
12. Ghosh, D., Deb, A., Mondal, M., Mondal, A., Pal, S. , (2012). Quantitative assessment of target dependence of pion fluctuation in hadronic interactions - Estimation through erraticity, Pramana - Journal of Physics 79 (6) , 1395-1405
13. Deb, A., Sarkar, G., Mandal, P., Biswas, A., Ganguly, A., Biswas, D., (2012). Transfer function identification from impulse response via a new set of orthogonal hybrid functions (HF), Applied Mathematics and Computation 218 (9) , 4760-4787
14. Ghosh, D., Deb, A., Bhattacharyya, S., Datta, U., (2012). Multiplicity dependence of entropy in different rapidity bins in high-energy nucleus-nucleus interactions, 2012 Physica Scripta 85 (6) , art. no. 065205
15. Ghosh, D., Deb, A., Bhattacharyya, S., Datta, U., (2012). Genuine pion-pion correlations in heavy-ion collisions, Journal of Physics G: Nuclear and Particle Physics 39 (10) , art. no. 105101

Dr. Sanat Karmakar

1. Sanat Karmakar and V. A. Raghunathan, X-ray diffraction and confocal fluorescence microscopy studies on the effect of cholesterol on phospholipid membranes, *Physics express*, 2014, 4:6.

Dr. Pabitra Kumar Paul:

1. "Adsorption behaviour of DNA onto cationic surfactant monolayer at the air-water interface" Chaitali Hansda, Syed Arshad Hussain, Debajyoti Bhattacharjee and **Pabitra Kumar Paul**, *Surface Science (Elsevier)*, 617 (2013) 124-130,
2. "Layer-by-Layer electrostatic self-assembly method: A facile approach of preparing nanoscale molecular thin films" **Pabitra Kumar Paul**, Chaitali Hansda and Syed Arshad Husai Review article, Accepted for publication, *Invertis Journal of Science and Technology*, 2013
3. "Effect of Mn doping on microstructure and optical properties of nanocrystalline ZnO", M. Karmakar, O. Mondal, B. Roy, P. K. Paul and M. Pal, Online Ready, *Nano (World Scientific)*, DOI:<http://dx.doi.org/10.1142/S1793292013500586>
4. "Preparation of Polystyrene-Clay nanocomposite by Solution Intercalation Technique" **P. K. Paul**, S. A. Hussain, D. Bhattacharjee and M. Pal, *Bulletin of Materials Science (Springer)*, 36(3) (2013) 361.

Dr. K. K. Chattopadhyay:

1. Banerjee, D., Nawn, D., Chattopadhyay, K.K., (2013). Synthesis of SnO₂ functionalized amorphous carbon nanotube for efficient electron field emission application, Journal of Alloys and Compounds 572 , 49-55

2. Maiti, S., Maiti, U.N., Behera, B.C., Pal, S., Chattopadhyay, K.K., (2013). Controlling the sharpness of ZnO tetrapods by restricted zinc oxidation in the open air: A low turn-on field emitter stabilized by grapheme, *Journal of Materials Chemistry C* 1 (32) , 4940-4947
3. Maity, S., Das, N.S., Chattopadhyay, K.K., (2013). Controlled surface damage of amorphous and crystalline carbon nanotubes for enhanced field emission, *Physica Status Solidi (B) Basic Research* 250 (9) , 1919-1925
4. Ghosh, P.K., Chattopadhyay, K.K. (2013). Optical properties of ZnS nanoparticles synthesized by Rf-magnetron sputtering technique, *AIP Conference Proceedings* 1536 , 23-24
5. Santra, S., Das, N.S., Chattopadhyay, K.K., (2013). CuBO₂: A new photoconducting material, *AIP Conference Proceedings* 1536 , 723-724
6. Enhanced field emission from polyaniline coated amorphous carbon nanotubes
7. Maity, S., Goswami, S., Chattopadhyay, K.K., 2013, *AIP Conference Proceedings* 1536 , pp. 607-608
8. Santra, S., Das, N.S., Chattopadhyay, K.K., (2013). Wide band gap p-type nanocrystalline CuBO₂ as a novel UV photocatalyst, *Materials Research Bulletin* 48 (7) , 2669-2677
9. Mazumder, N., Sen, D., Saha, S.,Ghorai, U.K., Das, N.S., Chattopadhyay, K.K. (2013). Enhanced ultraviolet emission from Mg doped SnO₂ nanocrystals at room temperature and its modulation upon H₂ annealing, *Journal of Physical Chemistry C* 117 (12) , pp. 6454-6461
10. Das, S., Maiti, S., Saha, S., Das, N.S.,Chattopadhyay, K.K., (2013). Template free synthesis of mesoporous CuO nano architects for field emission applications, *Journal of Nanoscience and Nanotechnology* 13 (4) , 2722-2728
11. Sarkar, D., Mukherjee, S.,Chattopadhyay, K.K., (2013). Synthesis, characterization and high natural sunlight photocatalytic performance of cobalt doped TiO₂ nanofibers, *Physica E: Low-Dimensional Systems and Nanostructures* 50 , 37-43
12. Dhar, J.C., Mondal, A., Singh, N.K.,Chattopadhyay, K.K., (2013). Enhanced photoemission from glancing angle deposited SiO_x-TiO₂ axial heterostructure nanowire arrays, *Journal of Applied Physics* 113 (17) , art. no. 174304
13. Sen, A., Maiti, U.N., Maiti, S.,Chattopadhyay, K.K., (2013). Single crystalline nanostructures of giant dielectric calcium copper titanate: A convenient route toward materialization of hard to realize multi-component perovskite nanostructures, *Journal of Materials Science* 48 (11) , 3967-3974
14. Choudhuri, B., Mondal, A., Dhar, J.C.,Singh, N.K., Goswami, T.,Chattopadhyay, K.K., (2013). Enhanced photocurrent from generated photothermal heat in indium nanoparticles embedded TiO₂ film, *Applied Physics Letters* 102 (23) , art. no. 233108
15. Bhattacharjee, K., Maity, S., Das, G.C.,Chattopadhyay, K.K., (2013). Ni-Zn ferrite-loaded superparamagnetic amorphous carbon nanotubes through a facile route, *Colloid and Polymer Science* , 1-9
16. Mondal, A., Dhar, J.C., Chinnamuthu, P., Singh, N.K., Chattopadhyay, K.K.,Das, S.K., Das, S.C., Bhattacharyya, A., (2013). Electrical properties of vertically oriented TiO₂ nanowire arrays synthesized by glancing angle deposition technique, *Electronic Materials Letters* 9 (2) , 213-217

19. Sen, D., Thapa, R., Chattopadhyay, K.K., (2013). Small Pd cluster adsorbed double vacancy defect graphene sheet for hydrogen storage: A first-principles study, *International Journal of Hydrogen Energy* 38 (7) , 3041-3049
20. Banerjee, D., Sen, D., Chattopadhyay, K.K., (2013). Simple chemical synthesis of porous carbon spheres and its improved field emission by water vapor adsorption, *Microporous and Mesoporous Materials* 171 , 201-207
21. Goswami, S., Maiti, U.N., Maiti, S., Mitra, M.K., Chattopadhyay, K.K., (2013). Polyaniline/Vanadium oxide composites: An effective control in morphology by varying reactant concentrations, *Materials Chemistry and Physics* 138 (1) , 319-326
22. Roy, R., Jha, A., Banerjee, D., Das, N.S., Chattopadhyay, K.K., (2013). Edge effect enhanced electron field emission in top assembled reduced graphene oxide assisted by amorphous CNT-coated carbon cloth substrate, *AIP Advances* 3 (1) , art. no. 012115
23. Nawn, D., Banerjee, D., Chattopadhyay, K.K., (2013). Zinc oxide nanostructure decorated amorphous carbon nanotubes: An improved field emitter, *Diamond and Related Materials* 34 , 50-59
24. Kumar, S., Chatterjee, S., Chattopadhyay, K.K., Ghosh, A.K., (2012). Sol-gel-derived ZnO:Mn nanocrystals: Study of structural, Raman, and optical properties, *Journal of Physical Chemistry C* 116 (31) , 16700-16708
25. Chinnamuthu, P., Mondal, A., Singh, N.K., Dhar, J.C., Chattopadhyay, K.K., Bhattacharya, S., (2012). Band gap enhancement of glancing angle deposited TiO₂ nanowire Array, *Journal of Applied Physics* 112 (5) , art. no. 054315
26. Maity, S., Jha, A., Das, N.S., Chattopadhyay, K.K., (2012). Fabrication of barium/strontium carbonate coated amorphous carbon nanotubes as an improved field emitter, *Applied Physics A: Materials Science and Processing* , 1-7, Article in Press
27. Banerjee, D., Jha, A., Chattopadhyay, K.K., (2012). Synthesis and characterization of water soluble functionalized amorphous carbon nanotube-poly(vinyl alcohol) composite, *Macromolecular Research* 20 (10) , 1021-1028
28. Banerjee, D., Chattopadhyay, K.K. (2012), Synthesis of crystalline carbon nanofern-like structure by dc-PECVD and study of its electrical and field emission properties, *Materials Research Bulletin* 47 (11) , 3868-3874
29. Thapa, R., Maiti, S., Rana, T.H., Maiti, U.N., Chattopadhyay, K.K., , (2012). Anatase TiO₂ nanoparticles synthesis via simple hydrothermal route: Degradation of Orange II, Methyl Orange and Rhodamine B, *Journal of Molecular Catalysis A: Chemical* 363-364 , 223-229
30. Banerjee, D., Das, N.S., Chattopadhyay, K.K. , (2012). Enhancement of field emission and hydrophobic properties of silicon nanowires by chemical vapor deposited carbon nanoflakes coating, *Applied Surface Science* 261 , 223-230
31. Ghosh, A.K., Kumar, S., Chatterjee, S., Chattopadhyay, K.K. , (2012). Structural and optical properties of sol-gel derived Zn_{1-x}Mn_xO nanoparticles, *AIP Conference Proceedings* 1447 (1) , 261-262
32. Maiti, S., Maiti, U.N., Chattopadhyay, K.K., , (2012). Three dimensional ZnO nanostructures realized through a polymer mediated aqueous chemical route: Candidate for transparent flexible electronics, *CrystEngComm* 14 (23) , 8244-8252

33. Santra, S., Das, N.S., Chattopadhyay, K.K., (2013). Sol-gel synthesis and characterization of wide band gap p-type nanocrystalline CuBO₂, *Materials Letters* 92 ,198-201
34. Das, N.S., Banerjee, D., Chattopadhyay, K.K., (2013). Thickness optimized nanocrystalline ZnO-coated silicon nanowires for cold cathode application, *Journal of Materials Science* 48 (2) , 750-757
35. Roy, R., Jha, A., Chattopadhyay, K.K., (2013). Chemically derived graphene sheets top assembled over multi-walled carbon nanotube thin film by Langmuir Blodgett method for improved dual field emission, *Journal of Nanoscience and Nanotechnology* 13 (1) , 452-460
36. Sarkar, D., Ghosh, C.K., Mukherjee, S.,Chattopadhyay, K.K., (2013). Three dimensional Ag₂O/TiO₂ type-II (p-n) nanoheterojunctions for superior photocatalytic activity, *ACS Applied Materials and Interfaces* 5 (2) , 331-337
37. Jha, A., Ghorai, U.K., Banerjee, D.,Mukherjee, S., Chattopadhyay, K.K., (2013). Surface modification of amorphous carbon nanotubes with copper phthalocyanine leading to enhanced field emission, *RSC Advances* 3 (4) , 1227-1234
38. Sen, D., Thapa, R., Bhattacharjee, K.,Chattopadhyay, K.K., (2012). Site dependent metal adsorption on (3 × 3) h-BN monolayer: Stability, magnetic and optical properties, *Computational Materials Science* 51 (1) , 165-171
39. Maiti, U.N., Maiti, S., Chattopadhyay, K.K., (2012). An ambient condition, one pot route for large scale production of ultrafine (<15 nm) ZnO nanowires from commercial zinc exhibiting excellent recyclable catalytic performance: Approach extendable to CuO nanostructures, *CrystEngComm* 14 (2) , 640-647
40. Jha, A., Thapa, R., Chattopadhyay, K.K., (2012). Structural transformation from Mn₃O₄ nanorods to nanoparticles and band gap tuning via Zn doping, *Materials Research Bulletin* 47 (3) , pp. 813-819
41. Sarkar, S., Chattopadhyay, K.K., (2012). Size-dependent optical and dielectric properties of BiVO₄ nanocrystals, *Physica E: Low-Dimensional Systems and Nanostructures* 44 (7- 8), 1742-1746
42. Sarkar, D., Ghosh, C.K., Chattopadhyay, K.K., (2012). Morphology control of rutile TiO₂ hierarchical architectures and their excellent field emission properties, *CrystEngComm* 14 (8) , 2683-2690
43. Mazumder, N., Bharati, A., Saha, S.,Sen, D., Chattopadhyay, K.K., (2012). Effect of Mg doping on the electrical properties of SnO₂ nanoparticles, *Current Applied Physics* 12 (3), 975-982
44. Sarkar, D., Maiti, U.N., Ghosh, C.K.,Chattopadhyay, K.K., (2012). Excellent
 - a. photocatalytic activity of mixed phase ultra slim TiO₂ nanofibers for the degradation of organic wastes, *Advanced Science Letters* 6 , 127-133
45. Ghosh, C.K., Sarkar, D., Mitra, M.K.,Chattopadhyay, K.K., (2012). Electronic structure and optical properties of CuAlO₂ under biaxial strain *Journal of Physics Condensed Matter* 24 (23) , art. no. 235501
46. Chinnamuthu, P., Mondal, A., Singh, N.K., Dhar, J.C., Das, S.K.,Chattopadhyay, K.K., (2012). Structural and optical properties of glancing angle deposited TiO₂ nanowires array, *Journal of Nanoscience and Nanotechnology* 12 (8) , 6445-6448

Dr. SANJAY KUMAR:

1. Role of inhomogeneous cation distribution in magnetic enhancement of nanosized $\text{Ni}_{0.35}\text{Zn}_{0.65}\text{Fe}_2\text{O}_4$: A structural, magnetic and hyperfine study by S. Dey, S.K. Dey, B. Ghosh, P. Dasgupta, A. Poddar, V.R. Reddy, **S. Kumar**, *Journal of Applied Physics* **114**, 093901 (2013).
2. Signature of exchange bias and spin-glass like phenomena in Fe/CoO Nanocomposite by S. P. Pati, A. Roychowdhury, **S. Kumar**, D. Das, *Journal of Applied Physics* **113**, 17D708 (2013).
3. Structural, microstructural, magnetic and hyperfine characterization of nanosized $\text{Ni}_{0.5}\text{Zn}_{0.5}\text{Fe}_2\text{O}_4$ synthesized by high energy ball-milling method by S. Dey, S.K. Dey, B. Ghosh, V.R. Reddy, **S. Kumar**, *Materials Chemistry and Physics* **138**, 833(2013).
4. Transformation of a Mother Crystal to a Daughter Crystal through Amorphous Phase: De-assembly of Coordination Helices upon Heating and Re-assembly through Aquation by R. Saha, S. K. Dey, S. Biswas, A. D. Jana, **S. Kumar**, *Crystal Growth & Design*, **13**, 2135 (2013).
5. Magnetically addressable fluorescent Fe₃O₄/ZnO nanocomposites: Structural, optical and magnetization studies by A. Roychowdhury, S.P. Pati, A.K. Mishra, **S. Kumar** D. Das, *Journal of Physics and Chemistry of Solid*, **74**, 811(2013).
6. Simultaneous Presence of Both Open Metal Sites and Free Functional Organic Sites in a Non-centrosymmetric-Dynamic MOF with Bimodal Catalytic and Sensing Activities by R. Saha, B. Joardar, A. Singha Roy, S. M. Islam, S. Kumar, *Chemistry - A European Journal* (Accepted for Publication) (2013).
7. Dielectric Relaxation and Conductivity of $\text{Ba}(\text{Mg}_{1/3}\text{Ta}_{2/3})\text{O}_3$ and $\text{Ba}(\text{Zn}_{1/3}\text{Ta}_{2/3})\text{O}_3$ by Md M. Hoque, A. Dutta, **S. Kumar**, T. P. Sinha, *Journal of Material Science and Technology* (Article in press) (2013).
8. 2D Ferromagnetic sheet of antiferromagnetic trimeric metal cores by S. Biswas, R. Saha, I. M. Steele, K. Dey, **S. Kumar**, *Polyhedron* **53**, 258 (2013).
9. Co-crystals of 2,3-Dimethylquinoxaline (DMQ) and Dimethylglyoxime (DMG) in 1:1 and 1:2 ratios and Hirshfeld Surface Analysis by S. Biswas, R. Saha, I. M. Steele, **S. Kumar**, K. Dey, *Journal of Chemical Crystallography* **43**, 493 (2013).
10. Synthesis and crystal structure of a group of phenoxo-bridged heterodinuclear $[\text{Ni}^{\text{II}}\text{Hg}^{\text{II}}]$ Schiff base complexes by D. Karmakar, M. Fleck, R. Saha, M. Layek, **S. Kumar**, D. Bandyopadhyay, *Polyhedron* **49**, 93 (2013).
11. $\{[\text{Mn}_2(\text{L-tartrate})_2(\text{H}_2\text{O})] \cdot 3\text{H}_2\text{O}\}_n$. A chiral MOF : Adsorption and Guest Dependent Magnetism by R. Saha, A. Roychowdhury, I. M. Steele, S. Biswas, **S. Kumar**, *Journal of the Indian Chemical Society*, **90**, 1043 (2013).
12. Stabilization of 2D water sheets in a supramolecular metal–organic Schiffbase complex: Reversible structural transformation upon dehydration–rehydration by R. Saha, S. Biswas, I. M. Steele, K. Dey, A. D. Jana, **S. Kumar**, *Inorganica Chimica Acta*, **399**, 200 (2013).
13. Spin disorder induced reentrant ferromagnetism in iron-based Nanocomposites by S. Mukherjee, **S. Kumar**, D. Das, *Applied Physics A* **106**, 507 (2012).
14. Tailoring Magnetic Responses of Nanoscale Integrated Magnetite and Cadmium Sulphide: Microstructural, Magnetic and Hyperfine Studies by S. Mukherjee, **S. Kumar**, and D. Das, *Nanoscience and Nanotechnology Letters* **4**, 110 (2012).

15. Tailoring the Magnetic and Optical Characteristics of Nanocrystalline BiFeO₃ by Ce Doping by B. Bhushan, Z. Wang, J. van Tol, N. S. Dalal, A. Basumallick, N. Y. Vasanthacharya, **S. Kumar**, and Dipankar Das, *Journal of American Ceramic Society* **95**, 1985 (2012).
16. Enhancing the magnetic characteristics of BiFeO₃ nanoparticles by Ca, Ba co-doping by B. Bhushan, D. Das, A. Priyam, N.Y. Vasanthachary, **S. Kumar**, *Materials Chemistry and Physics* **135**, 144 (2012).
17. Evidence of exchange bias in Fe/Co₃O₄ nanocomposites by S. P. Pati, A. Roychowdhury, **S. Kumar**, and D. Das, *AIP conference proceedings* **1447**, 1135 (2012).
18. Memory effects in exchange coupled Fe/Co₃O₄ nanocomposites by S.P. Pati , **S. Kumar**, D. Das, *Materials Chemistry and Physics* **137**, 303 (2012).
19. The impedance spectroscopic study and dielectric relaxation in A(Ni_{1/3}Ta_{2/3})O₃ [A = Ba, Ca and Sr] by Md M. Hoque, A. Dutta, **S. Kumar**, T. P. Sinha, *Physica B Condensed Matter* **407**, 3740 (2012).
20. {[Co₂(ndc)₂(bpee)₂](bpee)}: a 3D multifunctional MOF by R. Saha and **S. Kumar**, *Crystal Engineering Communication*, **14**, 4980 (2012).
21. A Multifunctional Porous Organic Schottky Barrier Diode by S. Dalapati, R. Saha, S. Jana, A. K. Patra, A. Bhaumik, S. Kumar, and N. Guchhait, *Angewandte Chemie International Edition*, **51**, 12534 (2012).

Dr. N. B. Manik

1. Islam, M.R., Maity, S., Haldar, A., Manik, N.B., Basu, A.N., (2012). Photocurrent growth and decay behavior of crystal violet dye-based photoelectrochemical cell in photovoltaic mode, *Ionics* **18** (1-2) , 209-214
2. Khan, A.H., Maji, S., Chakraborty, S., Manik, N.B., Acharya, S., (2012). Multidimensional self-assembly of peanut shaped PbS nanostructures, *RSC Advances* **2** (1) , 186-191
3. Saha, S., Manik, N.B., (2012). Enhancement of efficiency of phenosafranin based organic photovoltaic devices using nano particles, *Indian Journal of Physics* **86** (7) , 605-611
4. Saha, S., Manik, N.B., (2012). Study of solvent dependence of Methyl Red and C 60 based organic photovoltaic devices, *Thin Solid Films* **520** (19), 6274-6281
5. Islam, Md. R., Saha, S., Manik, N.B., Basu, A.N. , (2012). Transient current study in safranin-T dye based organic photo-electrochemical cell using exponentially distributed trap assisted charge transport model, *Indian Journal of Physics* **86** (12), 1101-1106

Prof. S. Tarafdar

1. Giri, A., Dutta Choudhury, M., Dutta, T., Tarafdar, S., (2013). Multifractal growth of crystalline NaCl aggregates in a gelatin medium, *Crystal Growth and Design* **13** (1) , 341-345
2. Basu, T., Middy, T.R., Tarafdar, S., (2013). Ion-conductivity study and anomalous diffusion analysis of plasticized gelatin films, *Journal of Applied Polymer Science* **130** (4) , 3018-3024
3. Giri, A., Tarafdar, S., Gouze, P., Dutta, T., Fractal geometry of sedimentary rocks: Simulation in 3-D using a relaxed bidisperse ballistic deposition model, *Geophysical Journal International* **192** (3) , 1059-1069 (2013)

4. Dutta, T., Giri, A., Choudhury, M.D., Tarafdar, S., (2013). Experiment and simulation of multifractal growth of crystalline NaCl aggregates in aqueous gelatin medium, *Colloids and Surfaces A: Physicochemical and Engineering Aspects* 432 , 127-131
5. Choudhury, M.D., Dutta, T., Tarafdar, S., (2013). Pattern formation in droplets of starch gels containing NaCl dried on different surfaces, *Colloids and Surfaces A: Physicochemical and Engineering Aspects* 432 , 110-118
6. Khatun, T., Choudhury, M.D., Dutta, T., Tarafdar, S. (2012). Electric-field-induced crack patterns: Experiments and simulation, *Physical Review E - Statistical, Nonlinear, and Soft Matter Physics* 86 (1) , art. no. 016114
7. Choudhury, M.D., Chandra, S., Nag, S., Das, S., Tarafdar, S., (2012). Forced spreading and rheology of starch gel: Viscoelastic modeling with fractional calculus, *Colloids and Surfaces A: Physicochemical and Engineering Aspects* 407, 64-70
8. Basu, T., Goswami, M.M., Middy, T.R., Tarafdar, S., (2012). Morphology and ion- conductivity of gelatin-LiClO₄ films: Fractional diffusion analysis, *Journal of Physical Chemistry B* 116 (36) , 11362-11369
9. Giri, A., Tarafdar, S., Gouze, P., Dutta, T. , (2012). Fractal pore structure of sedimentary rocks: Simulation in 2-d using a relaxed bidisperse ballistic deposition model, *Journal of Applied Geophysics* 87 , 40-45

Dr. T. K. Ballabh

1. Khatun, T., Choudhury, M.D., Dutta, T., Tarafdar, S. (2012). Electric-field-induced crack patterns: Experiments and simulation, *Physical Review E - Statistical, Nonlinear, and Soft Matter Physics* 86 (1) , art. no. 016114

Prof. T. R. Middy:

1. Basu, T., Middy, T.R., Tarafdar, S., (2013). Ion-conductivity study and anomalous diffusion analysis of plasticized gelatin films, *Journal of Applied Polymer Science* 130 (4) , 3018-3024
2. Uddin, M.J., Middy, T.R., Chaudhuri, B.K., (2013). Biosynthesized gold nanoparticles destroy percolative behavior of KH₂P₂O₇ (KDP) filled PVA composite film, *AIP Conference Proceedings* 1536 , 51-52
3. Uddin, M.J., Middy, T.R., Chaudhuri, B.K., (2013). Room temperature ferroelectric effect and enhanced dielectric permittivity in Rochelle salt/PVA percolative composite films, *Current Applied Physics* 13 (3) , 461-466
4. Sahoo, S., Middy, T.R., Sit, S.K., (2012). Dielectric behaviour of aprotic polar liquid dissolved in non-polar solvent under static and high frequency electric field, *Indian Journal of Pure and Applied Physics* 50 (3) , 175-183
5. Sarkar, A., Middy, T.R., Jana, A.D., (2012). A QSAR study of radical scavenging antioxidant activity of a series of flavonoids using DFT based quantum chemical descriptors - The importance of group frontier electron density, *Journal of Molecular Modeling* 18 (6) , pp. 2621-2631
6. Basu, T., Goswami, M.M., Middy, T.R., Tarafdar, S., (2012). Morphology and ion- conductivity of gelatin-LiClO₄ films: Fractional diffusion analysis, *Journal of Physical Chemistry B* 116 (36) , 11362-11369

7. Chaudhuri, B., Uddin, M.J., Chaudhuri, B., Pramanik, K., Midya, T.R. , (2012). Black tea leaf extract derived Ag nanoparticle-PVA composite film: Structural and dielectric properties, *Materials Science and Engineering B: Solid-State Materials for Advanced Technology* 177 (20) , 1741-1747
8. Chakraborty, R., De, M., Roy, S., Dey, A., Biswas, S.K., Midya, T.R., Mukhopadhyay, A.K., (2012). Improvement in hardness of soda-lime-silica glass, *AIP Conference Proceedings* 1447 (1) , 569-570

Other Faculty Members:

1. Midya, R., Basak, S.K., Ray, A., Roychowdhury, A. (2013). Outer and inner synchronization in networks on Rössler oscillators: An experimental verification, *Understanding Complex Systems* , 203-228
2. Chandra, S., Ghosh, B., (2013). Non-linear propagation of electrostatic waves in relativistic Fermi plasma with arbitrary temperature, *Indian Journal of Pure and Applied Physics* 51 (9) ,627-633
3. Biswas, I., Mukherjee, A., (2013). Solutions of Strominger System from Unitary Representations of Cocompact Lattices of $SL(2, \mathbb{I})$, *Communications in Mathematical Physics* 322 (2) , 373-384
4. Baruah, A., Roy, M.K., Sarkar, S., Mandal, N., (2013). Dynamics of solid-melt front migration from a reaction-diffusion model, *Heat and Mass Transfer/Waerme- und Stoffuebertragung* , 1-8
5. Mukherjee, R., Chanda, S., Bharti, C., Sahu, P., Sinha, T.P., (2013). Micro-structure, optical properties and ac conductivity of rare earth double perovskite oxides: Sr_2ErNbO_6 , *Physica B: Condensed Matter* 422 , 78-82
6. Das, S., Mitra, N.K., Das, S., (2013). Kinetics of thermal dehydration of sol-gel derived MgO - ZrO₂ composite hydrogel, *International Journal of Materials Research* 104 (6) , 78-585
7. Mitra, M., Manna, P., Das, A., Seth, S.K., Helliwell, M., Bauzá, A., Choudhury, S.R., (...), Mukhopadhyay, S., (2013). On the importance of unprecedented lone pair-salt bridge interactions in Cu(II)-malonate-2-amino-5-chloropyridine-perchlorate ternary system, *Journal of Physical Chemistry A* 117 (28) , 5802-5811
8. Ghosh, B., Banerjee, S., Paul, S.N., (2013). Effect of non-thermal electrons and warm negative ions on ion-acoustic solitary waves in multi-component drifting plasma, *Indian Journal of Pure and Applied Physics* 51 (7) , 488-493
9. Mitra, M., Chatterjee, K., Kargupta, K., Ganguly, S., Banerjee, D., (2013). Reduction of graphene oxide through a green and metal-free approach using formic acid, *Diamond and Related Materials* 37, 74-79
10. Ganguly, S., Das, S., Kargupta, K., Banerjee, D., (2013). Reduced order inferential model-based optimization of a phosphoric acid fuel cell (PAFC) stack, *Industrial and Engineering Chemistry Research* 52 (22) , pp. 7104-7115
11. Saha, P., Bhowmik, M.K., Bhattacharjee, D., De, B.K., Nasipuri, M., (2013). Gradient based fusion of infrared and visual face images using support vector machine for human face identification, *Proceedings of SPIE - The International Society for Optical Engineering* 8667, art. no. 86670Z
12. Sarkar, S., Bose, M., Mukherjee, S., Pramanik, J., (2013). Spatiotemporal evolution of dielectric driven cogenerated dust density waves, *Physics of Plasmas* 20 (6) , art. no. 064502

13. Chatterjee, R., Hazra, D.K., Mukherjee, M., Nethaji, M., Ali, M., (2013). Hydrothermal synthesis and characterization of bis(4,42 -bipyridinium) dodecatungstosilicate dehydrate, *Indian Journal of Chemistry - Section A Inorganic, Physical, Theoretical and Analytical Chemistry* 52 (6) , 749-752
14. Ray, A., RoyChowdhury, A., Basak, S., (2013). Effect of noise on generalized synchronization: An experimental perspective, *Journal of Computational and Nonlinear Dynamics* 8 (3) , art. no. 031003
15. Roy, D., Bagchi, B., Bhattacharya, A., Das, S., Nandy, P., (2013). A Comparative study of densification of sol-gel-derived nano-mullite due to the influence of iron, nickel and copper ions, *International Journal of Applied Ceramic Technology*, Article in Press
16. Hazra, D.K., Mukherjee, M., Mukherjee, A.K., (2013). Ab initio powder structure analysis and theoretical study of two thiazole derivatives, *Journal of Molecular Structure* 1039,153-15.
17. Bose, M., Bal, S., (2013). Climatological impact of solar activity on geo-extreme events, *Disaster Advances* 6 (4) , 22-29
18. Bal, S., Bose, M., (2013). Collision and recombination driven instabilities in variable charged dusty plasmas, *Pramana - Journal of Physics* 80 (4) , 643-664
19. Kalam, M., Rahaman, F., Monowar Hossein, S., Ray, S., Central density dependent anisotropic compact stars, *European Physical Journal C* 73 (4) ,1-6
20. Bhattacharya, D.P., Midday, S., Nag, S., Biswas, A., (2013). Lattice controlled transport in quantum wires at low temperature, *Physica E: Low-Dimensional Systems and Nanostructures* 47 , 264-269
21. Ghosh, B., Paul, S.N., Das, C., Paul, I., Banerjee, S., (2013). Electrostatic Double Layers in a Multicomponent Drifting Plasma Having Nonthermal Electrons, *Brazilian Journal of Physics* 43 (1-2) , 28-30
22. Banerjee, D., Bhattacharjee, J.K., (2013). Study of some model quantum systems in two dimensions, *European Journal of Physics* 34 (2) , 435-447
23. Chattopadhyay, B., Das, U., Mukherjee, M., Mukherjee, A.K., (2013). Structural study of four benzyloxybenzoic acids and benzyloxyanilines using X-ray powder diffraction: Interplay of strong and weak intermolecular interactions, *CrystEngComm* 15 (6) , 1077-1085
24. Dutta Gupta, M., Mukhopadhyay, A., Roy, S.K., Dabrowski, R., (2013). High birefringence liquid crystalline mixture: Optical properties and order parameter, *Journal of Applied Physics* 113 (5) , art. no. 053516
25. Sarkar, S., Bose, M., Pramanik, J., Mukherjee, S., (2013). Experimental observation of the behaviour of cogenerated dusty plasma using a bipolar pulsed direct current power supply, *Physics of Plasmas* 20 (2) , art. no. 024506
26. Bhar, S., Roy, S.K., (2013). A comparison of the performance of Wang-Landau-Transition-Matrix algorithm with Wang-Landau algorithm for the determination of the joint density of states for continuous spin models, *Computer Physics Communications* 184 (5) , 1387-139
27. Sanphui, P., Bolla, G., Das, U., Mukherjee, A.K., Nangia, A., (2013). Acemetacin polymorphs: A rare case of carboxylic acid catemer and dimer synthons, *CrystEngComm* 15 (1) , 34-38
28. Chandra, S., Paul, S.N., Ghosh, B., (2013). Electron-acoustic solitary waves in a relativistically degenerate quantum plasma with two-temperature electrons, *Astrophysics and Space Science* 343 (1) , 213-219

29. Ray, A., Roy Chowdhury, A., Ghosh, D. , (2013). Effect of noise on chaos synchronization in time-delayed systems: Numerical and experimental observations, *Physica A: Statistical Mechanics and its Applications* 392 (20) , pp. 4837-4849
30. H.M., Rananaware, U.B.,Mukherjee, A.K., (2012). Tris(hydroxymethyl) aminomethane salt of ramipril: Synthesis, structural characterization from X-ray powder diffraction and stability studies, *Journal of Pharmaceutical and Biomedical Analysis* 70 , pp. 280-287
31. Samanta, R., Purkait, M., Mandal, C.R., , (2012). Single ionization of helium by positron and electron impact , *Journal of Physics: Conference Series*388 (PART 4) , art. no. 042036
32. Agarwal, P., Roy Chowdhury, K., Roy Chowdhury, A. , (2012). On the gap soliton like structure due to the mutual influence of trapping potential and external field, *Nonlinear Optics Quantum Optics* 44 (4) , 235-244
33. Chandra, S., Ghosh, B., (2012). Modulational instability of electron-acoustic waves in relativistically degenerate quantum plasma, *Astrophysics and Space Science* 342 (2) , pp. 417-424
34. Sahu, P., Shee, S.K., Hamada, A.S.,Rovatti, L., Sahu, T., Mahato, B., Ghosh Chowdhury, S., Karjalainen, L.P. , (2012). Low strain rate deformation behavior of a Cr-Mn austenitic steel at -80 °c, *Acta Materialia* 60 (20), 6907-6919
35. Ghosh, A., Prasad, J., Bharadwaj, S.,Ali, S.S., Chengalur, J.N. , (2012). Characterizing foreground for redshifted 21cm radiation: 150MHz Giant Metrewave Radio Telescope observations, *Monthly Notices of the Royal Astronomical Society* 426 (4) , 3295-331
36. Hazra, D.K., Mukherjee, M., Helliwell, M.,Mukherjee, A.K. (2012). 2,4-Dimethyl-1,3-thia-zole-5-carb-oxy-lic acid: An X-ray structural study at 100 K and Hirshfeld surface analysis, *Acta Crystallographica Section C: Crystal Structure Communications* 68 (11) , 452-455
37. Ghoshal, N., Mukhopadhyay, K., Roy, S.K.(2012). Importance of transverse dipoles in the stability of biaxial nematic phase: A Monte Carlo study, *Liquid Crystals* 39 (11) , 1381-1392
38. Ghosh, S., Hazra, D.K., Chattopadhyay, B., Pal, S., Helliwell, M., Mukherjee, A.K., (2012). Crystal structure and electronic properties of a piroxicam derivative: A combined X-ray analysis and quantum mechanical studies, *Journal of Chemical Crystallography* 42 (10), 1067-1074
39. Paul, S.N., Pakira, G., Paula, B., Ghosh, B., (2012). Nonlinear ion-acoustic waves in gravitating dusty plasma with non-isothermal electrons and fluctuating dust charges, *Acta Physica Polonica A* 122 (1), 116-121
40. Nayek, P., Karan, S., Kundu, S., Lee, S.H., Gupta, S.D., Roy, S.K., Roy, S.K. (2012). Effect of admium sulfide nanorod content on Freedericksz threshold voltage, splay and bend elastic constants in liquid-crystal nanocomposites, *Journal of Physics D: Applied Physics*45 (23) , art. no. 235303
41. Paul, S.N., Bhattacharya, S.K., Paul, B.,Ghosh, B. (2012). Nonlinear Faraday rotation of ion-cyclotron whistler waves in the ionosphere, *Indian Journal of Physics* 86 (6) , pp. 489-492
42. Samanta, R., Jana, S., Ghosh, S.,Purkait, M., Mandal, C.R., (2012). Electron capture cross section in collision of multi-charged neon ions with ground state hydrogen and helium, *Indian Journal of Physics* 86 (6) , pp. 503-512
43. Ghosh, D., Dutta, S., Samanta, S., (2012). Fluctuation of gold price: A multifractal, Approach, *Acta Physica Polonica B* 43 (6) , pp. 1261-1274

44. Ghosh, B., Chandra, S., Paul, S.N., (2012). Relativistic effects on the modulational instability of electron plasma waves in quantum plasma, *Pramana - Journal of Physics* 78 , 779-790
45. Paul, I., Pakira, G., Chattopadhyay, S.K., Paul, S.N., Ghosh, B., (2012). Analytical study on the existence of ion-acoustic solitary waves in a plasma consisting of warm streaming ions and nonthermal electrons, *Indian Journal of Physics* 86 (5) , 395-400
46. Chandra, S., Paul, S.N., Ghosh, B., (2012). Linear and non-linear propagation of electron plasma waves in quantum plasma, *Indian Journal of Pure and Applied Physics* 50 (5) , 314-319
47. Gupta, M.D., Mukhopadhyay, A., Czuprynski, K., (2012). Thermal dependence of the dielectric behavior of two mesogens: A comparative study, *Molecular Crystals and Liquid Crystals* 557 , pp. 240-250
48. Ray, A., Roychowdhury, A., Mukherjee, I., (2012). Nonlinear control of hyperchaotic system, lie derivative, and state space linearization, *Journal of Computational and Nonlinear Dynamics* 7 (3), art. no. 031002
49. Samanta, R., Jana, S., Mandal, C.R., Purkait, M., (2012). Single-electron capture from hydrogenlike atomic systems, *Physical Review A - Atomic, Molecular, and Optical Physics* 85 (3) , art. no. 032714
50. Haldar, P.K., Manna, S.K., Saha, P., Ghosh, D., (2012). Peculiarities in the distribution of produced particles emission in 24Mg-Ag/Br interactions at 4.5 A GeV, *Indian Journal of Pure and Applied Physics* 50 (3) , 156-160
51. Dalal, S., Lohar, D., Sarkar, S., Sadhukhan, I., Debnath, G.C., (2012). Organizational modes of squall-type Mesoscale Convective Systems during premonsoon season over eastern India, *Atmospheric Research* 106 , 120-138
52. Ghosh, B., Paul, S.N., Das, C., Paul, I., (2012). Modulational instability of high frequency surface waves on warm plasma half-space, *Canadian Journal of Physics* 90 (3) , 291-297
53. Chattopadhyay, B., Ghosh, S., Mondal, S., Mukherjee, M., Mukherjee, A.K., (2012). Structural study of three o-hydroxyacetophenone derivatives using X-ray powder diffraction: Interplay of weak intermolecular interactions, *CrystEngComm* 14 (3), 837-846
54. Chandra, A., Bhattacharya, A., Chakrabarti, B. Heavy pentaquarks and doubly heavy baryons in quasiparticle approach 2012, *Modern Physics Letters A* 27 (1) , art. no. 1250006
55. Sahu, P., Hamada, A.S., Sahu, T., Puustinen, J., Oittinen, T., Karjalainen, L.P., (2012). Martensitic transformation during cold rolling deformation of an austenitic Fe-26Mn- 0.14C alloy, *Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science* 43 (1), 47-55
56. Bhattacharya, A., Chandra, A., Chakraborti, B., (2012). On Some Properties of (Θ^+) Excited States, *International Journal of Theoretical Physics* 51 (1) , pp. 206-212
57. Samanta, S., Pal, D.K., Lohar, D., Pal, B., (2012). Interpolation of climate variables and temperature modeling, *Theoretical and Applied Climatology* 107 (1-2) , pp. 35-45
58. Das, U., Chattopadhyay, B., Mukherjee, M., Mukherjee, A.K., (2012). Structure analysis of molecular compounds with $Z^2 = 2$ using laboratory X-ray powder diffraction data: 3-phenylpropionic acid and its derivatives, *Crystal Growth and Design* 12 (1) , pp. 466-474

5. Collaborative Programmes

6. Major Achievements:

Scheme: FIST Program, DST (Phase II) Name of the Agency: DST

Total Amount : 265 Lakhs

Award:

Dr. K. K. Chattopadhyay awarded with Materials Research Society of India (MRSI) Medal – for 2014

M.Sc. Physics Final 2012 -13 Batch (NET: 29)

SL.No	Name	Qualified in NET
01	Amit Kumar Chatterjee	NET CSIR, JEST, SINP
02	Swarnajit Chatterjee	NET-CSIR, GATE 2013), IACS
03	Biplab Gayen	NET, JU
04	Snigdha Ghosh	NET-CSIR, VECC
05	Arnab Kumar Pariari	NET-CSIR, SINP
06	Gopa Bhoumik	NET-CSIR
07	Tanmoy Paul	NET-CSIR, IACS
08	Sayan Patra	NET – CSIR, RRI
09	Supriyo Mondal	NET, IACS
10	Sumana Paul	NET
11	Pratik Kumar Das	NET, JU
12	Arindam Mullick	NET, GATE 2012, IASC
13	Hrishit Banerjee	NET, GATE 2012, S. N. Bose
14	Pradip Thakur	NET, JU
15	Sruti Dutta	NET, GATE 2011, SINP
16	Sunetra Das	NET-CSIR, GATE 2011, JU
17	Payel Aich	NET-CSIR, GATE 2012, IASC
18	Mandira Pal	NET, GATE 2012, IISER KOL
19	Anjana Mondal	NET, GATE 2012, IISER KOL
20	Subhadeep Chakraborty	NET-CSIR,GATE 2013,
	S.N.Bose	
21	Tanushree Dey	NET-CSIR, GATE 2012, JU
22	Purbasha Halder	NET, GATE 2011
23	Mrinmoy Mukherjee	CSIR, PGII Student, RANK 10
24	Bappaditya Pal	CSIR, PGII Student
25	Debarshi Das	NET, PGII Student

26	Subhadip Basu	NET, PGII Student
27	Rafikul Ali Saha	NET, PGII Student
28	Kanka Ghosh	NET, PGII Student
29	Arijit Sen	NET, PGII Student

ADVANCED RESEARCH IN PHARMACEUTICAL SCIENCES

(Dr. V. Ravi Chandran Endowment Fund)

[Dept. of Pharmaceutical Technology]

Int. : 2457-2037

Coordinator : Prof. A. K. Bandyopadhyay

Jt. Coordinator : Dr. Biswajit Mukherjee

1. A. Departmental Research Activities: (Broad Areas)

Research Areas : Pharmaceutics and Pharmaceutical Biotechnology

Novel Drug Delivery Systems

2. B. Major Research Project:

___Name of the Teacher/ Title of the Project /Name of the funding agency/Duration Sanctioned Amount(Rs.)/ From /To

Prof. Amal Kumar Bandyopadhyay

Development of Self- Microemulsifying Oral Drug Delivery System for Enhancement of Bioavailability of Atorvastatin Calcium, A Poorly Water Soluble Drug. UGC (Maulana Azad National Fellowship for Minority Students). 2009-2014

Prof. Amal Kumar Bandyopadhyay

Polymeric nanoparticles of selected anticancer drug: Characterization, in-vitro and in-vivo study. UGC (Rajiv Gandhi National Fellowship for SC/ST Students), 2012-2017

Prof. Amal Kumar Bandyopadhyay

Development, characterization and investigation of doxorubicin-loaded nanoliposomes to cross blood brain barrier in rats. Dr. V. Ravi Chandran Endowment Fund, 2012-2016

Prof. Biswajit Mukherjee

Insulin like growth factor II (IGF II) phosphorothioate antisense oligomers in search for a potential future drug of liver cancer. Indian Council of Medical Research. 2010-2013, 24 lakh

Prof. Biswajit Mukherjee

Antidiabetic potential of apignin- a mechanistic approach, Department of Science and Technology, 2010-2013

Prof. Biswajit Mukherjee

Preparation and characterization of phosphotidyl ethanol amine conjugated nanoparticles of Tamoxifen citrated for breast cancer therapy. Indian Council of Medical Research. 2011- 2014, 7.19 lakh

Prof. Biswajit Mukherjee

Development of nano-scale Liposomal targeted delivery of an anti cancer agent Department of Science and Technology, 2011-2014, 14.34 lakhs

Prof. Biswajit Mukherjee

Tamoxifen Citrate loaded in nanoliposomes tagged with monoclonal antibody for targeting in breast cancer cell. Indian Council of Medical Research, 2011-2014, 9.024 lakhs

Prof. Biswajit Mukherjee

Antisticking factor from caprine epididymal plasma: biochemical identity, role in sperm function and in tumor biology. Council of Scientific and Industrial Research, 2010-2013, 30.62 lakhs

Prof. Biswajit Mukherjee

Biochemical characteristics and physiological significance of a model forward motility stimulating proteins and its potential for application. Department of Biotechnology, 2010- 2013, 35 lakhs

Prof. Biswajit Mukherjee

Pulmonary delivery of nanoparticles of an antifungal agent using nebulizer or dry powder inhaler. Department of Biotechnology , 2012-2014, 10 lakhs

Prof. Biswajit Mukherjee

Diabetes mellitus, hepatocarcinogenesis and their correlation in animal model along with the modulation of the diseased conditions by Apigenin. Department of Science and Technology, 2013-2018, 14.34 lakhs

3. A. Invited Lectures Delivered/Session Chaired:

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

Prof. Amal Kumar Bandyopadhyay

"Price of Drugs and Treatment of Patients" A Discussion organised by C. V. Raman unit of Bigyan Mancha. Jadavpur University, 2013

Prof. Biswajit Mukherjee

Guest lecture for M.Pharm courses (Clinical Pharmacy & Pharmacy practice) Organized by Department of Pharm. Tech, Jadavpur University, Kolkata. Department of Pharm. Tech, Jadavpur University, Kolkata

Prof. Biswajit Mukherjee

Guest lecturer at in the 2013 Department of Chemistry, Aliah University, Kolkata in Autumn Semestar, Department of Chemistry, Aliah University, Kolkata 2013

B. Seminar/Workshop/Conference/Symposium Attended: (Resource Person)

Name of the Teacher/Name of the Paper presented/Name of the Seminar/Place/Duration

Prof. Amal Kumar Bandyopadhyay

**“Chewing gum as drug delivery system”, AICTE Sponsored Quality Improvement Programme
Jadavpur University, 2012**

Dr. Biswajit Mukherjee

Lecture on “Treatment of Antisense Insulin-like Growth Factor II controlling the development of hepatocellular carcinoma in rats”. The International Liver Congress TM 2012 - 47th annual meeting of the European Association for the Study of the Liver (EASL). Barcelona, Spain, 2012

Prof. Biswajit Mukherjee

Lecture on ‘Pharmaceutical Sciences: A Global Approach International Seminar organised By Department of Pharmacy, University of Sciences and Technology, Chittagong (USTC), Department of Pharmacy, University of Sciences and Technology, Chittagong (USTC). 26th February, 2013

Prof. Biswajit Mukherjee

Recent Advances in Pharmaceutical research. National Seminar organized by College of Pharmaceutical Sciences, Puri College of Pharmaceutical Sciences, Puri. 13th April, 2013

C. Seminar/Workshop/Conference/Symposium Organized:

____ Name of the Teacher/Name of the Paper Presented if any/Name of the Seminar/Place/Duration

Prof. Amal Kumar Bandyopadhyay And Dr. Biswajit Mukherjee

Organised “workshop and National Seminar on Biotechnology in Pharmaceutical Sciences: Recent Avenues” Jadavpur University Two days-2nd and 3rd December’ 2011

E. Orientation Courses/Refresher Courses Organized:

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

Prof. Biswasjit Mukherjee

QIP Refresher Course. 21 days (June-July 2012), Future Directions of pharmaceutical sciences and research, Department of Pharmaceutical Technology, Jadavpur University, Kolkata

Prof. Biswasjit Mukherjee

QIP Refresher Course. 14 Days (January 2013), Directions of Pharma-Research to achieve Pharma-excellence by 2025, 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: Chemically induced hepatocellular carcinoma : Stages of development with some biochemical and genetic modulation with a special reference to IGF-II and Raf in Hepatocellular carcinoma: Basic Research, 2012. Intech.

B. Articles Published in Journals: (1st April 2012- 30th March 2013)

Name of the Teacher/Name of the Article/Name of the Journal/Date of Publication/Volume

Prof. Amal Kumar Bandyopadhyay

Comparative Study between Conventional and Thermoreversible Mucoadhesive Nasal Gels of Midazolam Hydrochloride Shyamoshree Basu, Amal K. Bandyopadhyay, Science and Technology, 2012. V. 2(2)

Prof. Amal Kumar Bandyopadhyay

Formulation development and in vitro Evaluation of solidified self, microemulsion in the form of tablet containing atorvastatin Calcium. Kazi Asraf Ali, Biswajit Mukherjee, Amal Kumar Bandyopadhyay, Drug Development and Industrial Pharmacy, 2013. V. 39(11)

Mukherjee B., Ghosh M.K.

Treatment of antisense insulin-like growth factor II controlling the development of hepatocellular carcinoma in rats. Journal of hepatology. 2012. Accepted

Biswadip Sinha, Gurudutta Pattnaik, Biswajit Mukherjee

Poly-lactide-co-glycolide nanoparticle containing Voriconazole for pulmonary delivery: in vitro and in vivo study. Nanomedicine: nanotechnology, biology and medicine. 2012. Accepted

Kazi Asraf Ali, Biswajit Mukherjee, Amal Kumar Bandyopadhyay

Formulation development and in vitro evaluation of solidified self microemulsion in the form of tablet containing Atorvastatin calcium. Drug Development and Industrial Pharmacy. 2012. Accepted

Sumit Basu, Biswajit Mukherjee, Samrat Roy Chowdhury, Paramita Paul, Rupak Choudhury, Ajeet Kumar, Laboni Mondal, Chowdhury Mobaswar Hossain, Ruma Maji,

Colloidal gold loaded, biodegradable polymer-based Stavudine nanoparticles uptake by macrophages: an *in vitro* study. International Journal of Nanomedicine. 2012

Biswajit Mukherjee, Chowdhury M. Hossain, Laboni Mondal, Paramita Paul and Miltu K. Ghosh.

Obesity and insulin resistance: an abridged molecular correlation. Lipid Insight, 2013

5. Collaborative Programme:

Dr. Biswajit Mukherjee Jointly with Dr G C Majumder

Anti-sticking factor from caprine epididymal plasma: Biochemical identity, role in sperm function and tumor biology with special reference to metastasis. DBT. 2010-2013

Dr. Biswajit Mukherjee Jointly with Dr Bhaskar Majumder

Pulmonary delivery of nanoparticles of an antifungal agent using nebulizer or dry powder inhaler. DBT. 2012-2014

6. Major Achievements:

Acts as section editor of the encyclopedia of metalloproteinase (Springer), published in 2013.

AFRICAN LITERATURES & CULTURES

[Dept. of Comparative Literature]

Int. : 2457-2223/2149

Coordinator : Prof. Ipshta Chanda

Brief Profile : Year of Establishment: 2006

Department to which this Centre is attached: Attached to the faculty of Arts, housed in the Department of Comparative Literature.

Teaching posts: Nil

Administrative and Technical Staff: Nil

Courses Offered:

- The Center is housed in the Department of Comparative Literature and offers a course in Literatures of Africa as an optional in the third and fourth semesters of the MA programme.
- **Four Extra Departmental** courses in the cultures of the African Diaspora, including North America, Latin America and the Caribbeans, entitled **African Cultures across the World** to Undergraduate students of the Arts Faculty. In the four semesters, the centre offers courses in Music, Poetry, Drama and Narrative respectively.
- Syllabi for **two more Extra Departmental courses** in African Cultures across the World have been approved by the academic committee of the Centre for Studies in African Literatures and Cultures, which includes:

(1) African Cultures : A History of Dissemination

This course seeks to trace the historical processes by which individuals and communities from Africa were taken across the world to the United States, Latin America, the Caribbean Islands etc. through the Slave Trade and were in subsequent years assimilated into the societies of these countries. The course will mainly focus on the narratives/biographies/autobiographies/memoirs of slaves and first-generation emancipates also giving due accord to other forms of "popular" "black" cultural movements and references to treatises, policies and declarations dealing with the education of Slaves.

As a governing logic the course will emphasize the process by which the slaves came to learn the culture and specifically the language of their "masters" in which they later chose to express and assert themselves.

(2) 'Africa' in the Modern World

This course will focus on the various aspects of culture influenced directly and indirectly by African roots and residues, across the world. The course will be geared towards the understanding the generation and consumption of the "African-Some Nationality" identity in global media and culture. The course will focus on the impact of Africa in the modern world in fields like cuisine, film, fashion, sports and other spheres of popular culture.

Though approved by the academic committee, introduction has been held up due to lack of even part-time faculty.

A **bursary** named "Professor **Daleep Singh fellowship** in memory of Professor B.N. Ganguli" has been awarded for the second year to a research scholar registered for PhD. or M.Phil thesis on a topic relating to any country in Sub- Saharan Africa.

The Centre helps the Department run an optional course in Literatures of Africa in the third and fourth semesters of the MA programme in Comparative Literature.

Annual budget: Rs. 12,000

Brief Report:

Major Objectives

- A forum for the study of African cultures in the state, and later across the country.
- Facilitate South-South linkages by establishing academic relationships with African nations in terms of exchange, research and other modes of cooperation.
- Conducting research on literatures and cultures of Africa, within Africa and across the world.
- Establishing institutional and inter-departmental links for research.
- Building resources for African literary and cultural studies.

Faculty Profile:

The Centre has no staff exclusive to it. Activities are run by teachers (attached to the Department of English and the Department of Comparative Literature) + Research Fellows (attached to the Department of Comparative Literature and School of Media Communication and Culture).

Area of Research Activities:

Broad Area : South-South linkages.

Special Focus: Contact between cultures of the 'south'.

Thrust Areas of Research:

- African Cultures across the World
- Cultures of Orality

Research Collaborations:

The Coordinator is a member of the Advisory Council for the Policy Research Institute of the African Studies Association of India, and links with scholars across Africa especially interested in literatures and cultures of Africa have been established.

The Centre hosted, in 2012-2013, Dr. Tony Afejuku, Professor of English & Literature, in the Department of English & Literature, University of Benin, Benin City, Nigeria, who worked here on relations between Indian and African literatures.

The Centre participated in the formation and the first meeting of the Oral Historians Association of India (OHAI), at the Centre for Public History, Srishti School of Art, Design and Technology, Bangalore. The Centre is looking forward to collaborate with OHAI's future endeavors.

Collaborative Programmes:

Currently, we are discussing collaboration with the African Literatures and Languages programme in the School of South Asian Studies at Peking University, Beijing. Masters students from this programme are expected to participate in this year's Annual Forum for Scholars of African Literatures, and facilitate the visit of Professor Femi Osofisan.

We are expecting Professor Femi Osofisan, Department of Theatre Arts, University of Ibadan, Nigeria, in collaboration with the School of South Asian Studies, Peking University, Beijing, China. Professor Osofisan is expected to do a theatre workshop when he comes.

Publications:

Palaver Volume IV: Proceedings of the forum for scholars in African Studies, in press.

Conferences, Seminars etc.:

Invited performance of songs and poetry of African and African origin artists and poets at the opening of an African artifact festival at Sasha, Kolkata on June 29, 2012.

Palaver XI: a forum for scholars of African Studies, a conference on African Literatures and Cultures, on January 29, 2013 on "Identity Politics in/and Africa".

Palaver XII will be held in this academic year. This year, preceding the conference, we hope to include a workshop on performance as well.

Plan of Action (Next 5 Years):

- Introduction of two more Extra Departmental courses in African Cultures across the World, one regarding slave narratives in any genres from Europe and the Americas , and the other regarding popular cultures ranging from sports to music to films, from fashion to food and others.
- Establishing a group for learning and performing music of African origins, growing out of the Extra Departmental course on African Cultures across the World.
- Developing teaching materials for African Literatures and Cultures for Indian Universities. In order to reach a wider audience, apart from launching our official website; we have created accounts on popular social networking sites like Facebook, and professional networking site like LinkedIn. Articles and relevant materials are uploaded at regular intervals in these sites, with an active response from the users. A list of books gifted by Prof. Manabendra Bandopadhyay is already uploaded on our website, the Centre plans to upload its complete library catalogue and the archive records of music and performance forms.
- Archiving of resources: an audio visual archive of music of African cultures across the world. The process has already started by collecting materials and preserving them in the digital format.
- Extension of Research Support (National): We act as a resource centre for scholars and teachers in other departments like Philosophy and English at Jadavpur University, and for other universities in India, like Viswa-Bharati, Barddhaman and Assam University, Silchar and Central University of Rajasthan, Kishengarh.
- Strengthening International networks: We are currently facilitating the work of researchers from the Department of Anglophone Studies, University of Antananarivo, Madagascar working on oral literature and the dynamics of transmission/transfer of values and knowledge—a comparative approach of Malagasy literature with that of some East African Countries (Mozambique, etc.)/Indian Ocean islands literature.

- Members of academic committee are experts on Policy Research Initiative of the African Studies association of India (PRIASA), located in the School of International Relations at Jawaharlal Nehru University, Delhi.

BUDDHIST STUDIES

[Department of Philosophy]

Int. : 2457-2358

Coordinator : Prof. Madhumita Chattopadhyay

The ICPR Center for Buddhist Studies started officially its functioning from 19th February 2013, when Professor Souvik Bhattacharyya, the Honorable Vice Chancellor, Jadavpur University and Professor Nirmalya Narayan Chakraborty, the Honourable Member Secretary, ICPR inaugurated the Center. In the short span of eight months (actually it is six months, since the grant from the ICPR was received in the first week of April 2013) we have organized one special lecture, one short course, one workshop, a series of lectures and one-day seminar.

On 4th March 2013, Professor Jay L Garfield, Doris Silbert Professor of Philosophy and Director of the Logic Program and of the Five College Tibetan Studies in India Program at Smith College, delivered a special lecture on the "Mādhyamika Ethics". Since the Center basically aims to make young students, and research scholars well-acquainted with the original Buddhist texts, some of which are written in Tibetan language, we had organized a eight-day short course on "How to Read Tibetan Buddhist Texts". The course was conducted by Professor Suniti Pathak, Former Professor, Department of Indo-Tibetan Studies, Viswa Bharati, from 28th February to 8th March, in which 20 students of Jadavpur University, Calcutta University, research scholars and young professors of different Colleges participated. In the month of June (from 24th June to 26th June 2013) we organized a three-day National Workshop on "Different Forms of Buddhism" in which 30 scholars participated. The resource persons of this workshop were Professor Suniti Pathak, Professor R.K.Rana of Delhi University, Professor Aiswaryya Biswas of Calcutta University. In this workshop Professor Madhumita Chattopadhyay delivered the key-note address by pointing out the reasons why so many sects and sub-sects arose in Buddhism. Professor Aiswaryya Biswas spoke on the Theravāda Buddhism, Professor Pathak on the four main *saGgitis* of Buddhism and Professor Rana spoke on the development of Buddhism outside India, with special reference to Chinese Buddhism. In the month of July-August we have arranged a series of lectures by Professor Prabal Kumar Sen, Former Professor, Department of Philosophy, University of Calcutta on the Mādhyamika Critique of Epistemology. From 16th September to 22nd September Professor Sanghasen Singh, Former Professor, Department of Buddhist Studies, Delhi University has deliver four lectures on Buddhist Social Thoughts. The Center not only invites well-known scholars, but also inspires young scholars to express their views on the subject. And as such we have organized a Young Scholars Meet on "Different Aspects of Buddhism" on 28th September 2013 where students doing researches, as well as students of the UG and PG levels will participate.

Mere organizing workshop or seminar cannot be the sole function of a Center. We also do not think so. Accordingly we have a plan to publish the outcome of the Workshop in the form of an anthology. The first draft of this manuscript is almost ready. At the same time we are trying to establish a good collection of Buddhist texts, both primary and secondary, in our library. For this we have started purchasing books. We have started the task of establishing collaboration with other Buddhist Centers of this country and abroad. We have already contacted Central Institute of Tibetology, Sarnath and Bukkyo Dendo Kyokai of Japan in this regard. We are waiting for their responses.

CANADIAN STUDIES

[Dept. of Comparative Literature]

Int. : 2457-2152/2223

Coordinator : Prof. Suchorita Chattopadhyay

The Centre for Canadian Studies, Jadavpur University, Kolkata organized an International Conference entitled "Painting the Rainbow from Bloor to B'lore: Connecting Cultures of Difference in Canada and India" on February 26-27, 2013. The event was sponsored by the MDF grant administered by the Shastri Indo-Canadian Institute, Canada & India. The conference featured the screening of Alanis Obomsawin's film *Kanehsatake: 270 Years of Resistance* which chronicles the Oka crisis of 1990 followed by a discussion led by Professor Himani Banerjee of York University, Canada. The centre also organized the show of a series of short films on issues relevant to Canadian Studies today, names indigenous issues and diasporic issues. Collaborative projects have also been undertaken with the Ahmedabad based Budhan theatre group.

Professor Suchorita Chattopadhyay has conducted a session on 'Developing New Collaborative Programmes for Research and Teaching' in an International Conference on Roundtable discussions on 'INDIA CANADA COLLABORATION IN HIGHER EDUCATION – THE ROAD AHEAD'.

COMPUTER AIDED DESIGN

[Dept. of Computer Sc. & Engineering]

Int. : 2457-2807

Coordinator : Prof. Sivaji Bandyopadhyay

1. A. Courses Offered

Name of the Course/Duration of the Course/No. of Courses Offered/Total no. of Students

P.G. Diploma in Applied Remote Sensing and GIS (Geoinformatics),

	One year.	4	112
Diploma in Multimedia and Animation	One year	3	83
AutoCAD with AutoLISP	11 weeks	7	204
Structural Analysis And Design	10 weeks	1	30
Advanced 3D Modelling	10 weeks	1	16
WebGIS	Four months	1	18
Total		19	463

B. No. of Faculty Members :

The Centre is conducting various professional short-term courses with the help of 11 visiting faculties.

2. A. Area of Research Activities (Broad Areas) : CAD and Geoinformatics

3. A. Invited Lectures Delivered:

Bhatta, B. (2013). *Applications of RS-GIS and its future scopes*. In the Seminar on Future Scope of RS & GIS in Geography, Calcutta University, Kolkata, 23 March, Students' Geographical Association, Ballygunge Science College, Calcutta University.

4. A. Books/Monographs etc. Published:

Bhatta, B. (2013). *Research Methods in Remote Sensing*. Springer-Verlag, Heidelberg, pp. 128. (ISBN: 978-9400765931).

Bhatta, B. (2012). *Urban Growth Analysis and Remote Sensing: A Case Study of Kolkata, India, 1980-2010*. Springer-Verlag, Heidelberg, pp. 125. (ISBN: 978-9400746978).

5. Major Achievements :

In the last 27 years, the Centre has trained more than 7500 industry professionals, students and researchers in Computer Aided Design, Geographic Information System, Remote Sensing, Multimedia, and related areas. The Centre has also executed several R&D and Industrial projects since 1987.

Section-1 & III

Director of the Centre : Prof. Sivaji. Bandyopadhyay, Computer Science and Engg. Dept., JU.

CONDENSED MATTER PHYSICS RESEARCH CENTRE

[Dept. of Physics]

Tel : 2413-8917

Int. : 2457-2760

Coordinator : Prof. Sujata Tarafdar

1. Major Objectives of the Centre:

Conducting regular seminars and discussion, pursuing collaborative work in condensed matter and related subjects. Involving faculty of JU as well as other educational institutions in joint research work. Creating awareness among members and students about current research in condensed matter being done in research institutes in Kolkata and elsewhere by inviting scientists to deliver talks on different topics and sharing ideas with them.

Detailed Report of activities during March 2012-31st March 2013

Seminars Organized:

The Centre regularly organizes two seminars every month, these are usually held on Friday afternoon. The topics are mostly related to condensed matter physics, but other subjects of general interest are discussed too. Members from Physics Department JU as well as from other institutes attend.

One-day and two-day seminars are also organized once or twice a year, where there is much larger participation from students, teachers and researchers. Details of the talks during the last year are given below:

List of Seminars During March 2012-31st March 2013

No. of Seminars	Date	Name of Speaker	Affiliation	Topic	Attendance
1)		Abhra Giri			
	30/03/2012,	JU & St. Xavier's College.		Fractal and Multifractal in porous media,	7
2)		Dr. Dipak Kumar Sinha			
	13/04/2012,	IACS, Kolkata.		Physics Inspired Biology: Molecular machine and life,	16
3)		Prof. Tapas Ranjan Mirdya			
	20/04/2012,	JU,		A new look to some Undergraduate Problems,	23
4)		Prof. Dipak Ghosh			
	04/05/2012,	JU,		Neuro Physics Approach to Study of Cognition of Language, Music and Mathematics – Relation between Quantum Mechanics and Higher Brain Function (HBF).	45
5)		Madhumita Mukhopadhyay			
	11/05/2012,	CGCRI,		An insight to the development of Ni-YSZ Cermet by electroless technique and its application in electrochemical device.	13
6)		Dr. Surajit Some			
	25/05/2012,	Dept. of Chemistry,	South Korea,	Synthesis of Graphene Derivatives and their application.	11
7)		Dr. Dipankar Mandal			
	15/06/2012,	JU,		A facile route of Palladium Nano particles (Pd-NPs) preparation, the electroactive β phase formation and the control of chain and dipole orientations in Pd-NPs doped poly (vinylidene fluoride) thin films.	10
8)		Dr. Atish Mitra			
	21/06/2012	University of South Florida,	USA,	Local and Global Viewpoints in Dimension Theory.	22

- 9) **Dr. Tamaghna K. Das**
06/07/2012, IACS , Kolkata, Towards understanding anelasticity: A microscopic approach. 12
- 10) **Dr. Gopinath Laha**
27/07/2012, Gurudas college, CU, Development of Real Number. 12
- 11) **Dr. Ashesh Nandy**
03/08/2012, Center for Interdisciplinary Research and Education and CMPRC (JU). An informal and selective view of mathematical analysis of DNA sequences and interactions. 8
- 12) **Tania Basu & Abhra Giri**
17/08/2012, JU And JU and St. Xavier's college, 1. Anomalous diffusion analysis by fractional calculus of solid Biopolymer Electrolyte 2. Studying fractal and multifractal nature of a real 3-D rock sample. 8
- 13) **Tajkera Khatun, Moutushi Dutta Choudhury**
21/09/2012, J.U 1. Formation of the crack pattern in the presence of Electric field: Experiment and Simulation; 2. Pattern formation of droplets of polymer gels in Sodium Chloride solution. 13
- 14) **Prof. Utpal De**
5/10/12, J.U. How does monsoon come back every year in India? 20
- 15) **Mr. Abhra Giri**
12/10/12, J. U. Application of Multifractal Analysis on rock samples and crystal aggregates. 8
- 16) **Dr. Bikash C. Gupta**
16/11/2012, Visva Bharati, Nanowires, nanotubes and their interaction with Semiconducting substrates. 13
- 17) **Ms. Kasturi Basu**
07/12/12, St. Xavier's College Importance of thermal effects on electronic correlations in elemental Plutonium. 8
- 18) **Prof. Manju Ray**
14/12/12, Bose Institute, Understanding of cancer and utmost necessity of a non-toxic anti-cancer drug. 12
- 19) **CMPRC Members**
01/02/13, CMPRC Lab Annual Meeting, 17
- 20) **Subrata Chandra**
08/02/13, J.U. Functional Magnetic Resonance Imaging (fMRI)- Physics and Application, 18
- 21) **Prof. Somak Raychoudhury**
05/03/13, Presidency College, Prof. Shyamal Sengupta memorial lecture, " Why we need to go to space to see the sky". 61
- 22) **Dr. Nabin Baran Manik**
08/03/13, J.U. Instrumentation From Basic to Modern Approach. 20

23) **1 Day seminar**

21/03/13, J.U., EXPERIMENTAL TECHNIQUES IN CONDENSED MATTER PHYSICS. 80

Recent Publications by Members:

1. Domain wall dynamics of the spin-1/2 Ising-like antiferromagnetic chain in presence of Dzyaloshinskii-Moriya interactions; **Asim Kumar Ghosh**, Eur. Phys. J. B **82**, (2011) 19–27.
2. Iron nanoparticles from an electrochemical route, **Ruma Ray**, S. Das, M. Patra and M. Thakur, Vol. 1 (2012) 1–8.
3. Magnetic properties of sol-gel derived Gd₂O₃ nanoparticles, **R. Ray**, Sumita Biswas, S. Das, and M. Patra, AIP Conf. Proc. 1447(2012)319.
4. Magnetic reminiscence effects in Fe / g-Fe₂O₃ nanostructures, S. Biswas, Sk. Sabyasachi, A. Bhaumik and **R. Ray**, IEEE T. Magnetics (**accepted, 2013**)
5. Existence of staggered fields in the Ising-like antiferromagnetic compounds CsCoCl₃ and CsCoBr₃, **Asim Kumar Ghosh**, J. Mag. Mag. Mat. **324** (2012) 2907–2913
6. Experiment and simulation of multifractal growth of crystalline NaCl aggregates in aqueous gelatin medium, **T Dutta, A Giri, M Dutta Choudhury, S Tarafdar**, Colloids and Surfaces A:Physico chem.Eng.Aspects 432 (2013) 127-131
7. Pattern formation in droplets of starch gels containing NaCl dried on different surfaces, **M DuttaChoudhury, T Dutta, S Tarafdar**, Colloids and Surfaces A:Physico chem.Eng.Aspects 432 (2013) 110-118
8. Study of diffusion and conduction in gamma irradiated solid polymer electrolytes by fractal model structure, **S. Ghosal, R.Ray, T. K. Ballabh, S. Tarafdar**, Indian Jour. Pure Appl. Phys. 51, 2013, 342-327
9. Ion-Conductivity Study and Anomalous Diffusion Analysis of Plasticized Gelatin Films, **Tania Basu, T. R. Middy, Sujata Tarafdar**, J. Appl. Polymer Sci. DOI: 10.1002/app.39431, 2013
10. Electric-field-induced crack patterns: Experiments and simulation, **Tajkera Khatun, Moutushi Dutta Choudhury, Tapati Dutta, S Tarafdar**, Phys. Rev. E **86** (2012), 016114
11. Morphology and Ion-Conductivity of Gelatin/LiClO₄ Films: Fractional Diffusion Analysis, **Tania Basu, Minakshi Maitra Goswami, T. R. Middy, S Tarafdar**, J. Phys. Chem B, **116**, 11362 (2012)
12. In Silico Study of Rotavirus VP7 Surface Accessible Conserved Regions for Antiviral Drug/Vaccine Design, **Ambarnil Ghosh, Shiladitya Chattopadhyay, Mamta Chawla-Sarkar, Papiya Nandy, Ashesh Nandy**, PLoS ONE 7(7): e40749. doi:10.1371/journal.pone.0040749 (2012).
13. Study of solvent dependence of Methyl Red C₆₀ based organic photovoltaic devices, **S Saha and N B Manik**, Thin Solid Films **520**, (2012) 6274–6281.
14. Enhancement of efficiency of Phenosafranine based organic photovoltaic devices using nano particles, **S Saha and N B Manik**, Indian J Phys **86(7)**, (2012) 605–611.
15. Transient current study in safranine-T dye based organic photo-electrochemical cell using exponentially distributed trap assisted charge transport model, **Md R Islam, S Saha, N B Manik and A N Basu**, Indian J Phys **86(12)**, (2012) 1101–1106.

16. Modification in martensite morphology and magneto-strain through rapid solidification and heat treatment of NiMnGaAl alloy, **Satnam Singh, R.K. Roy, M.Ghosh, N.B.Manik, A.Mitra, A.K. Panda**, J. Magnetism and Magnetic Materials **343**, (2013) 169-172.
17. Effect of temperature on the intensity and carrier lifetime of an AlGaAs based red light emitting diode, **P. Dalapati, N.B.Manik and A.N. Basu**, Journal of Semiconductors, **34(9)**, (2013) 0920011-15.

Ongoing Projects :

- | Title | Rs | Duration | Agency |
|---|--------------|---|-----------------------------------|
| 1. Effect of competing mechanical and electromagnetic perturbation on formation of surface cracks, Indian PI- S. Tarafdar, CI – T. Dutta with Dr. Akio Nakahara, Nihon University, Japan. | 4 lac, | 22 months, starting June 2011, | DST-JSPS No.DST/INT/JSPS/P-128/11 |
| 2. MINERAL-FLUID INTERACTION MODEL FOR CO ₂ SEQUESTRATION PI- T. DUTTA, CI – S. Tarafdar, French Collaborator: Prof. Phillipe Gouze, Montpellier | 10 lac | Duration: Three years (January, 2010 to December, 2013, | CEFIPRA-IFCPAR (Project 4409-1) |
| 3. Synthesis and characterization of magnetic nanoparticles, PI- Ruma Ray, JU | 2 lac, | 2012-2014, | UGC |
| 4. Studies on Heisenberg spin chains in presence of interactions and fields, PI – Asim K.. Ghosh. | 14 lac | 2011-2013, | DSTDO no SR/S2/CMP-23/2010 |
| 5. COMPUTER SIMULATION AND EXPERIMENTAL STUDY OF GAMMA IRRADIATED SOLID POLYMER ELECTROLYTESPI- Ruma Ray (Gurudas College), | 8 lac. | 3 years | 2012, UGC |
| 6. An In Silico Study On Interdependence Between Hemagglutinin And Neuraminidase Subtypes In The Propagation Of Viral Infection.PI – Sukhen Das, | 2 years | 2012-14, | CSIR, 27(0255)/12/EMR-II |
| 7. Studies on Heisenberg spin chains in presence of interactions and fields, PI – Asim K. Ghosh | 14 lac, | 2011-2013, | DST DO no SR/S2/CMP-23/2010 |
| 8. STUDY OF THE LOW TEMPERATURE PERFORMANCE OF IR EMITTER AND PHOTODETECTORS APPLICABLE AT SPACE AND DEFENCE RESEARCHPI: Nabin Baran Manik | 15.656 lac, | 2011-2014, | DRDO |
| 9. STDY ON THE EFFECT OF DIFFERENT NANO PARTICLES ON CRYSTAL VIOLET DYE BASED ORGANIC PHOTOVOLTAIC CELLPI: Nabin Baran Manik | 12 lac | 2012-2015 | CSIR |
| 10. STUDY ON THE EFFECT OF CARBON NANOTUBES ON ORGANIC SOLAR CELLPI: Nabin Baran Manik | 11,24,800.00 | 2012-2015 | UGC |

Invited Talks/Sessions Chaired by Members

1. **Ashesh Nandy** – Invited Talk: Graphical and numerical representations of bio-molecular sequences and their applications. Presented at 7th Indo-US Workshop on Mathematical chemistry, PRIST University, Thanjavur, December 4-6, 2012.
2. **Ashesh Nandy** - Session Chair: Session 4, Wednesday Dec 5, 2012. 7th Indo-US Workshop on Mathematical chemistry, PRIST University, Thanjavur, December 4-6, 2012
3. **Sujata Tarafdar** - 'Crack formation during desiccation under an electric field', at 24th October 2012 in "Hakone Workshop on Cracks", Hakone, Japan

4. **Sujata Tarafdar** - 'Squeeze flow experiments on Newtonian and non-Newtonian fluids', invited talk at "Nonlinearity Workshop in Tottori 2012", 30th October, 2012
5. **Sujata Tarafdar** – 'The effect of electric field on crack formation patterns in drying Laponite' – FRACMEET-2013, Defects and Heterogeneities in Fracture and Flow, MatScience, Chennai 21-24 Jan, 2013.
6. **Nabin Manik** - Presented paper for oral presentation -"Estimations of carrier lifetime of various photodetectors by using OCVD measurement technique" in NCRDE 2013, New Delhi. (The paper was awarded 'Best Oral Presentation').
7. **Nabin Manik** - Poster presentation at Jadavpur University of paper entitled " Forward bias current-voltage(I-V) characteristics of GaAsP/GaP double heterostructures yellow light emitting diode".

COUNSELLING SERVICES & STUDIES IN SELF-DEVELOPMENT

[Dept. of Philosophy]

Int. : 2457-2481

Coordinators : Dr. Soumitra Basu & Professor Sadhan Chakraborti

Founder & External Expert : Prof. Madhabendranath Mitra

1. A. Courses Offered/Name of the Course/Duration of the Course/No. of Student

A. Basic Skills in Counselling for Interpersonal Conflict Management : **1 Year, 24**

B. UGC Approved three year (Certificate / Diploma /Advanced Diploma) Career Oriented Course on Stress Management : **3 Years, 24**

B. Number of Faculty Members **A.** **5**

B. **10**

2. A. Area of Research Activities Stress Management

B. Major Research Project Management of Stress of Students in Higher Educational Institutions of west Bengal Under UGC – UPE II CR & SS Programme.

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

Two day Seminar on Psycho-Social Dimensions of Aggression, March, 2013

Workshop : Workshop with students of each department of Engineering faculty and Science faculty on Curbing the Menace of Ragging

6. Major Achievements:

5 years Research Project on Management of Stress of Students in Higher Educational Institutions of West Bengal awarded by UGC under UPE – CR & SS Programme

EUROPEAN STUDIES

[Department of History]

Int : 2457-2079/2281

Coordinators : Dr. Kaushik Roy
Dr. Samarpita Mitra

The Centre for European Studies organised 'Remembering Eric Hobsbawm: a tribute' on 29 January 2013 at the Vivekananda Hall. Professor Subhash Ranjan Chakraborty (formerly of Presidency College, Kolkata) chaired and initiated the session with introductory observations. The other speakers who participated in the panel were Professor Harivasudevan (Calcutta University), Dr. Hintendra Patel (Rabindra Bharati University) and Professor Vijay Prashad (George and Martha Kellner Chair in South Asian History and Professor of International Studies, Trinity College, USA).

The panel was coordinated by Dr. Suchetana Chattopadhyay and Dr. Samarpita Mitra with administrative and financial assistance provided by Professor Anuradha Roy, Head, Department of History and Professor Amit Bhattacharyya, Coordinator, UGC-DRS Programme.

At the end of March 2013, Dr. Suchetana Chattopadhyay resigned from the Joint Coordinatorship of the Centre and her responsibilities were handed over to Dr. Samarpita Mitra, the new Joint Coordinator.

EXPERIMENTS IN SOCIAL & BEHAVIORAL SCIENCES

[Department of Economics]

Int.: 2457-2459

Coordinator: Prof. Gautam Gupta

Research Projects Undertaken:

1. Rich versus Poor in a Centipede Game (Completed)

2. Expectation Formation for Inflation and Output Gap (Completed)
3. Role of Leadership in Community Actions (Completed)
4. Regeneration of Common Pool Resources: Experimental Evidence from Indian Sundarbans.

Deliverables

1. Wealth difference In Centipede Game: Backward induction in an Experimental Economics Framework: Sanjukta Basu, Santanu Mitra and Gautam Gupta (published in International Journal of Humanities and Social Sciences; Vol. 3, No.10, May 2013)
2. Heterogeneity in Expectation formation and Monetary Policy in New Keynesian Economy Framework: Evidence from Laboratory Experiment (Abhishek Das, Arpita Ghosh and Gautam Gupta) Communicated

Conference

Two Day conference to commemorate the Birth Centenary of Alan Mathison Turing on 18-19 December 2012, titled *Beyond the Obvious: Conference to commemorate the birth Centenary of Alan Mathison Turing*

Speakers: Pathik Guha, Shaymol Chakravarty, Simanti Banerjee, Santanu Mitra, Mihir Chakravarty, Lopamudra Choudhury, Rianka Roy and others followed by a biopic on Alan Turing.

Research Projects Ongoing/Planned

1. Expectation formation and Monetary Policy in Overlapping Generation Model Framework :Evidence from Laboratory Experiment (Ongoing)
2. Field Experiment to Investigate Trust in Public Good Creation (Ongoing)
3. Role of Leadership in Community Actions (Ongoing)

One Two Day International Conference on Experimental Economics to be held 23-24 December 2013.

HUMAN SETTLEMENT PLANNING

[Dept. of Architecture]

Int. : 2457-2425

Coordinator : Prof. Tapas Kr. Bhattacharya

1. Year of establishment of the Centre (relevant E.C. resolution, if applicable): 1995
 2. Name of the department with which the Centre is currently associated (only for the Centres under the departments/schools) Department of Architecture
 3. Number of faculty members from JU involved: One
 4. Number of guest faculties involved: Nil
 5. Number of employees (full time) working in the Centre:
- (a) Trainers:

- (b) Technical Staff:
- (c) Office Staff:
- (d) Others: (Please specify with designations)
- 6. Number of employees (part time) working in the centre: (Specify the levels along with designations):
- 7. Procedure for recruiting the full time and part time employees:

Details About Courses Offered by the Centre

Sl. No./Name of the Course/Level of the Course (Certificate/ diploma/ Course PG diploma/ others (specify)/Duration of the Course/Course fee per student (for the entire Duration Procedure for approving the curriculum

- 1. SUPERVISION OF CONSTRUCTION SITES Certificate 10 weeks Rs. 6,000/- Through Executive Council approval

Details about the Projects Currently Being Carried out by the Centre

Title of the Project

Funding Agency Duration

Fund Allocated

No. of Faculty Members Involved (PI and Co-PI)

No. of Students Working at Masters level

No. of Students Working at Doctoral/Post Doctoral Level

2. Members NIL

IC DESIGN & FABRICATION

[Department of ETCE]

Int. : 2457-2406

Coordinator : Prof. Chandan Kumar Sarkar

1. Current Research Activities:

- a) MEMS based metal oxide gas sensors
- b) Design and Simulation of RF MEMS based filters
- c) MEMS based pressure sensors
- d) CMOS-MEMS integration and signal conditioning of gas sensors.
- e) Design and optimization of Low power VLSI circuits
- f) Design and simulation of Analog/Mixed signal circuits, data converters.

- g) Study of nano-crystalline silicon, Zinc oxide and titanium-di-oxide and their applications and gas sensors.
- h) Graphene synthesis and its application in gas sensor

2. No. of Students Who Applied and Got Admitted in Last 3 Years:

Course Name: Doctor of Philosophy

Applied : 5, Admitted: 5

3. Non-Teaching Staff:

Name Designation/Pay-Scale/Qualification/Nature of Duty

Ashoke Kumar Mondal

Sr. Technical Assistant, Basic Salary Rs, 24,240/-(Based on April 2012). B.Sc.(H). Technical Assistance

Bikash Bhowmik

Sr. Assistant, Basic Salary Rs, 18,140/-(Based on April 2012) B.Com. Junior Assistant

Kamal Das

Peon, Rs. 4,800/-(Fixed), H.S., Laboratory Maintenance & Other

4. List of Faculty Members:

Name & Designation/HighestQualification/Specialization/Exp/Age/Sex/Address

Prof. C.K. Sarkar

Professor & Co-ordinator, Ph.D., Device, Nanotechnology, 26, 58, M, Dept. of E.T.C.EJadavpur University, Kolkata – 700032.P: 033-26531576M: 9830347545E-mail: phyhod@yahoo.co.in

Prof. S.K. Sanyal

Professor, Ph.D., Digital Communication & Signal Processing, 26, 58, M, Dept. of E.T.C.E, Jadavpur University, Kolkata – 700032.M: 9433026007E-mail: salil_kumars@hotmail.com

Prof. S.K. Sarkar

Professor & Co coordinator, Ph.D. Device, 23, 53, M Dept. of E.T.C.E. Jadavpur University, Kolkata – 700032. M: 9830468007 E-mail: su_sarkar@hotmail.com

Prof. Amit Konar

Professor, Ph.D. Artificial Intelligence, 23, 49, M, Dept. of E.T.C.EJadavpur University, Kolkata–700032. P: 033 24136479, E-mail: konaramit@yahoo.com

Prof. Bhaskar Gupta

Professor, Ph.D, Microwave, 23, 49, M, Dept. of E.T.C.EJadavpur University, Kolkata – 700032. M: 9433034675E-mail: gupta_bh@yahoo.com

Prof. Mrinal Kanti Naskar

Professor, Ph.D. Computer Networks, 23, 48, M, Dept. of E.T.C.E, Jadavpur University, Kolkata–700032. M: 9433276385E-mail: mrinalnaskar@yahoo.co.in

Prof. (Mrs.) Chayanika Bose

Associate Professor, Ph.D. Electron Device, Communication , 26, 54, F, Dept. of E.T.C.E
Jadavpur University, Kolkata – 700032.M: 933046041, E-mail: chayanikab@yahoo.com

Mr. Sayan Chatterjee

Asst. Professor, M.E. Microwave, 3, 31, M, Dept. of E.T.C.E Jadavpur University, Kolkata – 700032. M:
9433032909, E-mail: sayan1234@gmail.com

5. List of Publications:

A. Journal Papers

- 1] A. Hazra, S. Das, J. Kanungo, E. Bontempi, C. K. Sarkar, P. Bhattacharyya & S. Basu "Influence of temperature, voltage and hydrogen on the reversible transition of electrical conductivity in sol-gel grown nanocrystalline TiO₂ thin film". Journal of Material Science: Materials in Electronics (2012), pp. 1-6, doi:10.1007/s10854-012-0991-3.
- 2] Z. Darmastuti, P. Bhattacharyya, M. Andersson, J. Kanungo, S. Basu, P.-O. Käll, L. Ojamäe, A. Lloyd Spetz, "SiC-FET methanol sensors for process control and leakage detection". Accepted in Sensors and Actuators B (2013).
- 3] A. Hazra, S. Das, J. Kanungo, C. K. Sarkar, P. Bhattacharyya & S. Basu "Fast hydrogen detection by a resistive gas sensor based on sol-gel grown nanocrystalline p-TiO₂ thin film". Sensors and Actuators B 183 (2013) 87–95.
- 4] J. Kanungo, C. K. Sarkar, S. Basu "Comparative study of Pd modified ZnO/p-Si and ZnO/PS/p-Si hetero structure for hydrogen detection". Accepted in Sensor Letters (2013).
- 5] Buddhadev Pradhan and Bhaskar Gupta, "Comb-Line Notch Filter Design on Silicon Coplanar Transmission Line", International Journal of Scientific and Engineering Research (IJSER), vol. 3, issue 6, pp. 1-5, June 2012.
- 6] Buddhadev Pradhan and Bhaskar Gupta, "K_u-Band RF MEMS Tunable Comb-Line Band-Reject Filter on Coplanar Transmission Line", International Journal of Electronics and Communications (AEU), vol. 67, issue 6, pp. 463-469, January 2013.
- 7] S. Roy, C.K. Sarkar, P. Bhattacharyya "A highly sensitive methane sensor with nickel alloy microheater on micromachined Si substrate". Solid-State Electronics, Vol.76, pp.84–90, 2012.
- 8] S. Roy, C.K. Sarkar, P. Bhattacharyya , "Ultrasensitive Pd–Ag/ZnO/Nickel Alloy-Based Metal–Insulator-Metal Methane Sensor on Micromachined Silicon Substrate," IEEE Sensors Journal, Vol.12, No.7, pp.2526-2527, July 2012.
- 9] S. Roy, C. K. Sarkar, and P. Bhattacharyya. "Low Temperature Fabrication of a Highly Sensitive Methane Sensor with Embedded Co-Planar Nickel Alloy Microheater on MEMS Platform", SENSOR LETTERS (ASP), Volume 10, Numbers 3-4, pp. 760-769(10), March/April 2012.
- 10] S.Roy, N.Banerjee , C.K.Sarkar, P.Bhattacharyya. "Low temperature Ethanol Sensor based on CBD grown ZnO nanorods", Solid-State Electronics vol. 87, pp. 43-50, (2013).
- 11] N. Banerjee, S. Roy, Member, IEEE, C.K.Sarkar, Senior Member, IEEE, P. Bhattacharyya, Member, IEEE. "High Dynamic Range Methanol Sensor based on Aligned ZnO Nanorods" IEEE Sensors Journal (IEEE) vol. 13, pp.1669-1676, (2013).

- 12] N. Banerjee, B. Bhowmik, S. Roy, C. K. Sarkar, P. Bhattacharyya. "Anomalous Recovery Characteristics of Pd Modified ZnO Nanorod Based Acetone Sensor", Accepted in Journal of Nanoscience & Nanotechnology (2013).
- 13] Amrita Chakraborty, Avra Kundu, Sayan Chatterjee & Bhaskar Gupta, "Design of Compact RF MEMS phase shifters based on space – filling curves", Accepted in the journal of the Institute of smart structures & systems 2012 (JISSS-2012), Vol.1, September 2012.
- 14] Rituparna Dasgupta, Dipankar Saha, Jagannath Samanta, Sayan Chatterjee, Chandan Kumar Sarakar, " Implementation of a New Offset Generator Block for the Low-Voltage, Low-Power Self Biased Threshold Voltage Extractor Circuit", Book Title: Progress in VLSI Design and Test, LNCS, vol. 7373, Springer Berlin Heidelberg.
- 15] Dipankar Saha, Subhramita Basak, Sagar Mukherjee, Sayan Chatterjee, C. K. Sarkar, "Implementation of the Cluster based Tunable Sleep Transistor Cell Power Gating Technique for a 4x4 Multiplier Circuit", International Journal of Computer Applications (0975-8887), vol. 66, no. 23, March, 2013

B. Conference Papers:

- 1] Buddhadev Pradhan and Bhaskar Gupta, "Comb-Line Notch Filter Design on Silicon Coplanar Transmission Line", International Conference on Emerging Trends (IEEE) (ICET 2012), 25th-27th March 2012, NIT Durgapur.
- 2] Buddhadev Pradhan, Amrita Chakraborty and Bhaskar Gupta, "Residual Stress Analysis in RF MEMS Comb line Band Reject Filter", Proc. International Conference on Communications, Devices and Intelligent Systems (IEEE) (CODIS 2012), 28th - 29th December 2012, Jadavpur University, Kolkata.
- 3] Amrita Chakraborty, Avra Kundu, Sayan Chatterjee & Bhaskar Gupta, "Design of compact RF MEMS phase shifters based on space filling curves", Proceedings of the 6th ISSS International conference on smart materials, structures & systems, 4th to 7th January 2012, IISc Bangalore.
- 4] Sunipa Roy, P.Bhattacharyya, C. K. Sarkar, " ZnO nanoflake based Metal Insulator-Metal Methane Sensor for underground Coalmine Application" Proc. International Conference on Communications, Devices and Intelligent Systems (IEEE) (CODIS 2012), 28th - 29th December 2012, Jadavpur University, Kolkata.
- 5] S.S.Mondal, Sunipa Roy, C. K. Sarkar, " Design and Electrothermal analysis of MEMS based Microheater Array for Gas Sensor using INVAR alloy" Proc. International Conference on Communications, Devices and Intelligent Systems (IEEE) (CODIS 2012), 28th - 29th December 2012, Jadavpur University, Kolkata.
- 6] Avisekh Ghosh, Sunipa Roy, C. K. Sarkar, " Design and Simulation of Piezoresistive pressure sensor with enhanced sensitivity", Proc. International Conference on Energy efficient Technologies for Sustainability (ICEETS13), St .Xavier's Catholic College of Engineering , Nagercoil ,Tamil Nadu.
- 7] N. Banerjee, Sunipa Roy, C. K. Sarkar P.Bhattacharyya, "Pd Modified ZnO Nanorod based High Dynamic Range Hydrogen Sensor", Proc. IEEE International Conference on Nanotechnology, 20-22th August, 2013 China [Accepted].
- 8] Rituparna Dasgupta, Dipankar Saha, Jagannath Samanta, Sayan Chatterjee, Chandan Kumar Sarakar, " Implementation of a New Offset Generator Block for the Low-Voltage, Low-Power Self Biased Threshold Voltage Extractor Circuit", Proceedings of the 16th International Symposium on VLSI Design and Test (VDAT), July, 2012.

- 9] Sagar Mukherjee, Dipankar Saha, Posiba Mostafa, Deepon Saha, Sayan Chatterjee, C. K. Sarkar, "A Low Power, High Speed, IF Range Flash Type ADC designed with the concept of TMCC and Binary Counter", IEEE INDICON, Dec., 2012.
- 10] Subhramita Basak, Dipankar Saha, Sagar Mukherjee, Sayan Chatterjee, C. K. Sarkar, "Design and Analysis of a Robust, High Speed, Energy Efficient 18 Transistor 1-bit Full Adder Cell", IEEE International Symposium on Electronic System Design (ISED), Dec., 2012.
- 11] Sagar Mukherjee, Dipankar Saha, Posiba Mostafa, Sayan Chatterjee, C. K. Sarkar, "A 4-bit Asynchronous Binary Search ADC for Low Power, High Speed Applications", IEEE International Symposium on Electronic System Design (ISED), Dec., 2012.
- 12] Dhruvajyoti Basu, Sagar Mukherjee, Dipankar Saha, Sayan Chatterjee, C. K. Sarkar, "An Optimized Analog Layout for a Low Power 3-bit Flash Type ADC modified with the CMOS Inverter based Comparator Designs", IEEE International Conference on Circuit, Power and Computing Technologies (ICCPCT), March, 2013.

6. Current Research Projects:

Title of the Project/Investigator/Supervising Agency

Special Manpower Development Programme for VLSI Design and Related Software (SMDP-II). Prof. C.K. Sarkar, Ministry of Communications and Information Technology, Govt. of India

Development of Graphene Based Hydrogen Sensor, Prof. C.K. Sarkar, Council of Scientific and Industrial Research, Govt. of India.

7. Workshop Organized:

- A) Special Manpower Development Project (SMDP-II) organized a workshop on "CMOS & beyond CMOS circuits and system design" (18th – 21st March 2013) in association with IEEE EDS chapter Kolkata section and synopsis (India) EDA software Pvt. Ltd.
- B) Organized a summer training course on VLSI Design & Microelectronics Technology from June 2012 to July 2013 (Total B.Tech. Students 100).

8. Major Achievements:

A) Post Doctoral Research Student

Sl.No.	Name of the Candidates	Year	Topics
1.	Jayita Kanungo Research Associate (Council of Scientific and Industrial Research, Govt. of India), 2012-2013, Efficient gas sensors by nanoimprinting method for room temperature detection of volatile toxic organic compounds		

B. Ph. D. Students

Sl.No.	Name of the Candidates	Year	Topics
1.	Sunipa Roy Sensor	2012-2013	Chemical
2.	Subhasis Prodhan Sensor	2012-2013	Chemical

3.	Amrita Chakraborty	2012-2013	MEMS
4.	Buddhadev Pradhan	2012-2013	RF MEMS
5.	Kousik Roy	2012-2013	Chemical

Sensor

C. M.Tech Thesis Completed

Sl.No.	Department	Name	Guide	Topics
1.	ETCE	Dhrubajyoti Basu	Prof. C.K. Sarkar	A study on reduction of power high speed ADCs
2.	ETCE	Dipankar Saha	Prof. C.K. Sarkar	Implementation of different level design techniques the leakage
3.	ETCE	Avisekh Ghosh	Prof. C.K. Sarkar	Design simulation and of MEMS based using finite
4.	ETCE	Subrata Suvra Mondal	Prof. C.K. Sarkar	Development of MEMS based planar micro heater element

INDOLOGY

[Dept. of Sanskrit]

Int. : 2457-2084

Coordinator: Prof. Debarchana Sarkar

Jt. Coordinator: Prof. Sarbani Ganguli

___As Coordinator of Centre for Indology published *Tarkasaūgraha* edited by Sarbani Ganguli under the auspices of the Centre for Indology, Jadavpur University. Printer: Sanskrit Book Depot, Kolkata, March 2013 (ISBN 978-93-81795-37-8)

KNOWLEDGE BASED SYSTEMS

[Dept.of Electrical Engg.]

Int. : 2457-2825

Coordinator : Dr. Smita Sadhu

Number of Faculty Members:

Academic committee constitutes 5 members apart from the chairman.

Area of Research Activities:

Design and research in the areas of Real Time Computer Control Systems and Safety Critical and High Consequence software, estimation and filtering techniques, design review and audit of aero engine control system, aircraft stabilization, railway signaling and interlocking systems.

Major Research Projects:

S.Sadhu, T.K.Ghoshal, K.Datta, A. Acharya, Fault Detection and Identification for Nonlinear Hybrid Plants, funded by Advanced Systems Laboratory, DRDO, Hyderabad.

Articles Published/Communicated:

1. Manasi Das, Smita Sadhu, T.K.Ghoshal, FDI of a Satellite INS using Nonlinear Adaptive Filters, submitted to Journal of Aerospace Information Systems, AIAA, 2013.
2. Aritro Dey, S. Sadhu, T.K. Ghoshal, Joint Estimation of Parameter and State of Nonlinear System using Adaptive Divided Difference Filter, accepted for Second Michael Faraday IET India Summit, 17 Nov, 2013.
3. Manasi Das, Smita Sadhu, T. K. Ghoshal, An Adaptive Sigma point Filter for Nonlinear Filtering Problems, accepted for Second Michael Faraday IET India Summit, 17 Nov, 2013.
4. Sayanti Chatterjee, Smita Sadhu, T.K.Ghoshal, State and mode estimation of a nonlinear hybrid system using a self-switched sigma point filter, accepted for Second Michael Faraday IET India Summit, 17 Nov, 2013.
5. Sudeshna Dasgupta, Smita Sadhu, T.K.Ghoshal, Decoupling Internal Model Controller Design of Distillation Column System, accepted for Second Michael Faraday IET India Summit, 17 Nov, 2013.
6. Chandrani Sadhukhan, Smita Sadhu, Tapan K. Ghoshal, Robust Fault Detection of Nonlinear Hybrid System using Risk Sensitive Unscented Kalman Filter, First Michael Faraday IET India Summit, Kolkata, November, 2012.
7. Sabyasachi Mondal, Smita Sadhu, Platform motion disturbances attenuation in a Missile Seeker subsystem using Internal Model Control, accepted for First International Conference on Control, Automation, Robotics and Embedded systems (CARE-2013), Jabalpur, 16-18 Dec, 2013.

Interaction with Other Institutions/Organizations

1. **Prof.Smita Sadhu is a Member of the Expert Committee for the review of existing programs under SAP, UGC and attended a review meeting at UGC, New Delhi on 24 September, 2012.**

2. Prof. Smita Sadhu was a member of the International Liaison Committee for the 15th International Conference on Information Fusion (Fusion 2012) held at Singapore during 9-12 July 2012.
3. Prof. Smita Sadhu was a member of the Technical Program Committee for the 15th International Conference on Information Fusion (Fusion 2012) held at Singapore during 9-12 July 2012.
4. Prof Smita Sadhu acted as External Examiner for evaluation of M.E. thesis at the Department of Electrical Engineering, BESU, Howrah in April, 2012.
5. Prof Smita Sadhu is an External expert for the Ph.D. Committee of two candidates enrolled at the Department of Electrical Engineering, BESU, Howrah.
6. Prof. T.K. Ghoshal has chaired meetings at DRDL/RCI/ASL Hyderabad.
7. Prof. T.K. Ghoshal attended DRDO review meetings at Bangalore.
8. Prof. T.K. Ghoshal is Member, Academic Committee of Jagadish Bose National Science Talent Search.
9. **Prof. Smita Sadhu acted as reviewer for IEEE Transactions on Aerospace and Electronic Systems, IEEE Transactions on Control Systems Technology, Elsevier Aerospace Science and Technology and many IEEE conferences.**
10. Prof. Smita Sadhu has attended a Project Review meeting at DRDL Hyderabad on 28 August, 2012.

Major Achievements

Prof. Tapan Kumar Ghoshal (Hon. Emeritus Professor) has been awarded the prestigious DRDO Academy Excellence Award, 2012 for evolving processes for independent verification and validation of control laws for the Indian Light Combat Aircraft (LCA) and his contributions to the field of control and guidance of Indian missiles and combat aircrafts.

MATHEMATICAL BIOLOGY & ECOLOGY

[Dept. of Mathematics]

Phone: +91-33-2414-6717

Int.: 2457-2743/2744

Coordinator : Dr. Nandadulal Bairagi

Jt. Coordinator :Dr. Dipak Kumar Kesh

1. **Courses Offered:** Centre for Mathematical Biology and Ecology, Department of Mathematics, offers Mathematical Biology as a special paper in the Final M.Sc.

2. A. Areas of Research Activities (Broad Areas)

- (a) Mathematical Ecology,
- (b) Epidemiology,
- (c) Bioeconomic modeling of exploitation of natural resources,
- (d) Marine ecosystems,
- (e) Pest management,
- (f) Physiology and

(g) Environment & sustainable development.

B. Ongoing Research Projects:

Sl. No. Title of the Project/Funding Agency Duration/Name of Faculty Members Involved (PI and Co-PI)/No. of Students Working at Doctoral Level

- 1 *Mathematical Models in Food Webs, Neural Networks and Eco-epidemiology*, DST(PURSE) 2009-2012, Prof. A. K. Sarkar, Dr. N.C.Majee, Dr. D. K. Kesh and Dr. N. Bairagi (Coordinator). Nil
- 2 *Biodynamical Model of HIV: A Control Based Theoretical Approach*, DST, 2009-2013, Dr. P.K.Roy (PI). One
- 3 *Study on non linear dynamics to control the disease of Jatropha Curcas plant and to optimize biodiesel production from Jatropha oil.* UGC 2012-20114, Dr. P.K.Roy (PI)
- 4 *Cytokine Regulatory Effect in Psoriasis: Control Based Mathematical Study*, CSIR, 2012-2015. Dr. P.K.Roy (PI)

3. A. Invited Lectures Delivered/Session Chaired:

Name of the Teacher/Type of Participation/Name of the Seminar/Conferences/Place/Duration

Dr. Nandadulal Bairagi

Invited Talk, National Conference on Recent Advances of Mathematics and its Applications Indian School of Mines, Dhanbad, 16-18 February 2013

Dr. Nandadulal Bairagi

Invited Talk, Special Seminar on Biomathematics, University of Stirling, Scotland, 1st July, 2012.

Dr. Nandadulal Bairagi

Contributory Talk, International Conference on System Biology and Bioengineering, Imperial College, London 4-6 July, 2012

Dr. Nandadulal Bairagi

Chaired a Session, International Conference on System Biology and Bioengineering, Imperial College, London 5th July, 2012

Dr. Priti Kumar Roy

Invited Talk, International Conference on Mathematical Methods and Models BIOMATH 2012 Sofia, Bulgaria. 17 – 22th June 2012

Dr. Priti Kumar Roy

Invited Talk, An Overview of the Disease Psoriasis and its Control through Mathematical Approach Budapest University of Technology and Economics, June 22, 2012

Dr. Priti Kumar Roy

Invited Talk, T-Cell Proliferation on Immunopathogenic Mechanism of Psoriasis: A Control Based Theoretical Approach. 5th Podlasie Conference on Mathematics in Bialystok University of Technology, Bialystok, Poland, 25th -28th June 2012

Dr. Priti Kumar Roy

Chaired a Session, Role of Biomathematics through Modelling and Control, 5th Podlasie Conference on Mathematics in Bialystok University of Technology, Bialystok, Poland, 25th -28th June 2012

Dr. Priti Kumar Roy

Invited Talk, Feedback Effect in Bidirectional Disease Transmission in Cutaneous Leishmaniasis, Mathematics Department, 11-14th January 2012

Dr. D. K. Kesh

Chaired a Session, ISI Kolkata and Biomathematical Society of India, ISI Kolkata, 12th January 2012.

C. Awards/ Achievements

1. Dr. Priti Kumar Roy was received Sikha Ratan Puraskar 2012 awarded by India International Friendship Society.

D. Seminar/Conference Organized:

Name of the Seminar / Conference	Organized by	Place	Duration
----------------------------------	--------------	-------	----------

Dr. P. K. Roy acted as a Joint Secretary of the International Conference, "India Biodiversity Meet 2013", ISI Kolkata and Biomathematical Society of India, ISI Kolkata. 11-14th January 2012.

Dr. N. Bairagi acted as an Executive Secretary in the International Conference, "India Biodiversity Meet 2013", ISI Kolkata and Biomathematical Society of India, ISI Kolkata 11-14th January 2012.

Dr. D. Kesh acted as a Joint Secretary of the International Conference, "India Biodiversity Meet 2013", ISI Kolkata and Biomathematical Society of India. ISI Kolkata, 11-14th January 2012.

D. Articles Published:

1. **Bairagi, N.** and Adak, D.: *How self proliferation of CD4+T cells affect the HIV dynamics in a in-host target-cell limited HIV model with saturation infection rate: A quasi-steady state approximation analysis*. **Int. J. Biomathematics**, 6(2), 60-104, **2013**.
2. Jana, D and **Bairagi, N.**: *Habitat complexity, Stochasticity and the stability of predator-prey interactions*. **Journal of Control Engineering and Technology**, 3(2), 76-83, **2013**.
3. Chaudhuri, S. and **Bairagi, N.**: *Study of ecological model of two symbionts under different biological aspects*. **The Journal of Ecology, Photon**, 107, 190-199, **2013**.
4. Chakraborty, S., Pal, S. and **Bairagi, N.**: *"Predator-prey fishery model under deterministic and stochastic environments: a mathematical perspective"*. **Int. J. Dyna. Systems and Differential Eqn.**, 4(3), 215-241, **2012**.
5. Jana, D., Chakraborty, S. and **Bairagi, N.**: *Stability, Nonlinear Oscillations and Bifurcation in a Delay-Induced Predator-Prey System with Harvesting*. **Engineering Letters**, 20(3), 238-246, **2012**.
6. **Bairagi, N.** and Jana, D.: *"Age-structured predator-prey model with habitat complexity: oscillations and control"*. **Dynamical Systems**, 27(4), 475-499, **2012**.
7. **Roy Priti Kumar**, Chatterjee_A N, Biswas Majee S: "Effect of Chemokine Analog through Perfect Adherence in HIV Treatment: A Model Based Study", International Journal of Applied Mathematics and Applications, Vol. 4, No. 2, pp. 121-145, 2012.
8. **Roy Priti Kumar**, Nandi S, Sil N, Bhattacharya S: "Insight of T Cell Proliferation in the Estimation of Expected Time to Extinction of the Disease HIV/AIDS", International Journal of Applied Mathematics, Volume 25, No. 6, pp.779-792, 2012.

9. Mondal J, **Roy Priti Kumar**, Biswas Majee S, Bhattacharya R.: "MATHEMATICAL MODELING OF IMPACT FOR ANTIGENIC STIMULATION ON T-CELL HOMEOSTASIS DURING PRIMARY HIV INFECTION", Bulletin of Calcutta Mathematical Society, Volume 104, No. 5, pp. 393- 408, 2012.
10. Mondal J, Biswas Majee S, **Roy Priti Kumar**: "Feedback Effect in Bidirectional Disease Transmission in Cutaneous Leishmaniasis", American Journal of Mathematics and Sciences, Vol.2, No.1, pp. 85-92, 2013.
11. **Roy Priti Kumar**, Chowdhury S: "Mathematical Modeling of Enfuvirtide - IL-2 Administration in Impulsive Mode for HIV-1 Treatment, American Journal of Mathematics and Sciences, Vol.2, No.1, pp. 93- 103, 2013.
12. **Roy Priti Kumar**, Datta A: "Mathematical Study on T-Cell Proliferation in the Chronic Plaque of Psoriasis", American Journal of Mathematics and Sciences, Vol.2, No.1, pp. 133- 140, 2013.
13. Chatterjee A. N, **Roy Priti Kumar**, Jayanta Mondal: "Mathematical Model for Suppression of Sand Flies Through IRS with DDT in Visceral Leishmaniasis", American Journal of Mathematics and Sciences, Vol.2, No.1, pp. 105- 112, 2013.
14. Nandi S, Ghosh M K, **Roy Priti Kumar**, "Analysis of Enzyme Kinetics By Mathematical Study", American Journal of Mathematics and Sciences, Vol.2, No.1, pp. 113- 121, 2013.
15. **Roy Priti Kumar**, Sil N, Datta A, Rana S, Nandi S, "A Fractional Order Differential Equation Model of Psoriasis In Presence of Suppression on Dendritic Cells", American Journal of Mathematics and Sciences, Vol.2, No.1, pp. 123- 131, 2013.
16. **Roy Priti Kumar**, Bhattacharyya R, Chatterjee A. N, Ghosh M K, Nandi S, "Optimization of Enzymatic Product By Mathematical Control Approach ", American Journal of Mathematics and Sciences, Vol.2, No.1, pp. 141- 149, 2013.
17. **Roy Priti Kumar**, Chatterjee A. N., Greenhalgh D., Khan Q. J. A., "Long term dynamics in a mathematical model of HIV-1 infection with delay in different variants of the basic drug therapy model", Nonlinear Analysis: Real World Applications, Vol.14, Issue 3, pp. 1621-1633, 2013.
18. **Roy Priti Kumar**, Chatterjee A. N., Biswas Majee S, "Immune Cell Response to Negative Feedback Effect on HIV", Biomedical Engineering Research, Vol.2, Issue 1, pp. 37-47, 2013.
19. **Roy Priti Kumar**, Datta A: "IMPACT OF CYTOKINE RELEASE IN PSORIASIS: A CONTROL BASED MATHEMATICAL APPROACH", Journal of Nonlinear Evolution Equations and Applications, Vol.2013, No.3, pp. 23- 42, 2013.
20. **Roy Priti Kumar, Datta A**: "Impact of Perfect Drug Adherence on Immunopathogenic Mechanism for Dynamical System of Psoriasis", BIOMATH, Vol.2, 1212101, pp. 1- 6, 2013.
21. **Roy Priti Kumar**, Bhadra J, Datta A: "Comparative Study of the Suppression on T-Cells and Dendritic Cells in a Mathematical Model of Psoriasis: Control Therapeutic Approach", Research on Evolution Equations Compendium, Nova Science Publishers, Volume 2, pp 321-343, 2013.
22. **Roy Priti Kumar**, Chowdhury S, Xue-Zhi Li: "Saturation Effects for CTL Mediated Control of HIV-1 Infection: A Mathematical Study", International Journal of Biomathematics, Vol. 6, No. 3, pp 1350013-1-19, 2013.
23. **Roy Priti Kumar**, Mondal J, Bhattacharyya R, Bhattacharya S, Tamas Szabados, "Extinction of Disease Pathogenesis in Infected Population and its Subsequent Recovery: A Stochastic Approach", Journal of Applied Mathematics, Vol. 2013, pp 1-8, 2013.

24. **Roy Priti Kumar**, Mondal J: "Host pathogen interaction with recovery rate using fractional - order derivative: A mathematical Approach", Nonlinear Studies, Vol. 20, No. 2, pp 251-261, 2013.
25. **Roy Priti Kumar**, Nandi S, Ghosh M K, "Modeling of a control induced system for product formation in enzyme kinetics", Journal of Mathematical Chemistry, Vol. 51, No. 7, pp , 2013.
26. **Roy Priti Kumar**, Chowdhury S, Chatterjee A, Chattopadhyay J, Rachel Norman: "A Mathematical Model on CTL Mediated Control of HIV Infection in a Long Term Drug Therapy", Journal of Biological Systems, Accepted, 2013.
27. Nandi S, Ghosh M K, **Roy Priti Kumar**, "Mathematical modeling to optimize the product in enzyme kinetics", Control and Cybernetics, Accepted, vol. 42, No. 2, 2013.
28. Datta A, **Roy Priti Kumar**, "T-Cell Proliferation on Immunopathogenic Mechanism of Psoriasis: A Control Based Theoretical Approach", Control and Cybernetics, Accepted, vol. 42, No. 2, 2013.

MICROPROCESSOR APPLICATIONS FOR TRAINING EDUCATION & RESEARCH

[Dept. of Computer Sc. & Engg.]

Int. : 2457-2367/2407

Coordinator : Dr. Mita Nasipuri

1. A. Courses Offered

SI No.	Name of the Course (short term)	Duration of the course	No. of students
1	Introduction to Linux and C Programming	88hrs	30
2	Business Intelligence and Data Warehouse	52hrs	30

B. Number of Faculty Members:

Professor – 04

Associate Professor - 03

Assistant Professor - 04

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

AI, Pattern Recognition & Image Processing, High Performance Computing, Soft Computing, Artificial Neural Networks, Evolutionary Computation, Bio-Medical Image Processing, Multimedia Technology Development, OCR of Handwritten Bengali Text, Bioinformatics, Face Processing.

B. Sponsored Projects Carried Out/Ongoing (2012-13):

1. Dr. Debotosh Bhattacharjee (P.I.), Prof. Mita Nasipuri (Co-investigator), Design and Development of Facial Thermogram technology for Biometric Security System, UGC, Govt. of India, 2010-2013, 3 years, Rs. 10,76,834/-
2. Dr. Debotosh Bhattacharjee (P.I.), Prof. Mita Nasipuri (Co-investigator) Development of 3D Face Recognition Techniques Based on Range Images, DIT, MCIT, Govt. of India, 2012-2015, 3 years, Rs. 66,21,250/-

3. Prof. Nandini Mukherjee (P.I.), Dr. Sarbani Roy, (Co- Investigator) Project entitled "Development of an Integrated Web Portal for Healthcare Management using Sensor Grid Technologies" funded by Department of Science and Technology (NRDMS and NSDI Division)
4. Prof. Nandini Mukherjee (P.I.), Project entitled "Monitoring Air Pollution Using GIS and Sensor Technology" funded by UGC.
5. Dr. Jamuna Kanta Sing (P.I.), Project entitled "Intensity Inhomogeneity Correction in Magnetic Resonance Images" funded by AICTE, 2009-2012, 3years, Rs.4,00,000.00/-
6. Dr. Jamuna Kanta Sing (P.I.), Project entitled "Development of robust face recognition systems from video" funded by UGC, 2010-2013, 3years, Rs.7,28,261.00/-
7. Dr. Sarbani Roy, (P.I) Project Title: Performance based Resource Management and Load balancing in Cloud Environment, Sponsor: under the project "Mobile Computing and Innovative Applications" under UPE - Phase II, 2012-2015.
8. Dr. Susmita Ghosh, (P.I. of J.U. Component) Title of the Project: Collaborative Program: India-Trento Program for Advanced Research (ITPAR) Project entitled "Advanced Techniques for Remote Sensing Image Processing & Recognition", Indian Institute of Technology (Bombay), Indian Statistical Institute (Kolkata), Jadavpur University (Kolkata) and University of Trento (Italy) are the collaborators of this joint research project. Duration: Phase I: Three years (start: 21.01.2004). Phase 2: Three years (start: 14.03.2008) Funding Authority: Department of Science & Technology (Government of India) and Ministry of Foreign Affairs and Autonomous Province of Trento (Government of Italy). The project cost, borne by the DST on behalf of Indian side is Rs. 90,79,400/- (for phase I) and Rs. 1,39,11, 000/- (for phase II) for the three Indian Components.
9. Dr. Subhadip Basu, (P.I), Title of the Project: "Segmentation of the carotid vasculature in human CT angiography", Funded by- DST FAST-TRACK, Govt. of India, Duration- 3years, 2013-2016, Rs. 8,58,000/-.
10. Dr. Subhadip Basu, (P.I), Title of the Project: "Design of Multimodal Biometric Systems for various Security and Forensic Applications" under the UGC Sponsored UPE-II Program under Mobile Computing and Innovative Applications. Duration- 2years, 2012-2014, Rs. 13,63,200/-

3. A. Invited Lectures Delivered by Faculty Members Associated with the Centre

1. Dr. Debotosh Bhattacharjee, Image Fusion Techniques" organized by RCC Institute of Information Technology, Kolkata on 24th July 2012.
2. Dr. Susmita Ghosh, Delivered Lecture, in a National Workshop on "Soft Computing And Numerical Optimization", Gandhi Institute of Excellent Technocrats, Bhubaneswar, March 17-18, 2012
3. Prof. Nandini Mukherjee has delivered invited lecture in The National Conference on High Performance Computing and Simulation held from Jan 18-Jan 19 2013 at Berhampur, Odisha.
4. Dr. Subhadip Basu has delivered invited lecture on Multi-scale opening of conjoined structures in shared intensity space at The Interdisciplinary Centre for Computational and Mathematical Modelling (ICM), University of Warsaw, Poland, 2012.
5. Dr. Subhadip Basu has delivered invited lecture on Multi-scale opening of conjoined structures in shared intensity space at CMATER, Jadavpur University, Date- 22.02.2013.

B. Seminar/Workshop/Conference/Symposium Attended:

1. Dr. Debotosh Bhattacharjee, IS&T/SPIE Symposium on Electronic Imaging, 3-7 February 2013, San Francisco, USA.
2. Dr. Susmita Ghosh, Symposium on "Future of STEM (Science, Technology, Engineering, and Mathematics)", Indian Statistical Institute, Kolkata, March 22, 2013
3. Prof. Mita Nasipuri acted as Session Chair in the International Conference on Communications, Devices and Intelligent Systems (CODIS), 2012, IEEE, 2012.
4. Prof. Mita Nasipuri acted as Session Chair in the International Conference on Emerging Applications of Information Technology (EAIT), 30 November -1December 2012 Kolkata, India.
5. Prof. Nandini Mukherjee acted as Session Chair in the International Conference on Emerging Applications of Information Technology (EAIT), 30 November -1December 2012 Kolkata, India.

C. Seminar/Workshop/Conference/Symposium Organized:

1. Seminar on Multi-scale opening of conjoined structures in shared intensity space, Speaker-Dr. Subhadip Basu, Assistant Professor, CSE-JU, Organized in collaboration with IEEE Gold Affinity Group. Date- 22.02.2013, Time-5P.M. to 5:30P.M.

4. A. Books/Monographs etc Published:

1. Subhadip Basu, Mahantapas Kundu, and Mita Nasipuri. "Development of OCR Techniques for Handwritten Bangla Text: OCR Techniques for Bangla Text.", LAP Lambert Academic Publishing , Germany ©2012, ISBN:3848430800 9783848430802,(2012).

B. Book Chapters:

1. Ayan Seal, Debotosh Bhattacharjee, Mita Nasipuri, Dipak Kr. Basu, "Thermal Human Face Recognition for Biometric Security System", accepted for Book Chapter of "Recent Advances in Computer Vision and Image Processing: Methodologies and Applications", Edited by: Rajeev Srivastava, S.K. Singh, and K.K. Shukla to be published by IGI Global, USA.
2. Satadal Saha, Subhadip Basu, and Mita Nasipuri. "Development of a Stop-Line Violation Detection System for Indian Vehicles." In Handbook of Research on Computational Intelligence for Engineering, Science, and Business, IGI Global (2012).
3. Mrinal Kanti Bhowmik, Priya Saha, Goutam Majumder, Debotosh Bhattacharjee, "Decision Fusion of Multisensor Images for Human Face Identification in Information Security", ISBN: 978-146-662-519-8, Book Chapter of "Handbook of Research on Computational Intelligence for Engineering, Science and Business", ISBN:Edited by: Dr. S. Bhattacharyya & Prof. P. Dutta, to be published by IGI Global, USA.
4. Pramit Ghosh, Debotosh Bhattacharjee, Mita Nasipuri and Dipak Kumar Basu, "Computational Intelligence in Health-care", accepted for Book Chapter of "Handbook of Research on Computational Intelligence for Engineering, Science and Business", ISBN: 978-146-662-519-8, Edited by: Dr. S. Bhattacharyya & Prof. P. Dutta, to be published by IGI Global, USA.
5. Madhulina Sarkar, Triparna Mondal, Sarbani Roy, Nandini Mukherjee, "Resource requirement prediction using clone detection technique", To be published in Future Generation Computer Systems, Volume 29, Issue 4, June 2013, Pages 936-952, ISSN 0167-739X.

6. Sujoy Mistry, Dibyanshu Jaiswal, Sagar Virani, Arijit Mukherjee, Nandini Mukherjee, "An Architecture for Dynamic Web Service Provisioning Using Peer-to-Peer Networks". In: Distributed Computing and Internet Technology, Hota, Chittaranjan and Srimani, Pradip K. (Eds.), Lecture Notes in Computer Science (Springer Berlin / Heidelberg), Volume 7753 / 2913, 290-301, ISBN 978-3-642-36070-1.
7. Suman Sankar Bhunia, Soumen Das, Sarbani Roy, Nandini Mukherjee, "An approach to manage mobility of sensor nodes in Sensor-Grid infrastructure", Elsevier Procedia Technology, Volume 6, 2012, Pages 754-762, ISSN 2212-0173
8. Sarbani Roy and Nandini Mukherjee (2012). "Topology Construction of 3D Wireless Sensor Network". In Meghanathan, Natarajan and Nagamalai, Dhinakaran and Chaki, Nabendu (Eds.), Advances in Computing and Information Technology (pp. 533-542), Advances in Intelligent Systems and Computing series, vol 176, Springer Berlin Heidelberg. ISBN 978-3-642-31512-1.
9. Subrata Dutta, Nandini Mukherjee, Monideepa Roy, Sarmistha Neogy (2012). "Efficient Path Selection to Propagate Data Message for Optimizing the Energy Dissipation in WSN". In Meghanathan, Natarajan and Nagamalai, Dhinakaran and Chaki, Nabendu (Eds.), Advances in Computing and Information Technology (pp. 533-542), Advances in Intelligent Systems and Computing series, vol 176, Springer Berlin Heidelberg. ISBN 978-3-642-31512-1.
10. Saumini Kar, Ajanta De Sarkar, and Nandini Mukherjee (2012), "An Integrated Framework in Geographic Information System using Wireless Sensor Network", IJCA Proceedings on International Conference on Recent Advances and Future Trends in Information Technology (iRAFIT 2012) pages 13-18, April 2012. Published by Foundation of Computer Science, New York, USA
11. Sarbani Roy, Ajanta De Sarkar, Nandini Mukherjee, "An Agent based E-learning Framework for Grid", accepted for publication in the Book: e-Learning Paradigms and Applications, Springer, 2013.

C. Articles Published in Journals:

1. Ankush Acharyya, Sandip Rakshit, Ram Sarkar, Subhadip Basu, and Mita Nasipuri. "Handwritten Word Recognition Using MLP based Classifier: A Holistic Approach.", IJCSI International Journal of Computer Science Issues, Vol. 10, Issue 2, No 2, pp. 422-427, (2013).
2. Brijesh K. Sriwastava, Subhadip Basu, Ujjwal Maulik, and Dariusz Plewczynski. "PPIcons: identification of protein-protein interaction sites in selected organisms." Journal of Molecular Modeling (2013): 1-12.
3. Ayatullah Faruk Mollah, Subhadip Basu, and Mita Nasipuri. "A Novel Approach towards Computation and Memory Efficient Implementation of Convolution-based Binarization Techniques." International Journal of Information Processing 6(3), pp. 67-79 (2012).
4. Ayatullah Faruk Mollah, Subhadip Basu, Mita Nasipuri, and Dipak Kumar Basu. "Handheld Mobile Device Based Text Region Extraction and Binarization of Image Embedded Text Documents." Journal of Intelligent Systems 22, no. 1 (2013): 25-47.
5. Nibaran Das, Ram Sarkar, Subhadip Basu, Mahantapas Kundu, Mita Nasipuri, and Dipak Kumar Basu. "A genetic algorithm based region sampling for selection of local features in handwritten digit recognition application." *Applied Soft Computing* 12, no. 5 (2012): 1592-1606.
6. Dariusz Plewczynski, Subhadip Basu, and Indrajit Saha. "AMS 4.0: consensus prediction of post-translational modifications in protein sequences." *Amino acids* 43, no. 2 (2012): 573-582.

7. Nibaran Das, Jagan Mohan Reddy, Ram Sarkar, Subhadip Basu, Mahantapas Kundu, Mita Nasipuri, and Dipak Kumar Basu. "A statistical-topological feature combination for recognition of handwritten numerals." *Applied Soft Computing* 12, no. 8 (2012): 2486-2495.
8. Samir Malakar, Dheeraj Mohanta, Ram Sarkar, Nibaran Das, and D. K. Basu. "A New Global Thresholding Approach for Document Image Binarization." *International Journal of Information Processing* 6(2), pp. 48 - 59 (2012).
9. Ayan Seal, Suranjan Ganguly, Debotosh Bhattacharjee, Mita Nasipuri, Dipak Kr. Basu, "Automated Thermal Face recognition based on Minutiae Extraction", *International Journal of Computational Intelligence Studies*, ISSN online: 1755-4985 ISSN print: 1755-4977 InderScience Publication, 2013.
10. Parama Bagchi, Debotosh Bhattacharjee, Mita Nasipuri, Dipak Kr. Basu, "A novel Approach for nose-tip detection on 3D face images across pose", *International Journal of Computational Intelligence and Informatics*, ISSN: 2231-0258, vol. 2 no. 1, April-June, 2012.
11. Rajib Saha, Debotosh Bhattacharjee, Shombhu Nath Ghosh, Prasenjit Das, Dona Ghosh, "Comparison and Error Finding of 2D Frontal Facial Images Between Twins", *International Journal of Advanced Research in Computer Science and Software Engineering*, vol. 2, issue 4, April 2012.
12. Mrinal Kanti Bhowmik, Debotosh Bhattacharjee, Dipak Kumar Basu, Mita Nasipuri, "Eye Region Based Fusion Technique of Thermal and Optical images for Human Face Recognition in Dark", *Optical Engineering Journal of SPIE*, vol. 51, No. 7, 2012.
13. Santunu Halder, Debotosh Bhattacharjee, Mita Nasipuri, Dipak Kr. Basu, "A Low Space Bit-Plane Slicing Based Image Storage Method using Extended JPEG Format", *International Journal of Emerging Technology and Advanced Engineering*, vol. 2, issue 4, April 2012, pp. 694-699.
14. Arindam Kar, Debotosh Bhattacharjee, Dipak Kumar Basu, Mita Nasipuri, and Mahantapas Kundu, "High Performance Human Face Recognition using Gabor based Pseudo Hidden Markov Model", *International Journal of Applied Evolutionary Computation (Taiwan) IGI Global*, July 2012.
15. Debotosh Bhattacharjee, Ayan Seal, Suranjan Ganguly, Mita Nasipuri, and Dipak Kumar Basu, "A Comparative Study of Human Thermal Face Recognition Based on Haar Wavelet Transform and Local Binary Pattern", *International Computational Intelligence and Neuroscience*, 2012.
16. Arindam Kar, Debotosh Bhattacharjee, Dipak Kumar Basu, Mita Nasipuri, and Mahantapas Kundu, "A Gabor block based Kernel Discriminative Common Vector (KDCV) approach using cosine kernels for Human Face Recognition", *International Computational Intelligence and Neuroscience*, 2012.
17. Satyabrata Maity, Amlan Chakrabarti, Debotosh Bhattacharjee, "Feature based Information Extraction for Generic Video Summarization", *International Journal of Computer Applications, iRAFIT - Number 4*, 2012.
18. Mridul Ghosh, Debotosh Bhattacharjee, "Human Identification by Gait Using Corner Points", *International Journal of Image, Graphics and Signal Processing*, 2012, 2, pp. 30-36.
19. Subrata Dutta, Nandini Mukherjee, Monideepa Roy, Sarmistha Neogy, "Efficient Path Selection to Propagate Data Message for Optimizing the Energy Dissipation in WSN", accepted for publication by *International Journal of Sensor Networks (IJSNet)* (InderScience Publishers).
20. Sarbani Roy and Nandini Mukherjee. "Dynamic topology construction of wireless sensor network using computational geometric approach". *International Journal of Sensor Networks* (InderScience Publishers), volume 12, number 4, pp. 210-222.

21. A. K. Das, S. Chatterjee, J. K. Sing, "A novel efficient access control scheme for large-scale distributed wireless sensor networks", *International Journal of Foundations of Computer Science*, Elsevier Publisher, Accepted for publication, 2013.
22. S. Chatterjee, A. K. Das, J. K. Sing, "An enhanced access control scheme in wireless sensor networks", *Ad Hoc & Sensor Wireless Networks*, Old City Publisher, vol. 0, pp. 1–29, 2012.
23. A. Basu, I. Sengupta, J. K. Sing, "Secured hierarchical secret sharing using ECC based signcryption", *Security and Communication Networks*, Wiley Publisher, vol. 5, pp. 752-763, 2012.
24. S. S. Thakur, J. K. Sing, "Prediction of Online Vehicle Insurance System using Bayes Classifier– A proposed Approach", *International Journal of Computer Applications (0975-8887)*, vol. 49, no. 16, pp. 38-42, 2012.
25. J. K. Sing, S. Chowdhury, D. K. Basu, M. Nasipuri, "An Improved Hybrid Approach to Face Recognition by Fusing Local and Global Discriminant Features", *Int'l Journal of Biometrics*, Inderscience Publisher, vol. 4, no. 2, pp. 144-164, 2012.
26. M. Roy, S. Ghosh, and A. Ghosh, "Change detection in remotely sensed images using semi-supervised clustering algorithms", *International Journal of Knowledge Engineering and Soft Data Paradigms*, (accepted).
27. M. Roy, D. Routray, S. Ghosh, and A. Ghosh, "Ensemble of multilayer perceptrons for change detection in remotely sensed images", *IEEE Geosciences and Remote Sensing Letters*, (in press).
28. A. Halder, S. Ghosh, and A. Ghosh, "Aggregation Pheromone Metaphor for Semi-supervised Classification," *Pattern Recognition*, vol. 46, pp. 2239-2248, 2013.
29. B. N. Subudhi, S. Ghosh, and A. Ghosh, "Change Detection for Moving Object Segmentation with Robust Background Construction under Wronskian Framework", *Machine Vision and Applications*, vol. 24, no. 4, pp. 795-809, 2013.
30. A. Ghosh, A. Datta, and S. Ghosh, "Self-adaptive Differential Evolution for Feature Selection in Hyperspectral Image Data", *Applied Soft Computing*, vol. 13, pp. 1969-1977, 2013.
31. A. Ghosh, B. N. Subudhi, and S. Ghosh, "Object Detection from Videos Captured by Moving Camera by Fuzzy Edge Incorporated Markov Random Field and Local Histogram Matching", *IEEE Transactions on Circuits and Systems for Video Technology*, vol. 22, pp. 1127- 1135, 2012
32. N. S. Mishra, S. Ghosh, and A. Ghosh, "Fuzzy Clustering Algorithms Incorporating Local Information for Change Detection in Remotely Sensed Images", *Applied Soft Computing*, vol. 12, pp. 2683–2692, 2012.

D. Articles Published in International Conferences:

1. Suchandra Payal, Piyali Chatterjee, Subhadip Basu, Mahantapas Kundu, and Mita Nasipuri. "Comparisons of Different Feature Sets for Predicting Carbohydrate-Binding Proteins From Amino Acid Sequences Using Support Vector Machine." In *Proceedings of Seventh International Conference on Bio-Inspired Computing: Theories and Applications (BIC-TA 2012)*, pp. 519-529. Springer India, 2013.
2. Jhuma Dutta, Subhadip Basu, Debotosh Bhattacharjee, and Mita Nasipuri. "A Neural Network Based Image Watermarking Technique Using Spiral Encoding of DCT Coefficients." In *Proceedings*

- of the International Conference on Frontiers of Intelligent Computing: Theory and Applications (FICTA), pp. 11-18. Springer Berlin Heidelberg, 2013.
3. Anupam Banerjee, Sumana Basu, Orachorn Mekkerdchoo, Georges Szrednicki, Mita Nasipuri, and Subhadip Basu. "Automatic classification of *A. paeoniifolius* species from DNA fingerprints of *Amorphophalus* Genus." In Communications, Devices and Intelligent Systems (CODIS), 2012 International Conference on, pp. 580-583. IEEE, 2012.
 4. Abhinaba Roy, Navonil Mazumder, Nibaran Das, Ram Sarkar, Subhadip Basu, and Mita Nasipuri. "A new quad tree based feature set for recognition of handwritten bangla numerals." In Engineering Education: Innovative Practices and Future Trends (AICERA), 2012 IEEE International Conference on, pp. 1-6. IEEE, 2012.
 5. Sovan Saha, Piyali Chatterjee, Subhadip Basu, Mahantapas Kundu, and Mita Nasipuri. "Improving prediction of protein function from protein interaction network using intelligent neighborhood approach." In Communications, Devices and Intelligent Systems (CODIS), 2012 International Conference on, pp. 584-587. IEEE, 2012.
 6. Samir Malakar, Bhagesh Seraogi, Ram Sarkar, Nibaran Das, Subhadip Basu, and Mita Nasipuri. "Two-stage skew correction of handwritten Bangla document images." In Emerging Applications of Information Technology (EAIT), 2012 Third International Conference on, pp. 303-306. IEEE, 2012.
 7. Tania Chatterjee, Piyali Chatterjee, Subhadip Basu, Mahantapas Kundu, and Mita Nasipuri. "Protein function by minimum distance classifier from protein interaction network." In Communications, Devices and Intelligent Systems (CODIS), 2012 International Conference on, pp. 588-591. IEEE, 2012.
 8. Abhinaba Roy, Nibaran Das, Ram Sarkar, Subhadip Basu, Mahantapas Kundu, and Mita Nasipuri. "Region selection in handwritten character recognition using Artificial Bee Colony Optimization." In Emerging Applications of Information Technology (EAIT), 2012 Third International Conference on, pp. 183-186. IEEE, 2012.
 9. Brijesh Kumar Sriwastava, Subhadip Basu, Ujjwal Maulik, and Dariusz Plewczynski. "Prediction of *E. coli* Protein-Protein Interaction Sites Using Inter-Residue Distances and High-Quality-Index Features." In Proceedings of the International Conference on Information Systems Design and Intelligent Applications 2012 (INDIA 2012) held in Visakhapatnam, India, January 2012, pp. 837-844. Springer Berlin Heidelberg, 2012.
 10. Ayatullah Faruk Mollah, Subhadip Basu, and Mita Nasipuri. "Text detection from camera captured images using a novel fuzzy-based technique." In Emerging Applications of Information Technology (EAIT), 2012 Third International Conference on, pp. 291-294. IEEE, 2012.
 11. Samir Malakar, Sougata Halder, Ram Sarkar, Nibaran Das, Subhadip Basu, and Mita Nasipuri. "Text line extraction from handwritten document pages using spiral run length smearing algorithm." In Communications, Devices and Intelligent Systems (CODIS), 2012 International Conference on, pp. 616-619. IEEE, 2012.
 12. Satadal Saha, Subhadip Basu, and Mita Nasipuri. "License Plate Localization Using Vertical Edge Map and Hough Transform Based Technique." In Proceedings of the International Conference on Information Systems Design and Intelligent Applications 2012 (INDIA 2012) held in Visakhapatnam, India, January 2012, pp. 649-656. Springer Berlin Heidelberg, 2012.

13. Priya Saha, Mrinal Kanti Bhowmik, Debotosh Bhattacharjee, Barin Kumar De, Mita Nasipuri, "Gradient based Fusion of Infrared and Visual Face Images using Support Vector Machine for Human Face Identification", Multimedia on Mobile Devices 2013 organized by the Society for Imaging Science and Technology (IS&T) and SPIE, San Francisco, Burlingame, California, Feb. 3-7, 2013.
14. Kankan Saha, Priya Saha, Mrinal Kanti Bhowmik, Debotosh Bhattacharjee, and Mita Nasipuri, "North-East Indian Face Database: Capturing, Performance Evaluation and Application", Sensors, Cameras, and Systems for Industrial/Scientific Applications XIV (Conference EI115) of Electronic Imaging (EI) 2013, organized by the Society for Imaging Science and Technology (IS&T) and SPIE, San Francisco, Burlingame, California, Feb. 3-7, 2013.
15. Priya Saha, Mrinal Kanti Bhowmik, Debotosh Bhattacharjee, Mita Nasipuri, Dipak Kumar Basu, "Performance Evaluation through KICA and Feature level Fusion for Human Face Recognition", International Conference on Artificial Intelligence and Soft Computing (AISC 2012), Organized by Department of Computer Engineering, IIT (BHU) Varanasi, To be Published by Narosa Publishing House, New Delhi, Dec. 7-9, 2012.
16. Goutam Majumder, Rajib Debnath, Mrinal Kanti Bhowmik, Debotosh Bhattacharjee and Mita Nasipuri, "Image Registration of North-Eastern Indian (NEI) Face Database", 1st International Conference on Intelligent Infrastructure, organized by Computer Society of India Kolkata Chapter (CSI 2012), Science City, Kolkata, India, published by Tata McGraw Hill, pp. 286-290, Dec 1-2, 2012, ISBN-13: 978-1-25-906170-7, ISBN-10: 1-25-906170-1.
17. Kankan Saha, Rajib Debnath, Mrinal Kanti Bhowmik, Debotosh Bhattacharjee, and Mita Nasipuri, "North-East Indian Face Database: Its Design and Aspects", 4th International Conference on Advances in Recent Technologies in Communication and Computing (ARTCom 2012), organized by the Association of Computer Electronics and Electrical Engineers (ACEEE), Bangalore, India, published by Springer, LNEE, pp. 450-456, Oct. 19-20, 2012, ISSN: 1876-1100.
18. Priya Saha, Mrinal Kanti Bhowmik, Debotosh Bhattacharjee, Barin Kumar De, Mita Nasipuri, "Fusion of Wavelet Coefficients for Classification of Human Face Images using Kernel Independent Component Analysis and Different SVM Kernels", In Press 2nd International Conference on Rough sets, Fuzzy sets and Soft Computing (ICRFSC '12), organized by Deptt. of Mathematics, Tripura University, Tripura, India, Jan. 17-19, 2013.
19. Mrinal Kanti Bhowmik, Debotosh Bhattacharjee, Dipak Kumar Basu, Mita Nasipuri, "Human Face Recognition using Wavelet Fusion and SVM", 6th International Workshop on Multimedia and Signal Processing (IWSSIP '12), Redzur 2012, organized by Slovak University of Technology, European Association for Signal Processing and Association for Telecommunications Users in Slovakia, Vienna, Austria, pp:5-9, Apr. 11, 2012, ISBN 978-80-227-3686-2.
20. Mrinal Kanti Bhowmik, Barin Kumar De, Debotosh Bhattacharjee, Dipak Kumar Basu, Mita Nasipuri, "Multisensor Fusion of Visual and Thermal Images for Human Face Identification using Different SVM Kernels", 8th Annual Conference on IEEE Long Island Systems, Applications and Technology (LISAT 2012), Farmingdale, NY, USA, pp. 1-7, May 4, 2012, Print ISBN 978-1-4577-1342-2
21. Ayan Seal, Suranjan Ganguly, Debotosh Bhattacharjee, Mita Nasipuri and Dipak Kumar Basu, "Thermal Human face recognition based on Haar wavelet transform and series matching technique," Proceedings of the Springer International Conference on Multimedia Processing, Communication and Computing Applications, PES Institute of Technology, India, December 13-15, 2012.

22. Parama Bagchi, Debotosh Bhattacharjee, Mita Nasipuri, Dipak Kumar Basu, "A Novel Approach in detecting pose orientation of a 3D face required for face registration", International Conference on Intelligent Infrastructure, 47th Annual National Convention of CSI – 2012.
23. Mrinal Kanti Bhowmik, Debotosh Bhattacharjee, Dipak Kumar Basu, Mita Nasipuri, " Human face Recognition Using Multisource Fusion", Track of Multi Sensor, Multisource Information Fusion: Architecture Algorithms, and Applications 2012 (DS223) SPIE. Defense, Security and Sensing 2012, 23-27 April 2012, Maryland, USA, Published by SPIE and SPIE Digital Library.
24. Parama Bagchi, Debotosh Bhattacharjee, Mita Nasipuri, Dipak Kumar Basu, "A novel approach to nose-tip and eye corners detection using H-K curvature analysis in case of 3D images," EAIT 2012.
25. Pallavi Sanyal, Somasri Das, Sarbani Roy and Nandini Mukherjee, "A Study on Multiple Sink Routing", in the proceedings of IEEE 4th International Conference on Electronics Computer Technology (ICECT), Kanyakumari, India ISBN: 978-1-4673-1849-5, April 6-8, 2012
26. Pallavi Sanyal, Somasri Das, Suman Sankar Bhunia, Sarbani Roy, Nandini Mukherjee, "An Experience of Implementing IPv6 based Data Retrieval System for Wireless Sensor Networks", in the proceedings of International Conference on Recent Advances in Computing and Software Systems (RACSS), April 25-27, 2012, Chennai, India, pp.154-157. Available from IEEE Xplore digital library. ISBN: 978-1-4673-0255-5.
27. Sushan Chakraborty, Madhulina Sarkar, Nandini Mukherjee, "Implementation of execution history in non-relational databases for feedback-guided job modeling", in Proceedings of the CUBE International Information Technology Conference, ACM, Pages 476-482, Pune, India, September 2012.
28. Suman Sankar Bhunia, Dilip Sikder, Sarbani Roy, Nandini Mukherjee (2012), "A Comparative Study on Routing schemes of IP based Wireless Sensor Network", in the proceedings of 9th International Conference on Wireless and Optical Communications Networks (WOCN), September 20-22, 2012, Indore, India, pp.1-5, Available from IEEE Xplore digital library, ISBN: 978-1-4673-1987-4.
29. Suman Sankar Bhunia, Sarbani Roy, Nandini Mukherjee, "On efficient health-care delivery using Sensor-Grid", CSI/IEEE International Conference on Emerging Applications of Information Technology (EAIT), 30 November -1December 2012 Kolkata, India.
30. Suman Sankar Bhunia, Soumen Das, Sarbani Roy, Nandini Mukherjee, "An approach to manage mobility of sensor nodes in Sensor-Grid infrastructure", in the proceedings of 2nd International Conference on Communication, Computing and Security (ICCCS-2012), October 6-8, 2012, Rourkela, India.
31. Suman Sankar Bhunia, Soumen Das, Sarbani Roy, Nandini Mukherjee, "Mobility management in IP based Wireless Sensor Network using TinyOS", 6th International Conference on Sensing Technology (ICST), December 18-21, 2012, Kolkata, India, pp.759-764. Available from IEEE Xplore digital library. ISBN:978-1-4673-2245-4.
32. Monideepa Roy, Pushpendu Kar, Nandini Mukherjee, "A Jini Based Implementation for Best Leader Node Selection in MANETs", Fourth International Conference on Networks and Communications, (NETCOM 2012), 22nd -23rd December, 2012, Chennai, LNEE
33. Debasree Das, Zeenat Rehena, Sarbani Roy, Nandini Mukherjee, "Multiple-sink placement strategies in wireless sensor networks", in the proceedings of fifth International Conference on Communication Systems and Networks (COMSNETS), January 7-10, 2013, pp.1-7. Available from IEEE Xplore digital library.

34. Zeenat Rehena, Sarbani Roy, Nandini Mukherjee, "Efficient Data Forwarding Techniques in Wireless Sensor Networks", In the Proceedings of 3rd IEEE International Advance Computing Conference (IACC-2013), February 22-23, 2013, Ghaziabad, India, Page 449-457, ISBN: 978-1-4673-4527-9
35. Zeenat Rehena, Debasree Das, Sarbani Roy, Nandini Mukherjee, "Handling Area Fault in Multiple-Sink Wireless Sensor Networks", In the Proceedings of 3rd IEEE International Advance Computing Conference (IACC-2013), February 22-23, 2013, Ghaziabad, India, Pages 458-464, ISBN: 978-1-4673-4527-9
36. J. K. Sing, D. Roy, D. K. Basu, M. Nasipuri, "Generalized Diagonal 2D FLDA for Efficient Face Recognition", Proc. of CODIS 2012, pp. 656-659.
37. S. K. Adhikari, J. K. Sing, D. K. Basu, M. Nasipuri, P. K. Saha, "Segmentation of MRI Brain Images by Incorporating Intensity Inhomogeneity and Spatial Information Using Probabilistic Fuzzy C-Means Clustering Algorithm", Proc. of CODIS 2012, pp. 133-136.
38. S. Chowdhury, J. K. Sing, D. K. Basu, M. Nasipuri, "Weighted Multi-Class Support Vector Machine for Robust Face Recognition", Proc. of CODIS 2012, pp. 334-337.
39. Atanu Basu, Indranil Sengupta, J. K. Sing, "Formal Security Verification of Secured ECC Based Signcryption Scheme", Proc. of CSIA 2012, pp. 713-725.
40. Siba Mitra, Ajanta De Sarkar, Sarbani Roy, "A Review of Fault Management System in Wireless Sensor Network", in the proceedings of CUBE 2012, Pune, India, 3-5 September 2012.
41. B. N. Subudhi, S. Ghosh, and A. Ghosh, "Spatial constraint Hopfield-type neural networks for detecting changes in remotely sensed multitemporal images", International Conference on Image Processing (ICIP), Melbourne, Australia, September 15-18, 2013 (accepted).
42. B. N. Subudhi, S. Ghosh, and A. Ghosh, "Moving object detection using Gaussian background model and Wronskian framework", International Symposium on Pattern Recognition and Image Processing (PRIP 2013), at Second International Conference on Advances in Computing, Communications and Informatics (ICACCI-2013), Mysore, India, August 22-25, 2013 (accepted).
43. A. Mondal, S. Ghosh, and A. Ghosh, "Efficient silhouette based contour tracking", International Symposium on Pattern Recognition and Image Processing (PRIP-2013), at Second International Conference on Advances in Computing, Communications and Informatics (ICACCI-2013), Mysore, India, August 22-25, 2013 (accepted).
44. A. Datta, S. Ghosh and A. Ghosh, "Band elimination of hyperspectral imagery using correlation of partitioned band images," at Second International Conference on Advances in Computing, Communications and Informatics (ICACCI-2013), Mysore, India, August 22-25, 2013 (accepted).
45. A. Mondal, B. N. Subudhi, M. Roy, S. Ghosh, and A. Ghosh, "A study on non-linear classifier based moving object tracking", International Conference on Signal, Image Processing and Pattern Recognition (SPPR-2013), New Delhi, India, May 24-26, 2013.
46. A. Datta, S. Ghosh, and A. Ghosh, "Clustering based Band Selection for Hyperspectral Images", International Conference on Communications, Devices and Intelligent Systems (CODIS), Kolkata, India, pp. 105-108, December 28-29, 2012.
47. A. Halder, A. Dasgupta, and S. Ghosh, "Image Segmentation using Rough-Fuzzy K-medoid Algorithm", International Conference on Communications, Devices and Intelligent Systems (CODIS), Kolkata, India, pp. 109-112, December 28-29, 2012.

- 48.M. Roy, D. Routaray, and S. Ghosh, "Change Detection in Remotely Sensed Images using an Ensemble of Multilayer Perceptrons, International Conference on Communications, Devices and Intelligent Systems (CODIS), Kolkata, India, pp. 286-289, December 28-29, 2012.
- 49.M. Roy, S. Ghosh, and A. Ghosh, "Semi-supervised Change Detection for Remotely Sensed Images using Ensemble Classifier", 4th International Conference on Intelligent Human Computer Interaction, Kharagpur, India, pp. 545-549, December 27-29, 2012
- 50.M. Roy, S. Ghosh, and A. Ghosh, "Search-based Semi-supervised Clustering Algorithms for Change Detection in Remotely Sensed Images", IEEE INDICON 2012, Kochi, India, December 07-09, 2012.
- 51.N. S. Mishra, S. Ghosh, A. Ghosh, "Combination of Fuzzy Clustering Algorithms for Change Detection in Remote Sensing Images", Third International Conference on Emerging Applications of Information Technology, Kolkata, India, LNCS Vol. No. 7143, November 29- December 01, 2012
- 52.B. N. Subudhi, S. Ghosh and A. Ghosh, "Object and Shadow separation using Fuzzy Markov Random Field and Local Gray Level Co-occurrence Matrix based Textural Features", 12th International Conference on Intelligent Systems Design and Applications (ISDA 2012), Kochi, India, November 27-29, 2012.
- 53.M. Roy, S. Das, S. Ghosh, and A. Ghosh, "Semi-supervised Hopfield-Type Neural Network for Change Detection in Remotely Sensed Images", 1st International Conference on Recent Advances in Information Technology, Dhanbad, India, pp. 379-384, March 15-17, 2012.
- 54.N. S. Mishra, S. Ghosh, and A. Ghosh, "Semi-supervised Fuzzy Clustering Algorithms for Change Detection in Remote Sensing Images", 1st Indo-Japan Conference on Perception and Machine Intelligence (PerMI 2012), Kolkata, India, pp. 269-276, January 12-13, 2012.

5. Collaborative Programmes:

1. Dr. Susmita Ghosh, Acting as local coordinator on behalf of Jadavpur University for Erasmus Mundus Action 2 Project India for EU II selected under EACEA 42/11 Lot 11 (URL: www.india4eu.eu) Funding agency: European Union Duration: 15.07.2012 – 14.07.2016 Amount: 2,999,025 Euro
2. Dr. Susmita Ghosh, Acting as local coordinator on behalf of Jadavpur University for Erasmus Mundus Project India for EU selected under EACEA/ 35/08 Lot (URL: www.india4eu.eu) Funding agency: European Union Duration: 15.07.2009 – 14.07.2013 Amount: 4,680,000 Euro
3. Dr. Debotosh Bhattacharjee (P.I.), Erasmus Mundus Mobility with Asia, Coordinator: Universidade de Evora, Portugal (Principal Investigator along with other Co-investigators) European Commission, Brussels, 2012-2015, 3 years, Rs. 2,80,000/-(approx)
4. Dr. Subhadip Basu, A collaborative project with University of New South Wales (Australia) and Chulalongkorn University (Thailand) as partners working on "Image Analytic Approaches to DNA Fingerprint based species classification".

6. Number of Ph.D degrees conferred by Faculty Members Associated with the Centre - 9

7. Major Achievements:

A. Post-Doctoral Fellowship:

1. Dr. Subhadip Basu, received EMMA West Post-Doctoral fellowship awarded by European Union, at University of Warsaw, Poland, from Oct 2012 to Dec 2012.

2. Dr. Nibaran Das, received EMMA West Post-Doctoral fellowship awarded by European Union, at University of Evora, Portugal, from Nov 2012 to Feb 2013.

B. Patent:

1. Satadal Saha, Subhadip Basu, Mita Nasipuri, and Dipak Kumar Basu. "Image binarization based on grey membership parameters of pixels." U.S. Patent 8,406,554, issued March 26, 2013.

C. Special Achievement Award:

1. Prof. Nandini Mukherjee is a recipient of NSF/IEEE-TCPP Early Adopter Awards for Curriculum Initiative on Parallel and Distributed Computing in Spring 2012.

NUCLEAR & PARTICLE PHYSICS RESEARCH

[Dept. of Physics]

Int. : 2457-2538

Coordinator : Prof. Dipak Ch. Ghosh

1. A. Number of Faculty Members : 4 (Four)

2. A. Area of Research Activities :

- High energy hadronic and leptonic interactions
- Relativistic and ultra-relativistic heavy ion interactions
- Quark gluon plasma
- Monopole search
- SQN search
- Environmental radioactivity
- Radon Physics
- Hadron structure
- Astroparticle Physics
- Early Universe

B. Major Research Projects :

Project Title

(Ongoing)

Properties of Baryons and Exotics

Funding Agency

UGC

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

1. DAE Symposium on Nuclear Physics held during 3-7 December, 2012 at University of Delhi
2. 20th. West Bengal State Science and Technology Congress, during 28th February-2nd March, 2013 at BESU, Shibpur, Howrah .

4. B. Articles Published in Journals

- 1 Levy index analysis and phase transition study with target protons at SPS energies
 Ghosh, D., Deb, A., Saha, R., Das, R., Alam, N.
Indian Journal of Physics 87 (1) ,2013, 71-76
- 2 Assessment of erratic fluctuations of pions and protons in hadron-nucleus interactions
 Ghosh, D., Deb, A., Pal, S., Mondal, M., Mondal, A., Alam, N.
Indian Journal of Physics 86 (10) ,2012, 925-930
- 3 Genuine pion-pion correlations in heavy-ion collisions
 Ghosh, D., Deb, A., Bhattacharyya, S., Datta, U.
Journal of Physics G: Nuclear and Particle Physics 39 (10) ,2012, 105101
- 4 Characteristics of pion production in ring-like events using entropy index
 Ghosh, D., Deb, A., Mondal, M., Biswas, S.
Indian Journal of Pure and Applied Physics 50 (9) ,2012, 617-622
- 5 Multiplicity dependence of entropy in different rapidity bins in high-energy nucleus nucleus interactions
 Ghosh, D., Deb, A., Bhattacharyya, S., Datta, U.
Physica Scripta 85 (6) , 2012,065205
- 6 Meson condensate and Fermi Momentum :
 A. Chandra, A. Bhattacharya, B. Chakrabarti.
 Eur. Phys. J.Plus. 4, 128 (2013)
- 7 Fractal Space time and variation of fine structure constant:
 A. Bhattacharya, R. Saha, B. Chakrabarti;
 Euro. Phys. J. Plus 127, (2012) 57

National Symposium Attended and Paper Presented:

1. Properties of Nucleon in Nuclear Matter: DAE Symposium on Nuclear Physics (2012) , 3-7th December 2012 Delhi University, North Campus.
2. $\theta +$ Excited states and Decay widths: DAE Symposium on Nuclear Physics (2012) , 3-7th December 2012 Delhi University, North Campus.

PLASMA STUDIES

[Dept. of Instrumentation Science]

Int. : 2457-2579

Coordinator : Prof. Radhaballabh Bhar

1. B. Number of Faculty Members :

No permanent Faculty Member.

Teachers, Researchers of participating
Departments, other Institutes, Colleges.
Participate in the activities of the Centre.

C. Participating Departments :

Instrumentation Science, J.U.

Mathematics, J.U.

Physics, J.U.

D. Collaborating Institutes:

Collaborative Institute (International):

- i) Universita Degli Studi de Milano- Bicocca (Italy)
- ii) Centre Lasers Intenses et Application, University Bordeaux, France.
- iii) University of North Carolina, Charlette (USA).
- iv) University of Zulu, South Africa.
- v) Institute of Physics, Beijing (China).

Collaborative Institute (India):

- i) Bhabha Atomic Research Centre (Mumbai).
- ii) Tata Institute of Fundamental Research (Mumbai).
- iii) Saha Institute of Nuclear Physics (SINP), Kolkata, Plasma Division.
- iv) Institute for Plasma Research, Gandhinagar.
- v) Indian Institute of Technology, Kanpur.
- vi) Inter University Centre for Astronomy and Astro-physics, Pune
- vii) Indian Statistical Institute, Kolkata, Physics & Mathematics Unit.
- viii) University of Calcutta, Applied Mathematics Dept.

2. A. Area of Research Activities (Jointly with Dept. of Instrumentation Science)

- i) Basic Plasma Physics : Linear & Non-linear wave processes.
- ii) Laser Plasma interaction : Inertial confinement fusion (ICF) related collaborative theoretical & experimental programme.

- iii) High Energy Density Plasma : Fluid Dynamics, Interfacial Fluid Instabilities applicable to ICF target and Astrophysics.
- iv) Dusty Plasma.
- v) Astrophysical Plasma.

B. Major Ongoing Research Project (Jointly with Dept. of Instrumentation Science)

Name of the Teacher	Title of the Project	Funding Agency
1. Prof. M. Khan (PI), Prof. M.R. Gupta, Dr. M.K. Srivastava (BARC), Prof. R. Bhar	Investigation of R-M & R-T instabilities in spherical targets.	DST, Govt. of India duration 2009-Sept., 2012
2. Prof. M. Khan (PI), Prof. R. Bhar, Prof. M.R. Gupta, Prof. S. Sarkar (C.U.), Prof. N. Chakraborty (CI), (SINP)	Investigation of the characteristics of wave propagation and Jeans instability in a complex plasma in presence of secondary electron emission from dust grains.	DAE, Govt. of India duration 2009-2014
3. Prof. M. Khan (PI), Prof. M.R. Gupta, Prof. R. Bhar, Dr. Samiran Ghosh (C.U.)	Studies of effects of dust charge variation on nonlinear collective phenomena in a dissipative dusty plasma.	CSIR, Govt. of India, duration 2009-2013
4. Prof. R. Bhar (PI), Prof. M. Khan, Prof. A.K. Pal, Prof. H.C. Pant, (Retired Scientist,CAT, Indore & Visiting Professor, J.U. Prof. R. Pal (SINP)	1. Synthesis of cBN thin film by Plasma assisted Pulsed Laser Ablation Techniques and their Characterization.	Purse Program of DST, Jadavpur University, 2009-Sept., 12

C. Seminar Symposia Organized:

Name of the Teacher acted as co-ordinator /convenor/Sponsored by/Name of Workshop/Training Programme/Organized by Duration

Convenor: **Prof. R. Bhar, Sponsored by UGC XIth Plan, Laser and its applications. Department of Instrumentation Sc. in collaboration with Centre for Plasma Studies, J.U. January 31, 2013**

3. A. Invited Lecture Delivered/Charing a Session:

Name of the Teacher/Type of Seminar/ Workshop/Conference/Organizer/Place/Duration/No of days/Week

Prof M. Khan

- a) **Invited lecture delivered on "National Conference on Theoretical Physics". Tezpur University, Assam. February 8-12, 2013, Five days**
- b) **Chaired a Session on Micro-seminar on nonlinear phenomena. Burdwan University, July 27, 2012, One day**

B. Seminar/Workshop/Symposium Attended and Presented Papers:

Name of Teacher Conference/Workshop/Place/Duration/Paper/Invited talk/Duration

Prof Manoranjan Khan

- (i) **13th International Workshop on the Physics of Compressible and Turbulent Mixing (IWPCTM-13)Organized by Cranfield University, UK. Combined effect of viscosity, surface tension and compressibility on the R-T instability between two fluids. July 16-20, 2012.**

(ii) **International Conference on complex processes in Plasmas and nonlinear dynamical system. Organized by the Institute of Plasma Research, Ahmedabad. Dissipative bright and dark soliton in electro negative dusty plasma. Nov. 6-9, 2012.**

(iii) **100th Indian National Science Congress Organized by Calcutta University. Jan. 3-7, 2013**

(iv) **Seminar on Laser and its application. Organized by Dept. of Instrumentation Sc. and Centre for Plasma Studies. Jan. 31, 2013**

Prof. R. Bhar

(i) **Micro-seminar on nonlinear phenomena Organized by Burdwan University. July 27, 2012**

Dr. Samiran Ghosh

International Conference on complex processes in Plasmas and nonlinear dynamical system. Dissipative bright and dark soliton in electro negative dusty plasma. Nov. 6-9, 2012. Organized by the Institute of Plasma Research, Ahmedabad.

Mr. Labakanta Mondal

(i) **13th International Workshop on the Physics of Compressible and Turbulent Mixing (IWPCTM-13) Organized by Cranfield University, UK. R-M instability in a spherical target incorporated with density variation. July 16-20, 2012.**

3. C. Award / Honour, etc. :

Prof. Manoranjan Khan awarded UGC Emeritus Fellowship 2011-2013.

4. A. Books / Monographs Published : NIL

List of Publications in Referred Journals During 2012- 13

1. Small amplitude nonlinear electron acoustic solitary waves in weakly magnetized plasma., M. Dutta, S. Ghosh, R. Roychoudhury, **Manoranjan Khan** and N. Chakrabarti. Physics of Plasmas, 20, 012113 (2013).
2. Synthesis of carbon nano-fibers on p-Si having improved temperature sensing capability, S. Hussain, D. Ghosh, B. Ghosh, Subhajyoti Chaudhuri, **R. Bhar** and **A.K. Pal**, Materials Science and Engineering B 178 (2013) 83– 88.
3. Ultrastructure and Chemical Composition of Elephant Hair in the Context of Chemical Signals in the Asian Elephant *Elephas maximus*, P Raha, M Poddar-Sarkar, UK Nag, **R Bhar**, RL Brahmachary, Chemical Signals in Vertebrates 12, 227-234(2013)
4. Classification of yarn interlacement pattern in fabrics using least square support vector machines, A Ghosh, T Guha, **R.B. Bhar**., Fibers and Polymers 14 (7), 1215-1219(2013)
5. Luminescent S-doped carbon dots: an emergent architecture for multimodal applications S Chandra, P Patra, SH Pathan, S Roy, S Mitra, A Layek, **R. Bhar**, P Pramanik ... J. Mater. Chem. B 1 (18), 2375-2382(2013).
6. Synthesis and characterization of Indium Phosphide films prepared by co-evaporation technique, R. N. Gayen, S. Hussain, R. Bhar and A. K. Pal, Vacuum 86 (2012) 1240
7. Ferromagnetism in nanocrystalline nickel incorporated diamond-like carbon thin films, R. Paul,, M.K. Sharma, R. Chatterjee, S. Hussain, **R. Bhar**, **A.K. Pal**, Appl. Surf. Sci., 258 (2012) 5850

8. Modulation of mechanical properties of diamond-like carbon films with the incorporation of nanocrystalline silver, R. Paul, Arjun Dey, A. K. Mukherjee, S. N. Sarangi and **A K Pal**, Ind. J. Pure & Appl. Phys., 50 (2012) 252
9. Synthesis and characterization of Indium Phosphide films prepared by co-evaporation technique, R. N. Gayen, S. Hussain, **R. Bhar and A. K. Pal**, Vacuum 86 (2012) 1240
10. Growth of CdTe films by pulsed laser deposition technique, B. Ghosh, S. Hussain, D. Ghosh, **R. Bhar and A. K. Pal**, Physica B, 407 (2012) 4214–4220
11. Growth of ZnTe films by pulsed laser deposition technique, B. Ghosh, D. Ghosh, S. Hussain, **R. Bhar and A. K. Pal**, J. Alloys & Comp, 541 (2012) 104–110
12. Novel BN/Pd composite films for stable Liquid Petroleum Gas sensor, D. Ghosh, B. Ghosh, S. Hussain, Subhajyoti Chaudhuri, **R. Bhar and A.K. Pal**, Appl. Surf. Sci. 263 (2012) 788–794.
13. Effect of viscosity and shear flow on the nonlinear two fluid interfacial structures. R. Banerjee, L.K. Mandal, **Manoranjan Khan**, M.R. Gupta. Phys. Plasmas 19, 122105 (2012).
14. Effect of viscosity and surface Tension on the growth of R-T. instability and R-M instability induced two fluid interfacial nonlinear structure., M.R. Gupta, R. Banerjee, L.K. Mandal, **R. Bhar**, H.C. Pant, **Manoranjan Khan** and M.K. Srivastava., Ind. J. Phys. 86, 471-479 (2012).
15. Therapeutic immunization with radio-attenuated Leishmania parasites through im route revealed protection against the experimental murine visceral leishmaniasis S Datta, M Manna, S Khanra, M Ghosh, **R Bhar**, A Chakraborty, S Roy Parasitology research 111 (1), 361-369(2012)

5. Collaborative Programme:

Objective:

- i) An agreement signed between Universita

Academic cooperation for joint research Degli Studi de Milano – Bicocca (Italy) programme, organize Conference, exchange of visits of in the field of Laser Plasma.

Coordinator: Prof. Dimitri Batani
&

Professor, researchers, students, etc.

Jadavpur University, Kolkata
Coordinator: Prof. Manoranjan Khan

6. Major Achievement (Jointly with Dept. of Instrumentation Science) :

Ph. D. Degree awarded : 1
Ph.D. Registration : 4
Project completed : 2
New project sanctioned : —

Obituary:

Prof. M.R. Gupta, an eminent academician and Honorary Visiting Professor of Centre for Plasma Studies, J.U. expired on July 16, 2013. He was born on August 04, 1932.

Prof. Gupta was associated with the Centre for Plasma Studies from 1998 – 2013.

He was UGC Visiting Professor 1998 – 2000 and he was associated as Research Collaborator and Honorary Visiting Professor 2001 – 2013.

Prof. Gupta was Co-investigator of several Major Research Project.

___ Completed Project	Ongoing Project
DST – 3	DST – 1
DAE – 2	DAE – 1
CSIR – 1	

Total Publication During 1998 – 2013

Referred Journals	: 38
Proceedings	: 1
Ph.D. student guided	: 5

QUALITY MANAGEMENT SYSTEM

[Dept. of Mechanical Engg.]

Int. : 2457-2256/2488/2582

Coordinator : Prof. Sadhan Kr. Ghosh

1. Major Research Project: (Departmental / Individual, Name of the Project/ Funding agency).

Details of the ongoing Project between 01.04.2012 and 31.03.2013 :

Prof Sadhan Kumar Ghosh

Publications :

1. J. Nixon, P.K.Dey, **S. K. Ghosh**, P. Davies, Evaluation of options for energy recovery from municipal solid waste in India using the analytical network process Energy, Journal of Energy, Elsevier, Accepted in March 2013 for publication.
2. J. Nixon, P.K.Dey, **S. K. Ghosh**, A comparative assessment of waste incinerators in the UK, Journal of Waste Management, Elsevier, Under review. accepted for publication in March 2013.
3. T. Roy, A.K.Mukhopadhyaya, **S. K.Ghosh**, G. Majumdar, Influence of honking on the noisier situation(L_{10}), Noise control engineering journal.(Accoustical Society of America), Volume 60, Number 2, pp132-136 April 2012.
4. A. K. Sarkar, A. K. Mukhopadhyaya, **S. K.Ghosh**, Forecasting Daily Workflow Volumes for Medical Transcription Process, IAPQR Transaction, Vol 37, No 2, 2012, pp 83-102.
5. A. K. Sarkar, A. K. Mukhopadhyaya, **S. K.Ghosh**, Addressing Environmental concern through Lean Six Sigma – a Greener Approach, 2nd International Conference on Solid Waste Management, 2012, pp 71-76.
6. **S. K. Ghosh**, Sustainable Development in Waste Management in India, Proceedings of the International Conf on Waste and Health, ICWWH 2013, IIWM, DST, Bhopal, Feb 15-17, 2013.
7. A. Aich, **S. K.Ghosh**, Windrow Composting is More Financial Viable Option than Vermi Composting and Anaerobic Digestion for the Disposal and Processing of Municipal Waste of Big Cities, 3rd IconSWM 2012 , Proceedings of International Conf on SWM, Mysore, Infosys Campus, July 30 - Aug 01, 2012, pp 353 – 361, ISBN : 81- 86862 - 45 – 5.

Academic Appointments / Lectures Abroad by Prof Sadhan K Ghosh

1. Delivered lecture at Fu Jen Catholic University, on 28th March 2013.
2. Delivered lecture at Green Trade Project Office, Ministry of Economic Affairs, Taiwan on "Green Manufacturing on 26th March 2013.
3. Delivered lecture at Green Trade Project Office, Taiwan on " TQM" on 27th March 2013.
4. Visited Tongji University, China on invitation during 29th March to 5th April 2013.
5. Worked at Aston University as Distinguished Visiting Fellow of Royal Academy of Engineering, during August – Sept 2012 on Energy recovery from Wastes.
6. Visiting Faculty at Aston University, UK : Carried out collaborative research during October – November 2012. 25th to June 14th 2013 under UKIERI.
7. Attended ISO TC 207 Environment Management System, meeting at Kuala Lumpur in June 2012 as Indian Delegation.

Outstanding Achievment:

Awarded Distinguishehd Visiting Fellow by Royal Academy of Engineering, UK in December 2012 to woirk on " Energy Recovery from Municipal Waste".

Lectures Abroad by Prof Sadhan K Ghosh

1. Speech at the International conference on SWM at DST and IIWM at Bhopal in February 2013.
2. Lecture on House Keeping and TQM in MANIT, Bhopal in February 2013.

Research Projects Ongoing by Prof Sadhan K Ghosh as PI

1. UK India Educational Research Initiative – Thematic Partnership Research Project "Waste to Energy from MSW – Decision support System for planning and implementation in India" Partners are Aston University, UK and IIT Kharagpur, 2013 – 2015 – 40,000 GBP.
2. UK India Educational Research Initiative – Thematic Partnership Research Project "Climate Change Issues and Environmental Performance of the Indian Small and Medium-sized Enterprises" Partners are Aston University, UK and IIT Kharagpur, 2012 – 2014 – 60,000 GBP.
3. Research Project for Developing DPR for modernization of EWS KMC for repair and maintenance of submersible pumps for enhanced quality and productivity, 2012 – INR 10.80 Lacs.
4. Research Project for study of SWM status & developing detail Bio Gas Project Document for nine ULBs, 2011 – 2012 – INR 2.70 Lacs.
5. Research Project on Study & developing 2nd generation DDP for 5 years planning for Howrah Municipal Corporation, 2012 – INR 6.60 Lacs.

Edited Volume as Chief Editor by Prof Sadhan K Ghosh

Proceedings of 3rd International Conference on Solid Waste Management, in 2012 (Associate editors are Dr. R. Stegmann, Dr. J. Wong, Mr. J. C. Muffat, Dr. P. Agamuthu, Dr. Wang Jing-Yuan AND Prof P. K. Dey,

Chairman of Icon SWM

Chairman, 4th International Conference on Solid Waste Management to be held at Hyderanvbad organized by Govt of Andhra Pradesh during January 28-30, 2014.

Prof Sankar Dhar

Research Projects:

Principal Investigator/Acting PI Co Investigators / Name of the Research Project /Project Value/Funding Agency

Prof. Sankar Dhar

Dr. sanjib Acharyya, Modelling and Finite element Simulation of Multiaxial Fatigue and Ratcheting of SA333 C-Mn steel, 19.0 Lakhs. BARC

- 2. Invited Lectures Delivered / Session Chaired:** (Name of the Teacher, Type of participation, name of the Seminar/ Conference etc., Place, Duration).

Name of the Teacher - Prof. Sankar Dhar

Lectures Delivered:

Date/Organisation/Topic/Capacity

04-05 May,2012, TATA STEEL R&D and NML, Finite Element Application in Metal Plasticity Invited Speaker

20.07.2012, PXE, DRDO. Finite Element Analysis of ballistic Penetration in Armour Steel Invited Speaker

- 3. Invited to Chair / Co – Chair Technical Session:-**

Name of the Teacher – Prof. Sankar Dhar

Fatigue Fracture and Integrity Assessment (FFIA) , 04-05 May, 2012 organised by Tata Steel R&D and NML Jamshedpur

Papers Published in Journals/Magazines :

Name of the Teacher – Prof. Sankar Dhar

1. S. Bhowmik, S.K. Acharyya, P. Sahoo, S. Dhar, J. Chattopadhyay, "Estimation and comparative study of J_{IC} using different method for 20MnMoNi55 steel", *Materials and Design*: 2013 Vol 46, pp 680-687.
2. J.SHIT , S.DHAR, S. ACHARYYA, 2012, "Modelling and Finite Element Simulation of Low Cycle Fatigue behavior of SS 316", *Procedia Engineering*.
3. Sumit Bhowmik, Prasanta Sahoo, Sanjib Kumar Acharyya, Sankar Dhar, 2013, "Effect of corrosion on fracture toughness in ductile to brittle transition region of 20MnMoNi55 steel", *Procedia Engineering*
4. S.K.Paul, S. Sivaprasad, S.Dhar, S. Tarafder ,2012, " True Stress-Controlled Ratcheting Behavior of 304LN Stainless Steel", *J . Mat. Sc.* 47 (11) 4660-4672

DIPANKAR SANYAL

A. Publications

1. B.K. Sarkar, P. Mandal, R. Saha, S. Mookherjee and D. Sanyal, "GA-optimized feedforward-PID tracking control for a rugged electrohydraulic system design," *ISA Trans.*, <http://dx.doi.org/10.1016/j.isatra.2013.07.008>, 2013.

2. B. K. Sarkar, J. Das, R. Saha, S. Mookherjee and **D. Sanyal**, 2013, Approaching servoclass tracking performance by a proportional valve-controlled system, *IEEE/ASME Trans. on Mechatronics*, vol. 18, pp. 1425–1430, 2013.
3. B. Halder, R Saha and **D. Sanyal**, 2012, Control-integrated design by theoretical simulation for a torque-actuated 6-SBU Stewart platform, *AMAE Int. J. Manufacturing and Material Science 2*, pp 13-21.
4. N. P. Mandal, R. Saha and **D. Sanyal**, 2012, Effects of flow inertia modeling and valve plate geometry on swash plate axial piston pump performance, *Proc. Inst. Mech. Engrs, Part I, J Systems Control Engg*, 226, pp 451-465.
5. A. Mukhopadhyay and **D. Sanyal**, 2012, Modeling of evaporation and combustion of droplets in a spray using the unit cell approach: A review, *Heat Transfer Engineering* 33, pp 375–386.

B. Projects

SI No	Name of Funding agency/Project Title/PI or Co-I (other members)/ Duration/Funding
1	ITR, Chandipur Design and Implementation of Two-Axis Direct Drive Tracking Mechanism/Co-I (with Kumardeb Bandyopadhyay, Kamalesh Majumdar, Sanjib Kumar Acharyya, Saikat Mookherjee, Sanjoy Saha, Rana Saha), 2013-2015, Rs 10.0 lakh
2	ER&IPR, DRDO, New Delhi. Development of a Multiple Degree of Freedom Hydraulic Parallel Manipulator with Control for Motion Tracking/Co-I (with Rana Saha), 2012-2015, Rs 43.91 lakh
3	Aeronautics R&D Board, New Delhi. Design of Low Noise Swash Plate axial Piston Pump/PI (with Rana Saha), 2012-2014, Rs 14.86 lakh
4	HAL, Lucknow, Analysis of Pressure Compensator Design of LCA –130 lpm Main Hydraulic Pump by Modelling and Simulation/ Co-I (with Saikat Mookherjee & Rana Saha), 2012-13, Rs 4.0 lakh
5	Aeronautics R&D Board, New Delhi, High-Frequency Real Time Tracking Control for Linear Servo Actuation System/Co-I (with Rana Saha), 2012-2014, Rs 20.45 lakh

Publications of Prof. Simul Banerjee (1st April 2012 to 31st March 2013)

Present "h index": 3

1. Bijoy Mandal, Rajender Singh, Santanu Das, **Simul Banerjee**, *Development of a grinding fluid delivery technique and its performance evaluation*, *Materials and Manufacturing Processes*, 27/4 (2012) 436 – 442.
2. Sunil Hansda, **Simul Banerjee**, *Multiple performance characteristics optimization in drilling of glass fibre reinforced polyester composite at different weightage of performance by Grey relational analysis*, *International Journal of Machining and Machinability of Materials*, 12/1/2 (2012) 14 – 27.
3. Asit Baran Puri, **Simul Banerjee**, *Multiple-response optimization of electrochemical grinding characteristics through response surface methodology*, *International Journal of Advanced Manufacturing Technology*, 64/5-8 (2013) 715 – 725.
4. Ushasta Aich, Amit Kumar Pal, Dipak Laha, **Simul Banerjee**, *Searching for a pareto optimal multi-objective simulated annealing on RSM model*, *Advanced Materials Research*, 622-623 (2013) 51-55.

5. Bijoy Mandal, Debashis Biswas, Anirban Sarkar, Santanu Das, **Simul Banerjee**, *Improving grindability of Inconel 600 using alumina wheel through pneumatic barrier assisted fluid application*, Advanced Materials Research, 622-623 (2013) 394-398.
6. Haradhan Soren, Subhas Chandra Panja, Sunil Hansda, **Simul Banerjee**, *Analysis process capability of drilling on glass fiber reinforced polyester (GFRP) composites with Taguchi loss function*, Advanced Materials Research, 622-623 (2013) 1314-1319.
7. Bijoy Mandal, Debashis Biswas, Anirban Sarkar, Santanu Das, Simul Banerjee, *Experimental Observation on Grindability of Titanium Gr.1 Under Different Environment*, Proceedings of 4th International and 25th AIMTDR Conference, December 14 – 16, 2012, Jadavpur University, India, 2012, 357 – 362.

Prof. Goutam Sutradhar

Published in Journal (National/International) During April 2012 to March 2013

1. Rabindra Behera and G. Sutradhar, "Solidification Characteristics and Forgeability of Aluminium" Transaction of Indian Institute Metals (**Springer**), Received: 11 January 2012 / Accepted: 9 May 2012 DOI 10.1007/s12666-012-0140-y.
2. Rabindra Behera, D Chatterjee and G Sutradhar "Effect of reinforcement particles on the fluidity and solidification behavior of the stir cast aluminum alloy metal matrix composites", American Journal of Materials Science, 2012, 2(3): 53-61 DOI: 10.5923/j.materials.20120203.04.
3. Sourav Kayal, Rabindra Behera and G Sutradhar, "Castability of Al-SiCp Metal Matrix Composites in Thin Walled Castings", Published in International Journal of Engineering Science and Technology (IJEST), Vol. 4, No. 07 July 2012
4. Sourav Kayal, Rabindra Behera and G Sutradhar, "Mechanical properties of the as-cast silicon carbide particulate reinforced Aluminium alloy matrix composites", Published in International Journal of Current Engineering and Technology, Vol.2, No.3 (Sept. 2012)
5. Hillol Joardar, Goutam Sutradhar and Nitai Sudar Das, "FEM Simulation and Experimental Validation of Cold Forging Behavior of LM6 Base Metal Matrix Composites", Published in International Journal of Minerals and Materials Characterization and Engineering, 2012, 11, 989-994, (Sept. 2012)
6. R Behera, Nihar Ranjan Mohanta, G Sutradhar, "Distribution of SiC Particulates in Stir Cast Aluminium alloy Metal Matrix Composites & its Effect on Mechanical Properties". Published in international journal of emerging trends in engineering & development. Issue 2,vol.1(2012)
7. Souvik Ghosh , Prasanta Sahoo & Goutam Sutradhar , " Friction Performance of Al-SiC_p Metal Matrix Composites using Taguchi Method" International Society Research Network, ISRN, Vol.11, 2013
8. R Behera, D.Chatterjee and G Sutradhar, "Machinability of LM6/SiCp Metal Matrix Composites with Tungsten Carbide Cutting Tool Inserts". Published in ARPN journal of Engineering & applied sciences, vol.7, No.2, Feb-2012 , ISSN 1819 -6608
9. Sujit Das, **R. Behera**, S Koyal, G. Majumdar, B. Oraona, G. Sutradhar, "Study on the effect of heat treatment on the mechanical properties and forgeability of AMMCs", International Journal of Emerging Trends in Engineering and Development Issue 3, Vol.2 (March 2013) ISSN 2249-6149, pp 62-72.

Presented Paper in National/International Conferences :

1. "Casting defects Analysis and Remedy" presented in the National Conference on Achieving Excellence for Industrial Competitiveness January 19-20, 2013, at GLA University, Mathura.
2. "Shop Floor Practice of Ductile Iron Castings : At a Glance" Presented in 61st. Indian Foundry Congress held at Kolkata during 29-31st January 2013.

PAPER PRESENTED IN ABROAD

1. "Modern Foundry Sand Control : Few Important Observations In Indian Perspective" Presented in 53rd. International Foundry Conference , Portoroz 2013, Slovenia during 11-13th.Sept.2013

Books Written

- (i) Principles of Foundry Process design – New Age International (p) Limited, Publishers, New Delhi – Sept'2012

Review Work:

Reviewed 20 cds [about 40 hours] of recording and time line of 4 weeks to launch a portal containing courses on **Casting Design and Simulation** by **Prof.B.Ravi, Chair Professor, Department of Mechanical Engineering , IIT Bombay** organized by Dept of Chemical Engineering, IIT Bombay under **Talk To A Teacher Project** funded by **Ministry of Human Resources and Development (MHRD)** , New Delhi during April- May 2012

International Technical Tour :

1. Visited Ten Foundries in Japan as delegate of The Institute of Indian Foundrymen (IIF) as Joint venture between two countries during 15.4.2013 to 22.4.2013
2. **Invited Lectures Delivered / Session Chaired:** (Name of the Teacher, Type of Participation, name of the Seminar/ Conference etc., Place, Duration).

Name of the Teacher - Prof. Sudipta De

Date Organisation Topic Capacity

7th February, 2013, International Conference on Energy Resources & Technologies for Sustainable Development (ICERTSD), BESU, Shibpur, West Bengal, 'Energy systems modeling – from first principle to data based' Invited Speaker

5th August, 2013, National Power Training Institute (NPTI), Durgapur, WB 'Electricity from conventional power plants: somethoughts on challenges and visible future trends' Invited Speaker

4. Books/ Monographs etc. Published: (Name of the Teacher, Name of the Book, Name of the Publisher)

B. Articles Published in Journals/ Conferences: (Name of the Teacher, name of the Article, Name of the Journal/ Proceedings, Date of the Publication, Volume)

Prof. Sudipta De:

International Journal Papers:

1. Jana, K. and **De, S.*** (2013): 'Utilizing waste heat of the flue gas for post combustion CO₂ capture – a comparative study for different process layouts', **Energy Sources, Part A: Recovery, Utilization, and Environmental Effects (Taylor & Francis) (Accepted).**

2. Majoumerd, M.M., Raas, H., **De, S.**, Assadi, M. "Estimation of performance variation of future generation IGCC with coal quality and gasification process - simulation results of EU H2-IGCC project" **Applied Energy (Elsevier) (In Press)**.
3. Maiti, R., Ghosh, S. and **De, S.*** (2013): "Cracking of tar by steam reforming and hydrogenation", **Biomass Conversion and Biorefinery (Springer)**, 3(2), 103-111.

International Conference Papers:

- 1) **Naskar, S., Jana, K. and De, S.* (2013): 'Comparative performance study of CO₂ capture with monoethyl and diethyl amines using ASPEN PLUS'**, International Conference on Energy Resources & Technologies for Sustainable Development (**Paper No.: ICERTSD-16-304**).
- 2) **Ghoshal, G., Ghosh, A., Maiti, S. and De, S.* (2013): 'Optimum operation for different design conditions of a single pressure heat recovery steam generator (HRSG) for minimum entropy generation'**, International Conference on Energy Resources & Technologies for Sustainable Development (**Paper No.: ICERTSD-15-228**).
- 3) **Bose, A., Mitra, D., Jana, K. and De, S.* (2013): 'Coal Based Polygeneration With CO₂ Capture For Power And Urea Production - Possible Improved Schemes'**, International Conference on Energy Resources & Technologies for Sustainable Development (**Paper No.: ICERTSD-03-227**).
- 4) **Jana, K. and De, S.* (2013): 'Energy savings potential through waste heat recovery from flue gas for post combustion CO₂ capture'**, International Conference on Energy Resources & Technologies for Sustainable Development (**Paper No.: ICERTSD-15-219**).

National Conference Papers:

- 1) **Poddar, S., De, A., Chowdhury R. and De, S. (2012): 'Transient behavior of a Semi-Batch pyrolyser based on the Jute Waste- Experiments and Modeling'**. Indian Chemical Engineering Congress- CHEMCON 2012 (**Paper No.: P306**).

6. Major Achievements:

Prof. Sudipta De

1. Organizing a lecture series (over one-year) on '**Sustainability of Indian Energy Sector: Prospects and Challenges**' jointly with Bengal Chamber of Commerce and Industry (BCCI) and European Business and Technology Centre (EBTC) with World Bank funding. (http://teqip.jdvu.ac.in/for_website/web_lecture.html)
2. Senior research fellow of '**Indian-European Multi-Level Climate Governance Research Network**' (http://www.indiaeu-climategovernance.org/people/senior_researchers/de_sudipta/index.html).
3. Expert Member of High Power Committee of **Kolkata Metropolitan Corporation (KMC)** for saving of energy in public utilities.
4. Expert member of West Bengal Board of Boiler Operation Engineers under the **Directorate of the Boiler, Government of West Bengal**.
5. Member of the Core Group of the Jadavpur University for **Indo – European Interactions on Higher Education** coordinated by **British Council**.
6. Regular **reviewer** of many reputed international journals.

ACHINTYA MUKHOPADHYAY

Journal Publication:

1. S. Mondal, A. Mukhopadhyay and S. Sen, Dynamic Characterization of a Laboratory-Scale Pulse Combustor, *Combustion Science and Technology*, Accepted for publication, 2013.
2. S. Chatterjee, S. Samanta, A. Mukhopadhyay and S. Sen, Effect of Confinement and Prefilming on the Stability of an Annular Liquid Sheet, *Atomization and Sprays*, Vol. 23, pp. 401 – 418, 2013.
3. P. Ghose, A. Datta and A. Mukhopadhyay, Effect of Dome Shape on Static pressure Recovery in a Dump Diffuser at Different Inlet Swirl, *International Journal of Emerging Technology and Advanced Engineering*, Vol. 3, pp. 465 – 471, 2013.
4. T.J. Tharakan, A. Mukhopadhyay, A. Datta and M.A. Jog, Trends in Comprehensive Modeling of Spray Formation, *International Journal of Spray and Combustion Dynamics*, Vol.5 pp. 123 – 180, 2013.
5. A. Mukhopadhyay, R.R. Chaudhari, T. Paul, S. Sen and A. Ray, Prediction of Lean Blow-out in Gas Turbine Combustors using Symbolic Time Series Analysis, *Journal of Propulsion and Power*, Vol. 29 pp. 950 – 960, 2013.
6. P. Sinha Mahapatra, S. De, K.Ghosh, N.K. Manna and A. Mukhopadhyay, Heat Transfer Enhancement and Entropy Generation in a Square Enclosure in the Presence of Adiabatic and Isothermal Blocks, *Numerical Heat Transfer Part A: Applications*, Vol. 64 pp. 577 - 596, 2013.
7. S. Barman, N. Barman, A. Mukhopadhyay and S. Sen, Studies on the Phase Transformation during Cooling of a Moving Plate under Water Jet, *Journal of Machining and Forming Technology*, Vol. 5 pp. 137 – 149, 2013.
8. S. Barman, N. Barman, A. Mukhopadhyay and S. Sen, Thermal Behaviour of a Hot Moving Steel Strip under Multi-Cooling Jets, *Heat Transfer Engineering*, Accepted for publication, 2013.
9. R. R. Chaudhari, R.P. Sahu, S. Ghosh, A. Mukhopadhyay and S. Sen, Flame Color as a Lean Blowout Predictor, *International Journal of Spray and Combustion Dynamics*, Vol. 5 pp. 49 – 66, 2013.
10. S. Barman, N. Barman, A. Mukhopadhyay and S. Sen, Analytical Prediction of Thermal Behavior during Cooling of a Steel Strip, *Advanced Materials Research*, Vol. 585, pp. 19 – 23, 2012.
11. N. Biswas, N.K. Manna, A. Mukhopadhyay and S. Sen, Numerical Simulation of Laminar Confined Radial Flow Between Parallel Circular Discs, *Transactions of ASME Journal of Fluids Engineering*, Vol.134, pp. 011205-1 – 011205-8, 2012
12. A. Mukhopadhyay, G. Jasor and W. Polifke, Simulation of Pure Sedimentation of Raindrops using Quadrature Method of Moments, *Atmospheric Research*, Vol.106, 61 – 70, 2012.
13. S. Mondal, A. Mukhopadhyay and S. Sen, Effects of Inlet Conditions on Dynamics of a Thermal Pulse Combustor, *Combustion Theory and Modelling*, Vol.16, pp. 59 – 74, 2012
14. A. Mukhopadhyay and D. Sanyal, Modeling of Evaporation and Combustion of Droplets in a Spray using Unit Cell Approach: A Review, *Heat Transfer Engineering*, Vol. 33 pp. 375 – 386, 2012.

Conference Publication:

1. A. Mukhopadhyay, Parametric Investigation of Sedimentation of Raindrop using Quadrature Method of Moments, *Proc. 5th International Conference on Population Balance Modelling*, Bangalore, September 2013.
2. M. Das, S. Chatterjee, A. Garai, A. Mukhopadhyay and S. Sen, Spray Characterization of Hollow Cone Nozzle, *Proc. Indian Conference on Applied Mechanics (INCAM)*, Chennai, July 2013.

3. P. S. Mahapatra, S. Chatterjee, K. Ghosh, N.K. Manna, S. Sen and A. Mukhopadhyay, Transient Interaction of Particles with Quiescent Water: Experimental and Numerical Analysis, *Proc. Indian Conference on Applied Mechanics (INCAM)*, Chennai, July 2013.
4. S. Chatterjee, M. Das, A. Mukhopadhyay and S. Sen, Experimental Investigation of Swirling Effects in Central Air Core on Atomization in an Annular Hybrid Atomizer, *Proc. European Combustion Meeting*, Lund, Sweden, June 2013.
5. S. Mondal, A. Mukhopadhyay and S. Sen, Effect of CO₂ dilution with Methane in Thermal Pulse Combustor, *Proc. International Workshop on Non-Normal and Nonlinear Effects in Aero- and Thermo-acoustics*, Munich, Germany, June 2013.
6. S. Chatterjee, A. Mukhopadhyay and S. Sen, Study of Laminar Flame Dynamics using Proper Orthogonal Decomposition and Dynamic Mode Decomposition, *Proc. International Workshop on Non-Normal and Nonlinear Effects in Aero- and Thermo-acoustics*, Munich, Germany, June 2013.
7. S. Chatterjee, M. Das, A. Mukhopadhyay and S. Sen, Effect of Co- and Counter-Swirling Inner Air on the Spray Dynamics of an Annular Fuel Sheet in a Hybrid Atomizer, *Proc. 9th Asia Pacific Conference on Combustion*, Gyongju, Korea, May, 2013.
8. S. Chatterjee, M. Das, A. Mukhopadhyay and S. Sen, Experimental Investigation of Disintegration of Annular Liquid Jet in a Prefilming Hybrid Atomizer, Paper No. 12008, *Proc. National Propulsion Conference*, Chennai, 2013.
9. S. Chatterjee, A. Mukhopadhyay and S. Sen, Dynamic Mode Decomposition of Liquid Jet Atomization in a Hybrid Atomizer, Paper No. 12009, *Proc. National Propulsion Conference*, Chennai, 2013.
10. P. Ghose, A. Datta and A. Mukhopadhyay, Effect of Dome Shape on Static pressure Recovery in a Dump Diffuser at Different Inlet Swirl, *Proc. International Conference on Energy Resources and Technologies for Sustainable Development*, Shibpur, 2013.
11. R. Bhattacharjee and A. Mukhopadhyay, Analysis of Hot Spot Formation in Multicore Processors using Open FOAM, Paper No.: FMFP2012-199, *Proc. 39th National Conference on Fluid Mechanics and Fluid Power*, Surat, 2012.
12. K.K. Das, M. Sarkar, R. Ganguly and A. Mukhopadhyay, Transient Response of Ferrofluid Plug, Paper No.: FMFP2012-178, *Proc. 39th National Conference on Fluid Mechanics and Fluid Power*, Surat, 2012.
13. S. Chatterjee, M. Das, A. Mukhopadhyay, and S. Sen, Experimental Study of Disintegration of Annular Swirling Liquid Jet in a Hybrid Atomizer, Paper No.: FMFP2012-177, *Proc. 39th National Conference on Fluid Mechanics and Fluid Power*, Surat, 2012.
14. S. Chatterjee S. Samanta, A. Mukhopadhyay, K. Ghosh and S. Sen, Stability Analysis and Parametric Study of an Annular Prefilming Atomizer in a Swirling Field, Paper No.: FMFP2012-176, *Proc. 39th National Conference on Fluid Mechanics and Fluid Power*, Surat, 2012.
15. A. Guha and A. Mukhopadhyay, Control of Mass Flowrate of Non-polar Fluid in Microchannels using Time Varying Electroosmotic Flow, Paper No.: FMFP2012-175, *Proc. 39th National Conference on Fluid Mechanics and Fluid Power*, Surat, 2012.
- 16.A. Basu, A. Bose, D. Mitra, D. Mukherjee and A. Mukhopadhyay, Analytic and Numerical Study of Dynamics of Polydisperse particulate Flow to Fluctuating Flowfields, Paper No.: FMFP2012-174, *Proc. 39th National Conference on Fluid Mechanics and Fluid Power*, Surat, 2012.

- 17.S. Kar and A. Mukhopadhyay, Numerical Simulation of Response of Polydisperse Sprays to Fluctuating Flowfield using Method of Moments, Paper No.: FMFP2012-170, *Proc. 39th National Conference on Fluid Mechanics and Fluid Power*, Surat, 2012.
18. M. Das, S. Chatterjee, A. Mukhopadhyay, and S. Sen, Experimental Investigation and Spray Characterization of Viscous Liquid Jet, Paper No.: FMFP2012-166, *Proc. 39th National Conference on Fluid Mechanics and Fluid Power*, Surat, 2012.
19. K. Chatterjee, A. Kumar, S. Chatterjee, A. Mukhopadhyay and S. Sen, Numerical Simulation to Characterize Homogeneity of Air-Fuel Mixture for Premixed Combustion in Gas Turbine Combustor, *Proc. ASME 2012 Gas Turbine India Conference*, Paper No.:GTIndia2012-9602, Mumbai, 2012.
20. A. Kumar, K. Chatterjee, A. Mukhopadhyay and S. Sen, Experimental Characterization of Premixed Flame in gas Turbine Combustor with Spectroscopy and RGB Analysis, *Proc. ASME 2012 Gas Turbine India Conference*, Paper No.:GTIndia2012-9604, Mumbai, 2012.
21. S. Chatterjee, S. Samanta, A. Mukhopadhyay, K. Ghosh and S. Sen, Effect of a Confined Outer Air Stream on Instability of an Annular Liquid Sheet Exposed to Gas Flow, *Proc. ASME 2012 Gas Turbine India Conference*, Paper No.:GTIndia2012-9605, Mumbai, 2012.
22. S. Mahapatra, S. Chatterjee, S. Shannigrahi, A. Mukhopadhyay and S. Sen, Experimental Investigation and Spray Characterization of Liquid Jet Atomization of Conventional Fuels and Liquid Bio-Fuels, *Proc. ICLASS 2012, 12th Triennial International Conference on Liquid Atomization and Spray Systems*, Heidelberg, Germany, 2012.
23. S. Nath, A. Mukhopadhyay, A. Datta and S. Sen, Analysis of Disintegration of Plane Liquid Sheets Sandwiched between Gas Streams with unequal Velocities and Resulting Spray Formation, *Proc. ICLASS 2012, 12th Triennial International Conference on Liquid Atomization and Spray Systems*, Heidelberg, Germany, 2012.
- 24.S. Mondal, A. Mukhopadhyay and S. Sen, Dynamic Characterization of a Laboratory-Scale Thermal Pulse Combustor, Paper No: GT2012-69273, *Proc. ASME Turbo Expo 2012*, Copenhagen, 2012.

Research Projects (In addition to already included in report):

Principal Investigator /Acting PI/ Co Investigator/ Name of the Research Project/Project Value in Lakh of INR/Funding Agency

Achintya Mukhopadhyay

Swarnendu Sen, Koushik Ghosh, Amitava Datta Modeling and Experimental Validation of Spray Formation by Disintegration of Annular Swirling Liquid Sheets for Design of Advanced Fuel Injectors for Gas Turbine Combustors. 15.58, GATET-GTRE

Swarnendu Sen

Achintya Mukhopadhyay, Koushik Ghosh, Amitava Datta, Conjugate Heat transfer Modeling with Gas Radiation for Gas-turbine Combustor/Afterburner Liners. 16.67, GATET-GTRE

Publications of Prof. Goutam Pohit (1st April 2012 to 31st March 2013)

Referred Journals

1. Chaterjee, S., and Pohit, G., "Squeeze-film damping characteristics of cantilever micro-resonators under large electrostatic loading", *Journal of Mechanics of Advanced Materials and Structures*, 19, 2012, pp. 613–624.

2. Chatterjee, S., and Pohit, G., "Dynamics of nonlinearly damped microcantilevers under electrostatic excitation", *Proc IMechE Part C: J Mechanical Engineering Science*, 227(3), 2012, pp. 630-646.
3. Pohit, G. and Kumar K., "Virtual Manufacturing of various types of Gears and the validation of the technique using Rapid Prototype." *Virtual and Physical Prototyping*, Vol. 7, No. 2, 2012, pp. 153-171.
4. Pohit G. and Misra D., "Optimization of Engine Performance and Emission Characteristics of Diesel Engine Fueled with Karanja Oil Methyl Ester using Grey-Taguchi Method." *Journal of Engineering*, Volume 2013, Article ID 915357, 8 pages.
5. Jena, Pankaj Charan, Parhi, Dayal R. and Pohit, G., "Study of faults detection of a single cracked beam through various techniques", *International Journal of Applied Artificial Intelligence in Engineering System*, Vol. 4, No. 1, 2012, pp. 51-58.
6. Pohit, G. Das, S. K. and Roy, P. C., "Non-linear In-plane Vibration of a Rotating Beam with Spring-mass System Attached to the Beam", *Advances in Vibration Engineering*, Vol. 14, Issue 1, 2014.
7. Jena, Pankaj Charan, Parhi, Dayal, R., and Pohit, G., "Faults Detection of a Single Cracked Beam by Theoretical and Experimental Analysis using Vibration Signatures", *Journal of Mechanical and Civil Engineering (IOSR-JMCE)*, Vol. 4, Issue 3, pp 01-18.
8. Sahoo, Bamadev, Panda, L. N, Pohit, G., "Parametric and Internal Resonances of an Axially Moving Beam with time Dependent Velocity", In Press *Modelling and Simulation in Engineering*.
9. Sahoo, Bamadev, Panda, L. N, Pohit, G., "A Continuation Algorithm for Stability and Bifurcation Analysis of Nonlinear Systems," In Press *Journal of Mechatronics and Intelligent Manufacturing*.

Contribution in Conference Proceedings

1. Datta, Ambarish and Pohit, G., "Optimization of performances and emissions of a karanja biodiesel driven vcr ci engine", *International Conference on Recent Advances and Challenges in Energy (RACE – 2012)*, MIT, Manipal.
2. Banerjee, Amit and Pohit, G., "Comparison Study of Cracked Detection of Cantilever Beam using Artificial Neural Network and wavelet Transform", *2nd International Conference on Advanced Manufacturing and Automation (INCAMA-2013)*, Kalasalingam University, 28-30 March 2013, pp 13-18.
3. Sahoo, Bamadev, Panda, L.N. and Pohit, G., "A Continuation Algorithm for Stability and Bifurcation Analysis of Nonlinear Systems", *2nd International Conference on Advanced Manufacturing and Automation (INCAMA-2013)*, Kalasalingam University, 28-30 March 2013, pp 19-26.

Sanjib Kumar Acharyya , M.E Department since 2012

International Journal :

1. Sumit Bhowmik, Prasanta Sahoo, Sanjib Kumar Acharyya, Sankar Dhar, 2013, "Effect of corrosion on fracture toughness in ductile to brittle transition region of 20MnMoNi55 steel", *Procedia Engineering*
2. Ruby Mishra, T.K.Naskar, Sanjib Acharyya 2013, "Synthesis of coupler curve of a Four Bar Linkage with joint Clearances" *International Journal of Engineering Research and Applications (IJERA)* Vol. 3, Issue 1, pp.1193-1199.

3. J.SHIT , S.DHAR, S. ACHARYYA, 2012, "Modelling and Finite Element Simulation of Low Cycle Fatigue behavior of SS 316", *Procedia Engineering*.
4. Ruby Mishra, T.K.Naskar and S. K. Acharyya , 2012, "Synthesis of 4r path generating chain with multiple joint clearances using de algorithm", *International Journal of Engineering Science and Technology (IJEST)*, Vol. 4 No.12, pp-4912-4921
5. S. Bhowmik, S.K. Acharyya, P. Sahoo, S. Dhar, J. Chattopadhyay, "Estimation and comparative study of J_{IC} using different method for 20MnMoNi55 steel", *Materials and Design: 2013 Vol 46*, pp 680-687.
6. S. Bhowmik , P. Sahoo , S.K. Acharyya , J. Chattopadhyay , S. Dhar 2012, "Application and comparative study of the master curve methodology for fracture toughness characterization of 20MnMoNi55 steel", *Materials and Design* ,vol-39, pp-309–317
7. Bappa Acherjee, Arunanshu S. Kuar, Souren Mitra, Dipten Misra, Sanjib Acharyya, 2012, "Experimental investigation on laser transmission welding of PMMA to ABS via response surface modeling" *Optics and Laser Technology*, 44 (5) , pp. 1372-1383
8. SHIT, J., DHAR, S., ACHARYYA, S.K., GOYAL. S., 2012. "Modeling of uniaxial ratchetting behavior of SA333 carbon manganese steel", *International Journal of Pressure Vessels and Piping*, 92 , pp. 96-105

Project Supervised:

Sl.No/Designation /Title of the Project/Funding Authority/Duration from, to/Sanctioned Amount (Rs. in lakh)/Status of the Project

- 1 Co- Investigator, Modelling and Finite element Simulation of Uniaxial and Bi- axial Low cycle fatigue and Ratcheting, BARC, 2008-2013, 12.0. Ongoing
- 2 Principal Investigator, Master Curve Generation for Fracture Toughness of the material 20 Mn Mo Ni 55 from lower shelf to upper shelf", BARC, 2009-2013, 44.0, Ongoing
- 3 Principal Investigator, Fracture Tests on Three Point Bend Specimens of the material 20MnMoNi55 at Room and Sub-zero Temperature to Investigate Master Curve." BARC, 2010-2014, 39.0, Ongoing
- 4 Principal Investigator, Measurement of Mass Properties of Payloads, RCI, DRDO, 2010-2013, 9.95, Ongoing
- 5 C.I, DESIGN & IMPLEMENTATION OF TWO-AXIS DIRECT-DRIVE TRACKING MECHANISM ITR, DRDO, 2013-2015, 10.0, ongoing

Chattopadhyay, Himadri

List of Publication/ Journals

- 1 Biswas, G., Chattopadhyay, H. and Sinha, A. (2012), Augmentation of Heat Transfer by Creation of Stream-wise Longitudinal Vortices using Vortex Generators, *Heat Transfer Engineering* , 33, 506-524.
- 2 Chattopadhyay, H., Kundu, A., Saha, B.K. and Gangopadhyay, T, (2012) Analysis of flow structure inside a spool type pressure regulating valve, *Energy Conversion and Management*, **53**, 196-204
- 3 Loha, C., Chattopadhyay, H. and Chatterjee, P.K. (2012), Simulation of bubbling fluidized bed using different drag models, *Chemical Engineering Science*, **75**, 400-407

- 4 Rawat, M., Das, L.G., Chattopadhyay, H., Neogi, S. (2012), An experimental investigation on thermoelectric refrigeration system: a potential green refrigeration technology, *J. Environmental Research Development*, **6**, 1031-1037
- 5 Das, P., Samanta, S.K., Chattopadhyay, H., Sharma, B.B., Datta, P. (2012), Effect of Pouring Temperature on Semi Solid Slurry Generation Process in a Cooling Channel, *Acta Metallurgica Sinica*, **25**, 329-339
- 6 Nandi, T. and Chattopadhyay, H. (2012), Simultaneously developing flow in microchannels under pulsating inlet flow condition, *Int. J. Transport Phenomena*, **13**, 111-20.
- 7 Das, P., Samanta, S.K., Chattopadhyay, H., Sharma, B.B., Datta, P. (2012), Microstructural evolution of A356 Al alloy during flow along a Cooling Slope, *Transactions IIM*, **65(6)**, 669-672
- 8 Simlandi, S., Barman, N. and Chattopadhyay, H. (2012), Study on rheological behavior of A356 alloy during solidification in presence of stirring, *Transactions IIM*, **65(6)**, 809-814
- 9 Das, P., Samanta, S.K., Chattopadhyay, H., Barman, N., Datta, P. (2013), Rheological characterization of semi-solid A356 aluminium alloy, *Solid State Phenomena* **192-193**, 329-334
- 10 Simlandi, S., Barman, N. and Chattopadhyay, H. (2013), Study of thixotropic property of A356 alloy in semisolid state, *Solid State Phenomena* **192-193**, 335-340
- 11 Das, P., Samanta, S.K., Chattopadhyay, H., Datta, P. (2013), Studies on rheocasting using cooling slope, *Solid State Phenomena*, **192-193**, 341-346
- 12 Sinha, A., Ashoke Raman, K., A., Biswas, G., Chattopadhyay H. (2013), Effects of Different Orientations of Winglet Arrays on the Performance of Plate-Fin Heat Exchangers, *Int. J. Heat Mass Transfer*, **57**, 202-214
- 13 Ghosh., A., Barman, N.K., Chattopadhyay, H. Hloch, S. (2013), A Study on thermal Behaviour during Submerged Arc Welding, *Strojniški vestnik - Journal of Mechanical Engineering*, **59**: 333-338
- 14 Das, P., Samanta, S.K., Chattopadhyay, H., Datta, P. (2013), Eulerian Two Phase Flow Simulation and experimental validation of semisolid slurry generation process using cooling slope, *Materials Science and Technology*, **29**:83-92
- 15 Simlandi, S., Barman, N. and Chattopadhyay, H. (2013), Studies on Transport Phenomena during Continuous Casting of an Al-Alloy in Presence of Electromagnetic Stirring, *Transactions IIM* **66**: 141-146
- 16 Loha, C., Chattopadhyay, H. and Chatterjee, P.K., Euler-Euler CFD modeling of fluidized bed: influence of specular coefficient on hydrodynamic behavior, *Particology (in press)*
- 17 Rawat M.K., Chattopadhyay, H., Neogi, S. (2013) Review on developments of thermoelectric refrigeration and air conditioning systems : a novel potential green R& AC technology, *Int J. Emerging Tech Advanced Engg*, **3**: 362-367
- 18 Ghosh., A., Barman, N.K., Chattopadhyay, H., Bag, S.(2013), Modeling of Heat Transfer in Submerged Arc Welding Process, *Proc. Instt Mechanical Engineers Pat B J. Engg. Manufacture*,
- 19 Ghosh, A. and Chattopadhyay, H., Mathematical Modeling of Moving Heat Source Shape for Submerged Arc Welding Process, *Advanced Manufacturing Technology, in press*
- 20 Nandi, T. and Chattopadhyay, H., Numerical Investigations of Simultaneously Developing Flow in Wavy Microchannels under Pulsating Inlet Flow Condition, *Int Comm Heat Mass Transfer*, In press

Conferences

1. Nandi, T., Chattopadhyay, H., Numerical investigation of microchannel flow under pulsating inlet, accepted National Conf. for Fluid Mechanics Fluid Power, Surat November 2012
2. Loha, C., Chattopadhyay, H., Numerical simulation of bubble formation in a jetting fluidized bed accepted National Conf. for Fluid Mechanics Fluid Power, Surat November 2012
3. Bit, A., Chattopadhyay, H., Non-newtonian flows in stenosed channel, accepted for Indian Science Congress, 3-7 January 2013
4. Nandi, T., Chattopadhyay, H., Development of flow and thermal field in wavy microchannels under inlet pulsations, accepted for Indian Science Congress, 3-7 January 2013
5. Simlandi, S., Barman, N. and Chattopadhyay, H., Rheological Behaviour of Semisolid Alloy Slurry – an Overview, accepted for Indian Foundry Congress 27-29 January, 2013, Kolkata
6. Rawat M.K., Chattopadhyay, H., Neogy, S Review on developments of thermoelectric refrigeration and air conditioning systems : a novel potential green R& AC technology, International Conference on Energy Resources and Technologies for Sustainable Development, Feb 7-9, 2013, Howrah India

SAIKAT MOOKHERJEE,

C. Publications

1. B. K. Sarkar, J. Das, R. Saha, **S. Mookherjee** and D. Sanyal, *Trans. on Mechatronics*, vol. 18, pp. 1425–1430, 2013.
2. N. P. Mandal, R. Saha, **S. Mookherjee** and D. Sanyal, 2013, Pressure compensator design for an axial piston pump, *Trans. ASME Dynamic Systems Measurements Controls*, Accepted for publication (manuscript no. DS-12-1356.)

D. Projects

Sl No. Name of Funding Agency/Project Title/PI or Co-I (other members)/DurationFunding

- 1 ITR, Chandipur Design and Implementation of Two-Axis Direct Drive Tracking Mechanism/Co-I (with Kumardeb Bandyopadhyay, Kamallesh Majumdar, Sanjib Kumar Acharyya, Dipankar Sanyal, Sanjoy Saha, Rana Saha), 2013-2015, Rs 10.0 lakh
- 2 HAL, Lucknow Analysis of Pressure Compensator Design of LCA –130 lpm Main Hydraulic Pump by Modelling and Simulation/ PI (with Dipankar Sanyal & Rana Saha), 2012-13, Rs 4.0 lakh

Dr. Nilkanta Barman

PUBLICATIONS

INTERNATIONAL JOURNALS

1. U. Ray, A. Sarkar, S. Sen, B. Roychowdhury and **N. Barman**, "Induction Heating of an Aluminum Billet: A Numerical Study of the Thermal Behavior", *Applied Mechanics and Materials*, vols. 110-116, 2012, pp. 4697-4704
2. S. Simlandi, **N. Barman** and H. Chattopadhyay, "Study on Thixotropic Property of A356 Alloy in Semi-Solid State", *Solid State Phenomena*, vols. 192-193, 2013, pp. 335-340

3. **N. Barman** and P. Dutta, "Evolution of Microstructure during Solidification of an Aluminium Alloy under Stirring", *Transactions of the Indian Institute of Metals*, vol. 65(6), pp. 683-687
4. D. Mohanty, A. K. Nayak and **N. Barman**, "Studies on Transport Phenomena during Solidification of a Binary Solution (NH₄Cl +H₂O) on an Inclined Cooling Plate", *Transactions of the Indian Institute of Metals*, vol. 65(6),2012, pp. 801-807
5. S. Simlandi, **N. Barman** and H. Chattopadhyay, "Study on Rheological Behavior of Semisolid A356 Alloy during Solidification", *Transactions of the Indian Institute of Metals*, vol. 65(6),2012, pp. 809-814
6. A. Das, N. Banerjee, S. Sen, B. Neogi, S. Simlandi and **N. Barman**, "Studies on Double Diffusive Convection and Macro-segregation during Solidification of an Al-alloy based on Macro-Micro Model", *Transactions of the Indian Institute of Metals*, vol. 65(6), 2012, pp. 815-820
7. S. Barman, **N. Barman**, A. Mukhopadhyay and S. Sen, "Analytical Prediction of Thermal Behavior during Cooling of a Hot Steel Strip", *Advanced Materials Research*, vol. 585(2012), pp. 19-23.
8. P. Das, S. K. Samanta, H. Chattopadhyay, P. Dutta and **N. Barman**, "Rheological Characterization of Semi-Solid A356 Aluminium Alloy", *Solid State Phenomena*, vols. 192-193, 2013, pp. 329-334
9. S. Simlandi, **N. Barman** and H. Chattopadhyay, "Studies on Transport Phenomena during Continuous Casting of an Al-Alloy in Presence of Electromagnetic Stirring", *Transactions of the Indian Institute of Metals* (in press, 2013)
10. S. Barman, **N. Barman**, A. Mukhopadhyay and S. Sen, "Thermal Behavior of a Hot Moving Steel Strip under Multi-cooling Jets", *Heat Transfer Engineering* (accepted)
11. S. Barman, **N. Barman**, A. Mukhopadhyay and S. Sen, "Studies on the Phase Transformation during Cooling of a Hot Moving Steel Plate under Multi Water Jets", *Journal of Machining and Forming Technology* (in press, 2013)

CONFERENCE PROCEEDINGS

1. S. Mukherjee, S. Simlandi and **N. Barman**, "Studies on Thermal Behavior for Cooling of a Building using Phase Change Material ", Recent Advances and Challenges in Energy, January 4 -6, 2012, MIT, Manipal, India, pp. 695-701
2. R. Halder and **N. Barman**, "Studies on the Forced Convection Flow over a Porous Hot Flat Plate" International Conference on Applications of Fluid Engineering September 20-22, 2012, G .I. Bajaj Institute of Technology and Management, Greater Noida (U.P.), India
3. **N. Barman**, S. Simlandi and H. Chattopadhyay, "Rheological Behaviour of Semisolid Alloy Slurry - An Overview", Transactions of 61st Indian Foundry Congress 2013, Kolkata, India

Best Paper Award

Best Paper Award to Sri S. Mukherjee (a Student) for presenting a work entitled "*Studies on Thermal Behavior for Cooling of a Building using Phase Change Material*" by S. Mukherjee, S. Simlandi and N. Barman in the conference "*Recent Advances and Challenges in Energy*" held on January 4 -6, 2012 at MIT, Manipal, India

RESEARCH GRANTS

Title

Funding Agency

Duration

An Experimental Study on the Formation of Slurry during Solidification of a Metal Analogous Transparent Solution ($\text{NH}_4\text{Cl} + \text{H}_2\text{O}$) in Presence of Shear Flow, DST under Fast Track Scheme(Rs.14.64 lacs), 2012-2015

SWARNENDU SEN

Journal Publication:

1. Flame Color as a Lean Blowout Predictor; R. R. Chaudhari, R.P. Sahu, S. Ghosh, A. Mukhopadhyay, S. Sen; International Journal of Spray and Combustion Dynamics; V-5, 49-66, 2013
2. Studies on the Phase Transformation during Cooling of a Hot Moving Steel Plate under Multi Water Jets; S. Barman, N. Barman, A. Mukhopadhyay, S. Sen; Journal of Machining and Forming Technologies; V-5, 137-149, 2013
3. Effect of Confinement and Prefilming on the Stability of an Annular Liquid Sheet; S. Chatterjee, S. Samanta, A. Mukhopadhyay, S. Sen; Atomization and Sprays; V-23, 401-418, 2013
4. Analytical Prediction of Thermal Behaviour during Cooling of a Hot Steel Strip; S. Barman, N. Barman, A. Mukhopadhyay, S. Sen; Advanced Materials Research; Vol. 585, 19-23, 2012
5. Numerical Simulation of Laminar Confined Radial Flow between Parallel Circular Discs; N. Biswas, N.K.Manna, A. Mukhopadhyay, S.Sen; Trans ASME J. Fluids Engg.; Vol-134, 011205-1 – 011205-8, 2012.
6. Shear Viscosity Enhancement in Water-nanoparticle Suspensions; B. Ganesh, S. Sen, I.K. Puri; Physics Letter A; Vol-376, 860-863, 2012.
7. Effects of Inlet Conditions on Dynamics of a Thermal Pulse Combustor, S. Mondal, A. Mukhopadhyay, S. Sen; Combustion Theory and Modelling. Vol-16, 59-74, 2012.
8. Thermal Behavior of a Hot Moving Steel Strip under Multi-cooling Jets; S. Barman, N. Barman, A. Mukhopadhyay, S. Sen; Heat Transfer Engineering (In Press).
9. Lean Blowout Prediction in Gas Turbine Combustors Using Symbolic Time Series Analysis; A. Mukhopadhyay, R.R. Chaudhary, T. Paul, S. Sen & A. Ray; J. Prop. Power (In Press)
10. Dynamic Characterization of a Laboratory-Scale Pulse Combustor, S. Mondal, A. Mukhopadhyay & S. Sen; Combust. Sc. Technol. (Accepted).

Conference Publication:

1. Stability Study of Laminar Flame using Proper Orthogonal Decomposition and Dynamic Mode Decomposition; S. Chatterjee, A. Mukhopadhyay, S. Sen; International Summer School and Workshop on Non-Normal and Nonlinear Effects in Aero- and Thermoacoustics, June 18 - 21, 2013, Munich
2. Effect of CO_2 Dilution with Methane in Thermal Pulse Combustor; S. Mondal, A. Mukhopadhyay, S. Sen; International Summer School and Workshop on Non-Normal and Nonlinear Effects in Aero- and Thermoacoustics, June 18 - 21, 2013, Munich
3. Experimental Investigation and Spray Characterization of Liquid Jet Atomization of Conventional Fuels and Liquid Bio-Fuels; S. Mahapatra, S. Chatterjee, S. Shannigrahi, A. Mukhopadhyay, S. Sen; 12th Triennial International Conference on Liquid Atomization and Spray Systems (ICLASS 2012), Pap. No.: 1223b, Heidelberg, Germany, September 2-6, 2012

4. Analysis of Disintegration of Planar Liquid Sheet Sandwiched between Gas Streams with Unequal Velocities and Resulting Spray Formation; S. Nath, A. Mukhopadhyay, A. Datta, S. Sen, 12th Triennial International Conference on Liquid Atomization and Spray Systems (ICLASS 2012), Pap. No.: 1154b, Heidelberg, Germany, September 2-6, 2012
5. Effect of a Confined Outer Air Stream on Instability of an Annular Liquid Sheet Exposed to Gas Flow. Chatterjee S, Samanta S, Mukhopadhyay A, Ghosh K, Sen S. Proceedings of ASME 2012 Gas Turbine India Conference; Paper No.:GTIndia2012-9605; 1 December, 2012, Mumbai, India.
6. Stability Analysis and Parametric Study of an Annular Prefilming Atomizer in a Swirling Field; Chatterjee S, Samanta S, Mukhopadhyay A, Ghosh K, Sen S. Proc. 39th National Conference on Fluid Mechanics and Fluid Power; Paper No: 176; 13-15 December, 2012, SVNIT Surat, Gujarat, India.
7. Experimental Study of Disintegration of Annular Swirling Liquid Jet in a Hybrid Atomizer; Chatterjee S, Das M, Mahapatra S, Mukhopadhyay A, Sen S. Proc. 39th National Conference on Fluid Mechanics and Fluid Power; Paper No. 177; 13-15 December, 2012, SVNIT Surat, Gujarat, India.
8. Experimental Investigation and Spray Characterization of Viscous Liquid Jet; Das M, Mahapatra S, Chatterjee S, Mukhopadhyay A, Sen S. Proc. 39th National Conference on Fluid Mechanics and Fluid Power; Paper No. 166; 13-15 December, 2012, SVNIT Surat, Gujarat, India.

Research Projects (In addition to already included in report):

Principal Investigator/ Acting PI/ Co Investigator/ Name of the Research Project/Project Value in Lakh of INR/Funding Agency

Achintya Mukhopadhyay

Swarnendu Sen, Koushik Ghosh, Amitava Datta Modeling and Experimental Validation of Spray Formation by Disintegration of Annular Swirling Liquid Sheets for Design of Advanced Fuel Injectors for Gas Turbine Combustors 15.58 GATET-GTRE

Swarnendu Sen

Achintya Mukhopadhyay, Koushik Ghosh, Amitava Datta, Conjugate Heat transfer Modeling with Gas Radiation for Gas-turbine Combustor/Afterburner Liners. 16.67, GATET-GTRE

Prasanta Sahoo:

Publication Data (April 2012 onwards)

BOOK Chapters

Tribology for Scientists and Engineers (Eds. Sudeep Ingole et al.), 2013, Springer, USA, Sahoo, P. and Davim, J. P., Tribology of ceramics and ceramic matrix composites (in press).

Handbook of Measurement in Science and Engineering, (Ed. Myer Kutz), 2013, Wiley, USA; ISBN: 978-1-1183-8463-3, Sahoo, P.: Tribology measurements (Chapter 32), pp. 981-1006.

Dynamic Methods and Process Advancements in Mechanical, Manufacturing, and Materials Engineering, J P Davim (Ed.) IGI Global, Hershey, USA, 2012

Chapter 2: Large Amplitude Forced Vibration Analysis of Stiffened Plates under Harmonic Excitation (pages 25-61), A Mitra, P. Sahoo, K Saha

Dynamic Methods and Process Advancements in Mechanical, Manufacturing, and Materials Engineering, J P Davim (Ed.) IGI Global, Hershey, USA, 2012

Chapter 18: Roughness Optimization of Electroless Ni-B Coatings Using Taguchi Method (pages 302-319) S K Das, P. Sahoo

Materials and Surface Engineering: Research and Development (Ed. J. Paulo Davim), 2012, Woodhead, UK, Chapter 6, P. Sahoo: Tribo Performance of Electroless Ni-P coatings, pp. 163-206.

Mechatronics and Manufacturing Engineering: Research and Development (Ed. J. Paulo Davim), 2012, Woodhead, UK, Chapter 5, P. Sahoo and T K Barman: ANN Modelling of Fractal Dimension in Machining, pp. 159-226.

RESEARCH Publications (most recent first): 2013

Referred Journals

1. Chatterjee, B and Sahoo, P, Shakedown behavior in multiple normal loading-unloading of an elastic-plastic spherical stick contact, Tribology in Industry, 2013, 35(1), 3-18.
2. Das, M. K., Kumar, K, Barman, T. K. and Sahoo, P., Optimization of material removal rate in EDM using Taguchi method, Advanced Materials Research, 2013, 626, 270-274.
3. Bhowmik S, Acharyya S K, Sahoo P, Dhar S and Chattopadhyay J, Estimation and comparative study of JIC using different methods for 20MnMoNi55 steel, Materials and Design, 2013, 46, 680-687.
4. Chatterjee, B and Sahoo, P, Finite element based multiple normal loading-unloading of an elastic-plastic spherical stick contact, ISRN Tribology, 2013, ID 871634, 1-13.
5. Mitra, A., Sahoo, P. and Saha, K. N., Forced vibration analysis of cross stiffened plates with simply supported boundary condition, Advances in Vibration Engineering, 2013, 12 (3) 303-310.
6. Mitra, A, Sahoo, P and Saha K N, Effect of In-plane Boundary Conditions on Forced Vibration Analysis of Stiffened Plates with a Free Edge, Journal of Vibration and Control 2013, 19(2), 234-261.
7. Mitra, A., Sahoo, P. and Saha, K.N., Nonlinear vibration analysis of simply supported stiffened plates by a variational method, Mechanics of Advanced Materials and Structures, 2013, 20(5), 373-396.
8. Chatterjee, B and Sahoo, P, Finite element based unloading of an elastic plastic spherical stick contact for varying tangent modulus and hardening rule, International Journal of Surface Engineering and Interdisciplinary Materials Science, 2013, 1(1), 13-32.

Contribution in Conference Proceedings

9. Sudeepan J, Kumar K, Barman T K and Sahoo, P., Study of tribological and mechanical properties of ABS/CaCO₃ composites, Proc. 4th International Conference on Recent Advances in Composite Materials (ICRACM-2013), Feb 18-21, Goa, 2013.
10. Sudeepan J, Kumar K, Barman T K and Sahoo, P., Study of tribological and mechanical properties of compression molded ABS/TiO₂ composites, Proceedings of International Conference on Innovations in Materials and Product Development, Lucknow, India, 1-3 March, 2013, paper ID 86, pp. 1-4.

11. Sudeepan J, Kumar K, Barman T K and Sahoo, P., Comparative studies on tribological and mechanical properties of ABS/CaCO₃ and ABS/TiO₂ composites, Proc. 2nd International Conference on Advanced Manufacturing and Automation (INCAMA-2013), 28-30 March, 2013, Krishnankoil, pp. 179-183.
12. Roy, S and Sahoo, P., Tribological performance optimization of electroless Ni-P-W coating using weighted principal component analysis, Proc. 2nd International Conference on Advanced Manufacturing and Automation (INCAMA-2013), 28-30 March, 2013, Krishnankoil, pp. 174-178.
13. Ghosh, S., Sahoo, P. and Sutradhar, G., Wear behaviour optimization of Al-7.5%SiC metal matrix composite using Taguchi method, Proc. 2nd International Conference on Advanced Manufacturing and Automation (INCAMA-2013), 28-30 March, 2013, Krishnankoil, pp. 184-188.
14. Das, M. K., Kumar, K, Barman, T. K. and Sahoo, P., Optimization of EDM process parameters using Grey-Taguchi Technique, Proc. 2nd International Conference on Advanced Manufacturing and Automation (INCAMA-2013), 28-30 March, 2013, Krishnankoil, pp. 521-525.

2012 (since April)

Referred Journals

15. Roy, S and Sahoo, P., Corrosion Study of Electroless Ni-P-W Coatings using Electrochemical Impedance Spectroscopy, Portugalie Electrochimica Acta, 2012, 30(3), 203-220.
16. Ghosh, S., Sahoo, P. and Sutradhar, G., Wear Behaviour of Al-SiCp Metal Matrix Composites and Optimization using Taguchi Method and Grey Relational Analysis, Journal of Minerals & Materials Characterization & Engineering, 2012, 11(11), 1085-1094.
17. Das, S. K. and Sahoo, P., Influence of process parameters on microhardness of electroless Ni-B coatings, Advances in Mechanical Engineering, 2012, ID 703168, pp. 1-11.
18. Roy, S and Sahoo, P., Multiple roughness characteristics of chemically deposited Ni-P-W coatings, Tribology in Industry, 2012, 34 (4), 186-197.
19. Ghosh, S., Sahoo, P. and Sutradhar, G., Friction performance of Al-10%SiCp metal matrix composites using Taguchi method, ISRN Tribology, 2012, ID 386861, 1-9.
20. Roy, S and Sahoo, P., Friction performance optimization of chemically deposited Ni-P-W coating using Taguchi method, ISRN Tribology, 2012, ID 136740, 1-9.
21. Sahoo, P., Barman, T. K. and Routara, B. C., Grey-based Taguchi analysis of cylindrical grinding process parameters with multiple roughness characteristics, International Journal of Production and Quality Engineering, 2012 (in press).
22. Roy, S and Sahoo, P., Optimization of multiple roughness characteristics of chemically deposited Ni-P-W coating using weighted principal component analysis, ISRN Mechanical Engineering, 2012, ID 495857, 1-7.
23. Chatterjee, B and Sahoo, P, Unloading of an elastic plastic spherical stick contact under varying strain hardening-A finite element study, International Journal of Materials, Manufacturing and Design, 2012, 1 (1), 107-126.
24. Sahoo, P., Loading and unloading characteristics of rough surfaces in presence of soft coatings and adhesion, International Journal of Materials, Manufacturing and Design, 2012, 1(1), 89-105.
25. Ghosh, S. and Sahoo, P., Friction behaviour of medium leaded brass UNS C34000 against steel using Taguchi method, International Journal of Materials, Manufacturing and Design, 2012, 1(1), 77-87.

26. Roy, S and Sahoo, P., Potentiodynamic polarization behavior of electroless Ni-P-W coatings, ISRN Corrosion, 2012, ID 914867, 1-11.
27. Mitra, A., Sahoo, P. and Saha, K. N., Large displacement of crossbeam structure through energy method, International Journal of Automotive & Mechanical Engineering, 2012, 5, 520-544.
28. Bhowmik S, Sahoo P, Acharyya S K, Chattopadhyay J and Dhar S, Application and comparative study of the master curve methodology for fracture toughness characterization of 20MnMoNi55 steel, Materials and Design, 2012, 39, 309-317.
29. Chatterjee, B and Sahoo, P, Effect of strain hardening on elastic-plastic contact of a deformable sphere against a rigid flat under full stick contact condition, Advances in Tribology 2012, ID 472794, 1-8.
30. Das, D, Sahoo, P and Saha K N, A numerical analysis of large amplitude beam vibration under different boundary conditions and excitation patterns, Journal of Vibration and Control 2012, 18(12), 1900-1915.
31. Barman, T. K. and Sahoo, P., Prediction of fractal dimension in cylindrical grinding of brass using ANN, Journal of Machining and Forming Technologies, 2012, 4 (1-2), 85-106.
32. Das, D, Sahoo, P and Saha K N, Dynamic analysis of rotating annular disk of variable thickness under uniform axial pressure, International Journal for Computational Methods in Engineering Science & Mechanics, 2012, 13, 37-59.

Contribution in Conference Proceedings

33. Mitra, A., Sahoo, P. and Saha, K. N., Experimental Investigation of Static Deflection and Loaded Natural Frequencies of Stiffened Plates, Proceedings of the IASTED International Conference Engineering and Applied Science (EAS 2012) December 27-29, 2012 Colombo, Sri Lanka, pp. 6-13.
34. Das M K, Kumar K, Barman T K and Sahoo, P., Surface roughness modeling in wire electrical discharge machining (WEDM) using response surface methodology, Proc. International Conference on Advances in Mechanical Engineering and its Interdisciplinary Areas, Kolaghat, 27-28 Dec, 2012, pp. 186-191.
35. Roy, S. and Sahoo, P., Friction performance optimization of electroless Ni-P-W coating using Taguchi design of experiments, Proc. International Conference on Advances in Mechanical Engineering and its Interdisciplinary Areas, Kolaghat, 27-28 Dec, 2012, pp. 207-213.
36. Das M K, Kumar K, Barman T K and P Sahoo, Optimization of surface roughness in EDM of EN31 tool steel using Taguchi method, 8th International Conference on Industrial Tribology, 2012, Dec 7-9, Pune, paper ID: TSI 812507, p. 9.
37. Roy, S. and Sahoo, P., Wear performance optimization of electroless Ni-P-W coating parameters using Taguchi method, 8th International Conference on Industrial Tribology, 2012, Dec 7-9, Pune, paper ID: TSI 812541, p. 50.
38. Ghosh, S., Sahoo, P. and Sutradhar, G., Tribological performance of Al-5%SiC metal matrix composite using Taguchi based grey relational analysis, 8th International Conference on Industrial Tribology, 2012, Dec 7-9, Pune, paper ID: TSI 812540, p. 49.
39. Chatterjee, B. and Sahoo, P., Finite element based cyclic loading-unloading of an elastic-plastic spherical stick contact, Proc. 57th ISTAM International Congress, 2012, Dec 17-20, Pune, pp. 177-182.

40. Chatterjee, B. and Sahoo, P., Shakedown behavior in multiple loading-unloading of an elastic-plastic spherical stick contact, 8th International Conference on Industrial Tribology, 2012, Dec 7-9, Pune, paper ID: TSI 812513, p. 17.
41. Bhowmik, S., Sahoo, P., Acharyya, S. K., Dhar, S., Comparative study of fracture toughness in ductile to brittle transition region of 20MnMoNi55 steel, National Conference on Sustainable Development through Innovative Research in Science and Technology, Sept 28-29, 2012, Jadavpur, P 66.
42. Roy, S. and Sahoo, P., Surface Roughness Optimization of Electroless Ni-P-W Coating Based on Taguchi Method, National Conference on Sustainable Development through Innovative Research in Science and Technology, Sept 28-29, 2012, Jadavpur, P 67.
43. Duari, S., Barman, T. K. and Sahoo, P., Friction and Wear Behavior of Electroless Ni-P Coatings under Lubrication, National Conference on Sustainable Development through Innovative Research in Science and Technology, Sept 28-29, 2012, Jadavpur, P 68.
44. Das M K, Kumar K, Barman T K and P Sahoo, Modeling of MRR in WEDM on EN 31 Tool Steel Using Response Surface Methodology, National Conference on Sustainable Development through Innovative Research in Science and Technology, Sept 28-29, 2012, Jadavpur, P 72.
45. Ghosh S, Sahoo P and Sutradhar G, Friction performance optimization of Al- 7.5% SiCp metal matrix composite using Taguchi method, National Conference on Sustainable Development through Innovative Research in Science and Technology, Sept 28-29, 2012, Jadavpur, P 84.
46. Bhowmik, S., Sahoo, P., Acharyya, S. K., Dhar, S., Effect of thickness, geometry and microstructure on fracture toughness for 20MnMoNi55 steel, Nat Symposium on Fatigue, Fracture and Integrity Assessment (FFIA) May 4-5, 2012, Jamshedpur, p. 47.

Tarun Kumar Naskar

Journal Papers:

1. T.K.Naskar and R. Mishra., "Introduction of control points in B-splines for synthesis of ping finite optimized cam motion program", Journal of Mechanical Science and Techonology 26(2)(2012) 489-494.
2. Ruby Mishra, T.K.Naskar, S.K. Acharya., "Synthesis of 4R path generating chain with multiple joint clearances using DE algorithm", International Journal of Engineering Science and Technology, Vol.4.No.12.December 2012.
3. Ruby Mishra, T.K.Naskar, Sanjib Acharya., "Synthesis of coupler curve of a four bar linkage with joint clearances", International Journal of Engineering Research and Applications, Vol. 3, Jan-Feb 2013, pp.1193-1199.
4. Ruby Mishra, T.K.Naskar, Sanjib Acharya., "Synthesis of flexible 4-bar linkage considering deformation" International Journal of Engineering Research and Applications, accepted.

Conference Papers

1. Ruby Mishra, T.K.Naskar, and Sanjib Acharya, "Path synthesis of 4-bar linkages with joint clearances using DE algorithm", Proceedings of the National Conference on Trends and Advances in Mechanical Engineering, YMCA University of science and Technology, Faridabad, Oct, 2012.
2. Ruby Mishra, T.K.Naskar and Sanjib Acharya., "Synthesis of 4-bar linkages with joint clearances using DE algorithm". Conference Proceedings: NASOME 2012, KIIT University BBSR.

3. Harsh Nahata and Tarun Kanti Naskar, Graphical assessment of workspace of a 6-axis robotic manipulator, Accepted in International Conference on Recent Trends in Mechanical Engineering, 16 November, 2013.

Gautam Majumder

Title / Author 's Name/ Page No./Journal Name/Volume

Experimental Investigation on the effect of reinforcement particles on the forgeability and the mechanical properties of aluminum metal matrix composition, S.Das,R.Behera,A.Dutta, Gautam Majumdar, B.Oraon,G.Sutradhar. P.310-316, Materials science and application. November 2010

An Experimental Investigation on the machinability of powder formed silicon carbide particle reinforced aluminum metal matrix composition, SujitDas,R.Behera,A.Dutta, Gautam Majumdar, B.Oraon,G.Sutradhar. P. 1-10, International journal of scientific & engineering and research, Volume 2 Issue 7, July-2011

Performacce measurement of distribution centre combining data envelopment analysis and analytic hierarchy process, P.S Chakraborty, Gautam Majumdar,B.Sarkar. P. 117-128, Advances in Production Engineering & Management, Volume 6 Issue 2, 2011

Prediction of electroless Ni-Co-P coating using response surface method, T.Banerjee, R.S.Sen, B.Oraon, Gautam Majumdar. International journal of advance manufacturing technology, 4 April 2012

Taguchi approach followed by fuzzy linguistic reasoning for quality productivity optimization in machining operation: a case study , Kumar Abhishek, Saurav Dutta, Siba Sankar Mahapatra, Goutam Mandal and Gautam Majumdar . P. 929-951, Journal of manufacturing technology management, Volume 2 4Number 6, 2013

Appraisement and selection of third party logistics service providers in fuzzy environment, Saurav Dutta, Chitrasen Samantra, siba Sankar Mahapatra, Goutam Mandal and Gautam Majumdar. P. 537-548, Benchmarking an international journal, Volume 20 Number 4,2013

Prediction of surface roughness and application of response surface methodology to develop a mathematical model, N.Biswas,J.De, R.S.Sen, B.Oraon, Gautam Majumdar, P. 2771-2777, International journal of innovative research in science, engineering and technology Volume, 2 Issue 7, 2013

Estimation of noise of a moving passenger car, T.Roy, A.K.Mukhopadhyaya, Sadhan K.Ghosh, Gautam Majumdar. P. 459-464, Indian journal of environment protection, Volume 33, Number 6, June 2013

Influence of honking on the noisier situation(L_{10}), T.Roy, A.K. Mukhopadhyaya, Sadhan K. Ghosh, Gautam Majumdar. P. 132-136, Noise control engineering journal.(Accoustical Society of America), Volume 60 Number 2, April 2012

Int. : 2457-2139/2123
Coordinator : Professor Ananda Lal
Joint Coordinator : Dr. Samantak Das

The Rabindranath Studies Centre (RSC), Jadavpur University, was set up under the “Epoch Making Social Thinkers” Scheme of the University Grants Commission (UGC) in 2010. The Centre carries out research on various aspects of Rabindranath Tagore’s life and work, conducts seminars, symposia and workshops, disseminates the poet’s thoughts, has introduced and runs courses on him in the Faculty of Arts, Jadavpur University, and collaborates with institutions and individuals in examining and spreading ideas related to Rabindranath Tagore.

Funding for the Rabindranath Studies Centre by the UGC under the XIth Plan period came to an end in March 2012. Unfortunately, despite several letters and other communication, no response was received from the UGC about the continuation of such funding during the XIIth Plan period. This made it impossible to organise seminars/workshops/conferences during the year under review.

The Rabindranath Studies Centre continued its Extra-Departmental courses for UG I and UG II students of the Faculty of Arts. Students in large numbers signed up for all the ED courses and two scholars, Prof. Aparna Bandyopadhyay and Prof. Aishika Chakraborty, were invited to deliver special lectures for the UG II ED course “A New Femininity: Rabindranath Then and Now”.

The Tagore Translation Project, funded by the Ministry of Culture, Government of India, mentioned in last year’s Annual Report, was completed in the year under review. The following seven translations were completed:

1. *Guru* into Marathi (translator Veena Alase)
2. *Malini* into Gujarati (translator Shailesh Parekh)
3. *Muktadhara* into Urdu (translators Azhar Alam and Uma Jhunjhunwala)
4. *Guru* into Hindi (translator Santwana Nigam)
5. *Tasher Desh* into Manipuri (translator Rajkumari Geetanjali Devi)
6. *Rakta-karabi* into Santali (translator Boro Baski)
7. *Chandalika* into Malayalam (translator Manoj Murali Nair)

The process for publishing these translations is underway.

For individual achievements by faculty members connected to the RSC, please see the Annual Report for the departments of English (for Professor Ananda Lal) and Comparative Literature (for Dr Samantak Das).

[Dept. of Physics]
Int. : 2457-2862
Coordinator : Prof. Siddhartha Datta
Jt. Coordinator : Prof. Argha Deb

1. B. Number of Faculty Members : Two

2. A. Area of Research Activities

- Effect of music and noise on autonomous nervous system
- A neuro-physical study on Music cognition and the brain
- Study of the melodic, rhythmic and emotional characteristics of music
- Studies of stochastic, chaotic and fractal behavior of speech and music signals
- Study on the phonetic quality and articulation patterns in Indian music visa-a-vi speech
- Study on the alankars in Indian classical music, namely, Taan, Meend, etc.
- Study on the Musical scales, consonance and dissonance, shrutis and the intervals used in the Indian classical music performance
- Study on Nasality in speech and music, the acoustic and perceptual cues of nasality, the degree of nasality and effect of nasality
- Study on the improvisation in different forms of Indian music
- Study on the Rhythm, tempo and styles in Indian music
- Analysis of different nuances of Indian music for finding out the features for estimating the physical correlates of musical terminologies
- Feature extraction and study on the Timbre and prosodic characteristics of vocal and instrumental music.

3. A. Invited Lectures Delivered/ Session Chaired :

Two invited lectures were delivered by Prof. Dipak Ghosh, Emeritus Professor of the Centre in and around Kolkata on Emotions in music and its estimation by biosensors.

B. Seminar/Workshop/Conference/Symposium Attended:

- Attended National Symposium on Acoustics (NSA-2012), organised by Acoustical Society of India, during, 5-7 December, 2012, at KSR Institute for Engineering and Technology, KSR Kalvi Nagar, Tiruchengode – 637215, Tamilnadu
- Attended 20th. West Bengal State Science and Technology Congress, during 28th February-2nd March, 2013 at BESU, Shibpur, Howrah and presented two papers.

C. Seminar/Workshop/Conference/Symposium Organized:

- Organised Invitational workshop “Frontiers of Research on Speech and Music

(FRSM- IW), March 5-7, 2013, jointly with ITC Sangeet Research Academy, Kolkata, at TEQIP building, Jadavpur University, The workshop was inaugurated by Prof. Bikash Sinha, Homi Bhabha Chair, VECC,

Kolkata and the Chief Guest was Prof. Rabiranjana Chatterjee, Hon'ble Minister of Science and Technology, Govt. of West Bengal and Guest-in Honour was Prof. Abhi Duttamajumdar, Acting President, State Council of Science and Technology, Govt. of West Bengal. Many distinguished scientists across the country participated and presented papers in the workshop.

4. B. Papers Published in Journals/ Conference Proceedings

1. **Capturing the Essence of Raga from Hindusthani Singing : an Objective Approach** - Journal of Acoustical Society of India, Vol. 39 (1), pp. 20-24, 2012
2. **Categorisation of Tabla strokes by Wavelet analysis** - (Communicated) Journal of New Music Research, 2013, Europe.
3. **Search for spectral cues of Emotion in Hindustani music** - Proceedings of the National Symposium on Acoustics-2012 (NSA-2012), 5-7 December, 2012, KSR Institute for Engineering and Technology, KSR Kalvi Nagar, Tiruchengode – 637215, Tamilnadu
4. **Effect of harmonium usage in Hindustani music performances: A signal processing approach** - Proceedings of the National Symposium on Acoustics-2012 (NSA-2012), 5-7 December, 2012, KSR Institute for Engineering and Technology, KSR Kalvi Nagar, Tiruchengode – 637215, Tamilnadu
5. **Processing for Emotions induced by Hindustani Instrumental music** - Proceedings of the National Symposium on Acoustics-2012 (NSA-2012), 5-7 December, 2012, KSR Institute for Engineering and Technology, KSR Kalvi Nagar, Tiruchengode – 637215, Tamilnadu
6. **Neuro-Cognitive Physics approach using Biosensors (EEG) to investigate raga induced emotion recognition process in the brain** - Proceedings of Abstracts, HS-OP-14, pp. 212, 20th. West Bengal State Science and Technology Congress, 28th February-2nd. March, 2013, BESU, Shibpur,
7. **Effect of Harmonium usage in Hindustani music performances: A signal processing approach** - Proceedings of Abstracts, SSP-OP-10, pp. 288, 20th. West Bengal State Science and Technology Congress, 28th February-2nd. March, 2013, BESU, Shibpur,

SRI AUROBINDO STUDIES

[Dept. of Philosophy]

Int.: 2457-2013/2358

Coordinator ; Prof. Indrani Sanyal

29th Annual Sri Aurobindo Memorial Lecture by Professor Ashok Kumar Mukhopadhyay, Former Netaji Subhas Professor of Political Science, Calcutta University and UGC Emeritus Fellow in Political Science on Aurobindo's Political Theory: A critical Appreciation on 16.8.2012

A Three-year Group Research Project entitled **Essays on the Life Divine** (in Bengali) to celebrate 100 years of publication of **The Life Divine** which was published from August 1914 to 1919 in **Arya**.

Members Include

1. Professor Indrani Sanyal, Co-ordinator
2. Professor Aparna Banerjee, Department of Philosophy, Calcutta University
3. Dr Aparajita Mukhopadhyay, Associate Professor, Department of Philosophy, Jadavpur University
4. Sm Sibani Choudhury, retired professor of Philosophy, Bankura Saradmani Mahavidyalaya
5. Sm Tamasa Chatterjee, Assistant Professor, Vivekananda College for women, Thakurpukur
6. Sm Sushmita Saha, Assistant Professor, Dept of Philosophy, Jhargram Raj College
7. Sm Sukla Sanyal, Part-Time Lecturer, Dept of Philosophy, Narasingha Dutta College, Howrah
8. Sm kamalika Siddhanta, Part-Time Lecturer, Dept of Philosophy, Abhedananda Mahavidyalaya, Sainthia, Birbhum
9. Dr Sharmistha Deb, Former Post-doctoral ICPR Fellow.
10. Sm Sucharita Mitra, Guest Lecturer, Dept of Philosophy, Vivekananda College, Kolkata
11. Balaram Karan, Guest Lecturer, Vivekananda College for women, Thakurpukur
12. Sm Debashri Banerjee, Assistant Professor, Dept of Philosophy, Chatra Ramai Pandit Mahavidyalaya, Bankura

2012-13 : Ist year of Group Research Project has been completed.

Books Published

Aparna Banerjee, *Integral Philosophy of Sri Aurobindo*, Centre for Sri Aurobindo Studies, Jadavpur University in collaboration with Decent Books, New Delhi, 2012, ISBN 13;978-81-86921-57-9, ISBN 10;81-86921-57-5.

STUDIES OF RELIGION AND SOCIETY

[Dept. of Sociology]

Phone : 2414 6411

Int. : 2457-2262/2559

Coordinator : Dr. Rubi Sain

1. A. Courses Offered:

2. A. Area of the Research Activities.:

1. Sociology of Religion
2. Environment
3. Sociology of Health
4. Aging

DR. RUBY SAIN, COORDINATOR

2. A. a. Sociology of Religion
- b. Sociology of Health and Illness

3. A. Invited Lectures Delivered/Session Chaired:

Chaired Academic Sessions

Chaired Seminar on the topic: *Law and Social Change*.

Date: 17 December 2012. Venue : Gandhi Bhavan, JU.

B. SEMINAR/WORKSHOP/CONFERENCE/SYMPOSIUM ATTENDED

C. SEMINAR/WORKSHOP/CONFERENCE/SYMPOSIUM ORGANIZED

- i) **International Conference on RELIGION AND GLOBALIZATION: A CHANGING PERSPECTIVE** Centre for the Study of Religion and Society, Department of Sociology, Jadavpur University(JU), Kolkata in collaboration with Department of Literature, History of Ideas and Religion (LIR), University of Gothenburg, Sweden. 29 NOVEMBER TO 1 DECEMBER, 2012. Venue: Anita Banerjee Memorial Hall,UG Arts Building, JU.
- ii) Workshop on Religious Change in Contemporary India,3-5 December,2012 in collaboration with Department of Literature, History of Ideas and Religion (LIR), University of Gothenburg,Sweden
- iii) *Seminar on the topic: Law and Social Change. Date: 17 December 2012.Venue : Gandhi Bhavan, JU.* Organised by: Jogesh Chandra Chaudhury Law College in Collaboration with Centre for the Study of Religion and Society

4. B. Articles Published in Journals

Religion and Environment, Environment and Religion :A Sociological Narrative of Interconnections in *Jadavpur University Journal of Sociology*, vol. 6, (February 2013). .

Books

1. 'The Sociology of Religion in India :Past , Present and Future'(edited) , Abhijeet Publications, New Delhi, ,January, 2013.,
2. "Religion and Folk Religion in Modern and Postmodern Societies" in 'The Sociology of Religion in India : Past , Present and Future' ,edited by Ferdinanda Sardella and Ruby Sain , Abhijeet Publications, New Delhi, January, 2013, pages – 84-104,

3. "Depression Among The Elderly" , Serials Publications, New Delhi, July 2012.
4. White collar Worker's Trade Union in Bengal 2005-2008: A Sociological Study, Rachayita, Kolkata, 2013 .

____Newsletter Published : CENTRE FOR THE STUDY OF RELIGION AND SOCIETY Volume: 2, July, 2012 to March, 2013. Estd. 21st December, 2011.

Submitted by Ruby Sain, Coordinator and Head, Department of Sociology, JU.

SURFACE SCIENCE

[Dept. of Chemistry]

Phone : +91-33-2414 6411

Int. : 2457-2262/2559

Coordinator : Prof. S. C. Bhattacharyya

The activities of the Centre by way of the research works and academic interactions of its members have been significant in the year 2012-2013. These are briefly presented in what follows.

Members:

1. Prof. Satya P. Moulik
2. Prof. Subhash C. Bhattacharya
3. Dr. Soumen Ghosh

Research Activities

In the financial year of April, 2012-March, 2013, research works on the following topics were undertaken:

1. Micelle formation of surfactants in aquo and aquo-organic media by calorimetric, tensiometric, fluorimetric and conductometric methods
2. Synthesis of nanoparticles in micellar, microemulsion and sub phase of Langmuir trough.
3. Clouding of surfactants and polymers; amphiphile mutual interaction.
4. Physicochemical behaviors of polymer in solution and in solvent depleted states.
5. Coacervate formation by mixing oppositely charged surfactants, polymers, etc.
6. Self-aggregation of surfactants with respect to coacervation by way of interaction with polymers.
7. Physicochemical studies on solution behavior of triblock copolymers pluronics and their interactions with surfactants.
8. Photophysical studies of dyes in micelles and reverse micelles
9. Photophysical studies in organized media and at interfaces.
10. Laser Induced Optoacoustic Spectroscopy, Laser Spectroscopy, Steady-state and Time-resolved fluorometric study of the photophysical and photochemical processes in homogeneous as well as in microheterogeneous environments.

11. Theoretical modeling and simulations of photophysical/photochemical processes. Fluorescence sensing of trace materials.

12. Interaction of surfactants and lipids with polymer and biopolymers in solution and at interfaces.

13. Interfacial and interactional properties of insoluble monolayers with Langmuir Balance.

Elaborate physicochemical studies of the above topics have been made. The results have been interpreted in terms of theories and physicochemical concepts. The synthesis of nanoparticles of different types has been made in micelles, reverse micelles and using other templates. The isolation and characterization employing various physical methods have been made. Interactions of amphiphiles with polymers like polyvinylpyrrolidone, inulin, gelatin, bovine serum albumin (BSA), and triblock copolymers (pluronic) have been studied in details and physicochemical characterization of products formed has been also made.

The photophysical properties of dyes have been studied to estimate the aggregation states of micelles and reverse micelles as well to estimate the activity levels of the water pool in reverse micelles and microemulsions. The generation of photovoltage and photocurrent in liposomes containing dyes has been also demonstrated. The physicochemical properties viz., transport, conductance, activation energy for conductance, structural features, stability, etc. of bilayer lipid membranes formed under various environmental conditions have been also investigated in detail. In addition to this, electron transfer reactions as well as oxidation of surfactants by metal ion oxidants have been investigated.

The works had done have yielded a good number of publications, which are given in Appendix I.

Projects:

Project: 1. "Spectroscopic Investigation of Pharmaceutically Significant Pyrazoline Derivatives in Organized Media. CSIR.

Project: 2. Physicochemical Studies on Catanionic Surfactants and Synthesis of Nanoparticles: DST.

Fund Position:

As per audit, a bank balance amount in the credit of CSS. We expect enhanced monetary support from the University.

Conference/Seminar Organized

1. The Centre for Surface Science and the Indian Society for Surface Science and Technology has jointly organized a one-day National Seminars entitled "Trends in Surface Science and Related Areas" on 25th July 2012 in the Department of Chemistry, Scottish Church College, Kolkata. Nearly two hundred participants attended in the seminar.

2. The Centre for Surface Science and the Indian Society for Surface Science and Technology has jointly organized a one-day National Seminars entitled "Trends in Surface Science and Related Areas" on 3rd May 2013 in the Department of Pharmacy, Jadavpur University, Kolkata. Nearly hundred participants attended in the seminar.

Appendix I:

List of Publications of Prof. Satya Priya Moulik (2012-13)

1. Shear and Temperature Dependent Viscosity Behavior of Two Phosphonium Based Ionic Liquids and Surfactant Triton X-100, and their Biocidal Activities, I. Mukherjee, K. Manna, Kausik, G. Dinda, S. Ghosh and **S. P. Moulik**, *J. Chem. Eng. Data* **57** (2012) **1376-1386**.

2. Revisiting the Self-aggregation Behavior of Cetyltrimethylammonium Bromide in Aqueous Sodium Salt Solutions with Varied Anions. B. Naskar, A. Dan, S. Ghosh, V. K. Aswal and **S. P. Moulik**, *J. Mol. Liq.* **170** (2012) 1-10.
3. "Solution Behavior of Normal and Reverse Triblock Copolymers (Pluronic L44 and 10R5) individually and in Binary Mixture", Bappaditya Naskar, Soumen Ghosh, and **S. P. Moulik**, *Langmuir* **28** (2012) 7134-7146.
4. Synthesis, characterization, and applications of microheterogeneous-templated CdS nanodispersions, I. Mukherjee, G. Dinda, S. Ghosh and **S. P. Moulik**, *J. Nanoparticle Res.* **997** (2012) 947-961.
5. Energetics of Micelle Formation: Non Agreement between the Enthalpy Change Measured by the Direct Method of Calorimetry and the Indirect Method of van't Hoff, **S. P. Moulik** and Debolina Mitra in *Recent Trends in Surface and Colloid Science*. Editor: B. K. Paul & **S. P. Moulik**. *World Scientific* 2012, Vol. 12 (*Statistical Science & Interdisciplinary Research*), pp. 51-68.
6. Physicochemistry of Interaction of Polyvinylpyrrolidone (PVP) with Sodium dodecyl Sulfate (SDS) in salt solution, B. Mandal, **S. P. Moulik** and S. Ghosh, *J. Surfaces and Interfaces of Materials* **1** (2012) 83-92.
7. Amphiphile Behavior in Mixed Solvent Media I: Self-Aggregation and Ion Association of Sodium Dodecyl Sulfate in 1,4-Dioxane-Water and Methanol-Water Media, A. Pan, B. Naskar, G. K. S. Prameela, B. V. N. Phani kumar, A. B. Mandal, S. C. Bhattacharya and **S. P. Moulik**. *Langmuir* **28** (2012) 13830-13843.
8. Effect of bovine serum albumin on the functionality and structure of cationic surfactant at air-buffer interface. K. Maiti, S. C. Bhattacharya, A. K. Panda and **S. P. Moulik**, *Materials Science and Engineering C* (accepted, 2013).
9. Amphiphilic Behavior of two Phosphonium Based Ionic Liquids, I. Mukherjee, S. Mukherjee, B. Naskar, S. Ghosh and **S. P. Moulik**, *J. Colloid and Interface Sci.* **395** (2013) 135 – 144.
10. Tensiometric Determination of Gibbs Surface Excess and Micelle Point: A Critical Revisit. I. Mukherjee, **S. P. Moulik** and A. K. Ralshit, *J. Colloid Interface Sci.* **394** (2013) 329–33.
11. Counter-ion Effect on Micellization of Ionic Surfactants: A Comprehensive Understanding with Two Representatives, Sodium Dodecyl Sulfate (SDS) and Dodecyltrimethylammonium Bromide (DTAB). A. Dey, B. Naskar and **S. P. Moulik**, *J. Surf. Deterg.* **76**(2013)785–794.
12. Morphology Control of Nickel Oxalate by Soft Chemistry and their Conversion to Nickel Oxide for Application in Photocatalysis, S. Rakshit, **S. P. Moulik** and S. C. Bhattacharya, *RSC Advances, Chem. Society, U.K.* **3** (2013) 6106 -6116.
13. JR 400–NaAOT interaction: a detailed thermodynamic study of polymer–surfactant interaction bearing opposite charges. I. Chakraborty, T. Chakraborty and S. P. Moulik, *Colloid and Polymer Sci.* **291** (2013) 1939 – 1948.
14. Controlled synthesis of spin glass nickel oxide nanoparticles and evaluation of their potential antimicrobial activity: A cost effective and eco friendly approach; S. Rakshit, S. Ghosh, S. Chall, S. S. Mati, **S. P. Moulik** and S. C. Bhattacharya, *RSC Adv.*, 2013, DOI:10.1039/c3ra42628a.
15. Self-Aggregation of MEGA-9 (N-Nonanoyl-N-methyl-D-glucamine) in Aqueous Medium: Physicochemistry of Interfacial and Solution Behaviors with Special Reference to Formation

Energetics and Micelle Microenvironment. A. Pan, S. S. Mati, B Naskar, S. C. Bhattacharya and **S. P. Moulik**, *J. Phys. Chem B*. **117 (2013) 7578 – 7592**.

16. Amphilic Activities of Anionic Sodium Cholate(NaC), Zwitterionic 3-[(3-cholamidopropyl)dimethylammonio]-1-propanesulfonate (CHAPS) and their mixtures. A Comparative Study. B. Naskar, S. Mondal and **S. P. Moulik**, *Colloids and Surfaces B: Biointerfaces*, **112 (2013)155-164**.
17. Controlled synthesis of spin glass nickel oxide nanoparticles and evaluation of their potential antimicrobial activity: A cost effective and eco friendly approach; S. Rakshit, S. Ghosh, S. Chall, S. S. Mati, **S. P. Moulik** and S. C. Bhattacharya, *RSC Adv.*, **2013**, DOI:10.1039/c3ra42628a.

Number of Current Research Scholars: 3

List of Publications of Prof. Subhash Chandra Bhattacharya (2012-13)

1. Spectroscopic probing of the microenvironment of 7-oxy(5-selenocyanato-pentyl)-2H-1-benzopyran-2-one in ionic and nonionic micelles; D. K. Rana, S. Rakshit, S. Dhar, **S. C. Bhattacharya**, *Journal of Photochemistry and Photobiology A: Chemistry* **270 (2013) 67– 74**.
2. Probing the Spectral Response of a New Class of Bio-Active Pyrazoline Derivative in Homogeneous Solvents and Cyclodextrin Nanocavities: A Spectroscopic Exploration Appended by Quantum Chemical Calculation and Molecular Docking Analysis; S.S. Mati, S. Sarkar, S. Rakshit, A. Sarkar and **S.C. Bhattacharya**; *RSC Advances*; **3, 2013, 8071-8082**.
3. Probing the Spectral Response of a New Class of Bio-Active Pyrazoline Derivative in Homogeneous Solvents and Cyclodextrin Nanocavities: A Spectroscopic Exploration Appended by Quantum Chemical Calculation and Molecular Docking Analysis; S.S. Mati, S. Sarkar, S. Rakshit, A. Sarkar and **S.C. Bhattacharya**; *RSC Advances*; **3, 2013, 8071-8082**.
4. Effect of bovine serum albumin on the functionality and structure of cationic surfactant at air-buffer interface; Maiti, K., **Bhattacharya, S.C.**, Moulik, S.P., Panda, A.K. *Materials Science and Engineering C*, **33, 2013, 836-843**.
5. Morphology control of nickel oxalate by soft chemistry and conversion to nickel oxide for application in photocatalysis; *RSC Advances*; S. Rakshit, S. Chall, S.S. Mati, A. Roychowdhury, S.P. Moulik and **S. C. Bhattacharya**; *RSC Advances*; **3, 2013, 6106-6116**.
6. Fluorescence turn-ON of a naphthalimide derivative by anions in cationic micellar network: An overture towards a simple chemosensing platform; S. Dhar, D. K. Rana, **S. C. Bhattacharya**; *Sensors and Actuators B: Chemical*, **176, 2013, 467-474**.
7. Explicit Spectral Response of the Geometrical Isomers of a Bio-Active Pyrazoline Derivative Encapsulated in β -Cyclodextrin Nanocavity: A Photophysical and Quantum Chemical Analysis; S. S. Mati, S. Sarkar, P. Sarkar and **S.C. Bhattacharya**; *J. Phys. Chem A*; **116, 2012, 10371-10382**.
8. Single step aqueous synthesis of pure rare earth nanoparticles in biocompatible polymer matrices; S. Chall, A. Saha, S. K. Biswas, A. Datta and **S. C. Bhattacharya**, *J. Mater. Chem.* **22, 2012, 12538-12546**.
9. Selective Fluorescence Resonance Energy Transfer from Serum Albumins to a bio-active 3-pyrazolyl-2-pyrazoline derivative: A Spectroscopic Analysis; A. Sarkar and **S. C. Bhattacharya**, *J. Luminescence*, **132, 2012, 2612-2618**.
10. Amphiphile behavior in mixed solvent media I: Self-aggregation and ion association of sodium dodecylsulfate in 1,4-dioxane-water and methanol-water media; Pan, A., Naskar, B., Prameela,

- G.K.S., Kumar, B.V.N.P., Mandal, A.B., **Bhattacharya, S.C.**, Moulik, S.P. *Langmuir* **28**, **2012**, **13830-13843**
11. Aqueous synthesis of ZnTe/dendrimer nanocomposites and their antimicrobial activity: implications in therapeutics; S. Ghosh, D. Ghosh, P.K. Bag, **S.C. Bhattacharya**, A. Saha, *Nanoscale*, **3**, **2012**, **1139-1148**.
 12. Differential contribution of Igepal and CnTAB micelles on the photophysics of nonsteroidal drug Naproxen; S. S. Mati, T.K. Mandal, **S.C. Bhattacharya**, *Spectrochim. Acta Part A*, **92**, **2012**, **122-130**.
 13. Facile room temperature synthesis of Lanthanum Oxalate nanorods and their interaction with antioxidative Naphthalimide derivative; S. Chall, S. Pramanik, S. Dhar, A. Saha and **S.C. Bhattacharya**; *J. Nanosci. Nanotech*, **11**, **2012**, **1-10**.
 14. Effect of solvent environment on the Photophysics of a newly synthesized bioactive 7-oxy (5-selenocyanato-pentyl)-2H-1-benzopyran-2-one; S. Dhar, D.K. Rana, S.S. Roy, S. Roy, S. Bhattacharya, **S.C. Bhattacharya**, *J. Luminescence*, **132**, **2012**, **957-964**.
 15. Self-Aggregation of MEGA-9 (N-Nonanoyl-N-methyl-D-glucamine) in Aqueous Medium: Physicochemistry of Interfacial and Solution Behaviors with Special Reference to Formation Energetics and Micelle Microenvironment. A. Pan, S. S. Mati, B Naskar, S. C. Bhattacharya and **S. P. Moulik**, *J. Phys. Chem B*. **117 (2013) 7578 – 7592**.
 16. Interaction of ZnS nanoparticles with flavins and glucose oxidase: A fluorimetric investigation; Chatterjee, A., Priyam, A., Ghosh, D., Mondal, S., **Bhattacharya, S.C.**, Saha, A., *J. Luminescence*, **132**, **2012**, **545-549**
 17. Dual Intramolecular Hydrogen Bond as a Switch for Inducing Ground and Excited State Intramolecular Double Proton Transfer in Doxorubicin: An Excitation Wavelength Dependence Study; D.K. Rana, S.Dhar, A. Sarkar, **S.C. Bhattacharya**, *J. Phys. Chem. A*, **115**, **2012**, **9169-9179**.

Number of Current Research Scholars: 7

List of Publications of Dr. Soumen Ghosh (2012-13)

1. "Shear- and Temperature-Dependent Viscosity Behavior of Two Phosphonium-based Ionic Liquids and Surfactant Triton X-100, and Their Biocidal Activities", Indrajyoti Mukherjee, Kaushik Manna, Gargi Dinda, **Soumen Ghosh** and Satya P. Moulik, *J. Chemical & Engineering Data* **57 (2012) 1376-1386**.
2. "Revisiting the Self-aggregation Behavior of Cetyltrimethylammonium Bromide in Aqueous Sodium Salt Solution with Varied Anions", Bappaditya Naskar, Abhijit Dan, **Soumen Ghosh**, V. K. Aswal and Satya P. Moulik, *J. Molecular Liquids* **170 (2012) 1-10**.
3. "Solution Behavior of Normal and Reverse Triblock Copolymers (Pluronic L44 and 10R5) individually and in Binary Mixture", Bappaditya Naskar, **Soumen Ghosh**, and Satya P. Moulik, *Langmuir* **28 (2012) 7134-7146**.
4. "Synthesis, characterization and applications of microheterogeneous templated CdS nano dispersions", Indrajyoti Mukherjee, Gargi Dinda, **Soumen Ghosh** and Satya P. Moulik, *J. Nanoparticle Research* **14 (2012) 997-1011**.
5. "Role of Curcumin on the Determination of the Critical Micellar Concentration by Absorbance, Fluorescence and Fluorescence Anisotropy Techniques", Satyajit Mondal and **Soumen Ghosh**, *J. Photochemistry and Photobiology B: Biology* **115 (2012) 9-15**.

6. "Spectroscopic Investigation of Interaction between Crystal Violet and Various Surfactants (Cationic, Anionic, Nonionic and Gemini) in Aqueous Solution", **Soumen Ghosh**, Satyajit Mondal, Sibani Das and Rathin Biswas, **Fluid Phase Equilibria** **332 (2012) 1-6**.
7. "Physicochemistry of Interaction of Polyvinylpyrrolidone (PVP) with Sodium dodecyl Sulfate (SDS) in salt solution", Bithika Mandal, Satya P. Moulik and **Soumen Ghosh**, **J. Surfaces and Interfaces of Materials** **1 (2012) 83-92**.
8. "Spectroscopic Study on the Interaction of Medicinal Pigment, Curcumin with Various Surfactants: An Overview", **Soumen Ghosh** and Satyajit Mondal, **J. Surface Science and Technology** **28 (2012) 179-195**.
9. "Amphiphilic Behavior of Two Phosphonium Based Ionic Liquids", Indrajyoti Mukherjee, Suvasree Mukherjee, Bappaditya Naskar, **Soumen Ghosh** and Satya P. Moulik, **J. Colloid and Interface Science** **395 (2013) 135-144**.
10. "Interaction Between Cationic Gemini and Monomeric Surfactants: Micellar and Surface Properties", Deepti Tikariha, Birendra Kumar, **Soumen Ghosh**, Amit K. Tiwari, N. Barbero, P. Quagliotto, Kallol K. Ghosh, **J. Nanofluids** **2 (2013) 316-324**.
11. "Physicochemical Studies on the Micellization of Cationic, Anionic and Nonionic Surfactants in Water-Polar Organic Solvent Mixtures", Sibani Das, Satyajit Mondal and **Soumen Ghosh**, **J. Chemical & Engineering Data (in web)**.

Number of Current Research Scholars: 5

TRANSLATION OF INDIAN LITERATURES (CENTIL)

[Dept. of Comparative Literature]

Int. : 2457-2223

Coordinators : Dr. Sayantan Dasgupta
: Sri Aveek Majumder

1. Name of the Department/School/Centre: CENTRE FOR TRANSLATION OF INDIAN LITERATURES
2. Names of programmes offered (UG, PG, MPhil, PhD, Integrated Masters; Integrated PhD, DSc, DLitt, etc.): Certificate course in **Translation as a Skill**
3. Interdisciplinary programmes being conducted and other departments involved: CENTIL is attached to the Department of Comparative Literature but functions with the active collaboration of faculty and students from the departments of Bangla, English, Sanskrit and Comparative Literature as well as other schools (such as the School of Women's Studies), centers and departments of Jadavpur University.
4. Courses in collaboration with other universities, industries, foreign institutions, etc.:

The certificate course in **Translation as a Skill** involves experts from various universities and institutions and sees substantial industry linkages. Institutions from which experts have been involved in adding value to the course include:

Indian Universities

- (a) University of Calcutta,
- (b) Rabindra Bharati University,
- (c) Visva-Bharati University,
- (d) Utkal University,
- (e) Jamia Milia Islamia,
- (f) University of Delhi,
- (g) Central University of Rajasthan, Kishengarh

Foreign Universities

- (a) University of East Anglia, UK

Other Institutions

- (a) Sahitya Akademi,
- (b) Bhartiya Bhasha Parishad,
- (c) American Association of Indian Studies
- (d) Kolkata Malayalee Samajam
- (e) Peoples' Linguistic Survey of India

5. Participation of the department in courses offered by other departments:

The Coordinators and the Academic Committee members are drawn from various departments and they all contribute to the academic life of the university across departments and disciplines. They have been known to contribute to courses in the departments of English, Comparative Literature, Sanskrit and Bangla, as well as in the School of Women's Studies and the School of Adult and Continuing Education, Jadavpur University. Moreover, many members of CENTIL are also involved with interdisciplinary university projects such as those under the UGC-University with Potential for Excellence Scheme.

6. Faculty profile with name, qualification, designation, area of specialization, experience and research under guidance:

Name/Qualification/Designation/Specialization/No. of Years of Experience/No. of Ph.D./M.Phil. students guided in the last 1 year

Dr Sayantan Dasgupta

Assistant Professor, Comparative Literature, Jadavpur University, Coordinator, Specialized: Modern Indian Literature, Translation, Comparative Literature, South Asia Exp. 9 Student : 3

7. List of senior Visiting Fellows, adjunct faculty, emeritus professors, visiting professors, etc.:

Among those who have taken classes at the Centre for Translation of Indian Literatures (CENTIL) in the last one year are:

Professor Ramkumar Mukhopadhyay (Sahitya Akademi; now with Visva-Bharati)

Professor Sukanta Chaudhuri

Professor Valerie Henitiuk (University of East Anglia)

Professor Harish Trivedi (Delhi University)

Professor Ansu Kar (Sahitya Akademi)

Dr Nilanjana Bhattacharya (Visva-Bharati)

Dr Sarmistha Duttagupta (Seagull; now with Ebong Alap)

Dr Mandira Sen (Stree)

Dr Lakshmi Holmstrom (University of East Anglia), etc.

8. **Research Thrust Areas:**

Indian literatures and their translation

9. **Recent Major Projects**

- a) PROJECT ANUVAD, undertaken as part of the UGC-UPE Scheme of Jadavpur University (Phase 2).

10. **Inter-Institutional Collaborative Projects and Associated Grants Received**

a) **National Collaboration**

- i) Collaboration with Peoples' Linguistic Survey of India in its Bhasa Project.
- ii) Regular collaboration with Sahitya Akademi for course on 'Translation as a Skill'.
- iii) Sahitya Akademi collaborating with CENTIL and funding several special sessions of course on 'Translation as a Skill' in the current session (2013-2014).

b) **International Collaboration**

- i) Professor Valerie Henitiuk, Director of the British Centre for Literary Translation, University of East Anglia, delivered a lecture and visited the Centre to explore collaboration possibilities.
- ii) Professor Kate Griffin of the British Centre for Literary Translation, University of East Anglia, visited the Centre to explore collaboration possibilities.
- iii) An International Translation Autumn School is being organized by CENTIL in collaboration with the University of East Anglia, Western Sydney University and the CAS in Comparative Literature, Jadavpur University.

11. **Special Research Laboratories Sponsored by / Created by Industry or Corporate Bodies:**

CENTIL has been building an archive of orature and literature from North Bengal and northeast India under the aegis of the UGC-UPE Scheme of Jadavpur University.

12. **Publications:**

Translation: Roles, Responsibilities and Boundaries. With Lakshmi Holmstrom and Sanjukta Dasgupta. Jadavpur University CAS: 2012.

Call of the Hills. Ed. Jadavpur University (CAS). 2012.

"Ambedkar and Contemporary Dalit Literature in Bangla: Notes on a Few Poems and Two Short Stories" in *Journal of the Department of English*, Vidyasagar University. 2011-2012.

"Writing Resistance, Righting Repression: A Reading of Three Stories by Provas Ray, Manoranjan Bapari and Manohar Mauli Biswas" in Jaydeep Sarangi and Champa Ghosal eds., *Marginal Writings in English: Bengali and Other Regional Literature*. New Delhi: Authors Press, 2013.

Translations of Ashoka Gupta's letters, published in Sarmistha Dutta Gupta and Narayani Gooptu eds., *A Fighting Spirit: Selected Writings of Ashoka Gupta*. New Delhi: Niyogi Books, 2013.

"Towards a New Shakespeare Pedagogy: Some Notes" in Jayanti Datta ed., *Only Connect*. Avenel Press, 2012.

"Literary and Non-Literary Translation in Multilingual India" in *Indian Literature* 269. New Delhi: Sahitya Akademi, May-June 2012.

"Calcutta of Yore" in *Frontline*. August 9, 2013. Chennai.

13. Faculty Selected Nationally / Internationally to Visit Other Laboratories / Institutions / Industries in India and Abroad (give details):

International Comparative Literature Association Triennial Congress at the Sorbonne, Paris, in July 2013. Sayantan Dasgupta, Coordinator, was selected for the Congress and presented three papers there. He also visited St Andrews University, Scotland, to explore the possibility of collaborations.

14. Faculty Serving in

- a) National committees b) International committees c) Editorial Boards d) any other (please specify and give details, including the name of the committee/s, position/s held, duration, etc.)
- i) One of the Coordinators, Dr Sayantan Dasgupta, is currently Executive Council member and Secretary of the Comparative Literature Association of India.
- ii) On the Editorial Board of *edhvani*, a peer-reviewed e-journal published from the University of Hyderabad.
- iii) Editorial Board member of *Jadavpur Journal of Comparative Literature*

15. Seminars/Conferences/Workshops Organized and the Source of Funding (national / international) with Brief Details (mention any notable features):

- (a) Nepali-Bangla-English translation workshop on the Tamang Selo, Madalay Geet and Lahari-Sawai, conducted under the aegis of Project Anuvad of the UGC-UPE Scheme (Jadavpur University) August 27-30 (2012). Resource persons Kabita Lama (Associate Professor of Nepali Literature and Language, Sikkim University), Ghanashyam Nepal (Professor of Nepali, North Bengal University), Siddharth Rai (Teacher, Mirik Higher Secondary School), and Rita Ghosh Roy (Retd. Professor of English, North Point College, Darjeeling) collaborated with translators in English and Bangla.
- (b) Editing Workshop for Lahari-Sawai translations conducted under the aegis of Project Anuvad of the UGC-UPE Scheme (Jadavpur University) (November 9, 2012).
- (c) Translation workshop on the Lahari Sawai conducted under the aegis of Project Anuvad of the UGC-UPE Scheme (Jadavpur University) (January 28-31, 2013). Resource persons Gokul Sinha (Retd Professor, Siliguri College), Dashrath Kharel (Professor of Nepali, Namchi College, Sikkim), and Sadeep Pradhan, (Assistant Professor of Nepali, Southfield College, Darjeeling) collaborated with translators in English and Bangla.

- (d) Rajbansi-Bangla-English annotation and translation workshop conducted under the aegis of Project Anuvad of the UGC-UPE Scheme (Jadavpur University) (March 12-14, 2013). Resource persons Taran Singha (Performing artist), Paresh Chandra Roy (Asst. Headmaster, Shibmandir High School, Siliguri), Dipak Kumar Roy (Asst. Professor, North Bengal University) and Dinesh Roy (Folklore researcher) collaborated with translators in English and annotators in Bangla.

16. Highlight the participation of students and faculty in extension activities.

CENTIL students and faculty are actively involved in outreach programmes and in extending the realms of education beyond the physical boundaries of the university. We strive constantly to make a difference to society at large. Thus, most of our projects have concentrated on smaller and endangered languages; our students and associates have been active in field work, documenting and archiving oral and literary texts from communities that have been hitherto largely marginalized. Our efforts have been recognized by the Sahitya Akademi, the Peoples' Linguistic Survey of India and the UGC, all of which have either collaborated with us or supported us with funding.

VICTORIAN STUDIES

[Dept. of English]

Int. : 2457-2145

Coordinator : Smt. Saswati Halder

Joint Coordinator: Dr. Chandreyee Niyogi

The Dept of English, JU, has always been very strong in the area of Nineteenth Century literature in general (which is one of the thrust areas of the CAS programme), and particularly in the specialized field of Victorian Studies, with (retired) Professors like Jashodhara Bagchi, Sajni Mukherji and Sheila Lahiri Choudhury leading the way. The present members of the Dept who specialize in the field of Victorian Studies would like to carry on this good work and make the **Centre for Victorian Studies** set up in 2010, a meeting place for fruitful research in the area.

A. Major Event

- Members of CVS had a workshop with the colleagues of School of English and Victorian Studies from University of Leicester on 4 April 2012 at Jadavpur University, to explore the nature of the term 'Victorian' from a global perspective and discussed the ways in which the category of 'Victorian' might be extended beyond national boundaries and instead be used to encompass a set of cultural, intellectual and political attitudes that have shaped- and continue to shape India as much as the UK. Ideas were exchanged on the continuing legacies of the Victorian in India as well as in the UK. Discussions were also held on developing the links between the Victorian Studies Centres and the

departments of English at both universities. Topics included honorary visiting fellowships, research collaboration, teaching research methodology and innovations in interdisciplinary teaching.

- **Centre for Victorian Studies UKIERI Seminar on 10th April 2012.**
- Talk by **Professor Deborah Logan** (Western Kentucky University & visiting Fulbright scholar) on Harriet Martineau's responses to the 1857 Uprising entitled '**The Reluctant Imperialist: Assessing the Civilizing Mission in India, 1857-1858**', 20 April 2012 (Fri) at 3.30 p.m. in the A-V room, Dept of English.
- **INTERNATIONAL CONFERENCE (18-20 DECEMBER 2012), ON 'THE DICKENS WORLD: POST-IMPERIAL READINGS'**, Organised by the Centre for Advanced Study, Department of English and The Centre for Victorian Studies, Jadavpur University with support from the British Council and the University's Merged Grant.
- Talk by **Douglas Tallack**, Professor of American Studies, Pro-Vice-Chancellor (International) and Head of the College of Arts, Humanities & Law, University of Leicester, UK: "One walked of course with one's eyes greatly open" (Henry James): London Sights in Henry James and Alvin Langdon Coburn', Monday, 14 January 2013, 3pm, AV Room, Department of English, 1st floor, UG Arts Building.

Major Awards

Under the grant of a **UKIERI 'Faculty Exchange' programme**, 2011-2012 two academics from the Centre for Victorian Studies (CVS), Dr. Sucheta Bhattacharya (Associate Professor, Dept. of Comparative Literature) and Smt. Saswati Halder (Assistant professor, Dept. Of English), visited the School of English and Victorian Studies Centre of the University of Leicester (VSC), UK, in March 2012, to facilitate towards cementing the connections between the Victorian Studies Centres of the two institutions and of bringing an Indian perspective to Victorian studies. The visit was reciprocated by a similar one by Professor Joanne Shattock (Professor Emeritus, Dept of English, University of Leicester), Dr Felicity James (Dept of English, University of Leicester) and Dr Gowan Dawson (Dept of English, University of Leicester).

- B. Projects
- C. Honour
- D. Others

Proposed Charles Dickens Volume 'The Dickens World: Post-Imperial Readings,' to be brought out by Jadavpur University Press.

WELDING TECHNOLOGY

[Dept. of Metallurgical & Material Engg.]

Int. : 2457-2171

Coordinator : Prof. T.K. Pal

Brief Profile:

Year of Establishment: **2002**

Department to which the Centre is Attached: **Metallurgical and Material Engineering**

Course Director: **Dr. T. K. Pal**

Teaching Post : **Nil**

Administrative Staff: **Nil**

Technical Staff: **1 (One)**

Course Offered:

- Certificate Course in Welding Inspection and Testing
- Training Course for Welders (MMAW/ TIG / Pipe Welding)/Supervisors

Annual Budget:

Rs 12,000 (University budgetary grant; excludes project funds and earnings)

Brief Report :**Major Objectives:**

To strengthen the understanding & cooperation in promoting the development of Welding Technology.

Major Activities

- To conduct training programme for freshers and experience personnel engaged in welding.
- To conduct long term and short term academic courses on welding technology.
- To undertake industry oriented research projects.
- To offer consultancy services for assessment and solution of industrial problem.

Faculty Profile

There is no sanctioned post. The Course Director profile is given below:

Name/Date of Birth/Year of Joining/Last Degree/Designation/Research/Interest /Specialisation/Contact/Details(e-mail)

T.K.Pal

18.02.1952, 1981, Ph. D, Professor, Welding Technology, tkpal.ju@ gmail.com

PAPER PUBLISHED (2012-2013)**A. International Journal:**

1. H. Das, S. S. Jana, **T. K. Pal** and A. De, "Numerical and experimental investigation on friction stir lap welding of aluminium to steel", Science and Technology of Welding and Joining, 2013 DOI 10.1179/1362171813Y.0000000166.
2. T.Saravanan, Hrishikesh Das, K.Arunmuthu, John Philip, B.P.C Rao, T. Jayakumar, **T.K.Pal**, "Evaluation of dissimilar friction stir lap joints using digital X-RAY radiography", Science and Technology of Welding and Joining,2013

3. Manidipto Mukherjee, **Tapan Kumar Pal**, " Role of microstructural constituents on surface crack formation during hot rolling of standard and low nickel austenitic stainless steel", Acta Metallurgica Sinica (English letter), 2013, Vol. 26, pp. 206-216.
4. B. Chakraborti, H. Das, S. Das and **T. K. Pal**, "Effect of process parameters on clad quality of duplex stainless steel using GMAW process", Trans. I.I.M, June, 2013, vol.66, issue 3, pp.221-230.
5. S. Basak, **T.K.Pal**, M. Shome and J. Maity, "GMA Brazing of Galvannealed Interstitial – Free Steel", Welding Journal, 2013, vol. 92, February, pp. 29-s to 35-s.
6. Hrishikesh Das, Sushovan Basak, Goutam Das, **Tapan Kumar pal**, "Parameter optimization in Al6061/HIF GA steel friction stir lap welds", Advanced Materials Research, 2013, Vol. 628 , pp 199-205.
7. Manidipto Mukherjee, **Tapan Kumar Pal**, " Effect of modes of metal transfer and microstructure on corrosion behavior of welded modified ferritic stainless steel in acidic environments" Journal of applied electrochemistry, 2013, vol.43, pp.347-365.
8. Manidipto Mukherjee, **Tapan Kumar Pal**, "Influence of heat input on martensite formation and impact property of ferritic – austenitic dissimilar weld metals" Journal of material science and technology, 2012, vol.28, pp.343-352.
9. Manidipto Mukherjee, **Tapan Kumar Pal**, "Influence of Mode of Metal Transfer on Microstructure and Mechanical Properties of Gas Metal Arc Welded Modified Ferritic Stainless Steel", Metallurgical and Materials Transactions A, 2012, vol. 43, pp.1791-1808.
10. Biplab Kumar Mondal, **Tapan Kumar Pal** and Joydeep Maity, "Microstructural characterization and fatigue performance evaluation of MIG-welded ship hull steel", Steel Research International, 2012, Vol. 83, DOI: 10.1002/srln.201100095
11. Rajesh Kr. Gupta, Hrishikesh Das and **Tapan Kumar Pal** "Influence of processing parameters on induced energy, mechanical and corrosion properties of FSW butt joint of 7475 aluminium alloy", International journal of Material Engineering and Performance, DOI: 10.1007/s11665-011-0074-2, 2012
12. Hrishikesh Das & Sushovan Basak & Goutam Das & **Tapan Kumar Pal**, "Influence of energy induced from processing parameters on the mechanical properties of friction stir welded lap joint of aluminium to coated steel sheet", International Journal of Advanced Manufacturing technology, 2013, vol.64, pp.1653-1661.
13. Mousumi Das, **T.K.Pal**, Goutam Das; "Effect of aging and cryo rolling on microstructural characterization and mechanical properties of precipitation hardenable 6063Al alloy", Materials Science and Engineering A, 2012, vol. 552, pp. 31–35.

B. National Journal and Proceedings of Seminar/Conference:

1. P.K. Mandal and **Tapan Kumar Pal**, "Impression creep testing of similar and dissimilar welding", Indian Welding Journal, October, 2013.
2. H. Das and **T. K. Pal**, "Corrosion Fatigue behavior of Submerged Arc Welded high strength steel used in Naval Structures", Indian Welding Journal, Volume 45 No. 2 April, 2012.
3. S. Basak, **Dr. T. K. Pal** & Dr. M. Shome, "Comparative study between MIG brazing and MIG welding process of joining zinc coated advanced high strength steel sheet used for automotive applications" Proc. Of National Welding Seminar, Bangalore on 8th -9th Feb, 2013.

4. P. Banerjee, **T. K. Pal** and M. Shome , "High cycle fatigue behavior of spot welded and weldbonded dual phase steels" Proc. Of National Welding Seminar, Bangalore on 8th -9th Feb,2013.
5. H.Das and **Dr. T.K.Pal**, "Influence of process parameter on the mechanical properties of friction stir lap welded 6061 aluminium alloy to HIF GA steel sheet" Proc. Of National Welding Seminar, Bangalore on 8th -9th Feb, 2013.
6. M. Mukherjee, P. Kanjilal and **T. K. Pal** , "Grain Boundary and Pitting Corrosion Behaviour of Modified Ferritic Stainless steel Weld metals in Acidic Environments" Proc. Of National Welding Seminar, Bangalore on 8th -9th Feb, 2013.
7. R.Sarkar, S. Sengupta, **T.K. Pal** & M.Shome, "Material Flow during similar and dissimilar Friction Stir Spot Welding" , Proc. Of National Welding Seminar, Bangalore on 8th -9th Feb, 2013.
8. R. Sarkar, **T.K. Pal** and M. Shome, "Material flow during friction stir spot welding of Steel" , Proc. of Int. Symposium on Joining of Materials (SOJOM 2012), Tiruchirapalli, India, Jan. 2012.
9. Hrishikesh Das, Debayan Chakraborti , and **Tapan Kumar pal** , "Influence of energy induced on the high cycle fatigue behaviour of friction stir butt welded 6061 aluminium alloy" , Proc. of Int. Symposium on Joining of Materials (SOJOM 2012), Tiruchirapalli, India, Jan. 2012.

C. Sponsored Research Project:

The following research projects were undertaken and ongoing during the last two years

SI. No/Title of Project/Facilities/Funding and Collaborated Agency/Period/Amount (Lakh)/Status

- 1 Development of coated electrode introducing nano-particles for welding/repair welding of Austempered Ductile iron, DST, New Delhi. 2013-2016, 24.91, Ongoing
- 2 Development of suitable gas metal arc welding (GMAW) procedure for high performance weld joints of modified ferritic stainless steel and low-nickel austenitic stainless steel, Ministry of Steel and Titagarh wagons Ltd. 2012-2015, 79.86, Ongoing
- 3 Study on Friction stir welding of aluminium alloy to zinc coated steel sheet, CSIR, New Delhi. 2011-2013, 17.48, Ongoing

D. Invited Talks Delivered:

1. Topic on: **Quality control measures in welding** organized by **National Test House**, on 29.08.13.
2. Topic on: **Welding Metallurgy** organized by **Alstom India Limited**, on 23.02.13.
3. Topic on: **Welding Metallurgy** organized by **NIT Silchar**, on 09.07.13.
4. Topic on: **Welding Metallurgy** organized by The Indian Institute of Welding, on 04.05.13.
5. Topic on: **Trends in welding technology for automotive industry**, organized by **The Indian Institute of Welding**, on 08.02.13.
6. Topic on: **Welding Metallurgy** organized by **The Indian Institute of Welding**, on 30.11.12.

E. Research Supervision

Following PhD dissertation were undertaken during last five years

SI No./PhD Dissertation Title/Present Status

1. Comparative study on friction stir welded and gas metal arc welded dissimilar aluminium alloy joining for marine application by Debkumar Adak, Ongoing

2. Friction Stir Welding of 6061 aluminium alloy to coated steel sheet lap joint by Hrishikesh Das, Ongoing
3. Development of suitable GMAW procedure for high performance weld joints of Modified ferritic and Low nickel austenitic stainless steel by Manidipto mukherjee Ongoing
4. Transient liquid phase diffusion bonding of aluminium based metal matrix composites by Pallab Roy, Ongoing
5. Fatigue behavior analysis of spot welded and weld bonded high strength and advanced high strength steel sheet joints by Pritish Banerjee, Ongoing
6. Development of friction stir spot welding process for automotive grade steel sheets to form welds of formable quality, characterization of welds and analysis of FSSW process for steels by Rajarshi Sarkar, Ongoing
7. Development and characterizations of weld metal for improved performance of armour steel plate joint by Ajit Pramanick. Ongoing
8. Development of MIG- Brazing Technique for Automotive Coated Steel and Hybrid Joints by Sushovan Basak. Ongoing
9. Influence of laser surface treatment on the microstructure and tribological behaviors of Rail and wheel steels used in Railways by S.M.Shariff , Submitted in 2013
10. Evaluation of mechanical properties of Nano/ultra-fine grained material and welded components by different minimally invasive techniques by Mausumi Das. Completed in 2013

F. Welding Inspection & Testing **(only for Company Sponsored Candidates):**

The following Short term courses, Training Programme courses were conducted during the last two years:

A. Short Time Course on (Only for company sponsored candidates)

Batch No.	Course Name	Duration	No. Of Candidate
1.	Welding Inspection &Testing	21.05.12 to 26.05.12	5
2.	Welding Inspection &Testing	03.09.12 to 08.09.12	20
Batch No.	Course Name	Duration	No. Of Candidate
3.	Advance Welding Technology	28.01.13 to 30.01.13	20
4.	Statistics for Practicing Engineers	18.02.13 to 20.02.13	16
5.	Welding Inspection &Testing	25.02.13 to 02.03.13	5
6.	Welding Inspection &Testing	06.05.13 to 11.05.13	8

G. Collaborative Programmed:

MOU signed with M/s Paul Engineering and Consultants pvt. Ltd. For conducting welding training for welders and supervisors.

H. Facilities Developed from the Sponsored Research Projects:

1. Friction Stir Welding M/C
2. MIG/MAG Welding m/c

3. TIG Welding m/c
4. Spot Welding m/c
5. INSTRON 8862 low cycle Fatigue Machine
6. RUMUL High cycle Fatigue Machine
7. Corrosion Testing (Potentiostatic)
8. Macro & Micro Structure Examination
9. Trinocular Optical Microscope (Carl zeiss made,)
10. Slow strain Rate Testing M/C
11. Wear Testing (ASTMG 65)
12. Erosion Testing
13. Hydrogen measuring unit (mercury method)
14. Trinocular Optical Microscope (Carl zeiss made,)